FUTURO

performance loves perfection



PERFORMANCE LOVES PERFECTION

When ultimate precision becomes absolute trust.

www.futuro.tools

MB-NAKLO

...Vir rešitev!

FUTURO –
Love at first rotation

Hold a **FUTURO** tool in your hand, and you will be able to sense maximum precision and excellent quality that meets even the most stringent requirements of industry. After all, over 20 years of passion and innovation in the tool industry have gone into it.

It‘s no wonder so many people have stayed loyal to our premium brand for their entire working lives.

Performance loves perfection — whether it‘s in medical technology wachmaking, tool and mould making, mechanical engineering or automotive and aviation industries.

We work together with leading manufacturers to develop our innovative premium tools exclusively for our customers, all in pursuit of having the best tools on the market for the industrial sector. FUTURO stock items can be at your door **in 24 hours within Europe and 48 hours worldwide**.

Thanks to the **Brütsch/Rüegger Tools** quality management system, consistent quality is always ensured.

FUTURO

Main Register – Our full range

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FUTURO

Metrology

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FUTURO



109054.0101

109054 Caliper gauge digital FUTURO

3-year guarantee

Designs:
Type A: depth gauge rectangular 4 x 1.4 mm **with ISO certification**
Type B: depth gauge round Ø 1.5 mm **with ISO certification**
Type C: depth gauge rectangular 4 x 1.4 mm, data output Proximity **with ISO certification**
Type D: depth gauge round Ø 1.5 mm, data output Proximity **with ISO certification**
Type L: data output Proximity **with ISO certification**
Type W: without (depth gauge, drive wheel, data output) **with ISO certification**
Features:
- LCD display
- Economy mode
- Memorized Position
- Stand-by function
- Auto-ON function on movement
- Conversion mm/inch
- Data output (depending on type)

Package contents:
Delivered in case incl. operating instructions and ISO certificate.

Appropriate accessories:
109145 Accessories SYLVAC
124008 Measuring inserts M2.5 FUTURO

Appropriate batteries:
1 pieces 109054.0040 - 150A / 0.01 / IP67 / ISO (included in scope of delivery).
1 pieces 155051.0546 - CR2032 / 3.0 V / 4 pieces (included in scope of delivery).
1 pieces 109054.0050 - 150B / 0.01 / IP67 / ISO (included in scope of delivery).
1 pieces 155051.0546 - CR2032 / 3.0 V / 4 pieces (included in scope of delivery).
1 pieces 109054.0060 - 200A / 0.01 / IP67 / ISO (included in scope of delivery).
1 pieces 155051.0546 - CR2032 / 3.0 V / 4 pieces (included in scope of delivery).
1 pieces 109054.0070 - 300W / 0.01 / IP67 / ISO (included in scope of delivery).
1 pieces 155051.0546 - CR2032 / 3.0 V / 4 pieces (included in scope of delivery).
1 pieces 109054.0101 - 150C / 0.01 / IP67 / Proximity / ISO (included in scope of delivery).
1 pieces 155051.0546 - CR2032 / 3.0 V / 4 pieces (included in scope of delivery).
1 pieces 109054.0151 - 150D / 0.01 / IP67 / Proximity / ISO (included in scope of delivery).
1 pieces 155051.0546 - CR2032 / 3.0 V / 4 pieces (included in scope of delivery).
1 pieces 109054.0201 - 200C / 0.01 / IP67 / Proximity / ISO (included in scope of delivery).
1 pieces 155051.0546 - CR2032 / 3.0 V / 4 pieces (included in scope of delivery).
1 pieces 109054.0301 - 300L / 0.01 / IP67 / Proximity / ISO (included in scope of delivery).
1 pieces 155051.0546 - CR2032 / 3.0 V / 4 pieces (included in scope of delivery).

Order ID	Type	Range mm	Resolution mm	Measuring jaw length mm	Protection class	Digit height mm	Depth gauge	Drive wheel	Data output
109054.0040	A	150	0.01	40	IP67	11.5	rectangular	—	—
109054.0050	B	150	0.01	40	IP67	11.5	round	—	—
109054.0060	A	200	0.01	50	IP67	11.5	rectangular	—	—
109054.0070	W	300	0.01	64	IP67	11.5	—	—	—
109054.0101	C	150	0.01	40	IP67	11.5	rectangular	—	Datenausgang Proximity
109054.0151	D	150	0.01	40	IP67	11.5	round	—	Datenausgang Proximity
109054.0201	C	200	0.01	50	IP67	11.5	rectangular	—	Datenausgang Proximity
109054.0301	L	300	0.01	64	IP67	11.5	—	—	Datenausgang Proximity

942000 Digital caliper gauge FUTURO connected with Bluetooth®





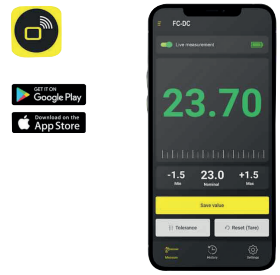
150 mm

Digital caliper gauge **with Bluetooth interface.** Extra-large LCD and customisable button with selectable functions. Resistant to water, dust and oil with **protection class IP67.** Automatic wake-up when the caliper gauge is moved, sleep mode after 20 minutes, last position saved in sleep mode. Precision-lapped measuring surfaces.

Package contents:
Supplied in case incl. ISO certificate.

FUTURO connected
Bluetooth data transmission for all needs:

- Data transfer at the touch of a button: measurement results are transferred to the active field on computer, regardless of whether it is in an Excel file, Word file or other software. The value is entered in the active field as if entered from the keyboard.
- Significant time savings: Automatic transmission of the measured value eliminates the need for manual input and eliminates errors.
- Flexible handling: Bluetooth wireless communication means that no cables hinder your movements.
- Easy connection: no software required for connection. A device with a Bluetooth connection is all you need.
- Mobile app for iOS and Android available from Apple App Store and Google Play Store



FUTURO connected App



Appropriate batteries:
1 pieces 155050.1400 - CR2032 / 3.0 V (included in scope of delivery).

Order ID		942000.0100	942000.0105	942000.0110
Range	**mm**	**150**	**200**	**300**
Resolution	mm	0.01	0.01	0.01
Reading		Switch between mm/inch	Switch between mm/inch	Switch between mm/inch
Accuracy	µm	30	30	30
Measuring jaw length	mm	40	50	65
Depth gauge		Rectangular 4 x 1.4 mm	Rectangular 4 x 1.4 mm	Rectangular 4 x 1.4 mm
Digit height	mm	11.5	11.5	11.5
Data output		Bluetooth®	Bluetooth®	Bluetooth®
Protection class		IP 67	IP 67	IP 67
Material		Stainless steel, INOX	Stainless steel, INOX	Stainless steel, INOX
Package		Plastic case	Plastic case	Plastic case

942010 Digital caliper gauge FUTURO connected with Bluetooth®



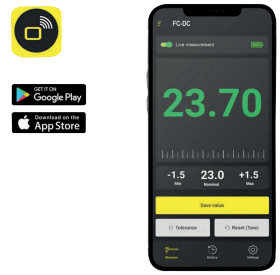


Digital caliper gauge **with Bluetooth interface.** Extra-large LCD and customisable button with selectable functions. Resistant to water, dust and oil with **protection class IP67.** Automatic wake-up when the caliper gauge is moved, sleep mode after 20 minutes, last position saved in sleep mode. Precision-lapped measuring surfaces, **depth gauge round Ø 1.5 mm.**

Package contents:
Supplied in case incl. ISO certificate.

FUTURO connected
Bluetooth data transmission for all needs:

- Data transfer at the touch of a button: measurement results are transferred to the active field on computer, regardless of whether it is in an Excel file, Word file or other software. The value is entered in the active field as if entered from the keyboard.
- Significant time savings: Automatic transmission of the measured value eliminates the need for manual input and eliminates errors.
- Flexible handling: Bluetooth wireless communication means that no cables hinder your movements.
- Easy connection: no software required. A device with a Bluetooth connection is all you need.
- Mobile app for iOS and Android available from Apple App Store and Google Play Store



FUTURO connected App

Appropriate batteries:
1 pieces 155050.1400 - CR2032 / 3.0 V (included in scope of delivery).

Order ID		942010.0100
Range	**mm**	**150**
Resolution	mm	0.01
Reading		Switch between mm/inch
Accuracy	µm	30
Measuring jaw length	mm	40
Depth gauge		Round, diameter 1.5 mm
Digit height	mm	11.5
Data output		Bluetooth®
Protection class		IP 67
Material		Stainless steel, INOX
Package		Plastic case

112405 Depth gauge digital FUTURO

3-year guarantee



112405.0100

Designs:
Type TB: Gauge rail with measuring tip Ø 1.5 x 5 mm
Features:
- LCD display
- Economy mode
- Auto-ON function on movement
- Position memorized (Absolute System S.I.S)
- Programmable button
- Stainless steel, hardened and ground
- Depth gauge hardened
- Data output Proximity

Package contents:
Delivered in case incl. operating instructions and ISO certificate.

Appropriate accessories:
109145 Accessories SYLVAC

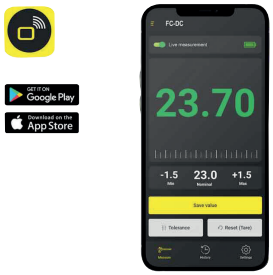
Appropriate batteries:
1 pieces 112405.0100 - 150 / 0.01 / IP67 / Proximity (included in scope of delivery).
1 pieces 155051.0546 - CR2032 / 3.0 V / 4 pieces (included in scope of delivery).
1 pieces 112405.0200 - 300 / 0.01 / IP67 / Proximity (included in scope of delivery).
1 pieces 155051.0546 - CR2032 / 3.0 V / 4 pieces (included in scope of delivery).

Order ID		112405.0100	112405.0200
Type		TB	TB
Range	mm	150	300
Resolution	mm	0.01	0.01
Length of base	mm	100	100
Rail cross section	mm	16 x 3.5	16 x 3.5
Protection class		IP67	IP67
Digit height	mm	11.5	11.5
Data output		•	•

942100 Digital depth gauge FUTURO connected Bluetooth®



150 mm



FUTURO connected App

Digital depth gauge **with Bluetooth interface.** Extra-large LCD and customisable button with selectable functions. Resistant to water, dust and oil with **protection class IP67.** Automatic wake-up when the caliper gauge is moved, sleep mode after 20 minutes, last position saved in sleep mode. Precision-lapped measuring surfaces, **depth gauge rectangular.**

Package contents:
Supplied in case incl. ISO certificate.

FUTURO connected
Bluetooth data transmission for all needs:

- Data transfer at the touch of a button: measurement results are transferred to the active field on computer, regardless of whether it is in an Excel file, Word file or other software. The value is entered in the active field as if entered from the keyboard.
- Significant time savings: Automatic transmission of the measured value eliminates the need for manual input and eliminates errors.
- Flexible handling: Bluetooth wireless communication means that no cables hinder your movements.
- Easy connection: no software required. A device with a Bluetooth connection is all you need.
- Mobile app for iOS and Android available from Apple App Store and Google Play Store

Appropriate batteries:
1 pieces 155050.1400 - CR2032 / 3.0 V (included in scope of delivery).

Order ID		942100.0100	942100.0105	942100.0110
Range	**mm**	**150**	**200**	**300**
Resolution	mm	0.01	0.01	0.01
Reading		Switch between mm/inch	Switch between mm/inch	Switch between mm/inch
Accuracy	µm	30	30	30
Depth gauge		Rectangular	Rectangular	Rectangular
Length of base	mm	100	100	100
Rail cross section	mm	16 x 4	14 x 6	14 x 6
Digit height	mm	11.5	11.5	11.5
Data output		Bluetooth®	Bluetooth®	Bluetooth®
Protection class		IP 67	IP 67	IP 67
Material		Stainless steel/inox	Stainless steel/inox	Stainless steel/inox
Package		Plastic case	Plastic case	Plastic case

942200 External micrometer digital with Bluetooth® FUTURO Connected







External micrometer 0–25 mm/0.001 FCT FUTURO Connected

FUTURO connected digital micrometer with Bluetooth interface. XXL display with 0.001 mm resolution for precise measurements. Thanks to its IP67 protection rating, the instrument is fully protected against the ingress of solid and liquid substances, making it ideal for demanding environments. Wireless connectivity enables easy data transfer and management. Automatic wake-up when the spindle is moved, with position memory in sleep mode. Versatile use thanks to a measuring force of 10 N for consistent and reproducible measurement results.

FUTURO Connected
Bluetooth data transfer to suit all needs:

- Data transfer at the touch of a button: the measu ement result is transferred to the active field on the computer, whether in an Excel, Word or other type of file. The value is entered in the active field as if it were a typed entry.
- Saves a considerable amount of time: automatic transfer of the measu ed value eliminates manual input and avoids errors.
- Flexible use: with Bluetooth wi eless communication, there are no cables to hinder your movements.
- Simple connection: no softwa e needed to connect. All that is needed is a Bluetooth-capable device.
- Mobile app for iOS and And oid available from the Apple App Store and Google Play Store

TECHNICAL DATA
- EAN: 764012568896
- Measuring range (mm): 0–2
- Max. er or (MPE)[1] (µm): 2
- Repeatability 2 (µm): 1 (± 1 digit)
- Key type: Ø 6.
- Data output: Bluetooth® wireless technology

SCOPE OF DELIVERY
- Instrument per technical dat
- CR2032 lithium battery include
- Operating instruction
- Calibration cert ficate
- ISO cert ficate

OPTIONAL: HIVE-CONNECT APPLICATION
Part of the „Hive" suite, the Hive-Connect application integrates the data collected by your measuring instruments into a digital control process.

- It is now possible to manage all control tools using a single application
- Data is displayed and logged in real time
- Tolerances are defined individually for each instrument
- Reset (offset) function available
- Can be linked to your ERP

Order ID		942200.0100
Resolution		1 µm
Resolution	mm	0.001
Insulation		IP67
Range 1	mm	0....25
Accuracy	µm	2
Measuring spindle Ø	mm	6.5
Measuring surface	mm	Ø 6.5
Spindle pitch	mm	1
Digit height	mm	13
Protection class		IP67
Measuring pressure	N	10
Number of external micrometers		1
Data output		Bluetooth®

FUTURO



123410.0030



123410.3200

123410 Dial gauge FUTURO

3-year guarantee
Standard version.

Features:
- Rotating dial with blocking
- Adjustable tolerance marks
- Clamping shaft Ø 8 mm
- Exchangeable measuring insert M2.5
- Impact-resistant (depending on the model)

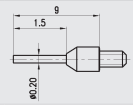
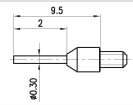
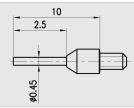
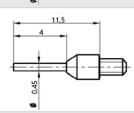
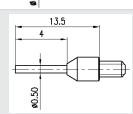
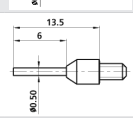
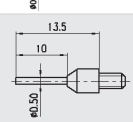
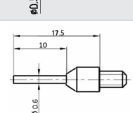
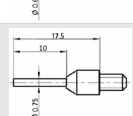
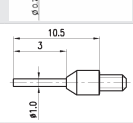
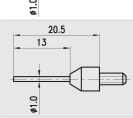
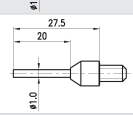
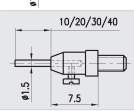
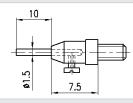
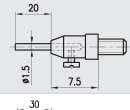
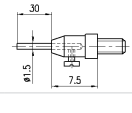
Package contents:
Delivered in transport packaging incl. ISO certificate.

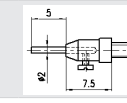
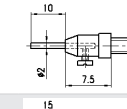
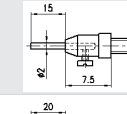
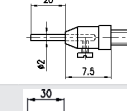
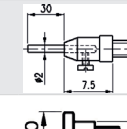
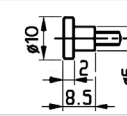
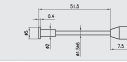
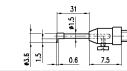
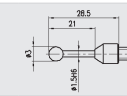
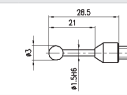
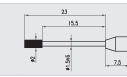
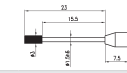
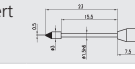
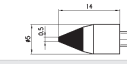
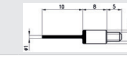
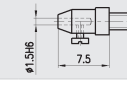
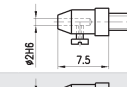
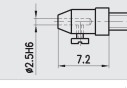
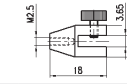
Order ID		123410.3100	123410.3200	123410.3300
Travel	mm	5	10	30
Resolution	mm	0.01	0.01	0.01
Bezel Ø	mm	40	58	58
Accuracy	µm	12	12	20
Accuracy		DIN 878	DIN 878	–
Lettering		0...100	0...100	0...100
1 revolution	mm	1	1	1
Protection antichoc		–	•	•

124008 Measuring inserts M2.5 FUTURO

SwissMade

Measuring inserts with an M2.5 connection thread offer a precise and versatile solution for various measuring tasks in different applications. They are compatible with common dial gauges, enabling easy integration into existing measuring systems and ensuring accurate measurements. Manufactured in Switzerland.

Order ID	Designation	
124008.0020	Carbide pin	
124008.0030	Carbide pin	
124008.0045	Carbide pin	
124008.0046	Carbide pin	
124008.0048	Carbide pin	
124008.0050	Carbide pin	
124008.0060	Carbide pin	
124008.0062	Carbide pin	
124008.0064	Carbide pin	
124008.0130	Carbide pin	
124008.0140	Carbide pin	
124008.0200	Carbide pin	
124008.0300	4 carbide pin, replaceable	
124008.0310	Carbide pin, replaceable	
124008.0320	Carbide pin, replaceable	
124008.0330	Carbide pin, replaceable	

Order ID	Designation	
124008.0405	Carbide pin, replaceable	
124008.0410	Carbide pin, replaceable	
124008.0415	Carbide pin, replaceable	
124008.0420	Carbide pin, replaceable	
124008.0430	Carbide pin, replaceable	
124008.0600	Contact Plate, flat	
124008.1500	Carbide pin	
124008.1520	Carbide pin Groove width from 0.8 mm Groove depth max. 1.4 mm	
124008.1640	Plastic ball	
124008.1650	Steel ball	
124008.1700	with replaceable POM measuring insert	
124008.1705	with replaceable POM measuring insert	
124008.1720	with replacement POM measuring insert / cone	
124008.1750	POM measuring insert / cone	
124008.1800	POM measuring insert / pin Ø 1 x 10	
124008.1805	POM measuring insert / pin Ø 1.5 x 13	
124008.2030	INOX insert-body FUTURO M2.5, with receptacle bore hole, Ø1.5H6	
124008.2040	INOX insert-body FUTURO M2.5, with receptacle bore hole, Ø2.0H6	
124008.2050	INOX insert-body FUTURO M2.5, with receptacle bore hole, Ø2.5H6	
124008.3000	Caliper support FUTURO Aluminium, black anodised M2.5	
124008.9000	Base on acrylic glass for inserts M2.5 transparent with place for 23 pieces	



123411 Plastic box FUTURO

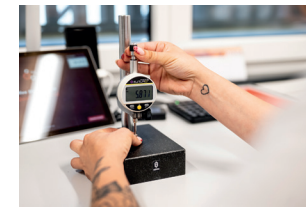
For dial gauges

Order ID	Overal size mm	Version	Colour of the product	Material
123411.0010	175 x 95 x 40	to dial gauge Ø 40 / 5	black / yellow	Plastic / foam
123411.0020	175 x 95 x 40	to dial gauge Ø 58 / 10	black / yellow	Plastic / foam
123411.0030	175 x 95 x 40	to dial gauge Ø 58 / 30	black / yellow	Plastic / foam

942300 Dial gauge digial with Bluetooth® FUTURO Connected

IP 67







Dial gauge digital FUTURO Connected/0.001 FCT

Dial gauge digital with Bluetooth interface FUTURO Connected. 59.5 mm 270° rotating housing and large display with 0.001 mm resolution, with LED indication of tolerance status for fast and accurate decision-making. Battery-free operation thanks to „Proximity" and „Power" data outputs. Integrated Bluetooth data transmission for fast and error-free wireless transfer. Built to last with IP54 protection against water and coolant. Convenient features including MIN/MAX/DELTA, TOL, Factor, PRESET and AUTO OFF, with automatic wake-up upon movement and sleep mode after 10 minutes of inactivity.

FUTURO Connected
Bluetooth data transfer to suit all needs:

- Data transfer at the touch of a button: the measu ement result is transferred to the active field on the computer, whether in an Excel, Word or other type of file. The value is entered in the active field as if it were a typed entry.
- Saves a considerable amount of time: automatic transfer of the measured value eliminates manual input and avoids errors.
- Flexible use: with Bluetooth wireless communication, there are no cables to hinder your movements.
- Simple connection: no software needed to connect. All that is needed is a Bluetooth-capable device.
- Mobile app for iOS and Android available from the Apple App Store and Google Play Store

TECHNICAL DATA

- Data output: Bluetooth® wireless technology/USB/RS232

SCOPE OF DELIVERY
- Instrument according to technical data
- CR2032 lithium battery included
- Operating instructions
- Calibration certificate
- ISO certificate

OPTIONAL: HIVE-CONNECT APPLICATION
Part of the „Hive" suite, the Hive-Connect application integrates the data collected by your measuring instruments into a digital control process.

- It is now possible to manage all control tools using a single application
- Data is displayed and logged in real time
- Tolerances are defined individually for each instrument
- Reset (offset) function available
- Can be linked to your ERP

Order ID	Insulation	Data output
942300.0100	IP 54/67	compatible RS232 / Bluetooth®
942300.0200	IP54/67	compatible RS232 / Bluetooth®

126500 Articulated stand FUTURO CL

SwissMade - 3-year guarantee
With precise **microfine adjustment** and chrome-plated arm section. Suitable for probes, dial gauges and lever gauges. Equipped with a powerful switching magnet and a prism soleplate, the magnet can be conveniently switched on and off using a rotary handle. Available in various sizes.

Designs:
Powerful on/off magnet with V-base, can be switched on and off by turning the handle
Package contents:
Delivered in transport packaging, **dial gauge not included**.
Appropriate accessories:
Dial gauges starting from 121450
Lever dial gauge from 124210
Attached articulated stand 126570 / 126580
Accessories 126590

Order ID		126500.0100	126500.0200	126500.0300
Radius of action	mm	200	288	400
Height	mm	310	390	510
Base	mm	60 x 50 x 55	75 x 50 x 55	75 x 50 x 55
Adhesive strength	N	~800	~1000	~1000
Base		M	SM	SM
Dial gauge holder	mm	Ø 8	Ø 8	Ø 8



126500.0200

127500 Granite measuring table FUTURO

Made of black granite and meets the evenness requirements of DIN 876/00. The column is made of durable chrome steel and has a thread for height adjustment. The horizontal arm is adjustable. The measuring table is ideal for precise measuring tasks.

Package contents:
Delivered in transport packaging.
Appropriate accessories:
Dial gauges starting from 121450, 942300

Order ID		127500.1000
Measuring height	mm	210
Capacity	mm	115
Table size	mm	250 x 200 x 50
Evenness	µm	3
Vertical arm	mm	Ø 35
Height	mm	320
Dial gauge holder	mm	Ø 8
Weight	kg	10.5



127500.1100



127500.1200



with ISO certificate

136750 Height measuring instrument FUTURO

1D measuring mode

SwissMade - 3-year guarantee, incl. ISO certificate
Shop-suitable measuring instrument with large and very readable LCD display with 2 rows presentation. Ideal for simple and reliable measurement of heights, depths and distances as well as inside and outside diameters.

Your customer benefits:
- **Probe range:** Probes with a length of up to 400 mm can be used
- **Simple data transfer:** Secure and uncomplicated transfer of measured values via RS-232 or USB
- **Clear display:** Large, two-line LCD display for easy reading of measured values
- **Easy to move:** The device can be moved easily and gently thanks to the integrated air cushion

Note:
We provide you with optional installation, activation, training, calibration and servicing on site for this measuring instrument.

Package contents:
Delivered in transport packaging incl.:
- ISO certificate (Print version)
- Probe with ruby ball Ø 4 mm
- Setting gauge 136755.0100
- Charger
- Protection cover
- Manual short / Manual (Digital)

Usable with:
136750 Height measuring instrument FUTURO 1D measuring mode

Appropriate accessories:
136600 Accessories SYLVAC / TRIMOS

Order ID		136750.0200	136755.0100
Model		F4	
Range	mm	711	
Area of application	mm	1023	
Resolution	mm	0.01 / 0.001	
Accuracy	µm	2.5+L/250	
Repeatability	µm	3	
Squareness	µm	13	
Measuring pressure	N	0.75...1.5	
Weight	kg	24	
Colour		black matt	
Designation			Feeler gauge 25 mm

139130 Spotting paint FUTURO

For precise markings and surface inspections in workpiece processing. It is specially used to visualize irregularities, scratches and defects on the surfaces of workpieces. Application suitable for quality control and adjustment work. Well suited for steel and bright materials.

Order ID	Colour	Contents	Container
139130.0100	Blue	80 ml	Tube
139130.0200	Red	80 ml	Tube
139130.0400	Blue	250 ml	Can



139130.0100



139130.0500

139138 Marking paint pen FUTURO

Ideally suited for marking workpieces, castings, forgings and metal surfaces. The paint dries quickly, adheres reliably and remains clearly visible even under demanding conditions. It ensures precise markings and facilitates processing. A strong contrast medium that enables precise and easy processing of workpieces.

Note:
Easily removable with Scribing paint remover FUTURO 139142.0100

Order ID	Colour
139138.0100	Blue

Symbols of danger	GHS2, GHS5, GHS7
H phrases	H225, H315, H317, H318, H412
P phrases	P210, P233, P261, P273, P280, P305+P351+P338, P310, P333+P313, P403+P235



139140 Scribing paint FUTURO

Spray or fluid

Perfect for scribing workpieces, forged and cast parts and metal surfaces. The paint dries quickly and adheres reliably. Thanks to its high resistance, the marking remains clearly visible even under demanding conditions. Highly effective contrast medium for effortless processing of workpieces.

Note:
Easily removable with Scribing paint remover FUTURO 139142.0100

Order ID	Contents	Colour	Container
139140.0101	400 ml	blue	Spray
139140.0201	400 ml	Red	Spray
139140.0300	500 ml	Blue	Bottle

Symbols of danger	F+, Xi
H phrases	R12, R36, R66, R67
P phrases	S16, S23.5, S9



139140.0101



139140.0300

139450 Ceramic scriber FUTURO

SwissMade

Not a conventional scriber; high-quality, robust stainless steel housing, black QPQ-coated with double end. There is a ceramic marking needle on one side and a practical magnet on the other. With the spring-clip cap on one side, the marking needle can be conveniently attached to any breast pocket, belt pocket etc. The hexagonal housing rests nicely in the hand, ensuring a pleasant feel. Supplied in a case.

Order ID	Length mm
139450.0100	130







140587 Stainless try square FUTURO

DIN 875/1

Stainless steel

Manufactured from stainless steel to DIN 875/1, it is characterized by precisely ground high edges, flat sides and finely machined test surfaces. Suitable for use in metrology, mechanical engineering, metalworking, construction and trade for precise angle measurements and alignment.

Package contents:
Delivered in transport packaging.

Order ID	Profile mm	Side lengths mm
140587.0401	30 x 6	200 x 130
140587.0601	40 x 8	300 x 200





140617 Stainless try square FUTURO

DIN 875/0

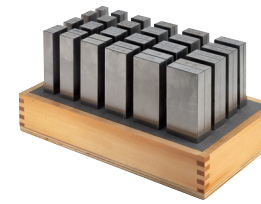
Stainless steel

Uprights and flat sides ground, inspection faces precision-ground. Suitable for inspection purposes and precise work.

Package contents:
Delivered in transport packaging.

Order ID	Side lengths mm	Profile mm
140617.0401	200 x 130	30 x 6

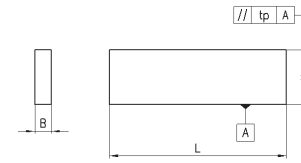
143210 Parallel base set FUTURO



(Milling blocks) - Made of hardened steel, for use as a base for work pieces in a wide variety of machining processes. The **high precision** of the parallel bases guarantees parallel clamping of the work piece.

Features:
- Nominal dimension information on the front face of the product
- **Nominal dimension tolerance in height + width ±0.01 mm**
- hardened approx. 60 HRC
- fine ground plane-parallel in pairs
- Pair tolerance (tp) in height IT5
- Remaining measurements in accordance with DIN ISO 2768 medium

Package contents:
Delivered in transport packaging included wooden box.



Appropriate spare parts:
143212 Pair of parallels FUTURO
143240 Wooden base FUTURO

Order ID	Length mm	Pairs	Weight kg	Profile mm
143210.0100	100	20	2.180	**2 x** 5 / 10 / 15 / 20 **3 x** 6 / 11 / 16 / 21 **4 x** 7 / 12 / 17 / 22 **5 x** 8 / 13 / 18 / 23 **6 x** 9 / 14 / 19 / 24
143210.0200	125	24	14	**8 x** 11 / 16 / 21 / 26 / 31 / 36 **10 x** 13 / 18 / 23 / 28 / 33 / 38 **12 x** 15 / 20 / 25 / 30 / 35 / 40 **14 x** 17 / 22 / 27 / 32 / 37 / 42
143210.0300	150	24	17	**8 x** 11 / 16 / 21 / 26 / 31 / 36 **10 x** 13 / 18 / 23 / 28 / 33 / 38 **12 x** 15 / 20 / 25 / 30 / 35 / 40 **14 x** 17 / 22 / 27 / 32 / 37 / 42

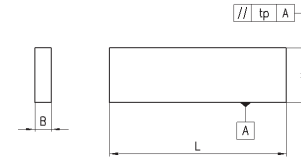
143212 Pair of parallels FUTURO



(Milling blocks) - Made of hardened steel, for use as a base for work pieces in a wide variety of machining processes. The **high precision** of the parallel bases guarantees parallel clamping of the work piece.

Features:
- Nominal dimension information on the front face of the product
- **Nominal dimension tolerance in height + width ±0.01 mm**
- hardened approx. 60 HRC
- fine ground plane-parallel in pairs
- Pair tolerance (tp) in height IT5
- Remaining measurements in accordance with DIN ISO 2768 medium

Package contents:
Delivered in transport packaging



Order ID	Length mm	Profile mm	Order ID	Length mm	Profile mm
143212.0210	100	2 x 5	143212.0430	125	8 x 21
143212.0220	100	2 x 10	143212.0440	125	8 x 26
143212.0230	100	2 x 15	143212.0450	125	8 x 31
143212.0240	100	2 x 20	143212.0460	125	8 x 36
143212.0250	100	3 x 6	143212.0470	125	10 x 13
143212.0260	100	3 x 11	143212.0480	125	10 x 18
143212.0270	100	3 x 16	143212.0490	125	10 x 23
143212.0280	100	3 x 21	143212.0500	125	10 x 28
143212.0290	100	4 x 7	143212.0510	125	10 x 33
143212.0300	100	4 x 12	143212.0520	125	10 x 38
143212.0310	100	4 x 17	143212.0530	125	12 x 15
143212.0320	100	4 x 22	143212.0540	125	12 x 20
143212.0330	100	5 x 8	143212.0550	125	12 x 25
143212.0340	100	5 x 13	143212.0560	125	12 x 30
143212.0350	100	5 x 18	143212.0570	125	12 x 35
143212.0360	100	5 x 23	143212.0580	125	12 x 40
143212.0370	100	6 x 9	143212.0590	125	14 x 17
143212.0380	100	6 x 14	143212.0600	125	14 x 22
143212.0390	100	6 x 19	143212.0610	125	14 x 27
143212.0400	100	6 x 24	143212.0620	125	14 x 32
143212.0410	125	8 x 11	143212.0630	125	14 x 37
143212.0420	125	8 x 16	143212.0640	125	14 x 42

143240 Wooden base FUTURO



Suitable for the sets of standard parallels and individual pairs.

Order ID	Pairs	Profile mm
143240.1000	20	**2 x** 5 / 10 / 15 / 20 **3 x** 6 / 11 / 16 / 21 **4 x** 7 / 12 / 17 / 22 **5 x** 8 / 13 / 18 / 23 **6 x** 9 / 14 / 19 / 24
143240.1100	24	**8 x** 11 / 16 / 21 / 26 / 31 / 36 **10 x** 13 / 18 / 23 / 28 / 33 / 38 **12 x** 15 / 20 / 25 / 30 / 35 / 40 **14 x** 17 / 22 / 27 / 32 / 37 / 42

142602 Cleaning/care material FUTURO

for granite products

for treating hard-stone tabletops.

Order ID	Designation	Contents ml
142602.0035	**FUTURO MICROCLEAN - Cleaner** For deep and total cleaning of hard-stone products. Completely removes lubricant particles from the micropores.	1000
142602.0065	**FUTURO MICROCARE - Care product** For the deep care of hard stone products. Gives the treated surface its original shine and promotes gliding.	1000

Symbols of danger	GHS5
H phrases	H314
P phrases	P280, P303+P361+P353, P305+P351+P338, P301+P330+P331, P310


142602.0035


142602.0065

143810 Precision vice FUTURO

Made of aluminium, clear anodized. For microscopes, profile projectors, optical measuring instruments and roughness gauges. Stainless, hardened and replaceable clamping jaws/clamping grooves on the long side. With an angular accuracy and parallelism of 0.01 mm, it is equipped with a prism on both sides. Available as a single piece or as a set.

Version:
143810.0500...143810.0700
1x Precision vice FUTURO ELOX
1x Plastic case FUTURO for mini-vices

143810.9100...143810.9300 set consisting of:
1x Precision vice FUTURO ELOX
1x Set of clamping jaws FUTURO on metal + plastic
1x Plastic case FUTURO for mini-vices
1x Angled key TORX® PB 410

143810.9900 set consisting of:
3x Precision vice FUTURO ELOX 15 / 25 / 35
3x Set of clamping jaws FUTURO on metal+plastic
1x Plastic case FUTURO for mini-vices
3x Angled key TORX® PB 410

Features:
- Gripping jaws stainless steel, hardened and interchangeable
- Fixing slots on longitudinal side
- Angular accuracy 0.01 mm
- Parallelism 0.01 mm
- Vee on stationary gripping jaw
- Vee on movable gripping jaw (only 25 / 35)

Package contents:
Delivered in plastic case




143810.9900

Order ID	Model	Version	L x W x H mm	Clamping width mm	Clamping depth mm
143810.0500	Single piece	ELOX	50 x 15 x 15	14.5	8
143810.0600	Single piece	ELOX	75 x 25 x 25	23.5	15
143810.0700	Single piece	ELOX	100 x 35 x 35	31.5	21
143810.9100	Set	ELOX	50 x 15 x 15	14.5	8
143810.9200	Set	ELOX	75 x 25 x 25	23.5	15
143810.9300	Set	ELOX	100 x 35 x 35	31.5	21
143810.9900	Set	ELOX	50 x 15 x 15 75 x 25 x 25 100 x 35 x 35	14.5 23.5 31.5	8 15 21

142661 Base / Base frame FUTURO

for surface plates

Robust steel tube construction with Bessel 3-point support and tip safety (bearing fitting). Bearing fitting is high adjustable and is used for aligning the plates (3-point support and 2 screws provided for tip safety). The working height can be adjusted using the anti-vibration adjustable feet with levelling screw. The working height (approx. 1000 mm) varies according to the thickness of the hard-stone plate. Paint RAL 7035.

Designs:
Model SU Safety base frame
Corners protected with safety edges
with base plate and adjustable tray
Load carrying capacity 1500 kg

Model SUS Safety base frame with drawer unit
Corners protected with safety edges
Drawer cabinet in solid steel sheet construction
Drawers 50 / 100 / 150 mm, lockable
Load carrying capacity 1500 kg

Model SSU Safety cabinet base
Corners protected with safety edges
Cabinet with double doors (2x) in solid steel sheet construction
Drawer cabinet in solid steel sheet construction
Drawers 50 / 100 / 150 / 150 mm, lockable
Load carrying capacity 1500 kg
Package contents:
Delivered in transport packaging incl. 3-point support kit, 2 anti-tilt devices, 4 adjusting feets, **without surface plate**.
Appropriate accessories:
142580 Surface plate made of black granite
142586 FUTURO test panel made of natural hard stone DIN 876/00
142595 Surface plate made of black granite Planolith
541636 Replacement lock cylinder FUTURO

Usable with:
142560 Surface plate made of black granite
142580 Surface plate made of black granite
142586 FUTURO test panel made of natural hard stone DIN 876/00
142595 Surface plate made of black granite Planolith
Note:
*Dimensions relative to the plate size (L x B).

Order ID	Model	Size * mm	Colour	Weight kg
142661.2210	SU	630 x 400	Light grey - RAL 7035	25
142661.2320	SU	800 x 500	Light grey - RAL 7035	53
142661.2430	SU	1000 x 630	Light grey - RAL 7035	68
142661.2540	SU	1200 x 800	Light grey - RAL 7035	84
142661.4530	SUS	800 x 500	Light grey - RAL 7035	80
142661.4640	SUS	1000 x 630	Light grey - RAL 7035	88
142661.4750	SUS	1200 x 800	Light grey - RAL 7035	101
142661.6340	SSU	1000 x 630	Light grey - RAL 7035	161
142661.6450	SSU	1200 x 800	Light grey - RAL 7035	191



142661.2320



142661.4640



142661.6340

152804 Base with granite tabletop FUTURO

Hard stone top made of black granite in accordance with DIN 876/2. The sturdy tubular steel base enables a working height of approx. 750 mm, which can be adjusted using anti-vibration feet with leveling screws. Features lockable drawers with a load capacity of 100 kg. Ideal for use with profile projectors, coordinate measuring machines and similar measuring devices.

Surface plate:
- Dark hard stone with dense structure
- Flatness to DIN 876/2
- Dimension 820 x 580 x 50 mm
- Weight 74 kg

Base:
- Robust steel tube construction
- Painted with RAL 7035
- **Working height approx. 750 mm**
- Base area 810 x 570 mm

Drawers:
- Drawers heights 50 / 100 / 150mm
- Lockable
- load capacity 100 kg

Package contents:
Base including 3-point support kit, 2 anti-tilt devices and 4 levelling feets.

Order ID	Version
152804.3200	Base without granite tabletop
152804.5000	Base with granite tabletop



152804.5000





142586 FUTURO test panel made of natural hard stone DIN 876/00

DIN 876/00

Made of dark hard stone with a dense structure and uniform coloration. The diamond-lapped measuring surface is manufactured in accordance with DIN 876/00 and has a Mohs hardness of 6-7. The material is corrosion-resistant, acid-resistant and has very low thermal conductivity and a high material density. Stable positioning thanks to three-point support surface.

Features:
- Mohs hardness grade 6-7
- Diamond lapped surface
- Corrosion and acid resistant
- very low thermal conductivity
- considerable material density
- Three-point support surface

Scope of delivery:
Delivered in transport packaging incl. ISO certificate.

Order ID	142586.0100	142586.0200	142586.0300	142586.0400	142586.0500	142586.0600





142588 FUTURO test panel made of natural hard stone DIN 876/2

DIN 876/2

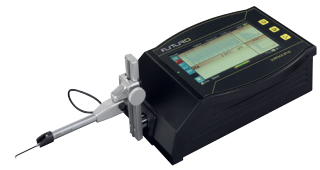
Made of dark hard stone with a dense structure and uniform coloration. The diamond-lapped measuring surface is manufactured in accordance with DIN 876/2 and has a Mohs hardness of 6-7. The material is corrosion-resistant, acid-resistant and has very low thermal conductivity and a high material density. Stable positioning thanks to three-point support surface.

Features:
- Mohs hardness grade 6-7
- Diamond lapped surface
- Corrosion and acid resistant
- very low thermal conductivity
- considerable material density
- Three-point support surface

Scope of delivery:
Delivered in transport packaging incl. ISO certificate.

Order ID	142588.0100

148206 Roughness tester FUTURO Surface BT60



Three-year warranty
Mobile surface measuring instrument with integrated evaluation unit and exchangeable skidless tracer system guarantees highly accurate measurements, while taking into account various standards. Easy to use thanks to the high-resolution 7-inch touchscreen and membrane keyboard. Thanks to its small dimensions, it can be used in the measuring room as well as in production settings. An error detection system warns if the probe is not resting on the surface or is under excessive pressure. The large internal memory provides space for a variety of measurements, which can be sent directly to a printer or PC via the integrated USB interface or stored on a USB stick.
The supplied probe head with a replaceable tracing arm can be used as a skidless tracer or, with mounted anti-skid protection, as a standard-compliant tracer with skid. Thanks to the height adjustment of 110 mm, an additional stand is no longer needed for a range of measuring tasks

Features:
- Menu guidance in multiple languages: DE/FR/IT/EN/PO/JP/CN/KO
- 7-inch touchscreen (18 cm) display, membrane keyboard
- Unit of measure can be switched between µm and µin
- Automatic cut-off detects standardised filter and tracing path
- Inductive tracing system, swivels 90°, suitable for lateral measurements
- Tracing height adjustment: 110 mm
- Skidless tracing system (with skid protection, tracker with skid system)
- Tracing arms can be swapped for roughness and mini contour
- Measurement program – Created with parameters, cut-off, measuring speed etc.
- Measured value memory – 4000 measured values/1000 profiles
- Evaluation – roughness parameters, diagrams, mini contour, logging
- Dimensions (H x L x W): 85 x 280 x 75 mm
- Data output: USB/Bluetooth®/±5 V

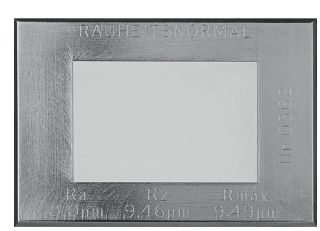
Parameters (some):
Ra, Rq, Rt, Rz, Rp, Rv, RSm, Rmax, Rmr, RPc, R3z, RΔq, RΔa RLo, Rlr, Rzjis, RHSC, Rmr(c), hp, Ep
Pa, Pq, Pt, Pq, Pv, Pc, Psk, Pku, PSm, PΔq, PPc, PLo, Plr, PHSC
Wa, Wq, Wt, Wz, Wp, Wv, Wc, Wsk, Wku, WSm, WΔq, WPc, WLo, Wlr, WHSC
Rk, Rpk, Rvk, Mr1, Mr2, A1, A2, Rpk*, Rvk*, WDSm, WDc, WDt
R, AR, Rx, W, Aw, Wx, Wte, Rke, Rpke, Rvke, Mr1e, Mr2e, A1e, A2e

Standards:
ISO: 4288, 13565, 12085
DIN: 4768, 2007
JIS: B0671, B0601, B0631
ASME: B46.1
Note:
We recommend training for this product!
For further technical information please request a consultation.
Scope of delivery:
Basic unit
Skidless tracer system SB200
Standard roughness stylus 1-Y
Roughness standard with ISO certificate
Probe protection
Universal power supply unit, 110–230 V
Operating instructions
Storage case

Appropriate accessories:
148120 Roughness standard FUTURO

Order ID		148206.0100	148206.9000
Type		BT60	BT60
Range	µm	± 1500	± 1500
Resolution	µm	0.0001	0.0001
Feeder length	mm	60	60
Cut-off wavelengths	mm	0.08/0.25/0.8/2.5/8	0.08/0.25/0.8/2.5/8
Measuring force	mN	0.75	0.75
Dimensions WxDxH	mm	75 x 280 x 85	75 x 280 x 85
Weight	kg	2.9	2.9
Version			Action package consisting of: **148206.0100** Roughness tester FUTURO Surface BT 60 **148210.0500** Probe arm FUTURO Minicontour measurement, carbide tip Stylus 4-S / 12°/ 20µm **148210.1500** Contour standard FUTURO 2.5 x 2.5 mm - R1 mm

148120 Roughness standard FUTURO



Suitable for calibration of roughness testers.

Roughness parameters:
R_a: Mathematical mean surface roughness
R_z: Average peak-to-valley
R_{max}: Maximum peak-to-valley
Scope of delivery:
Delivered included ISO certificate.

Order ID	Designation
148120.0100	Roughness standard, suitable for calibration of roughness testers, Ra 3µm



152378 Videomicroscope FUTURO INSPECT

The video microscope is equipped with a scanning zoom, a stable tripod and a separately height-adjustable positioning table. The fine adjustment of the height is carried out via the unit of the cross table. For simple, fast positioning of small parts this is a ideal solution. The HDMI camera **with automatic focusing** is operated via the integrated software and can be connected to a monitor directly at the HDMI port.

Microscope features:
- Raster zoom with 6 levels
- Dimmable LED ring light - with segment circuit and power supply
- Diffuser for LED ring light
- Adjustable lens 0.5x
- Base plate 420 x 250 mm
- Cross table - adjustability 70 x 50 mm, height-adjustable
- Glass plate Ø 95 mm
- 2 zoom ranges - 12 zoom levels

Camera features:
- Resolution: 1920x1080px
- Interface: 1x USB; 1x HDMI, 1x SD card
- Camera sensor: CMOS (Sony)
- Pixel size: 3.75 x 3.75µm
- Length: 81 mm
- Width: 65 mm
- Height: 78 mm
- Power supply: Direct current 12 V/1 A adapter

Note:
We recommend monitors with 4K resolution so that the entire unscaled image can be displayed.
Package contents:
Delivered in transport packaging **without monitor.**

Appropriate accessories:
151300 Cleaning utensils Optics

Order ID		152378.0060
Magnification		15x...105x
Field of vision	mm	27...4
Adjustability	mm	70 x 50
Table size	mm	217(180) x 155
Working distance	mm	170
Weight	kg	13.5



152380 Microscope camera FUTURO AUTOFOCUS

CMOS / KITOCAM – Microscope camera with built-in XCamView software (video and image processing application software) multilingual and mouse-controlled, including professional image processing functions such as 2D measurement, HDR, image stitching, EDF (extended depth of focus), image segmentation, image counter, image stacking, colour composite and noise reduction (USB).
The camera can be used as a Wi-Fi camera if a USB Wi-Fi adapter is used

Features:
- Resolution: 1920 x 1080 px
- Interface: 1x USB; 1x HDMI, 1x SD card
- Camera sensor: CMOS (Sony)
- Pixel size: 3.75 x 3.75 µm
- Length: 81 mm
- Width: 65 mm
- Height: 78 mm
- Power supply: DC 12-V/1-A adapter

Included in delivery:
CMOS camera, mains adapter, HDMI cable, USB mouse, wireless network adapter with USB interface, CD with driver and utility software, Wi-Fi adapter

Order ID		152380.0100
Resolution		1920 x 1080 px
Pixel size	µm	3.75 x 3.75
Interface		USB / HDMI / SD
Dimensions WxDxH	mm	65 x 81 x 78

159450 Tape rule FUTURO

mm / mm

TRI-MATIC- EC accuracy class I - Precision version with belt clip, continuous **mm graduation**. Steel tape painted yellow, anti-reflective coating, automatic tape retraction, backstop, and chrome-plated plastic housing.

Order ID	Length m	Tape width mm	EC Class
159450.0100	3	13	I
159450.0200	5	19	I



159450.0100

159620 Steel tape measure FUTURO GRIP

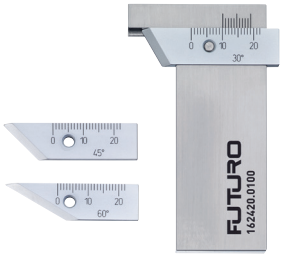
mm / mm

Steel tape yellow painted, nylon-coated (assure abrasion resistance, to avoid corrosion, for longer expected useful live), scale with **mm graduation**. Tape start with metal hook, impact and shock resistant plastic casing partially rubber coated, tape locking device, belt clip, **EC accuracy class II**.

Order ID	Length m	Tape width mm	EC Class
159620.0100	3	16	II
159620.0200	5	19	II
159620.0300	8	25	II



162420 Chamfer measuring device FUTURO

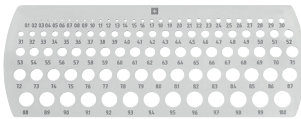


SwissMade
For quick and exact checks of bevel angles. Exchangeable straightedges for 30°, 45° and 60° bevels.

Package contents:
Delivered in plastic box **including 30°, 45° and 60° straightedges.**

Order ID	Range mm	Vernier mm
162420.0100	0...10	0.1
162420.9100		

162680 Drill hole gauge FUTURO



SwissMade
Drill hole gauge with 100 holes, graduation 0.1 mm.

Features:
- Stainless steel 1.4301
- Thickness 1.5 mm

Order ID	Measuring ranges Ø mm	Number of holes	Accuracy mm
162680.0100	0.1...10	100	0 /+0.03

163307 Parallel gauge block set FUTURO ceramic cl. 0

DIN EN ISO 3650



with ISO certificate

For testing external micrometers.

Set consists of:
5 parallel gauge blocks 5.1/10.3/15.0/20.2/25.0 mm.

Package contents:
Delivered in wooden box, includes cotton gloves and ISO certificate.

Order ID	Class of accuracy	Set composition
163307.0100	0	5.1 / 10.3 / 15.0 / 20.2 / 25.0 mm

163309 Parallel gauge block set FUTURO carbide class 0

DIN EN ISO 3650



with ISO certificate

For testing external micrometers.

Set consists of:
8 parallel gauge blocks 5.1/10.3/15.0/20.2/25/50/75/100 mm

Note:
Other tolerance classes on request.
Package contents:
Supplied in wooden box incl. ISO certificate.

Order ID	Class of accuracy	Set composition
163309.0100	0	5.1 / 10.3 / 15.0 / 20.2 / 25 / 50 / 75 / 100 mm

163428 Parallel gauge block FUTURO steel / cl.0

DIN EN ISO 3650



The gauge block manufactured in accordance with DIN EN ISO 3650 is the most frequently used **standard for setting and calibrating** gauges and measuring instruments in measuring rooms and test stations in the production area. The steel gauge block with a tolerance class 0 ensures precise calibration.

Package contents:
Delivered incl. ISO certificate.

Order ID	Length mm	Order ID	Length mm	Order ID	Length mm
163428.0410	0.50	163428.1400	1.30	163428.1850	10.50
163428.1000	1.00	163428.1410	1.31	163428.1860	11.00
163428.1010	1.0005	163428.1420	1.32	163428.1870	11.50
163428.1020	1.001	163428.1430	1.33	163428.1880	12.00
163428.1030	1.002	163428.1440	1.34	163428.1890	12.50
163428.1040	1.003	163428.1450	1.35	163428.1910	13.00
163428.1050	1.004	163428.1460	1.36	163428.1920	13.50
163428.1060	1.005	163428.1470	1.37	163428.1930	14.00
163428.1070	1.006	163428.1480	1.38	163428.1940	14.50
163428.1080	1.007	163428.1490	1.39	163428.1950	15.00
163428.1090	1.008	163428.1500	1.40	163428.1960	15.50
163428.1100	1.009	163428.1510	1.41	163428.1970	16.00
163428.1110	1.01	163428.1520	1.42	163428.1980	16.50
163428.1120	1.02	163428.1530	1.43	163428.1990	17.00
163428.1130	1.03	163428.1540	1.44	163428.2000	17.50
163428.1140	1.04	163428.1550	1.45	163428.2020	18.00
163428.1150	1.05	163428.1560	1.46	163428.2030	18.50
163428.1160	1.06	163428.1570	1.47	163428.2040	19.00
163428.1170	1.07	163428.1580	1.48	163428.2050	19.50
163428.1180	1.08	163428.1590	1.49	163428.2060	20.00
163428.1190	1.09	163428.1600	1.50	163428.2080	20.50
163428.1200	1.10	163428.1610	1.60	163428.2090	21.00
163428.1210	1.11	163428.1620	1.70	163428.2100	21.50
163428.1220	1.12	163428.1630	1.80	163428.2110	22.00
163428.1230	1.13	163428.1640	1.90	163428.2120	22.50
163428.1240	1.14	163428.1650	2.00	163428.2140	23.00
163428.1250	1.15	163428.1660	2.50	163428.2150	23.50
163428.1260	1.16	163428.1670	3.00	163428.2160	24.00
163428.1270	1.17	163428.1680	3.50	163428.2170	24.50
163428.1280	1.18	163428.1690	4.00	163428.2180	25.00
163428.1290	1.19	163428.1700	4.50	163428.2190	30.00
163428.1300	1.20	163428.1710	5.00	163428.2200	40.00
163428.1310	1.21	163428.1730	5.50	163428.2210	50.00
163428.1320	1.22	163428.1740	6.00	163428.2220	60.00
163428.1330	1.23	163428.1750	6.50	163428.2230	70.00
163428.1340	1.24	163428.1760	7.00	163428.2240	75.00
163428.1350	1.25	163428.1770	7.50	163428.2250	80.00
163428.1360	1.26	163428.1790	8.00	163428.2260	90.00
163428.1370	1.27	163428.1810	9.00	163428.2270	100.00
163428.1380	1.28	163428.1820	9.50		
163428.1390	1.29	163428.1830	10.00		

163541 Parallel gauge block set FUTURO ceramic class 1

DIN EN ISO 3650

The gauge blocks most often used, as **working standards** for setting and calibrating gauges and measuring devices, and in measuring labs and production inspection areas.

Note:
Ceramic is anti-magnetic, has low thermal conductivity and high wear resistance compared to steel.
Package contents:
Supplied in wooden box incl. ISO certificate.

Order ID	Number
163541.0200	47
163541.0300	87



with ISO certificate

Type of parallel gauge block			32	47	87	103
Nominal size	**Grading**	**Number**				
1.005		1	**			
1.01...1.09	0.01	9	**			
1.10...1.90	0.1	9	**			
1...9	1	9	**			
10...30	10	3	**			
50		1	**			
1.005		1		**		
1.01...1.20	0.01	20		**		
1.30...1.90	0.1	7		**		
1...9	1	9		**		
10...100	10	10		**		
1.001...1.009	0.001	9			**	
1.01...1.49	0.01	49			**	
0.5...9.50	0.5	19			**	
10...100	10	10			**	
1.005		1				**
1.01...1.49	0.1	49				**
0.5...24.5	0.5	49				**
25...100	25	4				**

Set composition

163545 Parallel gauge block FUTURO ceramic class 1

DIN EN ISO 3650

The gauge blocks most often used as **working standards** for setting and calibrating gauges and measuring devices, and in testing rooms and production inspection areas.

Note:
Ceramic is anti-magnetic, has low thermal conductivity and high wear resistance compared to steel.
Package contents:
Delivered incl. ISO certificate.

Order ID	Length mm	Order ID	Length mm
163545.0410	0.50	163545.1880	12.00
163545.1000	1.00	163545.1910	13.00
163545.1010	1.0005	163545.1930	14.00
163545.1060	1.005	163545.1950	15.00
163545.1200	1.10	163545.1970	16.00
163545.1300	1.20	163545.1990	17.00
163545.1400	1.30	163545.2020	18.00
163545.1500	1.40	163545.2040	19.00
163545.1600	1.50	163545.2060	20.00
163545.1610	1.60	163545.2090	21.00
163545.1620	1.70	163545.2110	22.00
163545.1630	1.80	163545.2140	23.00
163545.1640	1.90	163545.2160	24.00
163545.1650	2.00	163545.2180	25.00
163545.1670	3.00	163545.2190	30.00
163545.1690	4.00	163545.2200	40.00
163545.1710	5.00	163545.2210	50.00
163545.1740	6.00	163545.2220	60.00
163545.1760	7.00	163545.2230	70.00
163545.1790	8.00	163545.2240	75.00
163545.1810	9.00	163545.2250	80.00
163545.1830	10.00	163545.2260	90.00
163545.1860	11.00	163545.2270	100.00



with ISO certificate

FUTURO



163581.1100

163581 Parallel gauge block set FUTURO carbide class 1

For inspections during production.

Note:
Anti-magnetic, very resistant against oxydation and 10 times as much resistant as steel gauges. Even in heavy-duty applications with tough working conditions (for ex. in the presence of grinding swarf) the high surface hardness of around 1400 HV ensures that tungsten carbide gauge blocks continue to have a very long service life.

Package contents:
Supplied in wooden box incl. ISO certificate.

Order ID	Number
163581.1100	32
163581.1200	47

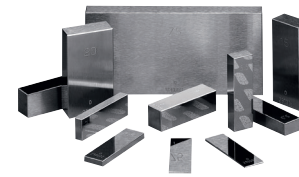
Type of parallel gauge block			32	47	87	103
Nominal size	**Grading**	**Number**				
1.005		1	**			
1.01...1.09	0.01	9	**			
1.10...1.90	0.1	9	**			
1...9	1	9	**			
10...30	10	3	**			
50		1	**			
1.005		1		**		
1.01...1.20	0.01	20		**		
1.30...1.90	0.1	7		**		
1...9	1	9		**		
10...100	10	10		**		
1.001...1.009	0.001	9			**	
1.01...1.49	0.01	49			**	
0.5...9.50	0.5	19			**	
10...100	10	10			**	
1.005		1				**
1.01...1.49	0.1	49				**
0.5...24.5	0.5	49				**
25...100	25	4				**

Set composition

163585 Parallel gauge block FUTURO carbide class 1

For inspections during production.

Note:
Anti-magnetic, very resistant against oxydation and 10 times as much resistant as steel gauges.
Package contents:
Delivered incl. ISO certificate.



with ISO certificate

Order ID	Length mm	Order ID	Length mm	Order ID	Length mm
163585.0015	0.5	163585.0425	1.31	163585.0835	10.5
163585.0025	1.0	163585.0435	1.32	163585.0845	11.0
163585.0035	1.001	163585.0445	1.33	163585.0855	11.5
163585.0045	1.002	163585.0455	1.34	163585.0865	12.0
163585.0055	1.003	163585.0465	1.35	163585.0875	12.5
163585.0065	1.004	163585.0475	1.36	163585.0885	13.0
163585.0075	1.005	163585.0485	1.37	163585.0895	13.5
163585.0085	1.006	163585.0495	1.38	163585.0905	14.0
163585.0095	1.007	163585.0505	1.39	163585.0915	14.5
163585.0105	1.008	163585.0515	1.40	163585.0925	15.0
163585.0115	1.009	163585.0525	1.41	163585.0935	15.5
163585.0125	1.01	163585.0535	1.42	163585.0945	16.0
163585.0135	1.02	163585.0545	1.43	163585.0955	16.5
163585.0145	1.03	163585.0555	1.44	163585.0965	17.0
163585.0155	1.04	163585.0565	1.45	163585.0975	17.5
163585.0165	1.05	163585.0575	1.46	163585.0985	18.0
163585.0175	1.06	163585.0585	1.47	163585.0995	18.5
163585.0185	1.07	163585.0595	1.48	163585.1005	19.0
163585.0195	1.08	163585.0605	1.49	163585.1015	19.5
163585.0205	1.09	163585.0615	1.50	163585.1025	20.0
163585.0215	1.10	163585.0625	1.60	163585.1035	20.5
163585.0225	1.11	163585.0635	1.70	163585.1045	21.0
163585.0235	1.12	163585.0645	1.80	163585.1055	21.5
163585.0245	1.13	163585.0655	1.90	163585.1065	22.0
163585.0255	1.14	163585.0665	2.0	163585.1075	22.5
163585.0265	1.15	163585.0675	2.5	163585.1085	23.0
163585.0275	1.16	163585.0685	3.0	163585.1095	23.5
163585.0285	1.17	163585.0695	3.5	163585.1105	24.0
163585.0295	1.18	163585.0705	4.0	163585.1115	24.5
163585.0305	1.19	163585.0715	4.5	163585.1125	25.0
163585.0315	1.20	163585.0725	5.0	163585.1135	30.0
163585.0325	1.21	163585.0735	5.5	163585.1145	40.0
163585.0335	1.22	163585.0745	6.0	163585.1155	50.0
163585.0345	1.23	163585.0755	6.5	163585.1165	60.0
163585.0355	1.24	163585.0765	7.0	163585.1175	70.0
163585.0365	1.25	163585.0775	7.5	163585.1185	75.0
163585.0375	1.26	163585.0785	8.0	163585.1195	80.0
163585.0385	1.27	163585.0795	8.5	163585.1205	90.0
163585.0395	1.28	163585.0805	9.0	163585.1215	100.0
163585.0405	1.29	163585.0815	9.5		
163585.0415	1.30	163585.0825	10.0		

163430 Parallel gauge block set FUTURO steel class 0

DIN EN ISO 3650









The gauge blocks manufactured in accordance with DIN EN ISO 3650 are the most frequently used **usage standards for setting and calibrating** gauges and measuring instruments in measuring rooms and test stations in the production area. Steel gauge blocks with a tolerance class 0 ensure precise calibration.

Package contents:
Supplied in wooden box incl. ISO certificate.

Order ID	Number
163430.0100	32
163430.0200	47
163430.0300	87
163430.0400	103

Type of parallel gauge block			32	47	87	103
Nominal size	**Grading**	**Number**				
1.005		1	**			
1.01...1.09	0.01	9	**			
1.10...1.90	0.1	9	**			
1...9	1	9	**			
10...30	10	3	**			
50		1	**			
1.005		1		**		
1.01...1.20	0.01	20		**		
1.30...1.90	0.1	7		**		
1...9	1	9		**		
10...100	10	10		**		
1.001...1.009	0.001	9			**	
1.01...1.49	0.01	49			**	
0.5...9.50	0.5	19			**	
10...100	10	10			**	
1.005		1				**
1.01...1.49	0.1	49				**
0.5...24.5	0.5	49				**
25...100	25	4				**

Set composition

163431 Parallel gauge block set FUTURO steel class 1

DIN EN ISO 3650





Most commonly used gauge blocks in accordance with DIN EN ISO 3650 as **usage standards for setting and calibrating** gauges and measuring instruments in measuring rooms and at test stations in the production area. Manufactured from steel with a tolerance class of 1, precise measurement is guaranteed.

Package contents:
Supplied in wooden box incl. ISO certificate.

Order ID	Number
163431.0100	32
163431.0200	47
163431.0300	87
163431.0400	103





Type of parallel gauge block			32	47	87	103
Nominal size	**Grading**	**Number**				
1.005		1	**			
1.01...1.09	0.01	9	**			
1.10...1.90	0.1	9	**			
1...9	1	9	**			
10...30	10	3	**			
50		1	**			
1.005		1		**		
1.01...1.20	0.01	20		**		
1.30...1.90	0.1	7		**		
1...9	1	9		**		
10...100	10	10		**		
1.001...1.009	0.001	9			**	
1.01...1.49	0.01	49			**	
0.5...9.50	0.5	19			**	
10...100	10	10			**	
1.005		1				**
1.01...1.49	0.1	49				**
0.5...24.5	0.5	49				**
25...100	25	4				**

Set composition

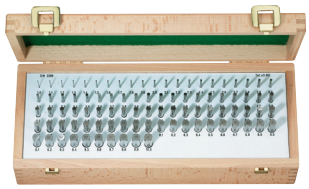
163429 Parallel gauge block FUTURO steel / cl.1

DIN EN ISO 3650



Most commonly used gauge block according to DIN EN ISO 3650 as a **usage standard for setting and calibrating** gauges and measuring instruments in measuring rooms and at test stations in the production area. Manufactured from steel with a tolerance class of 1, precise measurement is guaranteed.

Scope of delivery:
Delivery incl. ISO certificate.



163750 Set of pin gauges FUTURO

Ø 1.0...Ø 10.0 mm / gradation 0.1 mm

Gauge steel

For checking drill hole tolerances, the angularity of holes and for measuring V-blocks, grooves and gear teeth.
All parameters comply with DIN 2269 standard. Made of special gauge steel, aged, hardened and lapped. From Ø 3 mm, the sizes are marked on the front.

Features:
Accuracy ±0.001 mm
Package contents:
Supplied in wooden box.

Order ID	Nominal Ø mm	Gradation mm	Contents pieces	Working length mm
163750.0100	1.00...10.00	0.1	91	70

166060 Go thread plug gauge FUTURO NIHS

Go - HSS - 2 mm

SwissMade
HSS to NIHS standard tolerance with green-anodised **Ø 2 mm aluminium handle.**



Note:
NIHS tolerance NT/RT and DIN tolerances available upon request

Order ID	Thread	Pitch mm	Order ID	Thread	Pitch mm
166060.0050	S0.50	0.125	166060.0090	S0.90	0.225
166060.0060	S0.60	0.150	166060.0100	S1.00	0.250
166060.0080	S0.80	0.200	166060.0120	S1.20	0.250

166062 NoGo thread plug gauge FUTURO NIHS

NoGo - HSS - 2 mm

SwissMade
HSS to NIHS standard tolerance with red-anodised **Ø 2 mm aluminium handle.**



Note:
NIHS tolerance NT/RT and DIN tolerances available upon request

Order ID	Thread	Pitch mm	Order ID	Thread	Pitch mm
166062.0050	S0.50	0.125	166062.0100	S1.00	0.250
166062.0060	S0.60	0.150			

166070 Go thread plug gauge FUTURO NIHS

Go - HSS - 4.5 mm

SwissMade
HSS to NIHS standard tolerance with green-anodised **Ø 4.5 mm aluminium handle.**



Note:
NIHS tolerance NT/RT and DIN tolerances available upon request

Order ID	Thread	Pitch mm	Order ID	Thread	Pitch mm
166070.0040	S0.40	0.100	166070.0100	S1.00	0.250
166070.0050	S0.50	0.125	166070.0120	S1.20	0.250
166070.0060	S0.60	0.150			

166072 NoGo thread plug gauge FUTURO NIHS

NoGo - HSS - 4.5 mm

SwissMade
HSS to tolérance standard NIHS avec **manche en aluminium** anodisée rouge **Ø 4.5 mm.**



Note:
NIHS tolerance NT/RT and DIN tolerances available upon request

Order ID	Thread	Pitch mm	Order ID	Thread	Pitch mm
166072.0035	S0.35	0.090	166072.0080	S0.80	0.200
166072.0040	S0.40	0.100	166072.0090	S0.90	0.225
166072.0050	S0.50	0.125	166072.0160	S1.60	0.350
166072.0060	S0.60	0.150			

166074 Thread limit plug gauge FUTURO NIHS

Go/NoGo - HSS - 4.5 mm

SwissMade
HSS to NIHS standard tolerance with black-anodised **Ø 4.5 mm aluminium handle.**



Note:
NIHS tolerance NT/RT and DIN tolerances available upon request

Order ID	Thread	Pitch mm	Order ID	Thread	Pitch mm
166074.0035	S0.35	0.090	166074.0080	S0.80	0.200
166074.0050	S0.50	0.125	166074.0090	S0.90	0.225
166074.0060	S0.60	0.150	166074.0100	S1.00	0.250

166090 Go thread plug gauge FUTURO NIHS 4H

GO - Carbide - Ø 3 mm

SwissMade
Carbide to NIHS 4H GO standard tolerance, with green-anodised **Ø 3 mm aluminium handle.**



Order ID	Thread	Pitch mm	Order ID	Thread	Pitch mm
166090.0040	S0.40	0.100	166090.0090	S0.90	0.225
166090.0050	S0.50	0.125	166090.0100	S1.00	0.250
166090.0060	S0.60	0.150	166090.0120	S1.20	0.250
166090.0070	S0.70	0.175	166090.0140	S1.40	0.300
166090.0080	S0.80	0.200			

FUTURO



166092 NoGo thread plug gauge FUTURO NIHS 4H/3G

NO GO - Carbide - Ø 3 mm

SwissMade
Carbide to NIHS 4H/3G NO GO tolerance, with red-anodised **Ø 3 mm aluminium handle.**

Order ID	Thread	Pitch mm	Order ID	Thread	Pitch mm
166092.0040	S0.40	0.100	166092.0090	S0.90	0.225
166092.0050	S0.50	0.125	166092.0100	S1.00	0.250
166092.0060	S0.60	0.150	166092.0120	S1.20	0.250
166092.0070	S0.70	0.175	166092.0140	S1.40	0.300
166092.0080	S0.80	0.200			

FUTURO



166120 Go thread ring gauge FUTURO NIHS NT

Go - HSS-PM - 6 mm

SwissMade
HSS to NIHS standard tolerance with green-anodised **Ø 6 mm aluminium handle.**

Note:
NIHS tolerance NT/RT and DIN tolerances available upon request

Order ID	Thread	Pitch mm	Order ID	Thread	Pitch mm
166120.0050	S0.50	0.125	166120.0090	S0.90	0.225
166120.0070	S0.70	0.175	166120.0100	S1.00	0.250
166120.0080	S0.80	0.200			

FUTURO



166124 Go/NoGo thread ring gauge FUTURO NIHS

Go/NoGo - HSS-PM - 6 mm

SwissMade
HSS to NIHS standard tolerance with black-anodised **Ø 6 mm aluminium handle.**

Note:
NIHS tolerance NT/RT and DIN tolerances available upon request

Order ID	Thread	Pitch mm	Order ID	Thread	Pitch mm
166124.0035	S0.35	0.090	166124.0090	S0.90	0.225
166124.0040	S0.40	0.100	166124.0100	S1.00	0.250
166124.0050	S0.50	0.125	166124.0120	S1.20	0.250
166124.0070	S0.70	0.175	166124.0140	S1.40	0.300
166124.0080	S0.80	0.200			

FUTURO



166132 Go thread ring gauge FUTURO NIHS

Go - HSS-PM - 20 mm

SwissMade
HSS to NIHS standard tolerance, with green-anodised **Ø 20 mm aluminium handle.**

Note:
NIHS tolerance NT/RT and DIN tolerances available upon request

Order ID	Thread	Pitch mm	Order ID	Thread	Pitch mm
166132.0050	S0.50	0.125	166132.0100	S1.00	0.250
166132.0080	S0.80	0.200			

FUTURO



166134 NoGo thread ring gauge FUTURO NIHS

NoGo - HSS-PM - 20 mm

SwissMade
HSS to NIHS standard tolerance with red-anodised **Ø 20 mm aluminium handle.**

Note:
NIHS tolerance NT/RT and DIN tolerances available upon request

Order ID	Thread	Pitch mm	Order ID	Thread	Pitch mm
166134.0050	S0.50	0.125	166134.0070	S0.70	0.175
166134.0060	S0.60	0.150			

175441 Precision level FUTURO

avec protection contre les chocs.

DIN877 / DIN2276/1



with ISO certificate

3-year guarantee
Precision spirit level for levelling surfaces, shafts, machines etc.

Designs:
Type P: Prismatic base
Features:
- Housing made of high-quality special cast iron
- Width of housing 40 mm
- V-notch base with stop faces ground in the recess
- All measuring surfaces parallel to the level axis
- A longitudinal level and a transverse level both made of acrylic glass
- With insulated grips on the housing
- Protective glass over the levels

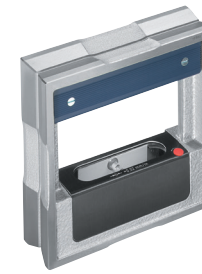
Note:
The longitudinal level can be effortlessly readjusted in the 0 position without dismantling and free of play, by means of an adjusting screw.
Package contents:
Delivered in case incl. ISO certificate.

Order ID	Type	Length mm	Sensitivity mm/m	Order ID	Type	Length mm	Sensitivity mm/m
175441.0200	P	150	0.02	175441.1000	P	150	0.10
175441.0210	P	200	0.02	175441.1010	P	200	0.10
175441.0220	P	300	0.02	175441.1020	P	300	0.10
175441.0500	P	150	0.05	175441.1500	P	150	0.50
175441.0510	P	200	0.05	175441.1510	P	200	0.50
175441.0520	P	300	0.05	175441.1520	P	300	0.50

175541 Precision frame level FUTURO

Sensitivity 0.02 - 0.10 mm/m

DIN 877 / DIN 2276/1



with ISO certificate

3-year guarantee
Precision frame level for levelling horizontal and vertical surfaces, shafts, etc., and for exact alignment of 90° angles.

Designs:
Type F: with 4 flat bases
Type P: 3 prismatic bases
Features:
- Frames made of high-quality special cast-iron
- Frame width 40 mm
- One longitudinal and transverse level each made of acrylic glass
- Insulated handles on the housing
- Glass guard over the levels

Note:
Using an adjusting screw, the longitudinal level can be readjusted to the 0 position without disassembly hassle- and backlash-free.
Package contents:
Delivered in case incl. ISO certificate.

Order ID	Type	Length mm	Sensitivity mm/m
175541.0200	P	150	0.02
175541.0210	P	200	0.02
175541.1000	P	150	0.10
175541.1010	P	200	0.10
175541.3200	F	150	0.02
175541.3210	F	200	0.02
175541.3500	F	150	0.05
175541.3510	F	200	0.05



178140 Articulated stand for centring FUTURO

SwissMade
Impresses with its infinitely variable mechanical design, which enables precise adjustment. Has a flexible holder with a clamping shaft Ø 4 mm or a dovetail. Manufactured in Switzerland to the highest quality standards.

Package contents:
Delivered in transport packaging.

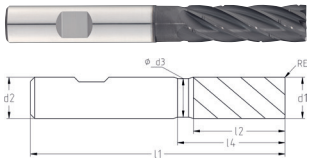
Order ID	Shaft Ø mm	Shank length mm	Radius of action mm
178140.0100	8	25	58

FUTURO

Milling, Drilling, Tapping

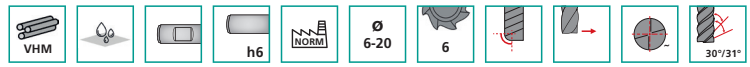
Solid carbide end-mill with rough profile	034-040
Solid carbide end-mill with finishing profile	041-081
SC chamfering, engraving and form milling cutters	082-087
Solid carbide end-mill with diamond coating	088-090
Solid carbide micro end mills	091-093
Solid carbide end mills for moulds and dies	094-116
HSS end mills	117-122
Indexable insert milling cutters	123-129
Carbide burr	130-144
Solid carbide burrs	145-159
NC spotting drills	160-161
Twist drills HSS DIN 338	162-167
Twist drills HSS DIN 1897	168
Twist drills HSS DIN 340	169
Twist drills HSS DIN 1869	170-171
HSS twist drill sets	172
Solid carbide twist drills	173-186
Step drill	187
Taps	188-196

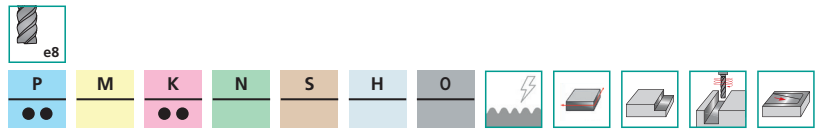
FUTURO



225963 FUTURO SC shoulder milling cutter 3xD

for dynamic milling, with chip breaker





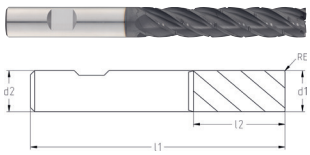
Made of solid hard metal, Coated, with Weldon shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 6 - 20 mm, Number of teeth 6, With corner radius, without center cut, with uneven pitch, End mill with unequal helix angle 30/31°, End mill cutting tolerance e8 (according to ISO 286 fit system) Main application: Steel (ISO-P), Main application: Cast materials (ISO K), For roughing, For trimming / hobbing, For shoulder milling, For dynamic milling, For inclined plunging

Some benefits:
Chip dividers on the cutting edges ensure optimum chip breakage at high depths. Slightly extended cutting length and neck clearance to enable efficient engagement length while maintaining stability.

Application:
Specially developed for the „dynamic milling" roughing strategy. For steel and cast iron.

Order ID	**d1** **mm**	l2 mm	l4 mm	d2 mm	l1 mm	d3 mm	RE mm
225963.0100	**6**	19	25	6	63	5.8	0.2
225963.0200	**8**	25	33	8	71	7.7	0.2
225963.0300	**10**	31	41	10	83	9.7	0.2
225963.0400	**12**	37	47	12	94	11.6	0.2
225963.0500	**16**	49	61	16	111	15.5	0.2
225963.0600	**20**	61	75	20	127	19.50	0.2

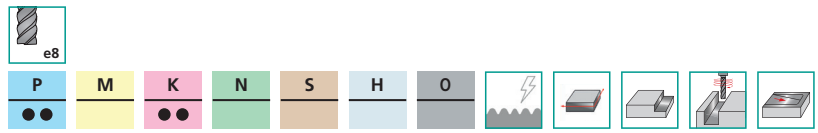
FUTURO



225964 FUTURO SC shoulder milling cutter 5xD

for dynamic milling, with chip breaker





Made of solid hard metal, Coated, with Weldon shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 6 - 20 mm, Number of teeth 5, With corner radius, without center cut, with uneven pitch, End mill with unequal helix angle 35/38°, End mill cutting tolerance e8 (according to ISO 286 fit system) Main application: Steel (ISO-P), Main application: Cast materials (ISO K), For roughing, For trimming / hobbing, For shoulder milling, For dynamic milling, For inclined plunging

Some benefits:
Chip dividers on the cutting edges ensure optimum chip breakage and therefore enable high depths. Slightly extended cutting length and neck clearance to enable efficient engagement length while maintaining stability.

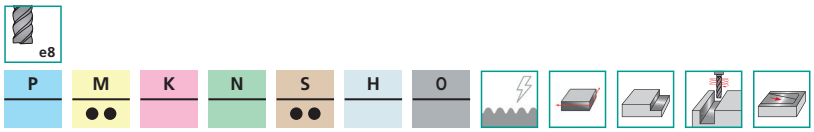
Application:
Specially developed for the „dynamic milling" roughing strategy. For steel and cast iron.

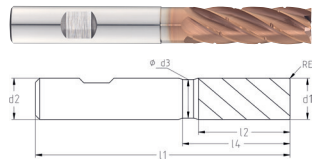
Order ID	**d1** **mm**	l2 mm	d2 mm	l1 mm	RE mm
225964.0100	**6**	31	6	75	0.2
225964.0200	**8**	41	8	85	0.2
225964.0300	**10**	51	10	100	0.2
225964.0400	**12**	61	12	115	0.2
225964.0500	**16**	81	16	140	0.2
225964.0600	**20**	102	20	163	0.2

225961 FUTURO SC shoulder milling cutter 3xD

for dynamic milling, with chip breaker







Made of solid hard metal, Coated, with Weldon shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 6 - 20 mm, Number of teeth 6, With corner radius, without center cut, with uneven pitch, End mill with unequal helix angle 30/31°, End mill cutting tolerance e8 (according to ISO 286 fit system) Main application: Stainless steel (ISO M), Main application: Superalloys (ISO S), For roughing, For trimming / hobbing, For shoulder milling, For dynamic milling, For inclined plunging

Some benefits:
Chip dividers on the cutting edges ensure optimum chip breakage and therefore enable high depths. Slightly extended cutting length and neck clearance to enable efficient engagement length while maintaining stability.

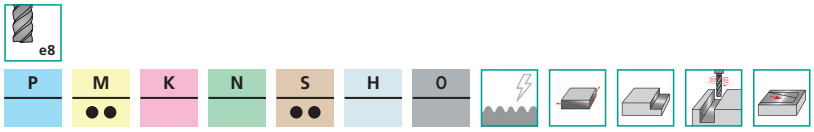
Application:
Specially developed for the „dynamic milling" roughing strategy. For stainless steel and superalloys.

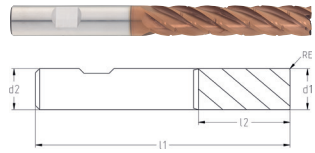
Order ID	**d1 mm**	l2 mm	l4 mm	d2 mm	l1 mm	d3 mm	RE mm
225961.0100	**6**	19	25	6	63	5.8	0.2
225961.0200	**8**	25	33	8	71	7.7	0.2
225961.0300	**10**	31	41	10	83	9.7	0.2
225961.0400	**12**	37	47	12	94	11.6	0.2
225961.0500	**16**	49	61	16	111	15.5	0.2
225961.0600	**20**	61	75	20	127	19.5	0.2

225962 FUTURO SC shoulder milling cutter 5xD

for dynamic milling, with chip breaker







Made of solid hard metal, Coated, with Weldon shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 6 - 20 mm, Number of teeth 5, With corner radius, without center cut, with uneven pitch, End mill with unequal helix angle 35/38°, End mill cutting tolerance e8 (according to ISO 286 fit system) Main application: Stainless steel (ISO M), Main application: Superalloys (ISO S), For roughing, For trimming / hobbing, For shoulder milling, For dynamic milling, For inclined plunging

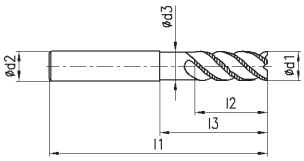
Some benefits:
Chip dividers on the cutting edges ensure optimum chip breakage and therefore enable high depths. Slightly extended cutting length and neck clearance to enable efficient engagement length while maintaining stability.

Application:
Specially developed for the „dynamic milling" roughing strategy. For stainless steel and superalloys.

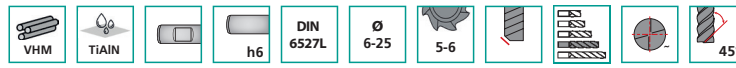
Order ID	**d1 mm**	l2 mm	d2 mm	l1 mm	RE mm
225962.0100	**6**	31	6	75	0.2
225962.0200	**8**	41	8	85	0.2
225962.0300	**10**	51	10	100	0.2
225962.0400	**12**	61	12	115	0.2
225962.0500	**16**	81	16	140	0.2
225962.0600	**20**	102	20	163	0.2

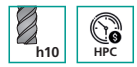
FUTURO





225900 FUTURO SC shoulder milling cutter





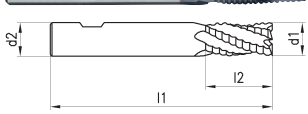


Made of solid hard metal, TiAlN coating, with Weldon shank, Shaft tolerance h6, According to DIN 6527L, Nominal size Ø 6 - 25 mm, Number of teeth 5 - 6, With protective chamfer, Long version, with uneven pitch, Milling cutter with 45° helix angle, End mill cutting edge tolerance h10 (according to ISO 286 fit system), HPC (High-Performance Cutting) milling technology
Main application: Steel (ISO-P), Main application: Cast materials (ISO K), For roughing, For trimming / hobbing, For shoulder milling

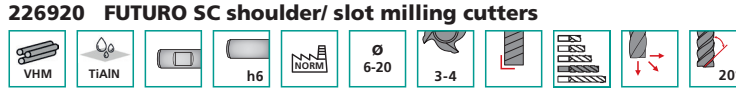
Order ID	**d1 mm**	l2 mm	**l3 mm**	d2 mm	l1 mm	d3 mm	teeth
225900.0100	**6**	13	**21**	6	57	5.7	5
225900.0200	**8**	19	**27**	8	63	7.7	5
225900.0300	**10**	22	**32**	10	72	9.5	5
225900.0400	**12**	26	**38**	12	83	11.5	5
225900.0500	**16**	32	**44**	16	92	15.5	6
225900.0600	**18**	32	**44**	18	92	17.5	6
225900.0700	**20**	38	**54**	20	104	19.5	6
225900.0800	**25**	45	**65**	25	121	24	6

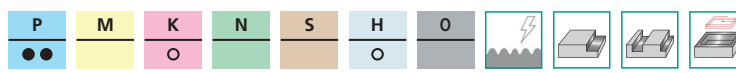
FUTURO





226920 FUTURO SC shoulder/ slot milling cutters





Made of solid hard metal, TiAlN coating, with Weldon shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 6 - 20 mm, Number of teeth 3 - 4, With sharp corner design, Long version, with center cut, Milling cutter with 20° helix angle
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), Secondary application: Hardened steel (ISO H), For roughing, For shoulder milling, For slot milling, For pocket milling

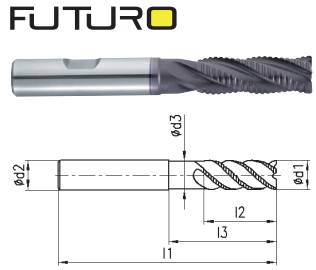
Order ID	**d1 mm**	l2 mm	d2 mm	l1 mm	teeth
226920.0100	**6**	16	6	57	3
226920.0200	**7**	16	8	63	3
226920.0300	**8**	16	8	63	3
226920.0400	**9**	19	10	72	4
226920.0500	**10**	22	10	72	4
226920.0600	**12**	26	12	83	4
226920.0700	**14**	26	14	83	4
226920.0800	**16**	32	16	92	4
226920.0900	**18**	32	18	92	4
226920.1000	**20**	38	20	104	4

225940 FUTURO SC shoulder/ slot milling cutters









Made of solid hard metal, TiAlN coating, with Weldon shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 6 - 20 mm, Number of teeth 4, With protective chamfer, Long version, with center cut, with uneven pitch, End mill with unequal helix angle 30/32°, End mill cutting edge tolerance h10 (according to ISO 286 fit system), HPC (High-Performance Cutting) milling technology
Main application: Steel (ISO-P), Main application: Cast materials (ISO K), For roughing, For shoulder milling, For slot milling, For pocket milling

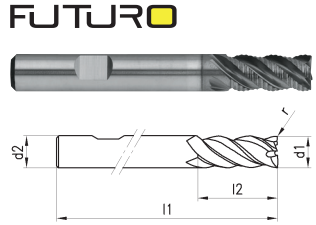
Order ID	**d1** **mm**	l2 mm	**l3** **mm**	d2 mm	l1 mm	d3 mm
225940.0100	**6**	18	**29**	6	65	5.5
225940.0200	**8**	24	**39**	8	75	7.5
225940.0300	**10**	30	**40**	10	80	9.2
225940.0400	**12**	36	**48**	12	93	11.2
225940.0500	**16**	48	**60**	16	108	15
225940.0600	**20**	60	**76**	20	126	19

226935 FUTURO SC shoulder/ slot milling cutters







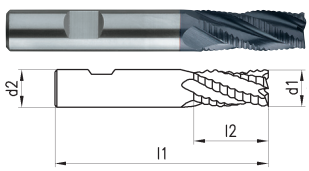


Made of solid hard metal, Coated, with Weldon shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 6 - 20 mm, Number of teeth 4 - 5, With corner radius, Medium-length version, with center cut, End mill with unequal helix angle 44/45°, Milling cutter cutting tolerance -0.03 / 0, HPC (High-Performance Cutting) milling technology
Main application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Main application: Cast materials (ISO K), For roughing, For shoulder milling, For slot milling, For pocket milling

Application
Top-quality carbide, innovative roughing profile for reducing vibrations and cutting forces, especially suited for fast feed and heavy-duty machining, plunge and pocket milling

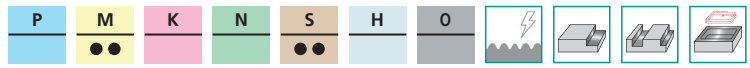
Order ID	**d1** **mm**	**r** **mm**	**l2** **mm**	d2 mm	l1 mm	teeth
226935.0100	**6**	**0.5**	**12**	6	57	4
226935.0200	**8**	**0.5**	**16**	8	63	4
226935.0300	**10**	**0.5**	**20**	10	72	4
226935.0400	**12**	**0.5**	**24**	12	83	4
226935.0500	**16**	**1**	**32**	16	92	5
226935.0600	**20**	**1**	**40**	20	104	5

FUTURO



227540 FUTURO SC shoulder/ slot milling cutters

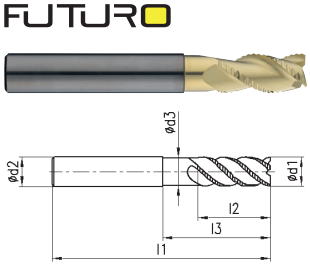




Made of solid hard metal, TiAlN coating, with Weldon shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 6 - 16 mm, Number of teeth 3 - 4, With sharp corner design, Long version, with center cut, Milling cutter with 30° helix angle
Main application: Stainless steel (ISO M), Main application: Superalloys (ISO S), For roughing, For shoulder milling, For slot milling, For pocket milling

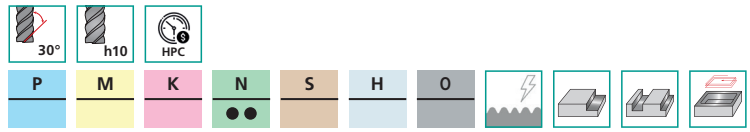
Order ID	**d1** **mm**	l2 mm	d2 mm	l1 mm	teeth
227540.0100	**6**	16	6	57	3
227540.0200	**7**	16	8	63	3
227540.0300	**8**	16	8	63	3
227540.0400	**9**	19	10	72	4
227540.0500	**10**	22	10	72	4
227540.0600	**12**	26	12	83	4
227540.0700	**14**	26	14	83	4
227540.0800	**16**	32	16	92	4

FUTURO



225800 FUTURO SC shoulder/ slot milling cutters

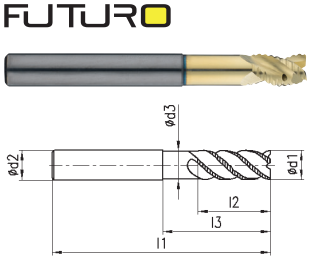




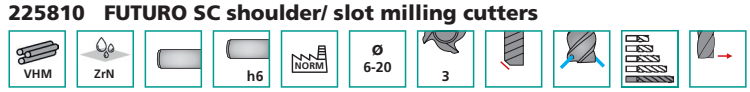
Made of solid hard metal, CrN coating, with Weldon shank or cylindrical shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 6 - 20 mm, Number of teeth 3, With protective chamfer, Milling with axial internal cooling, Long version, with center cut, Milling cutter with 30° helix angle, End mill cutting edge tolerance h10 (according to ISO 286 fit system), HPC (High-Performance Cutting) milling technology
Main application: Non-ferrous metals (ISO N), For roughing, For shoulder milling, For slot milling, For pocket milling

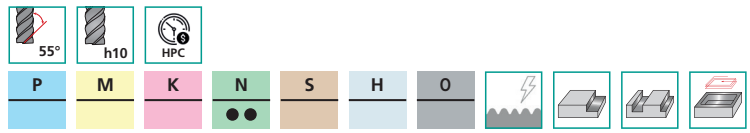
Order ID	**d1** **mm**	l2 mm	**l3** **mm**	d2 mm	l1 mm	d3 mm	Protective chamfer mm	Shape
225800.0100	**6**	13	**17**	6	70	5.7	0.4	HA
225800.0200	**8**	21	**24**	8	80	7.4	0.4	HA
225800.0300	**10**	22	**29**	10	80	9.2	0.4	HA
225800.0400	**12**	26	**35**	12	90	11	0.4	HA
225800.0500	**16**	36	**41**	16	100	15	0.4	HB
225800.0600	**20**	41	**51**	20	120	19	0.4	HB

FUTURO



225810 FUTURO SC shoulder/ slot milling cutters





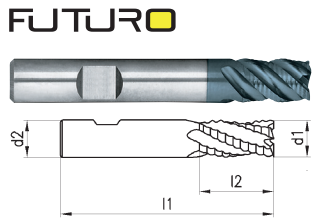
Made of solid hard metal, ZrN coating, with cylindrical shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 6 - 20 mm, Number of teeth 3, With protective chamfer, Milling with radial internal cooling, Extra long version, without center cut, Milling cutter with 55° helix angle, End mill cutting edge tolerance h10 (according to ISO 286 fit system), HPC (High-Performance Cutting) milling technology
Main application: Non-ferrous metals (ISO N), For roughing, For shoulder milling, For slot milling, For pocket milling, For inclined plunging

Order ID	**d1** **mm**	l2 mm	**l3** **mm**	d2 mm	l1 mm	d3 mm	Protective chamfer mm
225810.0100	**6**	10	**23**	8	63	5.5	0.4
225810.0200	**8**	12	**28**	10	72	7.5	0.4
225810.0300	**10**	14	**34**	12	83	9.5	0.4
225810.0400	**12**	16	**49**	12	100	11.5	0.4
225810.0500	**16**	20	**62**	16	115	15	0.4
225810.0600	**20**	20	**69**	20	125	19	0.5

226930 FUTURO SC shoulder/ slot milling cutters







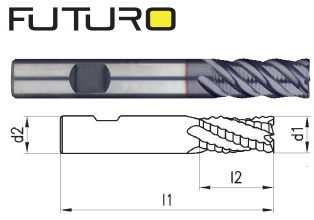
Made of solid hard metal, TiAlN coating, with Weldon shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 6 - 16 mm, Number of teeth 4 - 5, With sharp corner design, Short version, up to Ø12 mm with center cut, Milling cutter with 45° helix angle
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For roughing, For shoulder milling, For slot milling, For pocket milling

Order ID	**d1 mm**	l2 mm	d2 mm	l1 mm	teeth
226930.0100	**6**	7	6	54	4
226930.0200	**8**	9	8	58	4
226930.0300	**10**	14	10	66	4
226930.0400	**12**	16	12	73	4
226930.0500	**16**	22	16	82	5

226940 FUTURO SC shoulder/ slot milling cutters



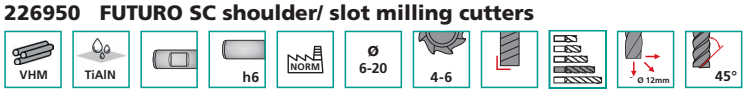




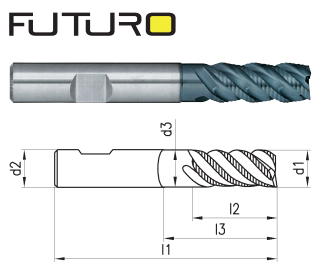
Made of solid hard metal, TiAlN coating, with Weldon shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 4 - 20 mm, Number of teeth 3 - 6, With sharp corner design, Long version, up to Ø12 mm with center cut, Milling cutter with 45° helix angle
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For roughing, For shoulder milling, For slot milling, For pocket milling

Order ID	**d1 mm**	l2 mm	d2 mm	l1 mm	teeth
226940.0100	**4**	11	6	57	3
226940.0200	**5**	13	6	57	4
226940.0300	**6**	16	6	57	4
226940.0400	**7**	16	8	63	4
226940.0500	**8**	16	8	63	4
226940.0600	**9**	19	10	72	4
226940.0700	**10**	22	10	72	4
226940.0800	**12**	26	12	83	4
226940.0900	**14**	26	14	83	5
226940.1000	**16**	32	16	92	5
226940.1200	**20**	38	20	104	6

226950 FUTURO SC shoulder/ slot milling cutters

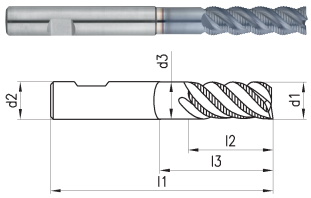






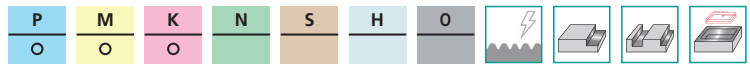
Made of solid hard metal, TiAlN coating, with Weldon shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 6 - 20 mm, Number of teeth 4 - 6, With sharp corner design, Long version, up to Ø12 mm with center cut, Milling cutter with 45° helix angle
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For roughing, For shoulder milling, For slot milling, For pocket milling

Order ID	**d1 mm**	l2 mm	l3 mm	d2 mm	l1 mm	d3 mm	teeth
226950.0100	**6**	16	20	6	57	5.5	4
226950.0200	**8**	16	26	8	63	7.5	4
226950.0300	**10**	22	31	10	72	9.5	4
226950.0400	**12**	26	37	12	83	11.5	4
226950.0500	**16**	32	51	16	100	15.5	5
226950.0600	**20**	38	59	20	110	19.2	6



226980 FUTURO SC shoulder/ slot milling cutters





Made of solid hard metal, AlTiN coating, with Weldon shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 6 - 25 mm, Number of teeth 4, With protective chamfer, Extra long version, Milling cutter with 40° helix angle
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), For roughing, For shoulder milling, For slot milling, For pocket milling

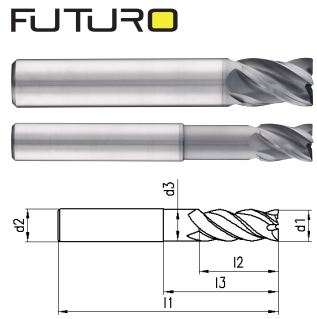
Order ID	**d1** **mm**	l2 mm	**l3** **mm**	d2 mm	l1 mm	d3 mm	Protective chamfer mm
226980.0100	**6**	20	**39**	6	80	5.7	0.4
226980.0200	**8**	25	**49**	8	100	7.4	0.4
226980.0300	**10**	30	**59**	10	100	9.2	0.4
226980.0400	**12**	40	**59**	12	120	11	0.4
226980.0500	**16**	50	**99**	16	150	15	0.4
226980.0600	**20**	60	**99**	20	150	19	0.4
226980.0700	**25**	80	**99**	25	150	24	0.5

225100 FUTURO SC shoulder/ slot milling cutters





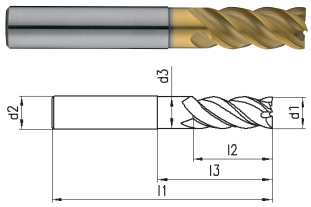




Made of solid hard metal, Coated, with cylindrical shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 3 - 16 mm, Number of teeth 4, With protective chamfer, with center cut, with uneven pitch, End mill with unequal helix angle 36/38°, Milling cutter cutting tolerance -0.03 / 0, HPC (High-Performance Cutting) milling technology
Main application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Main application: Cast materials (ISO K), For finishing, For shoulder milling, For slot milling, For pocket milling

Properties:
Special cutting geometry with **uneven pitch** and **uneven twist** for quieter running and chip evacuation. **Ultra fine grain carbide** with **improved coating** for increased resistance to heat and an extended service life.

Order ID	**d1**	**l2**	**l3**	l1	d2	d3	Protective chamfer	Shank
	mm	**mm**	**mm**	mm	mm	mm	mm	
225100.0050	**3.0**	**7**	**-**	54	6	-	0.10	HA
225100.0100	**3.0**	**7**	**12**	54	6	2.7	0.10	HA
225100.0200	**3.0**	**7**	**17**	57	6	2.7	0.10	HA
225100.0300	**3.0**	**8**	**14**	57	6	2.7	0.10	HA
225100.0350	**4.0**	**8**	**-**	54	6	-	0.15	HA
225100.0400	**4.0**	**8**	**15**	57	6	3.7	0.15	HA
225100.0500	**4.0**	**8**	**22**	63	6	3.7	0.15	HA
225100.0600	**4.0**	**11**	**16**	57	6	3.7	0.15	HA
225100.0650	**5.0**	**10**	**-**	54	6	-	0.15	HA
225100.0700	**5.0**	**10**	**17**	57	6	4.7	0.15	HA
225100.0800	**5.0**	**10**	**27**	67	6	4.7	0.15	HA
225100.0900	**5.0**	**13**	**18**	57	6	4.7	0.15	HA
225100.0950	**6.0**	**10**	**-**	57	6	-	0.20	HA
225100.1000	**6.0**	**10**	**15**	57	6	5.5	0.20	HA
225100.1100	**6.0**	**10**	**20**	62	6	5.5	0.20	HA
225100.1200	**6.0**	**10**	**32**	74	6	5.5	0.20	HA
225100.1300	**6.0**	**13**	**21**	57	6	5.5	0.20	HA
225100.1350	**8.0**	**12**	**-**	58	8	-	0.20	HA
225100.1400	**8.0**	**12**	**20**	63	8	7.5	0.20	HA
225100.1500	**8.0**	**12**	**30**	73	8	7.5	0.20	HA
225100.1600	**8.0**	**12**	**46**	90	8	7.5	0.20	HA
225100.1700	**8.0**	**19**	**27**	63	8	7.5	0.20	HA
225100.1750	**10.0**	**14**	**-**	66	10	-	0.30	HA
225100.1800	**10.0**	**14**	**25**	72	10	9.2	0.30	HA
225100.1900	**10.0**	**14**	**35**	82	10	9.2	0.30	HA
225100.2000	**10.0**	**14**	**55**	102	10	9.2	0.30	HA
225100.2100	**10.0**	**22**	**32**	72	10	9.2	0.30	HA
225100.2150	**12.0**	**16**	**-**	73	12	-	0.35	HA
225100.2200	**12.0**	**16**	**30**	83	12	11.0	0.35	HA
225100.2300	**12.0**	**16**	**40**	93	12	11.0	0.35	HA
225100.2400	**12.0**	**16**	**64**	117	12	11.0	0.35	HA
225100.2500	**12.0**	**26**	**38**	83	12	11.0	0.35	HA
225100.2550	**16.0**	**22**	**-**	82	16	-	0.40	HA
225100.2551	**16.0**	**22**	**-**	82	16	-	0.40	HA
225100.2600	**16.0**	**22**	**38**	92	16	15.0	0.40	HA
225100.2700	**16.0**	**22**	**56**	109	16	15.0	0.40	HA
225100.2800	**16.0**	**22**	**87**	141	16	15.0	0.40	HA
225100.2900	**16.0**	**32**	**44**	92	16	15.0	0.40	HB



225330 FUTURO SC shoulder/ slot milling cutters



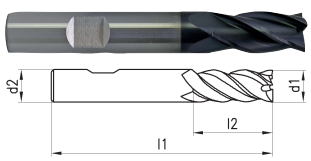




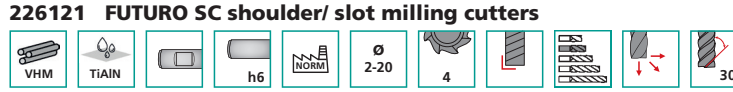
Made of solid hard metal, TiAlN-SiN coating, with cylindrical shank, Shaft tolerance h5, According to factory standard, Nominal size Ø 6 - 20 mm, Number of teeth 4, With protective chamfer, Long version, with center cut, with uneven pitch, Milling cutter with 45° helix angle, End mill cutting edge tolerance h10 (according to ISO 286 fit system), HPC (High-Performance Cutting) milling technology
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), For finishing, For shoulder milling, For slot milling, For pocket milling

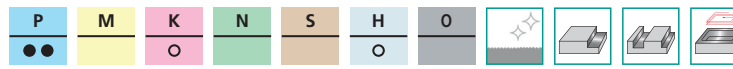
Properties
Special shank designed for shrink-fitting.

Order ID	**d1** **mm**	l2 mm	**l3** **mm**	l1 mm	d2 mm	d3 mm	Protective chamfer mm
225330.0100	**6**	13	**20**	57	6	5.5	0.2
225330.0200	**8**	19	**26**	63	8	7.5	0.2
225330.0300	**10**	22	**31**	72	10	9.5	0.3
225330.0400	**12**	26	**37**	83	12	11.5	0.3
225330.0500	**16**	32	**43**	92	16	15.5	0.4
225330.0600	**20**	38	**53**	104	20	19.5	0.5



226121 FUTURO SC shoulder/ slot milling cutters



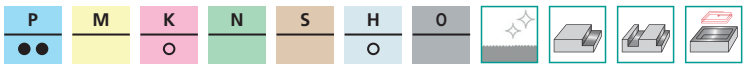


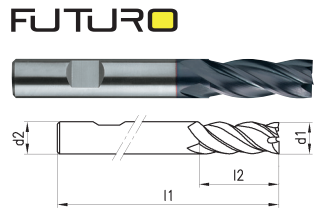
Made of solid hard metal, TiAlN coating, with Weldon shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 2 - 20 mm, Number of teeth 4, With sharp corner design, Short version, with center cut, Milling cutter with 30° helix angle
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), Secondary application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling

Order ID	**d1** **mm**	l2 mm	d2 mm	l1 mm
226121.0100	**2**	6	4	40
226121.0200	**2.5**	8	4	40
226121.0300	**3**	8	6	45
226121.0400	**3.5**	10	6	45
226121.0500	**4**	11	6	45
226121.0600	**4.5**	11	6	45
226121.0700	**5**	13	6	50
226121.0800	**5.5**	13	6	50
226121.0900	**6**	13	6	50
226121.1000	**6.5**	16	8	60
226121.1100	**7**	16	8	60
226121.1200	**7.5**	16	8	60
226121.1300	**8**	19	8	60
226121.1700	**10**	22	10	70
226121.2100	**12**	26	12	75
226121.2300	**16**	32	16	100
226121.2400	**20**	38	20	105

226140 FUTURO SC shoulder/ slot milling cutters



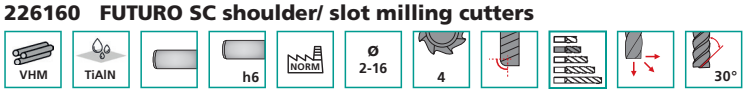




Made of solid hard metal, TiAlN coating, with Weldon shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 3 - 20 mm, Number of teeth 4, With sharp corner design, Long version, with center cut, Milling cutter with 30° helix angle
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), Secondary application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling

Order ID	**d1** **mm**	l2 mm	d2 mm	l1 mm
226140.0100	**3**	12	6	50
226140.0200	**4**	15	6	50
226140.0300	**5**	20	6	60
226140.0400	**6**	20	6	60
226140.0500	**8**	25	8	70
226140.0600	**10**	30	10	90
226140.0700	**12**	30	12	90
226140.0800	**16**	50	16	110
226140.0900	**20**	55	20	110

226160 FUTURO SC shoulder/ slot milling cutters



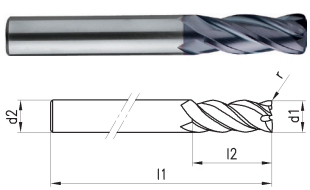




Made of solid hard metal, TiAlN coating, with cylindrical shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 2 - 16 mm, Number of teeth 4, With corner radius, Short version, with center cut, Milling cutter with 30° helix angle
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), Secondary application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling

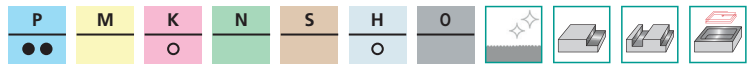
Order ID	**d1** **mm**	**r** **mm**	l2 mm	l3 mm	d2 mm	l1 mm	d3 mm
226160.0100	**2**	**0.2**	2.5	5	6	50	1.9
226160.0200	**2.5**	**0.25**	3	6	6	50	2.4
226160.0300	**3**	**0.3**	4	7	6	50	2.8
226160.0400	**3.5**	**0.35**	4.5	8	6	50	3.2
226160.0500	**4**	**0.4**	5	9	6	50	3.7
226160.0600	**5**	**0.5**	6	12	6	50	4.6
226160.0700	**6**	**0.6**	7	14	6	55	5.6
226160.0800	**8**	**0.8**	10	18	8	60	7.4
226160.0900	**10**	**1.0**	12	25	10	70	9.4
226160.1000	**12**	**1.2**	15	30	12	80	11.4
226160.1100	**16**	**1.6**	18	35	16	90	15.4

FUTURO



226220 FUTURO SC shoulder/ slot milling cutters

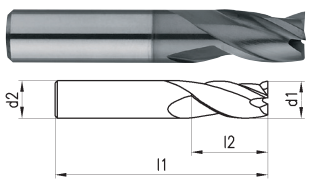




Made of solid hard metal, TiAlN coating, with cylindrical shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 6 - 12 mm, Number of teeth 4, With corner radius, Long version, with center cut, Milling cutter with 30° helix angle
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), Secondary application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling

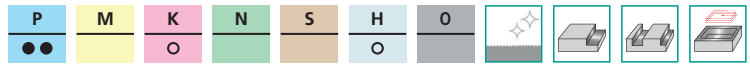
Order ID	d1 mm	r mm	l2 mm	d2 mm	l1 mm
226220.0100	**6**	**0.5**	20	6	60
226220.0200	**6**	**1**	20	6	60
226220.0300	**8**	**0.5**	25	8	70
226220.0400	**8**	**1**	25	8	70
226220.0500	**8**	**1.5**	25	8	70
226220.0600	**8**	**2**	25	8	70
226220.0700	**10**	**0.5**	30	10	90
226220.0800	**10**	**1**	30	10	90
226220.0900	**10**	**1.5**	30	10	90
226220.1000	**10**	**2**	30	10	90
226220.1100	**12**	**0.5**	30	12	90
226220.1200	**12**	**1**	30	12	90
226220.1400	**12**	**2**	30	12	90

FUTURO



226320 FUTURO SC shoulder/ slot milling cutters

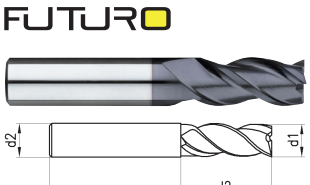




Made of solid hard metal, TiAlN coating, with cylindrical shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 1 - 14 mm, Number of teeth 3, With sharp corner design, Short version, with center cut, Milling cutter with 30° helix angle
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), Secondary application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling

Order ID	d1 mm	l2 mm	d2 mm	l1 mm	Order ID	d1 mm	l2 mm	d2 mm	l1 mm
226320.0100	**1**	2	4	35	226320.0600	**6**	8	6	39
226320.0200	**2**	4	4	35	226320.0700	**8**	11	8	43
226320.0300	**3**	5	6	36	226320.0800	**10**	13	10	50
226320.0400	**4**	7	6	38	226320.0900	**12**	15	12	55
226320.0500	**5**	8	6	39	226320.1000	**14**	15	14	58

FUTURO



226420 FUTURO SC shoulder/ slot milling cutters

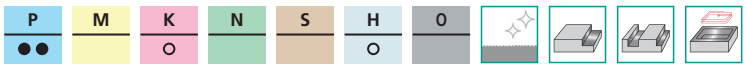


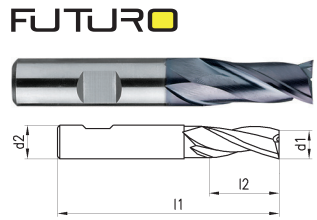
Made of solid hard metal, TiAlN coating, with cylindrical shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 3 - 20 mm, Number of teeth 3, With sharp corner design, Long version, with center cut, Milling cutter with 38° helix angle
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), Secondary application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling

Order ID	d1 mm	l2 mm	d2 mm	l1 mm	Order ID	d1 mm	l2 mm	d2 mm	l1 mm
226420.0100	**3**	10	6	50	226420.0600	**10**	22	10	72
226420.0200	**4**	12	6	50	226420.0700	**12**	25	12	73
226420.0300	**5**	14	6	57	226420.0800	**16**	32	16	82
226420.0400	**6**	16	6	57	226420.0900	**20**	38	20	92
226420.0500	**8**	20	8	63					

226440 FUTURO SC shoulder/ slot milling cutters







Made of solid hard metal, TiAlN coating, with Weldon shank or cylindrical shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 1 - 10 mm, Number of teeth 2, With sharp corner design, Short version, with center cut, Milling cutter with 30° helix angle
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), Secondary application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling

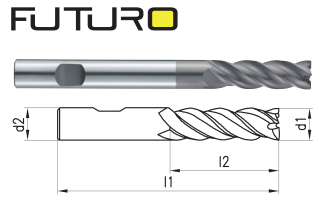
Order ID	**d1** **mm**	l2 mm	d2 mm	l1 mm	Shank	Order ID	**d1** **mm**	l2 mm	d2 mm	l1 mm	Shank
226440.0100	**1**	2.5	4	40	HA	226440.1000	**5.5**	13	6	50	HB
226440.0200	**1.5**	4	4	40	HA	226440.1100	**6**	13	6	50	HB
226440.0300	**2**	6	4	40	HA	226440.1200	**6.5**	16	8	60	HB
226440.0400	**2.5**	8	4	40	HA	226440.1300	**7**	16	8	60	HB
226440.0500	**3**	8	6	45	HB	226440.1400	**7.5**	16	8	60	HB
226440.0600	**3.5**	10	6	45	HB	226440.1500	**8**	19	8	60	HB
226440.0700	**4**	11	6	45	HB	226440.1600	**8.5**	19	10	70	HB
226440.0800	**4.5**	11	6	45	HB	226440.1800	**9.5**	19	10	70	HB
226440.0900	**5**	13	6	50	HB	226440.1900	**10**	22	10	70	HB

225728 FUTURO SC shoulder/ slot milling cutters





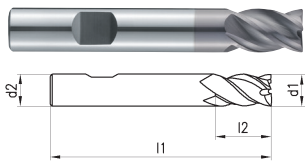




Made of solid hard metal, AlTiN coating, with Weldon shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 5 - 20 mm, Number of teeth 4, With protective chamfer, Extra long version, with center cut, with uneven pitch, End mill with unequal helix angle 35/38°, End mill cutting edge tolerance h10 (according to ISO 286 fit system), HPC (High-Performance Cutting) milling technology
Main application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Main application: Cast materials (ISO K), For finishing, For shoulder milling, For slot milling, For pocket milling

Order ID	**d1** **mm**	l2 mm	d2 mm	l1 mm	Protective chamfer mm
225728.0100	**5**	21	6	63	0.18
225728.0200	**6**	22	6	63	0.2
225728.0300	**8**	28	8	80	0.2
225728.0400	**10**	33	10	100	0.3
225728.0500	**12**	42	12	100	0.3
225728.0600	**14**	48	14	100	0.3
225728.0700	**16**	53	16	150	0.4
225728.0800	**20**	68	20	150	0.5

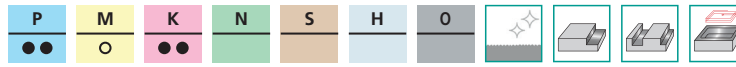
FUTURO



225731 FUTURO SC shoulder/ slot milling cutters





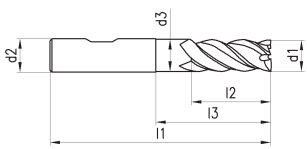


Made of solid hard metal, TiAlN coating, with Weldon shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 3 - 20 mm, Number of teeth 4, With protective chamfer, Short version, with center cut, with uneven pitch, End mill with unequal helix angle 35/38°, End mill cutting edge tolerance h10 (according to ISO 286 fit system), HPC (High-Performance Cutting) milling technology
Main application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Main application: Cast materials (ISO K), For finishing, For shoulder milling, For slot milling, For pocket milling

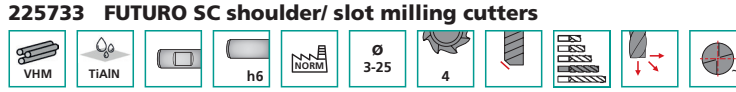
Order ID	**d1** mm	l2 mm	d2 mm	l1 mm	Protective chamfer mm
225731.0100	**3**	6	6	54	0.1
225731.0200	**4**	8	6	54	0.13
225731.0300	**5**	9	6	54	0.18
225731.0400	**6**	10	6	54	0.2
225731.0500	**7**	12	8	58	0.2
225731.0600	**8**	12	8	58	0.2
225731.0700	**9**	14	10	66	0.3
225731.0800	**10**	14	10	66	0.3
225731.0900	**11**	16	12	73	0.3
225731.1000	**12**	16	12	73	0.3
225731.1100	**13**	18	14	75	0.3
225731.1200	**14**	18	14	75	0.3
225731.1300	**16**	22	16	82	0.4
225731.1400	**18**	24	18	84	0.4
225731.1500	**20**	26	20	92	0.5

FUTURO





225733 FUTURO SC shoulder/ slot milling cutters







Made of solid hard metal, TiAlN coating, with Weldon shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 3 - 25 mm, Number of teeth 4, With protective chamfer, Long version, with center cut, with uneven pitch, End mill with unequal helix angle 35/38°, End mill cutting edge tolerance h10 (according to ISO 286 fit system), HPC (High-Performance Cutting) milling technology
Main application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Main application: Cast materials (ISO K), For finishing, For shoulder milling, For slot milling, For pocket milling

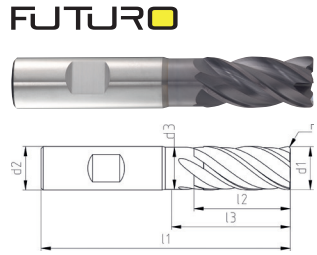
Order ID	**d1** mm	l2 mm	**l3** mm	d2 mm	l1 mm	d3 mm	Protective chamfer mm
225733.0100	**3**	8	**17**	6	57	2.8	0.13
225733.0200	**4**	11	**20**	6	57	3.6	0.18
225733.0300	**5**	13	**20**	6	57	4.6	0.2
225733.0400	**6**	13	**20**	6	57	5.5	0.2
225733.0500	**7**	19	**26**	8	63	6.5	0.2
225733.0600	**8**	19	**26**	8	63	7.5	0.2
225733.0700	**9**	22	**31**	10	72	8.5	0.3
225733.0800	**10**	22	**31**	10	72	9.5	0.3
225733.0900	**11**	26	**37**	12	83	10.5	0.3
225733.1000	**12**	26	**37**	12	83	11.5	0.3
225733.1100	**13**	26	**41**	14	83	12.5	0.3
225733.1200	**14**	26	**41**	14	83	13.5	0.3
225733.1300	**16**	32	**43**	16	92	15.5	0.4
225733.1400	**18**	32	**49**	18	100	17.5	0.4
225733.1500	**20**	38	**53**	20	104	19.5	0.5
225733.1600	**25**	42	**64**	25	121	24	0.5

225734 FUTURO SC shoulder/ slot milling cutters





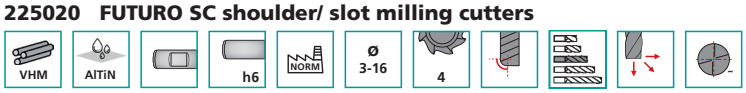




Made of solid hard metal, TiAlN coating, with Weldon shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 3 - 16 mm, Number of teeth 4, With corner radius, Long version, with center cut, with uneven pitch, End mill with unequal helix angle 35/38°, End mill cutting edge tolerance h10 (according to ISO 286 fit system), HPC (High-Performance Cutting) milling technology
Main application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Main application: Cast materials (ISO K), For finishing, For shoulder milling, For slot milling, For pocket milling

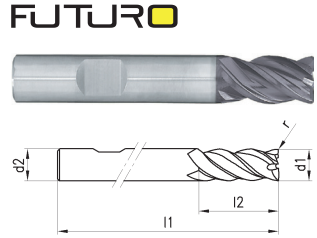
Order ID	**d1** **mm**	**r** **mm**	l2 mm	l3 mm	d2 mm	d3 mm	l1 mm
225734.0100	**4**	**0.25**	11	21	6	3.7	57
225734.0200	**4**	**0.5**	11	21	6	3.7	57
225734.0300	**4**	**1**	11	21	6	3.7	57
225734.0400	**5**	**0.5**	13	21	6	4.7	57
225734.0500	**5**	**1**	13	21	6	4.7	57
225734.0700	**6**	**0.5**	13	21	6	5.5	57
225734.0800	**6**	**1**	13	21	6	5.5	57
225734.0900	**6**	**1.5**	13	21	6	5.5	57
225734.1100	**8**	**0.5**	19	27	8	7.5	63
225734.1200	**8**	**1**	19	27	8	7.5	63
225734.1300	**8**	**1.5**	19	27	8	7.5	63
225734.1400	**8**	**2**	19	27	8	7.5	63
225734.1500	**10**	**0.5**	22	32	10	9.5	72
225734.1600	**10**	**1**	22	32	10	9.5	72
225734.1700	**10**	**1.5**	22	32	10	9.5	72
225734.1800	**10**	**2**	22	32	10	9.5	72
225734.1900	**12**	**0.5**	26	38	12	11	83
225734.2000	**12**	**1**	26	38	12	11	83
225734.2200	**12**	**2**	26	38	12	11	83
225734.2500	**16**	**1**	32	44	16	15	92
225734.2700	**16**	**2**	32	44	16	15	92
225734.2800	**16**	**2.5**	32	44	16	15	92
225734.3100	**20**	**1**	38	54	20	19	104
225734.3300	**20**	**2**	38	54	20	19	104
225734.3500	**20**	**3**	38	54	20	19	104

225020 FUTURO SC shoulder/ slot milling cutters







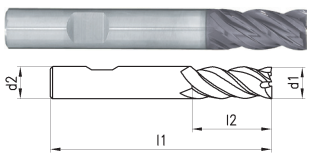


Made of solid hard metal, AlTiN coating, with Weldon shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 3 - 16 mm, Number of teeth 4, With corner radius, Medium-length version, with center cut, with uneven pitch, Milling cutter with 37° helix angle, Milling cutter cutting tolerance -0.03 / 0, HPC (High-Performance Cutting) milling technology
Secondary application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Superalloys (ISO S), For finishing, For shoulder milling, For slot milling, For pocket milling

Application
High-performance milling cutter for the machining of stainless steels, tool steels, unalloyed and alloyed steels, titanium, Inconel, and pre-hardened steels **up to 42 HRC**. Extremely wear-resistant, creates top-quality surfaces and reduces vibrations to a minimum.

Order ID	**d1** **mm**	r mm	l2 mm	d2 mm	l1 mm
225020.0100	**3**	0.3	7	6	54
225020.0200	**4**	0.3	8	6	54
225020.0300	**5**	0.3	10	6	54
225020.0400	**6**	0.45	10	6	54
225020.0500	**8**	0.45	12	8	58
225020.0600	**10**	0.45	14	10	66
225020.0700	**12**	0.7	16	12	73
225020.0800	**16**	0.95	22	16	82

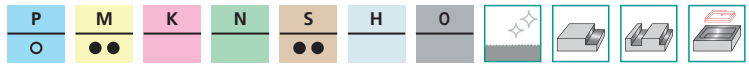
FUTURO



225040 FUTURO SC shoulder/ slot milling cutters







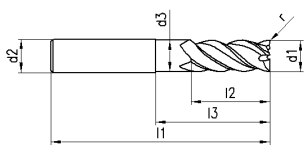
Made of solid hard metal, AlTiN coating, with Weldon shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 4 - 16 mm, Number of teeth 4, With protective chamfer, Long version, with center cut, with uneven pitch, Milling cutter with 37° helix angle, Milling cutter cutting tolerance -0.03 / 0, HPC (High-Performance Cutting) milling technology
Secondary application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Superalloys (ISO S), For finishing, For shoulder milling, For slot milling, For pocket milling

Application
High-performance milling cutter for the machining of stainless steels, tool steels, unalloyed and alloyed steels, titanium, Inconel, and pre-hardened steels **up to 42 HRC**. Extremely wear-resistant, creates outstanding surfaces and reduces vibrations to a minimum.

Order ID	**d1** **mm**	l2 mm	d2 mm	l1 mm
225040.0200	**4**	11	6	57
225040.0300	**5**	13	6	57
225040.0400	**6**	13	6	57
225040.0500	**8**	19	8	63
225040.0600	**10**	22	10	72
225040.0700	**12**	26	12	83
225040.0800	**16**	32	16	92

FUTURO

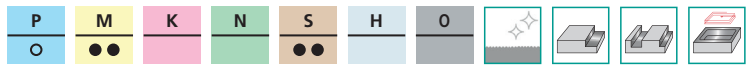




225070 FUTURO SC shoulder/ slot milling cutters







Made of solid hard metal, AlTiN coating, with cylindrical shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 3 - 20 mm, Number of teeth 4, With corner radius, Short and long versions, with center cut, Milling cutter with 37° helix angle, End mill cutting tolerance 0 / +0.03, HPC (High-Performance Cutting) milling technology
Secondary application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Superalloys (ISO S), For finishing, For shoulder milling, For slot milling, For pocket milling

Application
For machining stainless steels, tool steels, alloyed and unalloyed steels, titanium, Inconel and pre-hardened steels **up to 42 HRC**. Extremely wear-resistant, creates outstanding surfaces and reduces vibrations to a minimum.

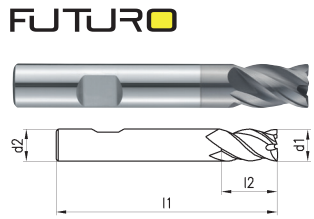
Order ID	**d1** **mm**	**r** **mm**	**l2** **mm**	**l3** **mm**	d2 mm	l1 mm	d3 mm
225070.0100	**3**	**0.3**	**7**	**12**	6	54	2.7
225070.0200	**3**	**0.3**	**7**	**17**	6	57	2.7
225070.0300	**4**	**0.3**	**8**	**15**	6	57	3.7
225070.0500	**5**	**0.3**	**10**	**17**	6	57	4.7
225070.0600	**5**	**0.3**	**10**	**27**	6	67	4.7
225070.0700	**6**	**0.5**	**10**	**15**	6	57	5.5
225070.0900	**6**	**0.5**	**10**	**32**	6	74	5.5
225070.1000	**8**	**0.5**	**12**	**20**	8	63	7.5
225070.1100	**8**	**0.5**	**12**	**30**	8	73	7.5
225070.1200	**8**	**0.5**	**12**	**46**	8	90	7.5
225070.1300	**10**	**0.5**	**14**	**25**	10	72	9.2
225070.1400	**10**	**0.5**	**14**	**35**	10	82	9.2
225070.1500	**10**	**0.5**	**14**	**55**	10	102	9.2
225070.1600	**12**	**0.7**	**16**	**30**	12	83	11
225070.1700	**12**	**0.7**	**16**	**40**	12	93	11
225070.1800	**12**	**0.7**	**16**	**64**	12	117	11
225070.1900	**16**	**1.0**	**22**	**38**	16	92	15
225070.2000	**16**	**1.0**	**22**	**55**	16	109	15
225070.2100	**16**	**1.0**	**22**	**87**	16	141	15
225070.2200	**20**	**1.0**	**26**	**50**	20	104	19
225070.2300	**20**	**1.0**	**26**	**70**	20	124	19
225070.2400	**20**	**1.0**	**26**	**110**	20	164	19

225737 FUTURO SC shoulder/ slot milling cutters







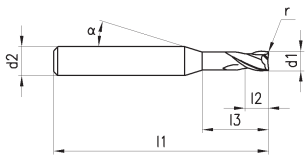


Made of solid hard metal, AlTiN coating, with Weldon shank, Shaft tolerance h6, According to DIN 6527L, Nominal size Ø 3 - 20 mm, Number of teeth 4, With protective chamfer, Short version, with center cut, with uneven pitch, End mill with unequal helix angle 35/38°, End mill cutting edge tolerance h10 (according to ISO 286 fit system)
Secondary application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For finishing, For shoulder milling, For slot milling, For pocket milling

Order ID	**d1** **mm**	l2 mm	d2 mm	l1 mm	Protective chamfer mm
225737.0100	**3**	6	6	54	0.1
225737.0200	**4**	8	6	54	0.13
225737.0400	**6**	10	6	54	0.2
225737.0600	**8**	12	8	58	0.2
225737.0700	**9**	14	10	66	0.3
225737.0800	**10**	14	10	66	0.3
225737.1000	**12**	16	12	73	0.3
225737.1400	**18**	24	18	84	0.4
225737.1500	**20**	26	20	92	0.5

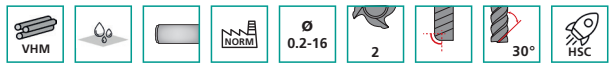
FUTURO

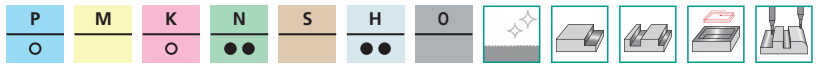




222400 FUTURO SC shoulder/ slot milling cutters

with corner radius





Made of solid hard metal, Coated, with cylindrical shank, According to factory standard, Nominal size Ø 0.2 - 16 mm, Number of teeth 2, With corner radius, Milling cutter with 30° helix angle, HSC (High-Speed Cutting) milling technology
Secondary application: Steel (ISO-P), Secondary application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N), Main application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling, For micro milling

Application:
Corner radius cutters can be used **up to 60 HRC**. Suitable for non-ferrous metals and hardened steels.

Tolerances r:
≤ 0.5 mm: +/- 0.005 mm
0.6...1.5 mm: +/- 0.010 mm
> 1.5 mm: +/- 0.015 mm

Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222400.0010	**0.2**	**0.02**	**1**	0.2	40	4	15	222400.0640	**0.6**	**0.1**	**10**	0.6	50	4	15
222400.0020	**0.2**	**0.02**	**1.5**	0.2	40	4	15	222400.0650	**0.7**	**0.1**	**2**	0.7	45	4	15
222400.0030	**0.2**	**0.05**	**1**	0.2	40	4	15	222400.0660	**0.7**	**0.1**	**4**	0.7	45	4	15
222400.0040	**0.2**	**0.05**	**1.5**	0.2	40	4	15	222400.0670	**0.7**	**0.1**	**6**	0.7	45	4	15
222400.0050	**0.3**	**0.05**	**1**	0.3	40	4	15	222400.0680	**0.8**	**0.02**	**2**	0.8	45	4	15
222400.0060	**0.3**	**0.05**	**2**	0.3	40	4	15	222400.0690	**0.8**	**0.02**	**4**	0.8	45	4	15
222400.0070	**0.3**	**0.05**	**3**	0.3	40	4	15	222400.0700	**0.8**	**0.02**	**6**	0.8	45	4	15
222400.0080	**0.4**	**0.05**	**1**	0.4	40	4	15	222400.0710	**0.8**	**0.02**	**8**	0.8	45	4	15
222400.0090	**0.4**	**0.05**	**2**	0.4	40	4	15	222400.0720	**0.8**	**0.02**	**10**	0.8	50	4	15
222400.0100	**0.4**	**0.05**	**3**	0.4	40	4	15	222400.0730	**0.8**	**0.05**	**2**	0.8	45	4	15
222400.0110	**0.4**	**0.05**	**4**	0.4	40	4	15	222400.0740	**0.8**	**0.05**	**4**	0.8	45	4	15
222400.0120	**0.4**	**0.1**	**1**	0.4	40	4	15	222400.0750	**0.8**	**0.05**	**6**	0.8	45	4	15
222400.0130	**0.4**	**0.1**	**1.5**	0.4	40	4	15	222400.0760	**0.8**	**0.05**	**8**	0.8	45	4	15
222400.0140	**0.4**	**0.1**	**2**	0.4	40	4	15	222400.0770	**0.8**	**0.05**	**10**	0.8	50	4	15
222400.0150	**0.4**	**0.1**	**3**	0.4	40	4	15	222400.0780	**0.8**	**0.1**	**2**	0.8	45	4	15
222400.0160	**0.4**	**0.1**	**4**	0.4	40	4	15	222400.0790	**0.8**	**0.1**	**4**	0.8	45	4	15
222400.0170	**0.5**	**0.02**	**1**	0.5	45	4	15	222400.0800	**0.8**	**0.1**	**6**	0.8	45	4	15
222400.0180	**0.5**	**0.02**	**1.5**	0.5	45	4	15	222400.0810	**0.8**	**0.1**	**8**	0.8	45	4	15
222400.0190	**0.5**	**0.02**	**2.0**	0.5	45	4	15	222400.0830	**0.8**	**0.2**	**2**	0.8	45	4	15
222400.0200	**0.5**	**0.02**	**2.5**	0.5	45	4	15	222400.0840	**0.8**	**0.2**	**4**	0.8	45	4	15
222400.0210	**0.5**	**0.02**	**3**	0.5	45	4	15	222400.0850	**0.8**	**0.2**	**6**	0.8	45	4	15
222400.0220	**0.5**	**0.02**	**4**	0.5	45	4	15	222400.0860	**0.8**	**0.2**	**8**	0.8	45	4	15
222400.0230	**0.5**	**0.02**	**5**	0.5	45	4	15	222400.0870	**0.8**	**0.2**	**10**	0.8	45	4	15
222400.0240	**0.5**	**0.02**	**6**	0.5	45	4	15	222400.0880	**1**	**0.05**	**4**	1	45	4	15
222400.0250	**0.5**	**0.02**	**8**	0.5	45	4	15	222400.0890	**1**	**0.05**	**6**	1	45	4	15
222400.0260	**0.5**	**0.02**	**10**	0.5	45	4	15	222400.0900	**1**	**0.05**	**8**	1	45	4	15
222400.0270	**0.5**	**0.05**	**1**	0.5	45	4	15	222400.0910	**1**	**0.05**	**10**	1	50	4	15
222400.0290	**0.5**	**0.05**	**2**	0.5	45	4	15	222400.0920	**1**	**0.05**	**12**	1	50	4	15
222400.0300	**0.5**	**0.05**	**2.5**	0.5	45	4	15	222400.0930	**1**	**0.05**	**16**	1	50	4	15
222400.0310	**0.5**	**0.05**	**3**	0.5	45	4	15	222400.0940	**1**	**0.05**	**20**	1	50	4	15
222400.0320	**0.5**	**0.05**	**4**	0.5	45	4	15	222400.0950	**1**	**0.05**	**22**	1	60	4	15
222400.0330	**0.5**	**0.05**	**5**	0.5	45	4	15	222400.0960	**1**	**0.05**	**25**	1	60	4	15
222400.0340	**0.5**	**0.05**	**6**	0.5	45	4	15	222400.0970	**1**	**0.1**	**4**	1	45	4	15
222400.0350	**0.5**	**0.05**	**8**	0.5	45	4	15	222400.0980	**1**	**0.1**	**6**	1	45	4	15
222400.0360	**0.5**	**0.05**	**10**	0.5	45	4	15	222400.0990	**1**	**0.1**	**8**	1	45	4	15
222400.0370	**0.5**	**0.1**	**1**	0.5	45	4	15	222400.1000	**1**	**0.1**	**10**	1	50	4	15
222400.0380	**0.5**	**0.1**	**1.5**	0.5	45	4	15	222400.1010	**1**	**0.1**	**12**	1	50	4	15
222400.0390	**0.5**	**0.1**	**2**	0.5	45	4	15	222400.1020	**1**	**0.1**	**16**	1	50	4	15
222400.0400	**0.5**	**0.1**	**2.5**	0.5	45	4	15	222400.1030	**1**	**0.1**	**20**	1	50	4	15
222400.0410	**0.5**	**0.1**	**3**	0.5	45	4	15	222400.1040	**1**	**0.1**	**22**	1	60	4	15
222400.0420	**0.5**	**0.1**	**4**	0.5	45	4	15	222400.1050	**1**	**0.1**	**25**	1	60	4	15
222400.0430	**0.5**	**0.1**	**5**	0.5	45	4	15	222400.1060	**1**	**0.2**	**4**	1	45	4	15
222400.0440	**0.5**	**0.1**	**6**	0.5	45	4	15	222400.1070	**1**	**0.2**	**6**	1	45	4	15
222400.0450	**0.5**	**0.1**	**8**	0.5	45	4	15	222400.1080	**1**	**0.2**	**8**	1	45	4	15
222400.0460	**0.5**	**0.1**	**10**	0.5	50	4	15	222400.1090	**1**	**0.2**	**10**	1	50	4	15
222400.0470	**0.6**	**0.02**	**2**	0.6	45	4	15	222400.1100	**1**	**0.2**	**12**	1	50	4	15
222400.0480	**0.6**	**0.02**	**3**	0.6	45	4	15	222400.1110	**1**	**0.2**	**16**	1	50	4	15
222400.0490	**0.6**	**0.02**	**4**	0.6	45	4	15	222400.1120	**1**	**0.2**	**20**	1	50	4	15
222400.0500	**0.6**	**0.02**	**6**	0.6	45	4	15	222400.1130	**1**	**0.2**	**22**	1	60	4	15
222400.0510	**0.6**	**0.02**	**8**	0.6	45	4	15	222400.1140	**1**	**0.2**	**25**	1	60	4	15
222400.0520	**0.6**	**0.02**	**10**	0.6	50	4	15	222400.1150	**1**	**0.3**	**4**	1	45	4	15
222400.0530	**0.6**	**0.05**	**2**	0.6	45	4	15	222400.1160	**1**	**0.3**	**6**	1	45	4	15
222400.0540	**0.6**	**0.05**	**3**	0.6	45	4	15	222400.1170	**1**	**0.3**	**8**	1	45	4	15
222400.0550	**0.6**	**0.05**	**4**	0.6	45	4	15	222400.1180	**1**	**0.3**	**10**	1	50	4	15
222400.0560	**0.6**	**0.05**	**6**	0.6	45	4	15	222400.1190	**1**	**0.3**	**12**	1	50	4	15
222400.0570	**0.6**	**0.05**	**8**	0.6	45	4	15	222400.1200	**1**	**0.3**	**16**	1	50	4	15
222400.0580	**0.6**	**0.05**	**10**	0.6	50	4	15	222400.1210	**1**	**0.3**	**20**	1	50	4	15
222400.0590	**0.6**	**0.1**	**2**	0.6	45	4	15	222400.1220	**1**	**0.3**	**22**	1	60	4	15
222400.0600	**0.6**	**0.1**	**3**	0.6	45	4	15	222400.1230	**1**	**0.3**	**25**	1	60	4	15
222400.0610	**0.6**	**0.1**	**4**	0.6	45	4	15	222400.1240	**1.2**	**0.1**	**4**	1.2	45	4	15
222400.0620	**0.6**	**0.1**	**6**	0.6	45	4	15	222400.1260	**1.2**	**0.1**	**8**	1.2	45	4	15
222400.0630	**0.6**	**0.1**	**8**	0.6	45	4	15	222400.1270	**1.2**	**0.1**	**10**	1.2	50	4	15

Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222400.1280	**1.2**	**0.1**	**12**	1.2	50	4	15	222400.2190	**2.5**	**0.2**	**16**	2.5	50	4	15
222400.1290	**1.2**	**0.1**	**16**	1.2	50	4	15	222400.2200	**2.5**	**0.2**	**20**	2.5	50	4	15
222400.1300	**1.2**	**0.1**	**20**	1.2	50	4	15	222400.2210	**2.5**	**0.2**	**25**	2.5	60	4	15
222400.1310	**1.2**	**0.2**	**4**	1.2	45	4	15	222400.2220	**2.5**	**0.2**	**30**	2.5	70	4	15
222400.1330	**1.2**	**0.2**	**8**	1.2	45	4	15	222400.2240	**2.5**	**0.3**	**16**	2.5	50	4	15
222400.1340	**1.2**	**0.2**	**10**	1.2	50	4	15	222400.2250	**2.5**	**0.3**	**20**	2.5	50	4	15
222400.1350	**1.2**	**0.2**	**12**	1.2	50	4	15	222400.2260	**2.5**	**0.3**	**25**	2.5	60	4	15
222400.1360	**1.2**	**0.2**	**16**	1.2	50	4	15	222400.2270	**2.5**	**0.3**	**30**	2.5	70	4	15
222400.1370	**1.2**	**0.2**	**20**	1.2	50	4	15	222400.2280	**2.5**	**0.5**	**10**	2.5	50	4	15
222400.1380	**1.2**	**0.3**	**4**	1.2	45	4	15	222400.2290	**2.5**	**0.5**	**16**	2.5	50	4	15
222400.1390	**1.2**	**0.3**	**6**	1.2	45	4	15	222400.2300	**2.5**	**0.5**	**20**	2.5	50	4	15
222400.1400	**1.2**	**0.3**	**8**	1.2	45	4	15	222400.2310	**2.5**	**0.5**	**25**	2.5	60	4	15
222400.1410	**1.2**	**0.3**	**10**	1.2	50	4	15	222400.2320	**2.5**	**0.5**	**30**	2.5	70	4	15
222400.1420	**1.2**	**0.3**	**12**	1.2	50	4	15	222400.2330	**3**	**0.1**	**10**	3	50	6	15
222400.1430	**1.2**	**0.3**	**16**	1.2	50	4	15	222400.2340	**3**	**0.1**	**12**	3	55	6	15
222400.1440	**1.2**	**0.3**	**20**	1.2	50	4	15	222400.2350	**3**	**0.1**	**16**	3	55	6	15
222400.1450	**1.5**	**0.1**	**4**	1.5	45	4	15	222400.2360	**3**	**0.1**	**20**	3	60	6	15
222400.1460	**1.5**	**0.1**	**6**	1.5	45	4	15	222400.2370	**3**	**0.1**	**25**	3	65	6	15
222400.1470	**1.5**	**0.1**	**8**	1.5	45	4	15	222400.2380	**3**	**0.1**	**30**	3	70	6	15
222400.1480	**1.5**	**0.1**	**10**	1.5	50	4	15	222400.2390	**3**	**0.1**	**35**	3	75	6	15
222400.1490	**1.5**	**0.1**	**12**	1.5	50	4	15	222400.2400	**3**	**0.1**	**40**	3	80	6	15
222400.1500	**1.5**	**0.1**	**16**	1.5	50	4	15	222400.2410	**3**	**0.2**	**10**	3	50	6	15
222400.1510	**1.5**	**0.1**	**20**	1.5	50	4	15	222400.2420	**3**	**0.2**	**12**	3	55	6	15
222400.1520	**1.5**	**0.1**	**22**	1.5	60	4	15	222400.2430	**3**	**0.2**	**16**	3	55	6	15
222400.1530	**1.5**	**0.1**	**25**	1.5	60	4	15	222400.2440	**3**	**0.2**	**20**	3	60	6	15
222400.1540	**1.5**	**0.2**	**4**	1.5	45	4	15	222400.2450	**3**	**0.2**	**25**	3	65	6	15
222400.1550	**1.5**	**0.2**	**6**	1.5	45	4	15	222400.2460	**3**	**0.2**	**30**	3	70	6	15
222400.1560	**1.5**	**0.2**	**8**	1.5	45	4	15	222400.2470	**3**	**0.2**	**35**	3	75	6	15
222400.1570	**1.5**	**0.2**	**10**	1.5	50	4	15	222400.2480	**3**	**0.2**	**40**	3	80	6	15
222400.1580	**1.5**	**0.2**	**12**	1.5	50	4	15	222400.2490	**3**	**0.3**	**10**	3	50	6	15
222400.1590	**1.5**	**0.2**	**16**	1.5	50	4	15	222400.2500	**3**	**0.3**	**12**	3	55	6	15
222400.1600	**1.5**	**0.2**	**20**	1.5	50	4	15	222400.2510	**3**	**0.3**	**16**	3	55	6	15
222400.1610	**1.5**	**0.2**	**22**	1.5	60	4	15	222400.2520	**3**	**0.3**	**20**	3	60	6	15
222400.1620	**1.5**	**0.2**	**25**	1.5	60	4	15	222400.2530	**3**	**0.3**	**25**	3	65	6	15
222400.1630	**1.5**	**0.3**	**4**	1.5	45	4	15	222400.2540	**3**	**0.3**	**30**	3	70	6	15
222400.1640	**1.5**	**0.3**	**6**	1.5	45	4	15	222400.2550	**3**	**0.3**	**35**	3	75	6	15
222400.1650	**1.5**	**0.3**	**8**	1.5	45	4	15	222400.2560	**3**	**0.3**	**40**	3	80	6	15
222400.1660	**1.5**	**0.3**	**10**	1.5	50	4	15	222400.2570	**3**	**0.5**	**10**	3	50	6	15
222400.1670	**1.5**	**0.3**	**12**	1.5	50	4	15	222400.2580	**3**	**0.5**	**12**	3	55	6	15
222400.1680	**1.5**	**0.3**	**16**	1.5	50	4	15	222400.2590	**3**	**0.5**	**16**	3	55	6	15
222400.1690	**1.5**	**0.3**	**20**	1.5	50	4	15	222400.2600	**3**	**0.5**	**20**	3	60	6	15
222400.1700	**1.5**	**0.3**	**22**	1.5	60	4	15	222400.2610	**3**	**0.5**	**25**	3	65	6	15
222400.1710	**1.5**	**0.3**	**25**	1.5	60	4	15	222400.2620	**3**	**0.5**	**30**	3	70	6	15
222400.1720	**1.5**	**0.5**	**4**	1.5	45	4	15	222400.2630	**3**	**0.5**	**35**	3	75	6	15
222400.1730	**1.5**	**0.5**	**6**	1.5	45	4	15	222400.2640	**3**	**0.5**	**40**	3	80	6	15
222400.1740	**1.5**	**0.5**	**8**	1.5	45	4	15	222400.2650	**3**	**1**	**10**	3	50	6	15
222400.1750	**1.5**	**0.5**	**10**	1.5	50	4	15	222400.2660	**3**	**1**	**12**	3	55	6	15
222400.1760	**1.5**	**0.5**	**12**	1.5	50	4	15	222400.2670	**3**	**1**	**16**	3	55	6	15
222400.1770	**1.5**	**0.5**	**16**	1.5	50	4	15	222400.2680	**3**	**1**	**20**	3	60	6	15
222400.1780	**1.5**	**0.5**	**20**	1.5	50	4	15	222400.2690	**3**	**1**	**25**	3	65	6	15
222400.1790	**1.5**	**0.5**	**22**	1.5	60	4	15	222400.2700	**3**	**1**	**30**	3	70	6	15
222400.1800	**1.5**	**0.5**	**25**	1.5	60	4	15	222400.2710	**3**	**1**	**35**	3	75	6	15
222400.1810	**2**	**0.1**	**6**	2	45	4	15	222400.2720	**3**	**1**	**40**	3	80	6	15
222400.1820	**2**	**0.1**	**8**	2	45	4	15	222400.2730	**4**	**0.1**	**12**	4	50	4	-
222400.1830	**2**	**0.1**	**10**	2	50	4	15	222400.2740	**4**	**0.1**	**20**	4	70	4	-
222400.1840	**2**	**0.1**	**12**	2	50	4	15	222400.2750	**4**	**0.1**	**12**	4	55	6	15
222400.1850	**2**	**0.1**	**16**	2	50	4	15	222400.2760	**4**	**0.1**	**16**	4	55	6	15
222400.1860	**2**	**0.1**	**20**	2	50	4	15	222400.2770	**4**	**0.1**	**20**	4	60	6	15
222400.1870	**2**	**0.1**	**25**	2	60	4	15	222400.2780	**4**	**0.1**	**25**	4	65	6	15
222400.1880	**2**	**0.1**	**30**	2	70	4	15	222400.2790	**4**	**0.1**	**30**	4	70	6	15
222400.1890	**2**	**0.2**	**6**	2	45	4	15	222400.2800	**4**	**0.1**	**35**	4	75	6	15
222400.1900	**2**	**0.2**	**8**	2	45	4	15	222400.2820	**4**	**0.1**	**45**	4	90	6	15
222400.1910	**2**	**0.2**	**10**	2	50	4	15	222400.2830	**4**	**0.1**	**50**	4	100	6	15
222400.1920	**2**	**0.2**	**12**	2	50	4	15	222400.2840	**4**	**0.2**	**12**	4	50	4	-
222400.1930	**2**	**0.2**	**16**	2	50	4	15	222400.2850	**4**	**0.2**	**20**	4	70	4	-
222400.1940	**2**	**0.2**	**20**	2	50	4	15	222400.2860	**4**	**0.2**	**12**	4	55	6	15
222400.1950	**2**	**0.2**	**25**	2	60	4	15	222400.2870	**4**	**0.2**	**16**	4	55	6	15
222400.1960	**2**	**0.2**	**30**	2	70	4	15	222400.2880	**4**	**0.2**	**20**	4	60	6	15
222400.1970	**2**	**0.3**	**6**	2	45	4	15	222400.2890	**4**	**0.2**	**25**	4	65	6	15
222400.1980	**2**	**0.3**	**8**	2	45	4	15	222400.2900	**4**	**0.2**	**30**	4	70	6	15
222400.1990	**2**	**0.3**	**10**	2	50	4	15	222400.2910	**4**	**0.2**	**35**	4	75	6	15
222400.2000	**2**	**0.3**	**12**	2	50	4	15	222400.2920	**4**	**0.2**	**40**	4	80	6	15
222400.2010	**2**	**0.3**	**16**	2	50	4	15	222400.2930	**4**	**0.2**	**45**	4	90	6	15
222400.2020	**2**	**0.3**	**20**	2	50	4	15	222400.2940	**4**	**0.2**	**50**	4	100	6	15
222400.2030	**2**	**0.3**	**25**	2	60	4	15	222400.2950	**4**	**0.3**	**12**	4	50	4	-
222400.2040	**2**	**0.3**	**30**	2	70	4	15	222400.2960	**4**	**0.3**	**20**	4	70	4	-
222400.2050	**2**	**0.5**	**6**	2	45	4	15	222400.2970	**4**	**0.3**	**12**	4	55	6	15
222400.2060	**2**	**0.5**	**8**	2	45	4	15	222400.2980	**4**	**0.3**	**16**	4	55	6	15
222400.2070	**2**	**0.5**	**10**	2	50	4	15	222400.2990	**4**	**0.3**	**20**	4	60	6	15
222400.2080	**2**	**0.5**	**12**	2	50	4	15	222400.3000	**4**	**0.3**	**25**	4	65	6	15
222400.2090	**2**	**0.5**	**16**	2	50	4	15	222400.3010	**4**	**0.3**	**30**	4	70	6	15
222400.2100	**2**	**0.5**	**20**	2	50	4	15	222400.3020	**4**	**0.3**	**35**	4	75	6	15
222400.2110	**2**	**0.5**	**25**	2	60	4	15	222400.3030	**4**	**0.3**	**40**	4	80	6	15
222400.2120	**2**	**0.5**	**30**	2	70	4	15	222400.3040	**4**	**0.3**	**45**	4	90	6	15
222400.2130	**2.5**	**0.1**	**10**	2.5	50	4	15	222400.3050	**4**	**0.3**	**50**	4	100	6	15
222400.2140	**2.5**	**0.1**	**16**	2.5	50	4	15	222400.3060	**4**	**0.5**	**12**	4	50	4	-
222400.2150	**2.5**	**0.1**	**20**	2.5	50	4	15	222400.3070	**4**	**0.5**	**20**	4	70	4	-
222400.2160	**2.5**	**0.1**	**25**	2.5	60	4	15	222400.3080	**4**	**0.5**	**12**	4	55	6	15
222400.2170	**2.5**	**0.1**	**30**	2.5	70	4	15	222400.3090	**4**	**0.5**	**16**	4	55	6	15
222400.2180	**2.5**	**0.2**	**10**	2.5	50	4	15	222400.3100	**4**	**0.5**	**20**	4	60	6	15

Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222400.3110	**4**	**0.5**	**25**	4	65	6	15	222400.3530	**6**	**1.5**	**20**	7	60	6	-
222400.3120	**4**	**0.5**	**30**	4	70	6	15	222400.3540	**6**	**1.5**	**40**	7	90	6	-
222400.3130	**4**	**0.5**	**35**	4	75	6	15	222400.3550	**8**	**0.2**	**22**	9	65	8	-
222400.3140	**4**	**0.5**	**40**	4	80	6	15	222400.3560	**8**	**0.2**	**40**	9	100	8	-
222400.3150	**4**	**0.5**	**45**	4	90	6	15	222400.3570	**8**	**0.3**	**22**	9	65	8	-
222400.3160	**4**	**0.5**	**50**	4	100	6	15	222400.3580	**8**	**0.3**	**40**	9	100	8	-
222400.3170	**4**	**1**	**12**	4	50	4	-	222400.3590	**8**	**0.5**	**22**	9	65	8	-
222400.3180	**4**	**1**	**20**	4	70	4	-	222400.3600	**8**	**0.5**	**40**	9	100	8	-
222400.3190	**4**	**1**	**12**	4	55	6	15	222400.3610	**8**	**1**	**22**	9	65	8	-
222400.3200	**4**	**1**	**16**	4	55	6	15	222400.3620	**8**	**1**	**40**	9	100	8	-
222400.3210	**4**	**1**	**20**	4	60	6	15	222400.3630	**8**	**1.5**	**22**	9	65	8	-
222400.3220	**4**	**1**	**25**	4	65	6	15	222400.3640	**8**	**1.5**	**40**	9	100	8	-
222400.3230	**4**	**1**	**30**	4	70	6	15	222400.3650	**10**	**0.2**	**24**	11	70	10	-
222400.3240	**4**	**1**	**35**	4	75	6	15	222400.3660	**10**	**0.2**	**45**	11	100	10	-
222400.3250	**4**	**1**	**40**	4	80	6	15	222400.3670	**10**	**0.3**	**24**	11	70	10	-
222400.3260	**4**	**1**	**45**	4	90	6	15	222400.3680	**10**	**0.3**	**45**	11	100	10	-
222400.3270	**4**	**1**	**50**	4	100	6	15	222400.3690	**10**	**0.5**	**24**	11	70	10	-
222400.3280	**5**	**0.2**	**15**	6	60	6	15	222400.3700	**10**	**0.5**	**45**	11	100	10	-
222400.3290	**5**	**0.2**	**25**	6	70	6	15	222400.3710	**10**	**1**	**24**	11	70	10	-
222400.3300	**5**	**0.2**	**30**	6	70	6	15	222400.3720	**10**	**1**	**45**	11	100	10	-
222400.3310	**5**	**0.2**	**40**	6	80	6	15	222400.3730	**10**	**1.5**	**24**	11	70	10	-
222400.3320	**5**	**0.2**	**50**	6	100	6	15	222400.3740	**10**	**1.5**	**45**	11	100	10	-
222400.3330	**5**	**0.5**	**15**	6	60	6	15	222400.3750	**10**	**2**	**24**	11	70	10	-
222400.3340	**5**	**0.5**	**25**	6	70	6	15	222400.3760	**10**	**2**	**45**	11	100	10	-
222400.3350	**5**	**0.5**	**30**	6	70	6	15	222400.3770	**12**	**0.2**	**26**	13	80	12	-
222400.3360	**5**	**0.5**	**40**	6	80	6	15	222400.3780	**12**	**0.2**	**50**	13	110	12	-
222400.3370	**5**	**0.5**	**50**	6	100	6	15	222400.3790	**12**	**0.3**	**26**	13	80	12	-
222400.3380	**5**	**1**	**15**	6	60	6	15	222400.3800	**12**	**0.3**	**50**	13	110	12	-
222400.3390	**5**	**1**	**25**	6	70	6	15	222400.3810	**12**	**0.5**	**26**	13	80	12	-
222400.3400	**5**	**1**	**30**	6	70	6	15	222400.3820	**12**	**0.5**	**50**	13	110	12	-
222400.3410	**5**	**1**	**40**	6	80	6	15	222400.3830	**12**	**1**	**26**	13	80	12	-
222400.3420	**5**	**1**	**50**	6	100	6	15	222400.3840	**12**	**1**	**50**	13	110	12	-
222400.3430	**6**	**0.1**	**20**	7	60	6	-	222400.3850	**12**	**1.5**	**26**	13	80	12	-
222400.3440	**6**	**0.1**	**40**	7	90	6	-	222400.3860	**12**	**1.5**	**50**	13	110	12	-
222400.3450	**6**	**0.2**	**20**	7	60	6	-	222400.3870	**12**	**2**	**26**	13	80	12	-
222400.3460	**6**	**0.2**	**40**	7	90	6	-	222400.3880	**12**	**2**	**50**	13	110	12	-
222400.3470	**6**	**0.3**	**20**	7	60	6	-	222400.3890	**12**	**3**	**26**	13	80	12	-
222400.3480	**6**	**0.3**	**40**	7	90	6	-	222400.3900	**12**	**3**	**50**	13	110	12	-
222400.3490	**6**	**0.5**	**20**	7	60	6	-	222400.3910	**16**	**0.5**	**35**	20	110	16	-
222400.3500	**6**	**0.5**	**40**	7	90	6	-	222400.3920	**16**	**0.5**	**35**	20	160	16	-
222400.3510	**6**	**1**	**20**	7	60	6	-	222400.3930	**16**	**1**	**35**	20	110	16	-
222400.3520	**6**	**1**	**40**	7	90	6	-	222400.3940	**16**	**1**	**35**	20	160	16	-

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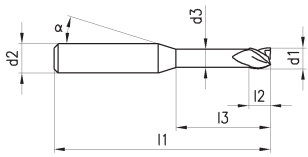
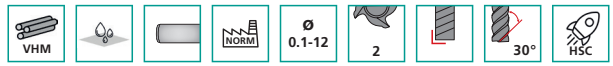
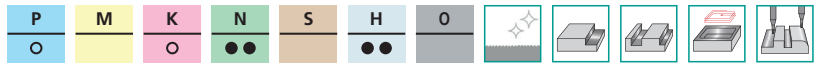


222402 FUTURO SC shoulder/ slot milling cutters





Made of solid hard metal, Coated, with cylindrical shank, According to factory standard, Nominal size Ø 0.1 - 12 mm, Number of teeth 2, With sharp corner design, Milling cutter with 30° helix angle, HSC (High-Speed Cutting) milling technology
Secondary application: Steel (ISO-P), Secondary application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N), Main application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling, For micro milling

Application:
Corner and slot milling cutters for various roughing and finishing operations. **Can be used up to 60 HRC**. Suitable for non-ferrous metals and hardened steels.

Order ID	d1 mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222402.0010	**0.1**	**-**	0.3	40	4	15	222402.0210	**0.4**	**3**	0.4	40	4	15
222402.0020	**0.1**	**-**	0.5	40	4	15	222402.0220	**0.4**	**3.5**	0.4	40	4	15
222402.0030	**0.2**	**0.5**	0.2	40	4	15	222402.0230	**0.4**	**4**	0.4	40	4	15
222402.0040	**0.2**	**1**	0.2	40	4	15	222402.0240	**0.4**	**5**	0.4	40	4	15
222402.0050	**0.2**	**1.5**	0.2	40	4	15	222402.0250	**0.4**	**6**	0.4	40	4	15
222402.0060	**0.2**	**2**	0.2	40	4	15	222402.0260	**0.4**	**8**	0.4	40	4	15
222402.0070	**0.2**	**2.5**	0.2	40	4	15	222402.0270	**0.4**	**10**	0.4	40	4	15
222402.0080	**0.2**	**3**	0.2	40	4	15	222402.0280	**0.5**	**1**	0.5	40	4	15
222402.0090	**0.3**	**1**	0.3	40	4	15	222402.0290	**0.5**	**2**	0.5	40	4	15
222402.0100	**0.3**	**1.5**	0.3	40	4	15	222402.0300	**0.5**	**3**	0.5	40	4	15
222402.0110	**0.3**	**2**	0.3	40	4	15	222402.0310	**0.5**	**4**	0.5	40	4	15
222402.0120	**0.3**	**2.5**	0.3	40	4	15	222402.0320	**0.5**	**5**	0.5	40	4	15
222402.0130	**0.3**	**3**	0.3	40	4	15	222402.0330	**0.5**	**6**	0.5	40	4	15
222402.0140	**0.3**	**3.5**	0.3	40	4	15	222402.0340	**0.5**	**8**	0.5	40	4	15
222402.0150	**0.3**	**4**	0.3	40	4	15	222402.0350	**0.5**	**10**	0.5	40	4	15
222402.0160	**0.3**	**5**	0.3	40	4	15	222402.0360	**0.5**	**12**	0.5	45	4	15
222402.0170	**0.4**	**1**	0.4	40	4	15	222402.0370	**0.5**	**14**	0.5	45	4	15
222402.0180	**0.4**	**1.5**	0.4	40	4	15	222402.0380	**0.6**	**1**	0.6	40	4	15
222402.0190	**0.4**	**2**	0.4	40	4	15	222402.0390	**0.6**	**2**	0.6	40	4	15
222402.0200	**0.4**	**2.5**	0.4	40	4	15	222402.0400	**0.6**	**3**	0.6	40	4	15

Order ID	d1 mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222402.0410	**0.6**	**4**	0.6	40	4	15
222402.0420	**0.6**	**5**	0.6	40	4	15
222402.0430	**0.6**	**6**	0.6	40	4	15
222402.0440	**0.6**	**8**	0.6	40	4	15
222402.0450	**0.6**	**10**	0.6	40	4	15
222402.0460	**0.6**	**12**	0.6	45	4	15
222402.0470	**0.6**	**14**	0.6	45	4	15
222402.0480	**0.6**	**16**	0.6	45	4	15
222402.0490	**0.7**	**2**	0.7	40	4	15
222402.0500	**0.7**	**4**	0.7	40	4	15
222402.0510	**0.7**	**6**	0.7	40	4	15
222402.0520	**0.7**	**8**	0.7	40	4	15
222402.0530	**0.7**	**10**	0.7	40	4	15
222402.0540	**0.7**	**12**	0.7	45	4	15
222402.0550	**0.8**	**2**	0.8	40	4	15
222402.0560	**0.8**	**3**	0.8	40	4	15
222402.0570	**0.8**	**4**	0.8	40	4	15
222402.0580	**0.8**	**5**	0.8	40	4	15
222402.0590	**0.8**	**6**	0.8	40	4	15
222402.0600	**0.8**	**8**	0.8	40	4	15
222402.0610	**0.8**	**10**	0.8	40	4	15
222402.0620	**0.8**	**12**	0.8	45	4	15
222402.0630	**0.8**	**14**	0.8	45	4	15
222402.0640	**0.9**	**6**	0.8	40	4	15
222402.0650	**0.9**	**8**	0.9	40	4	15
222402.0660	**0.9**	**10**	0.9	40	4	15
222402.0670	**1**	**2**	1	45	4	15
222402.0680	**1**	**3**	1	45	4	15
222402.0690	**1**	**4**	1	45	4	15
222402.0700	**1**	**5**	1	45	4	15
222402.0710	**1**	**6**	1	45	4	15
222402.0720	**1**	**8**	1	45	4	15
222402.0730	**1**	**10**	1	45	4	15
222402.0740	**1**	**12**	1	45	4	15
222402.0750	**1**	**14**	1	45	4	15
222402.0760	**1**	**16**	1	50	4	15
222402.0770	**1**	**18**	1	50	4	15
222402.0780	**1**	**20**	1	50	4	15
222402.0790	**1**	**25**	1	60	4	15
222402.0800	**1**	**30**	1	70	4	15
222402.0810	**1.2**	**4**	1.2	45	4	15
222402.0820	**1.2**	**6**	1.2	45	4	15
222402.0830	**1.2**	**8**	1.2	45	4	15
222402.0840	**1.2**	**10**	1.2	45	4	15
222402.0850	**1.2**	**12**	1.2	45	4	15
222402.0860	**1.2**	**16**	1.2	50	4	15
222402.0870	**1.2**	**20**	1.2	50	4	15
222402.0880	**1.2**	**25**	1.2	60	4	15
222402.0900	**1.4**	**6**	1.4	45	4	15
222402.0910	**1.4**	**8**	1.4	45	4	15
222402.0920	**1.4**	**10**	1.4	45	4	15
222402.0930	**1.4**	**14**	1.4	45	4	15
222402.0940	**1.4**	**16**	1.4	50	4	15
222402.0950	**1.4**	**20**	1.4	50	4	15
222402.0960	**1.5**	**4**	1.5	45	4	15
222402.0970	**1.5**	**6**	1.5	45	4	15
222402.0980	**1.5**	**8**	1.5	45	4	15
222402.0990	**1.5**	**10**	1.5	45	4	15
222402.1000	**1.5**	**12**	1.5	45	4	15
222402.1010	**1.5**	**14**	1.5	50	4	15
222402.1020	**1.5**	**16**	1.5	50	4	15
222402.1030	**1.5**	**18**	1.5	50	4	15
222402.1040	**1.5**	**20**	1.5	50	4	15
222402.1050	**1.5**	**25**	1.5	60	4	15
222402.1060	**1.5**	**30**	1.5	70	4	15
222402.1070	**1.6**	**10**	1.6	45	4	15
222402.1080	**1.6**	**14**	1.6	45	4	15
222402.1090	**1.6**	**18**	1.6	60	4	15
222402.1100	**1.8**	**10**	1.8	45	4	15
222402.1110	**1.8**	**14**	1.8	45	4	15
222402.1120	**1.8**	**18**	1.8	50	4	15
222402.1130	**2**	**4**	2	45	4	15
222402.1140	**2**	**6**	2	45	4	15
222402.1150	**2**	**8**	2	45	4	15
222402.1160	**2**	**10**	2	45	4	15
222402.1170	**2**	**12**	2	45	4	15
222402.1180	**2**	**14**	2	45	4	15
222402.1190	**2**	**16**	2	50	4	15
222402.1200	**2**	**18**	2	50	4	15
222402.1210	**2**	**20**	2	50	4	15
222402.1220	**2**	**22**	2	60	4	15
222402.1230	**2**	**25**	2	60	4	15
222402.1240	**2**	**30**	2	60	4	15
222402.1250	**2**	**35**	2	70	4	15
222402.1260	**2**	**40**	2	80	4	15
222402.1270	**2**	**45**	2	80	4	15
222402.1280	**2**	**50**	2	90	4	15
222402.1290	**2.5**	**8**	2.5	45	4	15
222402.1300	**2.5**	**10**	2.5	45	4	15
222402.1310	**2.5**	**12**	2.5	45	4	15
222402.1320	**2.5**	**16**	2.5	50	4	15
222402.1330	**2.5**	**20**	2.5	50	4	15
222402.1340	**2.5**	**25**	2.5	60	4	15
222402.1350	**2.5**	**30**	2.5	70	4	15
222402.1360	**2.5**	**35**	2.5	70	4	15
222402.1370	**2.5**	**40**	2.5	80	4	15
222402.1380	**2.5**	**50**	2.5	90	4	15
222402.1390	**3**	**6**	3	45	6	15
222402.1400	**3**	**8**	3	45	6	15
222402.1410	**3**	**10**	3	45	6	15
222402.1420	**3**	**12**	3	50	6	15
222402.1430	**3**	**16**	3	55	6	15
222402.1440	**3**	**20**	3	60	6	15
222402.1450	**3**	**25**	3	65	6	15
222402.1460	**3**	**30**	3	70	6	15
222402.1470	**3**	**35**	3	75	6	15
222402.1480	**3**	**40**	3	80	6	15
222402.1490	**3**	**45**	3	90	6	15
222402.1500	**3**	**50**	3	100	6	15
222402.1510	**3**	**60**	3	100	6	15
222402.1520	**4**	**8**	4	50	6	15
222402.1530	**4**	**10**	4	50	6	15
222402.1540	**4**	**12**	4	50	6	15
222402.1550	**4**	**16**	4	55	6	15
222402.1560	**4**	**20**	4	60	6	15
222402.1570	**4**	**25**	4	65	6	15
222402.1580	**4**	**30**	4	70	6	15
222402.1590	**4**	**35**	4	75	6	15
222402.1600	**4**	**40**	4	80	6	15
222402.1610	**4**	**45**	4	90	6	15
222402.1620	**4**	**50**	4	100	6	15
222402.1630	**4**	**55**	4	100	6	15
222402.1640	**4**	**60**	4	100	6	15
222402.1650	**5**	**16**	6	55	6	15
222402.1660	**5**	**20**	6	60	6	15
222402.1670	**5**	**25**	6	65	6	15
222402.1680	**5**	**30**	6	70	6	15
222402.1690	**5**	**35**	6	75	6	15
222402.1700	**5**	**40**	6	80	6	15
222402.1710	**5**	**50**	6	100	6	15
222402.1720	**5**	**60**	6	100	6	15
222402.1730	**6**	**20**	10	60	6	-
222402.1740	**6**	**30**	10	75	6	-
222402.1750	**6**	**40**	10	80	6	-
222402.1760	**6**	**50**	10	90	6	-
222402.1770	**6**	**60**	10	110	6	-
222402.1780	**8**	**20**	12	65	8	-
222402.1790	**8**	**30**	12	80	8	-
222402.1800	**8**	**40**	12	100	8	-
222402.1810	**10**	**25**	15	70	10	-
222402.1820	**10**	**35**	15	80	10	-
222402.1830	**10**	**45**	15	100	10	-
222402.1840	**12**	**30**	18	80	12	-
222402.1850	**12**	**40**	18	100	12	-
222402.1860	**12**	**50**	18	120	12	-

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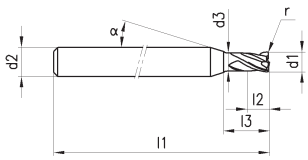
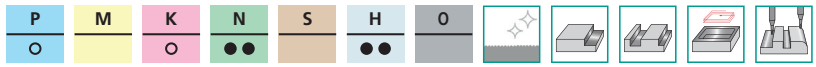


222403 FUTURO SC shoulder/ slot milling cutters

with corner radius





Made of solid hard metal, TiAlN-SiN coating, with cylindrical shank, According to factory standard, Nominal size Ø 0.8 - 12 mm, Number of teeth 4, With corner radius, Milling cutter with 30° helix angle, HSC (High-Speed Cutting) milling technology
Secondary application: Steel (ISO-P), Secondary application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N), Main application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling, For micro milling

Application:
Corner and slot milling cutters with corner radius **can be used up to 58 HRC**. Suitable for non-ferrous metals and hardened steels.

Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222403.0010	**0.8**	**0.02**	**2**	0.8	45	4	15	222403.0670	**1.2**	**0.1**	**8**	1.2	45	4	15
222403.0020	**0.8**	**0.02**	**4**	0.8	45	4	15	222403.0680	**1.2**	**0.1**	**10**	1.2	50	4	15
222403.0030	**0.8**	**0.02**	**6**	0.8	45	4	15	222403.0690	**1.2**	**0.1**	**12**	1.2	50	4	15
222403.0040	**0.8**	**0.02**	**8**	0.8	45	4	15	222403.0700	**1.2**	**0.1**	**16**	1.2	50	4	15
222403.0050	**0.8**	**0.02**	**10**	0.8	45	4	15	222403.0710	**1.2**	**0.1**	**20**	1.2	50	4	15
222403.0060	**0.8**	**0.05**	**2**	0.8	45	4	15	222403.0720	**1.2**	**0.2**	**4**	1.2	45	4	15
222403.0070	**0.8**	**0.05**	**4**	0.8	45	4	15	222403.0730	**1.2**	**0.2**	**6**	1.2	45	4	15
222403.0080	**0.8**	**0.05**	**6**	0.8	45	4	15	222403.0740	**1.2**	**0.2**	**8**	1.2	45	4	15
222403.0090	**0.8**	**0.05**	**8**	0.8	45	4	15	222403.0750	**1.2**	**0.2**	**10**	1.2	50	4	15
222403.0100	**0.8**	**0.05**	**10**	0.8	45	4	15	222403.0760	**1.2**	**0.2**	**12**	1.2	50	4	15
222403.0110	**0.8**	**0.1**	**2**	0.8	45	4	15	222403.0770	**1.2**	**0.2**	**16**	1.2	50	4	15
222403.0120	**0.8**	**0.1**	**4**	0.8	45	4	15	222403.0780	**1.2**	**0.2**	**20**	1.2	50	4	15
222403.0130	**0.8**	**0.1**	**6**	0.8	45	4	15	222403.0790	**1.2**	**0.3**	**4**	1.2	45	4	15
222403.0140	**0.8**	**0.1**	**8**	0.8	45	4	15	222403.0800	**1.2**	**0.3**	**6**	1.2	45	4	15
222403.0150	**0.8**	**0.1**	**10**	0.8	45	4	15	222403.0810	**1.2**	**0.3**	**8**	1.2	45	4	15
222403.0160	**1**	**0.02**	**4**	1	45	4	15	222403.0820	**1.2**	**0.3**	**10**	1.2	50	4	15
222403.0170	**1**	**0.02**	**6**	1	45	4	15	222403.0830	**1.2**	**0.3**	**12**	1.2	50	4	15
222403.0180	**1**	**0.02**	**8**	1	45	4	15	222403.0840	**1.2**	**0.3**	**20**	1.2	50	4	15
222403.0190	**1**	**0.02**	**10**	1	50	4	15	222403.0850	**1.5**	**0.02**	**6**	1.5	45	4	15
222403.0200	**1**	**0.02**	**12**	1	50	4	15	222403.0860	**1.5**	**0.02**	**8**	1.5	45	4	15
222403.0210	**1**	**0.02**	**16**	1	50	4	15	222403.0870	**1.5**	**0.02**	**10**	1.5	50	4	15
222403.0220	**1**	**0.02**	**20**	1	50	4	15	222403.0880	**1.5**	**0.02**	**12**	1.5	50	4	15
222403.0230	**1**	**0.05**	**4**	1	45	4	15	222403.0890	**1.5**	**0.02**	**16**	1.5	50	4	15
222403.0240	**1**	**0.05**	**6**	1	45	4	15	222403.0900	**1.5**	**0.02**	**20**	1.5	50	4	15
222403.0250	**1**	**0.05**	**8**	1	45	4	15	222403.0910	**1.5**	**0.02**	**22**	1.5	60	4	15
222403.0260	**1**	**0.05**	**10**	1	50	4	15	222403.0920	**1.5**	**0.02**	**25**	1.5	60	4	15
222403.0270	**1**	**0.05**	**12**	1	50	4	15	222403.0930	**1.5**	**0.05**	**6**	1.5	45	4	15
222403.0280	**1**	**0.05**	**16**	1	50	4	15	222403.0940	**1.5**	**0.05**	**8**	1.5	45	4	15
222403.0290	**1**	**0.05**	**20**	1	50	4	15	222403.0950	**1.5**	**0.05**	**10**	1.5	50	4	15
222403.0300	**1**	**0.1**	**4**	1	45	4	15	222403.0960	**1.5**	**0.05**	**12**	1.5	50	4	15
222403.0310	**1**	**0.1**	**6**	1	45	4	15	222403.0970	**1.5**	**0.05**	**16**	1.5	50	4	15
222403.0320	**1**	**0.1**	**8**	1	45	4	15	222403.0980	**1.5**	**0.05**	**20**	1.5	50	4	15
222403.0330	**1**	**0.1**	**10**	1	50	4	15	222403.0990	**1.5**	**0.05**	**22**	1.5	60	4	15
222403.0340	**1**	**0.1**	**12**	1	50	4	15	222403.1000	**1.5**	**0.05**	**25**	1.5	60	4	15
222403.0350	**1**	**0.1**	**16**	1	50	4	15	222403.1010	**1.5**	**0.1**	**6**	1.5	45	4	15
222403.0360	**1**	**0.1**	**20**	1	50	4	15	222403.1020	**1.5**	**0.1**	**8**	1.5	45	4	15
222403.0370	**1**	**0.2**	**4**	1	45	4	15	222403.1030	**1.5**	**0.1**	**10**	1.5	50	4	15
222403.0380	**1**	**0.2**	**6**	1	45	4	15	222403.1040	**1.5**	**0.1**	**12**	1.5	50	4	15
222403.0390	**1**	**0.2**	**8**	1	45	4	15	222403.1050	**1.5**	**0.1**	**16**	1.5	50	4	15
222403.0400	**1**	**0.2**	**10**	1	50	4	15	222403.1060	**1.5**	**0.1**	**20**	1.5	50	4	15
222403.0410	**1**	**0.2**	**12**	1	50	4	15	222403.1070	**1.5**	**0.1**	**22**	1.5	60	4	15
222403.0420	**1**	**0.2**	**16**	1	50	4	15	222403.1080	**1.5**	**0.1**	**25**	1.5	60	4	15
222403.0430	**1**	**0.2**	**20**	1	50	4	15	222403.1090	**1.5**	**0.2**	**6**	1.5	45	4	15
222403.0440	**1**	**0.3**	**4**	1	45	4	15	222403.1100	**1.5**	**0.2**	**8**	1.5	45	4	15
222403.0450	**1**	**0.3**	**6**	1	45	4	15	222403.1110	**1.5**	**0.2**	**10**	1.5	50	4	15
222403.0460	**1**	**0.3**	**8**	1	45	4	15	222403.1120	**1.5**	**0.2**	**12**	1.5	50	4	15
222403.0470	**1**	**0.3**	**10**	1	50	4	15	222403.1130	**1.5**	**0.2**	**16**	1.5	50	4	15
222403.0480	**1**	**0.3**	**12**	1	50	4	15	222403.1140	**1.5**	**0.2**	**20**	1.5	50	4	15
222403.0490	**1**	**0.3**	**16**	1	50	4	15	222403.1150	**1.5**	**0.2**	**22**	1.5	60	4	15
222403.0500	**1**	**0.3**	**20**	1	50	4	15	222403.1160	**1.5**	**0.2**	**25**	1.5	60	4	15
222403.0510	**1.2**	**0.02**	**4**	1.2	45	4	15	222403.1170	**1.5**	**0.3**	**6**	1.5	45	4	15
222403.0520	**1.2**	**0.02**	**6**	1.2	45	4	15	222403.1180	**1.5**	**0.3**	**8**	1.5	45	4	15
222403.0530	**1.2**	**0.02**	**8**	1.2	45	4	15	222403.1190	**1.5**	**0.3**	**10**	1.5	50	4	15
222403.0540	**1.2**	**0.02**	**10**	1.2	50	4	15	222403.1200	**1.5**	**0.3**	**12**	1.5	50	4	15
222403.0550	**1.2**	**0.02**	**12**	1.2	50	4	15	222403.1210	**1.5**	**0.3**	**16**	1.5	50	4	15
222403.0560	**1.2**	**0.02**	**16**	1.2	50	4	15	222403.1220	**1.5**	**0.3**	**20**	1.5	50	4	15
222403.0570	**1.2**	**0.02**	**20**	1.2	50	4	15	222403.1230	**1.5**	**0.3**	**22**	1.5	60	4	15
222403.0580	**1.2**	**0.05**	**4**	1.2	45	4	15	222403.1240	**1.5**	**0.3**	**25**	1.5	60	4	15
222403.0590	**1.2**	**0.05**	**6**	1.2	45	4	15	222403.1250	**1.5**	**0.5**	**6**	1.5	45	4	15
222403.0600	**1.2**	**0.05**	**8**	1.2	45	4	15	222403.1260	**1.5**	**0.5**	**8**	1.5	45	4	15
222403.0610	**1.2**	**0.05**	**10**	1.2	50	4	15	222403.1270	**1.5**	**0.5**	**10**	1.5	50	4	15
222403.0620	**1.2**	**0.05**	**12**	1.2	50	4	15	222403.1280	**1.5**	**0.5**	**12**	1.5	50	4	15
222403.0630	**1.2**	**0.05**	**16**	1.2	50	4	15	222403.1290	**1.5**	**0.5**	**16**	1.5	50	4	15
222403.0640	**1.2**	**0.05**	**20**	1.2	50	4	15	222403.1300	**1.5**	**0.5**	**20**	1.5	50	4	15
222403.0650	**1.2**	**0.1**	**4**	1.2	45	4	15	222403.1310	**1.5**	**0.5**	**22**	1.5	60	4	15
222403.0660	**1.2**	**0.1**	**6**	1.2	45	4	15	222403.1320	**1.5**	**0.5**	**25**	1.5	60	4	15

Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222403.1330	**2**	**0.02**	**6**	2	45	4	15	222403.2230	**2.5**	**0.5**	**10**	2.5	50	4	15
222403.1340	**2**	**0.02**	**8**	2	45	4	15	222403.2240	**2.5**	**0.5**	**12**	2.5	50	4	15
222403.1350	**2**	**0.02**	**10**	2	45	4	15	222403.2250	**2.5**	**0.5**	**16**	2.5	50	4	15
222403.1360	**2**	**0.02**	**12**	2	50	4	15	222403.2260	**2.5**	**0.5**	**20**	2.5	50	4	15
222403.1370	**2**	**0.02**	**14**	2	50	4	15	222403.2270	**2.5**	**0.5**	**25**	2.5	60	4	15
222403.1380	**2**	**0.02**	**16**	2	50	4	15	222403.2280	**2.5**	**0.5**	**30**	2.5	70	4	15
222403.1390	**2**	**0.02**	**18**	2	50	4	15	222403.2290	**3**	**0.1**	**10**	3	50	6	15
222403.1400	**2**	**0.02**	**20**	2	50	4	15	222403.2300	**3**	**0.1**	**16**	3	55	6	15
222403.1410	**2**	**0.02**	**22**	2	60	4	15	222403.2310	**3**	**0.1**	**20**	3	60	6	15
222403.1420	**2**	**0.02**	**25**	2	60	4	15	222403.2320	**3**	**0.1**	**25**	3	65	6	15
222403.1430	**2**	**0.02**	**30**	2	70	4	15	222403.2330	**3**	**0.1**	**30**	3	70	6	15
222403.1440	**2**	**0.02**	**35**	2	70	4	15	222403.2340	**3**	**0.1**	**35**	3	75	6	15
222403.1450	**2**	**0.05**	**6**	2	45	4	15	222403.2350	**3**	**0.1**	**40**	3	80	6	15
222403.1460	**2**	**0.05**	**8**	2	45	4	15	222403.2360	**3**	**0.1**	**50**	3	100	6	15
222403.1470	**2**	**0.05**	**10**	2	50	4	15	222403.2370	**3**	**0.2**	**10**	3	50	6	15
222403.1480	**2**	**0.05**	**12**	2	50	4	15	222403.2380	**3**	**0.2**	**16**	3	55	6	15
222403.1490	**2**	**0.05**	**14**	2	50	4	15	222403.2390	**3**	**0.2**	**20**	3	60	6	15
222403.1500	**2**	**0.05**	**16**	2	50	4	15	222403.2400	**3**	**0.2**	**25**	3	65	6	15
222403.1510	**2**	**0.05**	**18**	2	50	4	15	222403.2410	**3**	**0.2**	**30**	3	70	6	15
222403.1520	**2**	**0.05**	**20**	2	50	4	15	222403.2420	**3**	**0.2**	**35**	3	75	6	15
222403.1530	**2**	**0.05**	**22**	2	60	4	15	222403.2430	**3**	**0.2**	**40**	3	80	6	15
222403.1540	**2**	**0.05**	**25**	2	60	4	15	222403.2440	**3**	**0.2**	**50**	3	100	6	15
222403.1550	**2**	**0.05**	**30**	2	70	4	15	222403.2450	**3**	**0.3**	**10**	3	50	6	15
222403.1560	**2**	**0.05**	**35**	2	70	4	15	222403.2460	**3**	**0.3**	**16**	3	55	6	15
222403.1570	**2**	**0.1**	**6**	2	45	4	15	222403.2470	**3**	**0.3**	**20**	3	60	6	15
222403.1580	**2**	**0.1**	**8**	2	45	4	15	222403.2480	**3**	**0.3**	**25**	3	65	6	15
222403.1590	**2**	**0.1**	**10**	2	50	4	15	222403.2490	**3**	**0.3**	**30**	3	70	6	15
222403.1600	**2**	**0.1**	**12**	2	50	4	15	222403.2500	**3**	**0.3**	**35**	3	75	6	15
222403.1610	**2**	**0.1**	**14**	2	50	4	15	222403.2510	**3**	**0.3**	**40**	3	80	6	15
222403.1620	**2**	**0.1**	**16**	2	50	4	15	222403.2520	**3**	**0.3**	**50**	3	100	6	15
222403.1630	**2**	**0.1**	**18**	2	50	4	15	222403.2530	**3**	**0.5**	**10**	3	50	6	15
222403.1640	**2**	**0.1**	**20**	2	50	4	15	222403.2540	**3**	**0.5**	**16**	3	55	6	15
222403.1650	**2**	**0.1**	**22**	2	60	4	15	222403.2550	**3**	**0.5**	**20**	3	60	6	15
222403.1660	**2**	**0.1**	**25**	2	60	4	15	222403.2560	**3**	**0.5**	**25**	3	65	6	15
222403.1670	**2**	**0.1**	**30**	2	70	4	15	222403.2570	**3**	**0.5**	**30**	3	70	6	15
222403.1680	**2**	**0.1**	**35**	2	70	4	15	222403.2580	**3**	**0.5**	**35**	3	75	6	15
222403.1690	**2**	**0.2**	**6**	2	45	4	15	222403.2590	**3**	**0.5**	**40**	3	80	6	15
222403.1700	**2**	**0.2**	**8**	2	45	4	15	222403.2600	**3**	**0.5**	**50**	3	100	6	15
222403.1710	**2**	**0.2**	**10**	2	50	4	15	222403.2610	**3**	**1**	**10**	3	50	6	15
222403.1720	**2**	**0.2**	**12**	2	50	4	15	222403.2620	**3**	**1**	**16**	3	55	6	15
222403.1730	**2**	**0.2**	**14**	2	50	4	15	222403.2630	**3**	**1**	**20**	3	60	6	15
222403.1740	**2**	**0.2**	**16**	2	50	4	15	222403.2640	**3**	**1**	**25**	3	65	6	15
222403.1750	**2**	**0.2**	**18**	2	50	4	15	222403.2650	**3**	**1**	**30**	3	70	6	15
222403.1760	**2**	**0.2**	**20**	2	50	4	15	222403.2660	**3**	**1**	**35**	3	75	6	15
222403.1770	**2**	**0.2**	**22**	2	60	4	15	222403.2670	**3**	**1**	**40**	3	80	6	15
222403.1780	**2**	**0.2**	**25**	2	60	4	15	222403.2680	**3**	**1**	**50**	3	100	6	15
222403.1790	**2**	**0.2**	**30**	2	70	4	15	222403.2690	**4**	**0.1**	**12**	4	50	4	-
222403.1800	**2**	**0.2**	**35**	2	70	4	15	222403.2700	**4**	**0.1**	**20**	4	70	4	-
222403.1810	**2**	**0.3**	**6**	2	45	4	15	222403.2710	**4**	**0.1**	**13**	4	55	6	15
222403.1820	**2**	**0.3**	**8**	2	45	4	15	222403.2720	**4**	**0.1**	**16**	4	55	6	15
222403.1830	**2**	**0.3**	**10**	2	50	4	15	222403.2730	**4**	**0.1**	**20**	4	60	6	15
222403.1840	**2**	**0.3**	**12**	2	50	4	15	222403.2740	**4**	**0.1**	**25**	4	65	6	15
222403.1850	**2**	**0.3**	**14**	2	50	4	15	222403.2750	**4**	**0.1**	**30**	4	70	6	15
222403.1860	**2**	**0.3**	**16**	2	50	4	15	222403.2760	**4**	**0.1**	**35**	4	75	6	15
222403.1870	**2**	**0.3**	**18**	2	50	4	15	222403.2770	**4**	**0.1**	**40**	4	80	6	15
222403.1880	**2**	**0.3**	**20**	2	50	4	15	222403.2780	**4**	**0.1**	**45**	4	90	6	15
222403.1890	**2**	**0.3**	**22**	2	60	4	15	222403.2790	**4**	**0.1**	**50**	4	100	6	15
222403.1900	**2**	**0.3**	**25**	2	60	4	15	222403.2800	**4**	**0.2**	**12**	4	50	4	-
222403.1910	**2**	**0.3**	**30**	2	70	4	15	222403.2810	**4**	**0.2**	**20**	4	70	4	-
222403.1920	**2**	**0.3**	**35**	2	70	4	15	222403.2820	**4**	**0.2**	**13**	4	55	6	15
222403.1930	**2**	**0.5**	**6**	2	45	4	15	222403.2830	**4**	**0.2**	**16**	4	55	6	15
222403.1940	**2**	**0.5**	**8**	2	45	4	15	222403.2840	**4**	**0.2**	**20**	4	60	6	15
222403.1950	**2**	**0.5**	**10**	2	50	4	15	222403.2850	**4**	**0.2**	**25**	4	65	6	15
222403.1960	**2**	**0.5**	**12**	2	50	4	15	222403.2860	**4**	**0.2**	**30**	4	70	6	15
222403.1970	**2**	**0.5**	**14**	2	50	4	15	222403.2870	**4**	**0.2**	**35**	4	75	6	15
222403.1980	**2**	**0.5**	**16**	2	50	4	15	222403.2880	**4**	**0.2**	**40**	4	80	6	15
222403.1990	**2**	**0.5**	**18**	2	50	4	15	222403.2890	**4**	**0.2**	**45**	4	90	6	15
222403.2000	**2**	**0.5**	**20**	2	50	4	15	222403.2900	**4**	**0.2**	**50**	4	100	6	15
222403.2010	**2**	**0.5**	**22**	2	60	4	15	222403.2910	**4**	**0.3**	**12**	4	50	4	15
222403.2020	**2**	**0.5**	**25**	2	60	4	15	222403.2920	**4**	**0.3**	**20**	4	70	4	15
222403.2030	**2**	**0.5**	**30**	2	70	4	15	222403.2930	**4**	**0.3**	**13**	4	55	6	15
222403.2040	**2**	**0.5**	**35**	2	70	4	15	222403.2940	**4**	**0.3**	**16**	4	55	6	15
222403.2050	**2.5**	**0.1**	**10**	2.5	50	4	15	222403.2950	**4**	**0.3**	**20**	4	60	6	15
222403.2060	**2.5**	**0.1**	**12**	2.5	50	4	15	222403.2960	**4**	**0.3**	**25**	4	65	6	15
222403.2070	**2.5**	**0.1**	**16**	2.5	50	4	15	222403.2970	**4**	**0.3**	**30**	4	70	6	15
222403.2080	**2.5**	**0.1**	**20**	2.5	50	4	15	222403.2980	**4**	**0.3**	**35**	4	75	6	15
222403.2090	**2.5**	**0.1**	**25**	2.5	60	4	15	222403.2990	**4**	**0.3**	**40**	4	80	6	15
222403.2100	**2.5**	**0.1**	**30**	2.5	70	4	15	222403.3000	**4**	**0.3**	**45**	4	90	6	15
222403.2110	**2.5**	**0.2**	**10**	2.5	50	4	15	222403.3010	**4**	**0.3**	**50**	4	100	6	15
222403.2120	**2.5**	**0.2**	**12**	2.5	50	4	15	222403.3020	**4**	**0.5**	**12**	4	50	4	-
222403.2130	**2.5**	**0.2**	**16**	2.5	50	4	15	222403.3030	**4**	**0.5**	**20**	4	70	4	-
222403.2140	**2.5**	**0.2**	**20**	2.5	50	4	15	222403.3040	**4**	**0.5**	**13**	4	55	6	15
222403.2150	**2.5**	**0.2**	**25**	2.5	60	4	15	222403.3050	**4**	**0.5**	**16**	4	55	6	15
222403.2160	**2.5**	**0.2**	**30**	2.5	70	4	15	222403.3060	**4**	**0.5**	**20**	4	60	6	15
222403.2170	**2.5**	**0.3**	**10**	2.5	50	4	15	222403.3070	**4**	**0.5**	**25**	4	65	6	15
222403.2180	**2.5**	**0.3**	**12**	2.5	50	4	15	222403.3080	**4**	**0.5**	**30**	4	70	6	15
222403.2190	**2.5**	**0.3**	**16**	2.5	50	4	15	222403.3090	**4**	**0.5**	**35**	4	75	6	15
222403.2200	**2.5**	**0.3**	**20**	2.5	50	4	15	222403.3100	**4**	**0.5**	**40**	4	80	6	15
222403.2210	**2.5**	**0.3**	**25**	2.5	60	4	15	222403.3120	**4**	**0.5**	**50**	4	100	6	15
222403.2220	**2.5**	**0.3**	**30**	2.5	70	4	15	222403.3130	**4**	**1**	**12**	4	50	4	-

Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222403.3140	**4**	**1**	**20**	4	70	4	-	222403.3520	**6**	**0.3**	**50**	7	100	6	-
222403.3150	**4**	**1**	**13**	4	55	6	15	222403.3530	**6**	**0.5**	**20**	7	60	6	-
222403.3160	**4**	**1**	**16**	4	55	6	15	222403.3540	**6**	**0.5**	**40**	7	80	6	-
222403.3170	**4**	**1**	**20**	4	60	6	15	222403.3550	**6**	**0.5**	**50**	7	100	6	-
222403.3180	**4**	**1**	**25**	4	65	6	15	222403.3560	**6**	**1**	**20**	7	60	6	-
222403.3190	**4**	**1**	**30**	4	70	6	15	222403.3570	**6**	**1**	**40**	7	80	6	-
222403.3200	**4**	**1**	**35**	4	75	6	15	222403.3580	**6**	**1**	**50**	7	100	6	-
222403.3210	**4**	**1**	**40**	4	80	6	15	222403.3590	**6**	**1.5**	**20**	7	60	6	-
222403.3220	**4**	**1**	**45**	4	90	6	15	222403.3600	**6**	**1.5**	**40**	7	80	6	-
222403.3230	**4**	**1**	**50**	4	100	6	15	222403.3610	**6**	**1.5**	**50**	7	100	6	-
222403.3240	**5**	**0.1**	**16**	5	60	6	15	222403.3620	**8**	**0.2**	**22**	9	65	8	-
222403.3250	**5**	**0.1**	**30**	5	70	6	15	222403.3630	**8**	**0.3**	**22**	9	65	8	-
222403.3260	**5**	**0.1**	**40**	5	80	6	15	222403.3640	**8**	**0.5**	**22**	9	65	8	-
222403.3270	**5**	**0.1**	**50**	5	100	6	15	222403.3650	**8**	**0.5**	**40**	9	100	8	-
222403.3280	**5**	**0.2**	**16**	5	60	6	15	222403.3660	**8**	**1**	**22**	9	65	8	-
222403.3290	**5**	**0.2**	**30**	5	70	6	15	222403.3670	**8**	**1**	**40**	9	100	8	-
222403.3300	**5**	**0.2**	**40**	5	80	6	15	222403.3680	**8**	**1.5**	**22**	9	65	8	-
222403.3310	**5**	**0.2**	**50**	5	100	6	15	222403.3690	**8**	**1.5**	**40**	9	100	8	-
222403.3320	**5**	**0.3**	**16**	5	60	6	15	222403.3700	**8**	**2**	**22**	9	65	8	-
222403.3330	**5**	**0.3**	**30**	5	70	6	15	222403.3710	**10**	**0.2**	**24**	11	70	10	-
222403.3340	**5**	**0.3**	**40**	5	80	6	15	222403.3720	**10**	**0.3**	**24**	11	70	10	-
222403.3350	**5**	**0.3**	**50**	5	100	6	15	222403.3730	**10**	**0.5**	**24**	11	70	10	-
222403.3360	**5**	**0.5**	**16**	5	60	6	15	222403.3740	**10**	**0.5**	**40**	11	100	10	-
222403.3370	**5**	**0.5**	**30**	5	70	6	15	222403.3750	**10**	**1**	**24**	11	70	10	-
222403.3380	**5**	**0.5**	**40**	5	80	6	15	222403.3760	**10**	**1**	**40**	11	100	10	-
222403.3390	**5**	**0.5**	**50**	5	100	6	15	222403.3770	**10**	**1.5**	**24**	11	70	10	-
222403.3400	**5**	**1**	**16**	5	60	6	15	222403.3780	**10**	**1.5**	**40**	11	100	10	-
222403.3410	**5**	**1**	**30**	5	70	6	15	222403.3790	**10**	**2**	**24**	11	70	10	-
222403.3420	**5**	**1**	**40**	5	80	6	15	222403.3800	**10**	**2.5**	**24**	11	70	10	-
222403.3430	**5**	**1**	**50**	5	100	6	15	222403.3810	**12**	**0.3**	**26**	13	80	12	-
222403.3440	**6**	**0.1**	**20**	7	60	6	-	222403.3820	**12**	**0.5**	**26**	13	80	12	-
222403.3450	**6**	**0.1**	**40**	7	80	6	-	222403.3830	**12**	**0.5**	**40**	13	110	12	-
222403.3460	**6**	**0.1**	**50**	7	100	6	-	222403.3840	**12**	**1**	**26**	13	80	12	-
222403.3470	**6**	**0.2**	**20**	7	60	6	-	222403.3850	**12**	**1**	**40**	13	110	12	-
222403.3480	**6**	**0.2**	**40**	7	80	6	-	222403.3860	**12**	**1.5**	**26**	13	80	12	-
222403.3490	**6**	**0.2**	**50**	7	100	6	-	222403.3870	**12**	**1.5**	**40**	13	110	12	-
222403.3500	**6**	**0.3**	**20**	7	60	6	-	222403.3880	**12**	**2**	**26**	13	80	12	-
222403.3510	**6**	**0.3**	**40**	7	80	6	-	222403.3890	**12**	**3**	**26**	13	80	12	-

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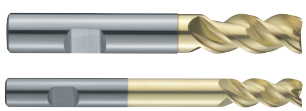
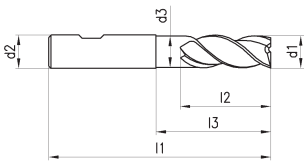
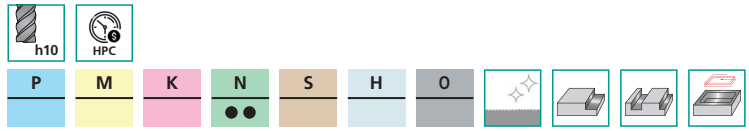




225740 FUTURO SC shoulder/ slot milling cutters



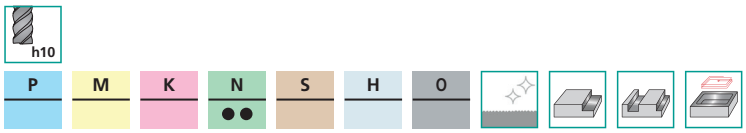


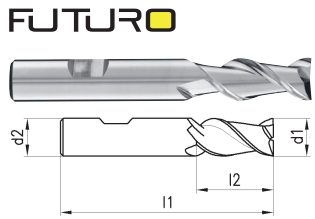
Made of solid hard metal, ZrN coating, with Weldon shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 3 - 25 mm, Number of teeth 3, With protective chamfer, Short version, with center cut, Milling cutter with 45° helix angle, End mill cutting edge tolerance h10 (according to ISO 286 fit system), HPC (High-Performance Cutting) milling technology
Main application: Non-ferrous metals (ISO N), For finishing, For shoulder milling, For slot milling, For pocket milling

Order ID	d1 mm	l2 mm	l3 mm	d2 mm	l1 mm	d3 mm	Protective chamfer mm
225740.0100	**3**	8	**12**	6	57	2.8	0.1
225740.0200	**4**	11	**18**	6	57	3.8	0.1
225740.0300	**5**	13	**18**	6	57	4.8	0.1
225740.0400	**6**	13	**18**	6	57	5.8	0.2
225740.0500	**6**	13	**42**	6	80	5.8	0.2
225740.0600	**8**	21	**25**	8	63	7.8	0.2
225740.0700	**8**	21	**62**	8	100	7.8	0.2
225740.0800	**10**	22	**30**	10	72	9.7	0.2
225740.0900	**10**	22	**58**	10	100	9.7	0.2
225740.1000	**12**	26	**36**	12	83	11.7	0.2
225740.1100	**12**	26	**73**	12	120	11.7	0.2
225740.1200	**16**	36	**42**	16	92	15.7	0.2
225740.1300	**16**	36	**100**	16	150	15.7	0.2
225740.1400	**18**	36	**42**	18	92	17.6	0.2
225740.1500	**18**	36	**100**	18	150	17.6	0.2
225740.1600	**20**	41	**52**	20	104	19.5	0.2
225740.1700	**20**	41	**98**	20	150	19.5	0.2
225740.1800	**25**	50	**65**	25	125	24.5	0.3

227620 FUTURO SC shoulder/ slot milling cutters







Made of solid hard metal, with Weldon shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 3 - 20 mm, Number of teeth 2, With sharp corner design, Long version, with center cut, Milling cutter with 45° helix angle, with polished chip flutes, End mill cutting edge tolerance h10 (according to ISO 286 fit system)
Main application: Non-ferrous metals (ISO N), For finishing, For shoulder milling, For slot milling, For pocket milling

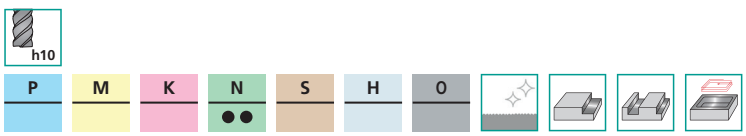
Properties
Highly polished flutes for optimum chip removal.

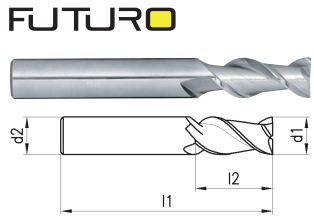
Application
For high chip volumes and superb surfaces in aluminium and copper materials.

Order ID	**d1** **mm**	l2 mm	d2 mm	l1 mm	Order ID	**d1** **mm**	l2 mm	d2 mm	l1 mm
227620.0100	**3**	8	6	57	227620.0600	**10**	22	10	72
227620.0200	**4**	11	6	57	227620.0700	**12**	26	12	83
227620.0300	**5**	13	6	57	227620.0900	**16**	32	16	92
227620.0400	**6**	13	6	57	227620.1100	**20**	38	20	104
227620.0500	**8**	19	8	63					

227650 FUTURO SC shoulder/ slot milling cutters







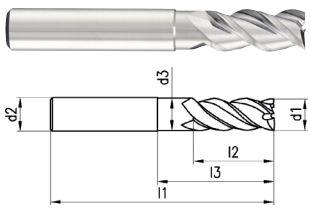
Made of solid hard metal, with cylindrical shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 3 - 16 mm, Number of teeth 2, With sharp corner design, Long version, with center cut, Milling cutter with 45° helix angle, with polished chip flutes, End mill cutting edge tolerance h10 (according to ISO 286 fit system)
Main application: Non-ferrous metals (ISO N), For finishing, For shoulder milling, For slot milling, For pocket milling

Properties
Highly polished flutes for optimum chip removal.

Application
For high chip volumes and superb surfaces in aluminium and copper materials.

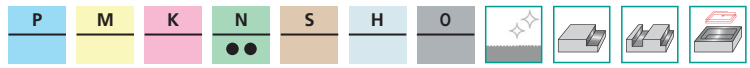
Order ID	**d1** **mm**	l2 mm	d2 mm	l1 mm	Order ID	**d1** **mm**	l2 mm	d2 mm	l1 mm
227650.0100	**3**	8	6	57	227650.0500	**8**	19	8	63
227650.0200	**4**	11	6	57	227650.0600	**10**	22	10	72
227650.0300	**5**	13	6	57	227650.0700	**12**	26	12	83
227650.0400	**6**	13	6	57	227650.0800	**16**	32	16	92

FUTURO



227665 FUTURO SC shoulder/ slot milling cutters



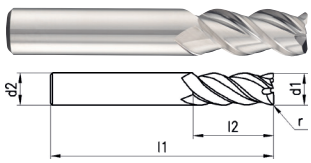


Made of solid hard metal, with cylindrical shank, Shaft tolerance h5, According to factory standard, Nominal size Ø 3 - 20 mm, Number of teeth 3, With sharp corner design, with center cut, Milling cutter with 45° helix angle, with polished chip flutes
Main application: Non-ferrous metals (ISO N), For finishing, For shoulder milling, For slot milling, For pocket milling

Properties
Highly polished flutes for optimum chip removal.
Application
For high chip volumes and superb surfaces in aluminium and copper materials.

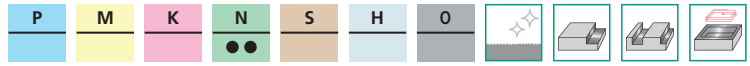
Order ID	**d1** **mm**	l2 mm	l3 mm	l1 mm	d2 mm	d3 mm
227665.0100	**3.0**	8	12	57	6	2.7
227665.0200	**4.0**	11	18	57	6	3.7
227665.0300	**5.0**	13	18	57	6	4.7
227665.0400	**6.0**	13	18	57	6	5.7
227665.0500	**8.0**	21	25	63	8	7.4
227665.0600	**10.0**	22	30	72	10	9.2
227665.0700	**12.0**	26	36	83	12	11
227665.0800	**16.0**	36	42	92	16	15
227665.0900	**20.0**	41	52	104	20	19

FUTURO



227670 FUTURO SC shoulder/ slot milling cutters





Made of solid hard metal, with cylindrical shank, According to factory standard, Nominal size Ø 3 - 16 mm, Number of teeth 3, With corner radius, Long version, with center cut, Milling cutter with 45° helix angle, with polished chip flutes
Main application: Non-ferrous metals (ISO N), For finishing, For shoulder milling, For slot milling, For pocket milling

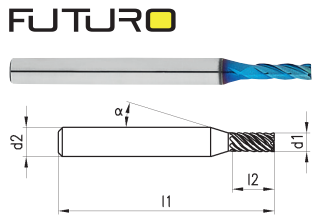
Properties
Highly polished flutes for optimum chip removal.
Application
For high chip volumes and superb surfaces in aluminium and copper materials.

Order ID	**d1** **mm**	**r** **mm**	l2 mm	l1 mm	d2 mm
227670.0100	**3.0**	**0.5**	12	57	6
227670.0200	**3.0**	**1**	12	57	6
227670.0300	**4.0**	**0.5**	15	57	6
227670.0400	**4.0**	**1**	15	57	6
227670.0500	**5.0**	**0.5**	20	57	6
227670.0600	**5.0**	**1**	20	57	6
227670.0700	**6.0**	**0.5**	20	65	6
227670.0800	**6.0**	**1**	20	65	6
227670.0900	**8.0**	**0.5**	22	65	8
227670.1000	**8.0**	**1**	22	65	8
227670.1100	**10.0**	**0.5**	25	70	10
227670.1200	**10.0**	**1**	25	70	10
227670.1300	**10.0**	**2**	25	70	10
227670.1400	**12.0**	**0.5**	25	75	12
227670.1500	**12.0**	**1**	25	75	12
227670.1600	**12.0**	**2**	25	75	12
227670.1700	**16.0**	**0.5**	35	90	16
227670.1800	**16.0**	**1**	35	90	16
227670.1900	**16.0**	**2**	35	90	16

222423 FUTURO SC shoulder/ slot milling cutters







Made of solid hard metal, Coated, with cylindrical shank, According to factory standard, Nominal size Ø 0.6 - 12 mm, Number of teeth 4, With sharp corner design, Milling cutter with 30° helix angle, HSC (High-Speed Cutting) milling technology
Secondary application: Steel (ISO-P), Main application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling

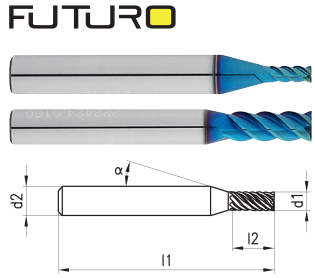
Application:
Corner and slot milling cutters for various roughing and finishing operations. **Can be used up to 68 HRC**.
Particularly suitable for machining hardened steels.

Order ID	**d1** mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	**d1** mm	l2 mm	l1 mm	d2 mm	alpha °
222423.0010	**0.6**	1.2	40	4	15	222423.0130	**3**	8	45	6	15
222423.0020	**0.8**	1.6	40	4	15	222423.0140	**3.5**	10	45	6	15
222423.0030	**1**	2.5	40	4	15	222423.0150	**4**	11	45	4	15
222423.0040	**1**	2.5	40	6	15	222423.0160	**4**	11	45	6	15
222423.0050	**1.2**	3	40	4	15	222423.0170	**4.5**	11	45	6	15
222423.0060	**1.5**	4	40	4	15	222423.0180	**5**	13	50	6	15
222423.0070	**1.5**	4	40	6	15	222423.0190	**5.5**	13	50	6	15
222423.0080	**2**	6	40	4	15	222423.0200	**6**	13	50	6	-
222423.0090	**2**	6	40	6	15	222423.0210	**8**	19	60	8	-
222423.0100	**2.5**	8	45	4	15	222423.0220	**10**	22	70	10	-
222423.0110	**2.5**	8	45	6	15	222423.0230	**12**	26	75	12	-
222423.0120	**3**	8	45	4	15						

222424 FUTURO SC shoulder/ slot milling cutters







Made of solid hard metal, Coated, with cylindrical shank, According to factory standard, Nominal size Ø 1 - 16 mm, Number of teeth 4, With sharp corner design, Milling cutter with 45° helix angle, HSC (High-Speed Cutting) milling technology
Main application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling

Application:
Corner and slot milling cutters for various roughing and finishing operations. **Can be used up to 68 HRC**.
Particularly suitable for machining hardened steels.

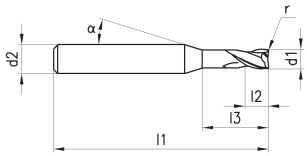
Order ID	**d1** mm	**l2** mm	l1 mm	d2 mm	alpha °	Order ID	**d1** mm	**l2** mm	l1 mm	d2 mm	alpha °
222424.0010	**1**	**1.5**	40	6	15	222424.0150	**5**	**10**	50	6	15
222424.0020	**1**	**2.5**	40	6	15	222424.0160	**5**	**13**	50	6	15
222424.0030	**1**	**3.5**	40	6	15	222424.0170	**5**	**20**	60	6	15
222424.0040	**2**	**3**	40	6	15	222424.0180	**6**	**13**	50	6	-
222424.0050	**2**	**5**	40	6	15	222424.0190	**6**	**15**	55	6	-
222424.0060	**2**	**8**	40	6	15	222424.0200	**6**	**20**	60	6	-
222424.0070	**2.5**	**6**	45	6	15	222424.0210	**8**	**20**	60	8	-
222424.0080	**2.5**	**8**	45	6	15	222424.0220	**8**	**25**	70	8	-
222424.0090	**3**	**6**	45	6	15	222424.0230	**10**	**22**	70	10	-
222424.0100	**3**	**8**	45	6	15	222424.0240	**10**	**30**	80	10	-
222424.0110	**3**	**12**	50	6	15	222424.0250	**12**	**26**	75	12	-
222424.0120	**4**	**8**	45	6	15	222424.0260	**12**	**35**	90	12	-
222424.0130	**4**	**11**	45	6	15	222424.0270	**16**	**35**	90	16	-
222424.0140	**4**	**15**	55	6	15	222424.0280	**16**	**50**	110	16	-

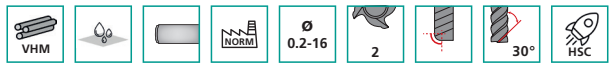
FUTURO

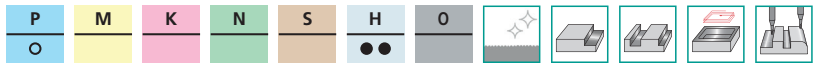
222426 FUTURO SC shoulder/ slot milling cutters

with corner radius









Made of solid hard metal, Coated, with cylindrical shank, According to factory standard, Nominal size Ø 0.2 - 16 mm, Number of teeth 2, With corner radius, Milling cutter with 30° helix angle, HSC (High-Speed Cutting) milling technology
Secondary application: Steel (ISO-P), Main application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling, For micro milling

Application:
Corner and slot milling cutters for various roughing and finishing operations. **Can be used up to 68 HRC**. Particularly suitable for machining hardened steels.

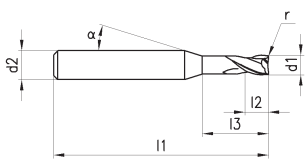
Order ID	d1	r	l3	l2	l1	d2	alpha	Order ID	d1	r	l3	l2	l1	d2	alpha
	mm	mm	mm	mm	mm	mm	°		mm	mm	mm	mm	mm	mm	°
222426.0010	**0.2**	**0.02**	**0.5**	0.2	40	4	15	222426.0690	**0.8**	**0.02**	**4**	0.8	45	4	15
222426.0020	**0.2**	**0.02**	**1**	0.2	40	4	15	222426.0700	**0.8**	**0.02**	**6**	0.8	45	4	15
222426.0030	**0.2**	**0.02**	**1.5**	0.2	40	4	15	222426.0710	**0.8**	**0.02**	**8**	0.8	45	4	15
222426.0040	**0.2**	**0.05**	**0.5**	0.2	40	4	15	222426.0720	**0.8**	**0.05**	**2**	0.8	45	4	15
222426.0050	**0.2**	**0.05**	**1**	0.2	40	4	15	222426.0730	**0.8**	**0.05**	**4**	0.8	45	4	15
222426.0060	**0.2**	**0.05**	**1.5**	0.2	40	4	15	222426.0740	**0.8**	**0.05**	**6**	0.8	45	4	15
222426.0070	**0.3**	**0.02**	**1**	0.3	40	4	15	222426.0750	**0.8**	**0.05**	**8**	0.8	45	4	15
222426.0080	**0.3**	**0.02**	**2**	0.3	40	4	15	222426.0760	**0.8**	**0.1**	**2**	0.8	45	4	15
222426.0090	**0.3**	**0.02**	**3**	0.3	40	4	15	222426.0770	**0.8**	**0.1**	**4**	0.8	45	4	15
222426.0100	**0.3**	**0.05**	**1**	0.3	40	4	15	222426.0780	**0.8**	**0.1**	**6**	0.8	45	4	15
222426.0120	**0.3**	**0.05**	**3**	0.3	40	4	15	222426.0790	**0.8**	**0.1**	**8**	0.8	45	4	15
222426.0130	**0.4**	**0.02**	**1**	0.4	40	4	15	222426.0800	**0.8**	**0.2**	**2**	0.8	45	4	15
222426.0140	**0.4**	**0.02**	**2**	0.4	40	4	15	222426.0810	**0.8**	**0.2**	**4**	0.8	45	4	15
222426.0150	**0.4**	**0.02**	**3**	0.4	40	4	15	222426.0820	**0.8**	**0.2**	**6**	0.8	45	4	15
222426.0160	**0.4**	**0.02**	**4**	0.4	40	4	15	222426.0830	**0.8**	**0.2**	**8**	0.8	45	4	15
222426.0170	**0.4**	**0.05**	**1**	0.4	40	4	15	222426.0840	**1**	**0.02**	**4**	1	45	4	15
222426.0180	**0.4**	**0.05**	**2**	0.4	40	4	15	222426.0850	**1**	**0.02**	**6**	1	45	4	15
222426.0190	**0.4**	**0.05**	**3**	0.4	40	4	15	222426.0860	**1**	**0.02**	**8**	1	45	4	15
222426.0200	**0.4**	**0.05**	**4**	0.4	40	4	15	222426.0870	**1**	**0.02**	**10**	1	50	4	15
222426.0210	**0.4**	**0.1**	**1**	0.4	40	4	15	222426.0880	**1**	**0.02**	**12**	1	50	4	15
222426.0220	**0.4**	**0.1**	**1.5**	0.4	40	4	15	222426.0890	**1**	**0.02**	**16**	1	50	4	15
222426.0230	**0.4**	**0.1**	**2**	0.4	40	4	15	222426.0900	**1**	**0.02**	**20**	1	50	4	15
222426.0240	**0.4**	**0.1**	**3**	0.4	40	4	15	222426.0910	**1**	**0.05**	**4**	1	45	4	15
222426.0250	**0.4**	**0.1**	**4**	0.4	40	4	15	222426.0920	**1**	**0.05**	**6**	1	45	4	15
222426.0260	**0.5**	**0.02**	**1**	0.5	45	4	15	222426.0930	**1**	**0.05**	**8**	1	45	4	15
222426.0270	**0.5**	**0.02**	**1.5**	0.5	45	4	15	222426.0940	**1**	**0.05**	**10**	1	50	4	15
222426.0280	**0.5**	**0.02**	**2**	0.5	45	4	15	222426.0950	**1**	**0.05**	**12**	1	50	4	15
222426.0290	**0.5**	**0.02**	**2.5**	0.5	45	4	15	222426.0960	**1**	**0.05**	**16**	1	50	4	15
222426.0300	**0.5**	**0.02**	**3**	0.5	45	4	15	222426.0970	**1**	**0.05**	**20**	1	50	4	15
222426.0310	**0.5**	**0.02**	**4**	0.5	45	4	15	222426.0980	**1**	**0.1**	**4**	1	45	4	15
222426.0320	**0.5**	**0.02**	**5**	0.5	45	4	15	222426.0990	**1**	**0.1**	**6**	1	45	4	15
222426.0330	**0.5**	**0.02**	**6**	0.5	45	4	15	222426.1000	**1**	**0.1**	**8**	1	45	4	15
222426.0340	**0.5**	**0.05**	**1**	0.5	45	4	15	222426.1010	**1**	**0.1**	**10**	1	50	4	15
222426.0350	**0.5**	**0.05**	**1.5**	0.5	45	4	15	222426.1020	**1**	**0.1**	**12**	1	50	4	15
222426.0360	**0.5**	**0.05**	**2**	0.5	45	4	15	222426.1030	**1**	**0.1**	**16**	1	50	4	15
222426.0370	**0.5**	**0.05**	**2.5**	0.5	45	4	15	222426.1040	**1**	**0.1**	**20**	1	50	4	15
222426.0380	**0.5**	**0.05**	**3**	0.5	45	4	15	222426.1050	**1**	**0.2**	**4**	1	45	4	15
222426.0390	**0.5**	**0.05**	**4**	0.5	45	4	15	222426.1060	**1**	**0.2**	**6**	1	45	4	15
222426.0400	**0.5**	**0.05**	**5**	0.5	45	4	15	222426.1070	**1**	**0.2**	**8**	1	45	4	15
222426.0410	**0.5**	**0.05**	**6**	0.5	45	4	15	222426.1080	**1**	**0.2**	**10**	1	50	4	15
222426.0420	**0.5**	**0.1**	**1**	0.5	45	4	15	222426.1090	**1**	**0.2**	**12**	1	50	4	15
222426.0430	**0.5**	**0.1**	**1.5**	0.5	45	4	15	222426.1100	**1**	**0.2**	**16**	1	50	4	15
222426.0440	**0.5**	**0.1**	**2**	0.5	45	4	15	222426.1110	**1**	**0.2**	**20**	1	50	4	15
222426.0450	**0.5**	**0.1**	**2.5**	0.5	45	4	15	222426.1120	**1**	**0.3**	**4**	1	45	4	15
222426.0460	**0.5**	**0.1**	**3**	0.5	45	4	15	222426.1130	**1**	**0.3**	**6**	1	45	4	15
222426.0470	**0.5**	**0.1**	**4**	0.5	45	4	15	222426.1140	**1**	**0.3**	**8**	1	45	4	15
222426.0480	**0.5**	**0.1**	**5**	0.5	45	4	15	222426.1150	**1**	**0.3**	**10**	1	50	4	15
222426.0490	**0.5**	**0.1**	**6**	0.5	45	4	15	222426.1160	**1**	**0.3**	**12**	1	50	4	15
222426.0500	**0.6**	**0.02**	**2**	0.6	45	4	15	222426.1170	**1**	**0.3**	**16**	1	50	4	15
222426.0510	**0.6**	**0.02**	**3**	0.6	45	4	15	222426.1180	**1**	**0.3**	**20**	1	50	4	15
222426.0520	**0.6**	**0.02**	**4**	0.6	45	4	15	222426.1190	**1.2**	**0.02**	**4**	1.2	45	4	15
222426.0530	**0.6**	**0.02**	**6**	0.6	45	4	15	222426.1200	**1.2**	**0.02**	**6**	1.2	45	4	15
222426.0540	**0.6**	**0.02**	**8**	0.6	45	4	15	222426.1210	**1.2**	**0.02**	**8**	1.2	45	4	15
222426.0550	**0.6**	**0.05**	**2**	0.6	45	4	15	222426.1220	**1.2**	**0.02**	**10**	1.2	50	4	15
222426.0560	**0.6**	**0.05**	**3**	0.6	45	4	15	222426.1230	**1.2**	**0.02**	**12**	1.2	50	4	15
222426.0570	**0.6**	**0.05**	**4**	0.6	45	4	15	222426.1240	**1.2**	**0.02**	**16**	1.2	50	4	15
222426.0580	**0.6**	**0.05**	**6**	0.6	45	4	15	222426.1250	**1.2**	**0.02**	**20**	1.2	50	4	15
222426.0590	**0.6**	**0.05**	**8**	0.6	45	4	15	222426.1260	**1.2**	**0.05**	**4**	1.2	45	4	15
222426.0600	**0.6**	**0.1**	**2**	0.6	45	4	15	222426.1270	**1.2**	**0.05**	**6**	1.2	45	4	15
222426.0610	**0.6**	**0.1**	**3**	0.6	45	4	15	222426.1280	**1.2**	**0.05**	**8**	1.2	45	4	15
222426.0620	**0.6**	**0.1**	**4**	0.6	45	4	15	222426.1290	**1.2**	**0.05**	**10**	1.2	50	4	15
222426.0630	**0.6**	**0.1**	**6**	0.6	45	4	15	222426.1300	**1.2**	**0.05**	**12**	1.2	50	4	15
222426.0640	**0.6**	**0.1**	**8**	0.6	45	4	15	222426.1310	**1.2**	**0.05**	**16**	1.2	50	4	15
222426.0650	**0.7**	**0.1**	**2**	0.7	45	4	15	222426.1320	**1.2**	**0.05**	**20**	1.2	50	4	15
222426.0660	**0.7**	**0.1**	**4**	0.7	45	4	15	222426.1330	**1.2**	**0.1**	**4**	1.2	45	4	15
222426.0670	**0.7**	**0.1**	**6**	0.7	45	4	15	222426.1340	**1.2**	**0.1**	**6**	1.2	45	4	15
222426.0680	**0.8**	**0.02**	**2**	0.8	45	4	15	222426.1350	**1.2**	**0.1**	**8**	1.2	45	4	15

Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222426.1360	**1.2**	**0.1**	**10**	1.2	50	4	15	222426.2260	**2**	**0.3**	**10**	2	50	4	15
222426.1370	**1.2**	**0.1**	**12**	1.2	50	4	15	222426.2270	**2**	**0.3**	**12**	2	50	4	15
222426.1380	**1.2**	**0.1**	**16**	1.2	50	4	15	222426.2280	**2**	**0.3**	**16**	2	50	4	15
222426.1390	**1.2**	**0.1**	**20**	1.2	50	4	15	222426.2290	**2**	**0.3**	**20**	2	50	4	15
222426.1400	**1.2**	**0.2**	**4**	1.2	45	4	15	222426.2300	**2**	**0.3**	**25**	2	60	4	15
222426.1410	**1.2**	**0.2**	**6**	1.2	45	4	15	222426.2310	**2**	**0.5**	**6**	2	45	4	15
222426.1420	**1.2**	**0.2**	**8**	1.2	45	4	15	222426.2320	**2**	**0.5**	**8**	2	45	4	15
222426.1430	**1.2**	**0.2**	**10**	1.2	50	4	15	222426.2330	**2**	**0.5**	**10**	2	50	4	15
222426.1440	**1.2**	**0.2**	**12**	1.2	50	4	15	222426.2340	**2**	**0.5**	**12**	2	50	4	15
222426.1450	**1.2**	**0.2**	**16**	1.2	50	4	15	222426.2350	**2**	**0.5**	**16**	2	50	4	15
222426.1460	**1.2**	**0.2**	**20**	1.2	50	4	15	222426.2360	**2**	**0.5**	**20**	2	50	4	15
222426.1470	**1.2**	**0.3**	**4**	1.2	45	4	15	222426.2370	**2**	**0.5**	**25**	2	60	4	15
222426.1480	**1.2**	**0.3**	**6**	1.2	45	4	15	222426.2380	**2.5**	**0.1**	**10**	2.5	50	4	15
222426.1490	**1.2**	**0.3**	**8**	1.2	45	4	15	222426.2390	**2.5**	**0.1**	**16**	2.5	50	4	15
222426.1500	**1.2**	**0.3**	**10**	1.2	50	4	15	222426.2400	**2.5**	**0.1**	**20**	2.5	50	4	15
222426.1510	**1.2**	**0.3**	**12**	1.2	50	4	15	222426.2410	**2.5**	**0.2**	**10**	2.5	50	4	15
222426.1520	**1.2**	**0.3**	**16**	1.2	50	4	15	222426.2420	**2.5**	**0.2**	**16**	2.5	50	4	15
222426.1530	**1.2**	**0.3**	**20**	1.2	50	4	15	222426.2430	**2.5**	**0.2**	**20**	2.5	50	4	15
222426.1540	**1.5**	**0.02**	**4**	1.5	45	4	15	222426.2440	**2.5**	**0.3**	**10**	2.5	50	4	15
222426.1550	**1.5**	**0.02**	**6**	1.5	45	4	15	222426.2450	**2.5**	**0.3**	**16**	2.5	50	4	15
222426.1560	**1.5**	**0.02**	**8**	1.5	45	4	15	222426.2460	**2.5**	**0.3**	**20**	2.5	50	4	15
222426.1570	**1.5**	**0.02**	**10**	1.5	50	4	15	222426.2470	**2.5**	**0.5**	**10**	2.5	50	4	15
222426.1580	**1.5**	**0.02**	**12**	1.5	50	4	15	222426.2480	**2.5**	**0.5**	**16**	2.5	50	4	15
222426.1590	**1.5**	**0.02**	**16**	1.5	50	4	15	222426.2490	**2.5**	**0.5**	**20**	2.5	50	4	15
222426.1600	**1.5**	**0.02**	**20**	1.5	50	4	15	222426.2500	**3**	**0.1**	**10**	3	50	6	15
222426.1610	**1.5**	**0.05**	**4**	1.5	45	4	15	222426.2510	**3**	**0.1**	**12**	3	50	6	15
222426.1620	**1.5**	**0.05**	**6**	1.5	45	4	15	222426.2520	**3**	**0.1**	**16**	3	55	6	15
222426.1630	**1.5**	**0.05**	**8**	1.5	45	4	15	222426.2530	**3**	**0.1**	**20**	3	60	6	15
222426.1640	**1.5**	**0.05**	**10**	1.5	50	4	15	222426.2540	**3**	**0.1**	**25**	3	65	6	15
222426.1650	**1.5**	**0.05**	**12**	1.5	50	4	15	222426.2550	**3**	**0.1**	**30**	3	70	6	15
222426.1660	**1.5**	**0.05**	**16**	1.5	50	4	15	222426.2560	**3**	**0.1**	**35**	3	75	6	15
222426.1670	**1.5**	**0.05**	**20**	1.5	50	4	15	222426.2570	**3**	**0.1**	**40**	3	80	6	15
222426.1680	**1.5**	**0.1**	**4**	1.5	45	4	15	222426.2580	**3**	**0.2**	**10**	3	50	6	15
222426.1690	**1.5**	**0.1**	**6**	1.5	45	4	15	222426.2590	**3**	**0.2**	**12**	3	50	6	15
222426.1700	**1.5**	**0.1**	**8**	1.5	45	4	15	222426.2600	**3**	**0.2**	**16**	3	55	6	15
222426.1710	**1.5**	**0.1**	**10**	1.5	50	4	15	222426.2610	**3**	**0.2**	**20**	3	60	6	15
222426.1720	**1.5**	**0.1**	**12**	1.5	50	4	15	222426.2620	**3**	**0.2**	**25**	3	65	6	15
222426.1730	**1.5**	**0.1**	**16**	1.5	50	4	15	222426.2630	**3**	**0.2**	**30**	3	70	6	15
222426.1740	**1.5**	**0.1**	**20**	1.5	50	4	15	222426.2640	**3**	**0.2**	**35**	3	75	6	15
222426.1750	**1.5**	**0.2**	**4**	1.5	45	4	15	222426.2650	**3**	**0.2**	**40**	3	80	6	15
222426.1760	**1.5**	**0.2**	**6**	1.5	45	4	15	222426.2660	**3**	**0.3**	**10**	3	50	6	15
222426.1770	**1.5**	**0.2**	**8**	1.5	45	4	15	222426.2670	**3**	**0.3**	**12**	3	50	6	15
222426.1780	**1.5**	**0.2**	**10**	1.5	50	4	15	222426.2680	**3**	**0.3**	**16**	3	55	6	15
222426.1790	**1.5**	**0.2**	**12**	1.5	50	4	15	222426.2690	**3**	**0.3**	**20**	3	60	6	15
222426.1800	**1.5**	**0.2**	**16**	1.5	50	4	15	222426.2700	**3**	**0.3**	**25**	3	65	6	15
222426.1810	**1.5**	**0.2**	**20**	1.5	50	4	15	222426.2710	**3**	**0.3**	**30**	3	70	6	15
222426.1820	**1.5**	**0.3**	**4**	1.5	45	4	15	222426.2720	**3**	**0.3**	**35**	3	75	6	15
222426.1830	**1.5**	**0.3**	**6**	1.5	45	4	15	222426.2730	**3**	**0.3**	**40**	3	80	6	15
222426.1840	**1.5**	**0.3**	**8**	1.5	45	4	15	222426.2740	**3**	**0.5**	**10**	3	50	6	15
222426.1850	**1.5**	**0.3**	**10**	1.5	50	4	15	222426.2750	**3**	**0.5**	**12**	3	50	6	15
222426.1860	**1.5**	**0.3**	**12**	1.5	50	4	15	222426.2760	**3**	**0.5**	**16**	3	55	6	15
222426.1870	**1.5**	**0.3**	**16**	1.5	50	4	15	222426.2770	**3**	**0.5**	**20**	3	60	6	15
222426.1880	**1.5**	**0.3**	**20**	1.5	50	4	15	222426.2780	**3**	**0.5**	**25**	3	65	6	15
222426.1890	**1.5**	**0.5**	**4**	1.5	45	4	15	222426.2790	**3**	**0.5**	**30**	3	70	6	15
222426.1900	**1.5**	**0.5**	**6**	1.5	45	4	15	222426.2800	**3**	**0.5**	**35**	3	75	6	15
222426.1910	**1.5**	**0.5**	**8**	1.5	45	4	15	222426.2810	**3**	**0.5**	**40**	3	80	6	15
222426.1920	**1.5**	**0.5**	**10**	1.5	50	4	15	222426.2820	**3**	**1**	**10**	3	50	6	15
222426.1930	**1.5**	**0.5**	**12**	1.5	50	4	15	222426.2830	**3**	**1**	**12**	3	50	6	15
222426.1940	**1.5**	**0.5**	**16**	1.5	50	4	15	222426.2840	**3**	**1**	**16**	3	55	6	15
222426.1950	**1.5**	**0.5**	**20**	1.5	50	4	15	222426.2850	**3**	**1**	**20**	3	60	6	15
222426.1960	**2**	**0.02**	**6**	2	45	4	15	222426.2860	**3**	**1**	**25**	3	65	6	15
222426.1970	**2**	**0.02**	**8**	2	45	4	15	222426.2870	**3**	**1**	**30**	3	70	6	15
222426.1980	**2**	**0.02**	**10**	2	50	4	15	222426.2880	**3**	**1**	**35**	3	75	6	15
222426.1990	**2**	**0.02**	**12**	2	50	4	15	222426.2890	**3**	**1**	**40**	3	80	6	15
222426.2000	**2**	**0.02**	**16**	2	50	4	15	222426.2900	**4**	**0.1**	**12**	4	50	6	15
222426.2010	**2**	**0.02**	**20**	2	50	4	15	222426.2910	**4**	**0.1**	**16**	4	55	6	15
222426.2020	**2**	**0.02**	**25**	2	60	4	15	222426.2920	**4**	**0.1**	**20**	4	60	6	15
222426.2030	**2**	**0.05**	**6**	2	45	4	15	222426.2930	**4**	**0.1**	**25**	4	65	6	15
222426.2040	**2**	**0.05**	**8**	2	45	4	15	222426.2940	**4**	**0.1**	**30**	4	70	6	15
222426.2050	**2**	**0.05**	**10**	2	50	4	15	222426.2950	**4**	**0.1**	**35**	4	75	6	15
222426.2060	**2**	**0.05**	**12**	2	50	4	15	222426.2960	**4**	**0.1**	**40**	4	80	6	15
222426.2070	**2**	**0.05**	**16**	2	50	4	15	222426.2970	**4**	**0.2**	**12**	4	50	6	15
222426.2080	**2**	**0.05**	**20**	2	50	4	15	222426.2980	**4**	**0.2**	**16**	4	55	6	15
222426.2090	**2**	**0.05**	**25**	2	60	4	15	222426.2990	**4**	**0.2**	**20**	4	60	6	15
222426.2100	**2**	**0.1**	**6**	2	45	4	15	222426.3000	**4**	**0.2**	**25**	4	65	6	15
222426.2110	**2**	**0.1**	**8**	2	45	4	15	222426.3010	**4**	**0.2**	**30**	4	70	6	15
222426.2120	**2**	**0.1**	**10**	2	50	4	15	222426.3020	**4**	**0.2**	**35**	4	75	6	15
222426.2130	**2**	**0.1**	**12**	2	50	4	15	222426.3030	**4**	**0.2**	**40**	4	80	6	15
222426.2140	**2**	**0.1**	**16**	2	50	4	15	222426.3040	**4**	**0.3**	**12**	4	50	6	15
222426.2150	**2**	**0.1**	**20**	2	50	4	15	222426.3050	**4**	**0.3**	**16**	4	55	6	15
222426.2160	**2**	**0.1**	**25**	2	60	4	15	222426.3060	**4**	**0.3**	**20**	4	60	6	15
222426.2170	**2**	**0.2**	**6**	2	45	4	15	222426.3070	**4**	**0.3**	**25**	4	65	6	15
222426.2180	**2**	**0.2**	**8**	2	45	4	15	222426.3080	**4**	**0.3**	**30**	4	70	6	15
222426.2190	**2**	**0.2**	**10**	2	50	4	15	222426.3090	**4**	**0.3**	**35**	4	75	6	15
222426.2200	**2**	**0.2**	**12**	2	50	4	15	222426.3100	**4**	**0.3**	**40**	4	80	6	15
222426.2210	**2**	**0.2**	**16**	2	50	4	15	222426.3110	**4**	**0.5**	**12**	4	50	6	15
222426.2220	**2**	**0.2**	**20**	2	50	4	15	222426.3120	**4**	**0.5**	**16**	4	55	6	15
222426.2230	**2**	**0.2**	**25**	2	60	4	15	222426.3130	**4**	**0.5**	**20**	4	60	6	15
222426.2240	**2**	**0.2**	**6**	2	45	4	15	222426.3140	**4**	**0.5**	**25**	4	65	6	15
222426.2250	**2**	**0.3**	**8**	2	45	4	15	222426.3150	**4**	**0.5**	**30**	4	70	6	15

Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222426.3160	**4**	**0.5**	**35**	4	75	6	15	222426.3430	**6**	**0.5**	**20**	7	60	6	-
222426.3170	**4**	**0.5**	**40**	4	80	6	15	222426.3440	**6**	**0.5**	**40**	7	80	6	-
222426.3180	**4**	**1**	**12**	4	50	6	15	222426.3450	**6**	**1**	**20**	7	60	6	-
222426.3190	**4**	**1**	**16**	4	55	6	15	222426.3460	**6**	**1**	**40**	7	80	6	-
222426.3200	**4**	**1**	**20**	4	60	6	15	222426.3470	**6**	**1.5**	**20**	7	60	6	-
222426.3210	**4**	**1**	**25**	4	65	6	15	222426.3480	**6**	**1.5**	**40**	7	80	6	-
222426.3220	**4**	**1**	**30**	4	70	6	15	222426.3490	**8**	**0.2**	**22**	9	65	8	-
222426.3230	**4**	**1**	**35**	4	75	6	15	222426.3500	**8**	**0.3**	**22**	9	65	8	-
222426.3240	**4**	**1**	**40**	4	80	6	15	222426.3510	**8**	**0.5**	**22**	9	65	8	-
222426.3250	**5**	**0.2**	**15**	6	60	6	15	222426.3520	**8**	**1**	**22**	9	65	8	-
222426.3260	**5**	**0.2**	**25**	6	70	6	15	222426.3530	**8**	**1.5**	**22**	9	65	8	-
222426.3270	**5**	**0.2**	**30**	6	70	6	15	222426.3540	**10**	**0.2**	**24**	11	70	10	-
222426.3280	**5**	**0.2**	**40**	6	80	6	15	222426.3550	**10**	**0.3**	**24**	11	70	10	-
222426.3290	**5**	**0.5**	**15**	6	60	6	15	222426.3560	**10**	**0.5**	**24**	11	70	10	-
222426.3300	**5**	**0.5**	**25**	6	70	6	15	222426.3570	**10**	**1**	**24**	11	70	10	-
222426.3310	**5**	**0.5**	**30**	6	70	6	15	222426.3580	**10**	**1.5**	**24**	11	70	10	-
222426.3320	**5**	**0.5**	**40**	6	80	6	15	222426.3590	**10**	**2**	**24**	11	70	10	-
222426.3330	**5**	**1**	**15**	6	60	6	15	222426.3600	**12**	**0.2**	**26**	13	80	12	-
222426.3340	**5**	**1**	**25**	6	70	6	15	222426.3610	**12**	**0.3**	**26**	13	80	12	-
222426.3350	**5**	**1**	**30**	6	70	6	15	222426.3620	**12**	**0.5**	**26**	13	80	12	-
222426.3360	**5**	**1**	**40**	6	80	6	15	222426.3630	**12**	**1**	**26**	13	80	12	-
222426.3370	**6**	**0.1**	**20**	7	60	6	-	222426.3640	**12**	**1.5**	**26**	13	80	12	-
222426.3380	**6**	**0.1**	**40**	7	80	6	-	222426.3650	**12**	**2**	**26**	13	80	12	-
222426.3390	**6**	**0.2**	**20**	7	60	6	-	222426.3660	**12**	**3**	**26**	13	80	12	-
222426.3400	**6**	**0.2**	**40**	7	80	6	-	222426.3670	**16**	**0.5**	**26**	20	110	16	-
222426.3410	**6**	**0.3**	**20**	7	60	6	-	222426.3680	**16**	**1**	**26**	20	110	16	-
222426.3420	**6**	**0.3**	**40**	7	80	6	-								

FUTURO





222427 FUTURO SC shoulder/ slot milling cutters

with corner radius





Made of solid hard metal, Coated, with cylindrical shank, According to factory standard, Nominal size Ø 0.8 - 12 mm, Number of teeth 4, With corner radius, Milling cutter with 30° helix angle, HSC (High-Speed Cutting) milling technology
Secondary application: Steel (ISO-P), Main application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling

Application:
Square milling cutter **can be used up to 68 HRC**. Particularly suitable for machining hardened steels.

Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222427.0010	**0.8**	**0.02**	**2**	0.8	45	4	15	222427.0360	**1**	**0.3**	**4**	1	45	4	15
222427.0020	**0.8**	**0.02**	**4**	0.8	45	4	15	222427.0370	**1**	**0.3**	**6**	1	45	4	15
222427.0030	**0.8**	**0.02**	**6**	0.8	45	4	15	222427.0380	**1**	**0.3**	**8**	1	45	4	15
222427.0040	**0.8**	**0.02**	**8**	0.8	45	4	15	222427.0390	**1**	**0.3**	**10**	1	50	4	15
222427.0050	**0.8**	**0.02**	**10**	0.8	45	4	15	222427.0400	**1**	**0.3**	**12**	1	50	4	15
222427.0060	**0.8**	**0.05**	**2**	0.8	45	4	15	222427.0410	**1.2**	**0.02**	**4**	1.2	45	4	15
222427.0070	**0.8**	**0.05**	**4**	0.8	45	4	15	222427.0420	**1.2**	**0.02**	**6**	1.2	45	4	15
222427.0080	**0.8**	**0.05**	**6**	0.8	45	4	15	222427.0430	**1.2**	**0.02**	**8**	1.2	45	4	15
222427.0090	**0.8**	**0.05**	**8**	0.8	45	4	15	222427.0440	**1.2**	**0.02**	**10**	1.2	50	4	15
222427.0100	**0.8**	**0.05**	**10**	0.8	45	4	15	222427.0450	**1.2**	**0.02**	**12**	1.2	50	4	15
222427.0110	**0.8**	**0.1**	**2**	0.8	45	4	15	222427.0460	**1.2**	**0.05**	**4**	1.2	45	4	15
222427.0120	**0.8**	**0.1**	**4**	0.8	45	4	15	222427.0470	**1.2**	**0.05**	**6**	1.2	45	4	15
222427.0130	**0.8**	**0.1**	**6**	0.8	45	4	15	222427.0480	**1.2**	**0.05**	**8**	1.2	45	4	15
222427.0140	**0.8**	**0.1**	**8**	0.8	45	4	15	222427.0490	**1.2**	**0.05**	**10**	1.2	50	4	15
222427.0150	**0.8**	**0.1**	**10**	0.8	45	4	15	222427.0500	**1.2**	**0.05**	**12**	1.2	50	4	15
222427.0160	**1**	**0.02**	**4**	1	45	4	15	222427.0510	**1.2**	**0.1**	**4**	1.2	45	4	15
222427.0170	**1**	**0.02**	**6**	1	45	4	15	222427.0520	**1.2**	**0.1**	**6**	1.2	45	4	15
222427.0180	**1**	**0.02**	**8**	1	45	4	15	222427.0530	**1.2**	**0.1**	**8**	1.2	45	4	15
222427.0190	**1**	**0.02**	**10**	1	50	4	15	222427.0540	**1.2**	**0.1**	**10**	1.2	50	4	15
222427.0200	**1**	**0.02**	**12**	1	50	4	15	222427.0550	**1.2**	**0.1**	**12**	1.2	50	4	15
222427.0210	**1**	**0.05**	**4**	1	45	4	15	222427.0560	**1.2**	**0.2**	**4**	1.2	45	4	15
222427.0220	**1**	**0.05**	**6**	1	45	4	15	222427.0570	**1.2**	**0.2**	**6**	1.2	45	4	15
222427.0230	**1**	**0.05**	**8**	1	45	4	15	222427.0580	**1.2**	**0.2**	**8**	1.2	45	4	15
222427.0240	**1**	**0.05**	**10**	1	50	4	15	222427.0590	**1.2**	**0.2**	**10**	1.2	50	4	15
222427.0250	**1**	**0.05**	**12**	1	50	4	15	222427.0600	**1.2**	**0.2**	**12**	1.2	50	4	15
222427.0260	**1**	**0.1**	**4**	1	45	4	15	222427.0610	**1.2**	**0.3**	**4**	1.2	45	4	15
222427.0270	**1**	**0.1**	**6**	1	45	4	15	222427.0620	**1.2**	**0.3**	**6**	1.2	45	4	15
222427.0280	**1**	**0.1**	**8**	1	45	4	15	222427.0630	**1.2**	**0.3**	**8**	1.2	45	4	15
222427.0290	**1**	**0.1**	**10**	1	50	4	15	222427.0640	**1.2**	**0.3**	**10**	1.2	50	4	15
222427.0300	**1**	**0.1**	**12**	1	50	4	15	222427.0650	**1.2**	**0.3**	**12**	1.2	50	4	15
222427.0310	**1**	**0.2**	**4**	1	45	4	15	222427.0660	**1.5**	**0.02**	**6**	1.5	45	4	15
222427.0320	**1**	**0.2**	**6**	1	45	4	15	222427.0670	**1.5**	**0.02**	**8**	1.5	45	4	15
222427.0330	**1**	**0.2**	**8**	1	45	4	15	222427.0680	**1.5**	**0.02**	**10**	1.5	50	4	15
222427.0340	**1**	**0.2**	**10**	1	50	4	15	222427.0690	**1.5**	**0.02**	**12**	1.5	50	4	15
222427.0350	**1**	**0.2**	**12**	1	50	4	15	222427.0700	**1.5**	**0.02**	**16**	1.5	50	4	15

Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222427.0710	**1.5**	**0.05**	**6**	1.5	45	4	15	222427.1610	**3**	**0.2**	**10**	3	50	6	15
222427.0720	**1.5**	**0.05**	**8**	1.5	45	4	15	222427.1620	**3**	**0.2**	**12**	3	50	6	15
222427.0730	**1.5**	**0.05**	**10**	1.5	50	4	15	222427.1630	**3**	**0.2**	**16**	3	55	6	15
222427.0740	**1.5**	**0.05**	**12**	1.5	50	4	15	222427.1640	**3**	**0.2**	**20**	3	60	6	15
222427.0750	**1.5**	**0.05**	**16**	1.5	50	4	15	222427.1650	**3**	**0.2**	**25**	3	65	6	15
222427.0760	**1.5**	**0.1**	**6**	1.5	45	4	15	222427.1660	**3**	**0.2**	**30**	3	70	6	15
222427.0770	**1.5**	**0.1**	**8**	1.5	45	4	15	222427.1670	**3**	**0.2**	**35**	3	75	6	15
222427.0780	**1.5**	**0.1**	**10**	1.5	50	4	15	222427.1680	**3**	**0.3**	**10**	3	50	6	15
222427.0790	**1.5**	**0.1**	**12**	1.5	50	4	15	222427.1690	**3**	**0.3**	**12**	3	50	6	15
222427.0800	**1.5**	**0.1**	**16**	1.5	50	4	15	222427.1700	**3**	**0.3**	**16**	3	55	6	15
222427.0810	**1.5**	**0.2**	**6**	1.5	45	4	15	222427.1710	**3**	**0.3**	**20**	3	60	6	15
222427.0820	**1.5**	**0.2**	**8**	1.5	45	4	15	222427.1720	**3**	**0.3**	**25**	3	65	6	15
222427.0830	**1.5**	**0.2**	**10**	1.5	50	4	15	222427.1730	**3**	**0.3**	**30**	3	70	6	15
222427.0840	**1.5**	**0.2**	**12**	1.5	50	4	15	222427.1740	**3**	**0.3**	**35**	3	75	6	15
222427.0850	**1.5**	**0.2**	**16**	1.5	50	4	15	222427.1750	**3**	**0.5**	**10**	3	50	6	15
222427.0860	**1.5**	**0.3**	**6**	1.5	45	4	15	222427.1760	**3**	**0.5**	**12**	3	50	6	15
222427.0870	**1.5**	**0.3**	**8**	1.5	45	4	15	222427.1770	**3**	**0.5**	**16**	3	55	6	15
222427.0880	**1.5**	**0.3**	**10**	1.5	50	4	15	222427.1780	**3**	**0.5**	**20**	3	60	6	15
222427.0890	**1.5**	**0.3**	**12**	1.5	50	4	15	222427.1790	**3**	**0.5**	**25**	3	65	6	15
222427.0900	**1.5**	**0.3**	**16**	1.5	50	4	15	222427.1800	**3**	**0.5**	**30**	3	70	6	15
222427.0910	**1.5**	**0.5**	**6**	1.5	45	4	15	222427.1810	**3**	**0.5**	**35**	3	75	6	15
222427.0920	**1.5**	**0.5**	**8**	1.5	45	4	15	222427.1820	**3**	**1**	**10**	3	50	6	15
222427.0930	**1.5**	**0.5**	**10**	1.5	50	4	15	222427.1830	**3**	**1**	**12**	3	50	6	15
222427.0940	**1.5**	**0.5**	**12**	1.5	50	4	15	222427.1840	**3**	**1**	**16**	3	55	6	15
222427.0950	**1.5**	**0.5**	**16**	1.5	50	4	15	222427.1850	**3**	**1**	**20**	3	60	6	15
222427.0960	**2**	**0.02**	**6**	2	45	4	15	222427.1860	**3**	**1**	**25**	3	65	6	15
222427.0970	**2**	**0.02**	**8**	2	45	4	15	222427.1870	**3**	**1**	**30**	3	70	6	15
222427.0980	**2**	**0.02**	**10**	2	50	4	15	222427.1880	**3**	**1**	**35**	3	75	6	15
222427.0990	**2**	**0.02**	**12**	2	50	4	15	222427.1890	**4**	**0.1**	**13**	4	55	6	15
222427.1000	**2**	**0.02**	**16**	2	50	4	15	222427.1900	**4**	**0.1**	**16**	4	55	6	15
222427.1010	**2**	**0.02**	**20**	2	50	4	15	222427.1910	**4**	**0.1**	**20**	4	60	6	15
222427.1020	**2**	**0.02**	**25**	2	60	4	15	222427.1920	**4**	**0.1**	**25**	4	65	6	15
222427.1030	**2**	**0.05**	**6**	2	45	4	15	222427.1930	**4**	**0.1**	**30**	4	70	6	15
222427.1040	**2**	**0.05**	**8**	2	45	4	15	222427.1940	**4**	**0.1**	**35**	4	75	6	15
222427.1050	**2**	**0.05**	**10**	2	50	4	15	222427.1950	**4**	**0.1**	**40**	4	80	6	15
222427.1060	**2**	**0.05**	**12**	2	50	4	15	222427.1960	**4**	**0.2**	**13**	4	55	6	15
222427.1070	**2**	**0.05**	**16**	2	50	4	15	222427.1970	**4**	**0.2**	**16**	4	55	6	15
222427.1080	**2**	**0.05**	**20**	2	50	4	15	222427.1980	**4**	**0.2**	**20**	4	60	6	15
222427.1090	**2**	**0.05**	**25**	2	60	4	15	222427.1990	**4**	**0.2**	**25**	4	65	6	15
222427.1100	**2**	**0.1**	**6**	2	45	4	15	222427.2000	**4**	**0.2**	**30**	4	70	6	15
222427.1110	**2**	**0.1**	**8**	2	45	4	15	222427.2010	**4**	**0.2**	**35**	4	75	6	15
222427.1120	**2**	**0.1**	**10**	2	50	4	15	222427.2020	**4**	**0.2**	**40**	4	80	6	15
222427.1130	**2**	**0.1**	**12**	2	50	4	15	222427.2030	**4**	**0.3**	**13**	4	55	6	15
222427.1140	**2**	**0.1**	**16**	2	50	4	15	222427.2040	**4**	**0.3**	**16**	4	55	6	15
222427.1150	**2**	**0.1**	**20**	2	50	4	15	222427.2050	**4**	**0.3**	**20**	4	60	6	15
222427.1160	**2**	**0.1**	**25**	2	60	4	15	222427.2060	**4**	**0.3**	**25**	4	65	6	15
222427.1170	**2**	**0.2**	**6**	2	45	4	15	222427.2070	**4**	**0.3**	**30**	4	70	6	15
222427.1180	**2**	**0.2**	**8**	2	45	4	15	222427.2080	**4**	**0.3**	**35**	4	75	6	15
222427.1190	**2**	**0.2**	**10**	2	50	4	15	222427.2090	**4**	**0.3**	**40**	4	80	6	15
222427.1200	**2**	**0.2**	**12**	2	50	4	15	222427.2100	**4**	**0.5**	**13**	4	55	6	15
222427.1210	**2**	**0.2**	**16**	2	50	4	15	222427.2110	**4**	**0.5**	**16**	4	55	6	15
222427.1220	**2**	**0.2**	**20**	2	50	4	15	222427.2120	**4**	**0.5**	**20**	4	60	6	15
222427.1230	**2**	**0.2**	**25**	2	60	4	15	222427.2130	**4**	**0.5**	**25**	4	65	6	15
222427.1240	**2**	**0.3**	**6**	2	45	4	15	222427.2140	**4**	**0.5**	**30**	4	70	6	15
222427.1250	**2**	**0.3**	**8**	2	45	4	15	222427.2150	**4**	**0.5**	**35**	4	75	6	15
222427.1260	**2**	**0.3**	**10**	2	50	4	15	222427.2160	**4**	**0.5**	**40**	4	80	6	15
222427.1270	**2**	**0.3**	**12**	2	50	4	15	222427.2170	**4**	**1**	**13**	4	55	6	15
222427.1280	**2**	**0.3**	**16**	2	50	4	15	222427.2180	**4**	**1**	**16**	4	55	6	15
222427.1290	**2**	**0.3**	**20**	2	50	4	15	222427.2190	**4**	**1**	**20**	4	60	6	15
222427.1300	**2**	**0.3**	**25**	2	60	4	15	222427.2200	**4**	**1**	**25**	4	65	6	15
222427.1310	**2**	**0.5**	**6**	2	45	4	15	222427.2210	**4**	**1**	**30**	4	70	6	15
222427.1320	**2**	**0.5**	**8**	2	45	4	15	222427.2220	**4**	**1**	**35**	4	75	6	15
222427.1330	**2**	**0.5**	**10**	2	50	4	15	222427.2230	**4**	**1**	**40**	4	80	6	15
222427.1340	**2**	**0.5**	**12**	2	50	4	15	222427.2240	**5**	**0.1**	**16**	5	60	6	15
222427.1350	**2**	**0.5**	**16**	2	50	4	15	222427.2250	**5**	**0.1**	**30**	5	70	6	15
222427.1360	**2**	**0.5**	**20**	2	50	4	15	222427.2260	**5**	**0.2**	**16**	5	60	6	15
222427.1370	**2**	**0.5**	**25**	2	60	4	15	222427.2270	**5**	**0.2**	**30**	5	70	6	15
222427.1380	**2.5**	**0.1**	**10**	2.5	50	4	15	222427.2280	**5**	**0.3**	**16**	5	60	6	15
222427.1390	**2.5**	**0.1**	**16**	2.5	50	4	15	222427.2290	**5**	**0.3**	**30**	5	70	6	15
222427.1400	**2.5**	**0.1**	**20**	2.5	50	4	15	222427.2300	**5**	**0.5**	**16**	5	60	6	15
222427.1410	**2.5**	**0.1**	**25**	2.5	60	4	15	222427.2310	**5**	**0.5**	**30**	5	70	6	15
222427.1420	**2.5**	**0.2**	**10**	2.5	50	4	15	222427.2320	**5**	**1**	**16**	5	60	6	15
222427.1430	**2.5**	**0.2**	**16**	2.5	50	4	15	222427.2330	**5**	**1**	**30**	5	70	6	15
222427.1440	**2.5**	**0.2**	**20**	2.5	50	4	15	222427.2340	**6**	**0.1**	**20**	7	60	6	-
222427.1450	**2.5**	**0.2**	**25**	2.5	60	4	15	222427.2350	**6**	**0.1**	**40**	7	80	6	-
222427.1460	**2.5**	**0.3**	**10**	2.5	50	4	15	222427.2360	**6**	**0.2**	**20**	7	60	6	-
222427.1470	**2.5**	**0.3**	**16**	2.5	50	4	15	222427.2370	**6**	**0.2**	**40**	7	80	6	-
222427.1480	**2.5**	**0.3**	**20**	2.5	50	4	15	222427.2380	**6**	**0.3**	**20**	7	60	6	-
222427.1490	**2.5**	**0.3**	**25**	2.5	60	4	15	222427.2390	**6**	**0.3**	**40**	7	80	6	-
222427.1500	**2.5**	**0.5**	**10**	2.5	50	4	15	222427.2400	**6**	**0.5**	**20**	7	60	6	-
222427.1510	**2.5**	**0.5**	**16**	2.5	50	4	15	222427.2410	**6**	**0.5**	**40**	7	80	6	-
222427.1520	**2.5**	**0.5**	**20**	2.5	50	4	15	222427.2420	**6**	**1**	**20**	7	60	6	-
222427.1530	**2.5**	**0.5**	**25**	2.5	60	4	15	222427.2430	**6**	**1**	**40**	7	80	6	-
222427.1540	**3**	**0.1**	**10**	3	50	6	15	222427.2440	**6**	**1.5**	**20**	7	60	6	-
222427.1550	**3**	**0.1**	**12**	3	50	6	15	222427.2450	**6**	**1.5**	**40**	7	80	6	-
222427.1560	**3**	**0.1**	**16**	3	55	6	15	222427.2460	**8**	**0.3**	**22**	9	65	8	-
222427.1570	**3**	**0.1**	**20**	3	60	6	15	222427.2470	**8**	**0.5**	**22**	9	65	8	-
222427.1580	**3**	**0.1**	**25**	3	65	6	15	222427.2480	**8**	**0.5**	**40**	9	100	8	-
222427.1590	**3**	**0.1**	**30**	3	70	6	15	222427.2490	**8**	**1**	**22**	9	65	8	-
222427.1600	**3**	**0.1**	**35**	3	75	6	15	222427.2500	**8**	**1**	**40**	9	100	8	-

Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222427.2510	**8**	**1.5**	**22**	9	65	8	-	222427.2600	**10**	**2.5**	**24**	11	70	10	-
222427.2520	**8**	**2**	**22**	9	65	8	-	222427.2610	**12**	**0.3**	**26**	13	80	12	-
222427.2530	**10**	**0.3**	**24**	11	70	10	-	222427.2620	**12**	**0.5**	**26**	13	80	12	-
222427.2540	**10**	**0.5**	**24**	11	70	10	-	222427.2630	**12**	**0.5**	**40**	13	110	12	-
222427.2550	**10**	**0.5**	**40**	11	100	10	-	222427.2640	**12**	**1**	**26**	13	80	12	-
222427.2560	**10**	**1**	**24**	11	70	10	-	222427.2650	**12**	**1**	**40**	13	110	12	-
222427.2570	**10**	**1**	**40**	11	100	10	-	222427.2660	**12**	**1.5**	**26**	13	80	12	-
222427.2580	**10**	**1.5**	**24**	11	70	10	-	222427.2670	**12**	**2**	**26**	13	80	12	-
222427.2590	**10**	**2**	**24**	11	70	10	-	222427.2680	**12**	**3**	**26**	13	80	12	-

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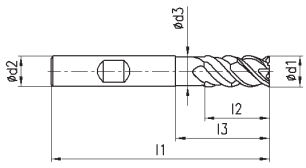
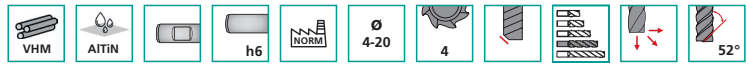
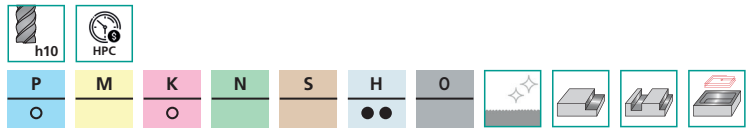


225310 FUTURO SC shoulder/ slot milling cutters





Made of solid hard metal, AlTiN coating, with Weldon shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 4 - 20 mm, Number of teeth 4, With protective chamfer, Long version, with center cut, Milling cutter with 52° helix angle, End mill cutting edge tolerance h10 (according to ISO 286 fit system), HPC (High-Performance Cutting) milling technology
Secondary application: Steel (ISO-P), Secondary application: Cast materials (ISO K), Main application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling

Order ID	d1 mm	l2 mm	l3 mm	d3 mm	d2 mm	l1 mm	Protective chamfer mm
225310.0100	**4**	11	**20**	3.8	6	57	0.1
225310.0200	**5**	13	**20**	4.8	6	57	0.1
225310.0300	**6**	13	**20**	5.8	6	57	0.1
225310.0400	**8**	19	**26**	7.8	8	63	0.15
225310.0500	**10**	22	**31**	9.8	10	72	0.15
225310.0600	**12**	26	**37**	11.8	12	83	0.2
225310.0700	**14**	26	**41**	13.8	14	83	0.2
225310.0800	**16**	32	**43**	15.8	16	92	0.2
225310.0900	**18**	32	**43**	17.8	18	92	0.3
225310.1000	**20**	38	**53**	19.8	20	104	0.3

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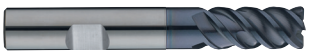
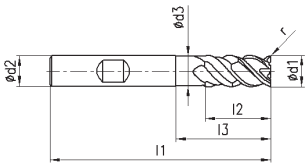
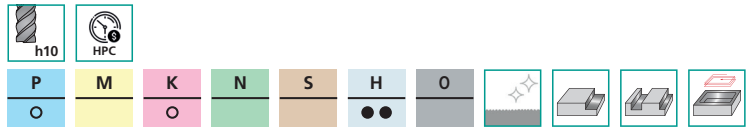




225320 FUTURO SC shoulder/ slot milling cutters





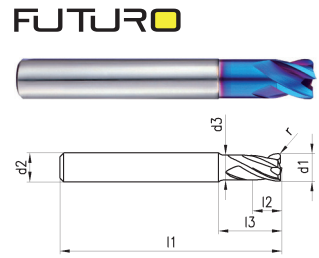
Made of solid hard metal, AlTiN coating, with Weldon shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 3 - 25 mm, Number of teeth 3 - 4, With corner radius, Long version, with center cut, Milling cutter with 52° helix angle, End mill cutting edge tolerance h10 (according to ISO 286 fit system), HPC (High-Performance Cutting) milling technology
Secondary application: Steel (ISO-P), Secondary application: Cast materials (ISO K), Main application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling

Order ID	d1 mm	r mm	l2 mm	l3 mm	d2 mm	l1 mm	d3 mm	teeth	Order ID	d1 mm	r mm	l2 mm	l3 mm	d2 mm	l1 mm	d3 mm	teeth
225320.0100	**3**	**0.2**	8	17	6	57	2.9	3	225320.2000	**10**	**1.5**	22	31	10	72	9.8	4
225320.0200	**3**	**0.5**	8	17	6	57	2.9	3	225320.2100	**10**	**2**	22	31	10	72	9.8	4
225320.0300	**4**	**0.3**	11	20	6	57	3.8	4	225320.2200	**12**	**0.5**	26	37	12	83	11.8	4
225320.0400	**4**	**0.5**	11	20	6	57	3.8	4	225320.2300	**12**	**1**	26	37	12	83	11.8	4
225320.0500	**4**	**1**	11	20	6	57	3.8	4	225320.2400	**12**	**1.5**	26	37	12	83	11.8	4
225320.0600	**5**	**0.3**	13	20	6	57	4.8	4	225320.2500	**12**	**2**	26	37	12	83	11.8	4
225320.0800	**5**	**1**	13	20	6	57	4.8	4	225320.2600	**16**	**0.5**	32	43	16	92	15.8	4
225320.0900	**6**	**0.3**	13	20	6	57	5.8	4	225320.2700	**16**	**1**	32	43	16	92	15.8	4
225320.1000	**6**	**0.5**	13	20	6	57	5.8	4	225320.2800	**16**	**1.5**	32	43	16	92	15.8	4
225320.1100	**6**	**1**	13	20	6	57	5.8	4	225320.2900	**16**	**2**	32	43	16	92	15.8	4
225320.1200	**6**	**1.5**	13	20	6	57	5.8	4	225320.3000	**16**	**1**	32	43	16	150	15.8	4
225320.1300	**6**	**2**	13	20	6	57	5.8	4	225320.3100	**20**	**0.5**	38	53	20	92	19.8	4
225320.1400	**8**	**0.5**	19	26	8	63	7.8	4	225320.3200	**20**	**1**	38	53	20	92	19.8	4
225320.1500	**8**	**1**	19	26	8	63	7.8	4	225320.3300	**20**	**1.5**	38	53	20	92	19.8	4
225320.1600	**8**	**1.5**	19	26	8	63	7.8	4	225320.3400	**20**	**2**	38	53	20	92	19.8	4
225320.1700	**8**	**2**	19	26	8	63	7.8	4	225320.3500	**20**	**1**	38	53	20	150	19.8	4
225320.1800	**10**	**0.5**	22	31	10	72	9.8	4	225320.3600	**25**	**2**	38	53	25	160	24.8	4
225320.1900	**10**	**1**	22	31	10	72	9.8	4									

227045 FUTURO SC shoulder/ slot milling cutters







Made of solid hard metal, XIDUR coating, with cylindrical shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 3 - 12 mm, Number of teeth 4, With corner radius, Long version, with center cut, Milling cutter with 30° helix angle
Secondary application: Steel (ISO-P), Main application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling

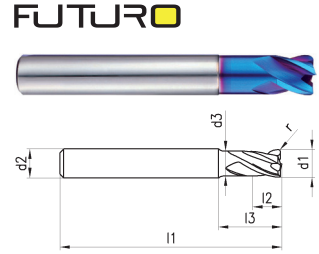
Order ID	d1	r	l2	l3	d2	l1	d3	Cutting tolerance on radius
	mm	mm	mm	mm	mm	mm	mm	
227045.0200	3	0.3	4	16	6	55	2.85	±0.01
227045.0300	3	0.3	4	20	6	55	2.85	±0.01
227045.0400	3	0.5	4	12	6	55	2.85	±0.01
227045.0500	3	0.5	4	16	6	55	2.85	±0.01
227045.0600	3	0.5	4	20	6	55	2.85	±0.01
227045.0700	4	0.3	5	12	6	55	3.85	±0.01
227045.0800	4	0.3	5	16	6	55	3.85	±0.01
227045.0900	4	0.3	5	20	6	55	3.85	±0.01
227045.1000	4	0.5	5	12	6	55	3.85	±0.01
227045.1100	4	0.5	5	16	6	55	3.85	±0.01
227045.1200	4	0.5	5	20	6	55	3.85	±0.01
227045.1300	4	1.0	5	12	6	55	3.85	±0.01
227045.1400	6	0.5	7	20	6	60	5.85	±0.01
227045.1500	6	0.5	9	20	6	90	5.85	±0.01
227045.1600	6	1.0	7	20	6	60	5.85	±0.015
227045.1700	6	1.0	9	20	6	90	5.85	±0.015
227045.1800	6	1.5	7	20	6	60	5.85	±0.015
227045.1900	8	0.5	9	25	8	60	7.7	±0.01
227045.2000	8	0.5	12	25	8	100	7.7	±0.01

Order ID	d1	r	l2	l3	d2	l1	d3	Cutting tolerance on radius
	mm	mm	mm	mm	mm	mm	mm	
227045.2100	8	1.0	9	25	8	60	7.7	±0.015
227045.2200	8	1.0	12	25	8	100	7.7	±0.015
227045.2300	8	1.5	9	25	8	60	7.7	±0.015
227045.2400	8	2.0	9	25	8	60	7.7	±0.015
227045.2500	10	0.5	11	32	10	70	9.7	±0.01
227045.2600	10	0.5	15	32	10	100	9.7	±0.01
227045.2700	10	1.0	11	32	10	70	9.7	±0.015
227045.2800	10	1.0	15	32	10	100	9.7	±0.015
227045.2900	10	1.5	11	32	10	70	9.7	±0.015
227045.3000	10	2.0	11	32	10	70	9.7	±0.015
227045.3100	10	2.0	15	32	10	100	9.7	±0.015
227045.3200	12	0.5	12	38	12	80	11.7	±0.01
227045.3300	12	0.5	18	38	12	110	11.7	±0.01
227045.3400	12	1.0	12	38	12	80	11.7	±0.015
227045.3500	12	1.0	18	38	12	110	11.7	±0.015
227045.3600	12	1.5	12	38	12	80	11.7	±0.015
227045.3700	12	2.0	12	38	12	80	11.7	±0.015
227045.3800	12	2.0	12	38	12	110	11.7	±0.015

227050 FUTURO SC shoulder/ slot milling cutters





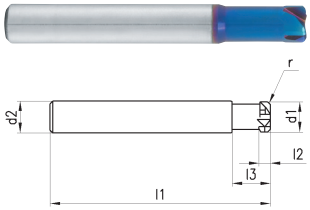


Made of solid hard metal, XIDUR coating, with cylindrical shank, According to factory standard, Nominal size Ø 1 - 16 mm, Number of teeth 4, With corner radius, Long version, with center cut, Milling cutter with 30° helix angle
Secondary application: Steel (ISO-P), Main application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling

Order ID	d1	r	l2	l3	d2	l1	d3
	mm	mm	mm	mm	mm	mm	mm
227050.0100	1	0.1	1.5	-	3	40	-
227050.0150	1	0.1	1.5	-	6	40	-
227050.0200	1.5	0.1	2.2	-	3	40	-
227050.0250	1.5	0.1	2.2	-	6	40	-
227050.0300	2	0.1	6	3	3	40	1.95
227050.0350	2	0.1	3	6	6	40	1.95
227050.0400	2.5	0.1	4	6	3	40	2.4
227050.0450	2.5	0.1	4	6	6	40	2.4
227050.0500	3	0.1	4	7	6	45	2.85

Order ID	d1	r	l2	l3	d2	l1	d3
	mm	mm	mm	mm	mm	mm	mm
227050.0600	3.5	0.1	5	9	6	45	3.35
227050.0700	4	0.1	5	9	6	45	3.85
227050.0900	5	0.2	6	11	6	50	4.85
227050.1000	6	0.2	7	14	6	50	5.85
227050.1100	8	0.2	9	18	8	60	7.7
227050.1200	10	0.2	12	25	10	75	9.7
227050.1300	12	0.3	15	30	12	75	11.7
227050.1400	16	0.3	18	38	16	90	15.7

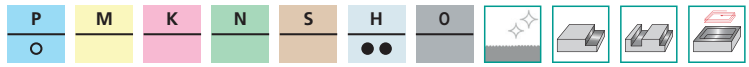
FUTURO



227060 FUTURO SC shoulder/ slot milling cutters

High feed



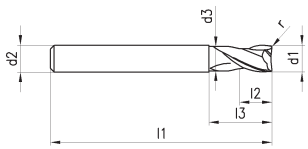


Made of solid hard metal, XIDUR coating, with cylindrical shank, According to factory standard, Nominal size Ø 2 - 12 mm, Number of teeth 4, With corner radius, Medium-length version, Milling cutter with 0° helix angle
Secondary application: Steel (ISO-P), Main application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling

Order ID	d1 mm	r mm	l2 mm	l3 mm	d2 mm	l1 mm	Order ID	d1 mm	r mm	l2 mm	l3 mm	d2 mm	l1 mm
227060.0100	**2**	**0.5**	1	6	6	50	227060.0600	**8**	**1**	3.5	16	8	60
227060.0200	**3**	**0.5**	1.2	8	6	50	227060.0700	**8**	**2**	3.5	16	8	60
227060.0300	**4**	**0.5**	1.5	10	6	50	227060.0800	**10**	**1**	4	20	10	70
227060.0400	**6**	**0.5**	2.5	12	6	60	227060.0900	**10**	**2**	4	20	10	70
227060.0500	**6**	**1**	2.5	12	6	60	227060.1000	**12**	**2**	5	25	12	80

FUTURO





227070 FUTURO SC shoulder/ slot milling cutters



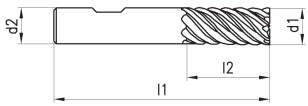


Made of solid hard metal, XIDUR coating, with cylindrical shank, According to factory standard, Nominal size Ø 0.3 - 10 mm, Number of teeth 2, With corner radius, Long version, with center cut, Milling cutter with 30° helix angle
Secondary application: Steel (ISO-P), Main application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling, For micro milling

Order ID	d1 mm	r mm	l2 mm	l3 mm	d2 mm	l1 mm	d3 mm	Order ID	d1 mm	r mm	l2 mm	l3 mm	d2 mm	l1 mm	d3 mm
227070.0010	**0.3**	**-**	0.45	-	3	40	-	227070.0160	**1**	**0.1**	1.5	-	6	40	-
227070.0020	**0.4**	**-**	0.6	-	3	40	-	227070.0200	**1.5**	**0.1**	2.2	-	3	40	-
227070.0030	**0.5**	**0.05**	0.7	-	3	40	-	227070.0250	**1.5**	**0.1**	2.2	-	6	40	-
227070.0040	**0.5**	**0.05**	1	-	4	40	-	227070.0300	**2**	**0.1**	3	6	3	40	1.95
227070.0050	**0.6**	**0.05**	0.9	-	3	40	-	227070.0360	**2**	**0.1**	3	6	6	40	1.95
227070.0060	**0.6**	**0.05**	1.2	-	4	40	-	227070.0500	**3**	**0.1**	4	7	6	45	2.85
227070.0080	**0.8**	**0.05**	1.2	-	3	40	-	227070.0700	**4**	**0.1**	5	9	6	45	3.85
227070.0090	**0.8**	**0.05**	1.6	-	4	40	-	227070.0900	**5**	**0.2**	6	11	6	50	4.85
227070.0095	**0.9**	**0.05**	2	-	4	40	-	227070.1000	**6**	**0.2**	7	14	6	50	5.85
227070.0100	**1**	**0.1**	1.5	-	3	40	-	227070.1200	**10**	**0.2**	12	25	10	75	9.7
227070.0130	**1**	**0.1**	1.5	-	4	40	-								

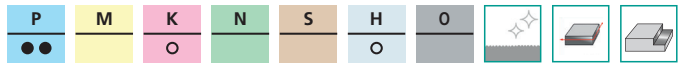
FUTURO





226021 FUTURO SC shoulder milling cutter



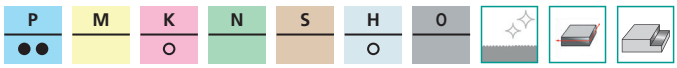


Made of solid hard metal, TiAlN coating, with Weldon shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 6 - 20 mm, Number of teeth 6 - 8, Long version, Milling cutter with 45° helix angle
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), Secondary application: Hardened steel (ISO H), For finishing, For trimming / hobbing, For shoulder milling

Order ID	d1 mm	l2 mm	d2 mm	l1 mm	teeth	Order ID	d1 mm	l2 mm	d2 mm	l1 mm	teeth
226021.0100	**6**	13	6	57	6	226021.0700	**14**	26	14	83	6
226021.0300	**8**	19	8	63	6	226021.0800	**16**	32	16	92	6
226021.0500	**10**	22	10	72	6	226021.1000	**20**	38	20	104	8
226021.0600	**12**	26	12	83	6						

226041 FUTURO SC shoulder milling cutter



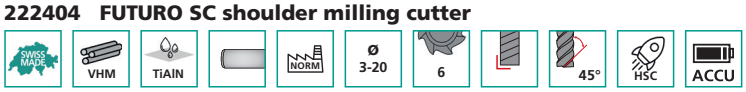




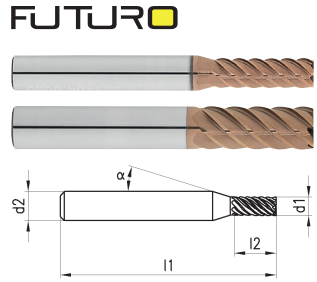
Made of solid hard metal, TiAlN coating, with cylindrical shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 6 - 20 mm, Number of teeth 6 - 8, With sharp corner design, Long version, Milling cutter with 45° helix angle
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), Secondary application: Hardened steel (ISO H), For finishing, For trimming / hobbing, For shoulder milling

Order ID	**d1** **mm**	l2 mm	d2 mm	l1 mm	teeth
226041.0100	**6**	13	6	57	6
226041.0300	**8**	19	8	63	6
226041.0500	**10**	22	10	72	6
226041.0600	**12**	26	12	83	6
226041.0800	**16**	32	16	92	6
226041.1000	**20**	38	20	104	8

222404 FUTURO SC shoulder milling cutter







Swiss Made, Made of solid hard metal, TiAlN coating, with cylindrical shank, According to factory standard, Nominal size Ø 3 - 20 mm, Number of teeth 6, With sharp corner design, Milling cutter with 45° helix angle, HSC (High-Speed Cutting) milling technology, Cordless version
Secondary application: Steel (ISO-P), Secondary application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N), Main application: Hardened steel (ISO H), For finishing, For trimming / hobbing, For shoulder milling

Application:
Square milling cutters for various roughing and finishing operations. **Can be used up to 60 HRC**. Suitable for non-ferrous metals and hardened steels.

Order ID	**d1** **mm**	**l2** **mm**	l1 mm	d2 mm	alpha °	Tolerance mm
222404.0010	**3**	**10**	50	6	15	+0/-0.01
222404.0020	**3**	**15**	50	6	15	+0/-0.01
222404.0030	**4**	**12**	50	6	15	+0/-0.01
222404.0040	**4**	**16**	50	6	15	+0/-0.01
222404.0050	**5**	**15**	50	6	15	+0/-0.01
222404.0060	**5**	**20**	60	6	15	+0/-0.01
222404.0070	**6**	**15**	50	6	-	-0.01/-0.025
222404.0080	**6**	**20**	60	6	-	-0.01/-0.025
222404.0090	**8**	**20**	60	8	-	-0.01/-0.025
222404.0100	**8**	**25**	65	8	-	-0.01/-0.025
222404.0110	**8**	**30**	75	8	-	-0.01/-0.025
222404.0140	**8**	**35**	80	8	-	-0.01/-0.025
222404.0150	**8**	**40**	90	8	-	-0.01/-0.025
222404.0160	**8**	**45**	100	8	-	-0.01/-0.025
222404.0170	**8**	**50**	100	8	-	-0.01/-0.025
222404.0180	**10**	**25**	70	10	-	-0.01/-0.025
222404.0190	**10**	**35**	90	10	-	-0.01/-0.025
222404.0200	**10**	**45**	100	10	-	-0.01/-0.025
222404.0210	**10**	**50**	100	10	-	-0.01/-0.025
222404.0220	**10**	**60**	110	10	-	-0.01/-0.025
222404.0230	**12**	**30**	80	12	-	-0.01/-0.025
222404.0240	**12**	**40**	90	12	-	-0.01/-0.025
222404.0250	**12**	**50**	100	12	-	-0.01/-0.025
222404.0260	**12**	**60**	110	12	-	-0.01/-0.025
222404.0270	**12**	**70**	120	12	-	-0.01/-0.025
222404.0280	**16**	**35**	90	16	-	-0.015/-0.03
222404.0290	**16**	**50**	110	16	-	-0.015/-0.03
222404.0300	**16**	**65**	120	16	-	-0.015/-0.03
222404.0310	**16**	**80**	150	16	-	-0.015/-0.03
222404.0320	**16**	**90**	160	16	-	-0.015/-0.03
222404.0330	**16**	**100**	160	16	-	-0.015/-0.03
222404.0340	**20**	**45**	100	20	-	-0.015/-0.03
222404.0350	**20**	**60**	120	20	-	-0.015/-0.03
222404.0360	**20**	**80**	150	20	-	-0.015/-0.03
222404.0370	**20**	**90**	160	20	-	-0.015/-0.03
222404.0380	**20**	**100**	160	20	-	-0.015/-0.03
222404.0390	**20**	**110**	170	20	-	-0.015/-0.03
222404.0400	**20**	**120**	180	20	-	-0.015/-0.03

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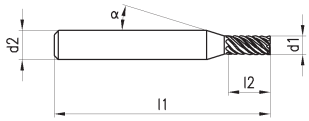
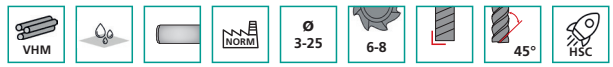


222425 FUTURO SC shoulder milling cutter





Made of solid hard metal, Coated, with cylindrical shank, According to factory standard, Nominal size Ø 3 - 25 mm, Number of teeth 6 - 8, With sharp corner design, Milling cutter with 45° helix angle, HSC (High-Speed Cutting) milling technology
Main application: Hardened steel (ISO H), For finishing, For trimming / hobbing, For shoulder milling

Application:
Square milling cutter for various roughing and finishing operations. **Can be used up to 68 HRC**. Particularly suitable for machining hardened steels.

Order ID	d1 mm	l2 mm	l1 mm	d2 mm	teeth	alpha °	Tolerance mm	Order ID	d1 mm	l2 mm	l1 mm	d2 mm	teeth	alpha °	Tolerance mm
222425.0010	**3**	**10**	50	6	6	15	+0/-0.01	222425.0230	**10**	**60**	110	10	6	-	-0.01/-0.025
222425.0020	**3**	**15**	50	6	6	15	+0/-0.01	222425.0240	**12**	**30**	80	12	6	-	-0.01/-0.025
222425.0030	**4**	**12**	50	6	6	15	+0/-0.01	222425.0250	**12**	**40**	90	12	6	-	-0.01/-0.025
222425.0040	**4**	**16**	50	6	6	15	+0/-0.01	222425.0260	**12**	**50**	100	12	6	-	-0.01/-0.025
222425.0050	**5**	**15**	50	6	6	15	+0/-0.01	222425.0270	**12**	**60**	110	12	6	-	-0.01/-0.025
222425.0060	**5**	**20**	60	6	6	15	+0/-0.01	222425.0280	**12**	**70**	120	12	6	-	-0.01/-0.025
222425.0070	**6**	**15**	50	6	6	-	-0.01/-0.025	222425.0290	**16**	**35**	90	16	6	-	-0.015/-0.03
222425.0080	**6**	**20**	60	6	6	-	-0.01/-0.025	222425.0300	**16**	**50**	110	16	6	-	-0.015/-0.03
222425.0090	**6**	**25**	65	6	6	-	-0.01/-0.025	222425.0310	**16**	**65**	120	16	6	-	-0.015/-0.03
222425.0100	**6**	**30**	70	6	6	-	-0.01/-0.025	222425.0320	**16**	**80**	150	16	6	-	-0.015/-0.03
222425.0110	**6**	**35**	75	6	6	-	-0.01/-0.025	222425.0330	**16**	**90**	160	16	6	-	-0.015/-0.03
222425.0120	**8**	**20**	60	8	6	-	-0.01/-0.025	222425.0340	**16**	**100**	160	16	6	-	-0.015/-0.03
222425.0130	**8**	**25**	65	8	6	-	-0.01/-0.025	222425.0350	**20**	**45**	100	20	6	-	-0.015/-0.03
222425.0140	**8**	**30**	75	8	6	-	-0.01/-0.025	222425.0360	**20**	**60**	120	20	6	-	-0.015/-0.03
222425.0150	**8**	**35**	80	8	6	-	-0.01/-0.025	222425.0370	**20**	**80**	150	20	6	-	-0.015/-0.03
222425.0160	**8**	**40**	90	8	6	-	-0.01/-0.025	222425.0380	**20**	**90**	160	20	6	-	-0.015/-0.03
222425.0170	**8**	**45**	100	8	6	-	-0.01/-0.025	222425.0390	**20**	**100**	160	20	6	-	-0.015/-0.03
222425.0180	**8**	**50**	100	8	6	-	-0.01/-0.025	222425.0400	**20**	**110**	170	20	6	-	-0.015/-0.03
222425.0190	**10**	**25**	70	10	6	-	-0.01/-0.025	222425.0410	**20**	**120**	180	20	6	-	-0.015/-0.03
222425.0200	**10**	**35**	90	10	6	-	-0.01/-0.025	222425.0420	**25**	**100**	160	25	8	-	-0.015/-0.03
222425.0210	**10**	**45**	100	10	6	-	-0.01/-0.025	222425.0430	**25**	**130**	200	25	8	-	-0.015/-0.03
222425.0220	**10**	**50**	100	10	6	-	-0.01/-0.025								

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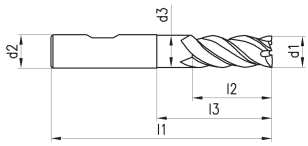


225790 FUTURO SC shoulder milling cutter







Made of solid hard metal, ZrN coating, with Weldon shank, Shaft tolerance h5, According to factory standard, Nominal size Ø 3 - 20 mm, Number of teeth 4, With protective chamfer, Milling with radial internal cooling, Long version, with center cut, with uneven pitch, End mill with unequal helix angle 35/38°, End mill cutting edge tolerance h10 (according to ISO 286 fit system), HPC (High-Performance Cutting) milling technology
Main application: Non-ferrous metals (ISO N), For finishing, For trimming / hobbing, For shoulder milling

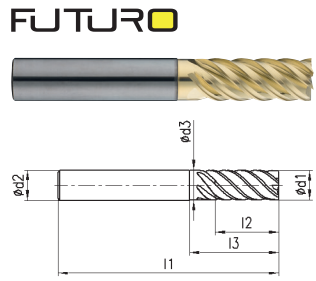
Order ID	d1 mm	l2 mm	l3 mm	d2 mm	l1 mm	d3 mm	Protective chamfer mm
225790.0100	**3**	11	**17**	6	57	2.8	0.1
225790.0200	**4**	12	**20**	6	57	3.6	0.1
225790.0400	**6**	15	**20**	6	57	5.5	0.2
225790.0500	**8**	21	**27**	8	63	7.5	0.2
225790.0600	**10**	22	**31**	10	72	9.5	0.3
225790.0700	**12**	28	**37**	12	83	11.5	0.3
225790.0900	**16**	35	**44**	16	92	15.5	0.4

225780 FUTURO SC shoulder milling cutter





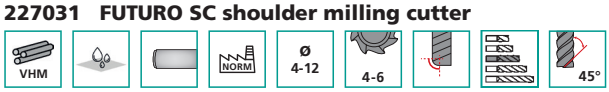




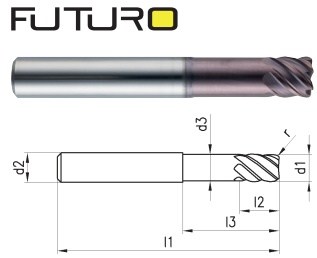
Made of solid hard metal, ZrN coating, with cylindrical shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 6 - 20 mm, Number of teeth 6, With sharp corner design, Long version, with center cut, Milling cutter with 45° helix angle, End mill cutting edge tolerance h10 (according to ISO 286 fit system), HSC (High-Speed Cutting) milling technology
Main application: Non-ferrous metals (ISO N), For finishing, For trimming / hobbing, For shoulder milling

Order ID	**d1** mm	l2 mm	**l3** mm	d2 mm	l1 mm	d3 mm	Order ID	**d1** mm	l2 mm	**l3** mm	d2 mm	l1 mm	d3 mm
225780.0100	**6**	15	**19**	6	57	5.7	225780.0700	**12**	30	**36**	12	83	11
225780.0200	**6**	15	**42**	6	80	5.7	225780.0800	**12**	30	**72**	12	120	11
225780.0300	**8**	20	**25**	8	63	7.4	225780.0900	**16**	40	**44**	16	93	15
225780.0400	**8**	20	**61**	8	100	7.4	225780.1000	**16**	40	**99**	16	150	15
225780.0500	**10**	25	**31**	10	73	9.2	225780.1100	**20**	50	**52**	20	104	19
225780.0600	**10**	25	**57**	10	100	9.2							

227031 FUTURO SC shoulder milling cutter



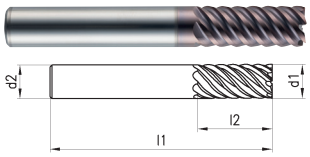




Made of solid hard metal, Coated, with cylindrical shank, According to factory standard, Nominal size Ø 4 - 12 mm, Number of teeth 4 - 6, With corner radius, Medium-length version, Milling cutter with 45° helix angle
Secondary application: Steel (ISO-P), Main application: Hardened steel (ISO H), For finishing, For trimming / hobbing, For shoulder milling

Application
For work on hardened steels **up to 68 HRC**.

Order ID	**d1** mm	**r** mm	**l2** mm	l3 mm	d2 mm	l1 mm	d3 mm
227031.0020	**4**	**0.2**	**6**	10	6	70	3.85
227031.0040	**4**	**0.5**	**6**	10	6	70	3.85
227031.0060	**5**	**0.2**	**6**	12	6	70	4.85
227031.0080	**5**	**0.5**	**6**	12	6	70	4.85
227031.0100	**6**	**0.5**	**6**	14	6	50	5.85
227031.0130	**6**	**0.5**	**13**	-	6	70	-
227031.0160	**6**	**0.5**	**26**	-	6	70	-
227031.0170	**6**	**1**	**6**	14	6	70	5.85
227031.0180	**6**	**1**	**13**	-	6	70	
227031.0200	**8**	**0.5**	**8**	24	8	60	7.7
227031.0220	**8**	**0.5**	**19**	-	8	90	-
227031.0260	**10**	**0.5**	**22**	-	10	100	-
227031.0300	**10**	**1**	**10**	30	10	70	9.7
227031.0320	**10**	**1**	**22**	-	10	100	-
227031.0340	**10**	**1**	**46**	-	10	100	-
227031.0360	**12**	**0.5**	**26**	-	12	110	-
227031.0400	**12**	**1**	**12**	30	12	75	11.7
227031.0500	**12**	**1**	**26**	-	12	110	-



227091 FUTURO SC shoulder milling cutter





Made of solid hard metal, Coated, with cylindrical shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 6 - 20 mm, Number of teeth 6 - 8, With sharp corner design, Long version, Milling cutter with 45° helix angle
Secondary application: Steel (ISO-P), Main application: Hardened steel (ISO H), For finishing, For trimming / hobbing, For shoulder milling

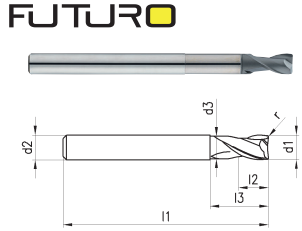
Application
For work on hardened steels **up to 68 HRC**.

Order ID	**d1** mm	l2 mm	d2 mm	l1 mm	teeth
227091.0100	**6**	13	6	57	6
227091.0200	**8**	19	8	63	6
227091.0300	**10**	22	10	72	6
227091.0400	**12**	26	12	83	6
227091.0500	**16**	32	16	92	6
227091.0600	**20**	38	20	104	8

227700 FUTURO SC shoulder milling cutter







Made of solid hard metal, Diamond coating, with cylindrical shank, Shaft tolerance h5, According to factory standard, Nominal size Ø 0.2 - 12 mm, Number of teeth 2, With corner radius, Short and long versions, with center cut, Milling cutter with 30° helix angle
Main application: Plastics and other materials (ISO O), For finishing, For trimming / hobbing, For shoulder milling

Diamond-coated end mills for machining **graphite** and other highly abrasive materials. The diamond coating ensures maximum durability and high productivity.

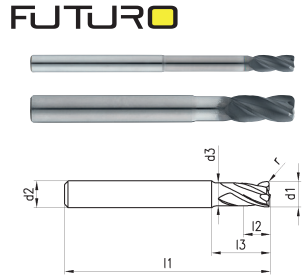
Order ID	**d1** mm	**r** mm	**l2** mm	**l3** mm	l1 mm	d2 mm	d3 mm	Cutting tolerance on radius
227700.0100	**0.2**	**0.05**	**0.2**	**1**	55	4	0.2	0.005
227700.0200	**0.3**	**0.05**	**0.3**	**1**	55	4	0.27	0.005
227700.0300	**0.3**	**0.05**	**0.3**	**3**	55	4	0.27	0.005
227700.0400	**0.4**	**0.05**	**0.4**	**2**	55	4	0.35	0.005
227700.0500	**0.4**	**0.05**	**0.4**	**4**	55	4	0.35	0.005
227700.0600	**0.4**	**0.05**	**0.4**	**8**	55	4	0.35	0.005
227700.0700	**0.5**	**0.05**	**0.5**	**2**	55	4	0.45	0.005
227700.0800	**0.5**	**0.05**	**0.5**	**5**	55	4	0.45	0.005
227700.0900	**0.5**	**0.05**	**0.5**	**10**	55	4	0.45	0.005
227700.1000	**0.6**	**0.06**	**0.8**	**3**	55	4	0.56	0.005
227700.1100	**0.6**	**0.06**	**0.8**	**6**	55	4	0.56	0.005
227700.1200	**0.6**	**0.06**	**0.8**	**9**	55	4	0.56	0.005
227700.1300	**0.6**	**0.06**	**0.8**	**12**	55	4	0.56	0.005
227700.1400	**0.8**	**0.08**	**1**	**4**	55	4	0.75	0.005
227700.1500	**0.8**	**0.08**	**1**	**8**	55	4	0.75	0.005
227700.1600	**0.8**	**0.08**	**1**	**12**	55	4	0.75	0.005
227700.1700	**0.8**	**0.08**	**1**	**16**	55	4	0.75	0.005
227700.1800	**1**	**0.1**	**1**	**5**	55	4	0.9	0.005
227700.1900	**1**	**0.1**	**1**	**10**	55	4	0.9	0.005
227700.2000	**1**	**0.1**	**1**	**15**	55	4	0.9	0.005
227700.2100	**1**	**0.1**	**1**	**20**	55	4	0.9	0.005
227700.2200	**1**	**0.1**	**1**	**25**	55	4	0.9	0.005
227700.2300	**1.2**	**0.12**	**1.5**	**5**	55	4	1.1	0.005
227700.2400	**1.2**	**0.12**	**1.5**	**10**	55	4	1.1	0.005
227700.2500	**1.2**	**0.12**	**1.5**	**15**	55	4	1.1	0.005
227700.2600	**1.5**	**0.15**	**2**	**5**	55	4	1.4	0.005
227700.2700	**1.5**	**0.15**	**2**	**8**	55	4	1.4	0.005
227700.2800	**1.5**	**0.15**	**2**	**10**	55	4	1.4	0.005
227700.2900	**1.5**	**0.15**	**2**	**15**	55	4	1.4	0.005
227700.3000	**1.5**	**0.15**	**2**	**20**	55	4	1.4	0.005
227700.3100	**1.5**	**0.15**	**2**	**25**	55	4	1.4	0.005
227700.3200	**1.8**	**0.18**	**2**	**10**	55	4	1.7	0.005
227700.3300	**1.8**	**0.18**	**2**	**20**	55	4	1.7	0.005
227700.3400	**2**	**0.2**	**2**	**10**	65	4	1.9	0.005
227700.3500	**2**	**0.2**	**2**	**15**	65	4	1.9	0.005
227700.3600	**2**	**0.2**	**2**	**20**	65	4	1.9	0.005
227700.3700	**2**	**0.2**	**2**	**25**	65	4	1.9	0.005

Order ID	d1 mm	r mm	l2 mm	l3 mm	l1 mm	d2 mm	d3 mm	Cutting tolerance on radius
227700.3800	2	0.5	2	10	65	4	1.9	0.005
227700.3900	2	0.5	2	15	65	4	1.9	0.005
227700.4000	2	0.5	2	20	65	4	1.9	0.005
227700.4100	2	0.5	2	25	65	4	1.9	0.005
227700.4200	3	0.3	3	15	65	4	2.9	0.005
227700.4300	3	0.3	3	25	75	4	2.9	0.005
227700.4400	3	0.5	3	10	65	4	2.9	0.005
227700.4500	3	0.5	3	15	65	4	2.9	0.005
227700.4600	3	0.5	3	20	65	4	2.9	0.005
227700.4700	3	0.5	3	25	75	4	2.9	0.005
227700.4800	3	0.5	3	30	75	4	2.9	0.005
227700.4900	3	0.5	3	45	90	6	2.9	0.005
227700.5000	4	0.4	4	15	65	6	3.9	0.005
227700.5100	4	0.4	4	25	75	6	3.9	0.005
227700.5200	4	0.5	4	20	65	6	3.9	0.005
227700.5300	4	0.5	4	30	75	6	3.9	0.005
227700.5400	4	0.5	4	40	90	6	3.9	0.005
227700.5500	5	0.5	5	20	75	6	4.9	0.005
227700.5600	5	0.5	5	30	75	6	4.9	0.005
227700.5700	5	0.5	5	40	90	6	4.9	0.005
227700.5800	5	0.5	5	50	90	6	4.9	0.005
227700.5900	6	0.3	6	30	75	6	5.9	0.005
227700.6000	6	0.5	6	30	75	6	5.9	0.005
227700.6100	6	0.5	6	40	90	6	5.9	0.005
227700.6200	6	0.5	6	50	90	6	5.9	0.005
227700.6300	6	0.5	6	60	100	6	5.9	0.005
227700.6400	6	1	6	30	75	6	5.9	0.005
227700.6500	6	1	6	40	90	6	5.9	0.005
227700.6600	8	0.5	8	30	80	8	7.8	0.005
227700.6700	8	0.5	8	60	100	8	7.8	0.005
227700.6800	8	1	8	30	80	8	7.8	0.005
227700.6900	8	1	8	60	100	8	7.8	0.005
227700.7000	10	0.5	10	30	80	10	9.8	0.005
227700.7100	10	0.5	10	60	100	10	9.8	0.005
227700.7200	10	1	10	30	80	10	9.8	0.005
227700.7300	10	1	10	60	100	10	9.8	0.005
227700.7400	12	0.5	12	30	80	12	11.8	0.005
227700.7500	12	0.5	12	60	100	12	11.8	0.005
227700.7600	12	1	12	30	80	12	11.8	0.005
227700.7700	12	1	12	60	100	12	11.8	0.005

227710 FUTURO SC shoulder milling cutter







Made of solid hard metal, Diamond coating, with cylindrical shank, Shaft tolerance h5, According to factory standard, Nominal size Ø 3 - 12 mm, Number of teeth 4, With corner radius, Short and long versions, with center cut, Milling cutter with 30° helix angle
Main application: Plastics and other materials (ISO O), For finishing, For trimming / hobbing, For shoulder milling

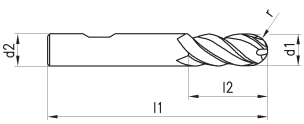
Diamond-coated end mills for machining **graphite** and other highly abrasive materials. The diamond coating ensures maximum durability and high productivity.

Order ID	d1 mm	r mm	l2 mm	l3 mm	l1 mm	d2 mm	d3 mm	Cutting tolerance on radius
227710.0100	3	0.3	6	14	50	3	2.7	0.005
227710.0200	3	0.3	6	32	80	3	2.7	0.005
227710.0300	3	0.5	6	14	50	3	2.7	0.005
227710.0400	3	0.5	6	32	80	3	2.7	0.005
227710.0500	3	1	6	14	50	3	2.7	0.005
227710.0600	3	1	6	32	80	3	2.7	0.005
227710.0700	4	0.4	8	16	50	4	3.7	0.005
227710.0900	4	0.5	8	16	50	4	3.7	0.005
227710.1000	4	0.5	8	36	80	4	3.7	0.005
227710.1100	4	1	8	16	50	4	3.7	0.005
227710.1300	5	0.5	10	18	54	5	4.6	0.005
227710.1400	5	0.5	10	40	80	5	4.6	0.005
227710.1500	5	1	10	18	54	5	4.6	0.005
227710.1600	5	1	10	40	80	5	4.6	0.005
227710.1700	6	0.5	13	21	57	6	5.5	0.005
227710.1800	6	0.5	13	44	90	6	5.5	0.005
227710.1900	6	1	13	21	57	6	5.5	0.005
227710.2000	6	1	13	44	90	6	5.5	0.005
227710.2100	6	1.5	13	21	57	6	5.5	0.005
227710.2200	6	1.5	13	44	90	6	5.5	0.005
227710.2300	8	0.5	15	27	63	8	7.4	0.005
227710.2400	8	0.5	15	54	100	8	7.4	0.005
227710.2500	8	1	15	27	63	8	7.4	0.005
227710.2900	8	2	15	27	63	8	7.4	0.005

Order ID	d1 mm	r mm	l2 mm	l3 mm	l1 mm	d2 mm	d3 mm	Cutting tolerance on radius
227710.3000	**8**	**2**	**15**	**54**	100	8	7.4	0.005
227710.3100	**10**	**0.5**	**18**	**32**	72	10	9.2	0.005
227710.3200	**10**	**0.5**	**18**	**60**	100	10	9.2	0.005
227710.3300	**10**	**1**	**18**	**32**	72	10	9.2	0.005
227710.3400	**10**	**1**	**18**	**60**	100	10	9.2	0.005
227710.3500	**10**	**1.5**	**18**	**32**	72	10	9.2	0.005
227710.3600	**10**	**1.5**	**18**	**60**	100	10	9.2	0.005
227710.3700	**10**	**2**	**18**	**32**	72	10	9.2	0.005
227710.3800	**10**	**2**	**18**	**60**	100	10	9.2	0.005
227710.3900	**12**	**0.5**	**26**	**38**	83	12	11	0.005
227710.4000	**12**	**0.5**	**26**	**75**	120	12	11	0.005
227710.4100	**12**	**1**	**26**	**38**	83	12	11	0.005
227710.4200	**12**	**1**	**26**	**75**	120	12	11	0.005
227710.4300	**12**	**1.5**	**26**	**38**	83	12	11	0.005
227710.4400	**12**	**1.5**	**26**	**75**	120	12	11	0.005
227710.4500	**12**	**2**	**26**	**38**	83	12	11	0.005
227710.4600	**12**	**2**	**26**	**75**	120	12	11	0.005

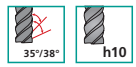
FUTURO





225739 FUTURO SC ball-nose copy milling cutters





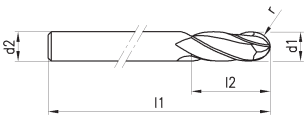


Made of solid hard metal, TiAlN coating, with Weldon shank, Shaft tolerance h6, According to DIN 6527L, Nominal size Ø 3 - 12 mm, Number of teeth 4, With full radius, Long version, with center cut, with uneven pitch, End mill with unequal helix angle 35/38°, End mill cutting edge tolerance h10 (according to ISO 286 fit system)
Main application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Main application: Cast materials (ISO K), For finishing, For copy milling

Order ID	d1 mm	r mm	l2 mm	d2 mm	l1 mm
225739.0100	**3**	**1.5**	8	6	57
225739.0200	**4**	**2**	10	6	57
225739.0300	**5**	**2.5**	13	6	57
225739.0400	**6**	**3**	13	6	57
225739.0500	**8**	**4**	16	8	63
225739.0600	**10**	**5**	22	10	72
225739.0700	**12**	**6**	26	12	83

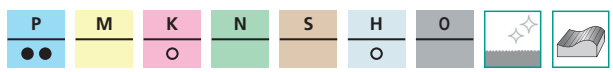
FUTURO





226620 FUTURO SC ball-nose copy milling cutters





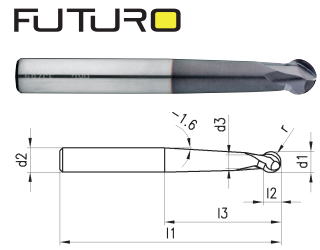
Made of solid hard metal, TiAlN coating, with cylindrical shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 1 - 10 mm, Number of teeth 4, With full radius, Long version, with center cut, Milling cutter with 30° helix angle
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), Secondary application: Hardened steel (ISO H), For finishing, For copy milling

Order ID	d1 mm	r mm	l2 mm	d2 mm	l1 mm
226620.0100	**1**	**0.5**	2.5	4	50
226620.0200	**1.5**	**0.75**	4	4	50
226620.0300	**2**	**1**	5	6	50
226620.0400	**3**	**1.5**	8	6	60
226620.0500	**4**	**2**	8	6	70
226620.0700	**6**	**3**	12	6	90
226620.0800	**7**	**3.5**	14	8	90
226620.0900	**8**	**4**	14	8	100
226620.1100	**10**	**5**	18	10	100

226700 FUTURO SC ball-nose copy milling cutters







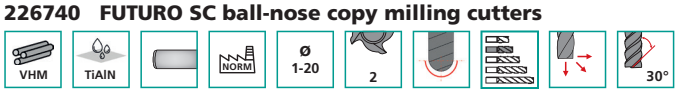
Made of solid hard metal, TiAlN coating, with cylindrical shank, According to factory standard, Nominal size Ø 3 - 12 mm, Number of teeth 2, With 240° ball radius (lollipop), Long version, Milling cutter with 30° helix angle
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), Secondary application: Hardened steel (ISO H), For finishing, For copy milling

Design:
Lollipop milling cutter, ball shape, cutting 240°

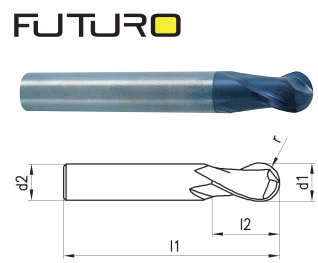
Application:
Thanks to the strong undercut cutting edge, this solid carbide radius copy milling cutter can also be used for reverse deburring, cone milling or form surface milling.

Order ID	d1 mm	r mm	l2 mm	l3 mm	d2 mm	l1 mm	d3 mm	Cutting tolerance on radius
226700.0100	**3**	**1.5**	2.3	30	6	80	2.5	+/- 0.01
226700.0200	**4**	**2**	3.1	30	6	80	3.3	+/- 0.01
226700.0400	**6**	**3**	4.9	28	6	100	4.7	+/- 0.01
226700.0500	**8**	**4**	6.3	33	8	100	6.5	+/- 0.01
226700.0600	**10**	**5**	7.9	40	10	100	8.2	+/- 0.01
226700.0700	**12**	**6**	9.5	49	12	100	9.8	+/- 0.01

226740 FUTURO SC ball-nose copy milling cutters



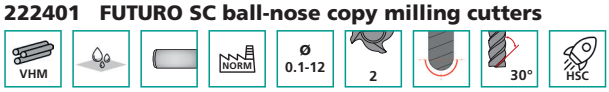




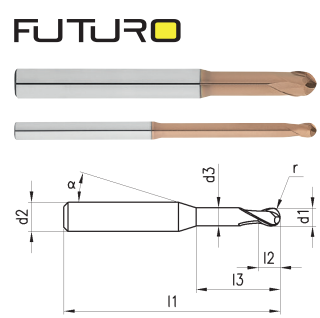
Made of solid hard metal, TiAlN coating, with cylindrical shank, According to factory standard, Nominal size Ø 1 - 20 mm, Number of teeth 2, With full radius, Short version, with center cut, Milling cutter with 30° helix angle
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), Secondary application: Hardened steel (ISO H), For finishing, For copy milling

Order ID	d1 mm	r mm	l2 mm	d2 mm	l1 mm	Cutting tolerance on radius
226740.0100	**1**	**0.5**	3	3	38	+/- 0.02
226740.0200	**1.2**	**0.6**	3	3	38	+/- 0.02
226740.0300	**1.5**	**0.75**	3	3	38	+/- 0.02
226740.0400	**2**	**1**	3	6	50	+/- 0.02
226740.0500	**3**	**1.5**	4	6	50	+/- 0.02
226740.0600	**4**	**2**	5	6	54	+/- 0.02
226740.0700	**5**	**2.5**	6	6	54	+/- 0.02
226740.0800	**6**	**3**	7	6	54	+/- 0.02
226740.0900	**8**	**4**	9	8	58	+/- 0.02
226740.1000	**10**	**5**	11	10	66	+/- 0.02
226740.1100	**12**	**6**	12	12	73	+/- 0.02
226740.1200	**16**	**8**	16	16	82	+/- 0.02
226740.1300	**20**	**10**	20	20	92	+/- 0.02

222401 FUTURO SC ball-nose copy milling cutters







Made of solid hard metal, Coated, with cylindrical shank, According to factory standard, Nominal size Ø 0.1 - 12 mm, Number of teeth 2, With full radius, Milling cutter with 30° helix angle, HSC (High-Speed Cutting) milling technology
Secondary application: Steel (ISO-P), Secondary application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N), Main application: Hardened steel (ISO H), For finishing, For copy milling

Application:
Ball end mills can be used **up to 60 HRC**. Suitable for non-ferrous metals and hardened steels.

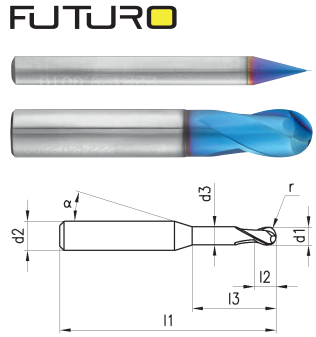
Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222401.0010	**0.1**	**0.05**	**-**	0.3	40	4	15	222401.0920	**1**	**0.5**	**20**	1	50	4	15
222401.0020	**0.1**	**0.05**	**-**	0.5	40	4	15	222401.0930	**1**	**0.5**	**20**	1	60	6	15
222401.0030	**0.2**	**0.1**	**0.5**	0.2	40	4	15	222401.0940	**1**	**0.5**	**22**	1	60	4	15
222401.0040	**0.2**	**0.1**	**1**	0.2	40	4	15	222401.0950	**1**	**0.5**	**22**	1	65	6	15
222401.0050	**0.2**	**0.1**	**1.5**	0.2	40	4	15	222401.0960	**1**	**0.5**	**25**	1	60	4	15
222401.0060	**0.2**	**0.1**	**2**	0.2	40	4	15	222401.0970	**1**	**0.5**	**30**	1	70	4	15
222401.0070	**0.2**	**0.1**	**2.5**	0.2	40	4	15	222401.0980	**1.2**	**0.6**	**4**	1.2	45	4	15
222401.0080	**0.2**	**0.1**	**3**	0.2	40	4	15	222401.0990	**1.2**	**0.6**	**4**	1.2	50	6	15
222401.0090	**0.3**	**0.15**	**1**	0.3	40	4	15	222401.1000	**1.2**	**0.6**	**6**	1.2	45	4	15
222401.0100	**0.3**	**0.15**	**1.5**	0.3	40	4	15	222401.1010	**1.2**	**0.6**	**6**	1.2	50	6	15
222401.0110	**0.3**	**0.15**	**2**	0.3	40	4	15	222401.1020	**1.2**	**0.6**	**8**	1.2	45	4	15
222401.0120	**0.3**	**0.15**	**2.5**	0.3	40	4	15	222401.1030	**1.2**	**0.6**	**8**	1.2	50	6	15
222401.0130	**0.3**	**0.15**	**3**	0.3	40	4	15	222401.1040	**1.2**	**0.6**	**10**	1.2	50	4	15
222401.0140	**0.3**	**0.15**	**3.5**	0.3	40	4	15	222401.1050	**1.2**	**0.6**	**10**	1.2	50	6	15
222401.0150	**0.3**	**0.15**	**4**	0.3	40	4	15	222401.1060	**1.2**	**0.6**	**12**	1.2	50	4	15
222401.0160	**0.3**	**0.15**	**5**	0.3	40	4	15	222401.1070	**1.2**	**0.6**	**12**	1.2	50	6	15
222401.0170	**0.4**	**0.2**	**1**	0.4	40	4	15	222401.1080	**1.2**	**0.6**	**16**	1.2	50	4	15
222401.0180	**0.4**	**0.2**	**1.5**	0.4	40	4	15	222401.1090	**1.2**	**0.6**	**16**	1.2	60	6	15
222401.0190	**0.4**	**0.2**	**2**	0.4	40	4	15	222401.1100	**1.2**	**0.6**	**20**	1.2	50	4	15
222401.0200	**0.4**	**0.2**	**2.5**	0.4	40	4	15	222401.1110	**1.2**	**0.6**	**20**	1.2	60	6	15
222401.0210	**0.4**	**0.2**	**3**	0.4	40	4	15	222401.1120	**1.2**	**0.6**	**24**	1.2	60	4	15
222401.0220	**0.4**	**0.2**	**3.5**	0.4	40	4	15	222401.1130	**1.2**	**0.6**	**24**	1.2	65	6	15
222401.0230	**0.4**	**0.2**	**4**	0.4	40	4	15	222401.1140	**1.4**	**0.7**	**6**	1.4	45	4	15
222401.0240	**0.4**	**0.2**	**5**	0.4	40	4	15	222401.1150	**1.4**	**0.7**	**8**	1.4	45	4	15
222401.0250	**0.4**	**0.2**	**6**	0.4	40	4	15	222401.1160	**1.4**	**0.7**	**12**	1.4	50	4	15
222401.0260	**0.4**	**0.2**	**8**	0.4	40	4	15	222401.1170	**1.4**	**0.7**	**16**	1.4	50	4	15
222401.0270	**0.4**	**0.2**	**10**	0.4	40	4	15	222401.1180	**1.5**	**0.75**	**3**	1.5	45	4	15
222401.0280	**0.5**	**0.25**	**1**	0.5	45	4	15	222401.1190	**1.5**	**0.75**	**3**	1.5	50	6	15
222401.0290	**0.5**	**0.25**	**1.5**	0.5	45	4	15	222401.1200	**1.5**	**0.75**	**4**	1.5	45	4	15
222401.0300	**0.5**	**0.25**	**2**	0.5	45	4	15	222401.1210	**1.5**	**0.75**	**4**	1.5	50	6	15
222401.0310	**0.5**	**0.25**	**2.5**	0.5	45	4	15	222401.1220	**1.5**	**0.75**	**6**	1.5	45	4	15
222401.0320	**0.5**	**0.25**	**3**	0.5	45	4	15	222401.1230	**1.5**	**0.75**	**6**	1.5	50	6	15
222401.0330	**0.5**	**0.25**	**3.5**	0.5	45	4	15	222401.1240	**1.5**	**0.75**	**8**	1.5	45	4	15
222401.0340	**0.5**	**0.25**	**4**	0.5	45	4	15	222401.1250	**1.5**	**0.75**	**8**	1.5	50	6	15
222401.0350	**0.5**	**0.25**	**4.5**	0.5	45	4	15	222401.1260	**1.5**	**0.75**	**10**	1.5	50	4	15
222401.0360	**0.5**	**0.25**	**5**	0.5	45	4	15	222401.1270	**1.5**	**0.75**	**10**	1.5	50	6	15
222401.0370	**0.5**	**0.25**	**6**	0.5	45	4	15	222401.1280	**1.5**	**0.75**	**12**	1.5	50	4	15
222401.0380	**0.5**	**0.25**	**8**	0.5	45	4	15	222401.1290	**1.5**	**0.75**	**12**	1.5	50	6	15
222401.0400	**0.5**	**0.25**	**12**	0.5	45	4	15	222401.1300	**1.5**	**0.75**	**14**	1.5	50	4	15
222401.0410	**0.5**	**0.25**	**14**	0.5	45	4	15	222401.1310	**1.5**	**0.75**	**14**	1.5	50	6	15
222401.0420	**0.6**	**0.3**	**1**	0.6	45	4	15	222401.1320	**1.5**	**0.75**	**16**	1.5	50	4	15
222401.0430	**0.6**	**0.3**	**2**	0.6	45	4	15	222401.1330	**1.5**	**0.75**	**16**	1.5	60	6	15
222401.0440	**0.6**	**0.3**	**3**	0.6	45	4	15	222401.1340	**1.5**	**0.75**	**18**	1.5	50	4	15
222401.0450	**0.6**	**0.3**	**4**	0.6	45	4	15	222401.1350	**1.5**	**0.75**	**18**	1.5	60	6	15
222401.0460	**0.6**	**0.3**	**5**	0.6	45	4	15	222401.1360	**1.5**	**0.75**	**20**	1.5	50	4	15
222401.0470	**0.6**	**0.3**	**6**	0.6	45	4	15	222401.1370	**1.5**	**0.75**	**20**	1.5	60	6	15
222401.0480	**0.6**	**0.3**	**8**	0.6	45	4	15	222401.1380	**1.5**	**0.75**	**22**	1.5	60	4	15
222401.0490	**0.6**	**0.3**	**10**	0.6	45	4	15	222401.1390	**1.5**	**0.75**	**22**	1.5	65	6	15
222401.0500	**0.6**	**0.3**	**12**	0.6	45	4	15	222401.1400	**1.5**	**0.75**	**25**	1.5	60	4	15
222401.0510	**0.6**	**0.3**	**14**	0.6	45	4	15	222401.1410	**1.5**	**0.75**	**25**	1.5	65	6	15
222401.0520	**0.6**	**0.3**	**16**	0.6	45	4	15	222401.1420	**1.5**	**0.75**	**30**	1.5	70	4	15
222401.0530	**0.7**	**0.35**	**2**	0.7	45	4	15	222401.1440	**1.5**	**0.75**	**35**	1.5	70	4	15
222401.0540	**0.7**	**0.35**	**4**	0.7	45	4	15	222401.1450	**1.5**	**0.75**	**40**	1.5	80	4	15
222401.0550	**0.7**	**0.35**	**6**	0.7	45	4	15	222401.1460	**1.6**	**0.8**	**6**	1.6	45	4	15
222401.0560	**0.7**	**0.35**	**8**	0.7	45	4	15	222401.1470	**1.6**	**0.8**	**8**	1.6	45	4	15
222401.0570	**0.7**	**0.35**	**10**	0.7	45	4	15	222401.1480	**1.6**	**0.8**	**12**	1.6	50	4	15
222401.0580	**0.7**	**0.35**	**12**	0.7	45	4	15	222401.1490	**1.6**	**0.8**	**16**	1.6	50	4	15
222401.0590	**0.8**	**0.4**	**2**	0.8	45	4	15	222401.1500	**1.6**	**0.8**	**20**	1.6	50	4	15
222401.0600	**0.8**	**0.4**	**3**	0.8	45	4	15	222401.1510	**1.8**	**0.9**	**6**	1.8	45	4	15
222401.0610	**0.8**	**0.4**	**4**	0.8	45	4	15	222401.1520	**1.8**	**0.9**	**8**	1.8	45	4	15
222401.0620	**0.8**	**0.4**	**5**	0.8	45	4	15	222401.1530	**1.8**	**0.9**	**12**	1.8	50	4	15
222401.0630	**0.8**	**0.4**	**6**	0.8	45	4	15	222401.1540	**1.8**	**0.9**	**16**	1.8	50	4	15
222401.0640	**0.8**	**0.4**	**8**	0.8	45	4	15	222401.1550	**1.8**	**0.9**	**20**	1.8	50	4	15
222401.0650	**0.8**	**0.4**	**10**	0.8	45	4	15	222401.1560	**2**	**1**	**4**	2	45	4	15
222401.0660	**0.8**	**0.4**	**12**	0.8	45	4	15	222401.1570	**2**	**1**	**4**	2	50	6	15
222401.0670	**0.8**	**0.4**	**14**	0.8	45	4	15	222401.1580	**2**	**1**	**6**	2	45	4	15
222401.0680	**0.8**	**0.4**	**16**	0.8	45	4	15	222401.1590	**2**	**1**	**6**	2	50	6	15
222401.0690	**0.9**	**0.45**	**4**	0.9	45	4	15	222401.1600	**2**	**1**	**8**	2	45	4	15
222401.0700	**1**	**0.5**	**2**	1	45	4	15	222401.1610	**2**	**1**	**8**	2	50	6	15
222401.0710	**1**	**0.5**	**2**	1	50	6	15	222401.1620	**2**	**1**	**10**	2	50	4	15
222401.0720	**1**	**0.5**	**3**	1	45	4	15	222401.1630	**2**	**1**	**10**	2	50	6	15
222401.0730	**1**	**0.5**	**3**	1	50	6	15	222401.1640	**2**	**1**	**12**	2	50	4	15
222401.0740	**1**	**0.5**	**4**	1	45	4	15	222401.1650	**2**	**1**	**12**	2	50	6	15
222401.0750	**1**	**0.5**	**4**	1	50	6	15	222401.1660	**2**	**1**	**14**	2	50	4	15
222401.0760	**1**	**0.5**	**5**	1	45	4	15	222401.1670	**2**	**1**	**14**	2	50	6	15
222401.0770	**1**	**0.5**	**5**	1	50	6	15	222401.1680	**2**	**1**	**16**	2	50	4	15
222401.0780	**1**	**0.5**	**6**	1	45	4	15	222401.1690	**2**	**1**	**16**	2	60	6	15
222401.0790	**1**	**0.5**	**6**	1	50	6	15	222401.1700	**2**	**1**	**18**	2	50	4	15
222401.0800	**1**	**0.5**	**8**	1	45	4	15	222401.1710	**2**	**1**	**18**	2	60	6	15
222401.0810	**1**	**0.5**	**8**	1	50	6	15	222401.1720	**2**	**1**	**20**	2	50	4	15
222401.0820	**1**	**0.5**	**10**	1	50	4	15	222401.1730	**2**	**1**	**20**	2	60	6	15
222401.0830	**1**	**0.5**	**10**	1	50	6	15	222401.1740	**2**	**1**	**22**	2	60	4	15
222401.0840	**1**	**0.5**	**12**	1	50	4	15	222401.1750	**2**	**1**	**22**	2	65	6	15
222401.0850	**1**	**0.5**	**12**	1	50	6	15	222401.1760	**2**	**1**	**25**	2	60	4	15
222401.0860	**1**	**0.5**	**14**	1	50	4	15	222401.1770	**2**	**1**	**25**	2	65	6	15
222401.0870	**1**	**0.5**	**14**	1	50	6	15	222401.1780	**2**	**1**	**30**	2	70	4	15
222401.0880	**1**	**0.5**	**16**	1	50	4	15	222401.1790	**2**	**1**	**30**	2	70	6	15
222401.0890	**1**	**0.5**	**16**	1	60	6	15	222401.1800	**2**	**1**	**35**	2	70	4	15
222401.0900	**1**	**0.5**	**18**	1	50	4	15	222401.1810	**2**	**1**	**35**	2	75	6	15
222401.0910	**1**	**0.5**	**18**	1	60	6	15	222401.1820	**2**	**1**	**40**	2	80	4	15

Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222401.1830	**2**	**1**	**40**	2	80	6	15	222401.2140	**4**	**2**	**12**	4	50	6	15
222401.1840	**2**	**1**	**45**	2	80	4	15	222401.2150	**4**	**2**	**16**	4	60	6	15
222401.1850	**2**	**1**	**50**	2	90	4	15	222401.2160	**4**	**2**	**20**	4	60	6	15
222401.1860	**2.5**	**1.25**	**8**	2.5	45	4	15	222401.2170	**4**	**2**	**25**	4	65	6	15
222401.1870	**2.5**	**1.25**	**8**	2.5	50	6	15	222401.2180	**4**	**2**	**30**	4	70	6	15
222401.1880	**2.5**	**1.25**	**10**	2.5	50	4	15	222401.2190	**4**	**2**	**35**	4	75	6	15
222401.1890	**2.5**	**1.25**	**10**	2.5	50	6	15	222401.2200	**4**	**2**	**40**	4	80	6	15
222401.1900	**2.5**	**1.25**	**16**	2.5	50	4	15	222401.2210	**4**	**2**	**45**	4	90	6	15
222401.1910	**2.5**	**1.25**	**16**	2.5	60	6	15	222401.2220	**4**	**2**	**50**	4	100	6	15
222401.1920	**2.5**	**1.25**	**20**	2.5	60	4	15	222401.2230	**4**	**2**	**55**	4	100	6	15
222401.1930	**2.5**	**1.25**	**25**	2.5	60	4	15	222401.2240	**4**	**2**	**60**	4	100	6	15
222401.1940	**2.5**	**1.25**	**30**	2.5	70	4	15	222401.2250	**4**	**2**	**65**	4	110	6	15
222401.1950	**2.5**	**1.25**	**35**	2.5	70	4	15	222401.2260	**4**	**2**	**70**	4	110	6	15
222401.1960	**2.5**	**1.25**	**40**	2.5	80	4	15	222401.2270	**5**	**2.5**	**20**	6	60	6	15
222401.1970	**3**	**1.5**	**6**	3	50	6	15	222401.2280	**5**	**2.5**	**25**	6	70	6	15
222401.1980	**3**	**1.5**	**8**	3	50	6	15	222401.2290	**5**	**2.5**	**30**	6	75	6	15
222401.1990	**3**	**1.5**	**10**	3	50	6	15	222401.2300	**5**	**2.5**	**40**	6	80	6	15
222401.2000	**3**	**1.5**	**12**	3	50	6	15	222401.2310	**5**	**2.5**	**45**	6	90	6	15
222401.2010	**3**	**1.5**	**16**	3	60	6	15	222401.2320	**5**	**2.5**	**50**	6	100	6	15
222401.2020	**3**	**1.5**	**20**	3	60	6	15	222401.2330	**5**	**2.5**	**60**	6	100	6	15
222401.2030	**3**	**1.5**	**25**	3	65	6	15	222401.2340	**5**	**2.5**	**65**	6	110	6	15
222401.2040	**3**	**1.5**	**30**	3	70	6	15	222401.2350	**5**	**2.5**	**70**	6	110	6	15
222401.2050	**3**	**1.5**	**35**	3	75	6	15	222401.2360	**6**	**3**	**15**	10	55	6	-
222401.2060	**3**	**1.5**	**40**	3	80	6	15	222401.2370	**6**	**3**	**30**	10	110	6	-
222401.2070	**3**	**1.5**	**45**	3	90	6	15	222401.2380	**8**	**4**	**25**	12	60	8	-
222401.2080	**3**	**1.5**	**50**	3	100	6	15	222401.2390	**8**	**4**	**30**	12	100	8	-
222401.2090	**3**	**1.5**	**60**	3	100	6	15	222401.2400	**10**	**5**	**30**	16	70	10	-
222401.2100	**3**	**1.5**	**65**	3	110	6	15	222401.2410	**10**	**5**	**35**	16	100	10	-
222401.2110	**3**	**1.5**	**70**	3	110	6	15	222401.2420	**12**	**6**	**30**	18	75	12	-
222401.2120	**4**	**2**	**8**	4	50	6	15	222401.2430	**12**	**6**	**40**	18	110	12	-
222401.2130	**4**	**2**	**10**	4	50	6	15								

222420 FUTURO SC ball-nose copy milling cutters







Made of solid hard metal, Coated, with cylindrical shank, According to factory standard, Nominal size Ø 0.1 - 12 mm, Number of teeth 2, With full radius, Milling cutter with 30° helix angle, HSC (High-Speed Cutting) milling technology
Secondary application: Steel (ISO-P), Main application: Hardened steel (ISO H), For finishing, For copy milling, For micro milling

Application:
Ball end mills **can be used up to 68 HRC**. Particularly suitable for machining hardened steels.

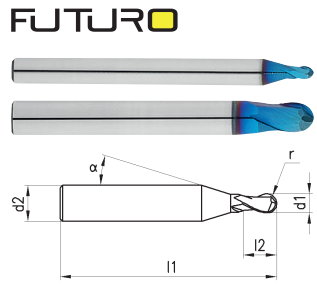
Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222420.0010	**0.1**	**0.05**	**-**	0.3	40	4	15	222420.0340	**0.5**	**0.25**	**3**	0.5	45	4	15
222420.0020	**0.1**	**0.05**	**-**	0.5	40	4	15	222420.0350	**0.5**	**0.25**	**3**	0.5	50	6	15
222420.0030	**0.2**	**0.1**	**0.5**	0.2	40	4	15	222420.0360	**0.5**	**0.25**	**3.5**	0.5	45	4	15
222420.0040	**0.2**	**0.1**	**1**	0.2	40	4	15	222420.0370	**0.5**	**0.25**	**4**	0.5	45	4	15
222420.0050	**0.2**	**0.1**	**1.5**	0.2	40	4	15	222420.0380	**0.5**	**0.25**	**4**	0.5	50	6	15
222420.0060	**0.2**	**0.1**	**2**	0.2	40	4	15	222420.0390	**0.5**	**0.25**	**4.5**	0.5	45	4	15
222420.0070	**0.2**	**0.1**	**2.5**	0.2	40	4	15	222420.0400	**0.5**	**0.25**	**5**	0.5	45	4	15
222420.0080	**0.2**	**0.1**	**3**	0.2	40	4	15	222420.0410	**0.5**	**0.25**	**5**	0.5	50	6	15
222420.0090	**0.3**	**0.15**	**1**	0.3	40	4	15	222420.0420	**0.5**	**0.25**	**6**	0.5	45	4	15
222420.0100	**0.3**	**0.15**	**1.5**	0.3	40	4	15	222420.0430	**0.5**	**0.25**	**6**	0.5	50	6	15
222420.0110	**0.3**	**0.15**	**2**	0.3	40	4	15	222420.0440	**0.5**	**0.25**	**8**	0.5	45	4	15
222420.0120	**0.3**	**0.15**	**2.5**	0.3	40	4	15	222420.0450	**0.5**	**0.25**	**10**	0.5	45	4	15
222420.0130	**0.3**	**0.15**	**3**	0.3	40	4	15	222420.0460	**0.5**	**0.25**	**12**	0.5	45	4	15
222420.0140	**0.3**	**0.15**	**3.5**	0.3	40	4	15	222420.0470	**0.6**	**0.3**	**1**	0.6	45	4	15
222420.0150	**0.3**	**0.15**	**4**	0.3	40	4	15	222420.0480	**0.6**	**0.3**	**1**	0.6	50	6	15
222420.0160	**0.3**	**0.15**	**5**	0.3	40	4	15	222420.0490	**0.6**	**0.3**	**2**	0.6	45	4	15
222420.0170	**0.4**	**0.2**	**1**	0.4	40	4	15	222420.0500	**0.6**	**0.3**	**2**	0.6	50	6	15
222420.0180	**0.4**	**0.2**	**1.5**	0.4	40	4	15	222420.0510	**0.6**	**0.3**	**3**	0.6	45	4	15
222420.0190	**0.4**	**0.2**	**2**	0.4	40	4	15	222420.0520	**0.6**	**0.3**	**3**	0.6	50	6	15
222420.0200	**0.4**	**0.2**	**2.5**	0.4	40	4	15	222420.0530	**0.6**	**0.3**	**4**	0.6	45	4	15
222420.0210	**0.4**	**0.2**	**3**	0.4	40	4	15	222420.0540	**0.6**	**0.3**	**4**	0.6	50	6	15
222420.0220	**0.4**	**0.2**	**3.5**	0.4	40	4	15	222420.0550	**0.6**	**0.3**	**5**	0.6	45	4	15
222420.0230	**0.4**	**0.2**	**4**	0.4	40	4	15	222420.0560	**0.6**	**0.3**	**5**	0.6	50	6	15
222420.0240	**0.4**	**0.2**	**4.5**	0.4	40	4	15	222420.0570	**0.6**	**0.3**	**6**	0.6	45	4	15
222420.0250	**0.4**	**0.2**	**5**	0.4	40	4	15	222420.0580	**0.6**	**0.3**	**6**	0.6	50	6	15
222420.0260	**0.4**	**0.2**	**6**	0.4	40	4	15	222420.0590	**0.6**	**0.3**	**8**	0.6	45	4	15
222420.0270	**0.4**	**0.2**	**8**	0.4	40	4	15	222420.0600	**0.6**	**0.3**	**8**	0.6	50	6	15
222420.0280	**0.5**	**0.25**	**1**	0.5	45	4	15	222420.0610	**0.6**	**0.3**	**10**	0.6	45	4	15
222420.0290	**0.5**	**0.25**	**1**	0.5	50	6	15	222420.0620	**0.6**	**0.3**	**12**	0.6	45	4	15
222420.0300	**0.5**	**0.25**	**1.5**	0.5	45	4	15	222420.0630	**0.6**	**0.3**	**14**	0.6	45	4	15
222420.0310	**0.5**	**0.25**	**2**	0.5	45	4	15	222420.0640	**0.7**	**0.35**	**2**	0.7	45	4	15
222420.0320	**0.5**	**0.25**	**2**	0.5	50	6	15	222420.0650	**0.7**	**0.35**	**4**	0.7	45	4	15
222420.0330	**0.5**	**0.25**	**2.5**	0.5	45	4	15	222420.0660	**0.7**	**0.35**	**6**	0.7	45	4	15

Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222420.0670	**0.7**	**0.35**	**8**	0.7	45	4	15
222420.0680	**0.7**	**0.35**	**10**	0.7	45	4	15
222420.0690	**0.7**	**0.35**	**12**	0.7	45	4	15
222420.0700	**0.8**	**0.4**	**2**	0.8	45	4	15
222420.0710	**0.8**	**0.4**	**2**	0.8	50	6	15
222420.0720	**0.8**	**0.4**	**3**	0.8	45	4	15
222420.0730	**0.8**	**0.4**	**3**	0.8	50	6	15
222420.0740	**0.8**	**0.4**	**4**	0.8	45	4	15
222420.0750	**0.8**	**0.4**	**4**	0.8	50	6	15
222420.0760	**0.8**	**0.4**	**5**	0.8	45	4	15
222420.0770	**0.8**	**0.4**	**5**	0.8	50	6	15
222420.0780	**0.8**	**0.4**	**6**	0.8	45	4	15
222420.0790	**0.8**	**0.4**	**6**	0.8	50	6	15
222420.0800	**0.8**	**0.4**	**8**	0.8	45	4	15
222420.0810	**0.8**	**0.4**	**8**	0.8	50	6	15
222420.0820	**0.8**	**0.4**	**10**	0.8	45	4	15
222420.0830	**0.8**	**0.4**	**12**	0.8	45	4	15
222420.0840	**0.9**	**0.45**	**4**	0.9	45	4	15
222420.0850	**0.9**	**0.45**	**6**	0.9	45	4	15
222420.0860	**0.9**	**0.45**	**8**	0.9	45	4	15
222420.0870	**0.9**	**0.45**	**10**	0.9	50	4	15
222420.0880	**0.9**	**0.45**	**12**	0.9	50	4	15
222420.0890	**1**	**0.5**	**2**	1	45	4	15
222420.0900	**1**	**0.5**	**2**	1	50	6	15
222420.0910	**1**	**0.5**	**3**	1	45	4	15
222420.0920	**1**	**0.5**	**3**	1	50	6	15
222420.0930	**1**	**0.5**	**4**	1	45	4	15
222420.0940	**1**	**0.5**	**4**	1	50	6	15
222420.0950	**1**	**0.5**	**5**	1	45	4	15
222420.0960	**1**	**0.5**	**5**	1	50	6	15
222420.0970	**1**	**0.5**	**6**	1	45	4	15
222420.0980	**1**	**0.5**	**6**	1	50	6	15
222420.0990	**1**	**0.5**	**8**	1	45	4	15
222420.1000	**1**	**0.5**	**8**	1	50	6	15
222420.1010	**1**	**0.5**	**10**	1	50	4	15
222420.1020	**1**	**0.5**	**10**	1	50	6	15
222420.1030	**1**	**0.5**	**12**	1	50	4	15
222420.1040	**1**	**0.5**	**12**	1	50	6	15
222420.1050	**1**	**0.5**	**14**	1	50	4	15
222420.1060	**1**	**0.5**	**16**	1	50	4	15
222420.1070	**1**	**0.5**	**18**	1	50	4	15
222420.1080	**1**	**0.5**	**20**	1	50	4	15
222420.1090	**1**	**0.5**	**22**	1	60	4	15
222420.1100	**1**	**0.5**	**25**	1	60	4	15
222420.1110	**1.2**	**0.6**	**4**	1.2	45	4	15
222420.1120	**1.2**	**0.6**	**4**	1.2	50	6	15
222420.1130	**1.2**	**0.6**	**6**	1.2	45	4	15
222420.1140	**1.2**	**0.6**	**6**	1.2	50	6	15
222420.1150	**1.2**	**0.6**	**8**	1.2	45	4	15
222420.1160	**1.2**	**0.6**	**8**	1.2	50	6	15
222420.1170	**1.2**	**0.6**	**10**	1.2	50	4	15
222420.1180	**1.2**	**0.6**	**10**	1.2	50	6	15
222420.1190	**1.2**	**0.6**	**12**	1.2	50	4	15
222420.1200	**1.2**	**0.6**	**12**	1.2	50	6	15
222420.1210	**1.2**	**0.6**	**16**	1.2	50	4	15
222420.1220	**1.2**	**0.6**	**20**	1.2	50	4	15
222420.1230	**1.2**	**0.6**	**24**	1.2	60	4	15
222420.1240	**1.4**	**0.7**	**6**	1.4	45	4	15
222420.1250	**1.4**	**0.7**	**8**	1.4	45	4	15
222420.1260	**1.4**	**0.7**	**12**	1.4	50	4	15
222420.1270	**1.4**	**0.7**	**16**	1.4	50	4	15
222420.1280	**1.5**	**0.75**	**3**	1.5	45	4	15
222420.1290	**1.5**	**0.75**	**3**	1.5	50	6	15
222420.1300	**1.5**	**0.75**	**4**	1.5	45	4	15
222420.1310	**1.5**	**0.75**	**4**	1.5	50	6	15
222420.1320	**1.5**	**0.75**	**6**	1.5	45	4	15
222420.1330	**1.5**	**0.75**	**6**	1.5	50	6	15
222420.1340	**1.5**	**0.75**	**8**	1.5	45	4	15
222420.1350	**1.5**	**0.75**	**8**	1.5	50	6	15
222420.1360	**1.5**	**0.75**	**10**	1.5	50	4	15
222420.1370	**1.5**	**0.75**	**10**	1.5	50	6	15
222420.1380	**1.5**	**0.75**	**12**	1.5	50	4	15
222420.1390	**1.5**	**0.75**	**12**	1.5	50	6	15
222420.1400	**1.5**	**0.75**	**14**	1.5	50	4	15
222420.1410	**1.5**	**0.75**	**14**	1.5	50	6	15
222420.1420	**1.5**	**0.75**	**16**	1.5	50	4	15
222420.1430	**1.5**	**0.75**	**16**	1.5	60	6	15
222420.1440	**1.5**	**0.75**	**18**	1.5	50	4	15
222420.1450	**1.5**	**0.75**	**20**	1.5	50	4	15
222420.1460	**1.5**	**0.75**	**22**	1.5	60	4	15
222420.1470	**1.5**	**0.75**	**25**	1.5	60	4	15
222420.1480	**1.5**	**0.75**	**30**	1.5	70	4	15
222420.1490	**1.6**	**0.8**	**6**	1.6	45	4	15
222420.1500	**1.6**	**0.8**	**8**	1.6	45	4	15
222420.1510	**1.6**	**0.8**	**12**	1.6	50	4	15
222420.1520	**1.6**	**0.8**	**16**	1.6	50	4	15
222420.1530	**1.6**	**0.8**	**20**	1.6	50	4	15
222420.1540	**1.8**	**0.9**	**6**	1.8	45	4	15
222420.1550	**1.8**	**0.9**	**8**	1.8	45	4	15
222420.1560	**1.8**	**0.9**	**12**	1.8	50	4	15
222420.1570	**1.8**	**0.9**	**16**	1.8	50	4	15
222420.1580	**1.8**	**0.9**	**20**	1.8	50	4	15
222420.1590	**2**	**1**	**4**	2	45	4	15
222420.1600	**2**	**1**	**4**	2	50	6	15
222420.1610	**2**	**1**	**6**	2	45	4	15
222420.1620	**2**	**1**	**6**	2	50	6	15
222420.1630	**2**	**1**	**8**	2	45	4	15
222420.1640	**2**	**1**	**8**	2	50	6	15
222420.1650	**2**	**1**	**10**	2	50	4	15
222420.1660	**2**	**1**	**10**	2	50	6	15
222420.1670	**2**	**1**	**12**	2	50	4	15
222420.1680	**2**	**1**	**12**	2	50	6	15
222420.1690	**2**	**1**	**14**	2	50	4	15
222420.1700	**2**	**1**	**14**	2	50	6	15
222420.1710	**2**	**1**	**16**	2	50	4	15
222420.1720	**2**	**1**	**16**	2	60	6	15
222420.1730	**2**	**1**	**18**	2	50	4	15
222420.1740	**2**	**1**	**18**	2	60	6	15
222420.1750	**2**	**1**	**20**	2	50	4	15
222420.1760	**2**	**1**	**20**	2	60	6	15
222420.1770	**2**	**1**	**22**	2	60	4	15
222420.1780	**2**	**1**	**25**	2	60	4	15
222420.1790	**2**	**1**	**30**	2	60	4	15
222420.1800	**2.5**	**1.25**	**8**	2.5	45	4	15
222420.1810	**2.5**	**1.25**	**8**	2.5	50	6	15
222420.1820	**2.5**	**1.25**	**10**	2.5	50	4	15
222420.1830	**2.5**	**1.25**	**10**	2.5	50	6	15
222420.1840	**2.5**	**1.25**	**12**	2.5	50	4	15
222420.1850	**2.5**	**1.25**	**12**	2.5	50	6	15
222420.1860	**2.5**	**1.25**	**16**	2.5	50	4	15
222420.1870	**2.5**	**1.25**	**16**	2.5	60	6	15
222420.1880	**2.5**	**1.25**	**20**	2.5	60	4	15
222420.1890	**2.5**	**1.25**	**20**	2.5	60	6	15
222420.1900	**2.5**	**1.25**	**25**	2.5	60	4	15
222420.1910	**2.5**	**1.25**	**30**	2.5	70	4	15
222420.1920	**3**	**1.5**	**6**	3	50	6	15
222420.1930	**3**	**1.5**	**8**	3	50	6	15
222420.1940	**3**	**1.5**	**10**	3	50	6	15
222420.1950	**3**	**1.5**	**12**	3	50	6	15
222420.1960	**3**	**1.5**	**16**	3	60	6	15
222420.1970	**3**	**1.5**	**20**	3	60	6	15
222420.1980	**3**	**1.5**	**25**	3	65	6	15
222420.1990	**3**	**1.5**	**30**	3	70	6	15
222420.2000	**3**	**1.5**	**35**	3	75	6	15
222420.2010	**3**	**1.5**	**40**	3	80	6	15
222420.2020	**3**	**1.5**	**45**	3	90	6	15
222420.2030	**3.5**	**1.75**	**10**	3.5	50	6	15
222420.2040	**3.5**	**1.75**	**15**	3.5	60	6	15
222420.2050	**3.5**	**1.75**	**20**	3.5	60	6	15
222420.2060	**3.5**	**1.75**	**25**	3.5	65	6	15
222420.2070	**3.5**	**1.75**	**30**	3.5	70	6	15
222420.2080	**3.5**	**1.75**	**35**	3.5	75	6	15
222420.2090	**3.5**	**1.75**	**40**	3.5	80	6	15
222420.2100	**4**	**2**	**8**	4	50	6	15
222420.2110	**4**	**2**	**10**	4	50	6	15
222420.2120	**4**	**2**	**12**	4	50	6	15
222420.2130	**4**	**2**	**16**	4	60	6	15
222420.2140	**4**	**2**	**20**	4	60	6	15
222420.2150	**4**	**2**	**25**	4	65	6	15
222420.2160	**4**	**2**	**30**	4	70	6	15
222420.2170	**4**	**2**	**35**	4	75	6	15
222420.2180	**4**	**2**	**40**	4	80	6	15
222420.2190	**4**	**2**	**45**	4	90	6	15
222420.2200	**5**	**2.5**	**16**	6	60	6	15
222420.2210	**5**	**2.5**	**20**	6	60	6	15
222420.2220	**5**	**2.5**	**25**	6	70	6	15
222420.2230	**5**	**2.5**	**30**	6	75	6	15
222420.2240	**5**	**2.5**	**40**	6	80	6	15
222420.2250	**5**	**2.5**	**45**	6	90	6	15
222420.2260	**6**	**3**	**15**	10	55	6	-
222420.2270	**8**	**4**	**25**	12	60	8	-
222420.2280	**10**	**5**	**30**	16	70	10	-
222420.2290	**12**	**6**	**30**	18	75	12	-

222421 FUTURO SC ball-nose copy milling cutters







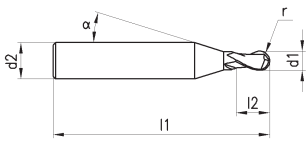
Made of solid hard metal, Coated, with cylindrical shank, According to factory standard, Nominal size Ø 0.1 - 12 mm, Number of teeth 2, With full radius, Milling cutter with 30° helix angle, HSC (High-Speed Cutting) milling technology
Secondary application: Steel (ISO-P), Main application: Hardened steel (ISO H), For finishing, For copy milling, For micro milling

Application:
Ball end mills **can be used up to 68 HRC**. Particularly suitable for machining hardened steels.

Order ID	**d1** **mm**	**r** **mm**	l2 mm	l1 mm	d2 mm	alpha °	Order ID	**d1** **mm**	**r** **mm**	l2 mm	l1 mm	d2 mm	alpha °
222421.0010	**0.1**	**0.05**	0.1	38	4	15	222421.0260	**1.5**	**0.75**	2.3	40	4	15
222421.0020	**0.1**	**0.05**	0.15	38	4	15	222421.0270	**1.5**	**0.75**	1.5	40	6	15
222421.0030	**0.15**	**0.075**	0.15	38	4	15	222421.0280	**1.5**	**0.75**	2.3	40	6	15
222421.0040	**0.15**	**0.075**	0.2	38	4	15	222421.0290	**2**	**1**	2	45	4	15
222421.0050	**0.2**	**0.1**	0.2	38	4	15	222421.0300	**2**	**1**	3	45	4	15
222421.0060	**0.2**	**0.1**	0.3	38	4	15	222421.0310	**2**	**1**	2	45	6	15
222421.0070	**0.3**	**0.15**	0.3	38	4	15	222421.0320	**2**	**1**	3	45	6	15
222421.0080	**0.3**	**0.15**	0.45	38	4	15	222421.0330	**3**	**1.5**	3	45	4	15
222421.0090	**0.4**	**0.2**	0.4	38	4	15	222421.0340	**3**	**1.5**	4.5	45	4	15
222421.0100	**0.4**	**0.2**	0.6	38	4	15	222421.0350	**3**	**1.5**	3	45	6	15
222421.0110	**0.5**	**0.25**	0.5	38	4	15	222421.0360	**3**	**1.5**	4.5	45	6	15
222421.0120	**0.5**	**0.25**	0.75	38	4	15	222421.0370	**4**	**2**	4	45	4	-
222421.0130	**0.6**	**0.3**	0.6	38	4	15	222421.0380	**4**	**2**	6	45	4	-
222421.0140	**0.6**	**0.3**	0.9	38	4	15	222421.0390	**4**	**2**	4	45	6	15
222421.0150	**0.7**	**0.35**	0.7	38	4	15	222421.0400	**4**	**2**	6	45	6	15
222421.0160	**0.7**	**0.35**	1	38	4	15	222421.0410	**5**	**2.5**	5	50	6	15
222421.0170	**0.8**	**0.4**	0.8	38	4	15	222421.0420	**5**	**2.5**	7.5	50	6	15
222421.0180	**0.8**	**0.4**	1.2	38	4	15	222421.0430	**6**	**3**	6	50	6	-
222421.0190	**0.9**	**0.45**	0.9	38	4	15	222421.0440	**6**	**3**	8	55	6	-
222421.0200	**0.9**	**0.45**	1.3	38	4	15	222421.0450	**8**	**4**	8	50	8	-
222421.0210	**1**	**0.5**	1	40	4	15	222421.0460	**8**	**4**	11	60	8	-
222421.0220	**1**	**0.5**	1.5	40	4	15	222421.0470	**10**	**5**	10	60	10	-
222421.0230	**1**	**0.5**	1	40	6	15	222421.0480	**10**	**5**	13	60	10	-
222421.0240	**1**	**0.5**	1.5	40	6	15	222421.0490	**12**	**6**	12	60	12	-
222421.0250	**1.5**	**0.75**	1.5	40	4	15							

FUTURO





222422 FUTURO SC ball-nose copy milling cutters





Made of solid hard metal, Coated, with cylindrical shank, According to factory standard, Nominal size Ø 0.1 - 12 mm, Number of teeth 2, With full radius, Milling cutter with 30° helix angle, HSC (High-Speed Cutting) milling technology
Secondary application: Steel (ISO-P), Main application: Hardened steel (ISO H), For finishing, For copy milling, For micro milling

Application:
Ball end mills **can be used up to 68 HRC**. Particularly suitable for machining hardened steels.

Order ID	d1 mm	r mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l2 mm	l1 mm	d2 mm	alpha °
222422.0010	**0.1**	**0.05**	0.2	40	4	15	222422.0210	**2.5**	**1.25**	6	50	4	15
222422.0020	**0.15**	**0.075**	0.3	40	4	15	222422.0220	**2.5**	**1.25**	6	75	6	15
222422.0030	**0.2**	**0.1**	0.4	40	4	15	222422.0230	**3**	**1.5**	8	50	4	15
222422.0040	**0.3**	**0.15**	0.6	40	4	15	222422.0240	**3**	**1.5**	8	60	6	15
222422.0050	**0.4**	**0.2**	0.8	40	4	15	222422.0250	**3**	**1.5**	8	80	6	15
222422.0060	**0.5**	**0.25**	1	45	4	15	222422.0260	**3.5**	**1.75**	8	60	6	15
222422.0070	**0.6**	**0.3**	1.2	45	4	15	222422.0270	**4**	**2**	8	60	4	-
222422.0080	**0.7**	**0.35**	1.5	45	4	15	222422.0280	**4**	**2**	8	80	4	-
222422.0090	**0.8**	**0.4**	2	45	4	15	222422.0290	**4**	**2**	8	70	6	15
222422.0100	**0.9**	**0.45**	2	45	4	15	222422.0300	**4**	**2**	8	90	6	15
222422.0110	**1**	**0.5**	2.5	50	4	15	222422.0310	**5**	**2.5**	10	75	6	15
222422.0120	**1**	**0.5**	2.5	50	6	15	222422.0320	**6**	**3**	10	60	6	-
222422.0130	**1**	**0.5**	2.5	70	6	15	222422.0330	**6**	**3**	12	90	6	-
222422.0140	**1.2**	**0.6**	3	50	4	15	222422.0340	**8**	**4**	12	60	8	-
222422.0150	**1.5**	**0.75**	4	50	4	15	222422.0350	**8**	**4**	14	100	8	-
222422.0160	**1.5**	**0.75**	4	50	6	15	222422.0360	**10**	**5**	15	70	10	-
222422.0170	**1.5**	**0.75**	4	70	6	15	222422.0370	**10**	**5**	18	100	10	-
222422.0180	**2**	**1**	5	50	4	15	222422.0380	**12**	**6**	18	75	12	-
222422.0190	**2**	**1**	5	50	6	15	222422.0390	**12**	**6**	22	110	12	-
222422.0200	**2**	**1**	5	75	6	15							

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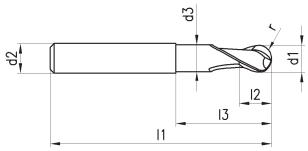


227000 FUTURO SC ball-nose copy milling cutters



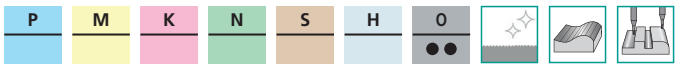


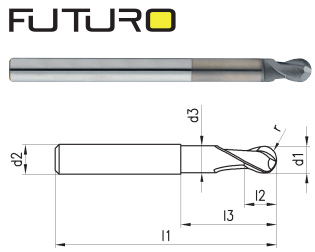
Made of solid hard metal, XIDUR coating, with cylindrical shank, According to factory standard, Nominal size Ø 0.1 - 12 mm, Number of teeth 2, With full radius, Medium-length version, with center cut, Milling cutter with 30° helix angle, HSC (High-Speed Cutting) milling technology
Secondary application: Steel (ISO-P), Main application: Hardened steel (ISO H), For finishing, For copy milling, For micro milling

Order ID	d1 mm	r mm	l2 mm	l3 mm	d2 mm	l1 mm	d3 mm	Cutting tolerance on radius	Order ID	d1 mm	r mm	l2 mm	l3 mm	d2 mm	l1 mm	d3 mm	Cutting tolerance on radius
227000.0100	**0.1**	**0.05**	0.2	-	4	40	-	+/- 0.005	227000.1000	**3**	**1.5**	4	10	6	60	2.85	+/- 0.005
227000.0200	**0.2**	**0.1**	0.3	-	4	40	-	+/- 0.005	227000.1050	**3.5**	**1.75**	4.5	10	6	60	3.35	+/- 0.005
227000.0250	**0.3**	**0.15**	0.5	-	4	40	-	+/- 0.005	227000.1100	**4**	**2**	5	10	6	60	3.85	+/- 0.005
227000.0300	**0.4**	**0.2**	0.6	-	4	40	-	+/- 0.005	227000.1150	**4.5**	**2.25**	5.5	10	6	60	4.35	+/- 0.005
227000.0400	**0.6**	**0.3**	0.9	-	4	40	-	+/- 0.005	227000.1200	**5**	**2.5**	6	12	6	60	4.85	+/- 0.005
227000.0450	**0.7**	**0.35**	1.1	-	4	40	-	+/- 0.005	227000.1300	**6**	**3**	7	15	6	60	5.85	+/- 0.005
227000.0500	**0.8**	**0.4**	1.2	-	4	40	-	+/- 0.005	227000.1400	**6**	**3**	9	30	6	90	5.85	+/- 0.005
227000.0550	**0.9**	**0.45**	1.4	-	4	40	-	+/- 0.005	227000.1500	**8**	**4**	9	15	8	80	7.7	+/- 0.005
227000.0600	**1**	**0.5**	1.5	3	6	50	0.95	+/- 0.005	227000.1600	**8**	**4.0**	12	30	8	100	7.7	+/- 0.005
227000.0700	**1.5**	**0.75**	2	4	6	50	1.45	+/- 0.005	227000.1800	**10**	**5.0**	11	25	10	80	9.7	+/- 0.005
227000.0800	**2**	**1**	2.5	5	6	50	1.95	+/- 0.005	227000.1900	**10**	**5.0**	15	30	10	100	9.7	+/- 0.005
227000.0900	**2.5**	**1.25**	3	7	6	50	2.4	+/- 0.005	227000.2000	**12**	**6.0**	14	25	12	80	11.4	+/- 0.005

227720 FUTURO SC ball-nose copy milling cutters



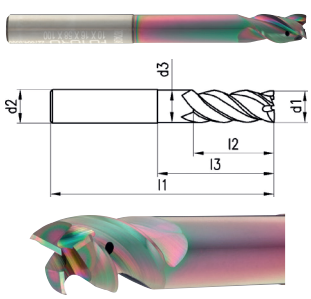




Made of solid hard metal, Diamond coating, with cylindrical shank, Shaft tolerance h5, According to factory standard, Nominal size Ø 0.2 - 12 mm, Number of teeth 2, With full radius, Short and long versions, with center cut, Milling cutter with 30° helix angle
Main application: Plastics and other materials (ISO O), For finishing, For copy milling, For micro milling

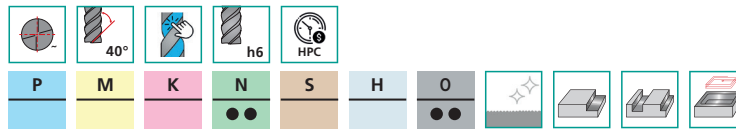
Diamond-coated end mills for machining **graphite** and other highly abrasive materials. The diamond coating ensures maximum durability and high productivity.

Order ID	d1 mm	r mm	l2 mm	l3 mm	l1 mm	d2 mm	d3 mm	Cutting tolerance on radius
227720.0100	0.2	0.1	0.2	1	55	4	0.18	0.003
227720.0200	0.3	0.15	0.3	1	55	4	0.27	0.003
227720.0300	0.3	0.15	0.3	3	55	4	0.27	0.003
227720.0400	0.3	0.15	0.3	5	55	4	0.27	0.003
227720.0500	0.3	0.15	0.3	8	55	4	0.27	0.003
227720.0600	0.4	0.2	0.4	4	55	4	0.35	0.003
227720.0700	0.4	0.2	0.4	6	55	4	0.35	0.003
227720.0800	0.4	0.2	0.4	8	55	4	0.35	0.003
227720.0900	0.5	0.25	0.5	5	55	4	0.45	0.003
227720.1000	0.5	0.25	0.5	10	55	4	0.45	0.003
227720.1100	0.6	0.3	0.8	6	55	4	0.56	0.003
227720.1200	0.6	0.3	0.8	9	55	4	0.56	0.003
227720.1300	0.6	0.3	0.8	12	55	4	0.56	0.003
227720.1400	0.7	0.35	0.9	7	55	4	0.65	0.003
227720.1500	0.7	0.35	0.9	14	55	4	0.65	0.003
227720.1600	0.8	0.4	1	8	55	4	0.75	0.003
227720.1700	0.8	0.4	1	12	55	4	0.75	0.003
227720.1800	0.8	0.4	1	16	55	4	0.75	0.003
227720.1900	1	0.5	1	5	55	4	0.9	0.003
227720.2000	1	0.5	1	10	55	4	0.9	0.003
227720.2100	1	0.5	1	15	55	4	0.9	0.003
227720.2200	1	0.5	1	20	55	4	0.9	0.003
227720.2300	1	0.5	1	25	55	4	0.9	0.003
227720.2400	1	0.5	1	30	55	4	0.9	0.003
227720.2500	1.2	0.6	1.5	5	55	4	1.1	0.003
227720.2600	1.2	0.6	1.5	10	55	4	1.1	0.003
227720.2700	1.2	0.6	1.5	15	55	4	1.1	0.003
227720.2800	1.5	0.75	2	5	55	4	1.4	0.003
227720.2900	1.5	0.75	2	10	55	4	1.4	0.003
227720.3000	1.5	0.75	2	15	55	4	1.4	0.003
227720.3100	1.5	0.75	2	20	55	4	1.4	0.003
227720.3200	1.5	0.75	2	25	55	4	1.4	0.003
227720.3300	1.8	0.9	2	10	55	4	1.7	0.003
227720.3400	1.8	0.9	2	20	55	4	1.7	0.003
227720.3500	2	1	2	10	55	4	1.9	0.003
227720.3600	2	1	2	15	55	4	1.9	0.003
227720.3700	2	1	2	20	55	4	1.9	0.003
227720.3800	2	1	2	25	65	4	1.9	0.003
227720.3900	2	1	2	30	65	4	1.9	0.003
227720.4000	3	1.5	3	10	65	4	2.9	0.003
227720.4100	3	1.5	3	15	65	4	2.9	0.003
227720.4200	3	1.5	3	20	65	4	2.9	0.003
227720.4300	3	1.5	3	25	75	4	2.9	0.003
227720.4400	3	1.5	3	30	75	4	2.9	0.003
227720.4500	4	2	4	20	65	6	3.9	0.003
227720.4600	4	2	4	30	75	6	3.9	0.003
227720.4700	4	2	4	40	90	6	3.9	0.003
227720.4800	5	2.5	5	20	65	6	4.9	0.003
227720.4900	5	2.5	5	30	75	6	4.9	0.003
227720.5000	5	2.5	5	40	90	6	4.9	0.003
227720.5100	5	2.5	5	50	90	6	4.9	0.003
227720.5200	6	3	6	30	75	6	5.9	0.003
227720.5300	6	3	6	40	90	6	5.9	0.003
227720.5400	6	3	6	50	90	6	5.9	0.003
227720.5500	6	3	6	60	100	6	5.9	0.003
227720.5600	8	4	8	30	80	8	7.8	0.003
227720.5700	8	4	8	60	100	8	7.8	0.003
227720.5800	10	5	10	30	80	10	9.8	0.003
227720.5900	10	5	10	60	100	10	9.8	0.003
227720.6000	12	6	12	30	83	12	11.8	0.003
227720.6100	12	6	12	60	100	12	11.8	0.003



227664 FUTURO SC shoulder/ slot milling cutters

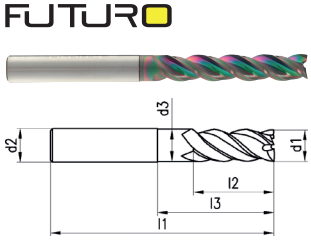




Made of solid hard metal, Coated, with Weldon shank or cylindrical shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 6 - 20 mm, Number of teeth 3, With protective chamfer, Milling with radial internal cooling, Extra long version, with center cut, with uneven pitch, Milling cutter with 40° helix angle, with polished chip flutes, End mill cutting tolerance h6 (according to ISO 286 fit system), HPC (High-Performance Cutting) milling technology
Main application: Non-ferrous metals (ISO N), Main application: Plastics and other materials (ISO O), For finishing, For shoulder milling, For slot milling, For pocket milling

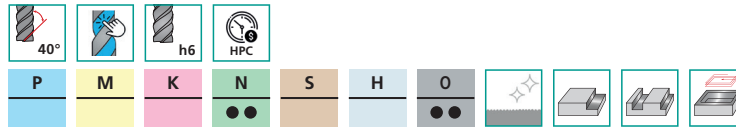
Designs:
6 mm...**20 mm**: Shank tolerance;h6, Cutting tolerance on diameter;h6,

Order ID	**d1** **mm**	l2 mm	l3 mm	l1 mm	d2 mm	d3 mm	Protective chamfer mm
227664.0100	**6**	10	42	75	6	5.7	0.2
227664.0200	**8**	15	62	100	8	7.7	0.2
227664.0300	**10**	16	58	100	10	9.7	0.2
227664.0400	**12**	20	60	100	12	11.7	0.2
227664.0500	**16**	25	92	150	16	15.5	0.2
227664.0600	**20**	32	100	150	20	19.5	0.2



227662 FUTURO SC shoulder/ slot milling cutters





Made of solid hard metal, Coated, with Weldon shank or cylindrical shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 2 - 20 mm, Number of teeth 3, With protective chamfer, Long version, with center cut, with uneven pitch, Milling cutter with 40° helix angle, with polished chip flutes, End mill cutting tolerance h6 (according to ISO 286 fit system), HPC (High-Performance Cutting) milling technology
Main application: Non-ferrous metals (ISO N), Main application: Plastics and other materials (ISO O), For finishing, For shoulder milling, For slot milling, For pocket milling

Designs:
2 mm...**20 mm**: Shank tolerance;h6, Cutting tolerance on diameter;h6,

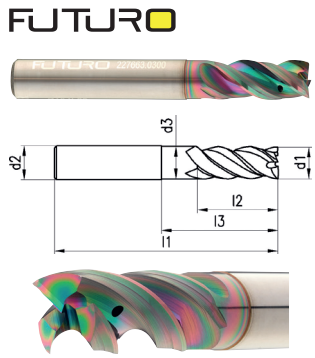
Order ID	**d1** **mm**	l2 mm	l3 mm	l1 mm	d2 mm	d3 mm	Protective chamfer mm
227662.0100	**2**	8	10	57	6	1.92	0.05
227662.0200	**3**	12	14	57	6	2.7	0.1
227662.0300	**4**	8	24	75	6	3.7	0.1
227662.0400	**5**	10	30	75	6	4.7	0.1
227662.0500	**6**	31	36	75	6	5.7	0.2
227662.0600	**8**	41	50	100	8	7.7	0.2
227662.0700	**10**	51	61	110	10	9.7	0.2
227662.0800	**12**	51	61	110	12	11.7	0.2
227662.0900	**12**	61	71	120	12	11.7	0.2
227662.1000	**16**	56	66	120	16	15.5	0.2
227662.1100	**16**	65	81	150	16	15.5	0.2
227662.1200	**20**	66	76	150	20	19.5	0.2

227663 FUTURO SC shoulder/ slot milling cutters









Made of solid hard metal, Coated, with Weldon shank or cylindrical shank, Shaft tolerance h6, According to DIN 6527L, Nominal size Ø 6 - 20 mm, Number of teeth 3, With protective chamfer, Milling with radial internal cooling, Long version, with center cut, with uneven pitch, Milling cutter with 40° helix angle, with polished chip flutes, End mill cutting tolerance h6 (according to ISO 286 fit system), HPC (High-Performance Cutting) milling technology
Main application: Non-ferrous metals (ISO N), Main application: Plastics and other materials (ISO O), For finishing, For shoulder milling, For slot milling, For pocket milling
DIN6527L

Designs:
6 mm...**20 mm**: Shank tolerance;h6, Cutting tolerance on diameter;h6,

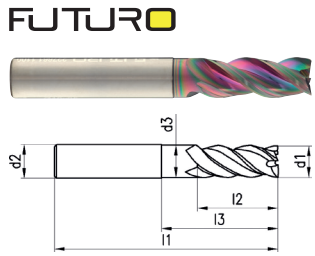
Order ID	**d1**	l2	l3	l1	d2	d3	Protective chamfer
	mm	mm	mm	mm	mm	mm	mm
227663.0100	**6**	13	20	57	6	5.7	0.2
227663.0200	**8**	21	25	63	8	7.7	0.2
227663.0300	**10**	22	30	72	10	9.7	0.2
227663.0400	**12**	26	36	83	12	11.7	0.2
227663.0500	**16**	36	42	92	16	15.5	0.2
227663.0600	**20**	41	52	104	20	19.5	0.2

227661 FUTURO SC shoulder/ slot milling cutters







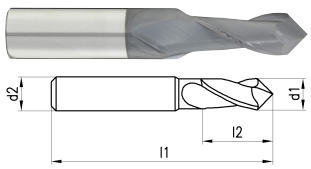


Made of solid hard metal, Coated, with Weldon shank or cylindrical shank, Shaft tolerance h6, According to DIN 6527L, Nominal size Ø 1 - 20 mm, Number of teeth 3, With protective chamfer, Long version, with center cut, with uneven pitch, Milling cutter with 40° helix angle, with polished chip flutes, End mill cutting tolerance h6 (according to ISO 286 fit system), HPC (High-Performance Cutting) milling technology
Main application: Non-ferrous metals (ISO N), Main application: Plastics and other materials (ISO O), For finishing, For shoulder milling, For slot milling, For pocket milling
DIN6527L

Designs:
1 mm...**20 mm**: Shank tolerance;h6, Cutting tolerance on diameter;h6,

Order ID	**d1**	l2	l3	l1	d2	d3	Protective chamfer
	mm	mm	mm	mm	mm	mm	mm
227661.0100	**1**	5	7	57	6	0.95	0.05
227661.0200	**1.5**	5	7.5	57	6	1.44	0.05
227661.0300	**2**	6	8	57	6	1.92	0.05
227661.0400	**2.5**	7.5	10	57	6	2.42	0.1
227661.0500	**3**	9	12	57	6	2.7	0.1
227661.0600	**3.5**	7.5	9	57	6	3.2	0.1
227661.0700	**4**	12	15	57	6	3.7	0.1
227661.0800	**5**	16	18	57	6	4.7	0.1
227661.0900	**6**	15	21	57	6	5.7	0.2
227661.1000	**8**	25	30	70	8	7.7	0.2
227661.1100	**10**	25	33	72	10	9.7	0.2
227661.1200	**12**	30	40	83	12	11.7	0.2
227661.1300	**16**	35	45	92	16	15.5	0.2
227661.1400	**20**	45	52	104	20	19.5	0.2

FUTURO



224290 FUTURO Solid carbide milling drill bit 90°

VHM | h6 | DIN 6535 | Ø 3-16 | 2 | 30° | h9/d9

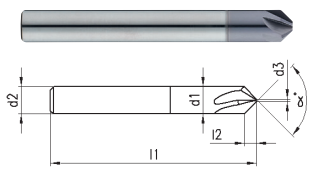
P | M | K | N | S | H | 0

Made of solid hard metal, Coated, with cylindrical shank, Shaft tolerance h6, According to DIN 6535, Nominal size Ø 3 - 16 mm, Number of teeth 2, Milling cutter with 30° helix angle, End mill cutting edge tolerance h9 / d9 (according to ISO 286 fit system)
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), For form milling

Application
For V-groove cutting, engraving, chamfering, boring, countersinking and drilling.

Order ID	**d1** **mm**	l2 mm	d2 mm	l1 mm
224290.0100	**3.0**	6	4	50
224290.0200	**4.0**	8	5	50
224290.0300	**5.0**	10	6	50
224290.0400	**6.0**	12	8	60
224290.0500	**8.0**	16	10	70
224290.0600	**10.0**	18	12	70
224290.0700	**12.0**	20	12	70
224290.0800	**16.0**	26	16	80

FUTURO



224112 FUTURO Solid carbide deburrer 90°

VHM | TiAlN | NORM | Ø 3-6 | 4-6

P | M | K | N | S | H | 0

Made of solid hard metal, TiAlN coating, with cylindrical shank, According to factory standard, Nominal size Ø 3 - 6 mm, Number of teeth 4 - 6, Long version
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), For form milling

Application
For deburring and chamfering workpiece edges, also for contour work.

Order ID	**d1** **mm**	l2 mm	d2 mm	d3 mm	l1 mm	Angle	teeth
224112.0300	**3**	1	3	1	50	90°	5
224112.0400	**4**	1.25	4	1.5	50	90°	6
224112.0500	**6**	2	6	2	50	90°	6

FUTURO



224111 FUTURO Solid carbide deburrer 90°

VHM | TiAlN | DIN 6527L | Ø 1-20 | 2-6

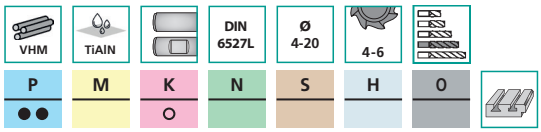
P | M | K | N | S | H | 0

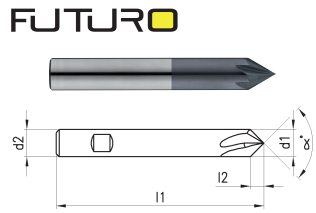
Made of solid hard metal, TiAlN coating, with Weldon shank or cylindrical shank, According to DIN 6527L, Nominal size Ø 1 - 20 mm, Number of teeth 2 - 6, Long version
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), Secondary application: Hardened steel (ISO H), For form milling

Application
For deburring and chamfering workpiece edges, also for contour work.

Order ID	**d1** **mm**	l2 mm	d2 mm	l1 mm	Angle	teeth	Shank
224111.0100	**1**	0.5	3	38	90°	3	HA
224111.0200	**2**	1	3	38	90°	3	HA
224111.0300	**3**	1.5	3	38	90°	4	HA
224111.0400	**4**	2	4	54	90°	4	HA
224111.0500	**6**	3	6	57	90°	4	HB
224111.0600	**8**	4	8	63	90°	5	HB
224111.0700	**10**	5	10	72	90°	6	HB
224111.0800	**12**	6	12	83	90°	6	HB
224111.0900	**16**	8	16	92	90°	6	HB
224111.1000	**20**	10	20	104	90°	6	HB

224113 FUTURO Solid carbide deburrer 60°



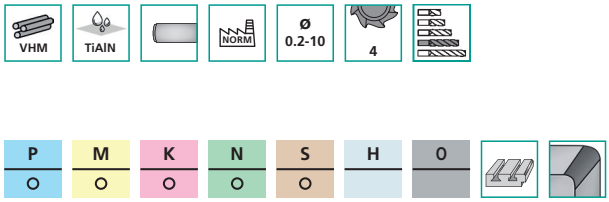


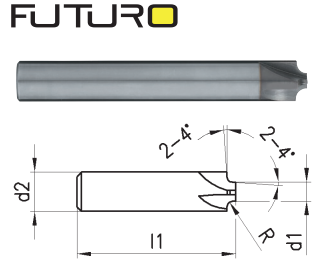
Made of solid hard metal, TiAlN coating, with Weldon shank or cylindrical shank, According to DIN 6527L, Nominal size Ø 4 - 20 mm, Number of teeth 4 - 6, Long version
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), For form milling

Application
For deburring and chamfering workpiece edges, also for contour work.

Order ID	**d1** **mm**	l2 mm	d2 mm	l1 mm	Angle	teeth	Shank
224113.0100	**4**	3.5	4	54	60°	4	HA
224113.0200	**6**	5	6	57	60°	4	HB
224113.0300	**8**	7	8	63	60°	5	HB
224113.0400	**10**	8.5	10	72	60°	6	HB
224113.0500	**12**	10	12	83	60°	6	HB
224113.0600	**16**	14	16	92	60°	6	HB
224113.0700	**20**	17	20	104	60°	6	HB

224127 FUTURO Solid carbide rounding end mill

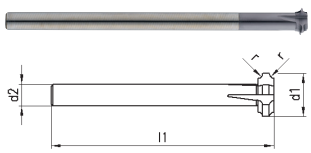




Made of solid hard metal, TiAlN coating, with cylindrical shank, According to factory standard, Nominal size Ø 0.2 - 10 mm, Number of teeth 4, Long version
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), For form milling, For outer radius milling

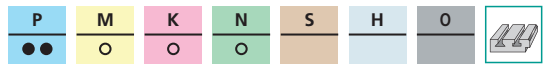
Order ID	**r** **mm**	d1 mm	l1 mm	d2 mm
224127.0100	**0.2**	5.6	58	6
224127.0200	**0.3**	5.4	58	6
224127.0400	**0.5**	7	70	8
224127.0500	**1**	6	70	8
224127.0600	**1.5**	7	75	10
224127.0700	**2**	6	75	10
224127.0800	**2.5**	7	75	12
224127.0900	**3**	6	75	12
224127.1000	**3.5**	9	80	16
224127.1100	**4**	8	80	16
224127.1200	**4.5**	7	80	16
224127.1300	**5**	10	80	20
224127.1400	**6**	8	80	20
224127.1500	**8**	9	100	25
224127.1600	**10**	5	100	25

FUTURO



224117 FUTURO Solid carbide forward and backward radius mill



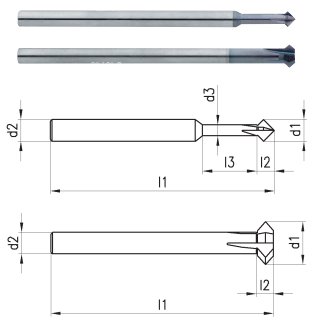


Made of solid hard metal, TiAlN coating, with cylindrical shank, According to factory standard, Number of teeth 4, Extra long version
Main application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), For form milling

Application
For milling radii on the front and back surfaces of workpieces. Universally applicable **up to 53 HRC.**

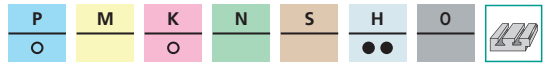
Order ID	**r** **mm**	d1 mm	d2 mm	l1 mm
224117.0100	**0.2**	8	6	100
224117.0200	**0.3**	8	6	100
224117.0300	**0.4**	8	6	100
224117.0400	**0.5**	8	6	100
224117.0500	**0.8**	10	6	100
224117.0600	**1**	10	6	100
224117.0700	**1.2**	10	6	100
224117.0800	**1.5**	10	6	100

FUTURO



224116 FUTURO Solid carbide forward and backward deburrer 90°





Made of solid hard metal, TiAlN coating, with cylindrical shank, According to factory standard, Nominal size Ø 2 - 16 mm, Number of teeth 3 - 4, Extra long version
Secondary application: Steel (ISO-P), Secondary application: Cast materials (ISO K), Main application: Hardened steel (ISO H), For form milling

Application
For deburring and chamfering workpiece edges, also for contour work. Universally applicable **up to 53 HRC.**

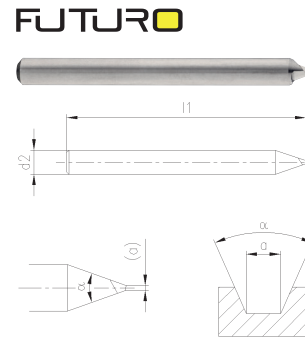
Order ID	**d1** **mm**	l2 mm	l3 mm	l1 mm	d2 mm	d3 mm	Angle	teeth
224116.0100	**2**	1.4	8	100	6	1.2	45°	3
224116.0200	**3**	2	8	100	6	2	45°	4
224116.0300	**4**	3	10	100	6	2	45°	4
224116.0400	**6**	4	15	100	6	4	45°	4
224116.0500	**8**	3.2	-	100	6	-	45°	4
224116.0600	**10**	4.3	-	100	6	-	45°	4
224116.0700	**12**	5	-	100	6	-	45°	4
224116.0800	**16**	8	-	100	10	-	45°	4

224253 FUTURO Solid carbide engraver's cutter

Type UMG

VHM | h6

P	M	K	N	S	H	O
O	O	O	O	O		O



Made of solid hard metal, with cylindrical shank, Shaft tolerance h6
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Plastics and other materials (ISO O), For form milling

Application
For general purpose use.

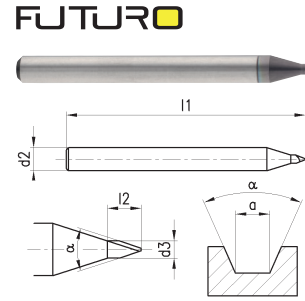
Order ID	a mm	d2 mm	l1 mm	Alpha
224253.0100	**0.05**	3	33	50°
224253.0200	**0.07**	3	33	50°
224253.0300	**0.1**	3	33	50°
224253.0400	**0.15**	3	33	50°

224257 FUTURO Solid carbide engraver's cutter

Type RSG (TiAlN coated)

VHM | TiAlN | h6

P	M	K	N	S	H	O
●●	●●	O	O	O		O



Made of solid hard metal, TiAlN coating, with cylindrical shank, Shaft tolerance h6
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Plastics and other materials (ISO O), For form milling

Application
Especially well suited to fine engraving in stainless steel.

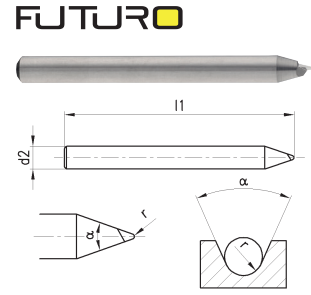
Order ID	a mm	d3 mm	l2 mm	d2 mm	l1 mm	Alpha
224257.0100	**0.1**	1.2	2	3	33	60°

224250 FUTURO Solid carbide engraver's cutter

Type UMGR

VHM | h6

P	M	K	N	S	H	O
O	O	O	O	O		O

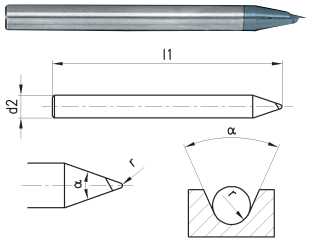


Made of solid hard metal, with cylindrical shank, Shaft tolerance h6
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Plastics and other materials (ISO O), For form milling

Application
For general purpose use.

Order ID	d2 mm	r mm	l1 mm	Alpha
224250.0200	**3**	**0.1**	33	30°
224250.0300	**3**	**0.2**	33	30°

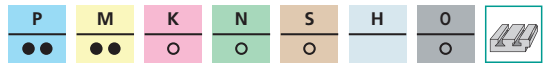
FUTURO



224252 FUTURO Solid carbide engraver's cutter

Type RSGR (TiAlN coated)



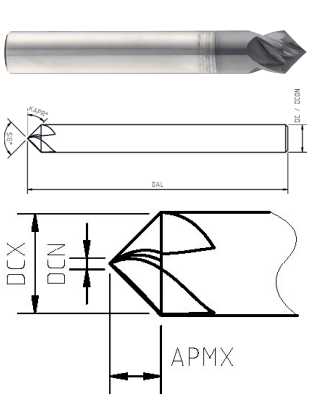


Made of solid hard metal, TiAlN coating, with cylindrical shank, Shaft tolerance h6
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Plastics and other materials (ISO O), For form milling

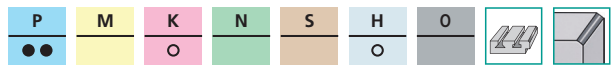
Application
Especially well suited to fine engraving in stainless steel.

Order ID	**d2** mm	**r** mm	l1 mm	Alpha
224252.0100	**3**	**0.1**	33	30°
224252.0200	**3**	**0.2**	33	30°

224090 FUTURO Chamfer mill 90°







Made of solid hard metal, Coated, with cylindrical shank, Nominal size Ø 3 - 12 mm, Number of teeth 4, With large chamfer, Medium-length version, Cutting direction: right, Right-handed cutters, Milling cutter with 35° helix angle, Tip angle 90°
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), Secondary application: Hardened steel (ISO H), For form milling, For chamfering and deburring

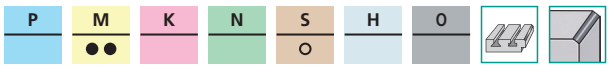
Design:
Perfect surface finish thanks to **spiral geometry**. High feed rates and chip volumes due to the **35° spiral angle and four-flute design**. Longer tool life and the prevention of built-up edges thanks to a novel coating.

Application:
Design and chip geometry specifically optimized for **ISO-P materials**. Excellent performance in steel, case-hardening steel, heat-treatable steel, nitriding steel, structural steel, etc.

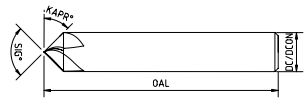
Order ID	**DC**	SIG °	KAPR °	APMX mm	DCON mm	OAL mm
224090.0100	**3 mm**	90	45	1.5	3	50
224090.0200	**4 mm**	90	45	2	4	50
224090.0300	**6 mm**	90	45	3	6	57
224090.0400	**8 mm**	90	45	4	8	63
224090.0500	**10 mm**	90	45	5	10	72
224090.0600	**12 mm**	90	45	6	12	83

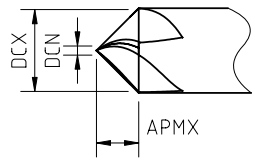
224091 FUTURO Chamfer mill 90°











Made of solid hard metal, Coated, with cylindrical shank, Nominal size Ø 3 - 12 mm, Number of teeth 4, With large chamfer, Medium-length version, Cutting direction: right, Right-handed cutters, Milling cutter with 35° helix angle, Tip angle 90°
Main application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For form milling, For chamfering and deburring

Design:
Perfect surface finish thanks to **spiral geometry**. High feed rates and chip volumes thanks to **35° helix angle and four-flute design**. Longer tool life and the prevention of built-up edges thanks to a novel coating.

Application:
Design and chip geometry specifically optimized for **ISO-M materials**. Excellent performance in stainless steel, superalloys, titanium, Hastelloy, Waspaloy, HRSA materials, etc.

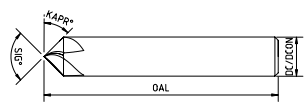
Order ID	DC	SIG °	KAPR °	APMX mm	DCON mm	OAL mm
224091.0100	**3 mm**	90	45	1.5	3	50
224091.0200	**4 mm**	90	45	2	4	50
224091.0300	**6 mm**	90	45	3	6	57
224091.0400	**8 mm**	90	45	4	8	63
224091.0500	**10 mm**	90	45	5	10	72
224091.0600	**12 mm**	90	45	6	12	83

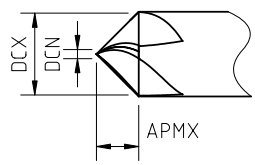
224092 FUTURO Chamfer mill 90°











Made of solid hard metal, Coated, with cylindrical shank, Nominal size Ø 3 - 12 mm, Number of teeth 4, With large chamfer, Medium-length version, Cutting direction: right, Right-handed cutters, Milling cutter with 35° helix angle, Tip angle 90°
Main application: Non-ferrous metals (ISO N), Secondary application: Plastics and other materials (ISO O), For form milling, For chamfering and deburring

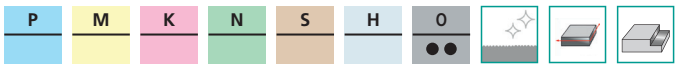
Design:
Perfect surface finish thanks to **spiral geometry**. High feed rates and chip volumes thanks to **35° helix angle and four-flute design**. Longer tool life and the prevention of built-up edges thanks to a novel coating.

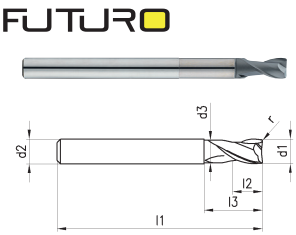
Application:
Design and chip geometry specifically optimized for **ISO-N materials**. Excellent performance in aluminum, gold, brass, bronze, plastics, and copper alloys."

Order ID	DC	SIG °	KAPR °	APMX mm	DCON mm	OAL mm
224092.0100	**3 mm**	90	45	1.5	3	50
224092.0200	**4 mm**	90	45	2	4	50
224092.0300	**6 mm**	90	45	3	6	57
224092.0400	**8 mm**	90	45	4	8	63
224092.0500	**10 mm**	90	45	5	10	72
224092.0600	**12 mm**	90	45	6	12	83

227700 FUTURO SC shoulder milling cutter







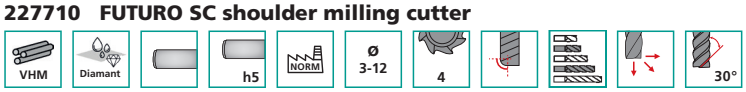
Made of solid hard metal, Diamond coating, with cylindrical shank, Shaft tolerance h5, According to factory standard, Nominal size Ø 0.2 - 12 mm, Number of teeth 2, With corner radius, Short and long versions, with center cut, Milling cutter with 30° helix angle
Main application: Plastics and other materials (ISO O), For finishing, For trimming / hobbing, For shoulder milling

Diamond-coated end mills for machining **graphite** and other highly abrasive materials. The diamond coating ensures maximum durability and high productivity.

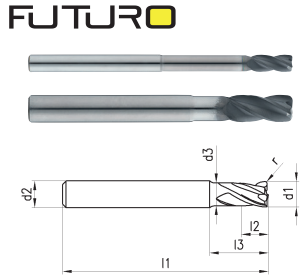
Order ID	**d1** **mm**	**r** **mm**	**l2** **mm**	**l3** **mm**	l1 mm	d2 mm	d3 mm	Cutting tolerance on radius
227700.0100	**0.2**	**0.05**	**0.2**	**1**	55	4	0.2	0.005
227700.0200	**0.3**	**0.05**	**0.3**	**1**	55	4	0.27	0.005
227700.0300	**0.3**	**0.05**	**0.3**	**3**	55	4	0.27	0.005
227700.0400	**0.4**	**0.05**	**0.4**	**2**	55	4	0.35	0.005
227700.0500	**0.4**	**0.05**	**0.4**	**4**	55	4	0.35	0.005
227700.0600	**0.4**	**0.05**	**0.4**	**8**	55	4	0.35	0.005
227700.0700	**0.5**	**0.05**	**0.5**	**2**	55	4	0.45	0.005
227700.0800	**0.5**	**0.05**	**0.5**	**5**	55	4	0.45	0.005
227700.0900	**0.5**	**0.05**	**0.5**	**10**	55	4	0.45	0.005
227700.1000	**0.6**	**0.06**	**0.8**	**3**	55	4	0.56	0.005
227700.1100	**0.6**	**0.06**	**0.8**	**6**	55	4	0.56	0.005
227700.1200	**0.6**	**0.06**	**0.8**	**9**	55	4	0.56	0.005
227700.1300	**0.6**	**0.06**	**0.8**	**12**	55	4	0.56	0.005
227700.1400	**0.8**	**0.08**	**1**	**4**	55	4	0.75	0.005
227700.1500	**0.8**	**0.08**	**1**	**8**	55	4	0.75	0.005
227700.1600	**0.8**	**0.08**	**1**	**12**	55	4	0.75	0.005
227700.1700	**0.8**	**0.08**	**1**	**16**	55	4	0.75	0.005
227700.1800	**1**	**0.1**	**1**	**5**	55	4	0.9	0.005
227700.1900	**1**	**0.1**	**1**	**10**	55	4	0.9	0.005
227700.2000	**1**	**0.1**	**1**	**15**	55	4	0.9	0.005
227700.2100	**1**	**0.1**	**1**	**20**	55	4	0.9	0.005
227700.2200	**1**	**0.1**	**1**	**25**	55	4	0.9	0.005
227700.2300	**1.2**	**0.12**	**1.5**	**5**	55	4	1.1	0.005
227700.2400	**1.2**	**0.12**	**1.5**	**10**	55	4	1.1	0.005
227700.2500	**1.2**	**0.12**	**1.5**	**15**	55	4	1.1	0.005
227700.2600	**1.5**	**0.15**	**2**	**5**	55	4	1.4	0.005
227700.2700	**1.5**	**0.15**	**2**	**8**	55	4	1.4	0.005
227700.2800	**1.5**	**0.15**	**2**	**10**	55	4	1.4	0.005
227700.2900	**1.5**	**0.15**	**2**	**15**	55	4	1.4	0.005
227700.3000	**1.5**	**0.15**	**2**	**20**	55	4	1.4	0.005
227700.3100	**1.5**	**0.15**	**2**	**25**	55	4	1.4	0.005
227700.3200	**1.8**	**0.18**	**2**	**10**	55	4	1.7	0.005
227700.3300	**1.8**	**0.18**	**2**	**20**	55	4	1.7	0.005
227700.3400	**2**	**0.2**	**2**	**10**	65	4	1.9	0.005
227700.3500	**2**	**0.2**	**2**	**15**	65	4	1.9	0.005
227700.3600	**2**	**0.2**	**2**	**20**	65	4	1.9	0.005
227700.3700	**2**	**0.2**	**2**	**25**	65	4	1.9	0.005
227700.3800	**2**	**0.5**	**2**	**10**	65	4	1.9	0.005
227700.3900	**2**	**0.5**	**2**	**15**	65	4	1.9	0.005
227700.4000	**2**	**0.5**	**2**	**20**	65	4	1.9	0.005
227700.4100	**2**	**0.5**	**2**	**25**	65	4	1.9	0.005
227700.4200	**3**	**0.3**	**3**	**15**	65	4	2.9	0.005
227700.4300	**3**	**0.3**	**3**	**25**	75	4	2.9	0.005
227700.4400	**3**	**0.5**	**3**	**10**	65	4	2.9	0.005
227700.4500	**3**	**0.5**	**3**	**15**	65	4	2.9	0.005
227700.4600	**3**	**0.5**	**3**	**20**	65	4	2.9	0.005
227700.4700	**3**	**0.5**	**3**	**25**	75	4	2.9	0.005
227700.4800	**3**	**0.5**	**3**	**30**	75	4	2.9	0.005
227700.4900	**3**	**0.5**	**3**	**45**	90	6	2.9	0.005
227700.5000	**4**	**0.4**	**4**	**15**	65	6	3.9	0.005
227700.5100	**4**	**0.4**	**4**	**25**	75	6	3.9	0.005
227700.5200	**4**	**0.5**	**4**	**20**	65	6	3.9	0.005
227700.5300	**4**	**0.5**	**4**	**30**	75	6	3.9	0.005
227700.5400	**4**	**0.5**	**4**	**40**	90	6	3.9	0.005
227700.5500	**5**	**0.5**	**5**	**20**	75	6	4.9	0.005
227700.5600	**5**	**0.5**	**5**	**30**	75	6	4.9	0.005
227700.5700	**5**	**0.5**	**5**	**40**	90	6	4.9	0.005
227700.5800	**5**	**0.5**	**5**	**50**	90	6	4.9	0.005
227700.5900	**6**	**0.3**	**6**	**30**	75	6	5.9	0.005
227700.6000	**6**	**0.5**	**6**	**30**	75	6	5.9	0.005
227700.6100	**6**	**0.5**	**6**	**40**	90	6	5.9	0.005
227700.6200	**6**	**0.5**	**6**	**50**	90	6	5.9	0.005
227700.6300	**6**	**0.5**	**6**	**60**	100	6	5.9	0.005
227700.6400	**6**	**1**	**6**	**30**	75	6	5.9	0.005
227700.6500	**6**	**1**	**6**	**40**	90	6	5.9	0.005
227700.6600	**8**	**0.5**	**8**	**30**	80	8	7.8	0.005
227700.6700	**8**	**0.5**	**8**	**60**	100	8	7.8	0.005
227700.6800	**8**	**1**	**8**	**30**	80	8	7.8	0.005
227700.6900	**8**	**1**	**8**	**60**	100	8	7.8	0.005

Order ID	d1 mm	r mm	l2 mm	l3 mm	l1 mm	d2 mm	d3 mm	Cutting tolerance on radius
227700.7000	10	0.5	10	30	80	10	9.8	0.005
227700.7100	10	0.5	10	60	100	10	9.8	0.005
227700.7200	10	1	10	30	80	10	9.8	0.005
227700.7300	10	1	10	60	100	10	9.8	0.005
227700.7400	12	0.5	12	30	80	12	11.8	0.005
227700.7500	12	0.5	12	60	100	12	11.8	0.005
227700.7600	12	1	12	30	80	12	11.8	0.005
227700.7700	12	1	12	60	100	12	11.8	0.005

227710 FUTURO SC shoulder milling cutter







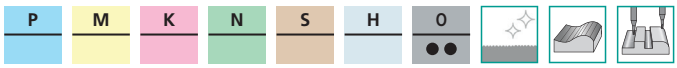
Made of solid hard metal, Diamond coating, with cylindrical shank, Shaft tolerance h5, According to factory standard, Nominal size Ø 3 - 12 mm, Number of teeth 4, With corner radius, Short and long versions, with center cut, Milling cutter with 30° helix angle
Main application: Plastics and other materials (ISO O), For finishing, For trimming / hobbing, For shoulder milling

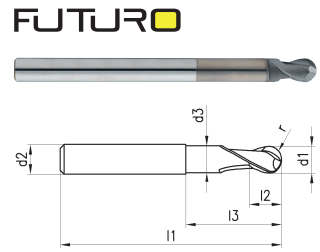
Diamond-coated end mills for machining **graphite** and other highly abrasive materials. The diamond coating ensures maximum durability and high productivity.

Order ID	d1 mm	r mm	l2 mm	l3 mm	l1 mm	d2 mm	d3 mm	Cutting tolerance on radius
227710.0100	3	0.3	6	14	50	3	2.7	0.005
227710.0200	3	0.3	6	32	80	3	2.7	0.005
227710.0300	3	0.5	6	14	50	3	2.7	0.005
227710.0400	3	0.5	6	32	80	3	2.7	0.005
227710.0500	3	1	6	14	50	3	2.7	0.005
227710.0600	3	1	6	32	80	3	2.7	0.005
227710.0700	4	0.4	8	16	50	4	3.7	0.005
227710.0900	4	0.5	8	16	50	4	3.7	0.005
227710.1000	4	0.5	8	36	80	4	3.7	0.005
227710.1100	4	1	8	16	50	4	3.7	0.005
227710.1300	5	0.5	10	18	54	5	4.6	0.005
227710.1400	5	0.5	10	40	80	5	4.6	0.005
227710.1500	5	1	10	18	54	5	4.6	0.005
227710.1600	5	1	10	40	80	5	4.6	0.005
227710.1700	6	0.5	13	21	57	6	5.5	0.005
227710.1800	6	0.5	13	44	90	6	5.5	0.005
227710.1900	6	1	13	21	57	6	5.5	0.005
227710.2000	6	1	13	44	90	6	5.5	0.005
227710.2100	6	1.5	13	21	57	6	5.5	0.005
227710.2200	6	1.5	13	44	90	6	5.5	0.005
227710.2300	8	0.5	15	27	63	8	7.4	0.005
227710.2400	8	0.5	15	54	100	8	7.4	0.005
227710.2500	8	1	15	27	63	8	7.4	0.005
227710.2900	8	2	15	27	63	8	7.4	0.005
227710.3000	8	2	15	54	100	8	7.4	0.005
227710.3100	10	0.5	18	32	72	10	9.2	0.005
227710.3200	10	0.5	18	60	100	10	9.2	0.005
227710.3300	10	1	18	32	72	10	9.2	0.005
227710.3400	10	1	18	60	100	10	9.2	0.005
227710.3500	10	1.5	18	32	72	10	9.2	0.005
227710.3600	10	1.5	18	60	100	10	9.2	0.005
227710.3700	10	2	18	32	72	10	9.2	0.005
227710.3800	10	2	18	60	100	10	9.2	0.005
227710.3900	12	0.5	26	38	83	12	11	0.005
227710.4000	12	0.5	26	75	120	12	11	0.005
227710.4100	12	1	26	38	83	12	11	0.005
227710.4200	12	1	26	75	120	12	11	0.005
227710.4300	12	1.5	26	38	83	12	11	0.005
227710.4400	12	1.5	26	75	120	12	11	0.005
227710.4500	12	2	26	38	83	12	11	0.005
227710.4600	12	2	26	75	120	12	11	0.005

227720 FUTURO SC ball-nose copy milling cutters







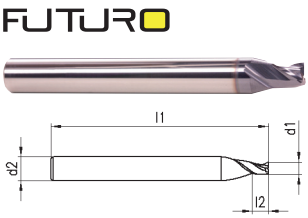
Made of solid hard metal, Diamond coating, with cylindrical shank, Shaft tolerance h5, According to factory standard, Nominal size Ø 0.2 - 12 mm, Number of teeth 2, With full radius, Short and long versions, with center cut, Milling cutter with 30° helix angle
Main application: Plastics and other materials (ISO O), For finishing, For copy milling, For micro milling

Diamond-coated end mills for machining **graphite** and other highly abrasive materials. The diamond coating ensures maximum durability and high productivity.

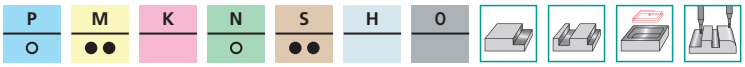
Order ID	d1 mm	r mm	l2 mm	l3 mm	l1 mm	d2 mm	d3 mm	Cutting tolerance on radius
227720.0100	0.2	0.1	0.2	1	55	4	0.18	0.003
227720.0200	0.3	0.15	0.3	1	55	4	0.27	0.003
227720.0300	0.3	0.15	0.3	3	55	4	0.27	0.003
227720.0400	0.3	0.15	0.3	5	55	4	0.27	0.003
227720.0500	0.3	0.15	0.3	8	55	4	0.27	0.003
227720.0600	0.4	0.2	0.4	4	55	4	0.35	0.003
227720.0700	0.4	0.2	0.4	6	55	4	0.35	0.003
227720.0800	0.4	0.2	0.4	8	55	4	0.35	0.003
227720.0900	0.5	0.25	0.5	5	55	4	0.45	0.003
227720.1000	0.5	0.25	0.5	10	55	4	0.45	0.003
227720.1100	0.6	0.3	0.8	6	55	4	0.56	0.003
227720.1200	0.6	0.3	0.8	9	55	4	0.56	0.003
227720.1300	0.6	0.3	0.8	12	55	4	0.56	0.003
227720.1400	0.7	0.35	0.9	7	55	4	0.65	0.003
227720.1500	0.7	0.35	0.9	14	55	4	0.65	0.003
227720.1600	0.8	0.4	1	8	55	4	0.75	0.003
227720.1700	0.8	0.4	1	12	55	4	0.75	0.003
227720.1800	0.8	0.4	1	16	55	4	0.75	0.003
227720.1900	1	0.5	1	5	55	4	0.9	0.003
227720.2000	1	0.5	1	10	55	4	0.9	0.003
227720.2100	1	0.5	1	15	55	4	0.9	0.003
227720.2200	1	0.5	1	20	55	4	0.9	0.003
227720.2300	1	0.5	1	25	55	4	0.9	0.003
227720.2400	1	0.5	1	30	55	4	0.9	0.003
227720.2500	1.2	0.6	1.5	5	55	4	1.1	0.003
227720.2600	1.2	0.6	1.5	10	55	4	1.1	0.003
227720.2700	1.2	0.6	1.5	15	55	4	1.1	0.003
227720.2800	1.5	0.75	2	5	55	4	1.4	0.003
227720.2900	1.5	0.75	2	10	55	4	1.4	0.003
227720.3000	1.5	0.75	2	15	55	4	1.4	0.003
227720.3100	1.5	0.75	2	20	55	4	1.4	0.003
227720.3200	1.5	0.75	2	25	55	4	1.4	0.003
227720.3300	1.8	0.9	2	10	55	4	1.7	0.003
227720.3400	1.8	0.9	2	20	55	4	1.7	0.003
227720.3500	2	1	2	10	55	4	1.9	0.003
227720.3600	2	1	2	15	55	4	1.9	0.003
227720.3700	2	1	2	20	55	4	1.9	0.003
227720.3800	2	1	2	25	65	4	1.9	0.003
227720.3900	2	1	2	30	65	4	1.9	0.003
227720.4000	3	1.5	3	10	65	4	2.9	0.003
227720.4100	3	1.5	3	15	65	4	2.9	0.003
227720.4200	3	1.5	3	20	65	4	2.9	0.003
227720.4300	3	1.5	3	25	75	4	2.9	0.003
227720.4400	3	1.5	3	30	75	4	2.9	0.003
227720.4500	4	2	4	20	65	6	3.9	0.003
227720.4600	4	2	4	30	75	6	3.9	0.003
227720.4700	4	2	4	40	90	6	3.9	0.003
227720.4800	5	2.5	5	20	65	6	4.9	0.003
227720.4900	5	2.5	5	30	75	6	4.9	0.003
227720.5000	5	2.5	5	40	90	6	4.9	0.003
227720.5100	5	2.5	5	50	90	6	4.9	0.003
227720.5200	6	3	6	30	75	6	5.9	0.003
227720.5300	6	3	6	40	90	6	5.9	0.003
227720.5400	6	3	6	50	90	6	5.9	0.003
227720.5500	6	3	6	60	100	6	5.9	0.003
227720.5600	8	4	8	30	80	8	7.8	0.003
227720.5700	8	4	8	60	100	8	7.8	0.003
227720.5800	10	5	10	30	80	10	9.8	0.003
227720.5900	10	5	10	60	100	10	9.8	0.003
227720.6000	12	6	12	30	83	12	11.8	0.003
227720.6100	12	6	12	60	100	12	11.8	0.003

226605 FUTURO SC shoulder/ slot milling cutter









Made of solid hard metal, TiAlN coating, with cylindrical shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 0.3 - 3 mm, Number of teeth 3, With sharp corner design, Medium-length version, with center cut, Milling cutter with 30° helix angle, End mill cutting tolerance +/- 0.01
Secondary application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Non-ferrous metals (ISO N), Main application: Superalloys (ISO S), For shoulder milling, For slot milling, For pocket milling, For micro milling

Order ID	**d1** **mm**	l2 mm	d2 mm	l1 mm	Order ID	**d1** **mm**	l2 mm	d2 mm	l1 mm
226605.0100	**0.30**	0.30	3	38	226605.2900	**1.70**	1.70	3	38
226605.0200	**0.35**	0.35	3	38	226605.3000	**1.75**	1.75	3	38
226605.0300	**0.40**	0.40	3	38	226605.3100	**1.80**	1.80	3	38
226605.0400	**0.45**	0.45	3	38	226605.3200	**1.85**	1.85	3	38
226605.0500	**0.50**	0.50	3	38	226605.3300	**1.90**	1.90	3	38
226605.0600	**0.55**	0.55	3	38	226605.3400	**1.95**	1.95	3	38
226605.0700	**0.60**	0.60	3	38	226605.3500	**2.00**	2.00	3	38
226605.0800	**0.65**	0.65	3	38	226605.3600	**2.05**	2.05	3	38
226605.0900	**0.70**	0.70	3	38	226605.3700	**2.10**	2.10	3	38
226605.1000	**0.75**	0.75	3	38	226605.3800	**2.15**	2.15	3	38
226605.1100	**0.80**	0.80	3	38	226605.3900	**2.20**	2.20	3	38
226605.1200	**0.85**	0.85	3	38	226605.4000	**2.25**	2.25	3	38
226605.1300	**0.90**	0.90	3	38	226605.4100	**2.30**	2.30	3	38
226605.1400	**0.95**	0.95	3	38	226605.4200	**2.35**	2.35	3	38
226605.1500	**1.00**	1.00	3	38	226605.4300	**2.40**	2.40	3	38
226605.1600	**1.05**	1.05	3	38	226605.4400	**2.45**	2.45	3	38
226605.1700	**1.10**	1.10	3	38	226605.4500	**2.50**	2.50	3	38
226605.1800	**1.15**	1.15	3	38	226605.4600	**2.55**	2.55	3	38
226605.1900	**1.20**	1.20	3	38	226605.4700	**2.60**	2.60	3	38
226605.2000	**1.25**	1.25	3	38	226605.4800	**2.65**	2.65	3	38
226605.2100	**1.30**	1.30	3	38	226605.4900	**2.70**	2.70	3	38
226605.2200	**1.35**	1.35	3	38	226605.5000	**2.75**	2.75	3	38
226605.2300	**1.40**	1.40	3	38	226605.5100	**2.80**	2.80	3	38
226605.2400	**1.45**	1.45	3	38	226605.5200	**2.85**	2.85	3	38
226605.2500	**1.50**	1.50	3	38	226605.5300	**2.90**	2.90	3	38
226605.2600	**1.55**	1.55	3	38	226605.5400	**2.95**	2.95	3	38
226605.2700	**1.60**	1.60	3	38	226605.5500	**3.00**	3.00	3	38
226605.2800	**1.65**	1.65	3	38					

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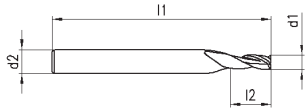
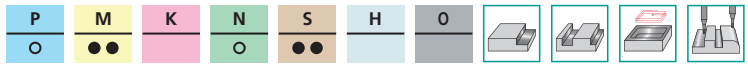


226610 FUTURO SC shoulder/ slot milling cutter







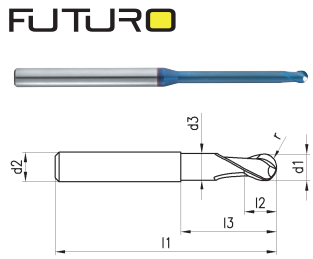
Made of solid hard metal, TiAlN coating, with cylindrical shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 0.5 - 3 mm, Number of teeth 3, With sharp corner design, Medium-length version, with center cut, Milling cutter with 30° helix angle, End mill cutting tolerance +/- 0.01
Secondary application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Non-ferrous metals (ISO N), Main application: Superalloys (ISO S), For shoulder milling, For slot milling, For pocket milling, For micro milling

Order ID	**d1** **mm**	l2 mm	d2 mm	l1 mm	Order ID	**d1** **mm**	l2 mm	d2 mm	l1 mm
226610.0100	**0.50**	1.5	3	38	226610.2700	**1.80**	5.4	3	38
226610.0200	**0.55**	1.65	3	38	226610.2800	**1.85**	5.55	3	38
226610.0300	**0.60**	1.8	3	38	226610.2900	**1.90**	5.7	3	38
226610.0400	**0.65**	1.95	3	38	226610.3000	**1.95**	5.85	3	38
226610.0500	**0.70**	2.1	3	38	226610.3100	**2.00**	6	3	38
226610.0600	**0.75**	2.25	3	38	226610.3200	**2.05**	6.15	3	38
226610.0700	**0.80**	2.4	3	38	226610.3300	**2.10**	6.3	3	38
226610.0800	**0.85**	2.55	3	38	226610.3400	**2.15**	6.45	3	38
226610.0900	**0.90**	2.7	3	38	226610.3500	**2.20**	6.6	3	38
226610.1000	**0.95**	2.85	3	38	226610.3600	**2.25**	6.75	3	38
226610.1100	**1.00**	3	3	38	226610.3700	**2.30**	6.9	3	38
226610.1200	**1.05**	3.15	3	38	226610.3800	**2.35**	7.05	3	38
226610.1300	**1.10**	3.3	3	38	226610.3900	**2.40**	7.2	3	38
226610.1400	**1.15**	3.45	3	38	226610.4000	**2.45**	7.35	3	38
226610.1500	**1.20**	3.6	3	38	226610.4100	**2.50**	7.5	3	38
226610.1600	**1.25**	3.75	3	38	226610.4200	**2.55**	7.65	3	38
226610.1700	**1.30**	3.9	3	38	226610.4300	**2.60**	7.8	3	38
226610.1800	**1.35**	4.05	3	38	226610.4400	**2.65**	7.95	3	38
226610.1900	**1.40**	4.2	3	38	226610.4500	**2.70**	8.1	3	38
226610.2000	**1.45**	4.35	3	38	226610.4600	**2.75**	8.25	3	38
226610.2100	**1.50**	4.5	3	38	226610.4700	**2.80**	8.4	3	38
226610.2200	**1.55**	4.65	3	38	226610.4800	**2.85**	8.55	3	38
226610.2300	**1.60**	4.8	3	38	226610.4900	**2.90**	8.7	3	38
226610.2400	**1.65**	4.95	3	38	226610.5000	**2.95**	8.85	3	38
226610.2500	**1.70**	5.1	3	38	226610.5100	**3.00**	9	6	51
226610.2600	**1.75**	5.25	3	38					

227080 FUTURO SC ball-nose copy milling cutter







Made of solid hard metal, XIDUR coating, with cylindrical shank, According to factory standard, Nominal size Ø 0.2 - 4 mm, Number of teeth 2, With full radius, Long version, with center cut, Milling cutter with 30° helix angle
Secondary application: Steel (ISO-P), Main application: Hardened steel (ISO H), For copy milling, For micro milling

Order ID	**d1** **mm**	**r** **mm**	l2 mm	l3 mm	d2 mm	d3 mm	l1 mm	Cutting tolerance on radius
227080.0010	**0.2**	**0.1**	0.2	1	4	0.18	45	+/- 0.005
227080.0020	**0.3**	**0.15**	0.3	2	4	0.27	45	+/- 0.005
227080.0040	**0.4**	**0.2**	0.4	4	4	0.37	45	+/- 0.005
227080.0050	**0.5**	**0.25**	0.4	2	4	0.45	45	+/- 0.005
227080.0060	**0.5**	**0.25**	0.4	4	4	0.45	45	+/- 0.005
227080.0070	**0.5**	**0.25**	0.4	6	4	0.45	45	+/- 0.005
227080.0080	**0.6**	**0.3**	0.5	2	4	0.55	45	+/- 0.005
227080.0090	**0.6**	**0.3**	0.5	4	4	0.55	45	+/- 0.005
227080.0110	**0.6**	**0.3**	0.5	6	4	0.55	45	+/- 0.005
227080.0120	**0.8**	**0.4**	0.6	2	4	0.75	45	+/- 0.005
227080.0130	**0.8**	**0.4**	0.6	4	4	0.75	45	+/- 0.005
227080.0140	**0.8**	**0.4**	0.6	8	4	0.75	45	+/- 0.005
227080.0150	**1**	**0.5**	0.8	3	4	0.95	45	+/- 0.005
227080.0155	**1**	**0.5**	0.8	4	4	0.95	45	+/- 0.005
227080.0160	**1**	**0.5**	0.8	5	4	0.95	45	+/- 0.005
227080.0170	**1**	**0.5**	0.8	8	4	0.95	45	+/- 0.005
227080.0180	**1**	**0.5**	0.8	10	4	0.95	45	+/- 0.005
227080.0190	**1.2**	**0.6**	1	6	4	1.15	45	+/- 0.005
227080.0200	**1.2**	**0.6**	1	10	4	1.15	45	+/- 0.005
227080.0210	**1.5**	**0.75**	1.2	6	4	1.45	45	+/- 0.005
227080.0220	**1.5**	**0.75**	1.2	10	4	1.45	45	+/- 0.005
227080.0230	**1.5**	**0.75**	1.2	16	4	1.45	45	+/- 0.005
227080.0240	**2**	**1**	1.6	4	4	1.95	45	+/- 0.005
227080.0250	**2**	**1**	1.6	8	4	1.95	45	+/- 0.005
227080.0260	**2**	**1**	1.6	12	4	1.95	50	+/- 0.005
227080.0270	**2**	**1**	1.6	16	4	1.95	50	+/- 0.005
227080.0280	**2**	**1**	1.6	20	4	1.95	55	+/- 0.005
227080.0290	**3**	**1.5**	2.4	12	6	2.85	50	+/- 0.005
227080.0300	**3**	**1.5**	2.4	16	6	2.85	55	+/- 0.005
227080.0310	**3**	**1.5**	2.4	20	6	2.85	60	+/- 0.005
227080.0320	**3**	**1.5**	2.4	30	6	2.85	70	+/- 0.005
227080.0330	**4**	**2**	3.2	12	6	3.85	60	+/- 0.005
227080.0340	**4**	**2**	3.2	16	6	3.85	60	+/- 0.005
227080.0350	**4**	**2**	3.2	20	6	3.85	65	+/- 0.005
227080.0360	**4**	**2**	3.2	30	6	3.85	70	+/- 0.005
227080.0370	**4**	**2**	3.2	40	6	3.85	90	+/- 0.005

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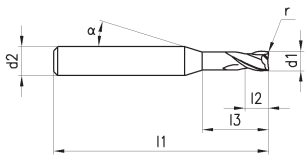
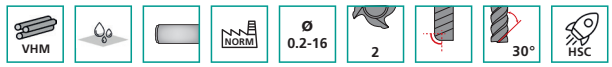
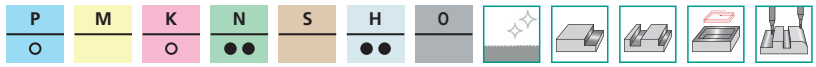


222400 FUTURO SC shoulder/ slot milling cutters

with corner radius





Made of solid hard metal, Coated, with cylindrical shank, According to factory standard, Nominal size Ø 0.2 - 16 mm, Number of teeth 2, With corner radius, Milling cutter with 30° helix angle, HSC (High-Speed Cutting) milling technology
Secondary application: Steel (ISO-P), Secondary application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N), Main application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling, For micro milling

Application:
Corner radius cutters can be used **up to 60 HRC**. Suitable for non-ferrous metals and hardened steels.

Tolerances r:
≤ 0.5 mm: +/- 0.005 mm
0.6...1.5 mm: +/- 0.010 mm
> 1.5 mm: +/- 0.015 mm

Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222400.0010	**0.2**	**0.02**	**1**	0.2	40	4	15	222400.0640	**0.6**	**0.1**	**10**	0.6	50	4	15
222400.0020	**0.2**	**0.02**	**1.5**	0.2	40	4	15	222400.0650	**0.7**	**0.1**	**2**	0.7	45	4	15
222400.0030	**0.2**	**0.05**	**1**	0.2	40	4	15	222400.0660	**0.7**	**0.1**	**4**	0.7	45	4	15
222400.0040	**0.2**	**0.05**	**1.5**	0.2	40	4	15	222400.0670	**0.7**	**0.1**	**6**	0.7	45	4	15
222400.0050	**0.3**	**0.05**	**1**	0.3	40	4	15	222400.0680	**0.8**	**0.02**	**2**	0.8	45	4	15
222400.0060	**0.3**	**0.05**	**2**	0.3	40	4	15	222400.0690	**0.8**	**0.02**	**4**	0.8	45	4	15
222400.0070	**0.3**	**0.05**	**3**	0.3	40	4	15	222400.0700	**0.8**	**0.02**	**6**	0.8	45	4	15
222400.0080	**0.4**	**0.05**	**1**	0.4	40	4	15	222400.0710	**0.8**	**0.02**	**8**	0.8	45	4	15
222400.0090	**0.4**	**0.05**	**2**	0.4	40	4	15	222400.0720	**0.8**	**0.02**	**10**	0.8	50	4	15
222400.0100	**0.4**	**0.05**	**3**	0.4	40	4	15	222400.0730	**0.8**	**0.05**	**2**	0.8	45	4	15
222400.0110	**0.4**	**0.05**	**4**	0.4	40	4	15	222400.0740	**0.8**	**0.05**	**4**	0.8	45	4	15
222400.0120	**0.4**	**0.1**	**1**	0.4	40	4	15	222400.0750	**0.8**	**0.05**	**6**	0.8	45	4	15
222400.0130	**0.4**	**0.1**	**1.5**	0.4	40	4	15	222400.0760	**0.8**	**0.05**	**8**	0.8	45	4	15
222400.0140	**0.4**	**0.1**	**2**	0.4	40	4	15	222400.0770	**0.8**	**0.05**	**10**	0.8	50	4	15
222400.0150	**0.4**	**0.1**	**3**	0.4	40	4	15	222400.0780	**0.8**	**0.1**	**2**	0.8	45	4	15
222400.0160	**0.4**	**0.1**	**4**	0.4	40	4	15	222400.0790	**0.8**	**0.1**	**4**	0.8	45	4	15
222400.0170	**0.5**	**0.02**	**1**	0.5	45	4	15	222400.0800	**0.8**	**0.1**	**6**	0.8	45	4	15
222400.0180	**0.5**	**0.02**	**1.5**	0.5	45	4	15	222400.0810	**0.8**	**0.1**	**8**	0.8	45	4	15
222400.0190	**0.5**	**0.02**	**2.0**	0.5	45	4	15	222400.0830	**0.8**	**0.2**	**2**	0.8	45	4	15
222400.0200	**0.5**	**0.02**	**2.5**	0.5	45	4	15	222400.0840	**0.8**	**0.2**	**4**	0.8	45	4	15
222400.0210	**0.5**	**0.02**	**3**	0.5	45	4	15	222400.0850	**0.8**	**0.2**	**6**	0.8	45	4	15
222400.0220	**0.5**	**0.02**	**4**	0.5	45	4	15	222400.0860	**0.8**	**0.2**	**8**	0.8	45	4	15
222400.0230	**0.5**	**0.02**	**5**	0.5	45	4	15	222400.0870	**0.8**	**0.2**	**10**	0.8	45	4	15
222400.0240	**0.5**	**0.02**	**6**	0.5	45	4	15	222400.0880	**1**	**0.05**	**4**	1	45	4	15
222400.0250	**0.5**	**0.02**	**8**	0.5	45	4	15	222400.0890	**1**	**0.05**	**6**	1	45	4	15
222400.0260	**0.5**	**0.02**	**10**	0.5	45	4	15	222400.0900	**1**	**0.05**	**8**	1	45	4	15
222400.0270	**0.5**	**0.05**	**1**	0.5	45	4	15	222400.0910	**1**	**0.05**	**10**	1	50	4	15
222400.0290	**0.5**	**0.05**	**2**	0.5	45	4	15	222400.0920	**1**	**0.05**	**12**	1	50	4	15
222400.0300	**0.5**	**0.05**	**2.5**	0.5	45	4	15	222400.0930	**1**	**0.05**	**16**	1	50	4	15
222400.0310	**0.5**	**0.05**	**3**	0.5	45	4	15	222400.0940	**1**	**0.05**	**20**	1	50	4	15
222400.0320	**0.5**	**0.05**	**4**	0.5	45	4	15	222400.0950	**1**	**0.05**	**22**	1	60	4	15
222400.0330	**0.5**	**0.05**	**5**	0.5	45	4	15	222400.0960	**1**	**0.05**	**25**	1	60	4	15
222400.0340	**0.5**	**0.05**	**6**	0.5	45	4	15	222400.0970	**1**	**0.1**	**4**	1	45	4	15
222400.0350	**0.5**	**0.05**	**8**	0.5	45	4	15	222400.0980	**1**	**0.1**	**6**	1	45	4	15
222400.0360	**0.5**	**0.05**	**10**	0.5	45	4	15	222400.0990	**1**	**0.1**	**8**	1	45	4	15
222400.0370	**0.5**	**0.1**	**1**	0.5	45	4	15	222400.1000	**1**	**0.1**	**10**	1	50	4	15
222400.0380	**0.5**	**0.1**	**1.5**	0.5	45	4	15	222400.1010	**1**	**0.1**	**12**	1	50	4	15
222400.0390	**0.5**	**0.1**	**2**	0.5	45	4	15	222400.1020	**1**	**0.1**	**16**	1	50	4	15
222400.0400	**0.5**	**0.1**	**2.5**	0.5	45	4	15	222400.1030	**1**	**0.1**	**20**	1	50	4	15
222400.0410	**0.5**	**0.1**	**3**	0.5	45	4	15	222400.1040	**1**	**0.1**	**22**	1	60	4	15
222400.0420	**0.5**	**0.1**	**4**	0.5	45	4	15	222400.1050	**1**	**0.1**	**25**	1	60	4	15
222400.0430	**0.5**	**0.1**	**5**	0.5	45	4	15	222400.1060	**1**	**0.2**	**4**	1	45	4	15
222400.0440	**0.5**	**0.1**	**6**	0.5	45	4	15	222400.1070	**1**	**0.2**	**6**	1	45	4	15
222400.0450	**0.5**	**0.1**	**8**	0.5	45	4	15	222400.1080	**1**	**0.2**	**8**	1	45	4	15
222400.0460	**0.5**	**0.1**	**10**	0.5	50	4	15	222400.1090	**1**	**0.2**	**10**	1	50	4	15
222400.0470	**0.6**	**0.02**	**2**	0.6	45	4	15	222400.1100	**1**	**0.2**	**12**	1	50	4	15
222400.0480	**0.6**	**0.02**	**3**	0.6	45	4	15	222400.1110	**1**	**0.2**	**16**	1	50	4	15
222400.0490	**0.6**	**0.02**	**4**	0.6	45	4	15	222400.1120	**1**	**0.2**	**20**	1	50	4	15
222400.0500	**0.6**	**0.02**	**6**	0.6	45	4	15	222400.1130	**1**	**0.2**	**22**	1	60	4	15
222400.0510	**0.6**	**0.02**	**8**	0.6	45	4	15	222400.1140	**1**	**0.2**	**25**	1	60	4	15
222400.0520	**0.6**	**0.02**	**10**	0.6	50	4	15	222400.1150	**1**	**0.3**	**4**	1	45	4	15
222400.0530	**0.6**	**0.05**	**2**	0.6	45	4	15	222400.1160	**1**	**0.3**	**6**	1	45	4	15
222400.0540	**0.6**	**0.05**	**3**	0.6	45	4	15	222400.1170	**1**	**0.3**	**8**	1	45	4	15
222400.0550	**0.6**	**0.05**	**4**	0.6	45	4	15	222400.1180	**1**	**0.3**	**10**	1	50	4	15
222400.0560	**0.6**	**0.05**	**6**	0.6	45	4	15	222400.1190	**1**	**0.3**	**12**	1	50	4	15
222400.0570	**0.6**	**0.05**	**8**	0.6	45	4	15	222400.1200	**1**	**0.3**	**16**	1	50	4	15
222400.0580	**0.6**	**0.05**	**10**	0.6	50	4	15	222400.1210	**1**	**0.3**	**20**	1	50	4	15
222400.0590	**0.6**	**0.1**	**2**	0.6	45	4	15	222400.1220	**1**	**0.3**	**22**	1	60	4	15
222400.0600	**0.6**	**0.1**	**3**	0.6	45	4	15	222400.1230	**1**	**0.3**	**25**	1	60	4	15
222400.0610	**0.6**	**0.1**	**4**	0.6	45	4	15	222400.1240	**1.2**	**0.1**	**4**	1.2	45	4	15
222400.0620	**0.6**	**0.1**	**6**	0.6	45	4	15	222400.1260	**1.2**	**0.1**	**8**	1.2	45	4	15
222400.0630	**0.6**	**0.1**	**8**	0.6	45	4	15	222400.1270	**1.2**	**0.1**	**10**	1.2	50	4	15

Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222400.1280	**1.2**	**0.1**	**12**	1.2	50	4	15	222400.2190	**2.5**	**0.2**	**16**	2.5	50	4	15
222400.1290	**1.2**	**0.1**	**16**	1.2	50	4	15	222400.2200	**2.5**	**0.2**	**20**	2.5	50	4	15
222400.1300	**1.2**	**0.1**	**20**	1.2	50	4	15	222400.2210	**2.5**	**0.2**	**25**	2.5	60	4	15
222400.1310	**1.2**	**0.2**	**4**	1.2	45	4	15	222400.2220	**2.5**	**0.2**	**30**	2.5	70	4	15
222400.1330	**1.2**	**0.2**	**8**	1.2	45	4	15	222400.2240	**2.5**	**0.3**	**16**	2.5	50	4	15
222400.1340	**1.2**	**0.2**	**10**	1.2	50	4	15	222400.2250	**2.5**	**0.3**	**20**	2.5	50	4	15
222400.1350	**1.2**	**0.2**	**12**	1.2	50	4	15	222400.2260	**2.5**	**0.3**	**25**	2.5	60	4	15
222400.1360	**1.2**	**0.2**	**16**	1.2	50	4	15	222400.2270	**2.5**	**0.3**	**30**	2.5	70	4	15
222400.1370	**1.2**	**0.2**	**20**	1.2	50	4	15	222400.2280	**2.5**	**0.5**	**10**	2.5	50	4	15
222400.1380	**1.2**	**0.3**	**4**	1.2	45	4	15	222400.2290	**2.5**	**0.5**	**16**	2.5	50	4	15
222400.1390	**1.2**	**0.3**	**6**	1.2	45	4	15	222400.2300	**2.5**	**0.5**	**20**	2.5	50	4	15
222400.1400	**1.2**	**0.3**	**8**	1.2	45	4	15	222400.2310	**2.5**	**0.5**	**25**	2.5	60	4	15
222400.1410	**1.2**	**0.3**	**10**	1.2	50	4	15	222400.2320	**2.5**	**0.5**	**30**	2.5	70	4	15
222400.1420	**1.2**	**0.3**	**12**	1.2	50	4	15	222400.2330	**3**	**0.1**	**10**	3	50	6	15
222400.1430	**1.2**	**0.3**	**16**	1.2	50	4	15	222400.2340	**3**	**0.1**	**12**	3	55	6	15
222400.1440	**1.2**	**0.3**	**20**	1.2	50	4	15	222400.2350	**3**	**0.1**	**16**	3	55	6	15
222400.1450	**1.5**	**0.1**	**4**	1.5	45	4	15	222400.2360	**3**	**0.1**	**20**	3	60	6	15
222400.1460	**1.5**	**0.1**	**6**	1.5	45	4	15	222400.2370	**3**	**0.1**	**25**	3	65	6	15
222400.1470	**1.5**	**0.1**	**8**	1.5	45	4	15	222400.2380	**3**	**0.1**	**30**	3	70	6	15
222400.1480	**1.5**	**0.1**	**10**	1.5	50	4	15	222400.2390	**3**	**0.1**	**35**	3	75	6	15
222400.1490	**1.5**	**0.1**	**12**	1.5	50	4	15	222400.2400	**3**	**0.1**	**40**	3	80	6	15
222400.1500	**1.5**	**0.1**	**16**	1.5	50	4	15	222400.2410	**3**	**0.2**	**10**	3	50	6	15
222400.1510	**1.5**	**0.1**	**20**	1.5	50	4	15	222400.2420	**3**	**0.2**	**12**	3	55	6	15
222400.1520	**1.5**	**0.1**	**22**	1.5	60	4	15	222400.2430	**3**	**0.2**	**16**	3	55	6	15
222400.1530	**1.5**	**0.1**	**25**	1.5	60	4	15	222400.2440	**3**	**0.2**	**20**	3	60	6	15
222400.1540	**1.5**	**0.2**	**4**	1.5	45	4	15	222400.2450	**3**	**0.2**	**25**	3	65	6	15
222400.1550	**1.5**	**0.2**	**6**	1.5	45	4	15	222400.2460	**3**	**0.2**	**30**	3	70	6	15
222400.1560	**1.5**	**0.2**	**8**	1.5	45	4	15	222400.2470	**3**	**0.2**	**35**	3	75	6	15
222400.1570	**1.5**	**0.2**	**10**	1.5	50	4	15	222400.2480	**3**	**0.2**	**40**	3	80	6	15
222400.1580	**1.5**	**0.2**	**12**	1.5	50	4	15	222400.2490	**3**	**0.3**	**10**	3	50	6	15
222400.1590	**1.5**	**0.2**	**16**	1.5	50	4	15	222400.2500	**3**	**0.3**	**12**	3	55	6	15
222400.1600	**1.5**	**0.2**	**20**	1.5	50	4	15	222400.2510	**3**	**0.3**	**16**	3	55	6	15
222400.1610	**1.5**	**0.2**	**22**	1.5	60	4	15	222400.2520	**3**	**0.3**	**20**	3	60	6	15
222400.1620	**1.5**	**0.2**	**25**	1.5	60	4	15	222400.2530	**3**	**0.3**	**25**	3	65	6	15
222400.1630	**1.5**	**0.3**	**4**	1.5	45	4	15	222400.2540	**3**	**0.3**	**30**	3	70	6	15
222400.1640	**1.5**	**0.3**	**6**	1.5	45	4	15	222400.2550	**3**	**0.3**	**35**	3	75	6	15
222400.1650	**1.5**	**0.3**	**8**	1.5	45	4	15	222400.2560	**3**	**0.3**	**40**	3	80	6	15
222400.1660	**1.5**	**0.3**	**10**	1.5	50	4	15	222400.2570	**3**	**0.5**	**10**	3	50	6	15
222400.1670	**1.5**	**0.3**	**12**	1.5	50	4	15	222400.2580	**3**	**0.5**	**12**	3	55	6	15
222400.1680	**1.5**	**0.3**	**16**	1.5	50	4	15	222400.2590	**3**	**0.5**	**16**	3	55	6	15
222400.1690	**1.5**	**0.3**	**20**	1.5	50	4	15	222400.2600	**3**	**0.5**	**20**	3	60	6	15
222400.1700	**1.5**	**0.3**	**22**	1.5	60	4	15	222400.2610	**3**	**0.5**	**25**	3	65	6	15
222400.1710	**1.5**	**0.3**	**25**	1.5	60	4	15	222400.2620	**3**	**0.5**	**30**	3	70	6	15
222400.1720	**1.5**	**0.5**	**4**	1.5	45	4	15	222400.2630	**3**	**0.5**	**35**	3	75	6	15
222400.1730	**1.5**	**0.5**	**6**	1.5	45	4	15	222400.2640	**3**	**0.5**	**40**	3	80	6	15
222400.1740	**1.5**	**0.5**	**8**	1.5	45	4	15	222400.2650	**3**	**1**	**10**	3	50	6	15
222400.1750	**1.5**	**0.5**	**10**	1.5	50	4	15	222400.2660	**3**	**1**	**12**	3	55	6	15
222400.1760	**1.5**	**0.5**	**12**	1.5	50	4	15	222400.2670	**3**	**1**	**16**	3	55	6	15
222400.1770	**1.5**	**0.5**	**16**	1.5	50	4	15	222400.2680	**3**	**1**	**20**	3	60	6	15
222400.1780	**1.5**	**0.5**	**20**	1.5	50	4	15	222400.2690	**3**	**1**	**25**	3	65	6	15
222400.1790	**1.5**	**0.5**	**22**	1.5	60	4	15	222400.2700	**3**	**1**	**30**	3	70	6	15
222400.1800	**1.5**	**0.5**	**25**	1.5	60	4	15	222400.2710	**3**	**1**	**35**	3	75	6	15
222400.1810	**2**	**0.1**	**6**	2	45	4	15	222400.2720	**3**	**1**	**40**	3	80	6	15
222400.1820	**2**	**0.1**	**8**	2	45	4	15	222400.2730	**4**	**0.1**	**12**	4	50	4	-
222400.1830	**2**	**0.1**	**10**	2	50	4	15	222400.2740	**4**	**0.1**	**20**	4	70	4	-
222400.1840	**2**	**0.1**	**12**	2	50	4	15	222400.2750	**4**	**0.1**	**12**	4	55	6	15
222400.1850	**2**	**0.1**	**16**	2	50	4	15	222400.2760	**4**	**0.1**	**16**	4	55	6	15
222400.1860	**2**	**0.1**	**20**	2	50	4	15	222400.2770	**4**	**0.1**	**20**	4	60	6	15
222400.1870	**2**	**0.1**	**25**	2	60	4	15	222400.2780	**4**	**0.1**	**25**	4	65	6	15
222400.1880	**2**	**0.1**	**30**	2	70	4	15	222400.2790	**4**	**0.1**	**30**	4	70	6	15
222400.1890	**2**	**0.2**	**6**	2	45	4	15	222400.2800	**4**	**0.1**	**35**	4	75	6	15
222400.1900	**2**	**0.2**	**8**	2	45	4	15	222400.2820	**4**	**0.1**	**45**	4	90	6	15
222400.1910	**2**	**0.2**	**10**	2	50	4	15	222400.2830	**4**	**0.1**	**50**	4	100	6	15
222400.1920	**2**	**0.2**	**12**	2	50	4	15	222400.2840	**4**	**0.2**	**12**	4	50	4	-
222400.1930	**2**	**0.2**	**16**	2	50	4	15	222400.2850	**4**	**0.2**	**20**	4	70	4	-
222400.1940	**2**	**0.2**	**20**	2	50	4	15	222400.2860	**4**	**0.2**	**12**	4	55	6	15
222400.1950	**2**	**0.2**	**25**	2	60	4	15	222400.2870	**4**	**0.2**	**16**	4	55	6	15
222400.1960	**2**	**0.2**	**30**	2	70	4	15	222400.2880	**4**	**0.2**	**20**	4	60	6	15
222400.1970	**2**	**0.3**	**6**	2	45	4	15	222400.2890	**4**	**0.2**	**25**	4	65	6	15
222400.1980	**2**	**0.3**	**8**	2	45	4	15	222400.2900	**4**	**0.2**	**30**	4	70	6	15
222400.1990	**2**	**0.3**	**10**	2	50	4	15	222400.2910	**4**	**0.2**	**35**	4	75	6	15
222400.2000	**2**	**0.3**	**12**	2	50	4	15	222400.2920	**4**	**0.2**	**40**	4	80	6	15
222400.2010	**2**	**0.3**	**16**	2	50	4	15	222400.2930	**4**	**0.2**	**45**	4	90	6	15
222400.2020	**2**	**0.3**	**20**	2	50	4	15	222400.2940	**4**	**0.2**	**50**	4	100	6	15
222400.2030	**2**	**0.3**	**25**	2	60	4	15	222400.2950	**4**	**0.3**	**12**	4	50	4	-
222400.2040	**2**	**0.3**	**30**	2	70	4	15	222400.2960	**4**	**0.3**	**20**	4	70	4	-
222400.2050	**2**	**0.5**	**6**	2	45	4	15	222400.2970	**4**	**0.3**	**12**	4	55	6	15
222400.2060	**2**	**0.5**	**8**	2	45	4	15	222400.2980	**4**	**0.3**	**16**	4	55	6	15
222400.2070	**2**	**0.5**	**10**	2	50	4	15	222400.2990	**4**	**0.3**	**20**	4	60	6	15
222400.2080	**2**	**0.5**	**12**	2	50	4	15	222400.3000	**4**	**0.3**	**25**	4	65	6	15
222400.2090	**2**	**0.5**	**16**	2	50	4	15	222400.3010	**4**	**0.3**	**30**	4	70	6	15
222400.2100	**2**	**0.5**	**20**	2	50	4	15	222400.3020	**4**	**0.3**	**35**	4	75	6	15
222400.2110	**2**	**0.5**	**25**	2	60	4	15	222400.3030	**4**	**0.3**	**40**	4	80	6	15
222400.2120	**2**	**0.5**	**30**	2	70	4	15	222400.3040	**4**	**0.3**	**45**	4	90	6	15
222400.2130	**2.5**	**0.1**	**10**	2.5	50	4	15	222400.3050	**4**	**0.3**	**50**	4	100	6	15
222400.2140	**2.5**	**0.1**	**16**	2.5	50	4	15	222400.3060	**4**	**0.5**	**12**	4	50	4	-
222400.2150	**2.5**	**0.1**	**20**	2.5	50	4	15	222400.3070	**4**	**0.5**	**20**	4	70	4	-
222400.2160	**2.5**	**0.1**	**25**	2.5	60	4	15	222400.3080	**4**	**0.5**	**12**	4	55	6	15
222400.2170	**2.5**	**0.1**	**30**	2.5	70	4	15	222400.3090	**4**	**0.5**	**16**	4	55	6	15
222400.2180	**2.5**	**0.2**	**10**	2.5	50	4	15	222400.3100	**4**	**0.5**	**20**	4	60	6	15

Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222400.3110	**4**	**0.5**	**25**	4	65	6	15	222400.3530	**6**	**1.5**	**20**	7	60	6	-
222400.3120	**4**	**0.5**	**30**	4	70	6	15	222400.3540	**6**	**1.5**	**40**	7	90	6	-
222400.3130	**4**	**0.5**	**35**	4	75	6	15	222400.3550	**8**	**0.2**	**22**	9	65	8	-
222400.3140	**4**	**0.5**	**40**	4	80	6	15	222400.3560	**8**	**0.2**	**40**	9	100	8	-
222400.3150	**4**	**0.5**	**45**	4	90	6	15	222400.3570	**8**	**0.3**	**22**	9	65	8	-
222400.3160	**4**	**0.5**	**50**	4	100	6	15	222400.3580	**8**	**0.3**	**40**	9	100	8	-
222400.3170	**4**	**1**	**12**	4	50	4	-	222400.3590	**8**	**0.5**	**22**	9	65	8	-
222400.3180	**4**	**1**	**20**	4	70	4	-	222400.3600	**8**	**0.5**	**40**	9	100	8	-
222400.3190	**4**	**1**	**12**	4	55	6	15	222400.3610	**8**	**1**	**22**	9	65	8	-
222400.3200	**4**	**1**	**16**	4	55	6	15	222400.3620	**8**	**1**	**40**	9	100	8	-
222400.3210	**4**	**1**	**20**	4	60	6	15	222400.3630	**8**	**1.5**	**22**	9	65	8	-
222400.3220	**4**	**1**	**25**	4	65	6	15	222400.3640	**8**	**1.5**	**40**	9	100	8	-
222400.3230	**4**	**1**	**30**	4	70	6	15	222400.3650	**10**	**0.2**	**24**	11	70	10	-
222400.3240	**4**	**1**	**35**	4	75	6	15	222400.3660	**10**	**0.2**	**45**	11	100	10	-
222400.3250	**4**	**1**	**40**	4	80	6	15	222400.3670	**10**	**0.3**	**24**	11	70	10	-
222400.3260	**4**	**1**	**45**	4	90	6	15	222400.3680	**10**	**0.3**	**45**	11	100	10	-
222400.3270	**4**	**1**	**50**	4	100	6	15	222400.3690	**10**	**0.5**	**24**	11	70	10	-
222400.3280	**5**	**0.2**	**15**	6	60	6	15	222400.3700	**10**	**0.5**	**45**	11	100	10	-
222400.3290	**5**	**0.2**	**25**	6	70	6	15	222400.3710	**10**	**1**	**24**	11	70	10	-
222400.3300	**5**	**0.2**	**30**	6	70	6	15	222400.3720	**10**	**1**	**45**	11	100	10	-
222400.3310	**5**	**0.2**	**40**	6	80	6	15	222400.3730	**10**	**1.5**	**24**	11	70	10	-
222400.3320	**5**	**0.2**	**50**	6	100	6	15	222400.3740	**10**	**1.5**	**45**	11	100	10	-
222400.3330	**5**	**0.5**	**15**	6	60	6	15	222400.3750	**10**	**2**	**24**	11	70	10	-
222400.3340	**5**	**0.5**	**25**	6	70	6	15	222400.3760	**10**	**2**	**45**	11	100	10	-
222400.3350	**5**	**0.5**	**30**	6	70	6	15	222400.3770	**12**	**0.2**	**26**	13	80	12	-
222400.3360	**5**	**0.5**	**40**	6	80	6	15	222400.3780	**12**	**0.2**	**50**	13	110	12	-
222400.3370	**5**	**0.5**	**50**	6	100	6	15	222400.3790	**12**	**0.3**	**26**	13	80	12	-
222400.3380	**5**	**1**	**15**	6	60	6	15	222400.3800	**12**	**0.3**	**50**	13	110	12	-
222400.3390	**5**	**1**	**25**	6	70	6	15	222400.3810	**12**	**0.5**	**26**	13	80	12	-
222400.3400	**5**	**1**	**30**	6	70	6	15	222400.3820	**12**	**0.5**	**50**	13	110	12	-
222400.3410	**5**	**1**	**40**	6	80	6	15	222400.3830	**12**	**1**	**26**	13	80	12	-
222400.3420	**5**	**1**	**50**	6	100	6	15	222400.3840	**12**	**1**	**50**	13	110	12	-
222400.3430	**6**	**0.1**	**20**	7	60	6	-	222400.3850	**12**	**1.5**	**26**	13	80	12	-
222400.3440	**6**	**0.1**	**40**	7	90	6	-	222400.3860	**12**	**1.5**	**50**	13	110	12	-
222400.3450	**6**	**0.2**	**20**	7	60	6	-	222400.3870	**12**	**2**	**26**	13	80	12	-
222400.3460	**6**	**0.2**	**40**	7	90	6	-	222400.3880	**12**	**2**	**50**	13	110	12	-
222400.3470	**6**	**0.3**	**20**	7	60	6	-	222400.3890	**12**	**3**	**26**	13	80	12	-
222400.3480	**6**	**0.3**	**40**	7	90	6	-	222400.3900	**12**	**3**	**50**	13	110	12	-
222400.3490	**6**	**0.5**	**20**	7	60	6	-	222400.3910	**16**	**0.5**	**35**	20	110	16	-
222400.3500	**6**	**0.5**	**40**	7	90	6	-	222400.3920	**16**	**0.5**	**35**	20	160	16	-
222400.3510	**6**	**1**	**20**	7	60	6	-	222400.3930	**16**	**1**	**35**	20	110	16	-
222400.3520	**6**	**1**	**40**	7	90	6	-	222400.3940	**16**	**1**	**35**	20	160	16	-

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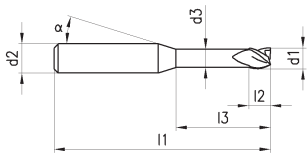
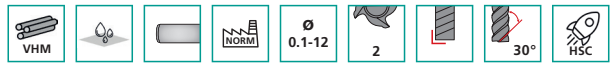
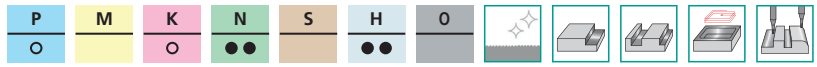


222402 FUTURO SC shoulder/ slot milling cutters





Made of solid hard metal, Coated, with cylindrical shank, According to factory standard, Nominal size Ø 0.1 - 12 mm, Number of teeth 2, With sharp corner design, Milling cutter with 30° helix angle, HSC (High-Speed Cutting) milling technology
Secondary application: Steel (ISO-P), Secondary application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N), Main application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling, For micro milling

Application:
Corner and slot milling cutters for various roughing and finishing operations. **Can be used up to 60 HRC**. Suitable for non-ferrous metals and hardened steels.

Order ID	d1 mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222402.0010	**0.1**	**-**	0.3	40	4	15	222402.0210	**0.4**	**3**	0.4	40	4	15
222402.0020	**0.1**	**-**	0.5	40	4	15	222402.0220	**0.4**	**3.5**	0.4	40	4	15
222402.0030	**0.2**	**0.5**	0.2	40	4	15	222402.0230	**0.4**	**4**	0.4	40	4	15
222402.0040	**0.2**	**1**	0.2	40	4	15	222402.0240	**0.4**	**5**	0.4	40	4	15
222402.0050	**0.2**	**1.5**	0.2	40	4	15	222402.0250	**0.4**	**6**	0.4	40	4	15
222402.0060	**0.2**	**2**	0.2	40	4	15	222402.0260	**0.4**	**8**	0.4	40	4	15
222402.0070	**0.2**	**2.5**	0.2	40	4	15	222402.0270	**0.4**	**10**	0.4	40	4	15
222402.0080	**0.2**	**3**	0.2	40	4	15	222402.0280	**0.5**	**1**	0.5	40	4	15
222402.0090	**0.3**	**1**	0.3	40	4	15	222402.0290	**0.5**	**2**	0.5	40	4	15
222402.0100	**0.3**	**1.5**	0.3	40	4	15	222402.0300	**0.5**	**3**	0.5	40	4	15
222402.0110	**0.3**	**2**	0.3	40	4	15	222402.0310	**0.5**	**4**	0.5	40	4	15
222402.0120	**0.3**	**2.5**	0.3	40	4	15	222402.0320	**0.5**	**5**	0.5	40	4	15
222402.0130	**0.3**	**3**	0.3	40	4	15	222402.0330	**0.5**	**6**	0.5	40	4	15
222402.0140	**0.3**	**3.5**	0.3	40	4	15	222402.0340	**0.5**	**8**	0.5	40	4	15
222402.0150	**0.3**	**4**	0.3	40	4	15	222402.0350	**0.5**	**10**	0.5	40	4	15
222402.0160	**0.3**	**5**	0.3	40	4	15	222402.0360	**0.5**	**12**	0.5	45	4	15
222402.0170	**0.4**	**1**	0.4	40	4	15	222402.0370	**0.5**	**14**	0.5	45	4	15
222402.0180	**0.4**	**1.5**	0.4	40	4	15	222402.0380	**0.6**	**1**	0.6	40	4	15
222402.0190	**0.4**	**2**	0.4	40	4	15	222402.0390	**0.6**	**2**	0.6	40	4	15
222402.0200	**0.4**	**2.5**	0.4	40	4	15	222402.0400	**0.6**	**3**	0.6	40	4	15

Order ID	d1 mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222402.0410	**0.6**	**4**	0.6	40	4	15
222402.0420	**0.6**	**5**	0.6	40	4	15
222402.0430	**0.6**	**6**	0.6	40	4	15
222402.0440	**0.6**	**8**	0.6	40	4	15
222402.0450	**0.6**	**10**	0.6	40	4	15
222402.0460	**0.6**	**12**	0.6	45	4	15
222402.0470	**0.6**	**14**	0.6	45	4	15
222402.0480	**0.6**	**16**	0.6	45	4	15
222402.0490	**0.7**	**2**	0.7	40	4	15
222402.0500	**0.7**	**4**	0.7	40	4	15
222402.0510	**0.7**	**6**	0.7	40	4	15
222402.0520	**0.7**	**8**	0.7	40	4	15
222402.0530	**0.7**	**10**	0.7	40	4	15
222402.0540	**0.7**	**12**	0.7	45	4	15
222402.0550	**0.8**	**2**	0.8	40	4	15
222402.0560	**0.8**	**3**	0.8	40	4	15
222402.0570	**0.8**	**4**	0.8	40	4	15
222402.0580	**0.8**	**5**	0.8	40	4	15
222402.0590	**0.8**	**6**	0.8	40	4	15
222402.0600	**0.8**	**8**	0.8	40	4	15
222402.0610	**0.8**	**10**	0.8	40	4	15
222402.0620	**0.8**	**12**	0.8	45	4	15
222402.0630	**0.8**	**14**	0.8	45	4	15
222402.0640	**0.9**	**6**	0.8	40	4	15
222402.0650	**0.9**	**8**	0.9	40	4	15
222402.0660	**0.9**	**10**	0.9	40	4	15
222402.0670	**1**	**2**	1	45	4	15
222402.0680	**1**	**3**	1	45	4	15
222402.0690	**1**	**4**	1	45	4	15
222402.0700	**1**	**5**	1	45	4	15
222402.0710	**1**	**6**	1	45	4	15
222402.0720	**1**	**8**	1	45	4	15
222402.0730	**1**	**10**	1	45	4	15
222402.0740	**1**	**12**	1	45	4	15
222402.0750	**1**	**14**	1	45	4	15
222402.0760	**1**	**16**	1	50	4	15
222402.0770	**1**	**18**	1	50	4	15
222402.0780	**1**	**20**	1	50	4	15
222402.0790	**1**	**25**	1	60	4	15
222402.0800	**1**	**30**	1	70	4	15
222402.0810	**1.2**	**4**	1.2	45	4	15
222402.0820	**1.2**	**6**	1.2	45	4	15
222402.0830	**1.2**	**8**	1.2	45	4	15
222402.0840	**1.2**	**10**	1.2	45	4	15
222402.0850	**1.2**	**12**	1.2	45	4	15
222402.0860	**1.2**	**16**	1.2	50	4	15
222402.0870	**1.2**	**20**	1.2	50	4	15
222402.0880	**1.2**	**25**	1.2	60	4	15
222402.0900	**1.4**	**6**	1.4	45	4	15
222402.0910	**1.4**	**8**	1.4	45	4	15
222402.0920	**1.4**	**10**	1.4	45	4	15
222402.0930	**1.4**	**14**	1.4	45	4	15
222402.0940	**1.4**	**16**	1.4	50	4	15
222402.0950	**1.4**	**20**	1.4	50	4	15
222402.0960	**1.5**	**4**	1.5	45	4	15
222402.0970	**1.5**	**6**	1.5	45	4	15
222402.0980	**1.5**	**8**	1.5	45	4	15
222402.0990	**1.5**	**10**	1.5	45	4	15
222402.1000	**1.5**	**12**	1.5	45	4	15
222402.1010	**1.5**	**14**	1.5	50	4	15
222402.1020	**1.5**	**16**	1.5	50	4	15
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222402.1050	**1.5**	**25**	1.5	60	4	15
222402.1060	**1.5**	**30**	1.5	70	4	15
222402.1070	**1.6**	**10**	1.6	45	4	15
222402.1080	**1.6**	**14**	1.6	45	4	15
222402.1090	**1.6**	**18**	1.6	60	4	15
222402.1100	**1.8**	**10**	1.8	45	4	15
222402.1110	**1.8**	**14**	1.8	45	4	15
222402.1120	**1.8**	**18**	1.8	50	4	15
222402.1130	**2**	**4**	2	45	4	15
222402.1140	**2**	**6**	2	45	4	15
222402.1150	**2**	**8**	2	45	4	15
222402.1160	**2**	**10**	2	45	4	15
222402.1170	**2**	**12**	2	45	4	15
222402.1180	**2**	**14**	2	45	4	15
222402.1190	**2**	**16**	2	50	4	15
222402.1200	**2**	**18**	2	50	4	15
222402.1210	**2**	**20**	2	50	4	15
222402.1220	**2**	**22**	2	60	4	15
222402.1230	**2**	**25**	2	60	4	15
222402.1240	**2**	**30**	2	60	4	15
222402.1250	**2**	**35**	2	70	4	15
222402.1260	**2**	**40**	2	80	4	15
222402.1270	**2**	**45**	2	80	4	15
222402.1280	**2**	**50**	2	90	4	15
222402.1290	**2.5**	**8**	2.5	45	4	15
222402.1300	**2.5**	**10**	2.5	45	4	15
222402.1310	**2.5**	**12**	2.5	45	4	15
222402.1320	**2.5**	**16**	2.5	50	4	15
222402.1330	**2.5**	**20**	2.5	50	4	15
222402.1340	**2.5**	**25**	2.5	60	4	15
222402.1350	**2.5**	**30**	2.5	70	4	15
222402.1360	**2.5**	**35**	2.5	70	4	15
222402.1370	**2.5**	**40**	2.5	80	4	15
222402.1380	**2.5**	**50**	2.5	90	4	15
222402.1390	**3**	**6**	3	45	6	15
222402.1400	**3**	**8**	3	45	6	15
222402.1410	**3**	**10**	3	45	6	15
222402.1420	**3**	**12**	3	50	6	15
222402.1430	**3**	**16**	3	55	6	15
222402.1440	**3**	**20**	3	60	6	15
222402.1450	**3**	**25**	3	65	6	15
222402.1460	**3**	**30**	3	70	6	15
222402.1470	**3**	**35**	3	75	6	15
222402.1480	**3**	**40**	3	80	6	15
222402.1490	**3**	**45**	3	90	6	15
222402.1500	**3**	**50**	3	100	6	15
222402.1510	**3**	**60**	3	100	6	15
222402.1520	**4**	**8**	4	50	6	15
222402.1530	**4**	**10**	4	50	6	15
222402.1540	**4**	**12**	4	50	6	15
222402.1550	**4**	**16**	4	55	6	15
222402.1560	**4**	**20**	4	60	6	15
222402.1570	**4**	**25**	4	65	6	15
222402.1580	**4**	**30**	4	70	6	15
222402.1590	**4**	**35**	4	75	6	15
222402.1600	**4**	**40**	4	80	6	15
222402.1610	**4**	**45**	4	90	6	15
222402.1620	**4**	**50**	4	100	6	15
222402.1630	**4**	**55**	4	100	6	15
222402.1640	**4**	**60**	4	100	6	15
222402.1650	**5**	**16**	6	55	6	15
222402.1660	**5**	**20**	6	60	6	15
222402.1670	**5**	**25**	6	65	6	15
222402.1680	**5**	**30**	6	70	6	15
222402.1690	**5**	**35**	6	75	6	15
222402.1700	**5**	**40**	6	80	6	15
222402.1710	**5**	**50**	6	100	6	15
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222402.1760	**6**	**50**	10	90	6	-
222402.1770	**6**	**60**	10	110	6	-
222402.1780	**8**	**20**	12	65	8	-
222402.1790	**8**	**30**	12	80	8	-
222402.1800	**8**	**40**	12	100	8	-
222402.1810	**10**	**25**	15	70	10	-
222402.1820	**10**	**35**	15	80	10	-
222402.1830	**10**	**45**	15	100	10	-
222402.1840	**12**	**30**	18	80	12	-
222402.1850	**12**	**40**	18	100	12	-
222402.1860	**12**	**50**	18	120	12	-

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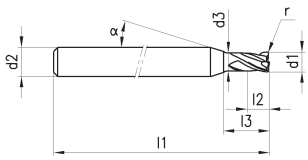
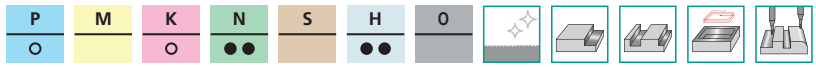


222403 FUTURO SC shoulder/ slot milling cutters

with corner radius





Made of solid hard metal, TiAlN-SiN coating, with cylindrical shank, According to factory standard, Nominal size Ø 0.8 - 12 mm, Number of teeth 4, With corner radius, Milling cutter with 30° helix angle, HSC (High-Speed Cutting) milling technology
Secondary application: Steel (ISO-P), Secondary application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N), Main application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling, For micro milling

Application:
Corner and slot milling cutters with corner radius **can be used up to 58 HRC**. Suitable for non-ferrous metals and hardened steels.

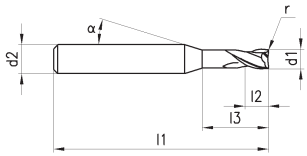
Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222403.0010	**0.8**	**0.02**	**2**	0.8	45	4	15	222403.0670	**1.2**	**0.1**	**8**	1.2	45	4	15
222403.0020	**0.8**	**0.02**	**4**	0.8	45	4	15	222403.0680	**1.2**	**0.1**	**10**	1.2	50	4	15
222403.0030	**0.8**	**0.02**	**6**	0.8	45	4	15	222403.0690	**1.2**	**0.1**	**12**	1.2	50	4	15
222403.0040	**0.8**	**0.02**	**8**	0.8	45	4	15	222403.0700	**1.2**	**0.1**	**16**	1.2	50	4	15
222403.0050	**0.8**	**0.02**	**10**	0.8	45	4	15	222403.0710	**1.2**	**0.1**	**20**	1.2	50	4	15
222403.0060	**0.8**	**0.05**	**2**	0.8	45	4	15	222403.0720	**1.2**	**0.2**	**4**	1.2	45	4	15
222403.0070	**0.8**	**0.05**	**4**	0.8	45	4	15	222403.0730	**1.2**	**0.2**	**6**	1.2	45	4	15
222403.0080	**0.8**	**0.05**	**6**	0.8	45	4	15	222403.0740	**1.2**	**0.2**	**8**	1.2	45	4	15
222403.0090	**0.8**	**0.05**	**8**	0.8	45	4	15	222403.0750	**1.2**	**0.2**	**10**	1.2	50	4	15
222403.0100	**0.8**	**0.05**	**10**	0.8	45	4	15	222403.0760	**1.2**	**0.2**	**12**	1.2	50	4	15
222403.0110	**0.8**	**0.1**	**2**	0.8	45	4	15	222403.0770	**1.2**	**0.2**	**16**	1.2	50	4	15
222403.0120	**0.8**	**0.1**	**4**	0.8	45	4	15	222403.0780	**1.2**	**0.2**	**20**	1.2	50	4	15
222403.0130	**0.8**	**0.1**	**6**	0.8	45	4	15	222403.0790	**1.2**	**0.3**	**4**	1.2	45	4	15
222403.0140	**0.8**	**0.1**	**8**	0.8	45	4	15	222403.0800	**1.2**	**0.3**	**6**	1.2	45	4	15
222403.0150	**0.8**	**0.1**	**10**	0.8	45	4	15	222403.0810	**1.2**	**0.3**	**8**	1.2	45	4	15
222403.0160	**1**	**0.02**	**4**	1	45	4	15	222403.0820	**1.2**	**0.3**	**10**	1.2	50	4	15
222403.0170	**1**	**0.02**	**6**	1	45	4	15	222403.0830	**1.2**	**0.3**	**12**	1.2	50	4	15
222403.0180	**1**	**0.02**	**8**	1	45	4	15	222403.0840	**1.2**	**0.3**	**20**	1.2	50	4	15
222403.0190	**1**	**0.02**	**10**	1	50	4	15	222403.0850	**1.5**	**0.02**	**6**	1.5	45	4	15
222403.0200	**1**	**0.02**	**12**	1	50	4	15	222403.0860	**1.5**	**0.02**	**8**	1.5	45	4	15
222403.0210	**1**	**0.02**	**16**	1	50	4	15	222403.0870	**1.5**	**0.02**	**10**	1.5	50	4	15
222403.0220	**1**	**0.02**	**20**	1	50	4	15	222403.0880	**1.5**	**0.02**	**12**	1.5	50	4	15
222403.0230	**1**	**0.05**	**4**	1	45	4	15	222403.0890	**1.5**	**0.02**	**16**	1.5	50	4	15
222403.0240	**1**	**0.05**	**6**	1	45	4	15	222403.0900	**1.5**	**0.02**	**20**	1.5	50	4	15
222403.0250	**1**	**0.05**	**8**	1	45	4	15	222403.0910	**1.5**	**0.02**	**22**	1.5	60	4	15
222403.0260	**1**	**0.05**	**10**	1	50	4	15	222403.0920	**1.5**	**0.02**	**25**	1.5	60	4	15
222403.0270	**1**	**0.05**	**12**	1	50	4	15	222403.0930	**1.5**	**0.05**	**6**	1.5	45	4	15
222403.0280	**1**	**0.05**	**16**	1	50	4	15	222403.0940	**1.5**	**0.05**	**8**	1.5	45	4	15
222403.0290	**1**	**0.05**	**20**	1	50	4	15	222403.0950	**1.5**	**0.05**	**10**	1.5	50	4	15
222403.0300	**1**	**0.1**	**4**	1	45	4	15	222403.0960	**1.5**	**0.05**	**12**	1.5	50	4	15
222403.0310	**1**	**0.1**	**6**	1	45	4	15	222403.0970	**1.5**	**0.05**	**16**	1.5	50	4	15
222403.0320	**1**	**0.1**	**8**	1	45	4	15	222403.0980	**1.5**	**0.05**	**20**	1.5	50	4	15
222403.0330	**1**	**0.1**	**10**	1	50	4	15	222403.0990	**1.5**	**0.05**	**22**	1.5	60	4	15
222403.0340	**1**	**0.1**	**12**	1	50	4	15	222403.1000	**1.5**	**0.05**	**25**	1.5	60	4	15
222403.0350	**1**	**0.1**	**16**	1	50	4	15	222403.1010	**1.5**	**0.1**	**6**	1.5	45	4	15
222403.0360	**1**	**0.1**	**20**	1	50	4	15	222403.1020	**1.5**	**0.1**	**8**	1.5	45	4	15
222403.0370	**1**	**0.2**	**4**	1	45	4	15	222403.1030	**1.5**	**0.1**	**10**	1.5	50	4	15
222403.0380	**1**	**0.2**	**6**	1	45	4	15	222403.1040	**1.5**	**0.1**	**12**	1.5	50	4	15
222403.0390	**1**	**0.2**	**8**	1	45	4	15	222403.1050	**1.5**	**0.1**	**16**	1.5	50	4	15
222403.0400	**1**	**0.2**	**10**	1	50	4	15	222403.1060	**1.5**	**0.1**	**20**	1.5	50	4	15
222403.0410	**1**	**0.2**	**12**	1	50	4	15	222403.1070	**1.5**	**0.1**	**22**	1.5	60	4	15
222403.0420	**1**	**0.2**	**16**	1	50	4	15	222403.1080	**1.5**	**0.1**	**25**	1.5	60	4	15
222403.0430	**1**	**0.2**	**20**	1	50	4	15	222403.1090	**1.5**	**0.2**	**6**	1.5	45	4	15
222403.0440	**1**	**0.3**	**4**	1	45	4	15	222403.1100	**1.5**	**0.2**	**8**	1.5	45	4	15
222403.0450	**1**	**0.3**	**6**	1	45	4	15	222403.1110	**1.5**	**0.2**	**10**	1.5	50	4	15
222403.0460	**1**	**0.3**	**8**	1	45	4	15	222403.1120	**1.5**	**0.2**	**12**	1.5	50	4	15
222403.0470	**1**	**0.3**	**10**	1	50	4	15	222403.1130	**1.5**	**0.2**	**16**	1.5	50	4	15
222403.0480	**1**	**0.3**	**12**	1	50	4	15	222403.1140	**1.5**	**0.2**	**20**	1.5	50	4	15
222403.0490	**1**	**0.3**	**16**	1	50	4	15	222403.1150	**1.5**	**0.2**	**22**	1.5	60	4	15
222403.0500	**1**	**0.3**	**20**	1	50	4	15	222403.1160	**1.5**	**0.2**	**25**	1.5	60	4	15
222403.0510	**1.2**	**0.02**	**4**	1.2	45	4	15	222403.1170	**1.5**	**0.3**	**6**	1.5	45	4	15
222403.0520	**1.2**	**0.02**	**6**	1.2	45	4	15	222403.1180	**1.5**	**0.3**	**8**	1.5	45	4	15
222403.0530	**1.2**	**0.02**	**8**	1.2	45	4	15	222403.1190	**1.5**	**0.3**	**10**	1.5	50	4	15
222403.0540	**1.2**	**0.02**	**10**	1.2	50	4	15	222403.1200	**1.5**	**0.3**	**12**	1.5	50	4	15
222403.0550	**1.2**	**0.02**	**12**	1.2	50	4	15	222403.1210	**1.5**	**0.3**	**16**	1.5	50	4	15
222403.0560	**1.2**	**0.02**	**16**	1.2	50	4	15	222403.1220	**1.5**	**0.3**	**20**	1.5	50	4	15
222403.0570	**1.2**	**0.02**	**20**	1.2	50	4	15	222403.1230	**1.5**	**0.3**	**22**	1.5	60	4	15
222403.0580	**1.2**	**0.05**	**4**	1.2	45	4	15	222403.1240	**1.5**	**0.3**	**25**	1.5	60	4	15
222403.0590	**1.2**	**0.05**	**6**	1.2	45	4	15	222403.1250	**1.5**	**0.5**	**6**	1.5	45	4	15
222403.0600	**1.2**	**0.05**	**8**	1.2	45	4	15	222403.1260	**1.5**	**0.5**	**8**	1.5	45	4	15
222403.0610	**1.2**	**0.05**	**10**	1.2	50	4	15	222403.1270	**1.5**	**0.5**	**10**	1.5	50	4	15
222403.0620	**1.2**	**0.05**	**12**	1.2	50	4	15	222403.1280	**1.5**	**0.5**	**12**	1.5	50	4	15
222403.0630	**1.2**	**0.05**	**16**	1.2	50	4	15	222403.1290	**1.5**	**0.5**	**16**	1.5	50	4	15
222403.0640	**1.2**	**0.05**	**20**	1.2	50	4	15	222403.1300	**1.5**	**0.5**	**20**	1.5	50	4	15
222403.0650	**1.2**	**0.1**	**4**	1.2	45	4	15	222403.1310	**1.5**	**0.5**	**22**	1.5	60	4	15
222403.0660	**1.2**	**0.1**	**6**	1.2	45	4	15	222403.1320	**1.5**	**0.5**	**25**	1.5	60	4	15

Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222403.1330	2	0.02	6	2	45	4	15	222403.2230	2.5	0.5	10	2.5	50	4	15
222403.1340	2	0.02	8	2	45	4	15	222403.2240	2.5	0.5	12	2.5	50	4	15
222403.1350	2	0.02	10	2	45	4	15	222403.2250	2.5	0.5	16	2.5	50	4	15
222403.1360	2	0.02	12	2	50	4	15	222403.2260	2.5	0.5	20	2.5	50	4	15
222403.1370	2	0.02	14	2	50	4	15	222403.2270	2.5	0.5	25	2.5	60	4	15
222403.1380	2	0.02	16	2	50	4	15	222403.2280	2.5	0.5	30	2.5	70	4	15
222403.1390	2	0.02	18	2	50	4	15	222403.2290	3	0.1	10	3	50	6	15
222403.1400	2	0.02	20	2	50	4	15	222403.2300	3	0.1	16	3	55	6	15
222403.1410	2	0.02	22	2	60	4	15	222403.2310	3	0.1	20	3	60	6	15
222403.1420	2	0.02	25	2	60	4	15	222403.2320	3	0.1	25	3	65	6	15
222403.1430	2	0.02	30	2	70	4	15	222403.2330	3	0.1	30	3	70	6	15
222403.1440	2	0.02	35	2	70	4	15	222403.2340	3	0.1	35	3	75	6	15
222403.1450	2	0.05	6	2	45	4	15	222403.2350	3	0.1	40	3	80	6	15
222403.1460	2	0.05	8	2	45	4	15	222403.2360	3	0.1	50	3	100	6	15
222403.1470	2	0.05	10	2	50	4	15	222403.2370	3	0.2	10	3	50	6	15
222403.1480	2	0.05	12	2	50	4	15	222403.2380	3	0.2	16	3	55	6	15
222403.1490	2	0.05	14	2	50	4	15	222403.2390	3	0.2	20	3	60	6	15
222403.1500	2	0.05	16	2	50	4	15	222403.2400	3	0.2	25	3	65	6	15
222403.1510	2	0.05	18	2	50	4	15	222403.2410	3	0.2	30	3	70	6	15
222403.1520	2	0.05	20	2	50	4	15	222403.2420	3	0.2	35	3	75	6	15
222403.1530	2	0.05	22	2	60	4	15	222403.2430	3	0.2	40	3	80	6	15
222403.1540	2	0.05	25	2	60	4	15	222403.2440	3	0.2	50	3	100	6	15
222403.1550	2	0.05	30	2	70	4	15	222403.2450	3	0.3	10	3	50	6	15
222403.1560	2	0.05	35	2	70	4	15	222403.2460	3	0.3	16	3	55	6	15
222403.1570	2	0.1	6	2	45	4	15	222403.2470	3	0.3	20	3	60	6	15
222403.1580	2	0.1	8	2	45	4	15	222403.2480	3	0.3	25	3	65	6	15
222403.1590	2	0.1	10	2	50	4	15	222403.2490	3	0.3	30	3	70	6	15
222403.1600	2	0.1	12	2	50	4	15	222403.2500	3	0.3	35	3	75	6	15
222403.1610	2	0.1	14	2	50	4	15	222403.2510	3	0.3	40	3	80	6	15
222403.1620	2	0.1	16	2	50	4	15	222403.2520	3	0.3	50	3	100	6	15
222403.1630	2	0.1	18	2	50	4	15	222403.2530	3	0.5	10	3	50	6	15
222403.1640	2	0.1	20	2	50	4	15	222403.2540	3	0.5	16	3	55	6	15
222403.1650	2	0.1	22	2	60	4	15	222403.2550	3	0.5	20	3	60	6	15
222403.1660	2	0.1	25	2	60	4	15	222403.2560	3	0.5	25	3	65	6	15
222403.1670	2	0.1	30	2	70	4	15	222403.2570	3	0.5	30	3	70	6	15
222403.1680	2	0.1	35	2	70	4	15	222403.2580	3	0.5	35	3	75	6	15
222403.1690	2	0.2	6	2	45	4	15	222403.2590	3	0.5	40	3	80	6	15
222403.1700	2	0.2	8	2	45	4	15	222403.2600	3	0.5	50	3	100	6	15
222403.1710	2	0.2	10	2	50	4	15	222403.2610	3	1	10	3	50	6	15
222403.1720	2	0.2	12	2	50	4	15	222403.2620	3	1	16	3	55	6	15
222403.1730	2	0.2	14	2	50	4	15	222403.2630	3	1	20	3	60	6	15
222403.1740	2	0.2	16	2	50	4	15	222403.2640	3	1	25	3	65	6	15
222403.1750	2	0.2	18	2	50	4	15	222403.2650	3	1	30	3	70	6	15
222403.1760	2	0.2	20	2	50	4	15	222403.2660	3	1	35	3	75	6	15
222403.1770	2	0.2	22	2	60	4	15	222403.2670	3	1	40	3	80	6	15
222403.1780	2	0.2	25	2	60	4	15	222403.2680	3	1	50	3	100	6	15
222403.1790	2	0.2	30	2	70	4	15	222403.2690	4	0.1	12	4	50	4	-
222403.1800	2	0.2	35	2	70	4	15	222403.2700	4	0.1	20	4	70	4	-
222403.1810	2	0.3	6	2	45	4	15	222403.2710	4	0.1	13	4	55	6	15
222403.1820	2	0.3	8	2	45	4	15	222403.2720	4	0.1	16	4	55	6	15
222403.1830	2	0.3	10	2	50	4	15	222403.2730	4	0.1	20	4	60	6	15
222403.1840	2	0.3	12	2	50	4	15	222403.2740	4	0.1	25	4	65	6	15
222403.1850	2	0.3	14	2	50	4	15	222403.2750	4	0.1	30	4	70	6	15
222403.1860	2	0.3	16	2	50	4	15	222403.2760	4	0.1	35	4	75	6	15
222403.1870	2	0.3	18	2	50	4	15	222403.2770	4	0.1	40	4	80	6	15
222403.1880	2	0.3	20	2	50	4	15	222403.2780	4	0.1	45	4	90	6	15
222403.1890	2	0.3	22	2	60	4	15	222403.2790	4	0.1	50	4	100	6	15
222403.1900	2	0.3	25	2	60	4	15	222403.2800	4	0.2	12	4	50	4	-
222403.1910	2	0.3	30	2	70	4	15	222403.2810	4	0.2	20	4	70	4	-
222403.1920	2	0.3	35	2	70	4	15	222403.2820	4	0.2	13	4	55	6	15
222403.1930	2	0.5	6	2	45	4	15	222403.2830	4	0.2	16	4	55	6	15
222403.1940	2	0.5	8	2	45	4	15	222403.2840	4	0.2	20	4	60	6	15
222403.1950	2	0.5	10	2	50	4	15	222403.2850	4	0.2	25	4	65	6	15
222403.1960	2	0.5	12	2	50	4	15	222403.2860	4	0.2	30	4	70	6	15
222403.1970	2	0.5	14	2	50	4	15	222403.2870	4	0.2	35	4	75	6	15
222403.1980	2	0.5	16	2	50	4	15	222403.2880	4	0.2	40	4	80	6	15
222403.1990	2	0.5	18	2	50	4	15	222403.2890	4	0.2	45	4	90	6	15
222403.2000	2	0.5	20	2	50	4	15	222403.2900	4	0.2	50	4	100	6	15
222403.2010	2	0.5	22	2	60	4	15	222403.2910	4	0.3	12	4	50	4	15
222403.2020	2	0.5	25	2	60	4	15	222403.2920	4	0.3	20	4	70	4	15
222403.2030	2	0.5	30	2	70	4	15	222403.2930	4	0.3	13	4	55	6	15
222403.2040	2	0.5	35	2	70	4	15	222403.2940	4	0.3	16	4	55	6	15
222403.2050	2.5	0.1	10	2.5	50	4	15	222403.2950	4	0.3	20	4	60	6	15
222403.2060	2.5	0.1	12	2.5	50	4	15	222403.2960	4	0.3	25	4	65	6	15
222403.2070	2.5	0.1	16	2.5	50	4	15	222403.2970	4	0.3	30	4	70	6	15
222403.2080	2.5	0.1	20	2.5	50	4	15	222403.2980	4	0.3	35	4	75	6	15
222403.2090	2.5	0.1	25	2.5	60	4	15	222403.2990	4	0.3	40	4	80	6	15
222403.2100	2.5	0.1	30	2.5	70	4	15	222403.3000	4	0.3	45	4	90	6	15
222403.2110	2.5	0.2	10	2.5	50	4	15	222403.3010	4	0.3	50	4	100	6	15
222403.2120	2.5	0.2	12	2.5	50	4	15	222403.3020	4	0.5	12	4	50	4	-
222403.2130	2.5	0.2	16	2.5	50	4	15	222403.3030	4	0.5	20	4	70	4	-
222403.2140	2.5	0.2	20	2.5	50	4	15	222403.3040	4	0.5	13	4	55	6	15
222403.2150	2.5	0.2	25	2.5	60	4	15	222403.3050	4	0.5	16	4	55	6	15
222403.2160	2.5	0.2	30	2.5	70	4	15	222403.3060	4	0.5	20	4	60	6	15
222403.2170	2.5	0.3	10	2.5	50	4	15	222403.3070	4	0.5	25	4	65	6	15
222403.2180	2.5	0.3	12	2.5	50	4	15	222403.3080	4	0.5	30	4	70	6	15
222403.2190	2.5	0.3	16	2.5	50	4	15	222403.3090	4	0.5	35	4	75	6	15
222403.2200	2.5	0.3	20	2.5	50	4	15	222403.3100	4	0.5	40	4	80	6	15
222403.2210	2.5	0.3	25	2.5	60	4	15	222403.3120	4	0.5	50	4	100	6	15
222403.2220	2.5	0.3	30	2.5	70	4	15	222403.3130	4	1	12	4	50	4	-

Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222403.3140	**4**	**1**	**20**	4	70	4	-	222403.3520	**6**	**0.3**	**50**	7	100	6	-
222403.3150	**4**	**1**	**13**	4	55	6	15	222403.3530	**6**	**0.5**	**20**	7	60	6	-
222403.3160	**4**	**1**	**16**	4	55	6	15	222403.3540	**6**	**0.5**	**40**	7	80	6	-
222403.3170	**4**	**1**	**20**	4	60	6	15	222403.3550	**6**	**0.5**	**50**	7	100	6	-
222403.3180	**4**	**1**	**25**	4	65	6	15	222403.3560	**6**	**1**	**20**	7	60	6	-
222403.3190	**4**	**1**	**30**	4	70	6	15	222403.3570	**6**	**1**	**40**	7	80	6	-
222403.3200	**4**	**1**	**35**	4	75	6	15	222403.3580	**6**	**1**	**50**	7	100	6	-
222403.3210	**4**	**1**	**40**	4	80	6	15	222403.3590	**6**	**1.5**	**20**	7	60	6	-
222403.3220	**4**	**1**	**45**	4	90	6	15	222403.3600	**6**	**1.5**	**40**	7	80	6	-
222403.3230	**4**	**1**	**50**	4	100	6	15	222403.3610	**6**	**1.5**	**50**	7	100	6	-
222403.3240	**5**	**0.1**	**16**	5	60	6	15	222403.3620	**8**	**0.2**	**22**	9	65	8	-
222403.3250	**5**	**0.1**	**30**	5	70	6	15	222403.3630	**8**	**0.3**	**22**	9	65	8	-
222403.3260	**5**	**0.1**	**40**	5	80	6	15	222403.3640	**8**	**0.5**	**22**	9	65	8	-
222403.3270	**5**	**0.1**	**50**	5	100	6	15	222403.3650	**8**	**0.5**	**40**	9	100	8	-
222403.3280	**5**	**0.2**	**16**	5	60	6	15	222403.3660	**8**	**1**	**22**	9	65	8	-
222403.3290	**5**	**0.2**	**30**	5	70	6	15	222403.3670	**8**	**1**	**40**	9	100	8	-
222403.3300	**5**	**0.2**	**40**	5	80	6	15	222403.3680	**8**	**1.5**	**22**	9	65	8	-
222403.3310	**5**	**0.2**	**50**	5	100	6	15	222403.3690	**8**	**1.5**	**40**	9	100	8	-
222403.3320	**5**	**0.3**	**16**	5	60	6	15	222403.3700	**8**	**2**	**22**	9	65	8	-
222403.3330	**5**	**0.3**	**30**	5	70	6	15	222403.3710	**10**	**0.2**	**24**	11	70	10	-
222403.3340	**5**	**0.3**	**40**	5	80	6	15	222403.3720	**10**	**0.3**	**24**	11	70	10	-
222403.3350	**5**	**0.3**	**50**	5	100	6	15	222403.3730	**10**	**0.5**	**24**	11	70	10	-
222403.3360	**5**	**0.5**	**16**	5	60	6	15	222403.3740	**10**	**0.5**	**40**	11	100	10	-
222403.3370	**5**	**0.5**	**30**	5	70	6	15	222403.3750	**10**	**1**	**24**	11	70	10	-
222403.3380	**5**	**0.5**	**40**	5	80	6	15	222403.3760	**10**	**1**	**40**	11	100	10	-
222403.3390	**5**	**0.5**	**50**	5	100	6	15	222403.3770	**10**	**1.5**	**24**	11	70	10	-
222403.3400	**5**	**1**	**16**	5	60	6	15	222403.3780	**10**	**1.5**	**40**	11	100	10	-
222403.3410	**5**	**1**	**30**	5	70	6	15	222403.3790	**10**	**2**	**24**	11	70	10	-
222403.3420	**5**	**1**	**40**	5	80	6	15	222403.3800	**10**	**2.5**	**24**	11	70	10	-
222403.3430	**5**	**1**	**50**	5	100	6	15	222403.3810	**12**	**0.3**	**26**	13	80	12	-
222403.3440	**6**	**0.1**	**20**	7	60	6	-	222403.3820	**12**	**0.5**	**26**	13	80	12	-
222403.3450	**6**	**0.1**	**40**	7	80	6	-	222403.3830	**12**	**0.5**	**40**	13	110	12	-
222403.3460	**6**	**0.1**	**50**	7	100	6	-	222403.3840	**12**	**1**	**26**	13	80	12	-
222403.3470	**6**	**0.2**	**20**	7	60	6	-	222403.3850	**12**	**1**	**40**	13	110	12	-
222403.3480	**6**	**0.2**	**40**	7	80	6	-	222403.3860	**12**	**1.5**	**26**	13	80	12	-
222403.3490	**6**	**0.2**	**50**	7	100	6	-	222403.3870	**12**	**1.5**	**40**	13	110	12	-
222403.3500	**6**	**0.3**	**20**	7	60	6	-	222403.3880	**12**	**2**	**26**	13	80	12	-
222403.3510	**6**	**0.3**	**40**	7	80	6	-	222403.3890	**12**	**3**	**26**	13	80	12	-

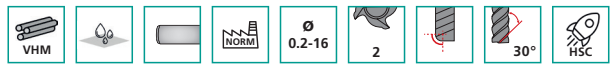
FUTURO

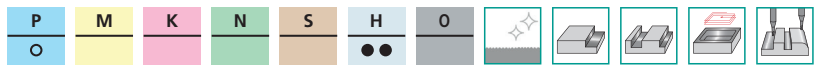




222426 FUTURO SC shoulder/ slot milling cutters

with corner radius





Made of solid hard metal, Coated, with cylindrical shank, According to factory standard, Nominal size Ø 0.2 - 16 mm, Number of teeth 2, With corner radius, Milling cutter with 30° helix angle, HSC (High-Speed Cutting) milling technology
Secondary application: Steel (ISO-P), Main application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling, For micro milling

Application:
Corner and slot milling cutters for various roughing and finishing operations. **Can be used up to 68 HRC**. Particularly suitable for machining hardened steels.

Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222426.0010	**0.2**	**0.02**	**0.5**	0.2	40	4	15	222426.0260	**0.5**	**0.02**	**1**	0.5	45	4	15
222426.0020	**0.2**	**0.02**	**1**	0.2	40	4	15	222426.0270	**0.5**	**0.02**	**1.5**	0.5	45	4	15
222426.0030	**0.2**	**0.02**	**1.5**	0.2	40	4	15	222426.0280	**0.5**	**0.02**	**2**	0.5	45	4	15
222426.0040	**0.2**	**0.05**	**0.5**	0.2	40	4	15	222426.0290	**0.5**	**0.02**	**2.5**	0.5	45	4	15
222426.0050	**0.2**	**0.05**	**1**	0.2	40	4	15	222426.0300	**0.5**	**0.02**	**3**	0.5	45	4	15
222426.0060	**0.2**	**0.05**	**1.5**	0.2	40	4	15	222426.0310	**0.5**	**0.02**	**4**	0.5	45	4	15
222426.0070	**0.3**	**0.02**	**1**	0.3	40	4	15	222426.0320	**0.5**	**0.02**	**5**	0.5	45	4	15
222426.0080	**0.3**	**0.02**	**2**	0.3	40	4	15	222426.0330	**0.5**	**0.02**	**6**	0.5	45	4	15
222426.0090	**0.3**	**0.02**	**3**	0.3	40	4	15	222426.0340	**0.5**	**0.05**	**1**	0.5	45	4	15
222426.0100	**0.3**	**0.05**	**1**	0.3	40	4	15	222426.0350	**0.5**	**0.05**	**1.5**	0.5	45	4	15
222426.0120	**0.3**	**0.05**	**3**	0.3	40	4	15	222426.0360	**0.5**	**0.05**	**2**	0.5	45	4	15
222426.0130	**0.4**	**0.02**	**1**	0.4	40	4	15	222426.0370	**0.5**	**0.05**	**2.5**	0.5	45	4	15
222426.0140	**0.4**	**0.02**	**2**	0.4	40	4	15	222426.0380	**0.5**	**0.05**	**3**	0.5	45	4	15
222426.0150	**0.4**	**0.02**	**3**	0.4	40	4	15	222426.0390	**0.5**	**0.05**	**4**	0.5	45	4	15
222426.0160	**0.4**	**0.02**	**4**	0.4	40	4	15	222426.0400	**0.5**	**0.05**	**5**	0.5	45	4	15
222426.0170	**0.4**	**0.05**	**1**	0.4	40	4	15	222426.0410	**0.5**	**0.05**	**6**	0.5	45	4	15
222426.0180	**0.4**	**0.05**	**2**	0.4	40	4	15	222426.0420	**0.5**	**0.1**	**1**	0.5	45	4	15
222426.0190	**0.4**	**0.05**	**3**	0.4	40	4	15	222426.0430	**0.5**	**0.1**	**1.5**	0.5	45	4	15
222426.0200	**0.4**	**0.05**	**4**	0.4	40	4	15	222426.0440	**0.5**	**0.1**	**2**	0.5	45	4	15
222426.0210	**0.4**	**0.1**	**1**	0.4	40	4	15	222426.0450	**0.5**	**0.1**	**2.5**	0.5	45	4	15
222426.0220	**0.4**	**0.1**	**1.5**	0.4	40	4	15	222426.0460	**0.5**	**0.1**	**3**	0.5	45	4	15
222426.0230	**0.4**	**0.1**	**2**	0.4	40	4	15	222426.0470	**0.5**	**0.1**	**4**	0.5	45	4	15
222426.0240	**0.4**	**0.1**	**3**	0.4	40	4	15	222426.0480	**0.5**	**0.1**	**5**	0.5	45	4	15
222426.0250	**0.4**	**0.1**	**4**	0.4	40	4	15	222426.0490	**0.5**	**0.1**	**6**	0.5	45	4	15

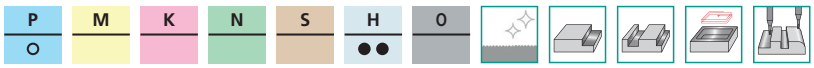
Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222426.0500	**0.6**	**0.02**	**2**	0.6	45	4	15	222426.1400	**1.2**	**0.2**	**4**	1.2	45	4	15
222426.0510	**0.6**	**0.02**	**3**	0.6	45	4	15	222426.1410	**1.2**	**0.2**	**6**	1.2	45	4	15
222426.0520	**0.6**	**0.02**	**4**	0.6	45	4	15	222426.1420	**1.2**	**0.2**	**8**	1.2	45	4	15
222426.0530	**0.6**	**0.02**	**6**	0.6	45	4	15	222426.1430	**1.2**	**0.2**	**10**	1.2	50	4	15
222426.0540	**0.6**	**0.02**	**8**	0.6	45	4	15	222426.1440	**1.2**	**0.2**	**12**	1.2	50	4	15
222426.0550	**0.6**	**0.05**	**2**	0.6	45	4	15	222426.1450	**1.2**	**0.2**	**16**	1.2	50	4	15
222426.0560	**0.6**	**0.05**	**3**	0.6	45	4	15	222426.1460	**1.2**	**0.2**	**20**	1.2	50	4	15
222426.0570	**0.6**	**0.05**	**4**	0.6	45	4	15	222426.1470	**1.2**	**0.3**	**4**	1.2	45	4	15
222426.0580	**0.6**	**0.05**	**6**	0.6	45	4	15	222426.1480	**1.2**	**0.3**	**6**	1.2	45	4	15
222426.0590	**0.6**	**0.05**	**8**	0.6	45	4	15	222426.1490	**1.2**	**0.3**	**8**	1.2	45	4	15
222426.0600	**0.6**	**0.1**	**2**	0.6	45	4	15	222426.1500	**1.2**	**0.3**	**10**	1.2	50	4	15
222426.0610	**0.6**	**0.1**	**3**	0.6	45	4	15	222426.1510	**1.2**	**0.3**	**12**	1.2	50	4	15
222426.0620	**0.6**	**0.1**	**4**	0.6	45	4	15	222426.1520	**1.2**	**0.3**	**16**	1.2	50	4	15
222426.0630	**0.6**	**0.1**	**6**	0.6	45	4	15	222426.1530	**1.2**	**0.3**	**20**	1.2	50	4	15
222426.0640	**0.6**	**0.1**	**8**	0.6	45	4	15	222426.1540	**1.5**	**0.02**	**4**	1.5	45	4	15
222426.0650	**0.7**	**0.1**	**2**	0.7	45	4	15	222426.1550	**1.5**	**0.02**	**6**	1.5	45	4	15
222426.0660	**0.7**	**0.1**	**4**	0.7	45	4	15	222426.1560	**1.5**	**0.02**	**8**	1.5	45	4	15
222426.0670	**0.7**	**0.1**	**6**	0.7	45	4	15	222426.1570	**1.5**	**0.02**	**10**	1.5	50	4	15
222426.0680	**0.8**	**0.02**	**2**	0.8	45	4	15	222426.1580	**1.5**	**0.02**	**12**	1.5	50	4	15
222426.0690	**0.8**	**0.02**	**4**	0.8	45	4	15	222426.1590	**1.5**	**0.02**	**16**	1.5	50	4	15
222426.0700	**0.8**	**0.02**	**6**	0.8	45	4	15	222426.1600	**1.5**	**0.02**	**20**	1.5	50	4	15
222426.0710	**0.8**	**0.02**	**8**	0.8	45	4	15	222426.1610	**1.5**	**0.05**	**4**	1.5	45	4	15
222426.0720	**0.8**	**0.05**	**2**	0.8	45	4	15	222426.1620	**1.5**	**0.05**	**6**	1.5	45	4	15
222426.0730	**0.8**	**0.05**	**4**	0.8	45	4	15	222426.1630	**1.5**	**0.05**	**8**	1.5	45	4	15
222426.0740	**0.8**	**0.05**	**6**	0.8	45	4	15	222426.1640	**1.5**	**0.05**	**10**	1.5	50	4	15
222426.0750	**0.8**	**0.05**	**8**	0.8	45	4	15	222426.1650	**1.5**	**0.05**	**12**	1.5	50	4	15
222426.0760	**0.8**	**0.1**	**2**	0.8	45	4	15	222426.1660	**1.5**	**0.05**	**16**	1.5	50	4	15
222426.0770	**0.8**	**0.1**	**4**	0.8	45	4	15	222426.1670	**1.5**	**0.05**	**20**	1.5	50	4	15
222426.0780	**0.8**	**0.1**	**6**	0.8	45	4	15	222426.1680	**1.5**	**0.1**	**4**	1.5	45	4	15
222426.0790	**0.8**	**0.1**	**8**	0.8	45	4	15	222426.1690	**1.5**	**0.1**	**6**	1.5	45	4	15
222426.0800	**0.8**	**0.2**	**2**	0.8	45	4	15	222426.1700	**1.5**	**0.1**	**8**	1.5	45	4	15
222426.0810	**0.8**	**0.2**	**4**	0.8	45	4	15	222426.1710	**1.5**	**0.1**	**10**	1.5	50	4	15
222426.0820	**0.8**	**0.2**	**6**	0.8	45	4	15	222426.1720	**1.5**	**0.1**	**12**	1.5	50	4	15
222426.0830	**0.8**	**0.2**	**8**	0.8	45	4	15	222426.1730	**1.5**	**0.1**	**16**	1.5	50	4	15
222426.0840	**1**	**0.02**	**4**	1	45	4	15	222426.1740	**1.5**	**0.1**	**20**	1.5	50	4	15
222426.0850	**1**	**0.02**	**6**	1	45	4	15	222426.1750	**1.5**	**0.2**	**4**	1.5	45	4	15
222426.0860	**1**	**0.02**	**8**	1	45	4	15	222426.1760	**1.5**	**0.2**	**6**	1.5	45	4	15
222426.0870	**1**	**0.02**	**10**	1	50	4	15	222426.1770	**1.5**	**0.2**	**8**	1.5	45	4	15
222426.0880	**1**	**0.02**	**12**	1	50	4	15	222426.1780	**1.5**	**0.2**	**10**	1.5	50	4	15
222426.0890	**1**	**0.02**	**16**	1	50	4	15	222426.1790	**1.5**	**0.2**	**12**	1.5	50	4	15
222426.0900	**1**	**0.02**	**20**	1	50	4	15	222426.1800	**1.5**	**0.2**	**16**	1.5	50	4	15
222426.0910	**1**	**0.05**	**4**	1	45	4	15	222426.1810	**1.5**	**0.2**	**20**	1.5	50	4	15
222426.0920	**1**	**0.05**	**6**	1	45	4	15	222426.1820	**1.5**	**0.3**	**4**	1.5	45	4	15
222426.0930	**1**	**0.05**	**8**	1	45	4	15	222426.1830	**1.5**	**0.3**	**6**	1.5	45	4	15
222426.0940	**1**	**0.05**	**10**	1	50	4	15	222426.1840	**1.5**	**0.3**	**8**	1.5	45	4	15
222426.0950	**1**	**0.05**	**12**	1	50	4	15	222426.1850	**1.5**	**0.3**	**10**	1.5	50	4	15
222426.0960	**1**	**0.05**	**16**	1	50	4	15	222426.1860	**1.5**	**0.3**	**12**	1.5	50	4	15
222426.0970	**1**	**0.05**	**20**	1	50	4	15	222426.1870	**1.5**	**0.3**	**16**	1.5	50	4	15
222426.0980	**1**	**0.1**	**4**	1	45	4	15	222426.1880	**1.5**	**0.3**	**20**	1.5	50	4	15
222426.0990	**1**	**0.1**	**6**	1	45	4	15	222426.1890	**1.5**	**0.5**	**4**	1.5	45	4	15
222426.1000	**1**	**0.1**	**8**	1	45	4	15	222426.1900	**1.5**	**0.5**	**6**	1.5	45	4	15
222426.1010	**1**	**0.1**	**10**	1	50	4	15	222426.1910	**1.5**	**0.5**	**8**	1.5	45	4	15
222426.1020	**1**	**0.1**	**12**	1	50	4	15	222426.1920	**1.5**	**0.5**	**10**	1.5	50	4	15
222426.1030	**1**	**0.1**	**16**	1	50	4	15	222426.1930	**1.5**	**0.5**	**12**	1.5	50	4	15
222426.1040	**1**	**0.1**	**20**	1	50	4	15	222426.1940	**1.5**	**0.5**	**16**	1.5	50	4	15
222426.1050	**1**	**0.2**	**4**	1	45	4	15	222426.1950	**1.5**	**0.5**	**20**	1.5	50	4	15
222426.1060	**1**	**0.2**	**6**	1	45	4	15	222426.1960	**2**	**0.02**	**6**	2	45	4	15
222426.1070	**1**	**0.2**	**8**	1	45	4	15	222426.1970	**2**	**0.02**	**8**	2	45	4	15
222426.1080	**1**	**0.2**	**10**	1	50	4	15	222426.1980	**2**	**0.02**	**10**	2	50	4	15
222426.1090	**1**	**0.2**	**12**	1	50	4	15	222426.1990	**2**	**0.02**	**12**	2	50	4	15
222426.1100	**1**	**0.2**	**16**	1	50	4	15	222426.2000	**2**	**0.02**	**16**	2	50	4	15
222426.1110	**1**	**0.2**	**20**	1	50	4	15	222426.2010	**2**	**0.02**	**20**	2	50	4	15
222426.1120	**1**	**0.3**	**4**	1	45	4	15	222426.2020	**2**	**0.02**	**25**	2	60	4	15
222426.1130	**1**	**0.3**	**6**	1	45	4	15	222426.2030	**2**	**0.05**	**6**	2	45	4	15
222426.1140	**1**	**0.3**	**8**	1	45	4	15	222426.2040	**2**	**0.05**	**8**	2	45	4	15
222426.1150	**1**	**0.3**	**10**	1	50	4	15	222426.2050	**2**	**0.05**	**10**	2	50	4	15
222426.1160	**1**	**0.3**	**12**	1	50	4	15	222426.2060	**2**	**0.05**	**12**	2	50	4	15
222426.1170	**1**	**0.3**	**16**	1	50	4	15	222426.2070	**2**	**0.05**	**16**	2	50	4	15
222426.1180	**1**	**0.3**	**20**	1	50	4	15	222426.2080	**2**	**0.05**	**20**	2	50	4	15
222426.1190	**1.2**	**0.02**	**4**	1.2	45	4	15	222426.2090	**2**	**0.05**	**25**	2	60	4	15
222426.1200	**1.2**	**0.02**	**6**	1.2	45	4	15	222426.2100	**2**	**0.1**	**6**	2	45	4	15
222426.1210	**1.2**	**0.02**	**8**	1.2	45	4	15	222426.2110	**2**	**0.1**	**8**	2	45	4	15
222426.1220	**1.2**	**0.02**	**10**	1.2	50	4	15	222426.2120	**2**	**0.1**	**10**	2	50	4	15
222426.1230	**1.2**	**0.02**	**12**	1.2	50	4	15	222426.2130	**2**	**0.1**	**12**	2	50	4	15
222426.1240	**1.2**	**0.02**	**16**	1.2	50	4	15	222426.2140	**2**	**0.1**	**16**	2	50	4	15
222426.1250	**1.2**	**0.02**	**20**	1.2	50	4	15	222426.2150	**2**	**0.1**	**20**	2	50	4	15
222426.1260	**1.2**	**0.05**	**4**	1.2	45	4	15	222426.2160	**2**	**0.1**	**25**	2	60	4	15
222426.1270	**1.2**	**0.05**	**6**	1.2	45	4	15	222426.2170	**2**	**0.2**	**6**	2	45	4	15
222426.1280	**1.2**	**0.05**	**8**	1.2	45	4	15	222426.2180	**2**	**0.2**	**8**	2	45	4	15
222426.1290	**1.2**	**0.05**	**10**	1.2	50	4	15	222426.2190	**2**	**0.2**	**10**	2	50	4	15
222426.1300	**1.2**	**0.05**	**12**	1.2	50	4	15	222426.2200	**2**	**0.2**	**12**	2	50	4	15
222426.1310	**1.2**	**0.05**	**16**	1.2	50	4	15	222426.2210	**2**	**0.2**	**16**	2	50	4	15
222426.1320	**1.2**	**0.05**	**20**	1.2	50	4	15	222426.2220	**2**	**0.2**	**20**	2	50	4	15
222426.1330	**1.2**	**0.1**	**4**	1.2	45	4	15	222426.2230	**2**	**0.2**	**25**	2	60	4	15
222426.1340	**1.2**	**0.1**	**6**	1.2	45	4	15	222426.2240	**2**	**0.2**	**6**	2	45	4	15
222426.1350	**1.2**	**0.1**	**8**	1.2	45	4	15	222426.2250	**2**	**0.3**	**8**	2	45	4	15
222426.1360	**1.2**	**0.1**	**10**	1.2	50	4	15	222426.2260	**2**	**0.3**	**10**	2	50	4	15
222426.1370	**1.2**	**0.1**	**12**	1.2	50	4	15	222426.2270	**2**	**0.3**	**12**	2	50	4	15
222426.1380	**1.2**	**0.1**	**16**	1.2	50	4	15	222426.2280	**2**	**0.3**	**16**	2	50	4	15
222426.1390	**1.2**	**0.1**	**20**	1.2	50	4	15	222426.2290	**2**	**0.3**	**20**	2	50	4	15

Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222426.2300	2	0.3	25	2	60	4	15
222426.2310	2	0.5	6	2	45	4	15
222426.2320	2	0.5	8	2	45	4	15
222426.2330	2	0.5	10	2	50	4	15
222426.2340	2	0.5	12	2	50	4	15
222426.2350	2	0.5	16	2	50	4	15
222426.2360	2	0.5	20	2	50	4	15
222426.2370	2	0.5	25	2	60	4	15
222426.2380	2.5	0.1	10	2.5	50	4	15
222426.2390	2.5	0.1	16	2.5	50	4	15
222426.2400	2.5	0.1	20	2.5	50	4	15
222426.2410	2.5	0.2	10	2.5	50	4	15
222426.2420	2.5	0.2	16	2.5	50	4	15
222426.2430	2.5	0.2	20	2.5	50	4	15
222426.2440	2.5	0.3	10	2.5	50	4	15
222426.2450	2.5	0.3	16	2.5	50	4	15
222426.2460	2.5	0.3	20	2.5	50	4	15
222426.2470	2.5	0.5	10	2.5	50	4	15
222426.2480	2.5	0.5	16	2.5	50	4	15
222426.2490	2.5	0.5	20	2.5	50	4	15
222426.2500	3	0.1	10	3	50	6	15
222426.2510	3	0.1	12	3	50	6	15
222426.2520	3	0.1	16	3	55	6	15
222426.2530	3	0.1	20	3	60	6	15
222426.2540	3	0.1	25	3	65	6	15
222426.2550	3	0.1	30	3	70	6	15
222426.2560	3	0.1	35	3	75	6	15
222426.2570	3	0.1	40	3	80	6	15
222426.2580	3	0.2	10	3	50	6	15
222426.2590	3	0.2	12	3	50	6	15
222426.2600	3	0.2	16	3	55	6	15
222426.2610	3	0.2	20	3	60	6	15
222426.2620	3	0.2	25	3	65	6	15
222426.2630	3	0.2	30	3	70	6	15
222426.2640	3	0.2	35	3	75	6	15
222426.2650	3	0.2	40	3	80	6	15
222426.2660	3	0.3	10	3	50	6	15
222426.2670	3	0.3	12	3	50	6	15
222426.2680	3	0.3	16	3	55	6	15
222426.2690	3	0.3	20	3	60	6	15
222426.2700	3	0.3	25	3	65	6	15
222426.2710	3	0.3	30	3	70	6	15
222426.2720	3	0.3	35	3	75	6	15
222426.2730	3	0.3	40	3	80	6	15
222426.2740	3	0.5	10	3	50	6	15
222426.2750	3	0.5	12	3	50	6	15
222426.2760	3	0.5	16	3	55	6	15
222426.2770	3	0.5	20	3	60	6	15
222426.2780	3	0.5	25	3	65	6	15
222426.2790	3	0.5	30	3	70	6	15
222426.2800	3	0.5	35	3	75	6	15
222426.2810	3	0.5	40	3	80	6	15
222426.2820	3	1	10	3	50	6	15
222426.2830	3	1	12	3	50	6	15
222426.2840	3	1	16	3	55	6	15
222426.2850	3	1	20	3	60	6	15
222426.2860	3	1	25	3	65	6	15
222426.2870	3	1	30	3	70	6	15
222426.2880	3	1	35	3	75	6	15
222426.2890	3	1	40	3	80	6	15
222426.2900	4	0.1	12	4	50	6	15
222426.2910	4	0.1	16	4	55	6	15
222426.2920	4	0.1	20	4	60	6	15
222426.2930	4	0.1	25	4	65	6	15
222426.2940	4	0.1	30	4	70	6	15
222426.2950	4	0.1	35	4	75	6	15
222426.2960	4	0.1	40	4	80	6	15
222426.2970	4	0.2	12	4	50	6	15
222426.2980	4	0.2	16	4	55	6	15
222426.2990	4	0.2	20	4	60	6	15

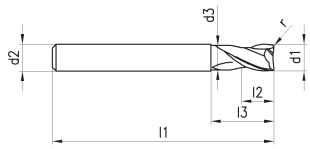
Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222426.3000	4	0.2	25	4	65	6	15
222426.3010	4	0.2	30	4	70	6	15
222426.3020	4	0.2	35	4	75	6	15
222426.3030	4	0.2	40	4	80	6	15
222426.3040	4	0.3	12	4	50	6	15
222426.3050	4	0.3	16	4	55	6	15
222426.3060	4	0.3	20	4	60	6	15
222426.3070	4	0.3	25	4	65	6	15
222426.3080	4	0.3	30	4	70	6	15
222426.3090	4	0.3	35	4	75	6	15
222426.3100	4	0.3	40	4	80	6	15
222426.3110	4	0.5	12	4	50	6	15
222426.3120	4	0.5	16	4	55	6	15
222426.3130	4	0.5	20	4	60	6	15
222426.3140	4	0.5	25	4	65	6	15
222426.3150	4	0.5	30	4	70	6	15
222426.3160	4	0.5	35	4	75	6	15
222426.3170	4	0.5	40	4	80	6	15
222426.3180	4	1	12	4	50	6	15
222426.3190	4	1	16	4	55	6	15
222426.3200	4	1	20	4	60	6	15
222426.3210	4	1	25	4	65	6	15
222426.3220	4	1	30	4	70	6	15
222426.3230	4	1	35	4	75	6	15
222426.3240	4	1	40	4	80	6	15
222426.3250	5	0.2	15	6	60	6	15
222426.3260	5	0.2	25	6	70	6	15
222426.3270	5	0.2	30	6	70	6	15
222426.3280	5	0.2	40	6	80	6	15
222426.3290	5	0.5	15	6	60	6	15
222426.3300	5	0.5	25	6	70	6	15
222426.3310	5	0.5	30	6	70	6	15
222426.3320	5	0.5	40	6	80	6	15
222426.3330	5	1	15	6	60	6	15
222426.3340	5	1	25	6	70	6	15
222426.3350	5	1	30	6	70	6	15
222426.3360	5	1	40	6	80	6	15
222426.3370	6	0.1	20	7	60	6	-
222426.3380	6	0.1	40	7	80	6	-
222426.3390	6	0.2	20	7	60	6	-
222426.3400	6	0.2	40	7	80	6	-
222426.3410	6	0.3	20	7	60	6	-
222426.3420	6	0.3	40	7	80	6	-
222426.3430	6	0.5	20	7	60	6	-
222426.3440	6	0.5	40	7	80	6	-
222426.3450	6	1	20	7	60	6	-
222426.3460	6	1	40	7	80	6	-
222426.3470	6	1.5	20	7	60	6	-
222426.3480	6	1.5	40	7	80	6	-
222426.3490	8	0.2	22	9	65	8	-
222426.3500	8	0.3	22	9	65	8	-
222426.3510	8	0.5	22	9	65	8	-
222426.3520	8	1	22	9	65	8	-
222426.3530	8	1.5	22	9	65	8	-
222426.3540	10	0.2	24	11	70	10	-
222426.3550	10	0.3	24	11	70	10	-
222426.3560	10	0.5	24	11	70	10	-
222426.3570	10	1	24	11	70	10	-
222426.3580	10	1.5	24	11	70	10	-
222426.3590	10	2	24	11	70	10	-
222426.3600	12	0.2	26	13	80	12	-
222426.3610	12	0.3	26	13	80	12	-
222426.3620	12	0.5	26	13	80	12	-
222426.3630	12	1	26	13	80	12	-
222426.3640	12	1.5	26	13	80	12	-
222426.3650	12	2	26	13	80	12	-
222426.3660	12	3	26	13	80	12	-
222426.3670	16	0.5	26	20	110	16	-
222426.3680	16	1	26	20	110	16	-

227070 FUTURO SC shoulder/ slot milling cutters





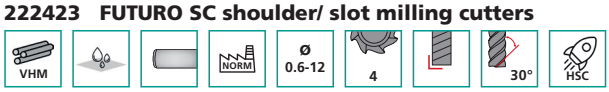




Made of solid hard metal, XIDUR coating, with cylindrical shank, According to factory standard, Nominal size Ø 0.3 - 10 mm, Number of teeth 2, With corner radius, Long version, with center cut, Milling cutter with 30° helix angle
Secondary application: Steel (ISO-P), Main application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling, For micro milling

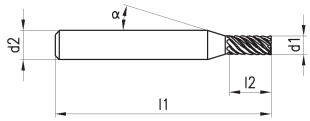
Order ID	d1 mm	r mm	l2 mm	l3 mm	d2 mm	l1 mm	d3 mm	Order ID	d1 mm	r mm	l2 mm	l3 mm	d2 mm	l1 mm	d3 mm
227070.0010	**0.3**	**-**	0.45	-	3	40	-	227070.0160	**1**	**0.1**	1.5	-	6	40	-
227070.0020	**0.4**	**-**	0.6	-	3	40	-	227070.0200	**1.5**	**0.1**	2.2	-	3	40	-
227070.0030	**0.5**	**0.05**	0.7	-	3	40	-	227070.0250	**1.5**	**0.1**	2.2	-	6	40	-
227070.0040	**0.5**	**0.05**	1	-	4	40	-	227070.0300	**2**	**0.1**	3	6	3	40	1.95
227070.0050	**0.6**	**0.05**	0.9	-	3	40	-	227070.0360	**2**	**0.1**	3	6	6	40	1.95
227070.0060	**0.6**	**0.05**	1.2	-	4	40	-	227070.0500	**3**	**0.1**	4	7	6	45	2.85
227070.0080	**0.8**	**0.05**	1.2	-	3	40	-	227070.0700	**4**	**0.1**	5	9	6	45	3.85
227070.0090	**0.8**	**0.05**	1.6	-	4	40	-	227070.0900	**5**	**0.2**	6	11	6	50	4.85
227070.0095	**0.9**	**0.05**	2	-	4	40	-	227070.1000	**6**	**0.2**	7	14	6	50	5.85
227070.0100	**1**	**0.1**	1.5	-	3	40	-	227070.1200	**10**	**0.2**	12	25	10	75	9.7
227070.0130	**1**	**0.1**	1.5	-	4	40	-								

222423 FUTURO SC shoulder/ slot milling cutters









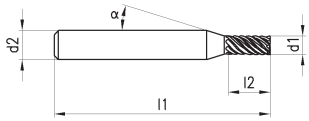
Made of solid hard metal, Coated, with cylindrical shank, According to factory standard, Nominal size Ø 0.6 - 12 mm, Number of teeth 4, With sharp corner design, Milling cutter with 30° helix angle, HSC (High-Speed Cutting) milling technology
Secondary application: Steel (ISO-P), Main application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling

Application:
Corner and slot milling cutters for various roughing and finishing operations. **Can be used up to 68 HRC**.
Particularly suitable for machining hardened steels.

Order ID	d1 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	l2 mm	l1 mm	d2 mm	alpha °
222423.0010	**0.6**	1.2	40	4	15	222423.0130	**3**	8	45	6	15
222423.0020	**0.8**	1.6	40	4	15	222423.0140	**3.5**	10	45	6	15
222423.0030	**1**	2.5	40	4	15	222423.0150	**4**	11	45	4	15
222423.0040	**1**	2.5	40	6	15	222423.0160	**4**	11	45	6	15
222423.0050	**1.2**	3	40	4	15	222423.0170	**4.5**	11	45	6	15
222423.0060	**1.5**	4	40	4	15	222423.0180	**5**	13	50	6	15
222423.0070	**1.5**	4	40	6	15	222423.0190	**5.5**	13	50	6	15
222423.0080	**2**	6	40	4	15	222423.0200	**6**	13	50	6	-
222423.0090	**2**	6	40	6	15	222423.0210	**8**	19	60	8	-
222423.0100	**2.5**	8	45	4	15	222423.0220	**10**	22	70	10	-
222423.0110	**2.5**	8	45	6	15	222423.0230	**12**	26	75	12	-
222423.0120	**3**	8	45	4	15						

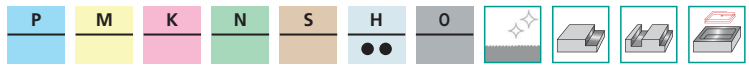
FUTURO





222424 FUTURO SC shoulder/ slot milling cutters





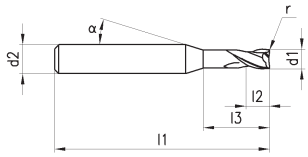
Made of solid hard metal, Coated, with cylindrical shank, According to factory standard, Nominal size Ø 1 - 16 mm, Number of teeth 4, With sharp corner design, Milling cutter with 45° helix angle, HSC (High-Speed Cutting) milling technology
Main application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling

Application:
Corner and slot milling cutters for various roughing and finishing operations. **Can be used up to 68 HRC**. Particularly suitable for machining hardened steels.

Order ID	d1 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	l2 mm	l1 mm	d2 mm	alpha °
222424.0010	**1**	**1.5**	40	6	15	222424.0150	**5**	**10**	50	6	15
222424.0020	**1**	**2.5**	40	6	15	222424.0160	**5**	**13**	50	6	15
222424.0030	**1**	**3.5**	40	6	15	222424.0170	**5**	**20**	60	6	15
222424.0040	**2**	**3**	40	6	15	222424.0180	**6**	**13**	50	6	-
222424.0050	**2**	**5**	40	6	15	222424.0190	**6**	**15**	55	6	-
222424.0060	**2**	**8**	40	6	15	222424.0200	**6**	**20**	60	6	-
222424.0070	**2.5**	**6**	45	6	15	222424.0210	**8**	**20**	60	8	-
222424.0080	**2.5**	**8**	45	6	15	222424.0220	**8**	**25**	70	8	-
222424.0090	**3**	**6**	45	6	15	222424.0230	**10**	**22**	70	10	-
222424.0100	**3**	**8**	45	6	15	222424.0240	**10**	**30**	80	10	-
222424.0110	**3**	**12**	50	6	15	222424.0250	**12**	**26**	75	12	-
222424.0120	**4**	**8**	45	6	15	222424.0260	**12**	**35**	90	12	-
222424.0130	**4**	**11**	45	6	15	222424.0270	**16**	**35**	90	16	-
222424.0140	**4**	**15**	55	6	15	222424.0280	**16**	**50**	110	16	-

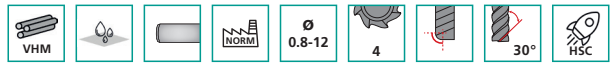
FUTURO

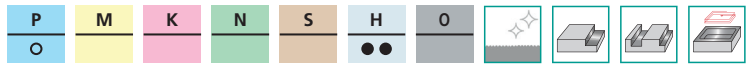




222427 FUTURO SC shoulder/ slot milling cutters

with corner radius





Made of solid hard metal, Coated, with cylindrical shank, According to factory standard, Nominal size Ø 0.8 - 12 mm, Number of teeth 4, With corner radius, Milling cutter with 30° helix angle, HSC (High-Speed Cutting) milling technology
Secondary application: Steel (ISO-P), Main application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling

Application:
Square milling cutter **can be used up to 68 HRC**. Particularly suitable for machining hardened steels.

Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222427.0010	**0.8**	**0.02**	**2**	0.8	45	4	15	222427.0270	**1**	**0.1**	**6**	1	45	4	15
222427.0020	**0.8**	**0.02**	**4**	0.8	45	4	15	222427.0280	**1**	**0.1**	**8**	1	45	4	15
222427.0030	**0.8**	**0.02**	**6**	0.8	45	4	15	222427.0290	**1**	**0.1**	**10**	1	50	4	15
222427.0040	**0.8**	**0.02**	**8**	0.8	45	4	15	222427.0300	**1**	**0.1**	**12**	1	50	4	15
222427.0050	**0.8**	**0.02**	**10**	0.8	45	4	15	222427.0310	**1**	**0.2**	**4**	1	45	4	15
222427.0060	**0.8**	**0.05**	**2**	0.8	45	4	15	222427.0320	**1**	**0.2**	**6**	1	45	4	15
222427.0070	**0.8**	**0.05**	**4**	0.8	45	4	15	222427.0330	**1**	**0.2**	**8**	1	45	4	15
222427.0080	**0.8**	**0.05**	**6**	0.8	45	4	15	222427.0340	**1**	**0.2**	**10**	1	50	4	15
222427.0090	**0.8**	**0.05**	**8**	0.8	45	4	15	222427.0350	**1**	**0.2**	**12**	1	50	4	15
222427.0100	**0.8**	**0.05**	**10**	0.8	45	4	15	222427.0360	**1**	**0.3**	**4**	1	45	4	15
222427.0110	**0.8**	**0.1**	**2**	0.8	45	4	15	222427.0370	**1**	**0.3**	**6**	1	45	4	15
222427.0120	**0.8**	**0.1**	**4**	0.8	45	4	15	222427.0380	**1**	**0.3**	**8**	1	45	4	15
222427.0130	**0.8**	**0.1**	**6**	0.8	45	4	15	222427.0390	**1**	**0.3**	**10**	1	50	4	15
222427.0140	**0.8**	**0.1**	**8**	0.8	45	4	15	222427.0400	**1**	**0.3**	**12**	1	50	4	15
222427.0150	**0.8**	**0.1**	**10**	0.8	45	4	15	222427.0410	**1.2**	**0.02**	**4**	1.2	45	4	15
222427.0160	**1**	**0.02**	**4**	1	45	4	15	222427.0420	**1.2**	**0.02**	**6**	1.2	45	4	15
222427.0170	**1**	**0.02**	**6**	1	45	4	15	222427.0430	**1.2**	**0.02**	**8**	1.2	45	4	15
222427.0180	**1**	**0.02**	**8**	1	45	4	15	222427.0440	**1.2**	**0.02**	**10**	1.2	50	4	15
222427.0190	**1**	**0.02**	**10**	1	50	4	15	222427.0450	**1.2**	**0.02**	**12**	1.2	50	4	15
222427.0200	**1**	**0.02**	**12**	1	50	4	15	222427.0460	**1.2**	**0.05**	**4**	1.2	45	4	15
222427.0210	**1**	**0.05**	**4**	1	45	4	15	222427.0470	**1.2**	**0.05**	**6**	1.2	45	4	15
222427.0220	**1**	**0.05**	**6**	1	45	4	15	222427.0480	**1.2**	**0.05**	**8**	1.2	45	4	15
222427.0230	**1**	**0.05**	**8**	1	45	4	15	222427.0490	**1.2**	**0.05**	**10**	1.2	50	4	15
222427.0240	**1**	**0.05**	**10**	1	50	4	15	222427.0500	**1.2**	**0.05**	**12**	1.2	50	4	15
222427.0250	**1**	**0.05**	**12**	1	50	4	15	222427.0510	**1.2**	**0.1**	**4**	1.2	45	4	15
222427.0260	**1**	**0.1**	**4**	1	45	4	15	222427.0520	**1.2**	**0.1**	**6**	1.2	45	4	15

Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222427.0530	**1.2**	**0.1**	**8**	1.2	45	4	15	222427.1430	**2.5**	**0.2**	**16**	2.5	50	4	15
222427.0540	**1.2**	**0.1**	**10**	1.2	50	4	15	222427.1440	**2.5**	**0.2**	**20**	2.5	50	4	15
222427.0550	**1.2**	**0.1**	**12**	1.2	50	4	15	222427.1450	**2.5**	**0.2**	**25**	2.5	60	4	15
222427.0560	**1.2**	**0.2**	**4**	1.2	45	4	15	222427.1460	**2.5**	**0.3**	**10**	2.5	50	4	15
222427.0570	**1.2**	**0.2**	**6**	1.2	45	4	15	222427.1470	**2.5**	**0.3**	**16**	2.5	50	4	15
222427.0580	**1.2**	**0.2**	**8**	1.2	45	4	15	222427.1480	**2.5**	**0.3**	**20**	2.5	50	4	15
222427.0590	**1.2**	**0.2**	**10**	1.2	50	4	15	222427.1490	**2.5**	**0.3**	**25**	2.5	60	4	15
222427.0600	**1.2**	**0.2**	**12**	1.2	50	4	15	222427.1500	**2.5**	**0.5**	**10**	2.5	50	4	15
222427.0610	**1.2**	**0.3**	**4**	1.2	45	4	15	222427.1510	**2.5**	**0.5**	**16**	2.5	50	4	15
222427.0620	**1.2**	**0.3**	**6**	1.2	45	4	15	222427.1520	**2.5**	**0.5**	**20**	2.5	50	4	15
222427.0630	**1.2**	**0.3**	**8**	1.2	45	4	15	222427.1530	**2.5**	**0.5**	**25**	2.5	60	4	15
222427.0640	**1.2**	**0.3**	**10**	1.2	50	4	15	222427.1540	**3**	**0.1**	**10**	3	50	6	15
222427.0650	**1.2**	**0.3**	**12**	1.2	50	4	15	222427.1550	**3**	**0.1**	**12**	3	50	6	15
222427.0660	**1.5**	**0.02**	**6**	1.5	45	4	15	222427.1560	**3**	**0.1**	**16**	3	55	6	15
222427.0670	**1.5**	**0.02**	**8**	1.5	45	4	15	222427.1570	**3**	**0.1**	**20**	3	60	6	15
222427.0680	**1.5**	**0.02**	**10**	1.5	50	4	15	222427.1580	**3**	**0.1**	**25**	3	65	6	15
222427.0690	**1.5**	**0.02**	**12**	1.5	50	4	15	222427.1590	**3**	**0.1**	**30**	3	70	6	15
222427.0700	**1.5**	**0.02**	**16**	1.5	50	4	15	222427.1600	**3**	**0.1**	**35**	3	75	6	15
222427.0710	**1.5**	**0.05**	**6**	1.5	45	4	15	222427.1610	**3**	**0.2**	**10**	3	50	6	15
222427.0720	**1.5**	**0.05**	**8**	1.5	45	4	15	222427.1620	**3**	**0.2**	**12**	3	50	6	15
222427.0730	**1.5**	**0.05**	**10**	1.5	50	4	15	222427.1630	**3**	**0.2**	**16**	3	55	6	15
222427.0740	**1.5**	**0.05**	**12**	1.5	50	4	15	222427.1640	**3**	**0.2**	**20**	3	60	6	15
222427.0750	**1.5**	**0.05**	**16**	1.5	50	4	15	222427.1650	**3**	**0.2**	**25**	3	65	6	15
222427.0760	**1.5**	**0.1**	**6**	1.5	45	4	15	222427.1660	**3**	**0.2**	**30**	3	70	6	15
222427.0770	**1.5**	**0.1**	**8**	1.5	45	4	15	222427.1670	**3**	**0.2**	**35**	3	75	6	15
222427.0780	**1.5**	**0.1**	**10**	1.5	50	4	15	222427.1680	**3**	**0.3**	**10**	3	50	6	15
222427.0790	**1.5**	**0.1**	**12**	1.5	50	4	15	222427.1690	**3**	**0.3**	**12**	3	50	6	15
222427.0800	**1.5**	**0.1**	**16**	1.5	50	4	15	222427.1700	**3**	**0.3**	**16**	3	55	6	15
222427.0810	**1.5**	**0.2**	**6**	1.5	45	4	15	222427.1710	**3**	**0.3**	**20**	3	60	6	15
222427.0820	**1.5**	**0.2**	**8**	1.5	45	4	15	222427.1720	**3**	**0.3**	**25**	3	65	6	15
222427.0830	**1.5**	**0.2**	**10**	1.5	50	4	15	222427.1730	**3**	**0.3**	**30**	3	70	6	15
222427.0840	**1.5**	**0.2**	**12**	1.5	50	4	15	222427.1740	**3**	**0.3**	**35**	3	75	6	15
222427.0850	**1.5**	**0.2**	**16**	1.5	50	4	15	222427.1750	**3**	**0.5**	**10**	3	50	6	15
222427.0860	**1.5**	**0.3**	**6**	1.5	45	4	15	222427.1760	**3**	**0.5**	**12**	3	50	6	15
222427.0870	**1.5**	**0.3**	**8**	1.5	45	4	15	222427.1770	**3**	**0.5**	**16**	3	55	6	15
222427.0880	**1.5**	**0.3**	**10**	1.5	50	4	15	222427.1780	**3**	**0.5**	**20**	3	60	6	15
222427.0890	**1.5**	**0.3**	**12**	1.5	50	4	15	222427.1790	**3**	**0.5**	**25**	3	65	6	15
222427.0900	**1.5**	**0.3**	**16**	1.5	50	4	15	222427.1800	**3**	**0.5**	**30**	3	70	6	15
222427.0910	**1.5**	**0.5**	**6**	1.5	45	4	15	222427.1810	**3**	**0.5**	**35**	3	75	6	15
222427.0920	**1.5**	**0.5**	**8**	1.5	45	4	15	222427.1820	**3**	**1**	**10**	3	50	6	15
222427.0930	**1.5**	**0.5**	**10**	1.5	50	4	15	222427.1830	**3**	**1**	**12**	3	50	6	15
222427.0940	**1.5**	**0.5**	**12**	1.5	50	4	15	222427.1840	**3**	**1**	**16**	3	55	6	15
222427.0950	**1.5**	**0.5**	**16**	1.5	50	4	15	222427.1850	**3**	**1**	**20**	3	60	6	15
222427.0960	**2**	**0.02**	**6**	2	45	4	15	222427.1860	**3**	**1**	**25**	3	65	6	15
222427.0970	**2**	**0.02**	**8**	2	45	4	15	222427.1870	**3**	**1**	**30**	3	70	6	15
222427.0980	**2**	**0.02**	**10**	2	50	4	15	222427.1880	**3**	**1**	**35**	3	75	6	15
222427.0990	**2**	**0.02**	**12**	2	50	4	15	222427.1890	**4**	**0.1**	**13**	4	55	6	15
222427.1000	**2**	**0.02**	**16**	2	50	4	15	222427.1900	**4**	**0.1**	**16**	4	55	6	15
222427.1010	**2**	**0.02**	**20**	2	50	4	15	222427.1910	**4**	**0.1**	**20**	4	60	6	15
222427.1020	**2**	**0.02**	**25**	2	60	4	15	222427.1920	**4**	**0.1**	**25**	4	65	6	15
222427.1030	**2**	**0.05**	**6**	2	45	4	15	222427.1930	**4**	**0.1**	**30**	4	70	6	15
222427.1040	**2**	**0.05**	**8**	2	45	4	15	222427.1940	**4**	**0.1**	**35**	4	75	6	15
222427.1050	**2**	**0.05**	**10**	2	50	4	15	222427.1950	**4**	**0.1**	**40**	4	80	6	15
222427.1060	**2**	**0.05**	**12**	2	50	4	15	222427.1960	**4**	**0.2**	**13**	4	55	6	15
222427.1070	**2**	**0.05**	**16**	2	50	4	15	222427.1970	**4**	**0.2**	**16**	4	55	6	15
222427.1080	**2**	**0.05**	**20**	2	50	4	15	222427.1980	**4**	**0.2**	**20**	4	60	6	15
222427.1090	**2**	**0.05**	**25**	2	60	4	15	222427.1990	**4**	**0.2**	**25**	4	65	6	15
222427.1100	**2**	**0.1**	**6**	2	45	4	15	222427.2000	**4**	**0.2**	**30**	4	70	6	15
222427.1110	**2**	**0.1**	**8**	2	45	4	15	222427.2010	**4**	**0.2**	**35**	4	75	6	15
222427.1120	**2**	**0.1**	**10**	2	50	4	15	222427.2020	**4**	**0.2**	**40**	4	80	6	15
222427.1130	**2**	**0.1**	**12**	2	50	4	15	222427.2030	**4**	**0.3**	**13**	4	55	6	15
222427.1140	**2**	**0.1**	**16**	2	50	4	15	222427.2040	**4**	**0.3**	**16**	4	55	6	15
222427.1150	**2**	**0.1**	**20**	2	50	4	15	222427.2050	**4**	**0.3**	**20**	4	60	6	15
222427.1160	**2**	**0.1**	**25**	2	60	4	15	222427.2060	**4**	**0.3**	**25**	4	65	6	15
222427.1170	**2**	**0.2**	**6**	2	45	4	15	222427.2070	**4**	**0.3**	**30**	4	70	6	15
222427.1180	**2**	**0.2**	**8**	2	45	4	15	222427.2080	**4**	**0.3**	**35**	4	75	6	15
222427.1190	**2**	**0.2**	**10**	2	50	4	15	222427.2090	**4**	**0.3**	**40**	4	80	6	15
222427.1200	**2**	**0.2**	**12**	2	50	4	15	222427.2100	**4**	**0.5**	**13**	4	55	6	15
222427.1210	**2**	**0.2**	**16**	2	50	4	15	222427.2110	**4**	**0.5**	**16**	4	55	6	15
222427.1220	**2**	**0.2**	**20**	2	50	4	15	222427.2120	**4**	**0.5**	**20**	4	60	6	15
222427.1230	**2**	**0.2**	**25**	2	60	4	15	222427.2130	**4**	**0.5**	**25**	4	65	6	15
222427.1240	**2**	**0.3**	**6**	2	45	4	15	222427.2140	**4**	**0.5**	**30**	4	70	6	15
222427.1250	**2**	**0.3**	**8**	2	45	4	15	222427.2150	**4**	**0.5**	**35**	4	75	6	15
222427.1260	**2**	**0.3**	**10**	2	50	4	15	222427.2160	**4**	**0.5**	**40**	4	80	6	15
222427.1270	**2**	**0.3**	**12**	2	50	4	15	222427.2170	**4**	**1**	**13**	4	55	6	15
222427.1280	**2**	**0.3**	**16**	2	50	4	15	222427.2180	**4**	**1**	**16**	4	55	6	15
222427.1290	**2**	**0.3**	**20**	2	50	4	15	222427.2190	**4**	**1**	**20**	4	60	6	15
222427.1300	**2**	**0.3**	**25**	2	60	4	15	222427.2200	**4**	**1**	**25**	4	65	6	15
222427.1310	**2**	**0.5**	**6**	2	45	4	15	222427.2210	**4**	**1**	**30**	4	70	6	15
222427.1320	**2**	**0.5**	**8**	2	45	4	15	222427.2220	**4**	**1**	**35**	4	75	6	15
222427.1330	**2**	**0.5**	**10**	2	50	4	15	222427.2230	**4**	**1**	**40**	4	80	6	15
222427.1340	**2**	**0.5**	**12**	2	50	4	15	222427.2240	**5**	**0.1**	**16**	5	60	6	15
222427.1350	**2**	**0.5**	**16**	2	50	4	15	222427.2250	**5**	**0.1**	**30**	5	70	6	15
222427.1360	**2**	**0.5**	**20**	2	50	4	15	222427.2260	**5**	**0.2**	**16**	5	60	6	15
222427.1370	**2**	**0.5**	**25**	2	60	4	15	222427.2270	**5**	**0.2**	**30**	5	70	6	15
222427.1380	**2.5**	**0.1**	**10**	2.5	50	4	15	222427.2280	**5**	**0.3**	**16**	5	60	6	15
222427.1390	**2.5**	**0.1**	**16**	2.5	50	4	15	222427.2290	**5**	**0.3**	**30**	5	70	6	15
222427.1400	**2.5**	**0.1**	**20**	2.5	50	4	15	222427.2300	**5**	**0.5**	**16**	5	60	6	15
222427.1410	**2.5**	**0.1**	**25**	2.5	60	4	15	222427.2310	**5**	**0.5**	**30**	5	70	6	15
222427.1420	**2.5**	**0.2**	**10**	2.5	50	4	15	222427.2320	**5**	**1**	**16**	5	60	6	15

Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222427.2330	**5**	**1**	**30**	5	70	6	15	222427.2510	**8**	**1.5**	**22**	9	65	8	-
222427.2340	**6**	**0.1**	**20**	7	60	6	-	222427.2520	**8**	**2**	**22**	9	65	8	-
222427.2350	**6**	**0.1**	**40**	7	80	6	-	222427.2530	**10**	**0.3**	**24**	11	70	10	-
222427.2360	**6**	**0.2**	**20**	7	60	6	-	222427.2540	**10**	**0.5**	**24**	11	70	10	-
222427.2370	**6**	**0.2**	**40**	7	80	6	-	222427.2550	**10**	**0.5**	**40**	11	100	10	-
222427.2380	**6**	**0.3**	**20**	7	60	6	-	222427.2560	**10**	**1**	**24**	11	70	10	-
222427.2390	**6**	**0.3**	**40**	7	80	6	-	222427.2570	**10**	**1**	**40**	11	100	10	-
222427.2400	**6**	**0.5**	**20**	7	60	6	-	222427.2580	**10**	**1.5**	**24**	11	70	10	-
222427.2410	**6**	**0.5**	**40**	7	80	6	-	222427.2590	**10**	**2**	**24**	11	70	10	-
222427.2420	**6**	**1**	**20**	7	60	6	-	222427.2600	**10**	**2.5**	**24**	11	70	10	-
222427.2430	**6**	**1**	**40**	7	80	6	-	222427.2610	**12**	**0.3**	**26**	13	80	12	-
222427.2440	**6**	**1.5**	**20**	7	60	6	-	222427.2620	**12**	**0.5**	**26**	13	80	12	-
222427.2450	**6**	**1.5**	**40**	7	80	6	-	222427.2630	**12**	**0.5**	**40**	13	110	12	-
222427.2460	**8**	**0.3**	**22**	9	65	8	-	222427.2640	**12**	**1**	**26**	13	80	12	-
222427.2470	**8**	**0.5**	**22**	9	65	8	-	222427.2650	**12**	**1**	**40**	13	110	12	-
222427.2480	**8**	**0.5**	**40**	9	100	8	-	222427.2660	**12**	**1.5**	**26**	13	80	12	-
222427.2490	**8**	**1**	**22**	9	65	8	-	222427.2670	**12**	**2**	**26**	13	80	12	-
222427.2500	**8**	**1**	**40**	9	100	8	-	222427.2680	**12**	**3**	**26**	13	80	12	-

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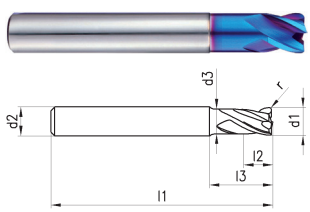
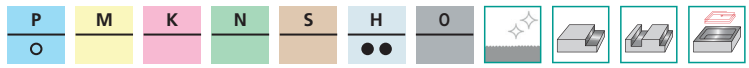


227050 FUTURO SC shoulder/ slot milling cutters





Made of solid hard metal, XIDUR coating, with cylindrical shank, According to factory standard, Nominal size Ø 1 - 16 mm, Number of teeth 4, With corner radius, Long version, with center cut, Milling cutter with 30° helix angle
Secondary application: Steel (ISO-P), Main application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling

Order ID	d1 mm	r mm	l2 mm	l3 mm	d2 mm	l1 mm	d3 mm	Order ID	d1 mm	r mm	l2 mm	l3 mm	d2 mm	l1 mm	d3 mm
227050.0100	**1**	**0.1**	1.5	-	3	40	-	227050.0600	**3.5**	**0.1**	5	9	6	45	3.35
227050.0150	**1**	**0.1**	1.5	-	6	40	-	227050.0700	**4**	**0.1**	5	9	6	45	3.85
227050.0200	**1.5**	**0.1**	2.2	-	3	40	-	227050.0900	**5**	**0.2**	6	11	6	50	4.85
227050.0250	**1.5**	**0.1**	2.2	-	6	40	-	227050.1000	**6**	**0.2**	7	14	6	50	5.85
227050.0300	**2**	**0.1**	6	3	3	40	1.95	227050.1100	**8**	**0.2**	9	18	8	60	7.7
227050.0350	**2**	**0.1**	3	6	6	40	1.95	227050.1200	**10**	**0.2**	12	25	10	75	9.7
227050.0400	**2.5**	**0.1**	4	6	3	40	2.4	227050.1300	**12**	**0.3**	15	30	12	75	11.7
227050.0450	**2.5**	**0.1**	4	6	6	40	2.4	227050.1400	**16**	**0.3**	18	38	16	90	15.7
227050.0500	**3**	**0.1**	4	7	6	45	2.85								

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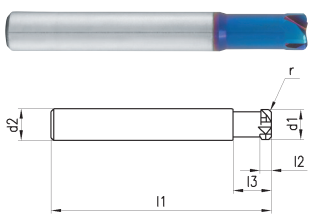
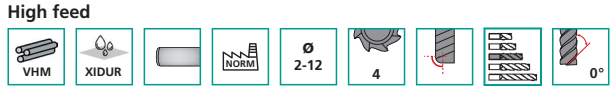


227060 FUTURO SC shoulder/ slot milling cutters

High feed





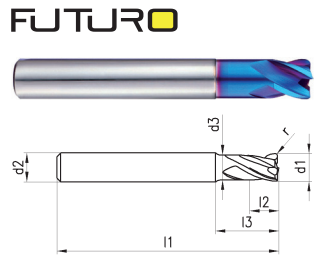
Made of solid hard metal, XIDUR coating, with cylindrical shank, According to factory standard, Nominal size Ø 2 - 12 mm, Number of teeth 4, With corner radius, Medium-length version, Milling cutter with 0° helix angle
Secondary application: Steel (ISO-P), Main application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling

Order ID	d1 mm	r mm	l2 mm	l3 mm	d2 mm	l1 mm	Order ID	d1 mm	r mm	l2 mm	l3 mm	d2 mm	l1 mm
227060.0100	**2**	**0.5**	1	6	6	50	227060.0600	**8**	**1**	3.5	16	8	60
227060.0200	**3**	**0.5**	1.2	8	6	50	227060.0700	**8**	**2**	3.5	16	8	60
227060.0300	**4**	**0.5**	1.5	10	6	50	227060.0800	**10**	**1**	4	20	10	70
227060.0400	**6**	**0.5**	2.5	12	6	60	227060.0900	**10**	**2**	4	20	10	70
227060.0500	**6**	**1**	2.5	12	6	60	227060.1000	**12**	**2**	5	25	12	80

227045 FUTURO SC shoulder/ slot milling cutters







Made of solid hard metal, XIDUR coating, with cylindrical shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 3 - 12 mm, Number of teeth 4, With corner radius, Long version, with center cut, Milling cutter with 30° helix angle
Secondary application: Steel (ISO-P), Main application: Hardened steel (ISO H), For finishing, For shoulder milling, For slot milling, For pocket milling

Order ID	d1	r	l2	l3	d2	l1	d3	Cutting tolerance on radius
	mm	mm	mm	mm	mm	mm	mm	
227045.0200	3	0.3	4	16	6	55	2.85	±0.01
227045.0300	3	0.3	4	20	6	55	2.85	±0.01
227045.0400	3	0.5	4	12	6	55	2.85	±0.01
227045.0500	3	0.5	4	16	6	55	2.85	±0.01
227045.0600	3	0.5	4	20	6	55	2.85	±0.01
227045.0700	4	0.3	5	12	6	55	3.85	±0.01
227045.0800	4	0.3	5	16	6	55	3.85	±0.01
227045.0900	4	0.3	5	20	6	55	3.85	±0.01
227045.1000	4	0.5	5	12	6	55	3.85	±0.01
227045.1100	4	0.5	5	16	6	55	3.85	±0.01
227045.1200	4	0.5	5	20	6	55	3.85	±0.01
227045.1300	4	1.0	5	12	6	55	3.85	±0.01
227045.1400	6	0.5	7	20	6	60	5.85	±0.01
227045.1500	6	0.5	9	20	6	90	5.85	±0.01
227045.1600	6	1.0	7	20	6	60	5.85	±0.015
227045.1700	6	1.0	9	20	6	90	5.85	±0.015
227045.1800	6	1.5	7	20	6	60	5.85	±0.015
227045.1900	8	0.5	9	25	8	60	7.7	±0.01
227045.2000	8	0.5	12	25	8	100	7.7	±0.01

Order ID	d1	r	l2	l3	d2	l1	d3	Cutting tolerance on radius
	mm	mm	mm	mm	mm	mm	mm	
227045.2100	8	1.0	9	25	8	60	7.7	±0.015
227045.2200	8	1.0	12	25	8	100	7.7	±0.015
227045.2300	8	1.5	9	25	8	60	7.7	±0.015
227045.2400	8	2.0	9	25	8	60	7.7	±0.015
227045.2500	10	0.5	11	32	10	70	9.7	±0.01
227045.2600	10	0.5	15	32	10	100	9.7	±0.01
227045.2700	10	1.0	11	32	10	70	9.7	±0.015
227045.2800	10	1.0	15	32	10	100	9.7	±0.015
227045.2900	10	1.5	11	32	10	70	9.7	±0.015
227045.3000	10	2.0	11	32	10	70	9.7	±0.015
227045.3100	10	2.0	15	32	10	100	9.7	±0.015
227045.3200	12	0.5	12	38	12	80	11.7	±0.01
227045.3300	12	0.5	18	38	12	110	11.7	±0.01
227045.3400	12	1.0	12	38	12	80	11.7	±0.015
227045.3500	12	1.0	18	38	12	110	11.7	±0.015
227045.3600	12	1.5	12	38	12	80	11.7	±0.015
227045.3700	12	2.0	12	38	12	80	11.7	±0.015
227045.3800	12	2.0	12	38	12	110	11.7	±0.015

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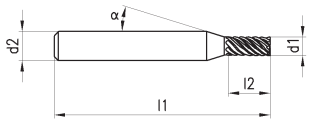
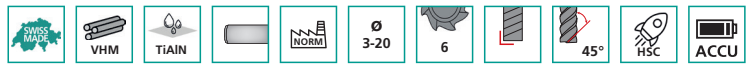


222404 FUTURO SC shoulder milling cutter





Swiss Made, Made of solid hard metal, TiAlN coating, with cylindrical shank, According to factory standard, Nominal size Ø 3 - 20 mm, Number of teeth 6, With sharp corner design, Milling cutter with 45° helix angle, HSC (High-Speed Cutting) milling technology, Cordless version
Secondary application: Steel (ISO-P), Secondary application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N), Main application: Hardened steel (ISO H), For finishing, For trimming / hobbing, For shoulder milling

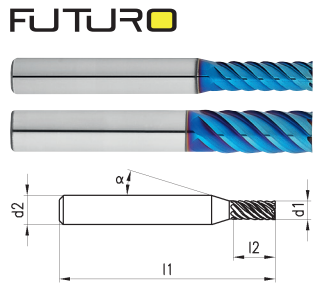
Application:
Square milling cutters for various roughing and finishing operations. **Can be used up to 60 HRC**. Suitable for non-ferrous metals and hardened steels.

Order ID	**d1** **mm**	**l2** **mm**	l1 mm	d2 mm	alpha °	Tolerance mm
222404.0010	**3**	**10**	50	6	15	+0/-0.01
222404.0020	**3**	**15**	50	6	15	+0/-0.01
222404.0030	**4**	**12**	50	6	15	+0/-0.01
222404.0040	**4**	**16**	50	6	15	+0/-0.01
222404.0050	**5**	**15**	50	6	15	+0/-0.01
222404.0060	**5**	**20**	60	6	15	+0/-0.01
222404.0070	**6**	**15**	50	6	-	-0.01/-0.025
222404.0080	**6**	**20**	60	6	-	-0.01/-0.025
222404.0090	**8**	**20**	60	8	-	-0.01/-0.025
222404.0100	**8**	**25**	65	8	-	-0.01/-0.025
222404.0110	**8**	**30**	75	8	-	-0.01/-0.025
222404.0140	**8**	**35**	80	8	-	-0.01/-0.025
222404.0150	**8**	**40**	90	8	-	-0.01/-0.025
222404.0160	**8**	**45**	100	8	-	-0.01/-0.025
222404.0170	**8**	**50**	100	8	-	-0.01/-0.025
222404.0180	**10**	**25**	70	10	-	-0.01/-0.025
222404.0190	**10**	**35**	90	10	-	-0.01/-0.025
222404.0200	**10**	**45**	100	10	-	-0.01/-0.025
222404.0210	**10**	**50**	100	10	-	-0.01/-0.025
222404.0220	**10**	**60**	110	10	-	-0.01/-0.025
222404.0230	**12**	**30**	80	12	-	-0.01/-0.025
222404.0240	**12**	**40**	90	12	-	-0.01/-0.025
222404.0250	**12**	**50**	100	12	-	-0.01/-0.025
222404.0260	**12**	**60**	110	12	-	-0.01/-0.025
222404.0270	**12**	**70**	120	12	-	-0.01/-0.025
222404.0280	**16**	**35**	90	16	-	-0.015/-0.03
222404.0290	**16**	**50**	110	16	-	-0.015/-0.03
222404.0300	**16**	**65**	120	16	-	-0.015/-0.03
222404.0310	**16**	**80**	150	16	-	-0.015/-0.03
222404.0320	**16**	**90**	160	16	-	-0.015/-0.03
222404.0330	**16**	**100**	160	16	-	-0.015/-0.03
222404.0340	**20**	**45**	100	20	-	-0.015/-0.03
222404.0350	**20**	**60**	120	20	-	-0.015/-0.03
222404.0360	**20**	**80**	150	20	-	-0.015/-0.03
222404.0370	**20**	**90**	160	20	-	-0.015/-0.03
222404.0380	**20**	**100**	160	20	-	-0.015/-0.03
222404.0390	**20**	**110**	170	20	-	-0.015/-0.03
222404.0400	**20**	**120**	180	20	-	-0.015/-0.03

222425 FUTURO SC shoulder milling cutter







Made of solid hard metal, Coated, with cylindrical shank, According to factory standard, Nominal size Ø 3 - 25 mm, Number of teeth 6 - 8, With sharp corner design, Milling cutter with 45° helix angle, HSC (High-Speed Cutting) milling technology
Main application: Hardened steel (ISO H), For finishing, For trimming / hobbing, For shoulder milling

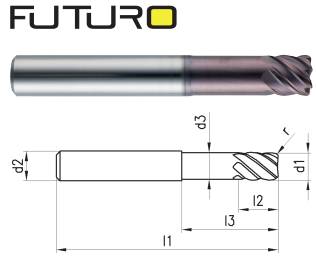
Application:
Square milling cutter for various roughing and finishing operations. **Can be used up to 68 HRC**. Particularly suitable for machining hardened steels.

Order ID	d1 mm	l2 mm	l1 mm	d2 mm	teeth	alpha °	Tolerance mm	Order ID	d1 mm	l2 mm	l1 mm	d2 mm	teeth	alpha °	Tolerance mm
222425.0010	**3**	**10**	50	6	6	15	+0/-0.01	222425.0230	**10**	**60**	110	10	6	-	-0.01/-0.025
222425.0020	**3**	**15**	50	6	6	15	+0/-0.01	222425.0240	**12**	**30**	80	12	6	-	-0.01/-0.025
222425.0030	**4**	**12**	50	6	6	15	+0/-0.01	222425.0250	**12**	**40**	90	12	6	-	-0.01/-0.025
222425.0040	**4**	**16**	50	6	6	15	+0/-0.01	222425.0260	**12**	**50**	100	12	6	-	-0.01/-0.025
222425.0050	**5**	**15**	50	6	6	15	+0/-0.01	222425.0270	**12**	**60**	110	12	6	-	-0.01/-0.025
222425.0060	**5**	**20**	60	6	6	15	+0/-0.01	222425.0280	**12**	**70**	120	12	6	-	-0.01/-0.025
222425.0070	**6**	**15**	50	6	6	-	-0.01/-0.025	222425.0290	**16**	**35**	90	16	6	-	-0.015/-0.03
222425.0080	**6**	**20**	60	6	6	-	-0.01/-0.025	222425.0300	**16**	**50**	110	16	6	-	-0.015/-0.03
222425.0090	**6**	**25**	65	6	6	-	-0.01/-0.025	222425.0310	**16**	**65**	120	16	6	-	-0.015/-0.03
222425.0100	**6**	**30**	70	6	6	-	-0.01/-0.025	222425.0320	**16**	**80**	150	16	6	-	-0.015/-0.03
222425.0110	**6**	**35**	75	6	6	-	-0.01/-0.025	222425.0330	**16**	**90**	160	16	6	-	-0.015/-0.03
222425.0120	**8**	**20**	60	8	6	-	-0.01/-0.025	222425.0340	**16**	**100**	160	16	6	-	-0.015/-0.03
222425.0130	**8**	**25**	65	8	6	-	-0.01/-0.025	222425.0350	**20**	**45**	100	20	6	-	-0.015/-0.03
222425.0140	**8**	**30**	75	8	6	-	-0.01/-0.025	222425.0360	**20**	**60**	120	20	6	-	-0.015/-0.03
222425.0150	**8**	**35**	80	8	6	-	-0.01/-0.025	222425.0370	**20**	**80**	150	20	6	-	-0.015/-0.03
222425.0160	**8**	**40**	90	8	6	-	-0.01/-0.025	222425.0380	**20**	**90**	160	20	6	-	-0.015/-0.03
222425.0170	**8**	**45**	100	8	6	-	-0.01/-0.025	222425.0390	**20**	**100**	160	20	6	-	-0.015/-0.03
222425.0180	**8**	**50**	100	8	6	-	-0.01/-0.025	222425.0400	**20**	**110**	170	20	6	-	-0.015/-0.03
222425.0190	**10**	**25**	70	10	6	-	-0.01/-0.025	222425.0410	**20**	**120**	180	20	6	-	-0.015/-0.03
222425.0200	**10**	**35**	90	10	6	-	-0.01/-0.025	222425.0420	**25**	**100**	160	25	8	-	-0.015/-0.03
222425.0210	**10**	**45**	100	10	6	-	-0.01/-0.025	222425.0430	**25**	**130**	200	25	8	-	-0.015/-0.03
222425.0220	**10**	**50**	100	10	6	-	-0.01/-0.025								

227031 FUTURO SC shoulder milling cutter





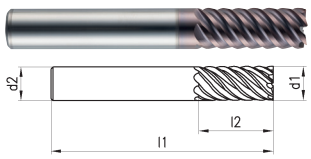


Made of solid hard metal, Coated, with cylindrical shank, According to factory standard, Nominal size Ø 4 - 12 mm, Number of teeth 4 - 6, With corner radius, Medium-length version, Milling cutter with 45° helix angle
Secondary application: Steel (ISO-P), Main application: Hardened steel (ISO H), For finishing, For trimming / hobbing, For shoulder milling

Application
For work on hardened steels **up to 68 HRC**.

Order ID	d1 mm	r mm	l2 mm	l3 mm	d2 mm	l1 mm	d3 mm
227031.0020	**4**	**0.2**	**6**	10	6	70	3.85
227031.0040	**4**	**0.5**	**6**	10	6	70	3.85
227031.0060	**5**	**0.2**	**6**	12	6	70	4.85
227031.0080	**5**	**0.5**	**6**	12	6	70	4.85
227031.0100	**6**	**0.5**	**6**	14	6	50	5.85
227031.0130	**6**	**0.5**	**13**	-	6	70	-
227031.0160	**6**	**0.5**	**26**	-	6	70	-
227031.0170	**6**	**1**	**6**	14	6	70	5.85
227031.0180	**6**	**1**	**13**	-	6	70	
227031.0200	**8**	**0.5**	**8**	24	8	60	7.7
227031.0220	**8**	**0.5**	**19**	-	8	90	-
227031.0260	**10**	**0.5**	**22**	-	10	100	-
227031.0300	**10**	**1**	**10**	30	10	70	9.7
227031.0320	**10**	**1**	**22**	-	10	100	-
227031.0340	**10**	**1**	**46**	-	10	100	-
227031.0360	**12**	**0.5**	**26**	-	12	110	-
227031.0400	**12**	**1**	**12**	30	12	75	11.7
227031.0500	**12**	**1**	**26**	-	12	110	-

FUTURO



227091 FUTURO SC shoulder milling cutter





Made of solid hard metal, Coated, with cylindrical shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 6 - 20 mm, Number of teeth 6 - 8, With sharp corner design, Long version, Milling cutter with 45° helix angle
Secondary application: Steel (ISO-P), Main application: Hardened steel (ISO H), For finishing, For trimming / hobbing, For shoulder milling

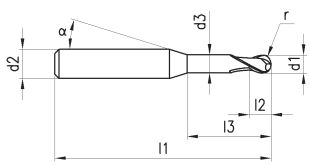
Application
For work on hardened steels **up to 68 HRC**.

Order ID	**d1** mm	l2 mm	d2 mm	l1 mm	teeth
227091.0100	**6**	13	6	57	6
227091.0200	**8**	19	8	63	6
227091.0300	**10**	22	10	72	6
227091.0400	**12**	26	12	83	6
227091.0500	**16**	32	16	92	6
227091.0600	**20**	38	20	104	8

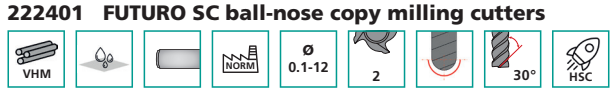
FUTURO







222401 FUTURO SC ball-nose copy milling cutters





Made of solid hard metal, Coated, with cylindrical shank, According to factory standard, Nominal size Ø 0.1 - 12 mm, Number of teeth 2, With full radius, Milling cutter with 30° helix angle, HSC (High-Speed Cutting) milling technology
Secondary application: Steel (ISO-P), Secondary application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N), Main application: Hardened steel (ISO H), For finishing, For copy milling

Application:
Ball end mills can be used **up to 60 HRC**. Suitable for non-ferrous metals and hardened steels.

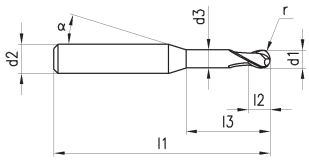
Order ID	**d1** mm	**r** mm	**l3** mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	**d1** mm	**r** mm	**l3** mm	l2 mm	l1 mm	d2 mm	alpha °
222401.0010	**0.1**	**0.05**	**-**	0.3	40	4	15	222401.0380	**0.5**	**0.25**	**8**	0.5	45	4	15
222401.0020	**0.1**	**0.05**	**-**	0.5	40	4	15	222401.0400	**0.5**	**0.25**	**12**	0.5	45	4	15
222401.0030	**0.2**	**0.1**	**0.5**	0.2	40	4	15	222401.0410	**0.5**	**0.25**	**14**	0.5	45	4	15
222401.0040	**0.2**	**0.1**	**1**	0.2	40	4	15	222401.0420	**0.6**	**0.3**	**1**	0.6	45	4	15
222401.0050	**0.2**	**0.1**	**1.5**	0.2	40	4	15	222401.0430	**0.6**	**0.3**	**2**	0.6	45	4	15
222401.0060	**0.2**	**0.1**	**2**	0.2	40	4	15	222401.0440	**0.6**	**0.3**	**3**	0.6	45	4	15
222401.0070	**0.2**	**0.1**	**2.5**	0.2	40	4	15	222401.0450	**0.6**	**0.3**	**4**	0.6	45	4	15
222401.0080	**0.2**	**0.1**	**3**	0.2	40	4	15	222401.0460	**0.6**	**0.3**	**5**	0.6	45	4	15
222401.0090	**0.3**	**0.15**	**1**	0.3	40	4	15	222401.0470	**0.6**	**0.3**	**6**	0.6	45	4	15
222401.0100	**0.3**	**0.15**	**1.5**	0.3	40	4	15	222401.0480	**0.6**	**0.3**	**8**	0.6	45	4	15
222401.0110	**0.3**	**0.15**	**2**	0.3	40	4	15	222401.0490	**0.6**	**0.3**	**10**	0.6	45	4	15
222401.0120	**0.3**	**0.15**	**2.5**	0.3	40	4	15	222401.0500	**0.6**	**0.3**	**12**	0.6	45	4	15
222401.0130	**0.3**	**0.15**	**3**	0.3	40	4	15	222401.0510	**0.6**	**0.3**	**14**	0.6	45	4	15
222401.0140	**0.3**	**0.15**	**3.5**	0.3	40	4	15	222401.0520	**0.6**	**0.3**	**16**	0.6	45	4	15
222401.0150	**0.3**	**0.15**	**4**	0.3	40	4	15	222401.0530	**0.7**	**0.35**	**2**	0.7	45	4	15
222401.0160	**0.3**	**0.15**	**5**	0.3	40	4	15	222401.0540	**0.7**	**0.35**	**4**	0.7	45	4	15
222401.0170	**0.4**	**0.2**	**1**	0.4	40	4	15	222401.0550	**0.7**	**0.35**	**6**	0.7	45	4	15
222401.0180	**0.4**	**0.2**	**1.5**	0.4	40	4	15	222401.0560	**0.7**	**0.35**	**8**	0.7	45	4	15
222401.0190	**0.4**	**0.2**	**2**	0.4	40	4	15	222401.0570	**0.7**	**0.35**	**10**	0.7	45	4	15
222401.0200	**0.4**	**0.2**	**2.5**	0.4	40	4	15	222401.0580	**0.7**	**0.35**	**12**	0.7	45	4	15
222401.0210	**0.4**	**0.2**	**3**	0.4	40	4	15	222401.0590	**0.8**	**0.4**	**2**	0.8	45	4	15
222401.0220	**0.4**	**0.2**	**3.5**	0.4	40	4	15	222401.0600	**0.8**	**0.4**	**3**	0.8	45	4	15
222401.0230	**0.4**	**0.2**	**4**	0.4	40	4	15	222401.0610	**0.8**	**0.4**	**4**	0.8	45	4	15
222401.0240	**0.4**	**0.2**	**5**	0.4	40	4	15	222401.0620	**0.8**	**0.4**	**5**	0.8	45	4	15
222401.0250	**0.4**	**0.2**	**6**	0.4	40	4	15	222401.0630	**0.8**	**0.4**	**6**	0.8	45	4	15
222401.0260	**0.4**	**0.2**	**8**	0.4	40	4	15	222401.0640	**0.8**	**0.4**	**8**	0.8	45	4	15
222401.0270	**0.4**	**0.2**	**10**	0.4	40	4	15	222401.0650	**0.8**	**0.4**	**10**	0.8	45	4	15
222401.0280	**0.5**	**0.25**	**1**	0.5	45	4	15	222401.0660	**0.8**	**0.4**	**12**	0.8	45	4	15
222401.0290	**0.5**	**0.25**	**1.5**	0.5	45	4	15	222401.0670	**0.8**	**0.4**	**14**	0.8	45	4	15
222401.0300	**0.5**	**0.25**	**2**	0.5	45	4	15	222401.0680	**0.8**	**0.4**	**16**	0.8	45	4	15
222401.0310	**0.5**	**0.25**	**2.5**	0.5	45	4	15	222401.0690	**0.9**	**0.45**	**4**	0.9	45	4	15
222401.0320	**0.5**	**0.25**	**3**	0.5	45	4	15	222401.0700	**1**	**0.5**	**2**	1	45	4	15
222401.0330	**0.5**	**0.25**	**3.5**	0.5	45	4	15	222401.0710	**1**	**0.5**	**2**	1	50	6	15
222401.0340	**0.5**	**0.25**	**4**	0.5	45	4	15	222401.0720	**1**	**0.5**	**3**	1	45	4	15
222401.0350	**0.5**	**0.25**	**4.5**	0.5	45	4	15	222401.0730	**1**	**0.5**	**3**	1	50	6	15
222401.0360	**0.5**	**0.25**	**5**	0.5	45	4	15	222401.0740	**1**	**0.5**	**4**	1	45	4	15
222401.0370	**0.5**	**0.25**	**6**	0.5	45	4	15	222401.0750	**1**	**0.5**	**4**	1	50	6	15

Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222401.0760	1	0.5	5	1	45	4	15
222401.0770	1	0.5	5	1	50	6	15
222401.0780	1	0.5	6	1	45	4	15
222401.0790	1	0.5	6	1	50	6	15
222401.0800	1	0.5	8	1	45	4	15
222401.0810	1	0.5	8	1	50	6	15
222401.0820	1	0.5	10	1	50	4	15
222401.0830	1	0.5	10	1	50	6	15
222401.0840	1	0.5	12	1	50	4	15
222401.0850	1	0.5	12	1	50	6	15
222401.0860	1	0.5	14	1	50	4	15
222401.0870	1	0.5	14	1	50	6	15
222401.0880	1	0.5	16	1	50	4	15
222401.0890	1	0.5	16	1	60	6	15
222401.0900	1	0.5	18	1	50	4	15
222401.0910	1	0.5	18	1	60	6	15
222401.0920	1	0.5	20	1	50	4	15
222401.0930	1	0.5	20	1	60	6	15
222401.0940	1	0.5	22	1	60	4	15
222401.0950	1	0.5	22	1	65	6	15
222401.0960	1	0.5	25	1	60	4	15
222401.0970	1	0.5	30	1	70	4	15
222401.0980	1.2	0.6	4	1.2	45	4	15
222401.0990	1.2	0.6	4	1.2	50	6	15
222401.1000	1.2	0.6	6	1.2	45	4	15
222401.1010	1.2	0.6	6	1.2	50	6	15
222401.1020	1.2	0.6	8	1.2	45	4	15
222401.1030	1.2	0.6	8	1.2	50	6	15
222401.1040	1.2	0.6	10	1.2	50	4	15
222401.1050	1.2	0.6	10	1.2	50	6	15
222401.1060	1.2	0.6	12	1.2	50	4	15
222401.1070	1.2	0.6	12	1.2	50	6	15
222401.1080	1.2	0.6	16	1.2	50	4	15
222401.1090	1.2	0.6	16	1.2	60	6	15
222401.1100	1.2	0.6	20	1.2	50	4	15
222401.1110	1.2	0.6	20	1.2	60	6	15
222401.1120	1.2	0.6	24	1.2	60	4	15
222401.1130	1.2	0.6	24	1.2	65	6	15
222401.1140	1.4	0.7	6	1.4	45	4	15
222401.1150	1.4	0.7	8	1.4	45	4	15
222401.1160	1.4	0.7	12	1.4	50	4	15
222401.1170	1.4	0.7	16	1.4	50	4	15
222401.1180	1.5	0.75	3	1.5	45	4	15
222401.1190	1.5	0.75	3	1.5	50	6	15
222401.1200	1.5	0.75	4	1.5	45	4	15
222401.1210	1.5	0.75	4	1.5	50	6	15
222401.1220	1.5	0.75	6	1.5	45	4	15
222401.1230	1.5	0.75	6	1.5	50	6	15
222401.1240	1.5	0.75	8	1.5	45	4	15
222401.1250	1.5	0.75	8	1.5	50	6	15
222401.1260	1.5	0.75	10	1.5	50	4	15
222401.1270	1.5	0.75	10	1.5	50	6	15
222401.1280	1.5	0.75	12	1.5	50	4	15
222401.1290	1.5	0.75	12	1.5	50	6	15
222401.1300	1.5	0.75	14	1.5	50	4	15
222401.1310	1.5	0.75	14	1.5	50	6	15
222401.1320	1.5	0.75	16	1.5	50	4	15
222401.1330	1.5	0.75	16	1.5	60	6	15
222401.1340	1.5	0.75	18	1.5	50	4	15
222401.1350	1.5	0.75	18	1.5	60	6	15
222401.1360	1.5	0.75	20	1.5	50	4	15
222401.1370	1.5	0.75	20	1.5	60	6	15
222401.1380	1.5	0.75	22	1.5	60	4	15
222401.1390	1.5	0.75	22	1.5	65	6	15
222401.1400	1.5	0.75	25	1.5	60	4	15
222401.1410	1.5	0.75	25	1.5	65	6	15
222401.1420	1.5	0.75	30	1.5	70	4	15
222401.1440	1.5	0.75	35	1.5	70	4	15
222401.1450	1.5	0.75	40	1.5	80	4	15
222401.1460	1.6	0.8	6	1.6	45	4	15
222401.1470	1.6	0.8	8	1.6	45	4	15
222401.1480	1.6	0.8	12	1.6	50	4	15
222401.1490	1.6	0.8	16	1.6	50	4	15
222401.1500	1.6	0.8	20	1.6	50	4	15
222401.1510	1.8	0.9	6	1.8	45	4	15
222401.1520	1.8	0.9	8	1.8	45	4	15
222401.1530	1.8	0.9	12	1.8	50	4	15
222401.1540	1.8	0.9	16	1.8	50	4	15
222401.1550	1.8	0.9	20	1.8	50	4	15
222401.1560	2	1	4	2	45	4	15
222401.1570	2	1	4	2	50	6	15
222401.1580	2	1	6	2	45	4	15
222401.1590	2	1	6	2	50	6	15
222401.1600	2	1	8	2	45	4	15
222401.1610	2	1	8	2	50	6	15
222401.1620	2	1	10	2	50	4	15
222401.1630	2	1	10	2	50	6	15
222401.1640	2	1	12	2	50	4	15
222401.1650	2	1	12	2	50	6	15
222401.1660	2	1	14	2	50	4	15
222401.1670	2	1	14	2	50	6	15
222401.1680	2	1	16	2	50	4	15
222401.1690	2	1	16	2	60	6	15
222401.1700	2	1	18	2	50	4	15
222401.1710	2	1	18	2	60	6	15
222401.1720	2	1	20	2	50	4	15
222401.1730	2	1	20	2	60	6	15
222401.1740	2	1	22	2	60	4	15
222401.1750	2	1	22	2	65	6	15
222401.1760	2	1	25	2	60	4	15
222401.1770	2	1	25	2	65	6	15
222401.1780	2	1	30	2	70	4	15
222401.1790	2	1	30	2	70	6	15
222401.1800	2	1	35	2	70	4	15
222401.1810	2	1	35	2	75	6	15
222401.1820	2	1	40	2	80	4	15
222401.1830	2	1	40	2	80	6	15
222401.1840	2	1	45	2	80	4	15
222401.1850	2	1	50	2	90	4	15
222401.1860	2.5	1.25	8	2.5	45	4	15
222401.1870	2.5	1.25	8	2.5	50	6	15
222401.1880	2.5	1.25	10	2.5	50	4	15
222401.1890	2.5	1.25	10	2.5	50	6	15
222401.1900	2.5	1.25	16	2.5	50	4	15
222401.1910	2.5	1.25	16	2.5	60	6	15
222401.1920	2.5	1.25	20	2.5	60	4	15
222401.1930	2.5	1.25	25	2.5	60	4	15
222401.1940	2.5	1.25	30	2.5	70	4	15
222401.1950	2.5	1.25	35	2.5	70	4	15
222401.1960	2.5	1.25	40	2.5	80	4	15
222401.1970	3	1.5	6	3	50	6	15
222401.1980	3	1.5	8	3	50	6	15
222401.1990	3	1.5	10	3	50	6	15
222401.2000	3	1.5	12	3	50	6	15
222401.2010	3	1.5	16	3	60	6	15
222401.2020	3	1.5	20	3	60	6	15
222401.2030	3	1.5	25	3	65	6	15
222401.2040	3	1.5	30	3	70	6	15
222401.2050	3	1.5	35	3	75	6	15
222401.2060	3	1.5	40	3	80	6	15
222401.2070	3	1.5	45	3	90	6	15
222401.2080	3	1.5	50	3	100	6	15
222401.2090	3	1.5	60	3	100	6	15
222401.2100	3	1.5	65	3	110	6	15
222401.2110	3	1.5	70	3	110	6	15
222401.2120	4	2	8	4	50	6	15
222401.2130	4	2	10	4	50	6	15
222401.2140	4	2	12	4	50	6	15
222401.2150	4	2	16	4	60	6	15
222401.2160	4	2	20	4	60	6	15
222401.2170	4	2	25	4	65	6	15
222401.2180	4	2	30	4	70	6	15
222401.2190	4	2	35	4	75	6	15
222401.2200	4	2	40	4	80	6	15
222401.2210	4	2	45	4	90	6	15
222401.2220	4	2	50	4	100	6	15
222401.2230	4	2	55	4	100	6	15
222401.2240	4	2	60	4	100	6	15
222401.2250	4	2	65	4	110	6	15
222401.2260	4	2	70	4	110	6	15
222401.2270	5	2.5	20	6	60	6	15
222401.2280	5	2.5	25	6	70	6	15
222401.2290	5	2.5	30	6	75	6	15
222401.2300	5	2.5	40	6	80	6	15
222401.2310	5	2.5	45	6	90	6	15
222401.2320	5	2.5	50	6	100	6	15
222401.2330	5	2.5	60	6	100	6	15
222401.2340	5	2.5	65	6	110	6	15
222401.2350	5	2.5	70	6	110	6	15
222401.2360	6	3	15	10	55	6	-
222401.2370	6	3	30	10	110	6	-
222401.2380	8	4	25	12	60	8	-
222401.2390	8	4	30	12	100	8	-
222401.2400	10	5	30	16	70	10	-
222401.2410	10	5	35	16	100	10	-
222401.2420	12	6	30	18	75	12	-
222401.2430	12	6	40	18	110	12	-

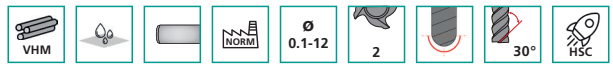
FUTURO







222420 FUTURO SC ball-nose copy milling cutters





Made of solid hard metal, Coated, with cylindrical shank, According to factory standard, Nominal size Ø 0.1 - 12 mm, Number of teeth 2, With full radius, Milling cutter with 30° helix angle, HSC (High-Speed Cutting) milling technology
Secondary application: Steel (ISO-P), Main application: Hardened steel (ISO H), For finishing, For copy milling, For micro milling

Application:
Ball end mills **can be used up to 68 HRC**. Particularly suitable for machining hardened steels.

Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222420.0010	**0.1**	**0.05**	**-**	0.3	40	4	15	222420.0700	**0.8**	**0.4**	**2**	0.8	45	4	15
222420.0020	**0.1**	**0.05**	**-**	0.5	40	4	15	222420.0710	**0.8**	**0.4**	**2**	0.8	50	6	15
222420.0030	**0.2**	**0.1**	**0.5**	0.2	40	4	15	222420.0720	**0.8**	**0.4**	**3**	0.8	45	4	15
222420.0040	**0.2**	**0.1**	**1**	0.2	40	4	15	222420.0730	**0.8**	**0.4**	**3**	0.8	50	6	15
222420.0050	**0.2**	**0.1**	**1.5**	0.2	40	4	15	222420.0740	**0.8**	**0.4**	**4**	0.8	45	4	15
222420.0060	**0.2**	**0.1**	**2**	0.2	40	4	15	222420.0750	**0.8**	**0.4**	**4**	0.8	50	6	15
222420.0070	**0.2**	**0.1**	**2.5**	0.2	40	4	15	222420.0760	**0.8**	**0.4**	**5**	0.8	45	4	15
222420.0080	**0.2**	**0.1**	**3**	0.2	40	4	15	222420.0770	**0.8**	**0.4**	**5**	0.8	50	6	15
222420.0090	**0.3**	**0.15**	**1**	0.3	40	4	15	222420.0780	**0.8**	**0.4**	**6**	0.8	45	4	15
222420.0100	**0.3**	**0.15**	**1.5**	0.3	40	4	15	222420.0790	**0.8**	**0.4**	**6**	0.8	50	6	15
222420.0110	**0.3**	**0.15**	**2**	0.3	40	4	15	222420.0800	**0.8**	**0.4**	**8**	0.8	45	4	15
222420.0120	**0.3**	**0.15**	**2.5**	0.3	40	4	15	222420.0810	**0.8**	**0.4**	**8**	0.8	50	6	15
222420.0130	**0.3**	**0.15**	**3**	0.3	40	4	15	222420.0820	**0.8**	**0.4**	**10**	0.8	45	4	15
222420.0140	**0.3**	**0.15**	**3.5**	0.3	40	4	15	222420.0830	**0.8**	**0.4**	**12**	0.8	45	4	15
222420.0150	**0.3**	**0.15**	**4**	0.3	40	4	15	222420.0840	**0.9**	**0.45**	**4**	0.9	45	4	15
222420.0160	**0.3**	**0.15**	**5**	0.3	40	4	15	222420.0850	**0.9**	**0.45**	**6**	0.9	45	4	15
222420.0170	**0.4**	**0.2**	**1**	0.4	40	4	15	222420.0860	**0.9**	**0.45**	**8**	0.9	45	4	15
222420.0180	**0.4**	**0.2**	**1.5**	0.4	40	4	15	222420.0870	**0.9**	**0.45**	**10**	0.9	50	4	15
222420.0190	**0.4**	**0.2**	**2**	0.4	40	4	15	222420.0880	**0.9**	**0.45**	**12**	0.9	50	4	15
222420.0200	**0.4**	**0.2**	**2.5**	0.4	40	4	15	222420.0890	**1**	**0.5**	**2**	1	45	4	15
222420.0210	**0.4**	**0.2**	**3**	0.4	40	4	15	222420.0900	**1**	**0.5**	**2**	1	50	6	15
222420.0220	**0.4**	**0.2**	**3.5**	0.4	40	4	15	222420.0910	**1**	**0.5**	**3**	1	45	4	15
222420.0230	**0.4**	**0.2**	**4**	0.4	40	4	15	222420.0920	**1**	**0.5**	**3**	1	50	6	15
222420.0240	**0.4**	**0.2**	**4.5**	0.4	40	4	15	222420.0930	**1**	**0.5**	**4**	1	45	4	15
222420.0250	**0.4**	**0.2**	**5**	0.4	40	4	15	222420.0940	**1**	**0.5**	**4**	1	50	6	15
222420.0260	**0.4**	**0.2**	**6**	0.4	40	4	15	222420.0950	**1**	**0.5**	**5**	1	45	4	15
222420.0270	**0.4**	**0.2**	**8**	0.4	40	4	15	222420.0960	**1**	**0.5**	**5**	1	50	6	15
222420.0280	**0.5**	**0.25**	**1**	0.5	45	4	15	222420.0970	**1**	**0.5**	**6**	1	45	4	15
222420.0290	**0.5**	**0.25**	**1**	0.5	50	6	15	222420.0980	**1**	**0.5**	**6**	1	50	6	15
222420.0300	**0.5**	**0.25**	**1.5**	0.5	45	4	15	222420.0990	**1**	**0.5**	**8**	1	45	4	15
222420.0310	**0.5**	**0.25**	**2**	0.5	45	4	15	222420.1000	**1**	**0.5**	**8**	1	50	6	15
222420.0320	**0.5**	**0.25**	**2**	0.5	50	6	15	222420.1010	**1**	**0.5**	**10**	1	50	4	15
222420.0330	**0.5**	**0.25**	**2.5**	0.5	45	4	15	222420.1020	**1**	**0.5**	**10**	1	50	6	15
222420.0340	**0.5**	**0.25**	**3**	0.5	45	4	15	222420.1030	**1**	**0.5**	**12**	1	50	4	15
222420.0350	**0.5**	**0.25**	**3**	0.5	50	6	15	222420.1040	**1**	**0.5**	**12**	1	50	6	15
222420.0360	**0.5**	**0.25**	**3.5**	0.5	45	4	15	222420.1050	**1**	**0.5**	**14**	1	50	4	15
222420.0370	**0.5**	**0.25**	**4**	0.5	45	4	15	222420.1060	**1**	**0.5**	**16**	1	50	4	15
222420.0380	**0.5**	**0.25**	**4**	0.5	50	6	15	222420.1070	**1**	**0.5**	**18**	1	50	4	15
222420.0390	**0.5**	**0.25**	**4.5**	0.5	45	4	15	222420.1080	**1**	**0.5**	**20**	1	50	4	15
222420.0400	**0.5**	**0.25**	**5**	0.5	45	4	15	222420.1090	**1**	**0.5**	**22**	1	60	4	15
222420.0410	**0.5**	**0.25**	**5**	0.5	50	6	15	222420.1100	**1**	**0.5**	**25**	1	60	4	15
222420.0420	**0.5**	**0.25**	**6**	0.5	45	4	15	222420.1110	**1.2**	**0.6**	**4**	1.2	45	4	15
222420.0430	**0.5**	**0.25**	**6**	0.5	50	6	15	222420.1120	**1.2**	**0.6**	**4**	1.2	50	6	15
222420.0440	**0.5**	**0.25**	**8**	0.5	45	4	15	222420.1130	**1.2**	**0.6**	**6**	1.2	45	4	15
222420.0450	**0.5**	**0.25**	**10**	0.5	45	4	15	222420.1140	**1.2**	**0.6**	**6**	1.2	50	6	15
222420.0460	**0.5**	**0.25**	**12**	0.5	45	4	15	222420.1150	**1.2**	**0.6**	**8**	1.2	45	4	15
222420.0470	**0.6**	**0.3**	**1**	0.6	45	4	15	222420.1160	**1.2**	**0.6**	**8**	1.2	50	6	15
222420.0480	**0.6**	**0.3**	**1**	0.6	50	6	15	222420.1170	**1.2**	**0.6**	**10**	1.2	50	4	15
222420.0490	**0.6**	**0.3**	**2**	0.6	45	4	15	222420.1180	**1.2**	**0.6**	**10**	1.2	50	6	15
222420.0500	**0.6**	**0.3**	**2**	0.6	50	6	15	222420.1190	**1.2**	**0.6**	**12**	1.2	50	4	15
222420.0510	**0.6**	**0.3**	**3**	0.6	45	4	15	222420.1200	**1.2**	**0.6**	**12**	1.2	50	6	15
222420.0520	**0.6**	**0.3**	**3**	0.6	50	6	15	222420.1210	**1.2**	**0.6**	**16**	1.2	50	4	15
222420.0530	**0.6**	**0.3**	**4**	0.6	45	4	15	222420.1220	**1.2**	**0.6**	**20**	1.2	50	4	15
222420.0540	**0.6**	**0.3**	**4**	0.6	50	6	15	222420.1230	**1.2**	**0.6**	**24**	1.2	60	4	15
222420.0550	**0.6**	**0.3**	**5**	0.6	45	4	15	222420.1240	**1.4**	**0.7**	**6**	1.4	45	4	15
222420.0560	**0.6**	**0.3**	**5**	0.6	50	6	15	222420.1250	**1.4**	**0.7**	**8**	1.4	45	4	15
222420.0570	**0.6**	**0.3**	**6**	0.6	45	4	15	222420.1260	**1.4**	**0.7**	**12**	1.4	50	4	15
222420.0580	**0.6**	**0.3**	**6**	0.6	50	6	15	222420.1270	**1.4**	**0.7**	**16**	1.4	50	4	15
222420.0590	**0.6**	**0.3**	**8**	0.6	45	4	15	222420.1280	**1.5**	**0.75**	**3**	1.5	45	4	15
222420.0600	**0.6**	**0.3**	**8**	0.6	50	6	15	222420.1290	**1.5**	**0.75**	**3**	1.5	50	6	15
222420.0610	**0.6**	**0.3**	**10**	0.6	45	4	15	222420.1300	**1.5**	**0.75**	**4**	1.5	45	4	15
222420.0620	**0.6**	**0.3**	**12**	0.6	45	4	15	222420.1310	**1.5**	**0.75**	**4**	1.5	50	6	15
222420.0630	**0.6**	**0.3**	**14**	0.6	45	4	15	222420.1320	**1.5**	**0.75**	**6**	1.5	45	4	15
222420.0640	**0.7**	**0.35**	**2**	0.7	45	4	15	222420.1330	**1.5**	**0.75**	**6**	1.5	50	6	15
222420.0650	**0.7**	**0.35**	**4**	0.7	45	4	15	222420.1340	**1.5**	**0.75**	**8**	1.5	45	4	15
222420.0660	**0.7**	**0.35**	**6**	0.7	45	4	15	222420.1350	**1.5**	**0.75**	**8**	1.5	50	6	15
222420.0670	**0.7**	**0.35**	**8**	0.7	45	4	15	222420.1360	**1.5**	**0.75**	**10**	1.5	50	4	15
222420.0680	**0.7**	**0.35**	**10**	0.7	45	4	15	222420.1370	**1.5**	**0.75**	**10**	1.5	50	6	15
222420.0690	**0.7**	**0.35**	**12**	0.7	45	4	15	222420.1380	**1.5**	**0.75**	**12**	1.5	50	4	15

Order ID	d1 mm	r mm	l3 mm	l2 mm	l1 mm	d2 mm	alpha °
222420.1390	**1.5**	**0.75**	**12**	1.5	50	6	15
222420.1400	**1.5**	**0.75**	**14**	1.5	50	4	15
222420.1410	**1.5**	**0.75**	**14**	1.5	50	6	15
222420.1420	**1.5**	**0.75**	**16**	1.5	50	4	15
222420.1430	**1.5**	**0.75**	**16**	1.5	60	6	15
222420.1440	**1.5**	**0.75**	**18**	1.5	50	4	15
222420.1450	**1.5**	**0.75**	**20**	1.5	50	4	15
222420.1460	**1.5**	**0.75**	**22**	1.5	60	4	15
222420.1470	**1.5**	**0.75**	**25**	1.5	60	4	15
222420.1480	**1.5**	**0.75**	**30**	1.5	70	4	15
222420.1490	**1.6**	**0.8**	**6**	1.6	45	4	15
222420.1500	**1.6**	**0.8**	**8**	1.6	45	4	15
222420.1510	**1.6**	**0.8**	**12**	1.6	50	4	15
222420.1520	**1.6**	**0.8**	**16**	1.6	50	4	15
222420.1530	**1.6**	**0.8**	**20**	1.6	50	4	15
222420.1540	**1.8**	**0.9**	**6**	1.8	45	4	15
222420.1550	**1.8**	**0.9**	**8**	1.8	45	4	15
222420.1560	**1.8**	**0.9**	**12**	1.8	50	4	15
222420.1570	**1.8**	**0.9**	**16**	1.8	50	4	15
222420.1580	**1.8**	**0.9**	**20**	1.8	50	4	15
222420.1590	**2**	**1**	**4**	2	45	4	15
222420.1600	**2**	**1**	**4**	2	50	6	15
222420.1610	**2**	**1**	**6**	2	45	4	15
222420.1620	**2**	**1**	**6**	2	50	6	15
222420.1630	**2**	**1**	**8**	2	45	4	15
222420.1640	**2**	**1**	**8**	2	50	6	15
222420.1650	**2**	**1**	**10**	2	50	4	15
222420.1660	**2**	**1**	**10**	2	50	6	15
222420.1670	**2**	**1**	**12**	2	50	4	15
222420.1680	**2**	**1**	**12**	2	50	6	15
222420.1690	**2**	**1**	**14**	2	50	4	15
222420.1700	**2**	**1**	**14**	2	50	6	15
222420.1710	**2**	**1**	**16**	2	50	4	15
222420.1720	**2**	**1**	**16**	2	60	6	15
222420.1730	**2**	**1**	**18**	2	50	4	15
222420.1740	**2**	**1**	**18**	2	60	6	15
222420.1750	**2**	**1**	**20**	2	50	4	15
222420.1760	**2**	**1**	**20**	2	60	6	15
222420.1770	**2**	**1**	**22**	2	60	4	15
222420.1780	**2**	**1**	**25**	2	60	4	15
222420.1790	**2**	**1**	**30**	2	60	4	15
222420.1800	**2.5**	**1.25**	**8**	2.5	45	4	15
222420.1810	**2.5**	**1.25**	**8**	2.5	50	6	15
222420.1820	**2.5**	**1.25**	**10**	2.5	50	4	15
222420.1830	**2.5**	**1.25**	**10**	2.5	50	6	15
222420.1840	**2.5**	**1.25**	**12**	2.5	50	4	15
222420.1850	**2.5**	**1.25**	**12**	2.5	50	6	15
222420.1860	**2.5**	**1.25**	**16**	2.5	50	4	15
222420.1870	**2.5**	**1.25**	**16**	2.5	60	6	15
222420.1880	**2.5**	**1.25**	**20**	2.5	60	4	15
222420.1890	**2.5**	**1.25**	**20**	2.5	60	6	15
222420.1900	**2.5**	**1.25**	**25**	2.5	60	4	15
222420.1910	**2.5**	**1.25**	**30**	2.5	70	4	15
222420.1920	**3**	**1.5**	**6**	3	50	6	15
222420.1930	**3**	**1.5**	**8**	3	50	6	15
222420.1940	**3**	**1.5**	**10**	3	50	6	15
222420.1950	**3**	**1.5**	**12**	3	50	6	15
222420.1960	**3**	**1.5**	**16**	3	60	6	15
222420.1970	**3**	**1.5**	**20**	3	60	6	15
222420.1980	**3**	**1.5**	**25**	3	65	6	15
222420.1990	**3**	**1.5**	**30**	3	70	6	15
222420.2000	**3**	**1.5**	**35**	3	75	6	15
222420.2010	**3**	**1.5**	**40**	3	80	6	15
222420.2020	**3**	**1.5**	**45**	3	90	6	15
222420.2030	**3.5**	**1.75**	**10**	3.5	50	6	15
222420.2040	**3.5**	**1.75**	**15**	3.5	60	6	15
222420.2050	**3.5**	**1.75**	**20**	3.5	60	6	15
222420.2060	**3.5**	**1.75**	**25**	3.5	65	6	15
222420.2070	**3.5**	**1.75**	**30**	3.5	70	6	15
222420.2080	**3.5**	**1.75**	**35**	3.5	75	6	15
222420.2090	**3.5**	**1.75**	**40**	3.5	80	6	15
222420.2100	**4**	**2**	**8**	4	50	6	15
222420.2110	**4**	**2**	**10**	4	50	6	15
222420.2120	**4**	**2**	**12**	4	50	6	15
222420.2130	**4**	**2**	**16**	4	60	6	15
222420.2140	**4**	**2**	**20**	4	60	6	15
222420.2150	**4**	**2**	**25**	4	65	6	15
222420.2160	**4**	**2**	**30**	4	70	6	15
222420.2170	**4**	**2**	**35**	4	75	6	15
222420.2180	**4**	**2**	**40**	4	80	6	15
222420.2190	**4**	**2**	**45**	4	90	6	15
222420.2200	**5**	**2.5**	**16**	6	60	6	15
222420.2210	**5**	**2.5**	**20**	6	60	6	15
222420.2220	**5**	**2.5**	**25**	6	70	6	15
222420.2230	**5**	**2.5**	**30**	6	75	6	15
222420.2240	**5**	**2.5**	**40**	6	80	6	15
222420.2250	**5**	**2.5**	**45**	6	90	6	15
222420.2260	**6**	**3**	**15**	10	55	6	-
222420.2270	**8**	**4**	**25**	12	60	8	-
222420.2280	**10**	**5**	**30**	16	70	10	-
222420.2290	**12**	**6**	**30**	18	75	12	-

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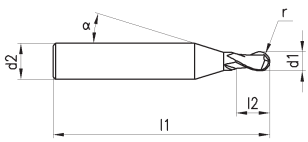


222421 FUTURO SC ball-nose copy milling cutters





Made of solid hard metal, Coated, with cylindrical shank, According to factory standard, Nominal size Ø 0.1 - 12 mm, Number of teeth 2, With full radius, Milling cutter with 30° helix angle, HSC (High-Speed Cutting) milling technology
Secondary application: Steel (ISO-P), Main application: Hardened steel (ISO H), For finishing, For copy milling, For micro milling

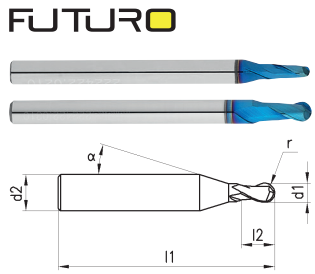
Application:
Ball end mills **can be used up to 68 HRC**. Particularly suitable for machining hardened steels.

Order ID	d1 mm	r mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l2 mm	l1 mm	d2 mm	alpha °
222421.0010	**0.1**	**0.05**	0.1	38	4	15	222421.0260	**1.5**	**0.75**	2.3	40	4	15
222421.0020	**0.1**	**0.05**	0.15	38	4	15	222421.0270	**1.5**	**0.75**	1.5	40	6	15
222421.0030	**0.15**	**0.075**	0.15	38	4	15	222421.0280	**1.5**	**0.75**	2.3	40	6	15
222421.0040	**0.15**	**0.075**	0.2	38	4	15	222421.0290	**2**	**1**	2	45	4	15
222421.0050	**0.2**	**0.1**	0.2	38	4	15	222421.0300	**2**	**1**	3	45	4	15
222421.0060	**0.2**	**0.1**	0.3	38	4	15	222421.0310	**2**	**1**	2	45	6	15
222421.0070	**0.3**	**0.15**	0.3	38	4	15	222421.0320	**2**	**1**	3	45	6	15
222421.0080	**0.3**	**0.15**	0.45	38	4	15	222421.0330	**3**	**1.5**	3	45	4	15
222421.0090	**0.4**	**0.2**	0.4	38	4	15	222421.0340	**3**	**1.5**	4.5	45	4	15
222421.0100	**0.4**	**0.2**	0.6	38	4	15	222421.0350	**3**	**1.5**	3	45	6	15
222421.0110	**0.5**	**0.25**	0.5	38	4	15	222421.0360	**3**	**1.5**	4.5	45	6	15
222421.0120	**0.5**	**0.25**	0.75	38	4	15	222421.0370	**4**	**2**	4	45	4	-
222421.0130	**0.6**	**0.3**	0.6	38	4	15	222421.0380	**4**	**2**	6	45	4	-
222421.0140	**0.6**	**0.3**	0.9	38	4	15	222421.0390	**4**	**2**	4	45	6	15
222421.0150	**0.7**	**0.35**	0.7	38	4	15	222421.0400	**4**	**2**	6	45	6	15
222421.0160	**0.7**	**0.35**	1	38	4	15	222421.0410	**5**	**2.5**	5	50	6	15
222421.0170	**0.8**	**0.4**	0.8	38	4	15	222421.0420	**5**	**2.5**	7.5	50	6	15
222421.0180	**0.8**	**0.4**	1.2	38	4	15	222421.0430	**6**	**3**	6	50	6	-
222421.0190	**0.9**	**0.45**	0.9	38	4	15	222421.0440	**6**	**3**	8	55	6	-
222421.0200	**0.9**	**0.45**	1.3	38	4	15	222421.0450	**8**	**4**	8	50	8	-
222421.0210	**1**	**0.5**	1	40	4	15	222421.0460	**8**	**4**	11	60	8	-
222421.0220	**1**	**0.5**	1.5	40	4	15	222421.0470	**10**	**5**	10	60	10	-
222421.0230	**1**	**0.5**	1	40	6	15	222421.0480	**10**	**5**	13	60	10	-
222421.0240	**1**	**0.5**	1.5	40	6	15	222421.0490	**12**	**6**	12	60	12	-
222421.0250	**1.5**	**0.75**	1.5	40	4	15							

222422 FUTURO SC ball-nose copy milling cutters







Made of solid hard metal, Coated, with cylindrical shank, According to factory standard, Nominal size Ø 0.1 - 12 mm, Number of teeth 2, With full radius, Milling cutter with 30° helix angle, HSC (High-Speed Cutting) milling technology
Secondary application: Steel (ISO-P), Main application: Hardened steel (ISO H), For finishing, For copy milling, For micro milling

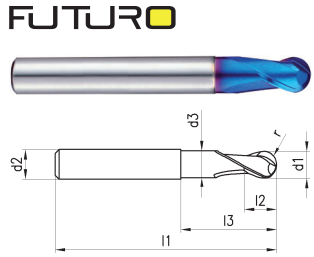
Application:
Ball end mills **can be used up to 68 HRC**. Particularly suitable for machining hardened steels.

Order ID	d1 mm	r mm	l2 mm	l1 mm	d2 mm	alpha °	Order ID	d1 mm	r mm	l2 mm	l1 mm	d2 mm	alpha °
222422.0010	**0.1**	**0.05**	0.2	40	4	15	222422.0210	**2.5**	**1.25**	6	50	4	15
222422.0020	**0.15**	**0.075**	0.3	40	4	15	222422.0220	**2.5**	**1.25**	6	75	6	15
222422.0030	**0.2**	**0.1**	0.4	40	4	15	222422.0230	**3**	**1.5**	8	50	4	15
222422.0040	**0.3**	**0.15**	0.6	40	4	15	222422.0240	**3**	**1.5**	8	60	6	15
222422.0050	**0.4**	**0.2**	0.8	40	4	15	222422.0250	**3**	**1.5**	8	80	6	15
222422.0060	**0.5**	**0.25**	1	45	4	15	222422.0260	**3.5**	**1.75**	8	60	6	15
222422.0070	**0.6**	**0.3**	1.2	45	4	15	222422.0270	**4**	**2**	8	60	4	-
222422.0080	**0.7**	**0.35**	1.5	45	4	15	222422.0280	**4**	**2**	8	80	4	-
222422.0090	**0.8**	**0.4**	2	45	4	15	222422.0290	**4**	**2**	8	70	6	15
222422.0100	**0.9**	**0.45**	2	45	4	15	222422.0300	**4**	**2**	8	90	6	15
222422.0110	**1**	**0.5**	2.5	50	4	15	222422.0310	**5**	**2.5**	10	75	6	15
222422.0120	**1**	**0.5**	2.5	50	6	15	222422.0320	**6**	**3**	10	60	6	-
222422.0130	**1**	**0.5**	2.5	70	6	15	222422.0330	**6**	**3**	12	90	6	-
222422.0140	**1.2**	**0.6**	3	50	4	15	222422.0340	**8**	**4**	12	60	8	-
222422.0150	**1.5**	**0.75**	4	50	4	15	222422.0350	**8**	**4**	14	100	8	-
222422.0160	**1.5**	**0.75**	4	50	6	15	222422.0360	**10**	**5**	15	70	10	-
222422.0170	**1.5**	**0.75**	4	70	6	15	222422.0370	**10**	**5**	18	100	10	-
222422.0180	**2**	**1**	5	50	4	15	222422.0380	**12**	**6**	18	75	12	-
222422.0190	**2**	**1**	5	50	6	15	222422.0390	**12**	**6**	22	110	12	-
222422.0200	**2**	**1**	5	75	6	15							

227000 FUTURO SC ball-nose copy milling cutters







Made of solid hard metal, XIDUR coating, with cylindrical shank, According to factory standard, Nominal size Ø 0.1 - 12 mm, Number of teeth 2, With full radius, Medium-length version, with center cut, Milling cutter with 30° helix angle, HSC (High-Speed Cutting) milling technology
Secondary application: Steel (ISO-P), Main application: Hardened steel (ISO H), For finishing, For copy milling, For micro milling

Order ID	d1 mm	r mm	l2 mm	l3 mm	d2 mm	l1 mm	d3 mm	Cutting tolerance on radius	Order ID	d1 mm	r mm	l2 mm	l3 mm	d2 mm	l1 mm	d3 mm	Cutting tolerance on radius
227000.0100	**0.1**	**0.05**	0.2	-	4	40	-	+/- 0.005	227000.1000	**3**	**1.5**	4	10	6	60	2.85	+/- 0.005
227000.0200	**0.2**	**0.1**	0.3	-	4	40	-	+/- 0.005	227000.1050	**3.5**	**1.75**	4.5	10	6	60	3.35	+/- 0.005
227000.0250	**0.3**	**0.15**	0.5	-	4	40	-	+/- 0.005	227000.1100	**4**	**2**	5	10	6	60	3.85	+/- 0.005
227000.0300	**0.4**	**0.2**	0.6	-	4	40	-	+/- 0.005	227000.1150	**4.5**	**2.25**	5.5	10	6	60	4.35	+/- 0.005
227000.0400	**0.6**	**0.3**	0.9	-	4	40	-	+/- 0.005	227000.1200	**5**	**2.5**	6	12	6	60	4.85	+/- 0.005
227000.0450	**0.7**	**0.35**	1.1	-	4	40	-	+/- 0.005	227000.1300	**6**	**3**	7	15	6	60	5.85	+/- 0.005
227000.0500	**0.8**	**0.4**	1.2	-	4	40	-	+/- 0.005	227000.1400	**6**	**3**	9	30	6	90	5.85	+/- 0.005
227000.0550	**0.9**	**0.45**	1.4	-	4	40	-	+/- 0.005	227000.1500	**8**	**4**	9	15	8	80	7.7	+/- 0.005
227000.0600	**1**	**0.5**	1.5	3	6	50	0.95	+/- 0.005	227000.1600	**8**	**4.0**	12	30	8	100	7.7	+/- 0.005
227000.0700	**1.5**	**0.75**	2	4	6	50	1.45	+/- 0.005	227000.1800	**10**	**5.0**	11	25	10	80	9.7	+/- 0.005
227000.0800	**2**	**1**	2.5	5	6	50	1.95	+/- 0.005	227000.1900	**10**	**5.0**	15	30	10	100	9.7	+/- 0.005
227000.0900	**2.5**	**1.25**	3	7	6	50	2.4	+/- 0.005	227000.2000	**12**	**6.0**	14	25	12	80	11.4	+/- 0.005

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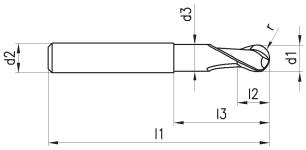


227080 FUTURO SC ball-nose copy milling cutter





Made of solid hard metal, XIDUR coating, with cylindrical shank, According to factory standard, Nominal size Ø 0.2 - 4 mm, Number of teeth 2, With full radius, Long version, with center cut, Milling cutter with 30° helix angle
Secondary application: Steel (ISO-P), Main application: Hardened steel (ISO H), For copy milling, For micro milling

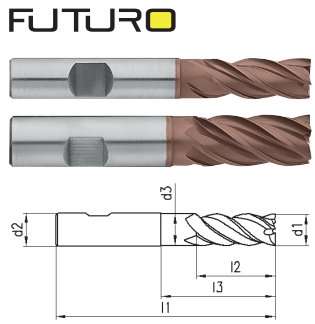
Order ID	**d1** **mm**	**r** **mm**	l2 mm	l3 mm	d2 mm	d3 mm	l1 mm	Cutting tolerance on radius
227080.0010	**0.2**	**0.1**	0.2	1	4	0.18	45	+/- 0.005
227080.0020	**0.3**	**0.15**	0.3	2	4	0.27	45	+/- 0.005
227080.0040	**0.4**	**0.2**	0.4	4	4	0.37	45	+/- 0.005
227080.0050	**0.5**	**0.25**	0.4	2	4	0.45	45	+/- 0.005
227080.0060	**0.5**	**0.25**	0.4	4	4	0.45	45	+/- 0.005
227080.0070	**0.5**	**0.25**	0.4	6	4	0.45	45	+/- 0.005
227080.0080	**0.6**	**0.3**	0.5	2	4	0.55	45	+/- 0.005
227080.0090	**0.6**	**0.3**	0.5	4	4	0.55	45	+/- 0.005
227080.0110	**0.6**	**0.3**	0.5	6	4	0.55	45	+/- 0.005
227080.0120	**0.8**	**0.4**	0.6	2	4	0.75	45	+/- 0.005
227080.0130	**0.8**	**0.4**	0.6	4	4	0.75	45	+/- 0.005
227080.0140	**0.8**	**0.4**	0.6	8	4	0.75	45	+/- 0.005
227080.0150	**1**	**0.5**	0.8	3	4	0.95	45	+/- 0.005
227080.0155	**1**	**0.5**	0.8	4	4	0.95	45	+/- 0.005
227080.0160	**1**	**0.5**	0.8	5	4	0.95	45	+/- 0.005
227080.0170	**1**	**0.5**	0.8	8	4	0.95	45	+/- 0.005
227080.0180	**1**	**0.5**	0.8	10	4	0.95	45	+/- 0.005
227080.0190	**1.2**	**0.6**	1	6	4	1.15	45	+/- 0.005
227080.0200	**1.2**	**0.6**	1	10	4	1.15	45	+/- 0.005
227080.0210	**1.5**	**0.75**	1.2	6	4	1.45	45	+/- 0.005
227080.0220	**1.5**	**0.75**	1.2	10	4	1.45	45	+/- 0.005
227080.0230	**1.5**	**0.75**	1.2	16	4	1.45	45	+/- 0.005
227080.0240	**2**	**1**	1.6	4	4	1.95	45	+/- 0.005
227080.0250	**2**	**1**	1.6	8	4	1.95	45	+/- 0.005
227080.0260	**2**	**1**	1.6	12	4	1.95	50	+/- 0.005
227080.0270	**2**	**1**	1.6	16	4	1.95	50	+/- 0.005
227080.0280	**2**	**1**	1.6	20	4	1.95	55	+/- 0.005
227080.0290	**3**	**1.5**	2.4	12	6	2.85	50	+/- 0.005
227080.0300	**3**	**1.5**	2.4	16	6	2.85	55	+/- 0.005
227080.0310	**3**	**1.5**	2.4	20	6	2.85	60	+/- 0.005
227080.0320	**3**	**1.5**	2.4	30	6	2.85	70	+/- 0.005
227080.0330	**4**	**2**	3.2	12	6	3.85	60	+/- 0.005
227080.0340	**4**	**2**	3.2	16	6	3.85	60	+/- 0.005
227080.0350	**4**	**2**	3.2	20	6	3.85	65	+/- 0.005
227080.0360	**4**	**2**	3.2	30	6	3.85	70	+/- 0.005
227080.0370	**4**	**2**	3.2	40	6	3.85	90	+/- 0.005

216010 FUTURO HSS shoulder/ slot milling cutters









Made of HSS-E CoPM (High Speed Steel, contains approximately 5% to 8% cobalt, powder metallurgy sintered variant), TiAlCN coating, with Weldon shank, Shaft tolerance h6, According to DIN 844, Nominal size Ø 6 - 25 mm, Number of teeth 4 - 6, With protective chamfer, Short version, with center cut, with uneven pitch, End mill with unequal helix angle 35/38°, End mill cutting edge tolerance k10 (according ISO 286 fit system), HPC (High-Performance Cutting) milling technology
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Main application: Superalloys (ISO S), For shoulder milling, For slot milling, For pocket milling

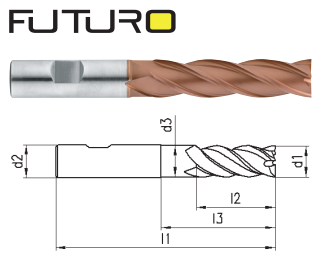
Order ID	**d1**	l2	l3	d3	d2	l1	teeth
	mm	mm	mm	mm	mm	mm	
216010.0100	**6**	13	20	5.7	6	57	4
216010.0200	**8**	19	-	-	10	69	4
216010.0300	**10**	22	31	9.7	10	72	4
216010.0400	**12**	26	37	11.5	12	83	4
216010.0500	**16**	32	43	15.5	16	92	5
216010.0600	**18**	32	43	15.5	16	92	5
216010.0700	**20**	38	53	19.5	20	104	5
216010.0800	**25**	45	64	24	25	121	6

216015 FUTURO HSS shoulder milling cutters









Made of HSS-E PM (High Speed Steel, contains approximately 5% to 8% cobalt, powder metallurgy sintered Variant), TiAlCN coating, with Weldon shank, Shaft tolerance h6, According to DIN 844, Nominal size Ø 6 - 25 mm, Number of teeth 4 - 6, With sharp corner design, Long version, with center cut, Milling cutter with 30° helix angle, End mill cutting edge tolerance k10 (according ISO 286 fit system)
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Main application: Superalloys (ISO S), For trimming / hobbing, For shoulder milling

Order ID	**d1**	l2	l3	d3	d2	l1	teeth
	mm	mm	mm	mm	mm	mm	
216015.0100	**6**	24	31	5.7	6	68	4
216015.0200	**8**	38	-	-	10	88	4
216015.0300	**10**	45	54	9.7	10	95	4
216015.0400	**12**	53	64	11.5	12	110	4
216015.0500	**16**	63	74	15.5	16	123	4
216015.0600	**18**	63	74	15.5	16	123	4
216015.0700	**20**	75	90	19.5	20	141	4
216015.0800	**25**	90	109	24	25	166	6

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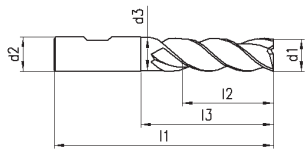
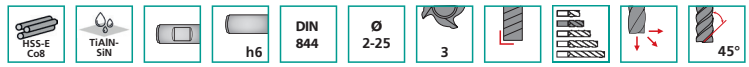


216306 FUTURO HSS shoulder/ slot milling cutters

Aluminium





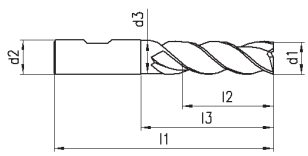


Made of HSS-E Co8 (High Speed Steel, contains approximately 8% cobalt), TiAlN-SiN coating, with Weldon shank, Shaft tolerance h6, According to DIN 844, Nominal size Ø 2 - 25 mm, Number of teeth 3, With sharp corner design, Short version, with center cut, Milling cutter with 45° helix angle, End mill cutting tolerance e8 (according to ISO 286 fit system)
Secondary application: Steel (ISO-P), Main application: Non-ferrous metals (ISO N), For shoulder milling, For slot milling, For pocket milling

Order ID	**d1** **mm**	l2 mm	l3 mm	d3 mm	d2 mm	l1 mm	Order ID	**d1** **mm**	l2 mm	l3 mm	d3 mm	d2 mm	l1 mm
216306.0100	**2**	7	-	-	6	51	216306.1600	**9.5**	19	-	-	10	72
216306.0200	**2.5**	8	-	-	6	52	216306.1700	**10**	22	31	9.7	10	72
216306.0300	**3**	8	-	-	6	52	216306.1800	**11**	22	-	-	12	79
216306.0400	**3.5**	11	-	-	6	55	216306.1900	**12**	26	37	11.5	12	83
216306.0500	**4**	11	-	-	6	55	216306.2000	**13**	26	37	11.5	12	83
216306.0600	**4.5**	11	-	-	6	57	216306.2100	**14**	26	37	11.5	12	83
216306.0700	**5**	13	-	-	6	57	216306.2200	**15**	26	37	11.5	12	83
216306.0800	**5.5**	13	-	-	6	57	216306.2300	**16**	32	43	15.5	16	92
216306.0900	**6**	13	20	5.7	6	57	216306.2400	**17**	32	43	15.5	16	92
216306.1000	**6.5**	16	-	-	10	66	216306.2500	**18**	32	43	15.5	16	92
216306.1100	**7**	16	-	-	10	66	216306.2600	**19**	32	43	15.5	16	92
216306.1200	**7.5**	16	-	-	10	66	216306.2700	**20**	38	53	19.5	20	104
216306.1300	**8**	19	-	-	10	69	216306.2800	**22**	38	53	19.5	20	104
216306.1400	**8.5**	19	-	-	10	69	216306.2900	**25**	45	64	24	25	121
216306.1500	**9**	19	-	-	10	69							

FUTURO





216308 FUTURO HSS shoulder/ slot milling cutters

Aluminium







Made of HSS-E Co8 (High Speed Steel, contains approximately 8% cobalt), TiAlN-SiN coating, with Weldon shank, Shaft tolerance h6, According to DIN 844, Nominal size Ø 2 - 25 mm, Number of teeth 3, With sharp corner design, Long version, with center cut, Milling cutter with 45° helix angle, End mill cutting tolerance e8 (according to ISO 286 fit system)
Secondary application: Steel (ISO-P), Main application: Non-ferrous metals (ISO N), For shoulder milling, For slot milling, For pocket milling

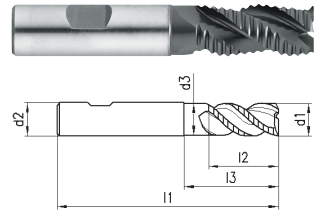
Order ID	**d1** **mm**	l2 mm	l3 mm	d3 mm	d2 mm	l1 mm	Order ID	**d1** **mm**	l2 mm	l3 mm	d3 mm	d2 mm	l1 mm
216308.0100	**2**	10	-	-	6	54	216308.0900	**10**	45	54	9.7	10	95
216308.0200	**3**	12	-	-	6	56	216308.1000	**12**	53	64	11.5	12	110
216308.0300	**4**	19	-	-	6	63	216308.1100	**14**	53	64	11.5	12	110
216308.0400	**5**	24	-	-	6	68	216308.1200	**16**	63	74	15.5	16	123
216308.0500	**6**	24	31	5.7	6	68	216308.1300	**18**	63	74	15.5	16	123
216308.0600	**7**	30	-	-	10	80	216308.1400	**20**	75	90	19.5	20	141
216308.0700	**8**	38	-	-	10	88	216308.1500	**22**	75	90	19.5	20	141
216308.0800	**9**	38	-	-	10	88	216308.1600	**25**	90	109	24	25	166

216302 FUTURO HSS shoulder/ slot milling cutters

Aluminium







Made of HSS-E Co8 (High Speed Steel, contains approximately 8% cobalt), TiAlN-SiN coating, with Weldon shank, Shaft tolerance h6, According to DIN 844, Nominal size Ø 8 - 25 mm, Number of teeth 3, Short version, with center cut, Milling cutter with 40° helix angle, End mill cutting edge tolerance k12 (according ISO 286 fit system)
Secondary application: Steel (ISO-P), Main application: Non-ferrous metals (ISO N), For shoulder milling, For slot milling, For pocket milling

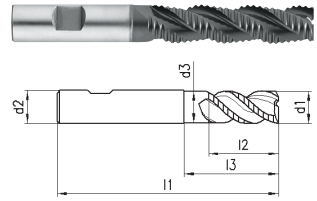
Order ID	**d1** mm	l2 mm	l3 mm	d3 mm	d2 mm	l1 mm	Order ID	**d1** mm	l2 mm	l3 mm	d3 mm	d2 mm	l1 mm
216302.0100	**8**	19	-	-	10	69	216302.0700	**14**	26	37	11.5	12	83
216302.0200	**9**	19	-	-	10	69	216302.0800	**15**	26	37	11.5	12	83
216302.0300	**10**	22	31	9.7	10	72	216302.0900	**16**	32	43	15.5	16	92
216302.0400	**11**	22	33	9.7	12	79	216302.1000	**18**	32	43	15.5	16	92
216302.0500	**12**	26	37	11.5	12	83	216302.1100	**20**	38	53	19.5	20	104
216302.0600	**13**	26	37	11.5	12	83	216302.1200	**25**	45	64	24	25	121

216304 FUTURO HSS shoulder milling cutters

Aluminium







Made of HSS-E Co8 (High Speed Steel, contains approximately 8% cobalt), TiAlN-SiN coating, with Weldon shank, Shaft tolerance h6, According to DIN 844, Nominal size Ø 8 - 25 mm, Number of teeth 3, Long version, with center cut, Milling cutter with 40° helix angle, End mill cutting edge tolerance k12 (according ISO 286 fit system)
Secondary application: Steel (ISO-P), Main application: Non-ferrous metals (ISO N), For trimming / hobbing, For shoulder milling

Order ID	**d1** mm	l2 mm	l3 mm	d3 mm	d2 mm	l1 mm
216304.0100	**8**	38	-	-	10	88
216304.0200	**10**	45	54	9.7	10	95
216304.0300	**12**	53	64	11.5	12	110
216304.0400	**14**	53	64	11.5	12	110
216304.0500	**16**	63	74	15.5	16	123
216304.0600	**18**	63	74	15.5	16	123
216304.0700	**20**	75	90	19.5	20	141
216304.0800	**25**	90	109	24	25	166

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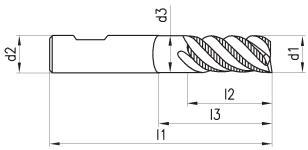


216346 FUTURO HSS shoulder/ slot milling cutters

HSS-E PM | TiAlCN | h6 | DIN 844 | Ø 6-32 | 4-6 | 30°

k12 | HPC

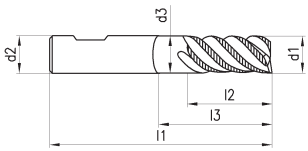
P | M | K | N | S | H | 0

Made of HSS-E PM (High Speed Steel, contains approximately 5% to 8% cobalt, powder metallurgy sintered Variant), TiAlCN coating, with Weldon shank, Shaft tolerance h6, According to DIN 844, Nominal size Ø 6 - 32 mm, Number of teeth 4 - 6, With protective chamfer, Short version, with center cut, Milling cutter with 30° helix angle, End mill cutting edge tolerance k12 (according ISO 286 fit system), HPC (High-Performance Cutting) milling technology
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Main application: Superalloys (ISO S), For shoulder milling, For slot milling, For pocket milling

Order ID	**d1** **mm**	l2 mm	l3 mm	d3 mm	d2 mm	l1 mm	teeth
216346.0100	**6**	13	20	5.7	6	57	4
216346.0200	**7**	16	-	-	10	66	4
216346.0300	**8**	19	-	-	10	69	4
216346.0400	**9**	19	-	-	10	69	4
216346.0500	**10**	22	31	9.7	10	72	5
216346.0600	**12**	26	37	11.5	12	83	5
216346.0700	**14**	26	37	11.5	12	83	5
216346.0800	**16**	32	43	15.5	16	92	5
216346.0900	**18**	32	43	15.5	16	92	5
216346.1000	**20**	38	53	19.5	20	104	5
216346.1100	**22**	38	53	19.5	20	104	5
216346.1200	**25**	45	64	24	25	121	5
216346.1300	**28**	45	64	24	25	121	5
216346.1400	**30**	45	64	24	25	121	5
216346.1500	**32**	53	77	31	32	133	6

FUTURO





216347 FUTURO HSS shoulder milling cutters

HSS-E PM | TiAlCN | h6 | DIN 844 | Ø 6-32 | 4-6 | 30°

k12

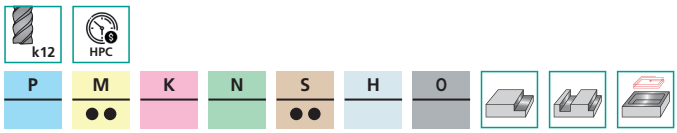
P | M | K | N | S | H | 0

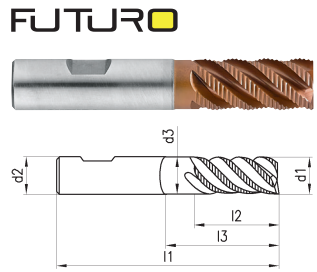
Made of HSS-E PM (High Speed Steel, contains approximately 5% to 8% cobalt, powder metallurgy sintered Variant), TiAlCN coating, with Weldon shank, Shaft tolerance h6, According to DIN 844, Nominal size Ø 6 - 32 mm, Number of teeth 4 - 6, With protective chamfer, Long version, with center cut, Milling cutter with 30° helix angle, End mill cutting edge tolerance k12 (according ISO 286 fit system)
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Main application: Superalloys (ISO S), For trimming / hobbing, For shoulder milling

Order ID	**d1** **mm**	l2 mm	l3 mm	d3 mm	d2 mm	l1 mm	teeth
216347.0100	**6**	24	28	5.7	6	68	4
216347.0200	**8**	38	-	-	10	88	4
216347.0300	**10**	45	54	9.7	10	95	4
216347.0400	**12**	53	64	11.5	12	110	4
216347.0500	**14**	53	-	-	12	110	4
216347.0600	**16**	63	74	15.5	16	123	4
216347.0700	**18**	63	-	-	16	123	4
216347.0800	**20**	75	90	19.5	20	141	4
216347.0900	**25**	90	109	24	25	166	5
216347.1000	**32**	106	125	31	32	186	6

216351 FUTURO HSS shoulder/ slot milling cutters





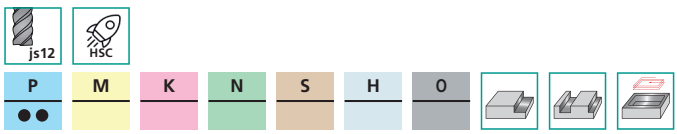


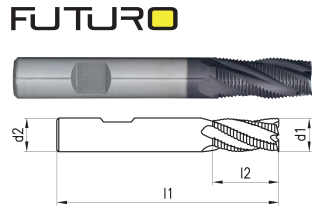
Made of HSS-E CoPM (High Speed Steel, contains approximately 5% to 8% cobalt, powder metallurgy sintered variant), TiAlCN coating, with Weldon shank, Shaft tolerance h6, According to DIN 844, Nominal size Ø 6 - 25 mm, Number of teeth 4 - 5, With protective chamfer, Short version, with center cut, Milling cutter with 45° helix angle, End mill cutting edge tolerance k12 (according ISO 286 fit system), HPC (High-Performance Cutting) milling technology
Main application: Stainless steel (ISO M), Main application: Superalloys (ISO S), For shoulder milling, For slot milling, For pocket milling

Order ID	**d1** **mm**	l2 mm	l3 mm	d3 mm	d2 mm	l1 mm	teeth
216351.0100	**6**	13	20	5.7	6	57	4
216351.0200	**7**	16	-	-	10	66	4
216351.0300	**8**	19	-	-	10	69	4
216351.0400	**9**	19	-	-	10	69	4
216351.0500	**10**	22	31	9.7	10	72	4
216351.0600	**12**	26	37	11.5	12	83	4
216351.0700	**14**	26	37	11.5	12	83	4
216351.0800	**16**	32	43	15.5	16	92	5
216351.0900	**18**	32	43	15.5	16	92	5
216351.1000	**20**	38	53	19.5	20	104	5
216351.1100	**22**	38	53	19.5	20	104	5
216351.1200	**25**	45	64	24	25	121	5

216440 FUTURO HSS shoulder/ slot milling cutters





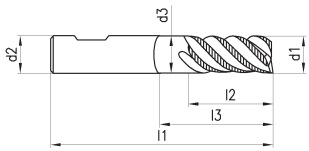


Made of HSS-PM (High Speed Steel, powder metallurgy sintered variant), TiAlN coating, with Weldon shank, Shaft tolerance h6, According to DIN 844K, Nominal size Ø 6 - 20 mm, Number of teeth 3 - 5, With protective chamfer, Short version, up to Ø20 mm with center cut, Milling cutter with 30° helix angle, End mill cutting edge tolerance js12 (according to ISO 286 fit system), HSC (High-Speed Cutting) milling technology
Main application: Steel (ISO-P), For shoulder milling, For slot milling, For pocket milling

Order ID	**d1** **mm**	l2 mm	d2 mm	l1 mm	teeth
216440.0100	**6**	13	6	57	3
216440.0300	**8**	19	10	69	3
216440.0500	**10**	22	10	72	4
216440.0600	**12**	26	12	83	4
216440.0700	**14**	26	12	83	4
216440.0800	**16**	32	16	92	4
216440.0900	**18**	32	16	92	4
216440.1000	**20**	38	20	104	4

FUTURO





216450 FUTURO HSS shoulder/ slot milling cutters

HSS-PM | TiAlN | h6 | DIN 844 | Ø 4-25 | 3-6 | 45°

P	M	K	N	S	H	0
O	O	O				

Made of HSS-PM (High Speed Steel, powder metallurgy sintered variant), TiAlN coating, with Weldon shank, Shaft tolerance h6, According to DIN 844, Nominal size Ø 4 - 25 mm, Number of teeth 3 - 6, With protective chamfer, Short version, with center cut, Milling cutter with 45° helix angle
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), For shoulder milling, For slot milling, For pocket milling

Order ID	**d1 mm**	l2 mm	d2 mm	l1 mm	d3 mm	l3 mm	teeth
216450.0100	**4**	11	6	57	-	-	3
216450.0200	**5**	13	6	57	-	-	4
216450.0300	**6**	13	6	57	-	-	4
216450.0400	**7**	16	10	66	-	-	4
216450.0500	**8**	19	10	69	-	-	4
216450.0600	**9**	19	10	69	-	-	4
216450.0700	**10**	22	10	72	9.5	31	4
216450.0800	**12**	26	12	83	11.5	37	4
216450.0900	**14**	26	12	83	-	-	5
216450.1000	**16**	32	16	92	15	44	5
216450.1100	**18**	32	16	92	-	-	6
216450.1200	**20**	38	20	104	19	54	6
216450.1300	**25**	45	25	121	24	63	6

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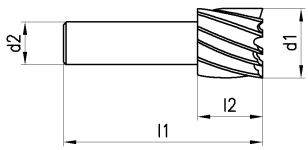


216017 FUTURO HSS shoulder milling cutters

HSS-E Co8 | ALCRONA | h6 | NORM | Ø 16-50 | 4-8 | 30° | k10 | BLUE

P	M	K	N	S	H	0
●●	●●	O		O		

Made of HSS-E Co8 (High Speed Steel, contains approximately 8% cobalt), ALCRONA coating, with Weldon shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 16 - 50 mm, Number of teeth 4 - 8, without center cut, Milling cutter with 30° helix angle, End mill cutting edge tolerance k10 (according ISO 286 fit system), Color Blue
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Superalloys (ISO S), For trimming / hobbing, For shoulder milling, For inclined plunging

Type N, coated with stepped shank.

Particularly suitable for narrow spaces.

Order ID	**d1 mm**	l2 mm	l1 mm	d2 mm	teeth
216017.0100	**16**	15	60	10	4
216017.0200	**20**	15	65	12	4
216017.0300	**25**	20	75	16	5
216017.0400	**30**	30	90	20	6
216017.0500	**32**	30	90	20	6
216017.0600	**35**	30	90	20	6
216017.0700	**40**	32	95	25	8
216017.0800	**50**	36	100	32	8

239000 FUTURO High-feed end mill



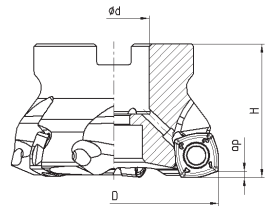
For machining with indexable insert systems

High-feed end mill, nickel-plated **with internal cooling** for maximum stock removal rates Designed for high stability, therefore reduced vibration, minimum power consumption and soft cutting.

Package content: Screwdriver not included.

Order ID	D mm	H mm	d mm	teeth	ap mm	Turning plate
239000.0100	**50**	40	22	4	2	XOLT
239000.0150	**52**	40	22	5	2	XOLT
239000.0200	**63**	40	22	5	2	XOLT
239000.0300	**80**	50	27	7	2	XOLT





239010 FUTURO Indexable insert XOLT

P	M	K	N	S	H	O
●●	●●			●●		

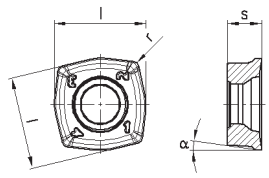
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Superalloys (ISO S)

Types:
FPM35HCP: for steel
MS35C: for stainless steel and superalloys.

Order ID	Code	Type	l mm	r mm	s mm	Alpha	ap mm	P	M	K	S
239010.0101	**XOLT 130410SR-MP FPM-35HCP**	**FPM35HCP**	13	1	4.76	9 °					
239010.0200	**XOLT 130410 MR**	**MS35C**	13	1	4.76	9 °	2				







239050 FUTURO Corner cutter 90°



For machining with indexable insert systems

High-precision corner cutter 90° nickel-plated **with internal cooling** and high stock removal rates even in less powerful machining centres.

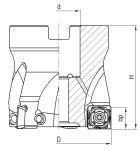
Package content: Screwdriver not included.

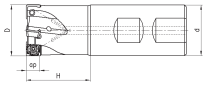
Order ID	D mm	H mm	d mm	teeth	ap mm	Turning plate
239050.0100	**25**	32	25	3	8	SD..
239050.0200	**32**	40	32	4	8	SD..
239050.0300	**40**	40	16	5	8	SD..
239050.0400	**50**	40	22	6	8	SD..
239050.0500	**63**	40	22	7	8	SD..
239050.0600	**80**	50	27	9	8	SD..
239050.0700	**100**	50	32	10	8	SD..





Ø25..32





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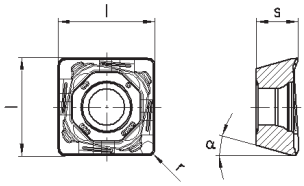


239060 FUTURO Indexable insert SD..

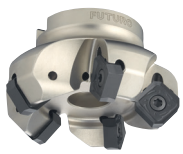
P	M	K	N	S	H	0
●●	●●	●●	●●	●●		

Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N), Main application: Superalloys (ISO S)

Types:
FK15HCC: for cast materials
FMP40HCP: for stainless steels
FN15HW: for non-ferrous materials.
FPM35HCP: for steel
MS35C: for stainless steel and superalloys.

Order ID	Code	Type	l mm	r mm	s mm	Alpha	ap mm	P	M	K	N	S
239060.0100	**SDKT 09T308 MM**	**MS35C**	9	0.8	3.97	15 °	8					
239060.0201	**SDKT 09T308SR-MM FMP40HCP**	**FMP40HCP**	9	0.8	3.97	15 °						
239060.0301	**SDKT 09T308SR-MP FPM35HCP**	**FPM35HCP**	9	0.8	3.97	15 °						
239060.0401	**SDKT 09T308SR-MK FK15HCC**	**FK15HCC**	9	0.8	3.97	15						
239060.0501	**SDHT 09T308FR-MN**	**FN15HW**	9	0.8	3.97	20°	8					

FUTURO



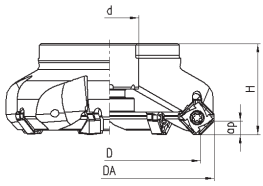
239100 FUTURO Face milling cutter 45°



For machining with indexable insert systems

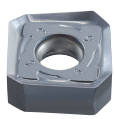
Face mill 45° nickel-plated **with internal cooling** and 8 effective cutting edges and rectangular, double-sided, positive indexable inserts.
Application
Face milling and roughing

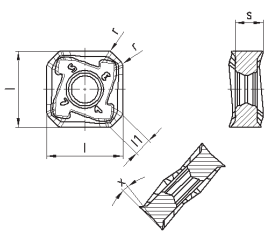
Package content: Screwdriver not included.



Order ID	D mm	Da mm	H mm	d mm	teeth	ap mm	Turning plate
239100.0100	**40**	55	45	16	4	6.5	SOKU15...
239100.0200	**50**	65	45	22	4	6.5	SOKU15...
239100.0300	**63**	78	45	22	5	6.5	SOKU15...
239100.0400	**80**	95	50	27	6	6.5	SOKU15...
239100.0500	**100**	115	50	32	7	6.5	SOKU15...
239100.0600	**125**	140	63	40	8	6.5	SOKU15...

FUTURO





239110 FUTURO Indexable insert SOKU

P	M	K	N	S	H	0
●●	●●	●●		●●		

Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Main application: Superalloys (ISO S)

Types:
FPM35HCP: for steel
K15C: for cast iron.
MS35C: for stainless steel and superalloys.
PK25C: for steel and cast iron.

Order ID	Code	Type	l mm	l1 mm	r mm	s mm	ap mm	P	M	K	S
239110.0100	**SOKU 1505 MM**	**K15C**	15.875	3.65	1	6.03	6.5				
239110.0200	**SOKU 1505 MM**	**PK25C**	15.875	3.65	1	6.03	6.5				
239110.0300	**SOKU 1505 MM**	**MS35C**	15.875	3.65	1	6.03	6.5				
239110.0401	**SOKU 1505AOER-MP FPM35HCP**	**FPM35HCP**	15.875	3.65	1	6.03					

239150 FUTURO Face milling cutter 45° Hexagon



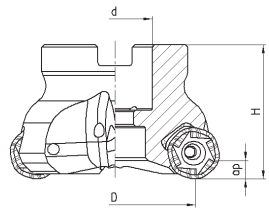
For machining with indexable insert systems

Face milling cutter 45° hexagon, nickel-plated **with internal cooling**, 12 effective cutting edges with double-sided and postive indexable inserts. Suitable for cutting depths up to 4.5 mm.

Package content: Screwdriver not included.

Order ID	**D** **mm**	H mm	d mm	teeth	ap mm	Turning plate
239150.0100	**40**	40	16	4	4.5	HOKU08...
239150.0200	**50**	40	22	4	4.5	HOKU08...
239150.0300	**63**	40	22	5	4.5	HOKU08...
239150.0400	**80**	50	27	6	4.5	HOKU08...





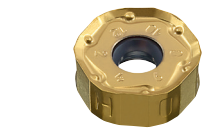
239160 FUTURO Indexable insert HOKU

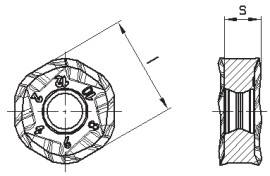
P	M	K	N	S	H	O
●●	●●	●●				

Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Cast materials (ISO K)

Order ID	**Code**	**Type**	l mm	s mm	ap mm	P	M	K	S
239160.0100	**HOKU 0806 MR**	**K15C**	14.7	5.3	4.5				
239160.0200	**HOKU 0806 MM**	**PK25C**	14.7	5.3	4.5				
239160.0400	**HOKU 0806 MM**	**P35P**	14.7	5.3	4.5				
239160.0500	**HOKU 0806 MM**	**K15C**	14.7	5.3	4.5				
239160.0600	**HOKU 0806 MM**	**M35P**	14.7	5.3	4.5				







239200 FUTURO Face milling cutter 45°



For machining with indexable insert systems

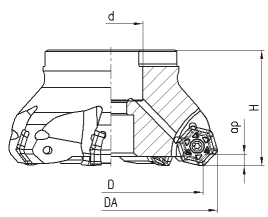
Unequally divided face milling cutter 45° nickel-plated **with internal cooling**, 6 effective cutting edges and positive indexable inserts. Suitable for cutting depths up to 4.5 mm.

Package content: Screwdriver not included.

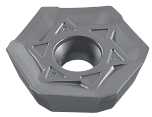
Order ID	**D** **mm**	Da mm	H mm	d mm	teeth	ap mm	Turning plate
239200.0100	**40**	52.2	40	16	4	4.5	HPKT06..
239200.0200	**50**	62.2	40	22	5	4.5	HPKT06..
239200.0300	**63**	75.2	40	22	6	4.5	HPKT06..
239200.0400	**80**	92.2	50	27	7	4.5	HPKT06..
239200.0500	**100**	112.2	50	32	9	4.5	HPKT06..

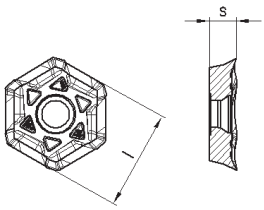






FUTURO





239210 FUTURO Indexable insert HPKT

P	M	K	N	S	H	O
●●	●●	●●	●●	●●		○

Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N), Main application: Superalloys (ISO S), Secondary application: Plastics and other materials (ISO O)

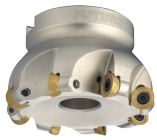
Types:
FMS35HCC: for stainless steels
FN15HW: for non-ferrous materials.
FPM35HCP: for steel
K15C: for cast iron.
PK25C: for steel and cast iron.
PK35P: for steel.

Order ID	Code	Type	l mm	s mm	ap mm	P	M	K	N	S	O	M	F
239210.0200	**HPKT 0604 MM**	**PK25C**	16.2	4.5	4.5	■		■					
239210.0301	**HPKT 0604AOER-MP FPM35HCP**	**FPM35HCP**	16.2	4.5		■	□						
239210.0400	**HPKT 0604 MM**	**K15C**	16.2	4.5	4.5			■					
239210.0500	**HPKT 0604 MM**	**PK35P**	16.2	4.5	4.5	■		■					
239210.0601	**HPKT 0604AOER-MM FMS35HCC**	**FMS35HCC**	16.2	4.5		□	□			■			
239210.0701	**HPCT 0604 MM**	**FN15HW**	16.2	4.5	4.5			□	■		□	●	●

FUTURO

239250 FUTURO Round insert cutter

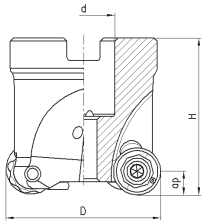




For machining with indexable insert systems

Round insert cutter nickel plated **with internal cooling** for multi-purpose machining.

Package content: Screwdriver not included.



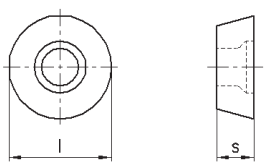
Order ID	D mm	H mm	d mm	teeth	ap mm	Turning plate
239250.0100	**40**	40	16	4	6	RPMX/RPHX12..
239250.0200	**50**	40	22	5	6	RPMX/RPHX12..
239250.0300	**63**	40	22	6	6	RPMX/RPHX12..
239250.0400	**80**	50	27	8	6	RPMX/RPHX12..
239250.0500	**100**	50	32	10	6	RPMX/RPHX12..

FUTURO

239260 FUTURO Indexable insert RPMX / RPHX

P	M	K	N	S	H	O
●●	●●	●●	●●	●●		





Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N), Main application: Superalloys (ISO S)

Types:
FMP40HCP: for stainless steels
FPM35HCP: for steel
K15C: for cast iron.
MS35C: for stainless steel and superalloys.
N15: Uncoated, for non-ferrous materials.
S40C: for superalloys.

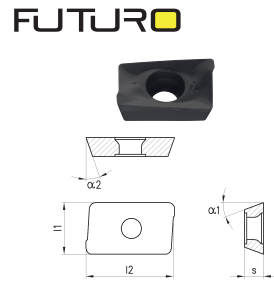
Order ID	Code	Type	l mm	s mm	ap mm	P	M	K	N	S
239260.0101	**RPMX 1204M0-MM FMP40HCP**	**FMP40HCP**	12	4		□	□			□
239260.0201	**RPMX 1204M0-MP FPM35HCP**	**FPM35HCP**	12	4		■	□			
239260.0300	**RPMX 1204 MM**	**K15C**	12	4	6			■		
239260.0400	**RPHX 1204 MM**	**N15**	12	4	6				■	
239260.0500	**RPHX 1204 MM**	**MS35C**	12	4	6		□			■
239260.0600	**RPHX 1204 MM**	**S40C**	12	4	6					■

240122 FUTURO indexable milling insert APKT

P	M	K	N	S	H	O
●●	●●	●●		●●		

Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Main application: Superalloys (ISO S)

Designs:
FK15HCC:
FM40HCP:
FMS35HCC:
FP30HCC:
FP35HCP:



Order ID	Code	Type	l1 mm	l2 mm	s mm	r mm	a 2 °	Coating	ap_{max} mm	Stiffness	P	M	K	S
240122.0100	**APKT 1003PDER-MP**	**FP30HCC**	6.75	10	3.5	0.5	11	CVD	9	30				
240122.0200	**APKT 1003PDER-MP**	**FP35HCP**	6.75	10	3.5	0.5	11	PVD	9	35				
240122.0300	**APKT 1003PDER-MM**	**FMS35HCC**	6.75	10	3.5	0.5	11	CVD	9	35				
240122.0500	**APKT 1003PDER-MM**	**FM40HCP**	6.75	10	3.5	0.5	11	PVD	9	40				
240122.0600	**APKT 1003PDER-MK**	**FK15HCC**	6.75	10	3.5	0.5	11	CVD	9	15				

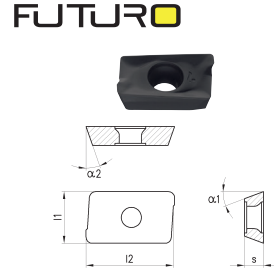
You can find all dimensions, sizes and versions in the ToolShop at www.brw.ch

240123 FUTURO indexable milling insert APKT

P	M	K	N	S	H	O
●●	●●	●●		●●		

Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Main application: Superalloys (ISO S)

Designs:
FK15HCC:
FM30HCP:
FM40HCP:
FMS35HCC:
FP30HCC:
FP35HCP:



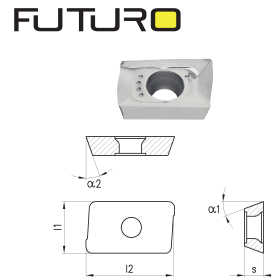
Order ID	Code	Type	l1 mm	l2 mm	s mm	r mm	a 2 °	Coating	ap_{max} mm	Stiffness	P	M	K	S
240123.0100	**APKT 1604PDER-MP**	**FP30HCC**	9.5	16	5.25	0.85	11	CVD	15	30				
240123.0200	**APKT 1604PDER-MP**	**FP35HCP**	9.5	16	5.25	0.85	11	PVD	15	35				
240123.0300	**APKT 1604PDER-MM**	**FMS35HCC**	9.5	16	5.25	0.85	11	CVD	15	35				
240123.0400	**APKT 1604PDER-MM**	**FM30HCP**	9.5	16	4.76	0.8	11	PVD	15	30				
240123.0500	**APKT 1604PDER-MM**	**FM40HCP**	9.5	16	5.25	0.85	11	PVD	15	40				
240123.0600	**APKT 1604PDER-MK**	**FK15HCC**	9.5	16	5.25	0.85	11	CVD	15	15				

240124 FUTURO indexable milling insert APHT

P	M	K	N	S	H	O
			●●			

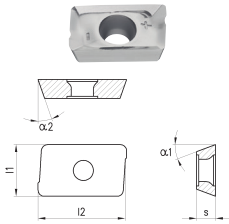
Main application: Non-ferrous metals (ISO N)

Designs:
FN15HW:



Order ID	Code	Type	l1 mm	l2 mm	s mm	r mm	a 1 °	a 2 °	ap_{max} mm	Stiffness	N
240124.0100	**APHT 100302FR-MN**	**FN15HW**	6.75	10	3	0.2		11	9	15	
240124.0200	**APHT 100304FR-MN**	**FN15HW**	6.75	10	3	0.4		11	9	15	
240124.0300	**APHT 100308FR-MN**	**FN15HW**	6.75	10	3	0.8		11	9	15	

FUTURO



240125 FUTURO indexable milling insert APHT

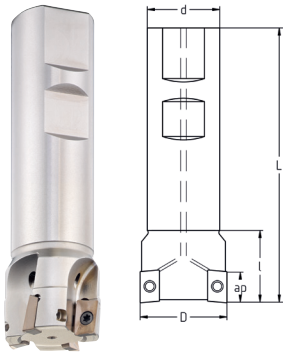
P	M	K	N	S	H	O
			●●			

Main application: Non-ferrous metals (ISO N)

Designs:
FN15HW:

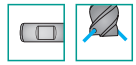
Order ID	Code	Type	l1 mm	l2 mm	s mm	r mm	a 2 °	ap_{max} mm	Stiffness	N
240125.0100	**APHT 1604PDFR-MN**	**FN15HW**	9.5	16	4.65	0.85	11	15	15	

FUTURO



240115 FUTURO Square-shoulder milling cutter 90°

for AP..1003





with Weldon shank, Milling with radial internal cooling
For machining with indexable insert systems

Appropriate accessories:
425276.0400 Screwdriver for TORX® screws NERIOX T8 x 60
432070.0300 Torque screwdriver WERA for TORX screws TX 8 1.2 Nm

Corresponding inserts:
240122 FUTURO indexable milling insert APKT
240124 FUTURO indexable milling insert APHT

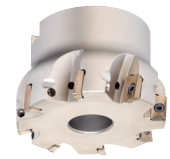
Order ID	**D mm**	d mm	L m	l mm	max ramping angle °	teeth	Turning plate	ap mm
240115.0020	**10**	16	80	28	11.0	1	AP..1003	9
240115.0040	**11**	16	80	28	11.0	1	AP..1003	9
240115.0060	**12**	16	80	28	9.0	1	AP..1003	9
240115.0080	**13**	16	80	28	8.5	1	AP..1003	9
240115.0100	**14**	16	80	28	8.0	1	AP..1003	9
240115.0120	**15**	16	85	28	4.0	2	AP..1003	9
240115.0140	**15.7**	16	85	28	3.5	2	AP..1003	9
240115.0160	**16**	16	85	37	3.5	2	AP..1003	9
240115.0180	**17**	16	85	37	3.0	2	AP..1003	9
240115.0200	**18**	20	90	40	2.5	2	AP..1003	9
240115.0220	**19.5**	20	90	40	1.5	3	AP..1003	9
240115.0240	**20**	20	90	40	1.5	3	AP..1003	9
240115.0260	**22**	25	95	49	1.5	3	AP..1003	9
240115.0280	**24.7**	25	95	49	0.9	4	AP..1003	9
240115.0300	**25**	25	105	49	0.9	3	AP..1003	9
240115.0320	**25**	25	105	49	0.9	4	AP..1003	9
240115.0340	**28**	25	105	49	0.9	4	AP..1003	9
240115.0360	**30**	25	105	49	0.8	4	AP..1003	9
240115.0380	**31.7**	25	110	54	0.6	5	AP..1003	9
240115.0400	**32**	25	110	54	0.6	5	AP..1003	9

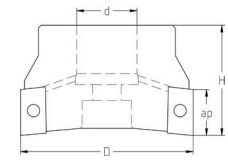
240116 FUTURO Square-shoulder milling cutter 90°

for AP..1003









Milling with radial internal cooling
For machining with indexable insert systems

Appropriate accessories:
425276.0400 Screwdriver for TORX® screws NERIOX T8 x 60
432070.0300 Torque screwdriver WERA for TORX screws TX 8 1.2 Nm

Corresponding inserts:
240122 FUTURO indexable milling insert APKT
240124 FUTURO indexable milling insert APHT

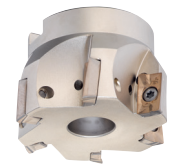
Order ID	**D** **mm**	d mm	H mm	teeth	Turning plate	ap mm
240116.0020	**40**	16	40	6	AP..1003	9
240116.0040	**50**	22	40	7	AP..1003	9
240116.0060	**63**	22	40	8	AP..1003	9
240116.0080	**80**	27	50	11	AP..1003	9
240116.0100	**100**	32	50	12	AP..1003	9

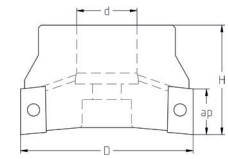
240117 FUTURO Square-shoulder milling cutter 90°

for AP..16..









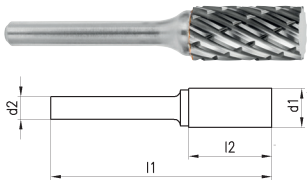
Milling with radial internal cooling
For machining with indexable insert systems
Designs:
160: without internal cooling / 200: without internal cooling / 250: without internal cooling

Appropriate accessories:
425276.0700 Screwdriver for TORX® screws NERIOX T15 x 80
432070.0600 Torque screwdriver WERA for TORX screws TX 15 3.0 Nm

Corresponding inserts:
240123 FUTURO indexable milling insert APKT
240125 FUTURO indexable milling insert APHT

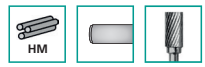
Order ID	**D** **mm**	d mm	H mm	max ramping angle °	teeth	Turning plate	ap mm	Notes
240117.0020	**40**	16	40	1.8	4	AP..16..	15	
240117.0040	**50**	22	40	1.0	5	AP..16..	15	
240117.0060	**63**	22	40	0.7	6	AP..16..	15	
240117.0080	**80**	27	50	0.6	7	AP..16..	15	
240117.0100	**100**	32	50	0.4	8	AP..16..	15	
240117.0120	**125**	40	63	0.3	9	AP..16..	15	
240117.0140	**160**	40	63	-	10	AP..16..	15	without internal cooling
240117.0160	**200**	60	63	-	12	AP..16..	15	without internal cooling
240117.0180	**250**	60	63	-	16	AP..16..	15	without internal cooling

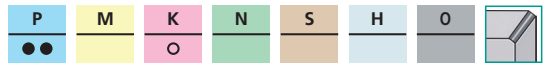
FUTURO



230002 FUTURO Carbide burr

ZYA



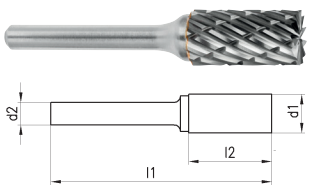


Made of hard metal, with cylindrical shank, Cylindrical shape (ZYL)
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), For chamfering and deburring

Cylindrical shape without end cut
Cut 5 STEEL

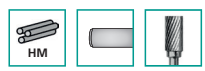
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230002.0100	**ZYA**	6	18	6	50
230002.0200	**ZYA**	8	19	6	64
230002.0300	**ZYA**	9.6	19	6	64
230002.0400	**ZYA**	12.7	25	6	70

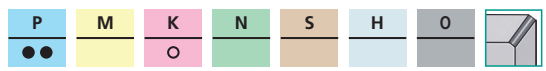
FUTURO



230012 FUTURO Carbide burr

ZYAS



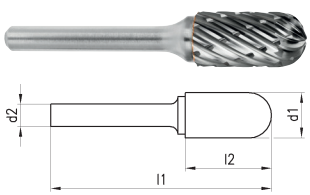


Made of hard metal, with cylindrical shank, Cylindrical shape (ZYL)
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), For chamfering and deburring

Cylindrical shape with end cut
Cut 5 STEEL

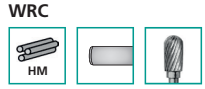
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230012.0100	**ZYAS**	6	18	6	50
230012.0200	**ZYAS**	8	19	6	64
230012.0300	**ZYAS**	9.6	19	6	64
230012.0400	**ZYAS**	12.7	25	6	70

FUTURO



230022 FUTURO Carbide burr

WRC





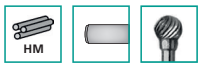
Made of hard metal, with cylindrical shank, Round cylindrical shape (WRC)
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), For chamfering and deburring

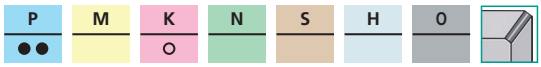
Sphero-cylinder shape
Cut 5 STEEL

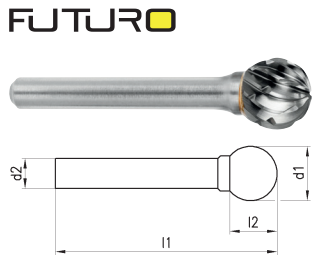
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230022.0100	**WRC**	6	18	6	50
230022.0200	**WRC**	8	19	6	63
230022.0300	**WRC**	9.6	19	6	63
230022.0400	**WRC**	12.7	25	6	70

230032 FUTURO Carbide burr

KUD







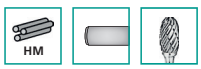
Made of hard metal, with cylindrical shank, Spherical shape (KUD)
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), For chamfering and deburring

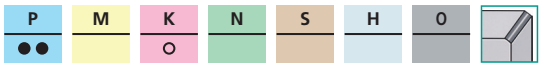
Ball shape
Cut 5 STEEL

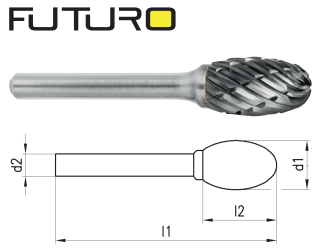
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230032.0100	**KUD**	6	4.7	6	50
230032.0200	**KUD**	8	6	6	52
230032.0300	**KUD**	9.6	8	6	54
230032.0400	**KUD**	12.7	11	6	56

230042 FUTURO Carbide burr

TRE







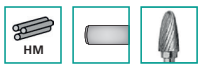
Made of hard metal, with cylindrical shank, Teardrop shape (TRC)
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), For chamfering and deburring

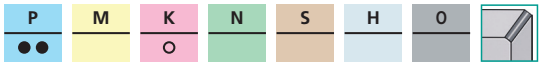
Oval shape
Cut 5 STEEL

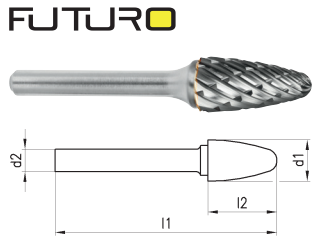
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230042.0100	**TRE**	12.7	22	6	67

230052 FUTURO Carbide burr

RBF





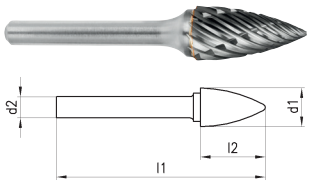


Made of hard metal, with cylindrical shank, Round arch shape (RBF)
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), For chamfering and deburring

Round-arch shape
Cut 5 STEEL

Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230052.0100	**RBF**	6	18	6	50
230052.0200	**RBF**	8	20	6	65
230052.0300	**RBF**	9.6	19	6	64
230052.0400	**RBF**	12.7	25	6	70

FUTURO



230062 FUTURO Carbide burr

SPG

HM

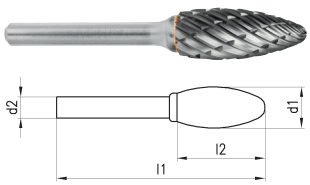
P	M	K	N	S	H	O
●●		○				

Made of hard metal, with cylindrical shank, Pointed arch shape (SPG)
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), For chamfering and deburring

Pointed-arch shape
Cut 5 STEEL

Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230062.0100	**SPG**	6	18	6	50
230062.0200	**SPG**	8	19	6	64
230062.0300	**SPG**	9.6	19	6	64
230062.0400	**SPG**	12.7	25	6	70

FUTURO



230072 FUTURO Carbide burr

H

HM

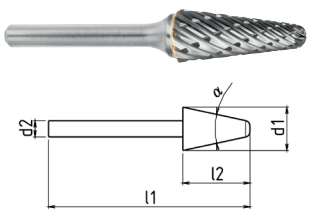
P	M	K	N	S	H	O
●●		○				

Made of hard metal, with cylindrical shank, Flame shape (FLB)
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), For chamfering and deburring

Flame shape
Cut 5 STEEL

Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230072.0100	**H**	8	19	6	64
230072.0200	**H**	12.7	32	6	77

FUTURO



230102 FUTURO Carbide burr

KEL

HM

P	M	K	N	S	H	O
●●		○				

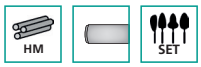
Made of hard metal, with cylindrical shank, Round cone shape (KEL)
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), For chamfering and deburring

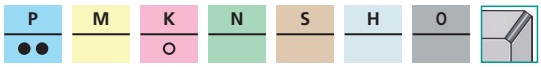
Conical shape with radius end
Cut 5 STEEL

Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm	Angle
230102.0100	**KEL**	10	20	6	65	14
230102.0200	**KEL**	12.7	32	6	77	14

230132 FUTURO Set of carbide burr

Head diameter 10mm







Made of hard metal, with cylindrical shank, delivered as a SET
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), For chamfering and deburring

cut 5 STEEL

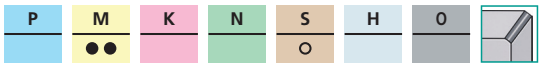
Consisting of:
230012.0300 FUTURO Carbide burr Form ZYAS, Z5, STEEL 9.6 x 19 / 6
230022.0300 FUTURO Carbide burr Form WRC, Z5, STEEL 9.6 x 19 / 6
230032.0300 FUTURO Carbide burr Form KUD, Z5, STEEL 9.6 x 8 / 6
230052.0300 FUTURO Carbide burr Form RBF, Z5, STEEL 9.6 x 19 / 6
230102.0100 FUTURO Carbide burr Form KEL, Z5, STEEL 10 x 20 / 6

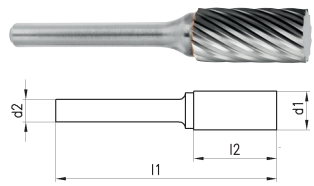
Order ID	Contents pieces	Shape	Head Ø mm	Shaft Ø mm
230132.0100	5	ZYAS, WRC, KUD, RBF, KEL	10	6

230003 FUTURO Carbide burr

ZYA







Made of hard metal, with cylindrical shank, Cylindrical shape (ZYL)
Main application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For chamfering and deburring

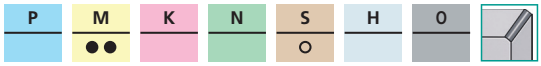
Cylindrical shape without end cut
Cut 4 INOX

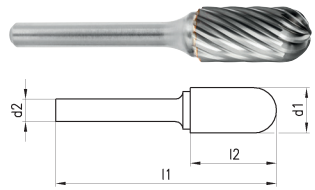
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230003.0100	**ZYA**	6	18	6	50
230003.0200	**ZYA**	8	19	6	64
230003.0300	**ZYA**	9.6	19	6	64
230003.0400	**ZYA**	12.7	25	6	70

230023 FUTURO Carbide burr

WRC





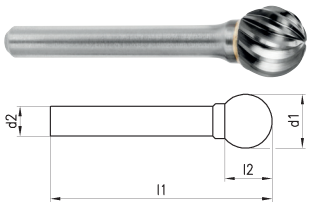


Made of hard metal, with cylindrical shank, Round cylindrical shape (WRC)
Main application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For chamfering and deburring

Sphero-cylinder shape
Cut 4 INOX

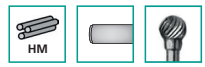
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230023.0100	**WRC**	6	18	6	50
230023.0200	**WRC**	8	19	6	63
230023.0300	**WRC**	9.6	19	6	63
230023.0400	**WRC**	12.7	25	6	70

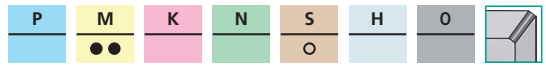
FUTURO



230033 FUTURO Carbide burr

KUD



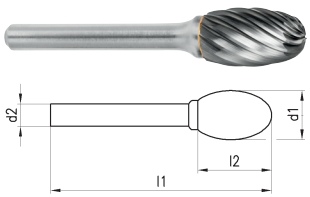


Made of hard metal, with cylindrical shank, Spherical shape (KUD)
Main application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For chamfering and deburring

Ball shape
Cut 4 INOX

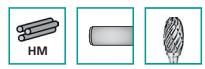
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230033.0100	**KUD**	6	4.7	6	50
230033.0200	**KUD**	8	6	6	52
230033.0300	**KUD**	9.6	8	6	54
230033.0400	**KUD**	12.7	11	6	56

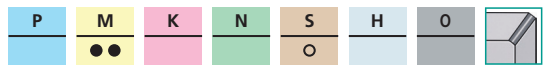
FUTURO



230043 FUTURO Carbide burr

TRE



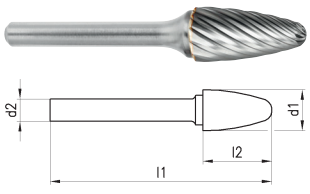


Made of hard metal, with cylindrical shank, Teardrop shape (TRC)
Main application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For chamfering and deburring

Oval shape
Cut 4 INOX

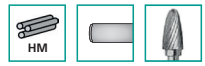
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230043.0100	**TRE**	8	15	6	60
230043.0200	**TRE**	9.6	16	6	60
230043.0300	**TRE**	12.7	22	6	67

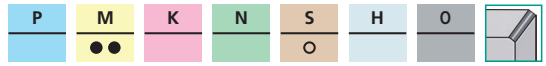
FUTURO



230053 FUTURO Carbide burr

RBF





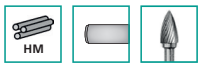
Made of hard metal, with cylindrical shank, Round arch shape (RBF)
Main application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For chamfering and deburring

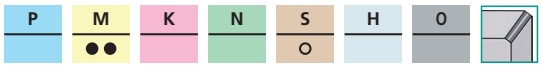
Round-arch shape
Cut 4 INOX

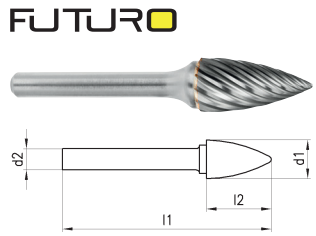
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230053.0100	**RBF**	6	18	6	50
230053.0200	**RBF**	8	20	6	65
230053.0300	**RBF**	9.6	19	6	64
230053.0400	**RBF**	12.7	25	6	70

230063 FUTURO Carbide burr

SPG







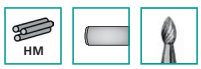
Made of hard metal, with cylindrical shank, Pointed arch shape (SPG)
Main application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For chamfering and deburring

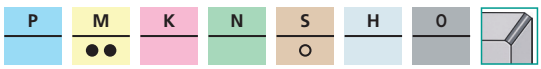
Pointed-arch shape
Cut 4 INOX

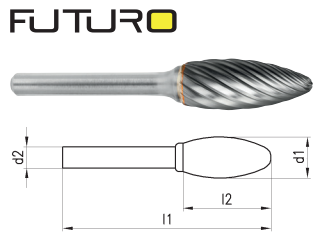
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230063.0100	SPG	6	18	6	50
230063.0200	SPG	8	19	6	64
230063.0300	SPG	9.6	19	6	64
230063.0400	SPG	12.7	25	6	70

230073 FUTURO Carbide burr

H







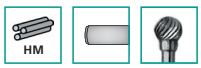
Made of hard metal, with cylindrical shank, Flame shape (FLB)
Main application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For chamfering and deburring

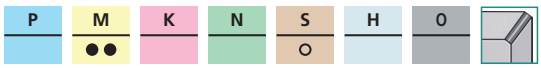
Flame shape
Cut 4 INOX

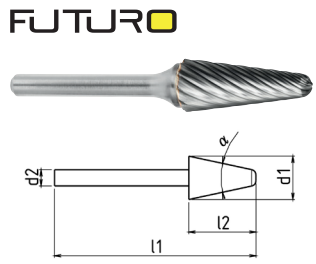
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230073.0100	H	8	19	6	64
230073.0200	H	9.6	19	6	65
230073.0300	H	12.7	32	6	77

230103 FUTURO Carbide burr

KEL



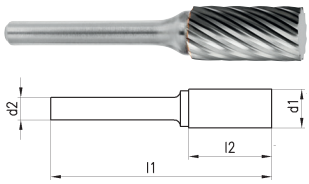




Made of hard metal, with cylindrical shank, Spherical shape (KUD)
Main application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For chamfering and deburring

Conical shape with radius end
Cut 4 INOX

Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm	Angle
230103.0100	KEL	8	25.4	6	70	14
230103.0200	KEL	10	20	6	65	14
230103.0300	KEL	12.7	32	6	77	14



230203 FUTURO Carbide mini burr

ZYA

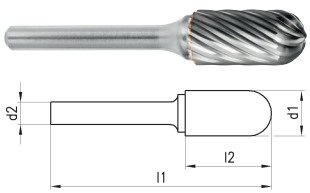
HM

P	M	K	N	S	H	O
	●●			○		

Made of hard metal, with cylindrical shank, Cylindrical shape (ZYL)
Main application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For chamfering and deburring

Cylindrical shape without end cut
Cut 4 INOX

Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230203.0100	**ZYA**	3	14	3	38
230203.0200	**ZYA**	6.3	12.7	3	45



230223 FUTURO Carbide mini burr

WRC

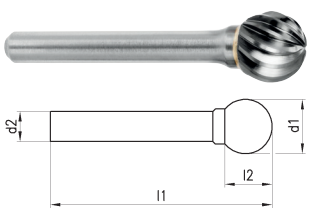
HM

P	M	K	N	S	H	O
	●●			○		

Made of hard metal, with cylindrical shank, Round cylindrical shape (WRC)
Main application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For chamfering and deburring

Sphero-cylinder shape
Cut 4 INOX

Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230223.0100	**WRC**	3	14	3	38
230223.0200	**WRC**	6.3	12.7	3	44



230233 FUTURO Carbide mini burr

KUD

HM

P	M	K	N	S	H	O
	●●			○		

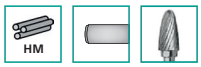
Made of hard metal, with cylindrical shank, Spherical shape (KUD)
Main application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For chamfering and deburring

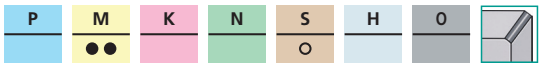
Ball shape
Cut 4 INOX

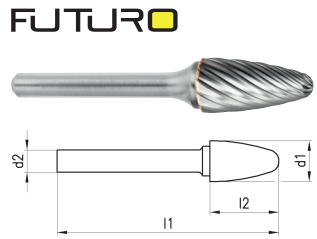
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230233.0100	**KUD**	3	2.5	3	38
230233.0200	**KUD**	6.3	5	3	38

230253 FUTURO Carbide mini burr

RBF







Made of hard metal, with cylindrical shank, Round arch shape (RBF)
Main application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For chamfering and deburring

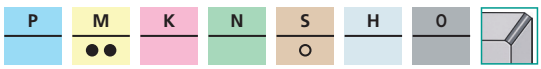
Round-arch shape
Cut 4 INOX

Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230253.0100	**RBF**	3	14	3	38
230253.0200	**RBF**	6.3	12.7	3	45

230133 FUTURO Set of carbide burr

Head diameter 10mm







Made of hard metal, with cylindrical shank, delivered as a SET
Main application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For chamfering and deburring

cut 4 INOX

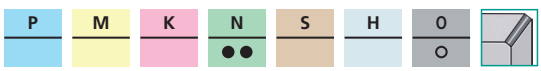
Consisting of:
230003.0300 FUTURO Carbide burr Form ZYA, Z4, INOX 9.6 x 19 / 6
230023.0300 FUTURO Carbide burr Form WRC, Z4, INOX 9.6 x 19 / 6
230033.0300 FUTURO Carbide burr Form KUD, Z4, INOX 9.6 x 8 / 6
230053.0300 FUTURO Carbide burr Form RBF, Z4, INOX 9.6 x 19 / 6
230103.0200 FUTURO Carbide burr Form KEL, Z4, INOX 10 x 20 / 6

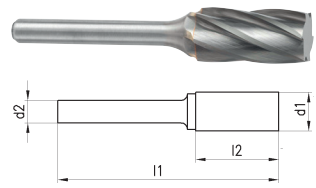
Order ID	Contents pieces	Shape	Head Ø mm	Shaft Ø mm
230133.0100	5	ZYA, WRC, KUD, RBF, KEL	10	6

230004 FUTURO Carbide burr

ZYA





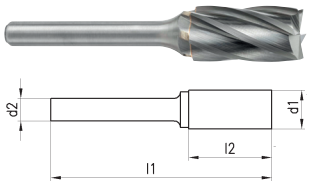


Made of hard metal, with cylindrical shank, Cylindrical shape (ZYL)
Main application: Non-ferrous metals (ISO N), Secondary application: Plastics and other materials (ISO O), For chamfering and deburring

Cylindrical shape without end cut
Cut 3 ALU

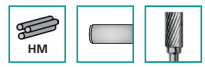
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230004.0100	**ZYA**	6	18	6	50
230004.0200	**ZYA**	8	19	6	64
230004.0300	**ZYA**	9.6	19	6	64
230004.0400	**ZYA**	12.7	25	6	70

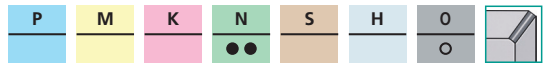
FUTURO



230014 FUTURO Carbide burr

ZYAS



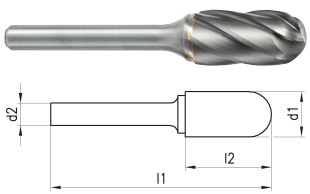


Made of hard metal, with cylindrical shank, Cylindrical shape (ZYL)
Main application: Non-ferrous metals (ISO N), Secondary application: Plastics and other materials (ISO O), For chamfering and deburring

Cylindrical shape with end cut
Cut 3 ALU

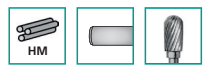
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230014.0100	**ZYAS**	6	18	6	50
230014.0200	**ZYAS**	8	19	6	64
230014.0300	**ZYAS**	9.6	19	6	64
230014.0400	**ZYAS**	12.7	25	6	70

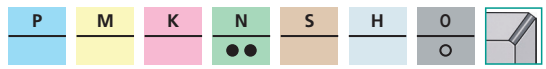
FUTURO



230024 FUTURO Carbide burr

WRC



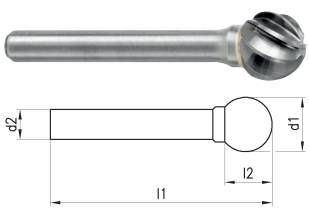


Made of hard metal, with cylindrical shank, Round cylindrical shape (WRC)
Main application: Non-ferrous metals (ISO N), Secondary application: Plastics and other materials (ISO O), For chamfering and deburring

Sphero-cylinder shape
Cut 3 ALU

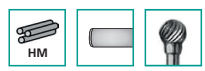
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230024.0100	**WRC**	6	18	6	50
230024.0200	**WRC**	8	19	6	63
230024.0300	**WRC**	9.6	19	6	64
230024.0400	**WRC**	12.7	25	6	70

FUTURO



230034 FUTURO Carbide burr

KUD





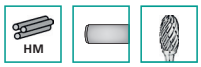
Made of hard metal, with cylindrical shank, Spherical shape (KUD)
Main application: Non-ferrous metals (ISO N), Secondary application: Plastics and other materials (ISO O), For chamfering and deburring

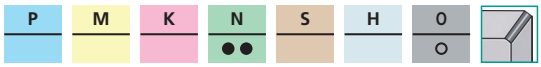
Ball shape
Cut 3 ALU

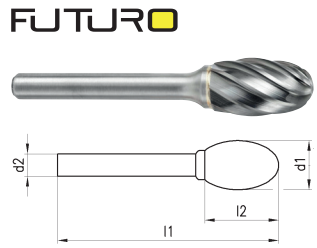
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230034.0100	**KUD**	6	4.7	6	50
230034.0200	**KUD**	8	6	6	52
230034.0300	**KUD**	9.6	8	6	54
230034.0400	**KUD**	12.7	11	6	56

230044 FUTURO Carbide burr

TRE







Made of hard metal, with cylindrical shank, Teardrop shape (TRC)
Main application: Non-ferrous metals (ISO N), Secondary application: Plastics and other materials (ISO O), For chamfering and deburring

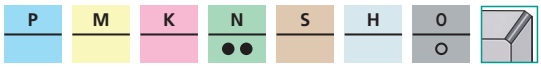
Oval shape
Cut 3 ALU

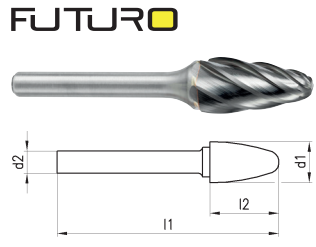
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230044.0100	**TRE**	8	15	6	60
230044.0200	**TRE**	9.6	16	6	60
230044.0300	**TRE**	12.7	22	6	67

230054 FUTURO Carbide burr

RBF







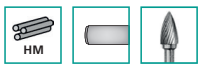
Made of hard metal, with cylindrical shank, Round arch shape (RBF)
Main application: Non-ferrous metals (ISO N), Secondary application: Plastics and other materials (ISO O), For chamfering and deburring

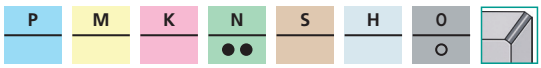
Round-arch shape
Cut 3 ALU

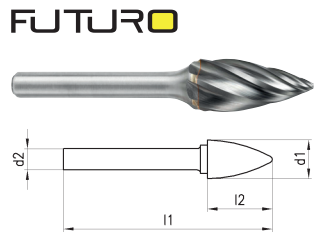
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230054.0100	**RBF**	6	18	6	50
230054.0200	**RBF**	8	20	6	65
230054.0300	**RBF**	9.6	19	6	64
230054.0400	**RBF**	12.7	25	6	70

230064 FUTURO Carbide burr

SPG



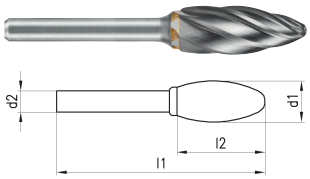




Made of hard metal, with cylindrical shank, Pointed arch shape (SPG)
Main application: Non-ferrous metals (ISO N), Secondary application: Plastics and other materials (ISO O), For chamfering and deburring

Pointed-arch shape
Cut 3 ALU

Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230064.0100	**SPG**	6	18	6	50
230064.0200	**SPG**	8	19	6	64
230064.0300	**SPG**	9.6	19	6	64
230064.0400	**SPG**	12.7	25	6	70



230074 FUTURO Carbide burr

H

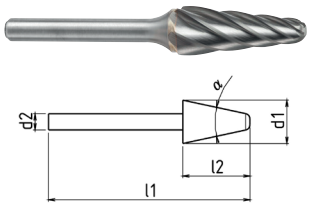
HM

P	M	K	N	S	H	O
			●●			○

Made of hard metal, with cylindrical shank, Flame shape (FLB)
Main application: Non-ferrous metals (ISO N), Secondary application: Plastics and other materials (ISO O), For chamfering and deburring

Flame shape
Cut 3 ALU

Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230074.0100	**H**	8	19	6	64
230074.0200	**H**	9.6	19	6	65
230074.0300	**H**	12.7	32	6	77



230104 FUTURO Carbide burr

KEL

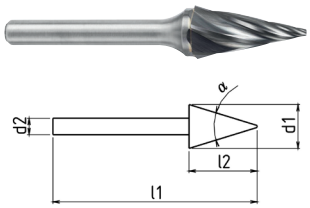
HM

P	M	K	N	S	H	O
			●●			○

Made of hard metal, with cylindrical shank, Round cone shape (KEL)
Main application: Non-ferrous metals (ISO N), Secondary application: Plastics and other materials (ISO O), For chamfering and deburring

Conical shape with radius end
Cut 3 ALU

Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm	Angle
230104.0100	**KEL**	8	25.4	6	70	14
230104.0200	**KEL**	10	20	6	65	14
230104.0300	**KEL**	12.7	32	6	77	14



230114 FUTURO Carbide burr

SKM

HM

P	M	K	N	S	H	O
			●●			○

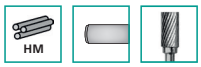
Made of hard metal, with cylindrical shank, Pointed cone shape (SKM)
Main application: Non-ferrous metals (ISO N), Secondary application: Plastics and other materials (ISO O), For chamfering and deburring

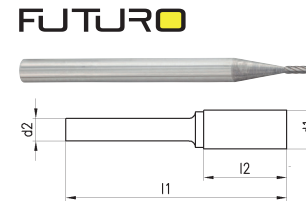
Conical pointed shape.
Cut 3 ALU

Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm	Angle
230114.0100	**SKM**	6	20	6	50	14
230114.0200	**SKM**	9.6	16	6	64	28
230114.0300	**SKM**	12.7	22	6	71	28

230005 FUTURO Carbide burr Micro

ZYA





P	M	K	N	S	H	O
O	O	O	O	O	O	

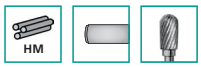
Made of hard metal, with cylindrical shank, Cylindrical shape (ZYL)
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Hardened steel (ISO H), For chamfering and deburring

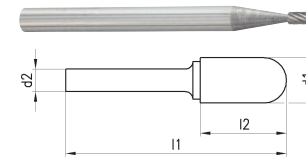
Cylindrical shape without end cut
Cut 2 MICRO

Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230005.0100	**ZYA**	1	4	3	38
230005.0200	**ZYA**	1.5	4	3	38
230005.0300	**ZYA**	2	4	3	38

230025 FUTURO Carbide burr Micro

WRC





P	M	K	N	S	H	O
O	O	O	O	O	O	

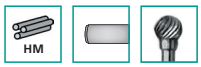
Made of hard metal, with cylindrical shank, Round cylindrical shape (WRC)
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Hardened steel (ISO H), For chamfering and deburring

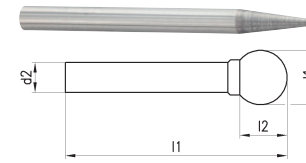
Sphero-cylinder shape
Cut 2 MICRO

Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230025.0100	**WRC**	1	4	3	38
230025.0200	**WRC**	1.5	4	3	38
230025.0300	**WRC**	2	4	3	38

230035 FUTURO Carbide burr Micro

KUD





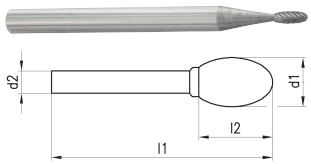
P	M	K	N	S	H	O
O	O	O	O	O	O	

Made of hard metal, with cylindrical shank, Spherical shape (KUD)
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Hardened steel (ISO H), For chamfering and deburring

Ball shape
Cut 2 MICRO

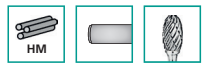
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230035.0100	**KUD**	1	0.9	3	38
230035.0200	**KUD**	1.5	1.35	3	38
230035.0300	**KUD**	2	1.8	3	38

FUTURO



230045 FUTURO Carbide burr Micro

TRE



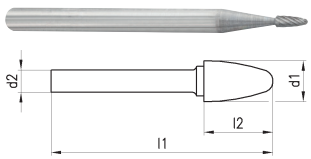
P	M	K	N	S	H	O
O	O	O	O	O	O	

Made of hard metal, with cylindrical shank, Teardrop shape (TRC)
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Hardened steel (ISO H), For chamfering and deburring

Oval shape
Cut 2 MICRO

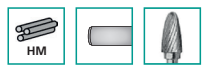
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230045.0100	**TRE**	1.5	4	3	38

FUTURO



230055 FUTURO Carbide burr Micro

RBF



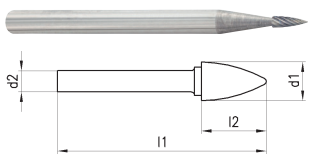
P	M	K	N	S	H	O
O	O	O	O	O	O	

Made of hard metal, with cylindrical shank, Round arch shape (RBF)
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Hardened steel (ISO H), For chamfering and deburring

Round-arch shape
Cut 2 MICRO

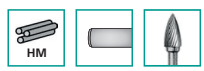
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230055.0100	**RBF**	1.5	4	3	38

FUTURO



230065 FUTURO Carbide burr Micro

SPG



P	M	K	N	S	H	O
O	O	O	O	O	O	

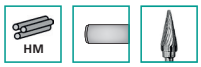
Made of hard metal, with cylindrical shank, Pointed arch shape (SPG)
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Hardened steel (ISO H), For chamfering and deburring

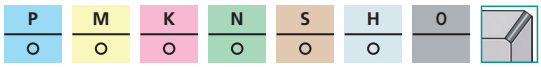
Pointed-arch shape
Cut 2 MICRO

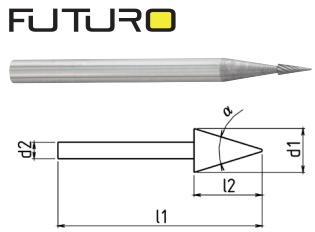
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230065.0100	**SPG**	1.5	4	3	38

230115 FUTURO Carbide burr Micro

SKM







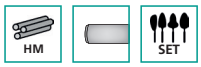
Made of hard metal, with cylindrical shank, Pointed cone shape (SKM)
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Hardened steel (ISO H), For chamfering and deburring

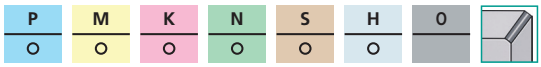
Conical pointed shape.
Cut 2 MICRO

Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm	Angle
230115.0100	**SKM**	1.5	4	3	38	15

230135 FUTURO Set of carbide burr

Head diameter 1mm and 1.5mm







Made of hard metal, with cylindrical shank, delivered as a SET
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Hardened steel (ISO H), For chamfering and deburring

cut 2 MICRO

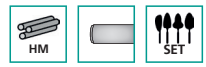
Consisting of:
230005.0100 FUTURO Carbide burr Micro Form ZYA, Z2, MICRO 1 x 4 / 3
230005.0200 FUTURO Carbide burr Micro Form ZYA, Z2, MICRO 1.5 x 4 / 3
230025.0100 FUTURO Carbide burr Micro Form WRC, Z2, MICRO 1 x 4 / 3
230025.0200 FUTURO Carbide burr Micro Form WRC, Z2, MICRO 1.5 x 4 / 3
230035.0100 FUTURO Carbide burr Micro Form KUD, Z2, MICRO 1 x 0.9 / 3
230035.0200 FUTURO Carbide burr Micro Form KUD, Z2, MICRO 1.5 x 1.35 / 3
230045.0100 FUTURO Carbide burr Micro Form TRE, Z2, MICRO 1.5 x 4 / 3
230055.0100 FUTURO Carbide burr Micro Form RBF, Z2, MICRO 1.5 x 4 / 3
230065.0100 FUTURO Carbide burr Micro Form SPG, Z2, MICRO 1.5 x 4 / 3
230115.0100 FUTURO Carbide burr Micro Form SKM, Z2, MICRO 1.5 x 4 / 3

Order ID	Contents pieces	Shape	Head Ø mm	Shaft Ø mm
230135.0100	10	ZYA, WRC, KUD, TRE, RBF, SPG, SKM	1 & 1.5	3



230145 FUTURO Set of carbide burr

Head diameter 1.5mm





Made of hard metal, with cylindrical shank, delivered as a SET
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Hardened steel (ISO H), For chamfering and deburring

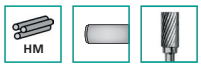
cut 2 MICRO

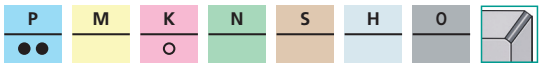
Consisting of:
230005.0200 FUTURO Carbide burr Micro Form ZYA, Z2, MICRO 1.5 x 4 / 3
230025.0200 FUTURO Carbide burr Micro Form WRC, Z2, MICRO 1.5 x 4 / 3
230035.0200 FUTURO Carbide burr Micro Form KUD, Z2, MICRO 1.5 x 1.35 / 3
230055.0100 FUTURO Carbide burr Micro Form RBF, Z2, MICRO 1.5 x 4 / 3
230065.0100 FUTURO Carbide burr Micro Form SPG, Z2, MICRO 1.5 x 4 / 3

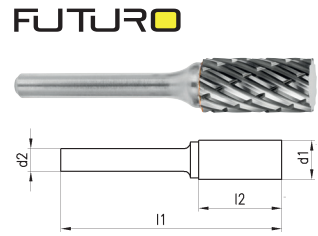
Order ID	Contents pieces	Shape	Head Ø mm	Shaft Ø mm
230145.0100	5	ZYA, WRC, KUD, RBF, SPG	1.5	3

230002 FUTURO Carbide burr

ZYA







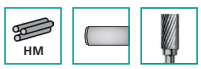
Made of hard metal, with cylindrical shank, Cylindrical shape (ZYL)
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), For chamfering and deburring

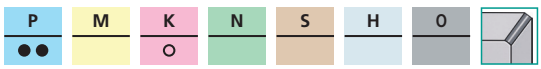
Cylindrical shape without end cut
Cut 5 STEEL

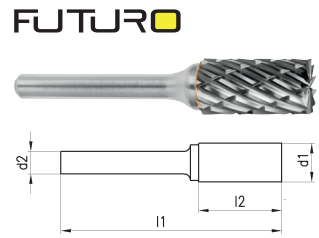
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230002.0100	**ZYA**	6	18	6	50
230002.0200	**ZYA**	8	19	6	64
230002.0300	**ZYA**	9.6	19	6	64
230002.0400	**ZYA**	12.7	25	6	70

230012 FUTURO Carbide burr

ZYAS







Made of hard metal, with cylindrical shank, Cylindrical shape (ZYL)
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), For chamfering and deburring

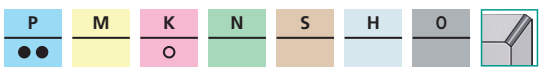
Cylindrical shape with end cut
Cut 5 STEEL

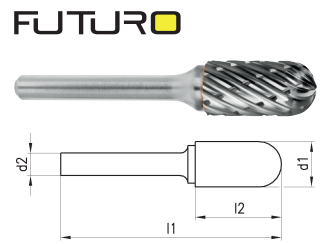
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230012.0100	**ZYAS**	6	18	6	50
230012.0200	**ZYAS**	8	19	6	64
230012.0300	**ZYAS**	9.6	19	6	64
230012.0400	**ZYAS**	12.7	25	6	70

230022 FUTURO Carbide burr

WRC





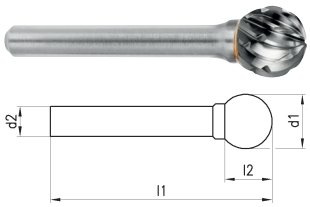


Made of hard metal, with cylindrical shank, Round cylindrical shape (WRC)
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), For chamfering and deburring

Sphero-cylinder shape
Cut 5 STEEL

Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230022.0100	**WRC**	6	18	6	50
230022.0200	**WRC**	8	19	6	63
230022.0300	**WRC**	9.6	19	6	63
230022.0400	**WRC**	12.7	25	6	70

FUTURO



230032 FUTURO Carbide burr

KUD

HM

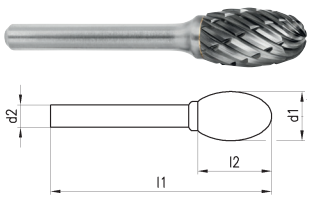
P	M	K	N	S	H	O
●●		○				

Made of hard metal, with cylindrical shank, Spherical shape (KUD)
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), For chamfering and deburring

Ball shape
Cut 5 STEEL

Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230032.0100	**KUD**	6	4.7	6	50
230032.0200	**KUD**	8	6	6	52
230032.0300	**KUD**	9.6	8	6	54
230032.0400	**KUD**	12.7	11	6	56

FUTURO



230042 FUTURO Carbide burr

TRE

HM

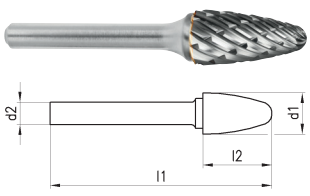
P	M	K	N	S	H	O
●●		○				

Made of hard metal, with cylindrical shank, Teardrop shape (TRC)
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), For chamfering and deburring

Oval shape
Cut 5 STEEL

Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230042.0100	**TRE**	12.7	22	6	67

FUTURO



230052 FUTURO Carbide burr

RBF

HM

P	M	K	N	S	H	O
●●		○				

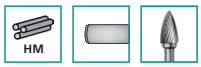
Made of hard metal, with cylindrical shank, Round arch shape (RBF)
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), For chamfering and deburring

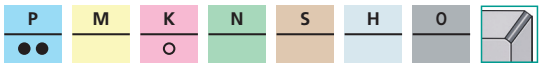
Round-arch shape
Cut 5 STEEL

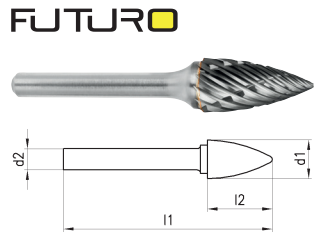
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230052.0100	**RBF**	6	18	6	50
230052.0200	**RBF**	8	20	6	65
230052.0300	**RBF**	9.6	19	6	64
230052.0400	**RBF**	12.7	25	6	70

230062 FUTURO Carbide burr

SPG







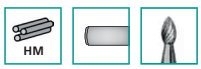
Made of hard metal, with cylindrical shank, Pointed arch shape (SPG)
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), For chamfering and deburring

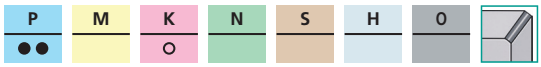
Pointed-arch shape
Cut 5 STEEL

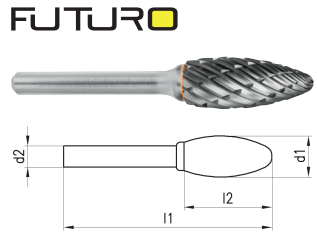
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230062.0100	**SPG**	6	18	6	50
230062.0200	**SPG**	8	19	6	64
230062.0300	**SPG**	9.6	19	6	64
230062.0400	**SPG**	12.7	25	6	70

230072 FUTURO Carbide burr

H







Made of hard metal, with cylindrical shank, Flame shape (FLB)
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), For chamfering and deburring

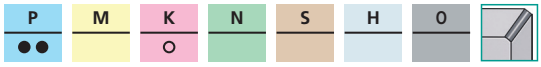
Flame shape
Cut 5 STEEL

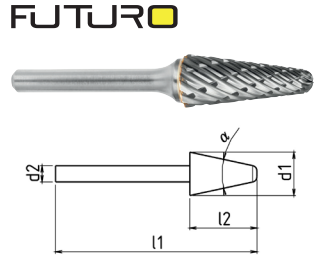
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230072.0100	**H**	8	19	6	64
230072.0200	**H**	12.7	32	6	77

230102 FUTURO Carbide burr

KEL







Made of hard metal, with cylindrical shank, Round cone shape (KEL)
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), For chamfering and deburring

Conical shape with radius end
Cut 5 STEEL

Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm	Angle
230102.0100	**KEL**	10	20	6	65	14
230102.0200	**KEL**	12.7	32	6	77	14



230132 FUTURO Set of carbide burr

Head diameter 10mm

HM | SET

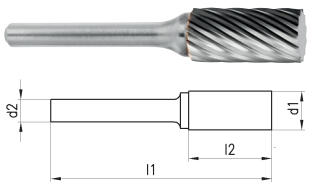
P	M	K	N	S	H	O	
●●		○					

Made of hard metal, with cylindrical shank, delivered as a SET
Main application: Steel (ISO-P), Secondary application: Cast materials (ISO K), For chamfering and deburring

cut 5 STEEL

Consisting of:
230012.0300 FUTURO Carbide burr Form ZYAS, Z5, STEEL 9.6 x 19 / 6
230022.0300 FUTURO Carbide burr Form WRC, Z5, STEEL 9.6 x 19 / 6
230032.0300 FUTURO Carbide burr Form KUD, Z5, STEEL 9.6 x 8 / 6
230052.0300 FUTURO Carbide burr Form RBF, Z5, STEEL 9.6 x 19 / 6
230102.0100 FUTURO Carbide burr Form KEL, Z5, STEEL 10 x 20 / 6

Order ID	Contents pieces	Shape	Head Ø mm	Shaft Ø mm
230132.0100	5	ZYAS, WRC, KUD, RBF, KEL	10	6



230003 FUTURO Carbide burr

ZYA

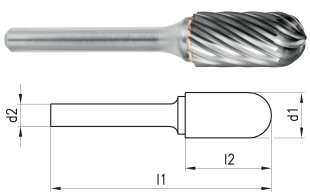
HM

P	M	K	N	S	H	O	
	●●			○			

Made of hard metal, with cylindrical shank, Cylindrical shape (ZYL)
Main application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For chamfering and deburring

Cylindrical shape without end cut
Cut 4 INOX

Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230003.0100	**ZYA**	6	18	6	50
230003.0200	**ZYA**	8	19	6	64
230003.0300	**ZYA**	9.6	19	6	64
230003.0400	**ZYA**	12.7	25	6	70



230023 FUTURO Carbide burr

WRC

HM

P	M	K	N	S	H	O	
	●●			○			

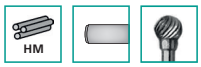
Made of hard metal, with cylindrical shank, Round cylindrical shape (WRC)
Main application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For chamfering and deburring

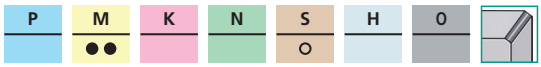
Sphero-cylinder shape
Cut 4 INOX

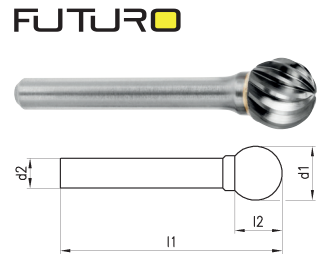
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230023.0100	**WRC**	6	18	6	50
230023.0200	**WRC**	8	19	6	63
230023.0300	**WRC**	9.6	19	6	63
230023.0400	**WRC**	12.7	25	6	70

230033 FUTURO Carbide burr

KUD







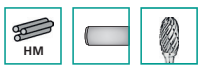
Made of hard metal, with cylindrical shank, Spherical shape (KUD)
Main application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For chamfering and deburring

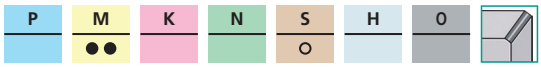
Ball shape
Cut 4 INOX

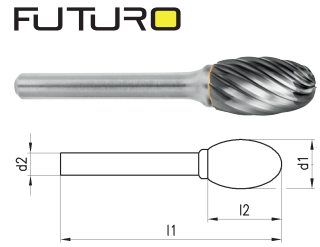
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230033.0100	**KUD**	6	4.7	6	50
230033.0200	**KUD**	8	6	6	52
230033.0300	**KUD**	9.6	8	6	54
230033.0400	**KUD**	12.7	11	6	56

230043 FUTURO Carbide burr

TRE







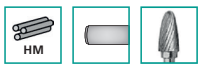
Made of hard metal, with cylindrical shank, Teardrop shape (TRC)
Main application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For chamfering and deburring

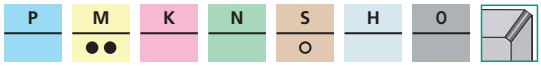
Oval shape
Cut 4 INOX

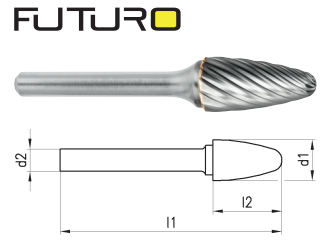
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230043.0100	**TRE**	8	15	6	60
230043.0200	**TRE**	9.6	16	6	60
230043.0300	**TRE**	12.7	22	6	67

230053 FUTURO Carbide burr

RBF





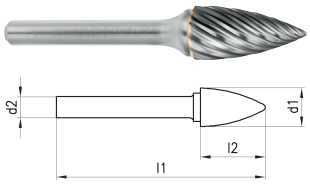


Made of hard metal, with cylindrical shank, Round arch shape (RBF)
Main application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For chamfering and deburring

Round-arch shape
Cut 4 INOX

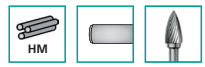
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230053.0100	**RBF**	6	18	6	50
230053.0200	**RBF**	8	20	6	65
230053.0300	**RBF**	9.6	19	6	64
230053.0400	**RBF**	12.7	25	6	70

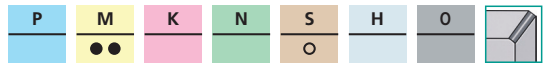
FUTURO



230063 FUTURO Carbide burr

SPG



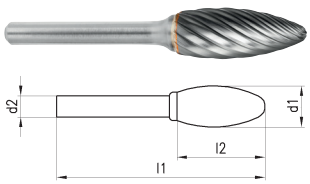


Made of hard metal, with cylindrical shank, Pointed arch shape (SPG)
Main application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For chamfering and deburring

Pointed-arch shape
Cut 4 INOX

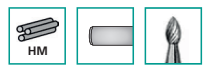
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230063.0100	**SPG**	6	18	6	50
230063.0200	**SPG**	8	19	6	64
230063.0300	**SPG**	9.6	19	6	64
230063.0400	**SPG**	12.7	25	6	70

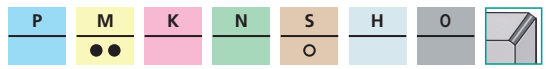
FUTURO



230073 FUTURO Carbide burr

H



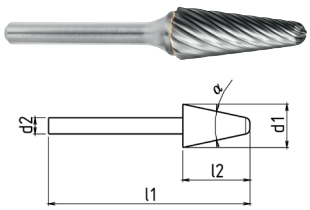


Made of hard metal, with cylindrical shank, Flame shape (FLB)
Main application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For chamfering and deburring

Flame shape
Cut 4 INOX

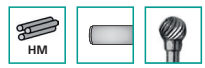
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230073.0100	**H**	8	19	6	64
230073.0200	**H**	9.6	19	6	65
230073.0300	**H**	12.7	32	6	77

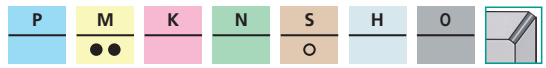
FUTURO



230103 FUTURO Carbide burr

KEL





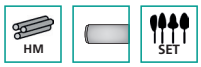
Made of hard metal, with cylindrical shank, Spherical shape (KUD)
Main application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For chamfering and deburring

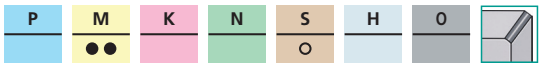
Conical shape with radius end
Cut 4 INOX

Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm	Angle
230103.0100	**KEL**	8	25.4	6	70	14
230103.0200	**KEL**	10	20	6	65	14
230103.0300	**KEL**	12.7	32	6	77	14

230133 FUTURO Set of carbide burr

Head diameter 10mm







Made of hard metal, with cylindrical shank, delivered as a SET
Main application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For chamfering and deburring

cut 4 INOX

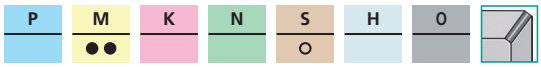
Consisting of:
230003.0300 FUTURO Carbide burr Form ZYA, Z4, INOX 9.6 x 19 / 6
230023.0300 FUTURO Carbide burr Form WRC, Z4, INOX 9.6 x 19 / 6
230033.0300 FUTURO Carbide burr Form KUD, Z4, INOX 9.6 x 8 / 6
230053.0300 FUTURO Carbide burr Form RBF, Z4, INOX 9.6 x 19 / 6
230103.0200 FUTURO Carbide burr Form KEL, Z4, INOX 10 x 20 / 6

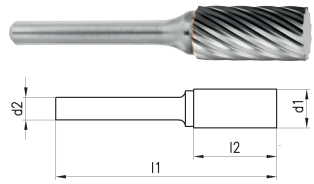
Order ID	Contents pieces	Shape	Head Ø mm	Shaft Ø mm
230133.0100	5	ZYA, WRC, KUD, RBF, KEL	10	6

230203 FUTURO Carbide mini burr

ZYA







Made of hard metal, with cylindrical shank, Cylindrical shape (ZYL)
Main application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For chamfering and deburring

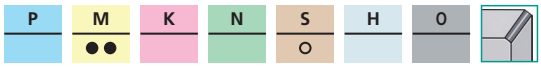
Cylindrical shape without end cut
Cut 4 INOX

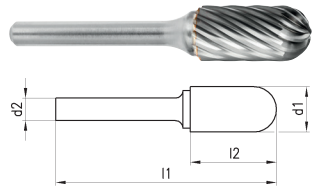
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230203.0100	**ZYA**	3	14	3	38
230203.0200	**ZYA**	6.3	12.7	3	45

230223 FUTURO Carbide mini burr

WRC



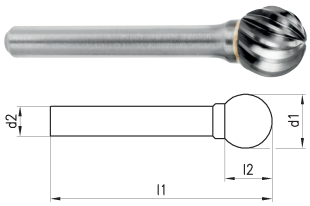




Made of hard metal, with cylindrical shank, Round cylindrical shape (WRC)
Main application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For chamfering and deburring

Sphero-cylinder shape
Cut 4 INOX

Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230223.0100	**WRC**	3	14	3	38
230223.0200	**WRC**	6.3	12.7	3	44



230233 FUTURO Carbide mini burr

KUD

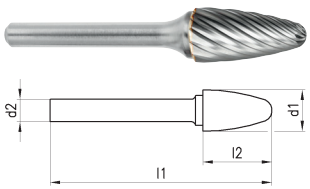
HM

P	M	K	N	S	H	O
	●●			○		

Made of hard metal, with cylindrical shank, Spherical shape (KUD)
Main application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For chamfering and deburring

Ball shape
Cut 4 INOX

Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230233.0100	**KUD**	3	2.5	3	38
230233.0200	**KUD**	6.3	5	3	38



230253 FUTURO Carbide mini burr

RBF

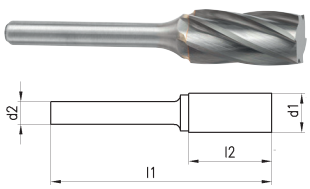
HM

P	M	K	N	S	H	O
	●●			○		

Made of hard metal, with cylindrical shank, Round arch shape (RBF)
Main application: Stainless steel (ISO M), Secondary application: Superalloys (ISO S), For chamfering and deburring

Round-arch shape
Cut 4 INOX

Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230253.0100	**RBF**	3	14	3	38
230253.0200	**RBF**	6.3	12.7	3	45



230004 FUTURO Carbide burr

ZYA

HM

P	M	K	N	S	H	O
			●●			○

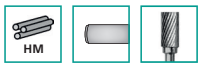
Made of hard metal, with cylindrical shank, Cylindrical shape (ZYL)
Main application: Non-ferrous metals (ISO N), Secondary application: Plastics and other materials (ISO O), For chamfering and deburring

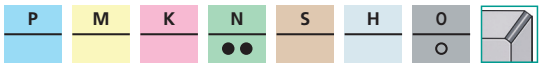
Cylindrical shape without end cut
Cut 3 ALU

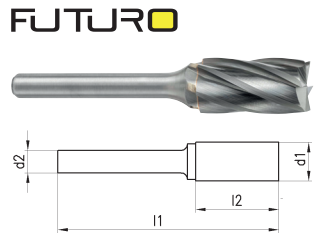
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230004.0100	**ZYA**	6	18	6	50
230004.0200	**ZYA**	8	19	6	64
230004.0300	**ZYA**	9.6	19	6	64
230004.0400	**ZYA**	12.7	25	6	70

230014 FUTURO Carbide burr

ZYAS







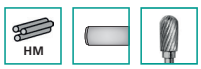
Made of hard metal, with cylindrical shank, Cylindrical shape (ZYL)
Main application: Non-ferrous metals (ISO N), Secondary application: Plastics and other materials (ISO O), For chamfering and deburring

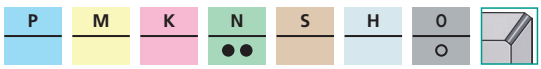
Cylindrical shape with end cut
Cut 3 ALU

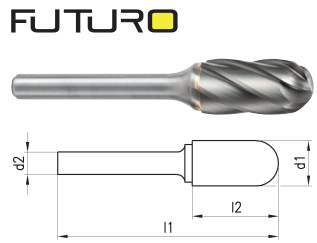
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230014.0100	**ZYAS**	6	18	6	50
230014.0200	**ZYAS**	8	19	6	64
230014.0300	**ZYAS**	9.6	19	6	64
230014.0400	**ZYAS**	12.7	25	6	70

230024 FUTURO Carbide burr

WRC







Made of hard metal, with cylindrical shank, Round cylindrical shape (WRC)
Main application: Non-ferrous metals (ISO N), Secondary application: Plastics and other materials (ISO O), For chamfering and deburring

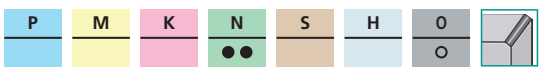
Sphero-cylinder shape
Cut 3 ALU

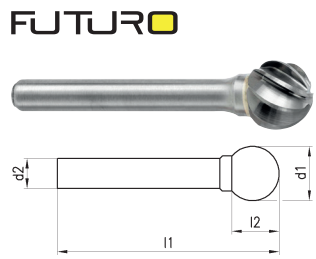
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230024.0100	**WRC**	6	18	6	50
230024.0200	**WRC**	8	19	6	63
230024.0300	**WRC**	9.6	19	6	64
230024.0400	**WRC**	12.7	25	6	70

230034 FUTURO Carbide burr

KUD





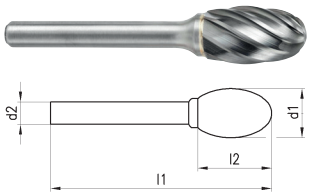


Made of hard metal, with cylindrical shank, Spherical shape (KUD)
Main application: Non-ferrous metals (ISO N), Secondary application: Plastics and other materials (ISO O), For chamfering and deburring

Ball shape
Cut 3 ALU

Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230034.0100	**KUD**	6	4.7	6	50
230034.0200	**KUD**	8	6	6	52
230034.0300	**KUD**	9.6	8	6	54
230034.0400	**KUD**	12.7	11	6	56

FUTURO



230044 FUTURO Carbide burr

TRE

HM

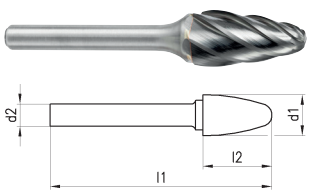
P M K N S H O

Made of hard metal, with cylindrical shank, Teardrop shape (TRC)
Main application: Non-ferrous metals (ISO N), Secondary application: Plastics and other materials (ISO O), For chamfering and deburring

Oval shape
Cut 3 ALU

Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230044.0100	**TRE**	8	15	6	60
230044.0200	**TRE**	9.6	16	6	60
230044.0300	**TRE**	12.7	22	6	67

FUTURO



230054 FUTURO Carbide burr

RBF

HM

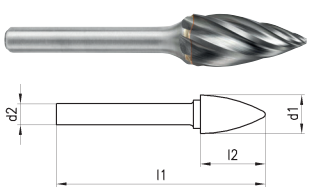
P M K N S H O

Made of hard metal, with cylindrical shank, Round arch shape (RBF)
Main application: Non-ferrous metals (ISO N), Secondary application: Plastics and other materials (ISO O), For chamfering and deburring

Round-arch shape
Cut 3 ALU

Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230054.0100	**RBF**	6	18	6	50
230054.0200	**RBF**	8	20	6	65
230054.0300	**RBF**	9.6	19	6	64
230054.0400	**RBF**	12.7	25	6	70

FUTURO



230064 FUTURO Carbide burr

SPG

HM

P M K N S H O

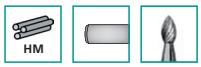
Made of hard metal, with cylindrical shank, Pointed arch shape (SPG)
Main application: Non-ferrous metals (ISO N), Secondary application: Plastics and other materials (ISO O), For chamfering and deburring

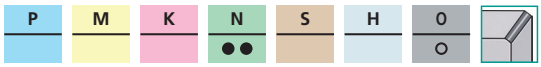
Pointed-arch shape
Cut 3 ALU

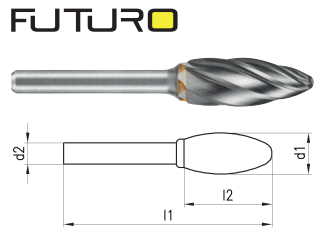
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230064.0100	**SPG**	6	18	6	50
230064.0200	**SPG**	8	19	6	64
230064.0300	**SPG**	9.6	19	6	64
230064.0400	**SPG**	12.7	25	6	70

230074 FUTURO Carbide burr

H







Made of hard metal, with cylindrical shank, Flame shape (FLB)
Main application: Non-ferrous metals (ISO N), Secondary application: Plastics and other materials (ISO O), For chamfering and deburring

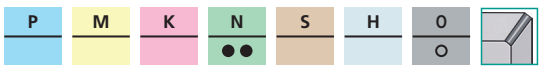
Flame shape
Cut 3 ALU

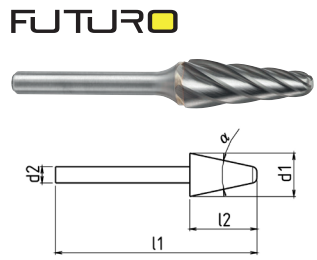
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230074.0100	**H**	8	19	6	64
230074.0200	**H**	9.6	19	6	65
230074.0300	**H**	12.7	32	6	77

230104 FUTURO Carbide burr

KEL







Made of hard metal, with cylindrical shank, Round cone shape (KEL)
Main application: Non-ferrous metals (ISO N), Secondary application: Plastics and other materials (ISO O), For chamfering and deburring

Conical shape with radius end
Cut 3 ALU

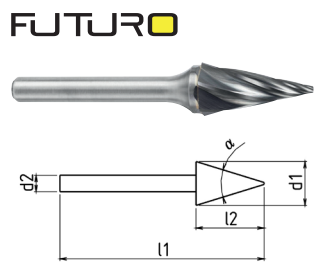
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm	Angle
230104.0100	**KEL**	8	25.4	6	70	14
230104.0200	**KEL**	10	20	6	65	14
230104.0300	**KEL**	12.7	32	6	77	14

230114 FUTURO Carbide burr

SKM





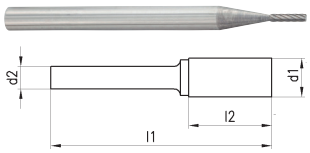


Made of hard metal, with cylindrical shank, Pointed cone shape (SKM)
Main application: Non-ferrous metals (ISO N), Secondary application: Plastics and other materials (ISO O), For chamfering and deburring

Conical pointed shape.
Cut 3 ALU

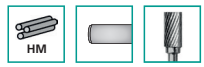
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm	Angle
230114.0100	**SKM**	6	20	6	50	14
230114.0200	**SKM**	9.6	16	6	64	28
230114.0300	**SKM**	12.7	22	6	71	28

FUTURO



230005 FUTURO Carbide burr Micro

ZYA



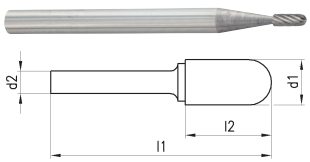
P	M	K	N	S	H	0	
O	O	O	O	O	O		

Made of hard metal, with cylindrical shank, Cylindrical shape (ZYL)
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Hardened steel (ISO H), For chamfering and deburring

Cylindrical shape without end cut
Cut 2 MICRO

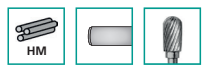
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230005.0100	**ZYA**	1	4	3	38
230005.0200	**ZYA**	1.5	4	3	38
230005.0300	**ZYA**	2	4	3	38

FUTURO



230025 FUTURO Carbide burr Micro

WRC



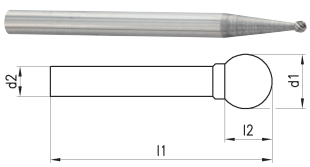
P	M	K	N	S	H	0	
O	O	O	O	O	O		

Made of hard metal, with cylindrical shank, Round cylindrical shape (WRC)
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Hardened steel (ISO H), For chamfering and deburring

Sphero-cylinder shape
Cut 2 MICRO

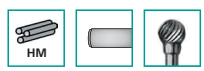
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230025.0100	**WRC**	1	4	3	38
230025.0200	**WRC**	1.5	4	3	38
230025.0300	**WRC**	2	4	3	38

FUTURO



230035 FUTURO Carbide burr Micro

KUD



P	M	K	N	S	H	0	
O	O	O	O	O	O		

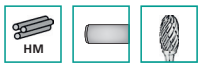
Made of hard metal, with cylindrical shank, Spherical shape (KUD)
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Hardened steel (ISO H), For chamfering and deburring

Ball shape
Cut 2 MICRO

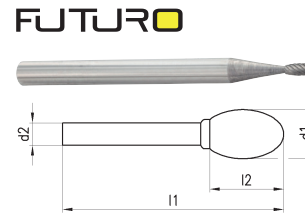
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230035.0100	**KUD**	1	0.9	3	38
230035.0200	**KUD**	1.5	1.35	3	38
230035.0300	**KUD**	2	1.8	3	38

230045 FUTURO Carbide burr Micro

TRE



P	M	K	N	S	H	O
O	O	O	O	O	O	



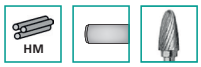
Made of hard metal, with cylindrical shank, Teardrop shape (TRC)
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Hardened steel (ISO H), For chamfering and deburring

Oval shape
Cut 2 MICRO

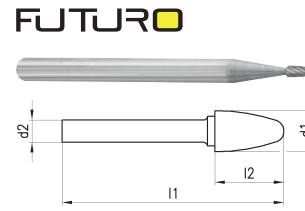
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230045.0100	**TRE**	1.5	4	3	38

230055 FUTURO Carbide burr Micro

RBF



P	M	K	N	S	H	O
O	O	O	O	O	O	



Made of hard metal, with cylindrical shank, Round arch shape (RBF)
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Hardened steel (ISO H), For chamfering and deburring

Round-arch shape
Cut 2 MICRO

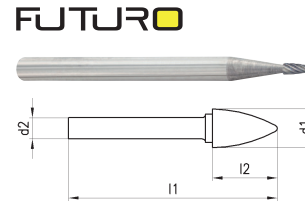
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230055.0100	**RBF**	1.5	4	3	38

230065 FUTURO Carbide burr Micro

SPG



P	M	K	N	S	H	O
O	O	O	O	O	O	

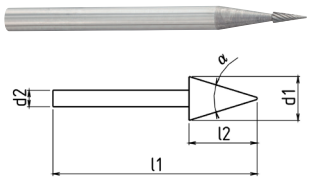


Made of hard metal, with cylindrical shank, Pointed arch shape (SPG)
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Hardened steel (ISO H), For chamfering and deburring

Pointed-arch shape
Cut 2 MICRO

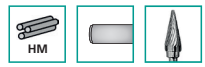
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm
230065.0100	**SPG**	1.5	4	3	38

FUTURO



230115 FUTURO Carbide burr Micro

SKM



P	M	K	N	S	H	O
O	O	O	O	O	O	

Made of hard metal, with cylindrical shank, Pointed cone shape (SKM)
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Hardened steel (ISO H), For chamfering and deburring

Conical pointed shape.
Cut 2 MICRO

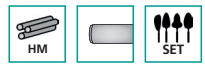
Order ID	Type	d1 mm	l2 mm	d2 mm	l1 mm	Angle
230115.0100	**SKM**	1.5	4	3	38	15

FUTURO



230135 FUTURO Set of carbide burr

Head diameter 1mm and 1.5mm



P	M	K	N	S	H	O
O	O	O	O	O	O	

Made of hard metal, with cylindrical shank, delivered as a SET
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Hardened steel (ISO H), For chamfering and deburring

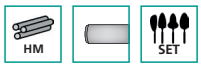
cut 2 MICRO

Consisting of:
230005.0100 FUTURO Carbide burr Micro Form ZYA, Z2, MICRO 1 x 4 / 3
230005.0200 FUTURO Carbide burr Micro Form ZYA, Z2, MICRO 1.5 x 4 / 3
230025.0100 FUTURO Carbide burr Micro Form WRC, Z2, MICRO 1 x 4 / 3
230025.0200 FUTURO Carbide burr Micro Form WRC, Z2, MICRO 1.5 x 4 / 3
230035.0100 FUTURO Carbide burr Micro Form KUD, Z2, MICRO 1 x 0.9 / 3
230035.0200 FUTURO Carbide burr Micro Form KUD, Z2, MICRO 1.5 x 1.35 / 3
230045.0100 FUTURO Carbide burr Micro Form TRE, Z2, MICRO 1.5 x 4 / 3
230055.0100 FUTURO Carbide burr Micro Form RBF, Z2, MICRO 1.5 x 4 / 3
230065.0100 FUTURO Carbide burr Micro Form SPG, Z2, MICRO 1.5 x 4 / 3
230115.0100 FUTURO Carbide burr Micro Form SKM, Z2, MICRO 1.5 x 4 / 3

Order ID	Contents pieces	Shape	Head Ø mm	Shaft Ø mm
230135.0100	10	ZYA, WRC, KUD, TRE, RBF, SPG, SKM	1 & 1.5	3

230145 FUTURO Set of carbide burr

Head diameter 1.5mm





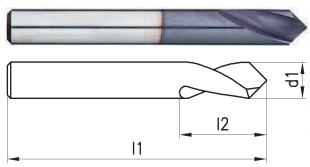


Made of hard metal, with cylindrical shank, delivered as a SET
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Hardened steel (ISO H), For chamfering and deburring

cut 2 MICRO

Consisting of:
230005.0200 FUTURO Carbide burr Micro Form ZYA, Z2, MICRO 1.5 x 4 / 3
230025.0200 FUTURO Carbide burr Micro Form WRC, Z2, MICRO 1.5 x 4 / 3
230035.0200 FUTURO Carbide burr Micro Form KUD, Z2, MICRO 1.5 x 1.35 / 3
230055.0100 FUTURO Carbide burr Micro Form RBF, Z2, MICRO 1.5 x 4 / 3
230065.0100 FUTURO Carbide burr Micro Form SPG, Z2, MICRO 1.5 x 4 / 3

Order ID	Contents pieces	Shape	Head Ø mm	Shaft Ø mm
230145.0100	5	ZYA, WRC, KUD, RBF, SPG	1.5	3



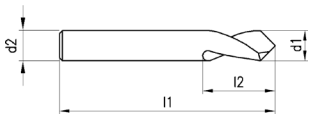
250120 FUTURO NC spotting drill 90°

HSS | Futura | Ø 4-20 | 90°

P	M	K	N	S	H	O
●●	●●	○	○	○		○

Made of HSS (High Speed Steel), Futura coating, with cylindrical shank, Nominal size Ø 4 - 20 mm, Tip angle 90°
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Plastics and other materials (ISO O), For NC spot drilling

Order ID	**d1 mm**	l2 mm	l1 mm	Order ID	**d1 mm**	l2 mm	l1 mm
250120.0100	**4**	12	52	250120.0500	**12**	30	102
250120.0200	**6**	20	66	250120.0600	**16**	35	115
250120.0300	**8**	25	79	250120.0700	**20**	40	131
250120.0400	**10**	25	89				



250130 FUTURO Solid carbide NC spotting drill 90°

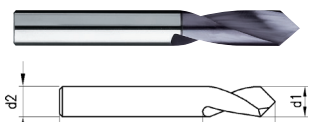
VHM | h5 | Ø 3-12 | 90° | h5

P	M	K	N	S	H	O
○	○	○	●●	○		●●

Made of solid hard metal, with cylindrical shank, Shaft tolerance h5, Nominal size Ø 3 - 12 mm, Tip angle 90°, Drill cutting tolerance h5 (according to ISO 286 fit system)
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Main application: Plastics and other materials (ISO O), For NC spot drilling

Extra stable design.

Order ID	**d1 mm**	l2 mm	l1 mm	d2 mm	Order ID	**d1 mm**	l2 mm	l1 mm	d2 mm
250130.0100	**3**	9	38	3	250130.0400	**8**	27	63	8
250130.0200	**4**	10	50	4	250130.0500	**10**	30	72	10
250130.0300	**6**	13	57	6	250130.0600	**12**	35	83	12



250140 FUTURO Solid carbide NC spotting drill 90°

VHM | TiAlN | h5 | Ø 3-12 | 90° | h5

P	M	K	N	S	H	O
●●	●●	●●	●●	○		○

Made of solid hard metal, TiAlN coating, with cylindrical shank, Shaft tolerance h5, Nominal size Ø 3 - 12 mm, Tip angle 90°, Drill cutting tolerance h5 (according to ISO 286 fit system)
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Plastics and other materials (ISO O), For NC spot drilling

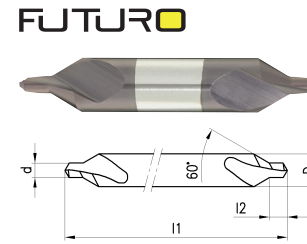
Extra stable design.

Order ID	**d1 mm**	l2 mm	l1 mm	d2 mm	Order ID	**d1 mm**	l2 mm	l1 mm	d2 mm
250140.0100	**3**	9	38	3	250140.0400	**8**	27	63	8
250140.0200	**4**	10	50	4	250140.0500	**10**	30	72	10
250140.0300	**6**	13	57	6	250140.0600	**12**	35	83	12

251136 FUTURO Centre drill 60°

HSS | TiAlN | h7 | DIN 333 | Ø 0.5-5

P	M	K	N	S	H	O	A
●●	●●		○	○		○	



Made of HSS (High Speed Steel), TiAlN coating, with cylindrical shank, Shaft tolerance h7, According to DIN 333, Nominal size Ø 0.5 - 5 mm
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Plastics and other materials (ISO O), For center drilling (Form A)
* only one-sided

Order ID	**d** **mm**	D mm	l2 mm	l1 mm
251136.0100	**0.5***	3.15	0.6…0.9	25
251136.0200	**0.75**	3.5	1.0…1.3	35
251136.0300	**1**	3.15	1.3…1.7	31
251136.0400	**1.5**	5	2.0…2.6	40
251136.0500	**1.6**	4	2.0…2.6	35
251136.0600	**2**	5	2.5…3.1	40
251136.0700	**2.5**	6.3	3.1…3.8	45
251136.0800	**3**	8	3.9…4.6	50
251136.0900	**3.15**	8	3.9…4.6	50
251136.1000	**4**	10	5.0…5.9	55
251136.1100	**5**	12	6.3…7.2	63

251137 FUTURO Set of centre drills 60°

HSS | TiAlN | h7 | DIN 333 | Ø 0.5-4

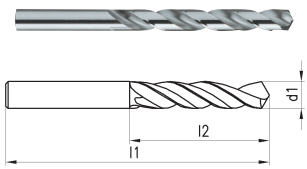
P	M	K	N	S	H	O	A
●●	●●		○	○		○	



Made of HSS (High Speed Steel), TiAlN coating, with cylindrical shank, Shaft tolerance h7, According to DIN 333, Nominal size Ø 0.5 - 4 mm
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Plastics and other materials (ISO O), For center drilling (Form A)

Order ID	**Contents pieces**	Contents, 1 unit each
251137.0100	**7**	0.5/1/1.6/2/2.5/3.15/4

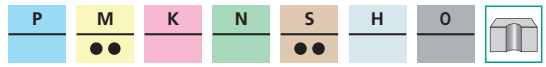
FUTURO



254120 FUTURO Twist drill

T-Plus





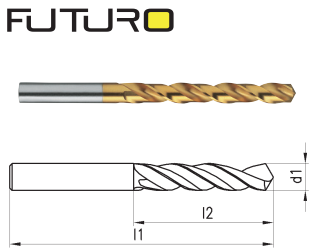
Made of HSS-Co (High Speed Steel), with cylindrical shank, According to DIN 338, Nominal size Ø 0.5 - 13 mm, Number of teeth 2, Length ratio 5xD, Tip angle 130°, Drill cutting tolerance h8 (according to ISO 286 fit system)
Main application: Stainless steel (ISO M), Main application: Superalloys (ISO S), For through-hole drilling
1 pack contains: 0.5...0.9 mm: 10

Order ID	**d1** **mm**	l2 mm	l1 mm	Order ID	**d1** **mm**	l2 mm	l1 mm	Order ID	**d1** **mm**	l2 mm	l1 mm
254120.0100	**0.5**	6	22	254120.4300	**4.7**	47	80	254120.6490	**8.9**	81	125
254120.0200	**0.6**	7	24	254120.4400	**4.8**	52	86	254120.6500	**9**	81	125
254120.0300	**0.7**	9	28	254120.4500	**4.9**	52	86	254120.6510	**9.1**	81	125
254120.0400	**0.8**	10	30	254120.4600	**5**	52	86	254120.6520	**9.2**	81	125
254120.0500	**0.9**	11	32	254120.4700	**5.1**	52	86	254120.6530	**9.3**	81	125
254120.0600	**1**	12	34	254120.4800	**5.2**	52	86	254120.6540	**9.4**	81	125
254120.0700	**1.1**	14	36	254120.4900	**5.3**	52	86	254120.6600	**9.5**	81	125
254120.0800	**1.2**	16	38	254120.5000	**5.4**	57	93	254120.6660	**9.6**	87	133
254120.0900	**1.3**	16	38	254120.5100	**5.5**	57	93	254120.6670	**9.7**	87	133
254120.1000	**1.4**	18	40	254120.5200	**5.6**	57	93	254120.6700	**9.8**	87	133
254120.1100	**1.5**	18	40	254120.5300	**5.7**	57	93	254120.6790	**9.9**	87	133
254120.1200	**1.6**	20	43	254120.5400	**5.8**	57	93	254120.6800	**10**	87	133
254120.1300	**1.7**	20	43	254120.5500	**5.9**	57	93	254120.6810	**10.1**	87	133
254120.1400	**1.8**	22	46	254120.5600	**6**	57	93	254120.6900	**10.2**	87	133
254120.1500	**1.9**	22	46	254120.5610	**6.1**	63	101	254120.6930	**10.3**	87	133
254120.1600	**2**	24	49	254120.5620	**6.2**	63	101	254120.6940	**10.4**	87	133
254120.1700	**2.1**	24	49	254120.5630	**6.3**	63	101	254120.7000	**10.5**	87	133
254120.1800	**2.2**	27	53	254120.5640	**6.4**	63	101	254120.7060	**10.6**	87	133
254120.1900	**2.3**	27	53	254120.5700	**6.5**	63	101	254120.7070	**10.7**	94	142
254120.2000	**2.4**	30	57	254120.5760	**6.6**	63	101	254120.7080	**10.8**	94	142
254120.2100	**2.5**	30	57	254120.5770	**6.7**	63	101	254120.7090	**10.9**	94	142
254120.2200	**2.6**	30	57	254120.5800	**6.8**	69	109	254120.7100	**11**	94	142
254120.2300	**2.7**	33	61	254120.5890	**6.9**	69	109	254120.7110	**11.1**	94	142
254120.2400	**2.8**	33	61	254120.5900	**7**	69	109	254120.7120	**11.2**	94	142
254120.2500	**2.9**	33	61	254120.5910	**7.1**	69	109	254120.7130	**11.3**	94	142
254120.2600	**3**	33	61	254120.5920	**7.2**	69	109	254120.7140	**11.4**	94	142
254120.2700	**3.1**	36	65	254120.5930	**7.3**	69	109	254120.7200	**11.5**	94	142
254120.2800	**3.2**	36	65	254120.5940	**7.4**	69	109	254120.7260	**11.6**	94	142
254120.2900	**3.3**	36	65	254120.6000	**7.5**	69	109	254120.7270	**11.7**	94	142
254120.3000	**3.4**	39	70	254120.6060	**7.6**	75	117	254120.7280	**11.8**	94	142
254120.3100	**3.5**	39	70	254120.6070	**7.7**	75	117	254120.7290	**11.9**	101	151
254120.3200	**3.6**	39	70	254120.6100	**7.8**	75	117	254120.7300	**12**	101	151
254120.3300	**3.7**	39	70	254120.6190	**7.9**	75	117	254120.7310	**12.1**	101	151
254120.3400	**3.8**	43	75	254120.6200	**8**	75	117	254120.7320	**12.2**	101	151
254120.3500	**3.9**	43	75	254120.6210	**8.1**	75	117	254120.7330	**12.3**	101	151
254120.3600	**4**	43	75	254120.6220	**8.2**	75	117	254120.7340	**12.4**	101	151
254120.3700	**4.1**	43	75	254120.6230	**8.3**	75	117	254120.7400	**12.5**	101	151
254120.3800	**4.2**	43	75	254120.6240	**8.4**	75	117	254120.7460	**12.6**	101	151
254120.3900	**4.3**	47	80	254120.6300	**8.5**	75	117	254120.7470	**12.7**	101	151
254120.4000	**4.4**	47	80	254120.6360	**8.6**	81	125	254120.7480	**12.8**	101	151
254120.4100	**4.5**	47	80	254120.6370	**8.7**	81	125	254120.7490	**12.9**	101	151
254120.4200	**4.6**	47	80	254120.6400	**8.8**	81	125	254120.7500	**13**	101	151

254140 FUTURO Twist drill

T-Plus, TiN







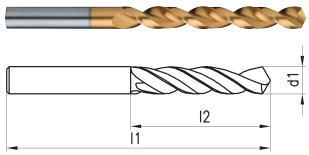
Made of HSS-E (High Speed Steel, contains approximately 5% to 8% cobalt), TiN coating, with cylindrical shank, According to DIN 338, Nominal size Ø 0.5 - 13 mm, Tip angle 130°
Main application: Stainless steel (ISO M), Main application: Superalloys (ISO S), For through-hole drilling

Application
Robust twist drill with high heat resistance. Best for use with titanium and titanium alloys, and rust-, acid- and heat-resistant austenitic steels.

1 pack contains: 0.5...0.9 mm: 10

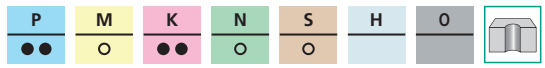
Order ID	**d1 mm**	l2 mm	l1 mm	Order ID	**d1 mm**	l2 mm	l1 mm	Order ID	**d1 mm**	l2 mm	l1 mm
254140.0100	**0.5**	6	22	254140.2600	**3**	33	61	254140.5100	**5.5**	57	93
254140.0200	**0.6**	7	24	254140.2700	**3.1**	36	65	254140.5200	**5.6**	57	93
254140.0300	**0.7**	9	28	254140.2800	**3.2**	36	65	254140.5300	**5.7**	57	93
254140.0400	**0.8**	10	30	254140.2900	**3.3**	36	65	254140.5400	**5.8**	57	93
254140.0500	**0.9**	11	32	254140.3000	**3.4**	39	70	254140.5500	**5.9**	57	93
254140.0600	**1**	12	34	254140.3100	**3.5**	39	70	254140.5600	**6**	57	93
254140.0700	**1.1**	14	36	254140.3200	**3.6**	39	70	254140.5700	**6.5**	63	101
254140.0800	**1.2**	16	38	254140.3300	**3.7**	39	70	254140.5800	**6.8**	69	109
254140.0900	**1.3**	16	38	254140.3400	**3.8**	43	75	254140.5900	**7**	69	109
254140.1000	**1.4**	18	40	254140.3500	**3.9**	43	75	254140.6000	**7.5**	69	109
254140.1100	**1.5**	18	40	254140.3600	**4**	43	75	254140.6100	**7.8**	75	117
254140.1200	**1.6**	20	43	254140.3700	**4.1**	43	75	254140.6200	**8**	75	117
254140.1300	**1.7**	20	43	254140.3800	**4.2**	43	75	254140.6300	**8.5**	75	117
254140.1400	**1.8**	22	46	254140.3900	**4.3**	47	80	254140.6400	**8.8**	81	125
254140.1500	**1.9**	22	46	254140.4000	**4.4**	47	80	254140.6500	**9**	81	125
254140.1600	**2**	24	49	254140.4100	**4.5**	47	80	254140.6600	**9.5**	81	125
254140.1700	**2.1**	24	49	254140.4200	**4.6**	47	80	254140.6700	**9.8**	87	133
254140.1800	**2.2**	27	53	254140.4300	**4.7**	47	80	254140.6800	**10**	87	133
254140.1900	**2.3**	27	53	254140.4400	**4.8**	52	86	254140.6900	**10.2**	87	133
254140.2000	**2.4**	30	57	254140.4500	**4.9**	52	86	254140.7000	**10.5**	87	133
254140.2100	**2.5**	30	57	254140.4600	**5**	52	86	254140.7100	**11**	94	142
254140.2200	**2.6**	30	57	254140.4700	**5.1**	52	86	254140.7200	**11.5**	94	142
254140.2300	**2.7**	33	61	254140.4800	**5.2**	52	86	254140.7300	**12**	101	151
254140.2400	**2.8**	33	61	254140.4900	**5.3**	52	86	254140.7400	**12.5**	101	151
254140.2500	**2.9**	33	61	254140.5000	**5.4**	57	93	254140.7500	**13**	101	151

FUTURO



254145 FUTURO High-performance drill



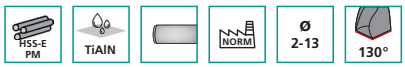


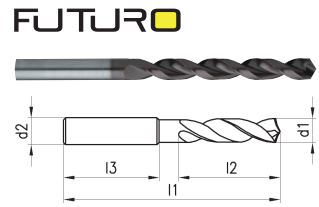
Made of HSS-E PM (High Speed Steel, contains approximately 5% to 8% cobalt, powder metallurgy sintered Variant), TiN coating, with cylindrical shank, According to DIN 338, Nominal size Ø 1 - 13 mm, Tip angle 130°
Main application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), For through-hole drilling

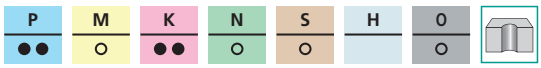
Application
Stable twist drill for use in steel and high-strength steel.

Order ID	**d1** **mm**	l2 mm	l1 mm	Order ID	**d1** **mm**	l2 mm	l1 mm	Order ID	**d1** **mm**	l2 mm	l1 mm
254145.0100	**1**	12	34	254145.3000	**3.9**	43	75	254145.5900	**6.8**	69	109
254145.0200	**1.1**	14	36	254145.3100	**4**	43	75	254145.6000	**6.9**	69	109
254145.0300	**1.2**	16	38	254145.3200	**4.1**	43	75	254145.6100	**7**	69	109
254145.0400	**1.3**	16	38	254145.3300	**4.2**	43	75	254145.6200	**7.1**	69	109
254145.0500	**1.4**	18	40	254145.3400	**4.3**	47	80	254145.6300	**7.2**	69	109
254145.0600	**1.5**	18	40	254145.3500	**4.4**	47	80	254145.6400	**7.3**	69	109
254145.0700	**1.6**	20	43	254145.3600	**4.5**	47	80	254145.6500	**7.4**	69	109
254145.0800	**1.7**	20	43	254145.3700	**4.6**	47	80	254145.6600	**7.5**	69	109
254145.0900	**1.8**	22	46	254145.3800	**4.7**	47	80	254145.6700	**7.6**	75	117
254145.1000	**1.9**	22	46	254145.3900	**4.8**	52	86	254145.6800	**7.7**	75	117
254145.1100	**2**	24	49	254145.4000	**4.9**	52	86	254145.6900	**7.8**	75	117
254145.1200	**2.1**	24	49	254145.4100	**5**	52	86	254145.7000	**7.9**	75	117
254145.1300	**2.2**	27	53	254145.4200	**5.1**	52	86	254145.7100	**8**	75	117
254145.1400	**2.3**	27	53	254145.4300	**5.2**	52	86	254145.7200	**8.5**	75	117
254145.1500	**2.4**	30	57	254145.4400	**5.3**	52	86	254145.7300	**8.8**	81	125
254145.1600	**2.5**	30	57	254145.4500	**5.4**	57	93	254145.7400	**9**	81	125
254145.1700	**2.6**	30	57	254145.4600	**5.5**	57	93	254145.7500	**9.3**	81	125
254145.1800	**2.7**	33	61	254145.4700	**5.6**	57	93	254145.7600	**9.5**	81	125
254145.1900	**2.8**	33	61	254145.4800	**5.7**	57	93	254145.7700	**9.8**	87	133
254145.2000	**2.9**	33	61	254145.4900	**5.8**	57	93	254145.7800	**10**	87	133
254145.2100	**3**	33	61	254145.5000	**5.9**	57	93	254145.7900	**10.2**	87	133
254145.2200	**3.1**	36	65	254145.5100	**6**	57	93	254145.8000	**10.5**	87	133
254145.2300	**3.2**	36	65	254145.5200	**6.1**	63	101	254145.8100	**11**	94	142
254145.2400	**3.3**	36	65	254145.5300	**6.2**	63	101	254145.8200	**11.5**	94	142
254145.2500	**3.4**	39	70	254145.5400	**6.3**	63	101	254145.8300	**12**	101	151
254145.2600	**3.5**	39	70	254145.5500	**6.4**	63	101	254145.8400	**12.5**	101	151
254145.2700	**3.6**	39	70	254145.5600	**6.5**	63	101	254145.8500	**13**	101	151
254145.2800	**3.7**	39	70	254145.5700	**6.6**	63	101				
254145.2900	**3.8**	43	75	254145.5800	**6.7**	63	101				

254150 FUTURO High-performance drill







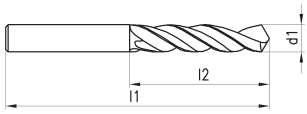
Made of HSS-E PM (High Speed Steel, contains approximately 5% to 8% cobalt, powder metallurgy sintered Variant), TiAlN coating, with cylindrical shank, According to factory standard, Nominal size Ø 2 - 13 mm, Tip angle 130°
Main application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Plastics and other materials (ISO O), For through-hole drilling

Application
Especially stable drill with high wear resistance. Best for use on high-alloy steels, tempered and case-hardened steels, cast iron, brass and bronze.

Order ID	**d1** **mm**	l2 mm	l1 mm	d2 mm	l3 mm	Order ID	**d1** **mm**	l2 mm	l1 mm	d2 mm	l3 mm
254150.0100	**2**	24	56	3	28	254150.1700	**7**	69	113	8	36
254150.0200	**2.5**	30	62	3	28	254150.1800	**7.5**	69	113	8	36
254150.0300	**3**	33	65	3	28	254150.1900	**7.8**	75	119	8	36
254150.0400	**3.3**	36	68	4	28	254150.2000	**8**	75	119	8	36
254150.0500	**3.5**	39	71	4	28	254150.2100	**8.5**	75	125	10	40
254150.0600	**3.8**	43	75	4	28	254150.2200	**8.8**	81	131	10	40
254150.0700	**4**	43	75	4	28	254150.2300	**9**	81	131	10	40
254150.0800	**4.2**	43	87	6	36	254150.2400	**9.5**	81	131	10	40
254150.0900	**4.5**	47	91	6	36	254150.2500	**10**	87	137	10	40
254150.1000	**4.8**	52	96	6	36	254150.2600	**10.2**	87	144	12	45
254150.1100	**5**	52	96	6	36	254150.2700	**10.5**	87	144	12	45
254150.1200	**5.5**	57	101	6	36	254150.2800	**11**	94	151	12	45
254150.1300	**5.8**	57	101	6	36	254150.2900	**11.5**	94	151	12	45
254150.1400	**6**	57	101	6	36	254150.3000	**12**	101	158	12	45
254150.1500	**6.5**	63	107	8	36	254150.3100	**12.5**	101	161	14	45
254150.1600	**6.8**	69	113	8	36	254150.3200	**13**	101	161	14	45

FUTURO





254035 FUTURO Twist drill

HSS-E | TiN | DIN 338 | Ø 1-13 | 135°

P	M	K	N	S	H	O
O	O	O	O			

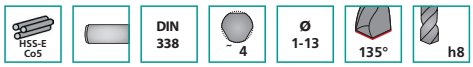
Made of HSS-E (High Speed Steel, contains approximately 5% to 8% cobalt), TiN coating, with cylindrical shank, According to DIN 338, Nominal size Ø 1 - 13 mm, Tip angle 135°
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), For through-hole drilling

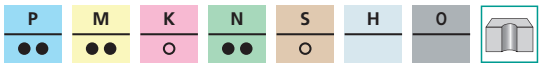
Application
Standard drill for drilling steel and cast steel (alloyed and unalloyed), cast iron, malleable cast iron, spheroidal graphite iron, sintered iron. Also suitable for stainless steels.

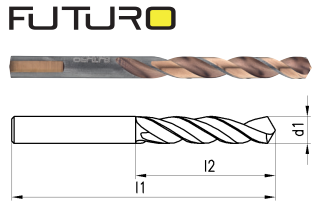
Order ID	**d1** **mm**	l2 mm	l1 mm	Order ID	**d1** **mm**	l2 mm	l1 mm	Order ID	**d1** **mm**	l2 mm	l1 mm
254035.0100	**1**	12	34	254035.4200	**5.1**	52	86	254035.6620	**9.2**	81	125
254035.0200	**1.1**	14	36	254035.4300	**5.2**	52	86	254035.6630	**9.3**	81	125
254035.0300	**1.2**	16	38	254035.4400	**5.3**	52	86	254035.6640	**9.4**	81	125
254035.0400	**1.3**	16	38	254035.4500	**5.4**	57	93	254035.6700	**9.5**	81	125
254035.0500	**1.4**	18	40	254035.4600	**5.5**	57	93	254035.6760	**9.6**	87	133
254035.0600	**1.5**	18	40	254035.4700	**5.6**	57	93	254035.6770	**9.7**	87	133
254035.0700	**1.6**	20	43	254035.4800	**5.7**	57	93	254035.6780	**9.8**	87	133
254035.0800	**1.7**	20	43	254035.4900	**5.8**	57	93	254035.6790	**9.9**	87	133
254035.0900	**1.8**	22	46	254035.5000	**5.9**	57	93	254035.6800	**10**	87	133
254035.1000	**1.9**	22	46	254035.5100	**6**	57	93	254035.6810	**10.1**	87	133
254035.1100	**2**	24	49	254035.5200	**6.1**	63	101	254035.6900	**10.2**	87	133
254035.1200	**2.1**	24	49	254035.5300	**6.2**	63	101	254035.6930	**10.3**	87	133
254035.1300	**2.2**	27	53	254035.5400	**6.3**	63	101	254035.6940	**10.4**	87	133
254035.1400	**2.3**	27	53	254035.5500	**6.4**	63	101	254035.7000	**10.5**	87	133
254035.1500	**2.4**	30	57	254035.5600	**6.5**	63	101	254035.7060	**10.6**	87	133
254035.1600	**2.5**	30	57	254035.5700	**6.6**	63	101	254035.7070	**10.7**	94	142
254035.1700	**2.6**	30	57	254035.5800	**6.7**	63	101	254035.7080	**10.8**	94	142
254035.1800	**2.7**	33	61	254035.5900	**6.8**	69	109	254035.7090	**10.9**	94	142
254035.1900	**2.8**	33	61	254035.6000	**6.9**	69	109	254035.7100	**11**	94	142
254035.2000	**2.9**	33	61	254035.6100	**7**	69	109	254035.7110	**11.1**	94	142
254035.2100	**3**	33	61	254035.6110	**7.1**	69	109	254035.7120	**11.2**	94	142
254035.2200	**3.1**	36	65	254035.6120	**7.2**	69	109	254035.7130	**11.3**	94	142
254035.2300	**3.2**	36	65	254035.6130	**7.3**	69	109	254035.7140	**11.4**	94	142
254035.2400	**3.3**	36	65	254035.6140	**7.4**	69	109	254035.7200	**11.5**	94	142
254035.2500	**3.4**	39	70	254035.6200	**7.5**	69	109	254035.7260	**11.6**	94	142
254035.2600	**3.5**	39	70	254035.6260	**7.6**	75	117	254035.7270	**11.7**	94	142
254035.2700	**3.6**	39	70	254035.6270	**7.7**	75	117	254035.7280	**11.8**	94	142
254035.2800	**3.7**	39	70	254035.6300	**7.8**	75	117	254035.7290	**11.9**	101	151
254035.2900	**3.8**	43	75	254035.6390	**7.9**	75	117	254035.7300	**12**	101	151
254035.3000	**3.9**	43	75	254035.6400	**8**	75	117	254035.7310	**12.1**	101	151
254035.3100	**4**	43	75	254035.6410	**8.1**	75	117	254035.7320	**12.2**	101	151
254035.3200	**4.1**	43	75	254035.6420	**8.2**	75	117	254035.7330	**12.3**	101	151
254035.3300	**4.2**	43	75	254035.6430	**8.3**	75	117	254035.7340	**12.4**	101	151
254035.3400	**4.3**	47	80	254035.6440	**8.4**	75	117	254035.7400	**12.5**	101	151
254035.3500	**4.4**	47	80	254035.6500	**8.5**	75	117	254035.7460	**12.6**	101	151
254035.3600	**4.5**	47	80	254035.6560	**8.6**	81	125	254035.7470	**12.7**	101	151
254035.3700	**4.6**	47	80	254035.6570	**8.7**	81	125	254035.7480	**12.8**	101	151
254035.3800	**4.7**	47	80	254035.6580	**8.8**	81	125	254035.7490	**12.9**	101	151
254035.3900	**4.8**	52	86	254035.6590	**8.9**	81	125	254035.7500	**13**	101	151
254035.4000	**4.9**	52	86	254035.6600	**9**	81	125				
254035.4100	**5**	52	86	254035.6610	**9.1**	81	125				

254181 FUTURO Twist drill

Triangular shank for perfect grip







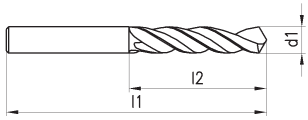
Made of HSS-E Co5 (High Speed Steel, contains approximately 5% cobalt), with cylindrical shank, According to DIN 338, With three-faced grinding from 4 mm, Nominal size Ø 1 - 13 mm, Tip angle 135°, Drill cutting tolerance h8 (according to ISO 286 fit system)
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), For through-hole drilling

Features
Triangular shank for perfect grip in three-jaw chucks. Prevents the tool from slipping in the chuck, which protects the tool and the clamping chuck.
The special ground drill point keeps the feed force low and is also ideal for use in hand-held drills.

Order ID	**d1** **mm**	l2 mm	l1 mm	Order ID	**d1** **mm**	l2 mm	l1 mm	Order ID	**d1** **mm**	l2 mm	l1 mm
254181.0050	**1**	12	34	254181.0600	**5**	52	86	254181.1150	**9.5**	81	125
254181.0100	**1.5**	18	40	254181.0650	**5.2**	52	86	254181.1200	**10**	87	133
254181.0150	**2**	24	49	254181.0700	**5.5**	57	93	254181.1210	**10.2**	87	133
254181.0200	**2.5**	30	57	254181.0750	**6**	57	93	254181.1250	**10.5**	87	133
254181.0250	**3**	33	61	254181.0800	**6.5**	63	101	254181.1300	**11**	94	142
254181.0300	**3.2**	36	65	254181.0850	**6.8**	69	109	254181.1350	**11.5**	94	142
254181.0350	**3.3**	36	65	254181.0900	**7**	69	109	254181.1400	**12**	101	151
254181.0400	**3.5**	39	70	254181.0950	**7.5**	69	109	254181.1450	**12.5**	101	151
254181.0450	**4**	43	75	254181.1000	**8**	75	117	254181.1500	**13**	101	151
254181.0500	**4.2**	43	75	254181.1050	**8.5**	75	117				
254181.0550	**4.5**	47	80	254181.1100	**9**	81	125				

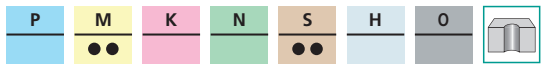
FUTURO





254240 FUTURO Twist drill





Made of HSS-E (High Speed Steel, contains approximately 5% to 8% cobalt), TiN coating, with cylindrical shank, According to DIN 1897, Nominal size Ø 0.5 - 15.5 mm, Tip angle 130°
Main application: Stainless steel (ISO M), Main application: Superalloys (ISO S), For through-hole drilling

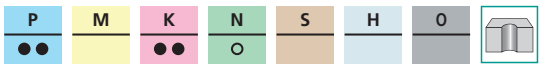
Application
Very robust twist drill with outstanding heat resistance. Suitable for hard-to-work materials, such as stainless and acid-resistant steels (SS steels), spring steels,austenitic steels.

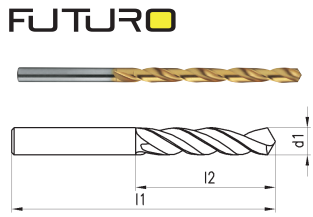
1 pack contains: 0.5...0.9 mm: 10

Order ID	**d1** **mm**	l2 mm	l1 mm	Order ID	**d1** **mm**	l2 mm	l1 mm	Order ID	**d1** **mm**	l2 mm	l1 mm
254240.0100	**0.5**	3	20	254240.2800	**3.3**	18	49	254240.5500	**6**	28	66
254240.0200	**0.7**	4.5	23	254240.2900	**3.4**	20	52	254240.5600	**6.5**	31	70
254240.0300	**0.8**	5	24	254240.3000	**3.5**	20	52	254240.5700	**6.8**	34	74
254240.0400	**0.9**	5.5	25	254240.3100	**3.6**	20	52	254240.5800	**7**	34	74
254240.0500	**1**	6	26	254240.3200	**3.7**	20	52	254240.5900	**7.5**	34	74
254240.0600	**1.1**	7	28	254240.3300	**3.8**	22	55	254240.6000	**7.8**	37	79
254240.0700	**1.2**	8	30	254240.3400	**3.9**	22	55	254240.6100	**8**	37	79
254240.0800	**1.3**	8	30	254240.3500	**4**	22	55	254240.6200	**8.5**	37	79
254240.0900	**1.4**	9	32	254240.3600	**4.1**	22	55	254240.6300	**8.8**	40	84
254240.1000	**1.5**	9	32	254240.3700	**4.2**	22	55	254240.6400	**9**	40	84
254240.1100	**1.6**	10	34	254240.3800	**4.3**	24	58	254240.6500	**9.5**	40	84
254240.1200	**1.7**	10	34	254240.3900	**4.4**	24	58	254240.6600	**9.8**	43	89
254240.1300	**1.8**	11	36	254240.4000	**4.5**	24	58	254240.6700	**10**	43	89
254240.1400	**1.9**	11	36	254240.4100	**4.6**	24	58	254240.6800	**10.2**	43	89
254240.1500	**2**	12	38	254240.4200	**4.7**	24	58	254240.6900	**10.5**	43	89
254240.1600	**2.1**	12	38	254240.4300	**4.8**	26	62	254240.7000	**10.8**	47	95
254240.1700	**2.2**	13	40	254240.4400	**4.9**	26	62	254240.7100	**11**	47	95
254240.1800	**2.3**	13	40	254240.4500	**5**	26	62	254240.7200	**11.5**	47	95
254240.1900	**2.4**	14	43	254240.4600	**5.1**	26	62	254240.7300	**12**	51	102
254240.2000	**2.5**	14	43	254240.4700	**5.2**	26	62	254240.7400	**12.5**	51	102
254240.2100	**2.6**	14	43	254240.4800	**5.3**	26	62	254240.7500	**13**	51	102
254240.2200	**2.7**	16	46	254240.4900	**5.4**	28	66	254240.7600	**13.5**	54	107
254240.2300	**2.8**	16	46	254240.5000	**5.5**	28	66	254240.7700	**14**	54	107
254240.2400	**2.9**	16	46	254240.5100	**5.6**	28	66	254240.7800	**14.5**	56	111
254240.2500	**3**	16	46	254240.5200	**5.7**	28	66	254240.7900	**15**	56	111
254240.2600	**3.1**	18	49	254240.5300	**5.8**	28	66	254240.8000	**15.5**	58	115
254240.2700	**3.2**	18	49	254240.5400	**5.9**	28	66				

254310 FUTURO Twist drill







Made of HSS (High Speed Steel), TiN coating, with cylindrical shank, According to DIN 340, Tip angle 118° Main application: Steel (ISO-P), Main application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), For through-hole drilling

Application
Standard drill for drilling deep holes and drilling through boring bushes. For drilling steel and cast steel (alloyed and unalloyed), cast iron, malleable cast iron, ductile cast iron, sintered iron.

1 pack contains: 0.5...0.9 mm: 10

Order ID	**d1** **mm**	l2 mm	l1 mm	Order ID	**d1** **mm**	l2 mm	l1 mm
254310.0100	**0.5**	12	32	254310.4200	**4.6**	82	126
254310.0200	**0.6**	15	35	254310.4300	**4.7**	82	126
254310.0300	**0.7**	21	42	254310.4400	**4.8**	87	132
254310.0400	**0.8**	25	46	254310.4500	**4.9**	87	132
254310.0500	**0.9**	29	51	254310.4600	**5**	87	132
254310.0600	**1**	33	56	254310.4700	**5.1**	87	132
254310.0700	**1.1**	37	60	254310.4800	**5.2**	87	132
254310.0800	**1.2**	41	65	254310.4900	**5.3**	87	132
254310.0900	**1.3**	41	65	254310.5000	**5.4**	91	139
254310.1000	**1.4**	45	70	254310.5100	**5.5**	91	139
254310.1100	**1.5**	45	70	254310.5200	**5.6**	91	139
254310.1200	**1.6**	50	76	254310.5300	**5.7**	91	139
254310.1300	**1.7**	50	76	254310.5400	**5.8**	91	139
254310.1400	**1.8**	53	80	254310.5500	**5.9**	91	139
254310.1500	**1.9**	53	80	254310.5600	**6**	91	139
254310.1600	**2**	56	85	254310.5700	**6.5**	97	148
254310.1700	**2.1**	56	85	254310.5800	**6.8**	102	156
254310.1800	**2.2**	59	90	254310.5900	**7**	102	156
254310.1900	**2.3**	59	90	254310.6000	**7.5**	102	156
254310.2000	**2.4**	62	95	254310.6100	**7.8**	109	165
254310.2100	**2.5**	62	95	254310.6200	**8**	109	165
254310.2200	**2.6**	62	95	254310.6300	**8.5**	109	165
254310.2300	**2.7**	66	100	254310.6400	**8.8**	115	175
254310.2400	**2.8**	66	100	254310.6500	**9**	115	175
254310.2500	**2.9**	66	100	254310.6600	**9.5**	115	175
254310.2600	**3**	66	100	254310.6700	**9.8**	121	184
254310.2700	**3.1**	69	106	254310.6800	**10**	121	184
254310.2800	**3.2**	69	106	254310.6900	**10.2**	121	184
254310.2900	**3.3**	69	106	254310.7000	**10.5**	121	184
254310.3000	**3.4**	73	112	254310.7100	**11**	128	195
254310.3100	**3.5**	73	112	254310.7200	**11.5**	128	195
254310.3200	**3.6**	73	112	254310.7300	**11.8**	128	195
254310.3300	**3.7**	73	112	254310.7400	**12**	134	205
254310.3400	**3.8**	78	119	254310.7500	**12.5**	134	205
254310.3500	**3.9**	78	119	254310.7600	**13**	134	205
254310.3600	**4**	78	119	254310.7700	**13.5**	140	214
254310.3700	**4.1**	78	119	254310.7800	**14**	140	214
254310.3800	**4.2**	78	119	254310.7900	**14.5**	144	220
254310.3900	**4.3**	82	126	254310.8000	**15**	144	220
254310.4000	**4.4**	82	126	254310.8100	**15.5**	149	227
254310.4100	**4.5**	82	126	254310.8200	**16**	149	227

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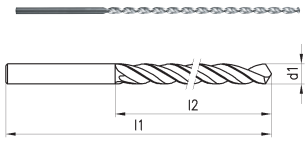
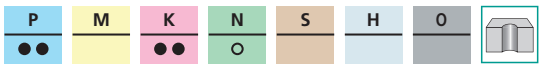


254320 FUTURO Twist drill, extra-long





Made of HSS (High Speed Steel), with cylindrical shank, According to DIN 1869, Tip angle 130°
Main application: Steel (ISO-P), Main application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), For through-hole drilling

Application
Standard drill for general purpose use in materials up to about 1000 N/mm2.

Order ID	d1 mm	l2 mm	l1 mm	Order ID	d1 mm	l2 mm	l1 mm	Order ID	d1 mm	l2 mm	l1 mm
254320.0050	**2**	85	125	254320.1500	**4.9**	135	195	254320.2950	**7.9**	165	240
254320.0100	**2.1**	85	125	254320.1550	**5**	135	195	254320.3000	**8**	165	240
254320.0150	**2.2**	90	135	254320.1600	**5.1**	135	195	254320.3050	**8.1**	165	240
254320.0200	**2.3**	90	135	254320.1650	**5.2**	135	195	254320.3100	**8.2**	165	240
254320.0250	**2.4**	95	140	254320.1700	**5.3**	135	195	254320.3150	**8.3**	165	240
254320.0300	**2.5**	95	140	254320.1750	**5.4**	140	205	254320.3200	**8.4**	165	240
254320.0350	**2.6**	95	140	254320.1800	**5.5**	140	205	254320.3250	**8.5**	165	240
254320.0400	**2.7**	100	150	254320.1850	**5.6**	140	205	254320.3300	**8.6**	175	250
254320.0450	**2.8**	100	150	254320.1900	**5.7**	140	205	254320.3350	**8.7**	175	250
254320.0500	**2.9**	100	150	254320.1950	**5.8**	140	205	254320.3400	**8.8**	175	250
254320.0550	**3**	100	150	254320.2000	**5.9**	140	205	254320.3450	**9**	175	250
254320.0600	**3.1**	105	155	254320.2050	**6**	140	205	254320.3500	**9.2**	175	250
254320.0650	**3.2**	105	155	254320.2100	**6.1**	150	215	254320.3550	**9.3**	175	250
254320.0700	**3.3**	105	155	254320.2150	**6.2**	150	215	254320.3600	**9.5**	175	250
254320.0750	**3.4**	115	165	254320.2200	**6.3**	150	215	254320.3650	**9.6**	185	265
254320.0800	**3.5**	115	165	254320.2250	**6.4**	150	215	254320.3700	**9.7**	185	265
254320.0850	**3.6**	115	165	254320.2300	**6.5**	150	215	254320.3750	**9.8**	185	265
254320.0900	**3.7**	115	165	254320.2350	**6.6**	150	215	254320.3800	**9.9**	185	265
254320.0950	**3.8**	120	175	254320.2400	**6.7**	150	215	254320.3850	**10**	185	265
254320.1000	**3.9**	120	175	254320.2450	**6.8**	155	225	254320.3900	**10.2**	185	265
254320.1050	**4**	120	175	254320.2500	**6.9**	155	225	254320.3950	**10.5**	185	265
254320.1100	**4.1**	120	175	254320.2550	**7**	155	225	254320.4000	**11**	195	280
254320.1150	**4.2**	120	175	254320.2600	**7.1**	155	225	254320.4050	**11.5**	195	280
254320.1200	**4.3**	125	185	254320.2650	**7.3**	155	225	254320.4100	**11.8**	195	280
254320.1250	**4.4**	125	185	254320.2700	**7.4**	155	225	254320.4150	**12**	205	295
254320.1300	**4.5**	125	185	254320.2750	**7.5**	155	225	254320.4200	**12.5**	205	295
254320.1350	**4.6**	125	185	254320.2800	**7.6**	165	240	254320.4250	**12.7**	205	295
254320.1400	**4.7**	125	185	254320.2850	**7.7**	165	240	254320.4300	**13**	205	295
254320.1450	**4.8**	135	195	254320.2900	**7.8**	165	240				

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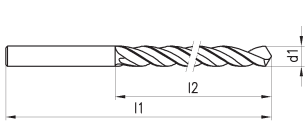


254330 FUTURO Twist drill, extra-long





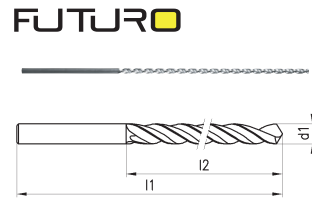
Made of HSS (High Speed Steel), with cylindrical shank, According to DIN 1869, Tip angle 130°
Main application: Steel (ISO-P), Main application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), For through-hole drilling

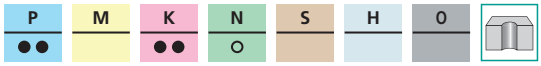
Application
Standard drill for general purpose use in materials up to about 1000 N/mm2.

Order ID	d1 mm	l2 mm	l1 mm	Order ID	d1 mm	l2 mm	l1 mm	Order ID	d1 mm	l2 mm	l1 mm
254330.0050	**2**	110	160	254330.0550	**5**	170	245	254330.1050	**9**	220	320
254330.0100	**2.3**	115	170	254330.0600	**5.5**	180	260	254330.1100	**9.5**	220	320
254330.0150	**2.5**	120	180	254330.0650	**6**	180	260	254330.1150	**10**	235	340
254330.0200	**3**	130	190	254330.0700	**6.3**	190	275	254330.1200	**10.2**	235	340
254330.0250	**3.2**	135	200	254330.0750	**6.5**	190	275	254330.1250	**10.5**	235	340
254330.0300	**3.3**	135	200	254330.0800	**7**	200	290	254330.1300	**11**	250	365
254330.0350	**3.5**	145	210	254330.0850	**7.5**	200	290	254330.1350	**11.5**	250	365
254330.0400	**4**	150	220	254330.0900	**8**	210	305	254330.1400	**12**	260	375
254330.0450	**4.2**	150	220	254330.0950	**8.2**	210	305	254330.1450	**12.5**	260	375
254330.0500	**4.5**	160	235	254330.1000	**8.5**	210	305	254330.1500	**13**	260	375

254340 FUTURO Twist drill, extra-long







Made of HSS (High Speed Steel), with cylindrical shank, According to DIN 1869, Tip angle 130°
Main application: Steel (ISO-P), Main application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), For through-hole drilling

Application
Standard drill for general purpose use in materials up to about 1000 N/mm2.

Order ID	**d1**	l2	l1	Order ID	**d1**	l2	l1	Order ID	**d1**	l2	l1
	mm	mm	mm		**mm**	mm	mm		**mm**	mm	mm
254340.0050	**2.5**	150	225	254340.0450	**6**	225	330	254340.0850	**9.5**	280	410
254340.0100	**3**	160	240	254340.0500	**6.5**	235	350	254340.0900	**10**	295	430
254340.0150	**3.5**	180	265	254340.0550	**6.8**	250	370	254340.0950	**10.5**	295	430
254340.0200	**4**	190	280	254340.0600	**7**	250	370	254340.1000	**11**	310	455
254340.0250	**4.2**	190	280	254340.0650	**7.5**	250	370	254340.1050	**11.5**	310	455
254340.0300	**4.5**	200	295	254340.0700	**8**	265	390	254340.1100	**12**	330	480
254340.0350	**5**	210	315	254340.0750	**8.5**	265	390	254340.1150	**12.5**	330	480
254340.0400	**5.5**	225	330	254340.0800	**9**	280	410	254340.1200	**13**	330	480



254491 FUTURO Set of twist drills





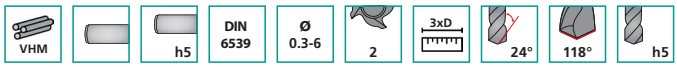
Made of HSS-E Co5 (High Speed Steel, contains approximately 5% cobalt), with cylindrical shank, According to DIN 338, With three-faced grinding from 4 mm, Tip angle 135°, Drill cutting tolerance h8 (according to ISO 286 fit system)
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), For through-hole drilling

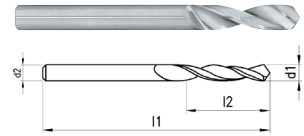
Features
Triangular shank for perfect grip in three-jaw chucks. Prevents the tool from slipping in the chuck, which protects the tool and the clamping chuck.
The special ground drill point keeps the feed force low and is also ideal for use in hand-held drills.

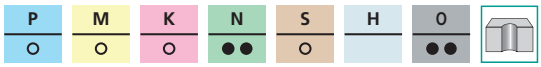
Order ID	**Range mm**	Gradation mm	Contents pieces
254491.0100	**1…10**	0.5	19
254491.0200	**1…13**	0.5	25

255500 FUTURO Solid carbide micro drill

PRO

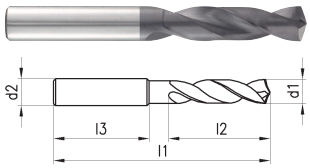






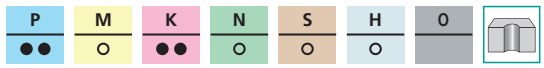
Made of solid hard metal, with cylindrical shank, Shaft tolerance h5, According to DIN 6539, Nominal size Ø 0.3 - 6 mm, Number of teeth 2, Length ratio 3xD, Drill with 24° helix angle, Tip angle 118°, Drill cutting tolerance h5 (according to ISO 286 fit system)
Secondary application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Main application: Plastics and other materials (ISO O), For through-hole drilling

Order ID	**d1**	l2	l1	d2
	mm	mm	mm	mm
255500.0100	**0.3**	5	30	0.3
255500.0200	**0.4**	6	30	0.4
255500.0300	**0.5**	6	30	0.5
255500.0400	**0.6**	6	30	0.6
255500.0500	**0.7**	6	30	0.7
255500.0600	**0.8**	7	30	0.8
255500.0700	**0.9**	7	30	0.9
255500.0800	**1**	7	30	1
255500.0900	**1.1**	8	30	1.1
255500.1000	**1.2**	8	30	1.2
255500.1100	**1.3**	8	30	1.3
255500.1200	**1.4**	8	30	1.4
255500.1300	**1.5**	8	30	1.5
255500.1400	**1.6**	9	38	1.6
255500.1500	**1.7**	9	38	1.7
255500.1600	**1.8**	9	38	1.8
255500.1700	**1.9**	9	38	1.9
255500.1800	**2**	9	38	2
255500.1900	**2.1**	9	38	2.1
255500.2000	**2.2**	10	40	2.2
255500.2100	**2.3**	10	40	2.3
255500.2200	**2.4**	11	43	2.4
255500.2300	**2.5**	11	43	2.5
255500.2400	**2.6**	11	43	2.6
255500.2500	**2.7**	12	46	2.7
255500.2600	**2.8**	12	46	2.8
255500.2700	**2.9**	12	46	2.9
255500.2800	**3**	12	46	3
255500.2900	**3.1**	14	49	3.1
255500.3000	**3.2**	14	49	3.2
255500.3200	**3.4**	15	52	3.4
255500.3300	**3.5**	15	52	3.5
255500.3400	**3.6**	15	52	3.6
255500.3100	**3.3**	14	49	3.3
255500.3500	**3.7**	15	52	3.7
255500.3600	**3.8**	17	55	3.8
255500.3700	**3.9**	17	55	3.9
255500.3800	**4**	17	55	4
255500.3900	**4.1**	17	55	4.1
255500.4000	**4.2**	17	55	4.2
255500.4100	**4.3**	18	58	4.3
255500.4200	**4.4**	18	58	4.4
255500.4300	**4.5**	18	58	4.5
255500.4500	**4.7**	18	58	4.7
255500.4600	**4.8**	20	62	4.8
255500.4700	**4.9**	20	62	4.9
255500.4800	**5**	20	62	5
255500.4900	**5.1**	20	62	5.1
255500.5000	**5.2**	20	62	5.2
255500.5100	**5.3**	20	62	5.3
255500.5200	**5.4**	21	66	5.4
255500.5300	**5.5**	21	66	5.5
255500.5400	**5.6**	21	66	5.6
255500.5500	**5.7**	21	66	5.7
255500.5600	**5.8**	21	66	5.8
255500.5700	**5.9**	21	66	5.9
255500.5800	**6**	21	66	6



255520 FUTURO Solid carbide twist drill





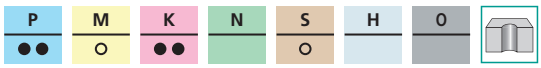
Made of solid hard metal, TiAlN coating, with cylindrical shank, According to DIN 6537, Nominal size Ø 3 - 16 mm, Number of teeth 2, Length ratio 3xD, Tip angle 140°
Main application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Hardened steel (ISO H), For through-hole drilling

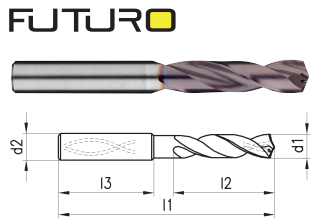
Design
Point angle 140°, strong core, very good self-centring, short chips from concave cutting geometry with special sharpening and pointing. The multilayer coating on a TiAlN-TiN bases combines the advantages of the TiN-, TiAlN and TiCN layers and thus offers unusually universal use.
For drilling depths 3 x D.

Order ID	**d1**	l2	l1	d2	l3	Order ID	**d1**	l2	l1	d2	l3
	mm	mm	mm	mm	mm		**mm**	mm	mm	mm	mm
255520.0100	**3**	20	62	6	36	255520.1520	**7.1**	41	79	8	36
255520.0120	**3.1**	20	62	6	36	255520.1540	**7.2**	41	79	8	36
255520.0140	**3.2**	20	62	6	36	255520.1560	**7.3**	41	79	8	36
255520.0200	**3.3**	20	62	6	36	255520.1580	**7.4**	41	79	8	36
255520.0250	**3.4**	20	62	6	36	255520.1600	**7.5**	41	79	8	36
255520.0300	**3.5**	20	62	6	36	255520.1620	**7.6**	41	79	8	36
255520.0320	**3.6**	20	62	6	36	255520.1640	**7.7**	41	79	8	36
255520.0340	**3.7**	20	62	6	36	255520.1700	**7.8**	41	79	8	36
255520.0400	**3.8**	24	66	6	36	255520.1750	**7.9**	41	79	8	36
255520.0450	**3.9**	24	66	6	36	255520.1800	**8**	41	79	8	36
255520.0500	**4**	24	66	6	36	255520.1820	**8.1**	47	89	10	40
255520.0550	**4.1**	24	66	6	36	255520.1840	**8.2**	47	89	10	40
255520.0600	**4.2**	24	66	6	36	255520.1860	**8.3**	47	89	10	40
255520.0620	**4.3**	24	66	6	36	255520.1880	**8.4**	47	89	10	40
255520.0640	**4.4**	24	66	6	36	255520.1900	**8.5**	47	89	10	40
255520.0700	**4.5**	24	66	6	36	255520.1950	**8.6**	47	89	10	40
255520.0720	**4.6**	24	66	6	36	255520.1975	**8.7**	47	89	10	40
255520.0740	**4.7**	24	66	6	36	255520.2000	**8.8**	47	89	10	40
255520.0800	**4.8**	28	66	6	36	255520.2050	**8.9**	47	89	10	40
255520.0850	**4.9**	28	66	6	36	255520.2100	**9**	47	89	10	40
255520.0900	**5**	28	66	6	36	255520.2120	**9.1**	47	89	10	40
255520.0920	**5.1**	28	66	6	36	255520.2140	**9.2**	47	89	10	40
255520.0940	**5.2**	28	66	6	36	255520.2160	**9.3**	47	89	10	40
255520.0960	**5.3**	28	66	6	36	255520.2180	**9.4**	47	89	10	40
255520.0980	**5.4**	28	66	6	36	255520.2200	**9.5**	47	89	10	40
255520.1000	**5.5**	28	66	6	36	255520.2220	**9.6**	47	89	10	40
255520.1020	**5.6**	28	66	6	36	255520.2240	**9.7**	47	89	10	40
255520.1040	**5.7**	28	66	6	36	255520.2260	**9.8**	47	89	10	40
255520.1100	**5.8**	28	66	6	36	255520.2280	**9.9**	47	89	10	40
255520.1150	**5.9**	28	66	6	36	255520.2400	**10**	47	89	10	40
255520.1200	**6**	28	66	6	36	255520.2500	**10.2**	55	102	12	45
255520.1220	**6.1**	34	79	8	36	255520.2600	**10.5**	55	102	12	45
255520.1240	**6.2**	34	79	8	36	255520.2700	**11**	55	102	12	45
255520.1260	**6.3**	34	79	8	36	255520.2800	**11.5**	55	102	12	45
255520.1280	**6.4**	34	79	8	36	255520.2900	**12**	55	102	12	45
255520.1300	**6.5**	34	79	8	36	255520.3000	**12.5**	60	107	14	45
255520.1320	**6.6**	34	79	8	36	255520.3100	**13**	60	107	14	45
255520.1340	**6.7**	34	79	8	36	255520.3200	**13.5**	60	107	14	45
255520.1400	**6.8**	34	79	8	36	255520.3300	**14**	60	107	14	45
255520.1450	**6.9**	34	79	8	36	255520.3400	**15**	65	115	16	48
255520.1500	**7**	34	79	8	36	255520.3500	**16**	65	115	16	48

255540 FUTURO Solid carbide twist drill







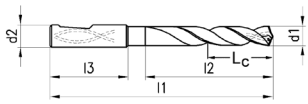
Made of solid hard metal, TiAlN coating, with cylindrical shank, According to DIN 6537, Nominal size Ø 4 - 16 mm, Number of teeth 2, With internal cooling vertically, Length ratio 3xD, Tip angle 140°
Main application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Secondary application: Superalloys (ISO S), For through-hole drilling

Design
Point angle 140°, strong core, very good self-centring, short chips from concave cutting geometry with special sharpening and pointing. The multilayer coating on a TiAlN-TiN bases combines the advantages of the TiN-, TiAlN and TiCN layers and thus offers unusually universal use.
For drilling depths 3 x D, with internal cooling.

Order ID	**d1** **mm**	l2 mm	l1 mm	d2 mm	l3 mm	Order ID	**d1** **mm**	l2 mm	l1 mm	d2 mm	l3 mm
255540.0100	**4**	24	66	6	36	255540.1700	**9**	47	89	10	40
255540.0200	**4.2**	24	66	6	36	255540.1800	**9.5**	47	89	10	40
255540.0300	**4.5**	24	66	6	36	255540.1900	**9.8**	47	89	10	40
255540.0400	**4.8**	28	66	6	36	255540.2000	**10**	47	89	10	40
255540.0500	**5**	28	66	6	36	255540.2100	**10.2**	55	102	12	45
255540.0600	**5.5**	28	66	6	36	255540.2200	**10.5**	55	102	12	45
255540.0700	**5.8**	28	66	6	36	255540.2300	**11**	55	102	12	45
255540.0800	**6**	28	66	6	36	255540.2400	**11.5**	55	102	12	45
255540.0900	**6.5**	34	79	8	36	255540.2500	**12**	55	102	12	45
255540.1000	**6.8**	34	79	8	36	255540.2600	**12.5**	60	107	14	45
255540.1100	**7**	34	79	8	36	255540.2700	**13**	60	107	14	45
255540.1200	**7.5**	41	79	8	36	255540.2800	**13.5**	60	107	14	45
255540.1300	**7.8**	41	79	8	36	255540.2900	**14**	60	107	14	45
255540.1400	**8**	41	79	8	36	255540.3000	**15**	65	115	16	48
255540.1500	**8.5**	47	89	10	40	255540.3100	**16**	65	115	16	48
255540.1600	**8.8**	47	89	10	40						

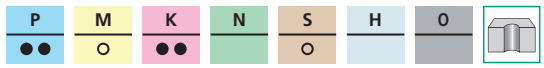
FUTURO





255550 FUTURO Solid carbide twist drill





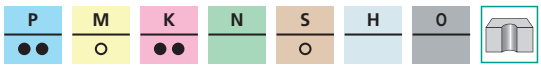
Made of solid hard metal, TiAlN coating, with Whistle-Notch shank, According to DIN 6537, Nominal size Ø 3 - 20 mm, Number of teeth 2, With internal cooling vertically, Length ratio 3xD, Tip angle 140°
Main application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Secondary application: Superalloys (ISO S), For through-hole drilling

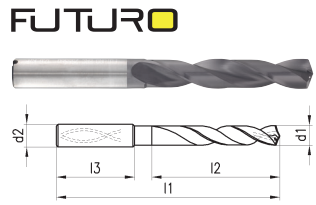
Design
Point angle 140°, strong core, very good self-centring, short chips from concave cutting geometry with special sharpening and pointing.
For drilling depths 3 x D, with internal cooling.

Order ID	**d1** mm	l2 mm	l1 mm	d2 mm	l3 mm	Order ID	**d1** mm	l2 mm	l1 mm	d2 mm	l3 mm
255550.0050	**3**	20	62	6	36	255550.2600	**7.9**	41	79	8	36
255550.0100	**3.1**	20	62	6	36	255550.2650	**8**	41	79	8	36
255550.0150	**3.2**	20	62	6	36	255550.2700	**8.1**	47	89	10	40
255550.0200	**3.3**	20	62	6	36	255550.2750	**8.2**	47	89	10	40
255550.0250	**3.4**	20	62	6	36	255550.2800	**8.3**	47	89	10	40
255550.0300	**3.5**	20	62	6	36	255550.2850	**8.4**	47	89	10	40
255550.0350	**3.6**	20	62	6	36	255550.2900	**8.5**	47	89	10	40
255550.0400	**3.7**	20	62	6	36	255550.2950	**8.6**	47	89	10	40
255550.0450	**3.8**	24	66	6	36	255550.3000	**8.7**	47	89	10	40
255550.0500	**3.9**	24	66	6	36	255550.3050	**8.8**	47	89	10	40
255550.0550	**4**	24	66	6	36	255550.3100	**8.9**	47	89	10	40
255550.0600	**4.1**	24	66	6	36	255550.3150	**9**	47	89	10	40
255550.0650	**4.2**	24	66	6	36	255550.3200	**9.1**	47	89	10	40
255550.0700	**4.3**	24	66	6	36	255550.3250	**9.2**	47	89	10	40
255550.0750	**4.4**	24	66	6	36	255550.3300	**9.3**	47	89	10	40
255550.0800	**4.5**	24	66	6	36	255550.3350	**9.4**	47	89	10	40
255550.0850	**4.6**	24	66	6	36	255550.3400	**9.5**	47	89	10	40
255550.0900	**4.65**	24	66	6	36	255550.3450	**9.6**	47	89	10	40
255550.0950	**4.7**	24	66	6	36	255550.3500	**9.7**	47	89	10	40
255550.1000	**4.8**	28	66	6	36	255550.3550	**9.8**	47	89	10	40
255550.1050	**4.9**	28	66	6	36	255550.3600	**9.9**	47	89	10	40
255550.1100	**5**	28	66	6	36	255550.3650	**10**	47	89	10	40
255550.1150	**5.1**	28	66	6	36	255550.3700	**10.2**	55	102	12	45
255550.1200	**5.2**	28	66	6	36	255550.3750	**10.3**	55	102	12	45
255550.1250	**5.3**	28	66	6	36	255550.3800	**10.5**	55	102	12	45
255550.1300	**5.4**	28	66	6	36	255550.3850	**10.8**	55	102	12	45
255550.1350	**5.5**	28	66	6	36	255550.3900	**11**	55	102	12	45
255550.1400	**5.55**	28	66	6	36	255550.3950	**11.2**	55	102	12	45
255550.1450	**5.6**	28	66	6	36	255550.4000	**11.5**	55	102	12	45
255550.1500	**5.7**	28	66	6	36	255550.4050	**11.8**	55	102	12	45
255550.1550	**5.8**	28	66	6	36	255550.4100	**12**	55	102	12	45
255550.1600	**5.9**	28	66	6	36	255550.4150	**12.2**	60	107	14	45
255550.1650	**6**	28	66	6	36	255550.4200	**12.5**	60	107	14	45
255550.1700	**6.1**	34	79	8	36	255550.4250	**13**	60	107	14	45
255550.1750	**6.2**	34	79	8	36	255550.4300	**13.5**	60	107	14	45
255550.1800	**6.3**	34	79	8	36	255550.4350	**14**	60	107	14	45
255550.1850	**6.4**	34	79	8	36	255550.4400	**14.2**	65	115	16	48
255550.1900	**6.5**	34	79	8	36	255550.4450	**14.5**	65	115	16	48
255550.1950	**6.6**	34	79	8	36	255550.4500	**14.7**	65	115	16	48
255550.2000	**6.7**	34	79	8	36	255550.4550	**15**	65	115	16	48
255550.2050	**6.8**	34	79	8	36	255550.4600	**15.2**	65	115	16	48
255550.2100	**6.9**	34	79	8	36	255550.4650	**15.5**	65	115	16	48
255550.2150	**7**	34	79	8	36	255550.4700	**16**	65	115	16	48
255550.2200	**7.1**	41	79	8	36	255550.4750	**16.5**	73	123	18	48
255550.2250	**7.2**	41	79	8	36	255550.4800	**17**	73	123	18	48
255550.2300	**7.3**	41	79	8	36	255550.4850	**17.5**	73	123	18	48
255550.2350	**7.4**	41	79	8	36	255550.4900	**18**	73	123	18	48
255550.2400	**7.5**	41	79	8	36	255550.4950	**18.5**	79	131	20	50
255550.2450	**7.6**	41	79	8	36	255550.5000	**19**	79	131	20	50
255550.2500	**7.7**	41	79	8	36	255550.5050	**19.5**	79	131	20	50
255550.2550	**7.8**	41	79	8	36	255550.5100	**20**	79	131	20	50

255560 FUTURO Solid carbide twist drill



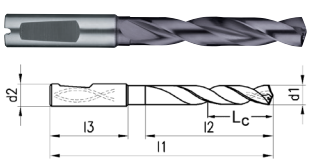




Made of solid hard metal, TiAlN coating, with cylindrical shank, According to DIN 6537, Nominal size Ø 4 - 16 mm, Number of teeth 2, With internal cooling vertically, Length ratio 5xD, Tip angle 140°
Main application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Secondary application: Superalloys (ISO S), For through-hole drilling

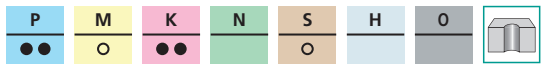
Design
Point angle 140°, strong core, very good self-centring, short chips from concave cutting geometry with special sharpening and pointing. The multilayer coating on a TiAlN-TiN bases combines the advantages of the TiN-, TiAlN and TiCN layers and thus offers unusually universal use.
For drilling depths 5 x D, with internal cooling.

Order ID	**d1** **mm**	l2 mm	l1 mm	d2 mm	l3 mm	Order ID	**d1** **mm**	l2 mm	l1 mm	d2 mm	l3 mm
255560.0100	**4**	36	74	6	36	255560.1700	**9**	61	103	10	40
255560.0200	**4.2**	36	74	6	36	255560.1800	**9.5**	61	103	10	40
255560.0300	**4.5**	36	74	6	36	255560.1900	**9.8**	61	103	10	40
255560.0400	**4.8**	44	82	6	36	255560.2000	**10**	61	103	10	40
255560.0500	**5**	44	82	6	36	255560.2100	**10.2**	71	118	12	45
255560.0600	**5.5**	44	82	6	36	255560.2200	**10.5**	71	118	12	45
255560.0700	**5.8**	44	82	6	36	255560.2300	**11**	71	118	12	45
255560.0800	**6**	44	82	6	36	255560.2400	**11.5**	71	118	12	45
255560.0900	**6.5**	53	91	8	36	255560.2500	**12**	71	118	12	45
255560.1000	**6.8**	53	91	8	36	255560.2600	**12.5**	77	124	14	45
255560.1100	**7**	53	91	8	36	255560.2700	**13**	77	124	14	45
255560.1200	**7.5**	53	91	8	36	255560.2800	**13.5**	77	124	14	45
255560.1300	**7.8**	53	91	8	36	255560.2900	**14**	77	124	14	45
255560.1400	**8**	53	91	8	36	255560.3000	**15**	83	133	16	48
255560.1500	**8.5**	61	103	10	40	255560.3100	**16**	83	133	16	48
255560.1600	**8.8**	61	103	10	40						



255570 FUTURO Solid carbide twist drill





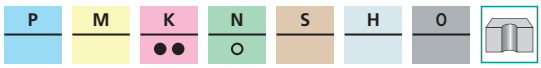
Made of solid hard metal, TiAlN coating, with Whistle-Notch shank, According to DIN 6537, Nominal size Ø 3 - 20 mm, Number of teeth 2, With internal cooling vertically, Length ratio 5xD, Tip angle 140°
Main application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Secondary application: Superalloys (ISO S), For through-hole drilling

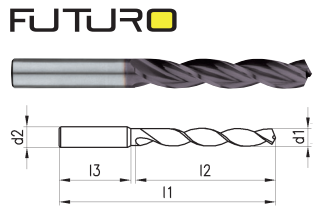
Design
Point angle 140°, strong core, very good self-centring, short chips from concave cutting geometry with special sharpening and pointing. The multilayer coating on a TiAlN-TiN bases combines the advantages of the TiN-, TiAlN and TiCN layers and thus offers unusually universal use.
For drilling depths 5 x D, with internal cooling.

Order ID	**d1**	l2	Lc	l1	d2	l3	Order ID	**d1**	l2	Lc	l1	d2	l3
	mm	mm	mm	mm	mm	mm		**mm**	mm	mm	mm	mm	mm
255570.0010	**3**	28	22	66	6	36	255570.1300	**7.8**	53	41	91	8	36
255570.0020	**3.1**	28	22	66	6	36	255570.1350	**7.9**	53	41	91	8	36
255570.0030	**3.2**	28	22	66	6	36	255570.1400	**8**	53	41	91	8	36
255570.0040	**3.3**	28	22	66	6	36	255570.1420	**8.1**	61	46	103	10	40
255570.0050	**3.4**	28	22	66	6	36	255570.1440	**8.2**	61	46	103	10	40
255570.0060	**3.5**	28	22	66	6	36	255570.1460	**8.3**	61	46	103	10	40
255570.0070	**3.6**	28	22	66	6	36	255570.1480	**8.4**	61	46	103	10	40
255570.0080	**3.7**	28	22	66	6	36	255570.1500	**8.5**	61	46	103	10	40
255570.0090	**3.8**	36	28	74	6	36	255570.1530	**8.6**	61	46	103	10	40
255570.0095	**3.9**	36	28	74	6	36	255570.1560	**8.7**	61	46	103	10	40
255570.0100	**4**	36	28	74	6	36	255570.1600	**8.8**	61	46	103	10	40
255570.0150	**4.1**	36	28	74	6	36	255570.1650	**8.9**	61	46	103	10	40
255570.0200	**4.2**	36	28	74	6	36	255570.1700	**9**	61	46	103	10	40
255570.0230	**4.3**	36	28	74	6	36	255570.1720	**9.1**	61	46	103	10	40
255570.0260	**4.4**	36	28	74	6	36	255570.1740	**9.2**	61	46	103	10	40
255570.0300	**4.5**	36	28	74	6	36	255570.1760	**9.3**	61	46	103	10	40
255570.0325	**4.6**	36	28	74	6	36	255570.1780	**9.4**	61	46	103	10	40
255570.0350	**4.65**	36	28	74	6	36	255570.1800	**9.5**	61	46	103	10	40
255570.0375	**4.7**	36	28	74	6	36	255570.1830	**9.6**	61	46	103	10	40
255570.0400	**4.8**	44	35	82	6	36	255570.1860	**9.7**	61	46	103	10	40
255570.0450	**4.9**	44	35	82	6	36	255570.1900	**9.8**	61	46	103	10	40
255570.0500	**5**	44	35	82	6	36	255570.1950	**9.9**	61	46	103	10	40
255570.0520	**5.1**	44	35	82	6	36	255570.2000	**10**	61	46	103	10	40
255570.0540	**5.2**	44	35	82	6	36	255570.2100	**10.2**	71	55	118	12	45
255570.0560	**5.3**	44	35	82	6	36	255570.2200	**10.5**	71	55	118	12	45
255570.0580	**5.4**	44	35	82	6	36	255570.2250	**10.8**	71	55	118	12	45
255570.0600	**5.5**	44	35	82	6	36	255570.2300	**11**	71	55	118	12	45
255570.0625	**5.55**	44	35	82	6	36	255570.2350	**11.2**	71	55	118	12	45
255570.0650	**5.6**	44	35	82	6	36	255570.2400	**11.5**	71	55	118	12	45
255570.0675	**5.7**	44	35	82	6	36	255570.2450	**11.8**	71	55	118	12	45
255570.0700	**5.8**	44	35	82	6	36	255570.2500	**12**	71	55	118	12	45
255570.0750	**5.9**	44	35	82	6	36	255570.2550	**12.2**	77	58	124	14	45
255570.0800	**6**	44	35	82	6	36	255570.2600	**12.5**	77	58	124	14	45
255570.0820	**6.1**	53	41	91	8	36	255570.2700	**13**	77	58	124	14	45
255570.0840	**6.2**	53	41	91	8	36	255570.2800	**13.5**	77	58	124	14	45
255570.0860	**6.3**	53	41	91	8	36	255570.2900	**14**	77	58	124	14	45
255570.0880	**6.4**	53	41	91	8	36	255570.2930	**14.2**	83	63	133	16	48
255570.0900	**6.5**	53	41	91	8	36	255570.2960	**14.5**	83	63	133	16	48
255570.0930	**6.6**	53	41	91	8	36	255570.3000	**15**	83	63	133	16	48
255570.0960	**6.7**	53	41	91	8	36	255570.3030	**15.2**	83	63	133	16	48
255570.1000	**6.8**	53	41	91	8	36	255570.3060	**15.5**	83	63	133	16	48
255570.1050	**6.9**	53	41	91	8	36	255570.3100	**16**	83	63	133	16	48
255570.1100	**7**	53	41	91	8	36	255570.3200	**16.5**	93	71	143	18	48
255570.1120	**7.1**	53	41	91	8	36	255570.3300	**17**	93	71	143	18	48
255570.1140	**7.2**	53	41	91	8	36	255570.3400	**17.5**	93	71	143	18	48
255570.1160	**7.3**	53	41	91	8	36	255570.3500	**18**	93	71	143	18	48
255570.1180	**7.4**	53	41	91	8	36	255570.3600	**18.5**	101	77	153	20	50
255570.1200	**7.5**	53	41	91	8	36	255570.3700	**19**	101	77	153	20	50
255570.1230	**7.6**	53	41	91	8	36	255570.3800	**19.5**	101	77	153	20	50
255570.1260	**7.7**	53	41	91	8	36	255570.3900	**20**	101	77	153	20	50

255620 FUTURO Solid carbide twist drill







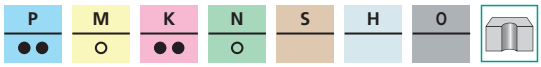
Made of solid hard metal, TiAlN coating, with cylindrical shank, According to DIN 6537, Nominal size Ø 3 - 12 mm, Number of teeth 3, Length ratio 5xD, Tip angle 130°
Main application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), For through-hole drilling

Version
Point angle 130°, narrow core, very good self-centring.
For drilling depths 5 x D.
Application
For drilling into solid material for holes that are precisely positioned and shaped. Dimension precision and surface quality correspond to the bore quality. Suited for drilling cast iron and long-chipping Al alloys.
The 3-fluted drill permits very high feed rates. The open cutting-flute profile in combination with the short, compact design offer maximum process security and allow use even under the most difficult conditions, such as tapping on slanted surfaces or reboring in an interrupted step.

Order ID	**d1** **mm**	l2 mm	l1 mm	d2 mm	l3 mm	Order ID	**d1** **mm**	l2 mm	l1 mm	d2 mm	l3 mm
255620.0100	**3**	28	66	6	36	255620.1000	**7**	53	91	8	36
255620.0200	**3.3**	28	66	6	36	255620.1100	**7.8**	53	91	8	36
255620.0300	**4**	36	74	6	36	255620.1200	**8**	53	91	8	36
255620.0400	**4.5**	36	74	6	36	255620.1300	**8.5**	61	103	10	40
255620.0500	**5**	44	82	6	36	255620.1400	**9**	61	103	10	40
255620.0600	**5.5**	44	82	6	36	255620.1500	**10**	61	103	10	40
255620.0700	**6**	44	82	6	36	255620.1600	**11**	71	118	12	45
255620.0800	**6.5**	53	91	8	36	255620.1700	**11.8**	71	118	12	45
255620.0900	**6.8**	53	91	8	36	255620.1800	**12**	71	118	12	45

255505 FUTURO Solid carbide micro drill

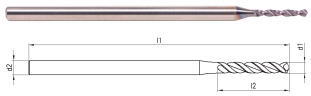






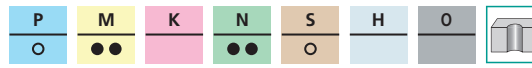
Made of solid hard metal, TiAlN coating, with cylindrical shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 0.2 - 0.5 mm, Number of teeth 2, Length ratio 5xD-7xD, Drill with 24° helix angle, Tip angle 118°, Drill cutting tolerance -0.002 / +0.004
Main application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), For through-hole drilling

Order ID	**d1** **mm**	l2 mm	l1 mm	d2 mm
255505.0100	**0.20**	1.0	30	1.0
255505.0200	**0.25**	1.0	30	1.0
255505.0300	**0.30**	1.5	30	1.0
255505.0400	**0.35**	1.5	30	1.0
255505.0500	**0.40**	2.0	30	1.0
255505.0600	**0.45**	3.5	30	1.0
255505.0700	**0.50**	4.0	30	1.0



255510 FUTURO Solid carbide micro drill



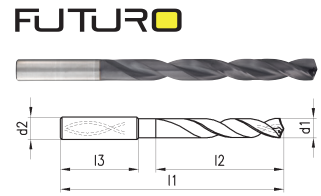


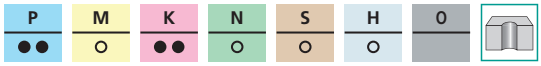
Made of solid hard metal, TiAlN coating, with cylindrical shank, Shaft tolerance h6, According to factory standard, Nominal size Ø 0.5 - 1.45 mm, Length ratio 5xD-7xD, Drill with 34° helix angle, Tip angle 118°, Drill cutting tolerance -0.002 / +0.004
Secondary application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), For through-hole drilling

Order ID	**d1** **mm**	l2 mm	l1 mm	d2 mm
255510.0100	**0.50**	4.0	30	1.5
255510.0200	**0.55**	4.0	30	1.5
255510.0300	**0.60**	5.0	30	1.5
255510.0400	**0.65**	5.0	30	1.5
255510.0500	**0.70**	5.0	30	1.5
255510.0600	**0.75**	5.0	30	1.5
255510.0700	**0.80**	6.0	30	1.5
255510.0800	**0.85**	6.0	30	1.5
255510.0900	**0.90**	7.0	30	1.5
255510.1000	**0.95**	7.0	30	1.5
255510.1100	**1.00**	8.0	30	1.5
255510.1200	**1.05**	8.0	30	1.5
255510.1300	**1.10**	9.0	30	1.5
255510.1400	**1.15**	9.0	30	1.5
255510.1500	**1.20**	10.0	30	1.5
255510.1600	**1.25**	10.0	30	1.5
255510.1700	**1.30**	10.0	30	1.5
255510.1800	**1.35**	11.0	30	1.5
255510.1900	**1.40**	11.0	30	1.5
255510.2000	**1.45**	11.0	30	1.5

255580 FUTURO Solid carbide twist drill

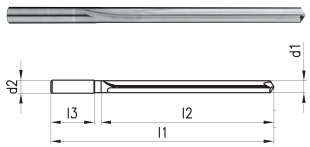






Made of solid hard metal, TiAlN-TiN Coating, with cylindrical shank, According to DIN 6537, Nominal size Ø 3 - 20 mm, With internal cooling vertically, Length ratio 8xD, Tip angle 140°, Drill cutting tolerance m7 (according to ISO 286 fit system)
Main application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Hardened steel (ISO H), For through-hole drilling

Order ID	**d1**	l2	l1	d2	l3	Order ID	**d1**	l2	l1	d2	l3
	mm	mm	mm	mm	mm		**mm**	mm	mm	mm	mm
255580.0030	**3**	30	70	6	36	255580.1000	**8.5**	87	131	10	40
255580.0031	**3.1**	30	70	6	36	255580.1060	**8.6**	87	131	10	40
255580.0032	**3.2**	30	70	6	36	255580.1070	**8.7**	87	131	10	40
255580.0033	**3.3**	30	70	6	36	255580.1080	**8.8**	87	131	10	40
255580.0034	**3.4**	30	70	6	36	255580.1090	**8.9**	87	131	10	40
255580.0035	**3.5**	35.5	75	6	36	255580.1100	**9**	87	131	10	40
255580.0036	**3.6**	35.5	75	6	36	255580.1110	**9.1**	95	139	10	40
255580.0037	**3.7**	35.5	75	6	36	255580.1120	**9.2**	95	139	10	40
255580.0038	**3.8**	37.5	75	6	36	255580.1130	**9.3**	95	139	10	40
255580.0039	**3.9**	37.5	75	6	36	255580.1140	**9.4**	95	139	10	40
255580.0040	**4**	37.5	75	6	36	255580.1200	**9.5**	95	139	10	40
255580.0041	**4.1**	37.5	75	6	36	255580.1260	**9.6**	95	139	10	40
255580.0042	**4.2**	37.5	75	6	36	255580.1270	**9.7**	95	139	10	40
255580.0043	**4.3**	45	85	6	36	255580.1280	**9.8**	95	139	10	40
255580.0044	**4.4**	45	85	6	36	255580.1290	**9.9**	95	139	10	40
255580.0045	**4.5**	45	85	6	36	255580.1300	**10**	95	139	10	40
255580.0046	**4.6**	45	85	6	36	255580.1310	**10.1**	106	155	12	45
255580.0047	**4.7**	45	85	6	36	255580.1400	**10.2**	106	155	12	45
255580.0048	**4.8**	50	90	6	36	255580.1430	**10.3**	106	155	12	45
255580.0049	**4.9**	50	90	6	36	255580.1440	**10.4**	106	155	12	45
255580.0100	**5**	50	90	6	36	255580.1500	**10.5**	106	155	12	45
255580.0110	**5.1**	50	90	6	36	255580.1560	**10.6**	106	155	12	45
255580.0120	**5.2**	50	90	6	36	255580.1570	**10.7**	106	155	12	45
255580.0130	**5.3**	50	90	6	36	255580.1580	**10.8**	106	155	12	45
255580.0140	**5.4**	57	97	6	36	255580.1590	**10.9**	106	155	12	45
255580.0200	**5.5**	57	97	6	36	255580.1600	**11**	106	155	12	45
255580.0260	**5.6**	57	97	6	36	255580.1610	**11.1**	114	163	12	45
255580.0270	**5.7**	57	97	6	36	255580.1620	**11.2**	114	163	12	45
255580.0280	**5.8**	57	97	6	36	255580.1630	**11.3**	114	163	12	45
255580.0290	**5.9**	57	97	6	36	255580.1640	**11.4**	114	163	12	45
255580.0300	**6**	57	97	6	36	255580.1700	**11.5**	114	163	12	45
255580.0310	**6.1**	66	106	8	36	255580.1760	**11.6**	114	163	12	45
255580.0320	**6.2**	66	106	8	36	255580.1770	**11.7**	114	163	12	45
255580.0330	**6.3**	66	106	8	36	255580.1780	**11.8**	114	163	12	45
255580.0340	**6.4**	66	106	8	36	255580.1790	**11.9**	114	163	12	45
255580.0400	**6.5**	66	106	8	36	255580.1800	**12**	114	163	12	45
255580.0460	**6.6**	66	106	8	36	255580.1810	**12.2**	133	182	14	45
255580.0470	**6.7**	66	106	8	36	255580.1820	**12.5**	133	182	14	45
255580.0500	**6.8**	66	106	8	36	255580.1830	**12.7**	133	182	14	45
255580.0590	**6.9**	76	116	8	36	255580.1840	**13**	133	182	14	45
255580.0600	**7**	76	116	8	36	255580.1850	**13.5**	133	182	14	45
255580.0610	**7.1**	76	116	8	36	255580.1860	**14**	133	182	14	45
255580.0620	**7.2**	76	116	8	36	255580.1870	**14.2**	152	204	16	48
255580.0630	**7.3**	76	116	8	36	255580.1880	**14.5**	152	204	16	48
255580.0640	**7.4**	76	116	8	36	255580.1890	**15**	152	204	16	48
255580.0700	**7.5**	76	116	8	36	255580.1900	**15.5**	152	204	16	48
255580.0760	**7.6**	76	116	8	36	255580.1910	**16**	152	204	16	48
255580.0770	**7.7**	76	116	8	36	255580.1920	**16.5**	171	223	18	48
255580.0800	**7.8**	76	116	8	36	255580.1930	**17**	171	223	18	48
255580.0890	**7.9**	76	116	8	36	255580.1940	**17.5**	171	223	18	48
255580.0900	**8**	76	116	8	36	255580.1950	**18**	171	223	18	48
255580.0910	**8.1**	87	131	10	40	255580.1960	**18.5**	190	244	20	50
255580.0920	**8.2**	87	131	10	40	255580.1970	**19**	190	244	20	50
255580.0930	**8.3**	87	131	10	40	255580.1980	**19.5**	190	244	20	50
255580.0940	**8.4**	87	131	10	40	255580.1990	**20**	190	244	20	50



255650 FUTURO Solid carbide deep hole drill





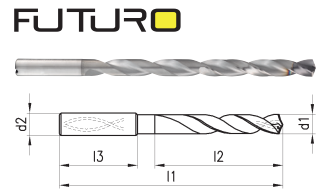
Made of solid hard metal, with cylindrical shank, According to factory standard, Nominal size Ø 4 - 16 mm, With internal cooling vertically, Length ratio 10xD, Tip angle 120°, Drill cutting tolerance m7 (according to ISO 286 fit system)
Main application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N), For through-hole drilling

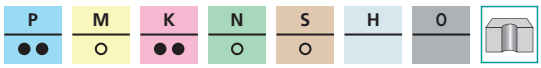
Design
Point angle 120°, strong core, very good self-centring, **straight fluted,** special flute shape with double bevels, special pointing.
For drilling depths 10 x D, with internal cooling.
Application For working short-chipping materials, such as cast iron, grey cast iron, tempered grey cast iron, aluminium alloys with high silicon content. For making holes with extremely high alignment precision.
Requirements, remarks
Powerful machines, low-play spindles, precisely aligned tool receptacles, concentricity error of the tool when mounted in chuck max. 0.02 mm.

Order ID	**d1** **mm**	l2 mm	l1 mm	d2 mm	l3 mm
255650.0100	**4**	77	121	6	36
255650.0200	**4.2**	77	121	6	36
255650.0300	**4.5**	77	121	6	36
255650.0400	**5**	82	121	6	36
255650.0500	**5.5**	82	121	6	36
255650.0600	**6**	82	121	6	36
255650.0700	**6.5**	106	146	8	36
255650.0800	**6.8**	106	146	8	36
255650.0900	**7**	106	146	8	36
255650.1000	**7.5**	106	146	8	36
255650.1100	**7.8**	106	146	8	36
255650.1200	**8**	106	146	8	36
255650.1300	**8.5**	130	175	10	40
255650.1400	**9**	130	175	10	40
255650.1500	**9.5**	130	175	10	40
255650.1600	**10**	130	175	10	40
255650.1700	**10.2**	159	209	12	45
255650.1800	**10.5**	159	209	12	45
255650.1900	**11**	159	209	12	45
255650.2000	**11.5**	159	209	12	45
255650.2100	**12**	159	209	12	45
255650.2200	**12.5**	183	233	14	45
255650.2300	**13**	183	233	14	45
255650.2400	**13.5**	183	233	14	45
255650.2500	**14**	183	233	14	45
255650.2600	**14.5**	207	260	16	48
255650.2700	**15**	207	260	16	48
255650.2800	**15.5**	207	260	16	48
255650.2900	**16**	207	260	16	48

255600 FUTURO Solid carbide twist drill







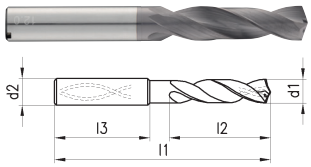
Made of solid hard metal, TiAlN-TiN Coating, with cylindrical shank, According to DIN 6537, Nominal size Ø 3 - 20 mm, With internal cooling vertically, Length ratio 12xD, Tip angle 135°, Drill cutting tolerance h7 (according to ISO 286 fit system)
Main application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), For through-hole drilling

Properties:
With **4 drill heels** for bores in true alignment.

Application suggestions
Making a cylindrical pilot hole with a drilling depth of at least 1 x D required.

Order ID	**d1**	l2	l1	d2	l3	Order ID	**d1**	l2	l1	d2	l3
	mm	mm	mm	mm	mm		**mm**	mm	mm	mm	mm
255600.0030	**3**	50	90	6	36	255600.0890	**7.9**	108	146	8	36
255600.0031	**3.1**	50	90	6	36	255600.0900	**8**	108	146	8	36
255600.0032	**3.2**	50	90	6	36	255600.0910	**8.1**	120	162	10	40
255600.0033	**3.3**	50	90	6	36	255600.0920	**8.2**	120	162	10	40
255600.0034	**3.4**	50	90	6	36	255600.0930	**8.3**	120	162	10	40
255600.0035	**3.5**	50	90	6	36	255600.0940	**8.4**	120	162	10	40
255600.0036	**3.6**	50	90	6	36	255600.1000	**8.5**	120	162	10	40
255600.0037	**3.7**	50	90	6	36	255600.1060	**8.6**	120	162	10	40
255600.0038	**3.8**	64	102	6	36	255600.1070	**8.7**	120	162	10	40
255600.0039	**3.9**	64	102	6	36	255600.1080	**8.8**	120	162	10	40
255600.0100	**4**	64	102	6	36	255600.1090	**8.9**	120	162	10	40
255600.0110	**4.1**	64	102	6	36	255600.1100	**9**	120	162	10	40
255600.0120	**4.2**	64	102	6	36	255600.1110	**9.1**	120	162	10	40
255600.0130	**4.3**	64	102	6	36	255600.1120	**9.2**	120	162	10	40
255600.0140	**4.4**	64	102	6	36	255600.1130	**9.3**	120	162	10	40
255600.0200	**4.5**	64	102	6	36	255600.1140	**9.4**	120	162	10	40
255600.0260	**4.6**	64	102	6	36	255600.1200	**9.5**	120	162	10	40
255600.0270	**4.7**	64	102	6	36	255600.1260	**9.6**	120	162	10	40
255600.0280	**4.8**	78	116	6	36	255600.1270	**9.7**	120	162	10	40
255600.0290	**4.9**	78	116	6	36	255600.1280	**9.8**	120	162	10	40
255600.0300	**5**	78	116	6	36	255600.1290	**9.9**	120	162	10	40
255600.0310	**5.1**	78	116	6	36	255600.1300	**10**	120	162	10	40
255600.0320	**5.2**	78	116	6	36	255600.1310	**10.1**	156	204	12	45
255600.0330	**5.3**	78	116	6	36	255600.1320	**10.2**	156	204	12	45
255600.0340	**5.4**	78	116	6	36	255600.1330	**10.3**	156	204	12	45
255600.0400	**5.5**	78	116	6	36	255600.1400	**10.5**	156	204	12	45
255600.0460	**5.6**	78	116	6	36	255600.1460	**10.6**	156	204	12	45
255600.0470	**5.7**	78	116	6	36	255600.1470	**10.7**	156	204	12	45
255600.0480	**5.8**	78	116	6	36	255600.1480	**10.8**	156	204	12	45
255600.0490	**5.9**	78	116	6	36	255600.1490	**10.9**	156	204	12	45
255600.0500	**6**	78	116	6	36	255600.1500	**11**	156	204	12	45
255600.0510	**6.1**	108	146	8	36	255600.1600	**11.5**	156	204	12	45
255600.0520	**6.2**	108	146	8	36	255600.1700	**12**	156	204	12	45
255600.0530	**6.3**	108	146	8	36	255600.1710	**12.5**	182	230	14	45
255600.0540	**6.4**	108	146	8	36	255600.1720	**12.7**	182	230	14	45
255600.0600	**6.5**	108	146	8	36	255600.1730	**13**	182	230	14	45
255600.0660	**6.6**	108	146	8	36	255600.1740	**13.5**	182	230	14	45
255600.0670	**6.7**	108	146	8	36	255600.1750	**14**	182	230	14	45
255600.0680	**6.8**	108	146	8	36	255600.1760	**14.5**	208	260	16	48
255600.0690	**6.9**	108	146	8	36	255600.1770	**15**	208	260	16	48
255600.0700	**7**	108	146	8	36	255600.1780	**15.5**	208	260	16	48
255600.0710	**7.1**	108	146	8	36	255600.1790	**16**	208	260	16	48
255600.0720	**7.2**	108	146	8	36	255600.1800	**16.5**	234	285	18	48
255600.0730	**7.3**	108	146	8	36	255600.1810	**17**	234	285	18	48
255600.0740	**7.4**	108	146	8	36	255600.1820	**17.5**	234	285	18	48
255600.0800	**7.5**	108	146	8	36	255600.1830	**18**	234	285	18	48
255600.0860	**7.6**	108	146	8	36	255600.1840	**18.5**	258	310	20	50
255600.0870	**7.7**	108	146	8	36	255600.1850	**19**	258	310	20	50
255600.0880	**7.8**	108	146	8	36	255600.1870	**20**	258	310	20	50

FUTURO



255541 FUTURO Solid carbide twist drill

VA







Swiss Made, Made of solid hard metal, Coated, with cylindrical shank, Shaft tolerance h6, According to DIN 6537, Nominal size Ø 3 - 16 mm, Number of teeth 2, With internal cooling vertically, Length ratio 3xD, Drill with 30° helix angle, Tip angle 140°, Drill cutting tolerance h6 (according to ISO 286 fit system) Main application: Stainless steel (ISO M), Secondary application: Non-ferrous metals (ISO N), Main application: Superalloys (ISO S), For through-hole drilling

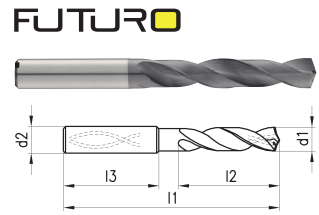
Design
Special geometry and coating for stainless steels and superalloys.
For drilling depths 3 x D, with internal cooling.

Order ID	**d1**	l2	Lc	d2	l1	l3	Order ID	**d1**	l2	Lc	d2	l1	l3
	mm	mm	mm	mm	mm	mm		**mm**	mm	mm	mm	mm	mm
255541.0050	**3**	20	15	6	62	36	255541.2400	**7.7**	41	29	8	79	36
255541.0100	**3.1**	20	15	6	62	36	255541.2450	**7.8**	41	29	8	79	36
255541.0150	**3.2**	20	15	6	62	36	255541.2500	**7.9**	41	29	8	79	36
255541.0200	**3.3**	20	15	6	62	36	255541.2550	**8**	41	29	8	79	36
255541.0250	**3.4**	20	14	6	62	36	255541.2600	**8.1**	47	34	10	89	40
255541.0300	**3.5**	20	14	6	62	36	255541.2650	**8.2**	47	34	10	89	40
255541.0350	**3.6**	20	14	6	62	36	255541.2700	**8.3**	47	34	10	89	40
255541.0400	**3.7**	20	14	6	62	36	255541.2750	**8.4**	47	34	10	89	40
255541.0450	**3.8**	24	18	6	66	36	255541.2800	**8.5**	47	34	10	89	40
255541.0500	**3.9**	24	18	6	66	36	255541.2850	**8.6**	47	34	10	89	40
255541.0550	**4**	24	18	6	66	36	255541.2900	**8.6**	47	34	10	89	40
255541.0600	**4.1**	24	17	6	66	36	255541.2950	**8.8**	47	33	10	89	40
255541.0650	**4.2**	24	17	6	66	36	255541.3000	**8.9**	47	33	10	89	40
255541.0700	**4.3**	24	17	6	66	36	255541.3050	**9**	47	33	10	89	40
255541.0750	**4.4**	24	17	6	66	36	255541.3100	**9.1**	47	33	10	89	40
255541.0800	**4.5**	24	17	6	66	36	255541.3150	**9.2**	47	33	10	89	40
255541.0850	**4.6**	24	17	6	66	36	255541.3200	**9.3**	47	33	10	89	40
255541.0900	**4.7**	24	16	6	66	36	255541.3250	**9.4**	47	32	10	89	40
255541.0950	**4.8**	28	20	6	66	36	255541.3300	**9.5**	47	32	10	89	40
255541.1000	**4.9**	28	20	6	66	36	255541.3350	**9.8**	47	32	10	89	40
255541.1050	**5**	28	20	6	66	36	255541.3400	**10**	47	32	10	89	40
255541.1100	**5.1**	28	20	6	66	36	255541.3450	**10.2**	55	39	12	102	45
255541.1150	**5.2**	28	20	6	66	36	255541.3500	**10.5**	55	39	12	102	45
255541.1200	**5.3**	28	20	6	66	36	255541.3550	**10.7**	55	38	12	102	45
255541.1250	**5.4**	28	19	6	66	36	255541.3600	**10.8**	55	38	12	102	45
255541.1300	**5.5**	28	19	6	66	36	255541.3650	**11**	55	38	12	102	45
255541.1350	**5.6**	28	19	6	66	36	255541.3700	**11.2**	55	38	12	102	45
255541.1400	**5.7**	28	19	6	66	36	255541.3750	**11.5**	55	37	12	102	45
255541.1450	**5.8**	28	19	6	66	36	255541.3800	**11.7**	55	37	12	102	45
255541.1500	**5.9**	28	19	6	66	36	255541.3850	**11.8**	55	37	12	102	45
255541.1550	**6**	28	19	6	66	36	255541.3900	**12**	55	43	12	102	45
255541.1600	**6.1**	34	24	8	79	36	255541.3950	**12.2**	60	47	14	107	45
255541.1650	**6.2**	34	24	8	79	36	255541.4000	**12.5**	60	47	14	107	45
255541.1700	**6.3**	34	24	8	79	36	255541.4050	**12.7**	60	47	14	107	45
255541.1750	**6.4**	34	24	8	79	36	255541.4100	**12.8**	60	47	14	107	45
255541.1800	**6.5**	34	24	8	79	36	255541.4150	**13**	60	47	14	107	45
255541.1850	**6.6**	34	24	8	79	36	255541.4200	**13.5**	60	46	14	107	45
255541.1900	**6.7**	34	23	8	79	36	255541.4250	**13.8**	60	46	14	107	45
255541.1950	**6.8**	34	23	8	79	36	255541.4300	**14**	60	46	14	107	45
255541.2000	**6.9**	34	23	8	79	36	255541.4350	**14.2**	64	49	16	115	48
255541.2050	**7**	34	23	8	79	36	255541.4400	**14.5**	64	49	16	115	48
255541.2100	**7.1**	41	30	8	79	36	255541.4450	**15**	64	52	16	115	48
255541.2150	**7.2**	41	30	8	79	36	255541.4500	**15.2**	64	51	16	115	48
255541.2200	**7.3**	41	30	8	79	36	255541.4550	**15.5**	64	51	16	115	48
255541.2250	**7.4**	41	29	8	79	36	255541.4600	**15.8**	64	51	16	115	48
255541.2300	**7.5**	41	29	8	79	36	255541.4650	**16**	64	51	16	115	48
255541.2350	**7.6**	41	29	8	79	36							

255572 FUTURO Solid carbide twist drill

VA









Made of solid hard metal, Coated, with cylindrical shank, Shaft tolerance h6, According to DIN 6537, Nominal size Ø 4 - 16 mm, Number of teeth 2, With internal cooling vertically, Length ratio 5xD, Drill with 30° helix angle, Tip angle 140°, Drill cutting tolerance h6 (according to ISO 286 fit system)
Main application: Stainless steel (ISO M), Secondary application: Non-ferrous metals (ISO N), Main application: Superalloys (ISO S), For through-hole drilling

Design
Special geometry and coating for stainless steels and superalloys.
For drilling depths 5 x D, with internal cooling.

Order ID	**d1**	l2	Lc	d2	l1	l3	Order ID	**d1**	l2	Lc	d2	l1	l3
	mm	mm	mm	mm	mm	mm		**mm**	mm	mm	mm	mm	mm
255572.0050	**4**	36	30	6	74	36	255572.2100	**8.1**	61	48	10	103	40
255572.0100	**4.1**	36	29	6	74	36	255572.2150	**8.2**	61	48	10	103	40
255572.0150	**4.2**	36	29	6	74	36	255572.2200	**8.3**	61	48	10	103	40
255572.0200	**4.3**	36	29	6	74	36	255572.2250	**8.4**	61	48	10	103	40
255572.0250	**4.4**	36	29	6	74	36	255572.2300	**8.5**	61	48	10	103	40
255572.0300	**4.5**	36	29	6	74	36	255572.2350	**8.6**	61	48	10	103	40
255572.0350	**4.6**	36	29	6	74	36	255572.2400	**8.7**	61	47	10	103	40
255572.0400	**4.7**	36	28	6	74	36	255572.2450	**8.8**	61	47	10	103	40
255572.0450	**4.8**	44	36	6	82	36	255572.2500	**8.9**	61	47	10	103	40
255572.0500	**4.9**	44	36	6	82	36	255572.2550	**9**	61	47	10	103	40
255572.0550	**5**	44	36	6	82	36	255572.2600	**9.1**	61	47	10	103	40
255572.0600	**5.1**	44	36	6	82	36	255572.2650	**9.2**	61	47	10	103	40
255572.0650	**5.2**	44	36	6	82	36	255572.2700	**9.3**	61	47	10	103	40
255572.0700	**5.3**	44	36	6	82	36	255572.2750	**9.4**	61	46	10	103	40
255572.0750	**5.4**	44	35	6	82	36	255572.2800	**9.5**	61	46	10	103	40
255572.0800	**5.5**	44	35	6	82	36	255572.2850	**9.8**	61	46	10	103	40
255572.0850	**5.6**	44	35	6	82	36	255572.2900	**10**	61	46	10	103	40
255572.0900	**5.7**	44	35	6	82	36	255572.2950	**10.2**	71	55	12	118	45
255572.0950	**5.8**	44	35	6	82	36	255572.3000	**10.5**	71	55	12	118	45
255572.1000	**5.9**	44	35	6	82	36	255572.3050	**10.8**	71	54	12	118	45
255572.1050	**6**	44	35	6	82	36	255572.3100	**11**	71	54	12	118	45
255572.1100	**6.1**	53	43	8	91	36	255572.3150	**11.2**	71	54	12	118	45
255572.1150	**6.2**	53	43	8	91	36	255572.3200	**11.5**	71	53	12	118	45
255572.1200	**6.3**	53	43	8	91	36	255572.3250	**11.8**	71	53	12	118	45
255572.1250	**6.4**	53	43	8	91	36	255572.3300	**12**	71	53	12	118	45
255572.1300	**6.5**	53	43	8	91	36	255572.3350	**12.2**	77	58	14	124	45
255572.1350	**6.6**	53	43	8	91	36	255572.3400	**12.5**	77	58	14	124	45
255572.1400	**6.7**	53	42	8	91	36	255572.3450	**12.8**	77	57	14	124	45
255572.1450	**6.8**	53	42	8	91	36	255572.3500	**13**	77	57	14	124	45
255572.1500	**6.9**	53	42	8	91	36	255572.3550	**13.5**	77	56	14	124	45
255572.1550	**7**	53	42	8	91	36	255572.3600	**13.8**	77	56	14	124	45
255572.1600	**7.1**	53	42	8	91	36	255572.3650	**14**	77	56	14	124	45
255572.1650	**7.2**	53	42	8	91	36	255572.3700	**14.2**	83	61	16	133	48
255572.1700	**7.3**	53	42	8	91	36	255572.3750	**14.5**	83	61	16	133	48
255572.1750	**7.4**	53	41	8	91	36	255572.3800	**14.8**	83	60	16	133	48
255572.1800	**7.5**	53	41	8	91	36	255572.3850	**15**	83	60	16	133	48
255572.1850	**7.6**	53	41	8	91	36	255572.3900	**15.2**	83	67	16	133	48
255572.1900	**7.7**	53	41	8	91	36	255572.3950	**15.5**	83	67	16	133	48
255572.1950	**7.8**	53	41	8	91	36	255572.4000	**15.8**	83	67	16	133	48
255572.2000	**7.9**	53	41	8	91	36	255572.4050	**16**	83	67	16	133	48
255572.2050	**8**	53	41	8	91	36							

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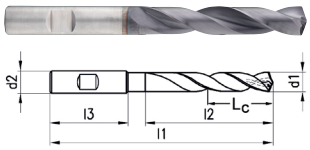
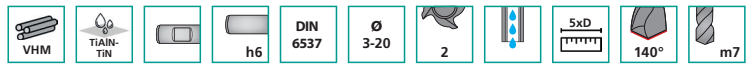
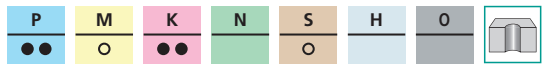


255571 FUTURO Solid carbide twist drill



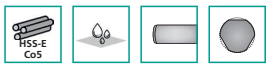


Made of solid hard metal, TiAlN-TiN Coating, with Weldon shank, Shaft tolerance h6, According to DIN 6537, Nominal size Ø 3 - 20 mm, Number of teeth 2, With internal cooling vertically, Length ratio 5xD, Tip angle 140°, Drill cutting tolerance m7 (according to ISO 286 fit system)
Main application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Secondary application: Superalloys (ISO S), For through-hole drilling

Design
Strong core, very good self-centring function, short chips due to concave cutting geometry with special grinding and point thinning
For drilling depths 5 x D, with internal cooling.

Order ID	d1 mm	l2 mm	Lc mm	l1 mm	d2 mm	l3 mm	Order ID	d1 mm	l2 mm	Lc mm	l1 mm	d2 mm	l3 mm
255571.0010	**3**	28	22	66	6	36	255571.1500	**8.5**	61	46	103	10	40
255571.0020	**3.1**	28	22	66	6	36	255571.1530	**8.6**	61	46	103	10	40
255571.0030	**3.2**	28	22	66	6	36	255571.1560	**8.7**	61	46	103	10	40
255571.0040	**3.3**	28	22	66	6	36	255571.1600	**8.8**	61	46	103	10	40
255571.0050	**3.4**	28	22	66	6	36	255571.1650	**8.9**	61	46	103	10	40
255571.0060	**3.5**	28	22	66	6	36	255571.1700	**9**	61	46	103	10	40
255571.0070	**3.6**	28	22	66	6	36	255571.1720	**9.1**	61	46	103	10	40
255571.0080	**3.7**	28	22	66	6	36	255571.1740	**9.2**	61	46	103	10	40
255571.0090	**3.8**	36	28	74	6	36	255571.1760	**9.3**	61	46	103	10	40
255571.0095	**3.9**	36	28	74	6	36	255571.1780	**9.4**	61	46	103	10	40
255571.0100	**4**	36	28	74	6	36	255571.1800	**9.5**	61	46	103	10	40
255571.0150	**4.1**	36	28	74	6	36	255571.1830	**9.6**	61	46	103	10	40
255571.0200	**4.2**	36	28	74	6	36	255571.1860	**9.7**	61	46	103	10	40
255571.0230	**4.3**	36	28	74	6	36	255571.1900	**9.8**	61	46	103	10	40
255571.0260	**4.4**	36	28	74	6	36	255571.1950	**9.9**	61	46	103	10	40
255571.0300	**4.5**	36	28	74	6	36	255571.2000	**10**	61	46	103	10	40
255571.0325	**4.6**	36	28	74	6	36	255571.2100	**10.2**	71	55	118	12	45
255571.0350	**4.65**	36	28	74	6	36	255571.2200	**10.5**	71	55	118	12	45
255571.0375	**4.7**	36	28	74	6	36	255571.2230	**10.7**	71	55	118	12	45
255571.0400	**4.8**	44	35	82	6	36	255571.2250	**10.8**	71	55	118	12	45
255571.0450	**4.9**	44	35	82	6	36	255571.2300	**11**	71	55	118	12	45
255571.0500	**5**	44	35	82	6	36	255571.2350	**11.2**	71	55	118	12	45
255571.0520	**5.1**	44	35	82	6	36	255571.2400	**11.5**	71	55	118	12	45
255571.0540	**5.2**	44	35	82	6	36	255571.2450	**11.8**	71	55	118	12	45
255571.0560	**5.3**	44	35	82	6	36	255571.2500	**12**	71	55	118	12	45
255571.0580	**5.4**	44	35	82	6	36	255571.2550	**12.2**	77	58	124	14	45
255571.0600	**5.5**	44	35	82	6	36	255571.2600	**12.5**	77	58	124	14	45
255571.0625	**5.55**	44	35	82	6	36	255571.2630	**12.7**	77	58	124	14	45
255571.0650	**5.6**	44	35	82	6	36	255571.2660	**12.8**	77	58	124	14	45
255571.0675	**5.7**	44	35	82	6	36	255571.2700	**13**	77	58	124	14	45
255571.0700	**5.8**	44	35	82	6	36	255571.2750	**13.1**	77	58	124	14	45
255571.0750	**5.9**	44	35	82	6	36	255571.2800	**13.5**	77	58	124	14	45
255571.0800	**6**	44	35	82	6	36	255571.2830	**13.7**	77	58	124	14	45
255571.0820	**6.1**	53	41	91	8	36	255571.2860	**13.8**	77	58	124	14	45
255571.0840	**6.2**	53	41	91	8	36	255571.2900	**14**	77	58	124	14	45
255571.0860	**6.3**	53	41	91	8	36	255571.2930	**14.2**	83	63	133	16	48
255571.0880	**6.4**	53	41	91	8	36	255571.2960	**14.5**	83	63	133	16	48
255571.0900	**6.5**	53	41	91	8	36	255571.2970	**14.7**	83	63	133	16	48
255571.0930	**6.6**	53	41	91	8	36	255571.2980	**14.8**	83	63	133	16	48
255571.0960	**6.7**	53	41	91	8	36	255571.3000	**15**	83	63	133	16	48
255571.1000	**6.8**	53	41	91	8	36	255571.3100	**15.1**	83	63	133	16	48
255571.1050	**6.9**	53	41	91	8	36	255571.3030	**15.2**	83	63	133	16	48
255571.1100	**7**	53	41	91	8	36	255571.3060	**15.5**	83	63	133	16	48
255571.1120	**7.1**	53	41	91	8	36	255571.3070	**15.7**	83	63	133	16	48
255571.1140	**7.2**	53	41	91	8	36	255571.3080	**15.8**	83	63	133	16	48
255571.1160	**7.3**	53	41	91	8	36	255571.3101	**16**	83	63	133	16	48
255571.1180	**7.4**	53	41	91	8	36	255571.3200	**16.5**	93	71	143	18	48
255571.1200	**7.5**	53	41	91	8	36	255571.3300	**17**	93	71	143	18	48
255571.1230	**7.6**	53	41	91	8	36	255571.3400	**17.5**	93	71	143	18	48
255571.1260	**7.7**	53	41	91	8	36	255571.3450	**17.8**	93	71	143	18	48
255571.1300	**7.8**	53	41	91	8	36	255571.3500	**18**	93	71	143	18	48
255571.1350	**7.9**	53	41	91	8	36	255571.3600	**18.5**	101	77	153	20	50
255571.1400	**8**	53	41	91	8	36	255571.3650	**18.7**	101	77	153	20	50
255571.1420	**8.1**	61	46	103	10	40	255571.3700	**19**	101	77	153	20	50
255571.1440	**8.2**	61	46	103	10	40	255571.3800	**19.5**	101	77	153	20	50
255571.1460	**8.3**	61	46	103	10	40	255571.3850	**19.7**	101	77	153	20	50
255571.1480	**8.4**	61	46	103	10	40	255571.3900	**20**	101	77	153	20	50

257650 FUTURO Multistep drill





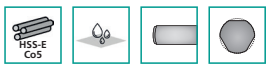


Made of HSS-E Co5 (High Speed Steel, contains approximately 5% cobalt), Coated, with cylindrical shank, With three-faced grinding
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Plastics and other materials (ISO O)

Properties:
Sturdy design for drilling and chamfering in one operation. The additional 60° groove is used for deburring thin-walled sheet metal.
Special coating to increase the service life and improve the surface quality.

Order ID	**Range mm**	Step size mm	**Step Ø mm**	Overall length mm	Shaft Ø mm
257650.0100	**4…12**	5	**4/5/6/7/8/9/10/11/12**	79	6
257650.0200	**4…20**	3	**4/6/8/10/12/14/16/18/20**	67	8
257650.0300	**4…30**	4	**4/6/8/10/12/14/16/18/20/22/24/26/28/30**	100	10

257651 FUTURO Multistep drill set





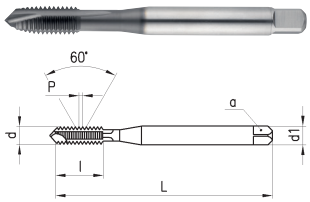


Made of HSS-E Co5 (High Speed Steel, contains approximately 5% cobalt), Coated, with cylindrical shank, With three-faced grinding
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Plastics and other materials (ISO O)

In a practical plastic box.
Properties:
Sturdy design for drilling and chamfering in one operation. The additional 60° groove is used for deburring thin-walled sheet metal.
Special coating to increase the service life and improve the surface quality.

Order ID	**Range mm**	Contents, 1 unit each	Contents pieces
257651.0100	**4…30**	4-12/4-20/4-30	3

FUTURO



264100 FUTURO High-performance tap

Metric ISO thread



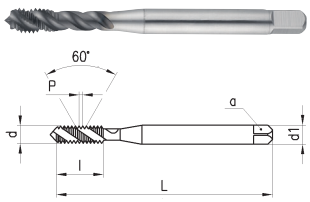


Made of HSS-E PM (High Speed Steel, contains approximately 5% to 8% cobalt, powder metallurgy sintered Variant), THL coating, For alloyed and stainless steels, spheroidal graphite cast iron, long-chipping aluminum cast and wrought alloys, long-chipping copper and brass alloys., with cylindrical shank with square end, According to thread standard M (metric coarse thread), Number of teeth 2 - 4, Cutting direction: right, Thread cutting edge form B, Thread tolerance zone 6HX
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), For tapping, For through-hole threads

Designs:
M1...M1.4: reinforced shaft, DIN 371, tolerance field 5HX, HSSE
M1.6...M10: reinforced shaft, DIN 371,
M12...M24: falling through shaft, DIN 376,

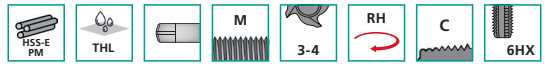
Order ID	d	P	DIN	L	l	d1	a	Ø	teeth
		mm		mm	mm	mm	mm	mm	
264100.0100	**M1**	0.25	371	40	5.5	2.5	2.1	0.75	2
264100.0200	**M1.2**	0.25	371	40	5.5	2.5	2.1	0.95	2
264100.0300	**M1.4**	0.3	371	40	7	2.5	2.1	1.1	2
264100.0400	**M1.6**	0.35	371	40	8	2.5	2.1	1.25	2
264100.0500	**M1.7**	0.35	371	40	8	2.5	2.1	1.35	2
264100.0600	**M1.8**	0.35	371	40	8	2.5	2.1	1.45	2
264100.0700	**M2**	0.4	371	45	7	2.8	2.1	1.6	3
264100.0800	**M2.5**	0.45	371	50	9	2.8	2.1	2.05	3
264100.0900	**M3**	0.5	371	56	10	3.5	2.7	2.5	3
264100.1000	**M4**	0.7	371	63	12	4.5	3.4	3.3	3
264100.1100	**M5**	0.8	371	70	14	6	4.9	4.2	3
264100.1200	**M6**	1	371	80	16	6	4.9	5	3
264100.1300	**M8**	1.25	371	90	18	8	6.2	6.8	3
264100.1400	**M10**	1.5	371	100	20	10	8	8.5	3
264100.1500	**M12**	1.75	376	110	24	9	7	10.2	4
264100.1600	**M14**	2	376	110	25	11	9	12	4
264100.1700	**M16**	2	376	110	28	12	9	14	4
264100.1800	**M18**	2.5	376	125	32	14	11	15.5	4
264100.1900	**M20**	2.5	376	140	32	16	12	17.5	4
264100.2000	**M24**	3	376	160	36	18	14.5	21	4

FUTURO



264105 FUTURO High-performance tap

Metric ISO thread





Made of HSS-E PM (High Speed Steel, contains approximately 5% to 8% cobalt, powder metallurgy sintered Variant), THL coating, For alloyed and stainless steels, spheroidal graphite cast iron, long-chipping aluminum cast and wrought alloys, long-chipping copper and brass alloys., with cylindrical shank with square end, According to thread standard M (metric coarse thread), Number of teeth 3 - 4, Cutting direction: right, Thread cutting edge form C, Thread tolerance zone 6HX
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), For tapping, For blind-hole threads

Designs:
M2...M10: reinforced shaft, DIN 371
M12...M24: falling through shaft, DIN 376

Order ID	d	P	DIN	L	l	d1	a	Ø	teeth
		mm		mm	mm	mm	mm	mm	
264105.0100	**M2**	0.4	371	45	6	2.8	2.1	1.6	3
264105.0200	**M2.5**	0.45	371	50	6.5	2.8	2.1	2.05	3
264105.0300	**M3**	0.5	371	56	7	3.5	2.7	2.5	3
264105.0400	**M4**	0.7	371	63	8.5	4.5	3.4	3.3	3
264105.0500	**M5**	0.8	371	70	10	6	4.9	4.2	3
264105.0600	**M6**	1	371	80	12	6	4.9	5	3
264105.0700	**M8**	1.25	371	90	14	8	6.2	6.8	3
264105.0800	**M10**	1.5	371	100	17	10	8	8.5	3
264105.0900	**M12**	1.75	376	110	18	9	7	10.2	4
264105.1000	**M14**	2	376	110	20.5	11	9	12	4
264105.1100	**M16**	2	376	110	20.5	12	9	14	4
264105.1200	**M18**	2.5	376	125	25.5	14	11	15.5	4
264105.1300	**M20**	2.5	376	140	25.5	16	12	17.5	4
264105.1400	**M24**	3	376	160	32	18	14.5	21	4

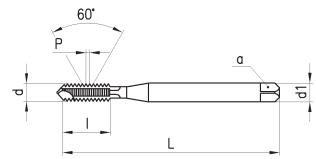
264110 FUTURO High-performance tap

Metric ISO thread









Made of HSS-E PM (High Speed Steel, contains approximately 5% to 8% cobalt, powder metallurgy sintered Variant), THL coating, For alloyed and stainless steels, spheroidal graphite cast iron, long-chipping aluminum cast and wrought alloys, long-chipping copper and brass alloys., with cylindrical shank with square end, According to thread standard M (metric coarse thread), Number of teeth 3 - 4, Threading with radial internal cooling, Cutting direction: right, Thread cutting edge form B, Thread tolerance zone 6HX
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), For tapping, For through-hole threads

Designs:
M5...M10: reinforced shaft, DIN 371
M12...M16: falling through shaft, DIN 376

Order ID	d	P mm	DIN	L mm	l mm	d1 mm	a mm	Ø mm	teeth
264110.0100	**M5**	0.8	371	70	14	6	4.9	4.2	3
264110.0200	**M6**	1	371	80	16	6	4.9	5	3
264110.0300	**M8**	1.25	371	90	18	8	6.2	6.8	3
264110.0400	**M10**	1.5	371	100	20	10	8	8.5	3
264110.0500	**M12**	1.75	376	110	24	9	7	10.2	4
264110.0600	**M14**	2	376	110	25	11	9	12	4
264110.0700	**M16**	2	376	110	28	12	9	14	4

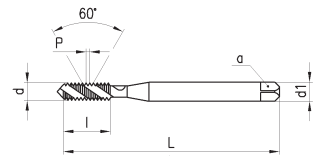
264115 FUTURO High-performance tap

Metric ISO thread









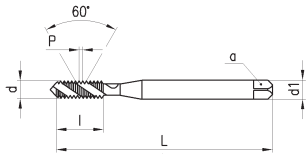
Made of HSS-E PM (High Speed Steel, contains approximately 5% to 8% cobalt, powder metallurgy sintered Variant), THL coating, For alloyed and stainless steels, spheroidal graphite cast iron, long-chipping aluminum cast and wrought alloys, long-chipping copper and brass alloys., with cylindrical shank with square end, According to thread standard M (metric coarse thread), Number of teeth 3 - 4, Threading with axial internal cooling, Cutting direction: right, Thread cutting edge form C, Thread tolerance zone 6HX
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), For tapping, For blind-hole threads

Designs:
M5...M10: reinforced shaft, DIN 371
M12...M16: falling through shaft, DIN 376

Order ID	d	P mm	DIN	L mm	l mm	d1 mm	a mm	Ø mm	teeth
264115.0100	**M5**	0.8	371	70	10	6	4.9	4.2	3
264115.0200	**M6**	1	371	80	12	6	4.9	5	3
264115.0300	**M8**	1.25	371	90	14	8	6.2	6.8	3
264115.0400	**M10**	1.5	371	100	17	10	8	8.5	3
264115.0500	**M12**	1.75	376	110	18	9	7	10.2	4
264115.0600	**M14**	2	376	110	20.5	11	9	12	4
264115.0700	**M16**	2	376	110	20.5	12	9	14	4

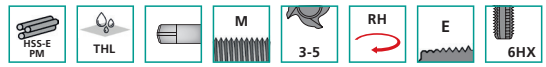
FUTURO





264120 FUTURO High-performance tap

Metric ISO thread





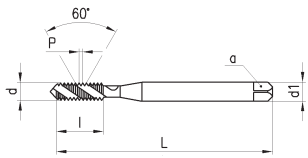
Made of HSS-E PM (High Speed Steel, contains approximately 5% to 8% cobalt, powder metallurgy sintered Variant), THL coating, For alloyed and stainless steels, spheroidal graphite cast iron, long-chipping aluminum cast and wrought alloys, long-chipping copper and brass alloys., with cylindrical shank with square end, According to thread standard M (metric coarse thread), Number of teeth 3 - 5, Cutting direction: right, Thread cutting edge form E, Thread tolerance zone 6HX
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), For tapping, For blind-hole threads

Designs:
M3...M10: reinforced shaft, DIN 371
M12...M20: falling through shaft, DIN 376

Order ID	d	P mm	DIN	L mm	l mm	d1 mm	a mm	Ø mm	teeth
264120.0100	**M3**	0.5	371	56	7	3.5	2.7	2.5	3
264120.0200	**M4**	0.7	371	63	8.5	4.5	3.4	3.3	3
264120.0300	**M5**	0.8	371	70	10	6	4.9	4.2	3
264120.0400	**M6**	1	371	80	12	6	4.9	5	3
264120.0500	**M8**	1.25	371	90	14	8	6.2	6.8	3
264120.0600	**M10**	1.5	371	100	17	10	8	8.5	3
264120.0700	**M12**	1.75	376	110	18	9	7	10.2	4
264120.0800	**M14**	2	376	110	20.5	11	9	12	5
264120.0900	**M16**	2	376	110	20.5	12	9	14	5
264120.1000	**M20**	2.5	376	140	25.5	16	12	17.5	5

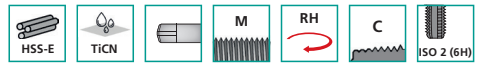
FUTURO

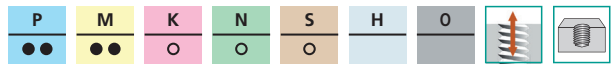




264540 FUTURO Tap

Metric ISO thread





Made of HSS-E (High Speed Steel, contains approximately 5% to 8% cobalt), TiCN coating, Universally applicable. For synchronous and conventional thread production., with cylindrical shank with square end, According to thread standard M (metric coarse thread), Cutting direction: right, Thread cutting edge form C, Thread tolerance zone ISO2 / 6H
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), For tapping, For blind-hole threads

Designs:
M3...M10: reinforced shaft, DIN 371
M12...M24: falling through shaft, DIN 376

Order ID	d	P mm	DIN	L mm	l mm	d1 mm	a mm	Ø mm
264540.0100	**M3**	0.5	371	56	6	3.5	2.7	2.5
264540.0200	**M4**	0.7	371	63	7.5	4.5	3.4	3.3
264540.0300	**M5**	0.8	371	70	8.5	6	4.9	4.2
264540.0400	**M6**	1	371	80	11	6	4.9	5
264540.0500	**M8**	1.25	371	90	14	8	6.2	6.8
264540.0600	**M10**	1.5	371	100	16	10	8	8.5
264540.0700	**M12**	1.75	376	110	18.5	9	7	10.2
264540.0800	**M14**	2	376	110	20	11	9	12
264540.0900	**M16**	2	376	110	20	12	9	14
264540.1000	**M18**	2.5	376	125	25	14	11	15.5
264540.1100	**M20**	2.5	376	140	25	16	12	17.5
264540.1200	**M22**	2.5	376	140	27	18	14.5	19.5
264540.1300	**M24**	3	376	160	30	18	14.5	21

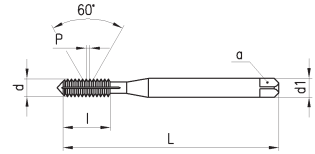
264370 FUTURO Roll form tap

Metric ISO thread









Made of HSS-E (High Speed Steel, contains approximately 5% to 8% cobalt), TiCN coating, For steel, stainless steel, and aluminum., with cylindrical shank with square end, According to thread standard M (metric coarse thread), Cutting direction: right, Thread cutting edge form C, Thread tolerance zone 6HX
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), For thread forming, For through-hole and blind-hole threads

Designs:
M3...M10: reinforced shaft, DIN ~371
M12...M16: falling through shaft, DIN ~376

Order ID	d	P mm	DIN	L mm	l mm	d1 mm	a mm	Ø mm
264370.0100	**M3**	0.5	371	56	10	3.5	2.7	2.8
264370.0200	**M4**	0.7	371	63	12	4.5	3.4	3.7
264370.0300	**M5**	0.8	371	70	14	6	4.9	4.65
264370.0400	**M6**	1	371	80	16	6	4.9	5.55
264370.0500	**M8**	1.25	371	90	18	8	6.2	7.4
264370.0600	**M10**	1.5	371	100	20	10	8	9.25
264370.0700	**M12**	1.75	376	110	24	9	7	11.25
264370.0800	**M16**	2	376	110	26	12	9	15.1

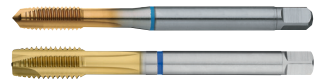
264340 FUTURO High-performance tap

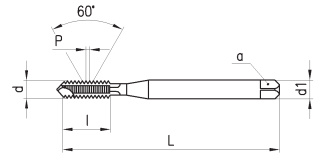
Metric ISO thread







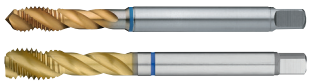


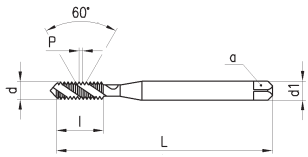


Made of HSS-E (High Speed Steel, contains approximately 5% to 8% cobalt), TiN coating, For tough materials (stainless steel)., with cylindrical shank with square end, According to thread standard M (metric coarse thread), Cutting direction: right, Thread cutting edge form B, Thread tolerance zone ISO2 / 6H
Main application: Stainless steel (ISO M), For tapping, For through-hole threads

Designs:
M3...M10: reinforced shaft, DIN 371
M12...M24: falling through shaft, DIN 376

Order ID	d	P mm	DIN	L mm	l mm	d1 mm	a mm	Ø mm
264340.0100	**M3**	0.5	371	56	10	3.5	2.7	2.5
264340.0200	**M4**	0.7	371	63	12	4.5	3.4	3.4
264340.0300	**M5**	0.8	371	70	14	6	4.9	4.2
264340.0400	**M6**	1	371	80	16	6	4.9	5
264340.0500	**M8**	1.25	371	90	18	8	6.2	6.8
264340.0600	**M10**	1.5	371	100	20	10	8	8.5
264340.0700	**M12**	1.75	376	110	24	9	7	10.2
264340.0800	**M16**	2	376	110	26	12	9	14
264340.0900	**M20**	2.5	376	140	32	16	12	17.5
264340.1000	**M24**	3	376	160	36	18	14.5	21





264350 FUTURO High-performance tap

Metric ISO thread

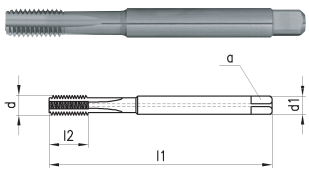
HSS-E PM | TiN | M | RH | C | ISO 2 (6H)

P | M | K | N | S | H | O

Made of HSS-E PM (High Speed Steel, contains approximately 5% to 8% cobalt, powder metallurgy sintered Variant), TiN coating, For tough materials (stainless steel)., with cylindrical shank with square end, According to thread standard M (metric coarse thread), Cutting direction: right, Thread cutting edge form C, Thread tolerance zone ISO2 / 6H
Main application: Stainless steel (ISO M), For blind-hole threads

Designs:
M3...M10: reinforced shaft, DIN 371
M12...M20: falling through shaft, DIN 376

Order ID	d	P mm	DIN	L mm	l mm	d1 mm	a mm	Ø mm
264350.0100	**M3**	0.5	371	56	6	3.5	2.7	2.5
264350.0200	**M4**	0.7	371	63	7.5	4.5	3.4	3.3
264350.0300	**M5**	0.8	371	70	8.5	6	4.9	4.2
264350.0400	**M6**	1	371	80	11	6	4.9	5
264350.0500	**M8**	1.25	371	90	14	8	6.2	6.8
264350.0600	**M10**	1.5	371	100	16	10	8	8.5
264350.0700	**M12**	1.75	376	110	18.5	9	7	10.2
264350.0800	**M16**	2	376	110	20	12	9	14
264350.0900	**M20**	2.5	376	140	25	16	12	17.5



264530 FUTURO Solid carbide tap

Metric ISO threads

VHM | M | RH | C | ISO 2 (6H)

P | M | K | N | S | H | O

Made of solid hard metal, For aluminum and aluminum alloys with a high Si content (10% Si), various cast materials such as GG15, GG25, GG40, GGG40, GGG60, GTW-35-04), non-ferrous metals, and plastics., with cylindrical shank with square end, According to thread standard M (metric coarse thread), Threading with axial internal cooling, Cutting direction: right, Thread cutting edge form C, Thread tolerance zone ISO2 / 6H
Main application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), For through-hole and blind-hole threads

Designs:
M3...M4: reinforced shaft, DIN 371, without internal cooling
M5...M10: reinforced shaft, DIN 371, with internal cooling

Order ID	d	P mm	l1 mm	l2 mm	d1 mm	a mm	Ø mm
264530.0100	**M3**	0.5	56	8	3.5	2.7	2.5
264530.0200	**M4**	0.7	63	10	4.5	3.4	3.3
264530.0300	**M5**	0.8	70	10	6	4.9	4.2
264530.0400	**M6**	1	80	12	6	4.9	5
264530.0500	**M8**	1.25	90	16	8	6.2	6.8
264530.0600	**M10**	1.5	100	18	10	8	8.5

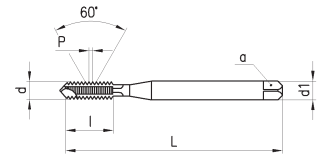
264230 FUTURO Machine tap

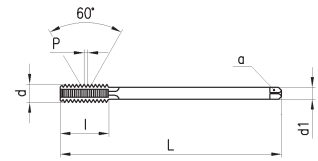
Metric ISO thread











Made of HSS-E (High Speed Steel, contains approximately 5% to 8% cobalt), VAP coating, For martensitic and austenitic stainless steels up to 1200 N/mm², with cylindrical shank with square end, According to thread standard M (metric coarse thread), Cutting direction: right, Thread cutting edge form B, Thread tolerance zone 6H
Main application: Stainless steel (ISO M), For tapping, For through-hole threads
Designs:
M3...M10: reinforced shaft, DIN 371
M12...M24: falling through shaft, DIN 376

Order ID	d	P mm	l mm	L mm	d1 mm	a mm	DIN	Ø mm
264230.0100	**M3**	0.5	10	56	3.5	2.7	371	2.5
264230.0200	**M4**	0.7	12	63	4.5	3.4	371	3.3
264230.0300	**M5**	0.8	14	70	6	4.9	371	4.2
264230.0400	**M6**	1	16	80	6	4.9	371	5
264230.0500	**M8**	1.25	18	90	8	6.2	371	6.8
264230.0600	**M10**	1.5	20	100	10	8	371	8.5
264230.0700	**M12**	1.75	24	110	9	7	376	10.2
264230.0800	**M14**	2	26	110	11	9	376	12
264230.0900	**M16**	2	26	110	12	9	376	14
264230.1000	**M20**	2.5	32	140	16	12	376	17.5
264230.1100	**M24**	3	36	160	18	14.5	376	21

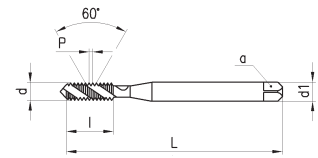
264235 FUTURO Machine tap

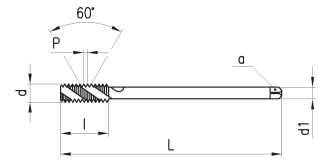
Metric ISO thread





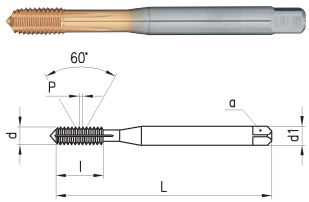






Made of HSS-E (High Speed Steel, contains approximately 5% to 8% cobalt), VAP coating, For martensitic and austenitic stainless steels up to 1200 N/mm², with cylindrical shank with square end, According to thread standard M (metric coarse thread), Cutting direction: right, Thread cutting edge form C, Thread tolerance zone 6H
Main application: Stainless steel (ISO M), For tapping, For blind-hole threads
Designs:
M3...M10: reinforced shaft, DIN 371
M12...M24: falling through shaft, DIN 376

Order ID	d	P mm	l mm	L mm	d1 mm	a mm	DIN	Ø mm
264235.0100	**M3**	0.5	6	56	3.5	2.7	371	2.5
264235.0200	**M4**	0.7	7.5	63	4.5	3.4	371	3.3
264235.0300	**M5**	0.8	8.5	70	6	4.9	371	4.2
264235.0400	**M6**	1	11	80	6	4.9	371	5
264235.0500	**M8**	1.25	14	90	8	6.2	371	6.8
264235.0600	**M10**	1.5	16	100	10	8	371	8.5
264235.0700	**M12**	1.75	18.5	110	9	7	376	10.2
264235.0800	**M14**	2	20	110	11	9	376	12
264235.0900	**M16**	2	20	110	12	9	376	14
264235.1000	**M18**	2.5	25	125	14	11	376	15.5
264235.1100	**M20**	2.5	25	140	16	12	376	17.5
264235.1200	**M24**	3	30	160	18	14.5	376	21



264360 FUTURO Thread former

Metric ISO thread

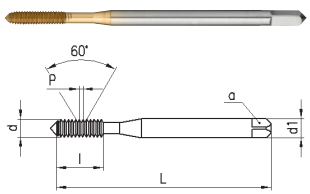
HSS-E | TiN | M | RH | C | 6HX

P	M	K	N	S	H	O
●●	●●		○	●●		

Made of HSS-E (High Speed Steel, contains approximately 5% to 8% cobalt), TiN coating, For all materials suitable for forming with an elongation at break of at least 10%., with cylindrical shank with square end, According to thread standard M (metric coarse thread), Cutting direction: right, Thread cutting edge form C, Thread tolerance zone 6HX
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Non-ferrous metals (ISO N), Main application: Superalloys (ISO S), For thread forming, For through-hole and blind-hole threads

Designs:
M3...M10: reinforced shaft, DIN ~371
M12...M16: falling through shaft, DIN ~376

Order ID	d	P	DIN	L	l	d1	a	Ø
		mm		mm	mm	mm	mm	mm
264360.0100	**M3**	0.5	371	56	10	3.5	2.7	2.8
264360.0200	**M4**	0.7	371	63	12	4.5	3.4	3.7
264360.0300	**M5**	0.8	371	70	14	6	4.9	4.65
264360.0400	**M6**	1	371	80	16	6	4.9	5.55
264360.0500	**M8**	1.25	371	90	18	8	6.2	7.4
264360.0600	**M10**	1.5	371	100	20	10	8	9.25
264360.0700	**M12**	1.75	376	110	24	9	7	11.25
264360.0800	**M16**	2	376	110	26	12	9	15.1



264365 FUTURO Micro thread former

Metric ISO thread

HSS-E | TiN | M | RH | C | 6HX

P	M	K	N	S	H	O
●●	○		○			

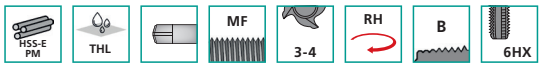
Made of HSS-E (High Speed Steel, contains approximately 5% to 8% cobalt), TiN coating, with cylindrical shank with square end, According to thread standard M (metric coarse thread), Cutting direction: right, Thread cutting edge form C, Thread tolerance zone 6HX
Main application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Secondary application: Non-ferrous metals (ISO N), For thread forming, For through-hole and blind-hole threads

Designs:
M1...M2.5: reinforced shaft, DIN ~371

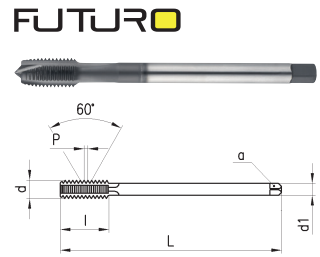
Order ID	d	P	L	l	d1	a	Ø
		mm	mm	mm	mm	mm	mm
264365.0100	**M1**	0.25	40	4	2.5	2.1	0.9
264365.0200	**M1.2**	0.25	40	4.8	2.5	2.1	1.1
264365.0300	**M1.4**	0.3	40	5.6	2.5	2.1	1.28
264365.0400	**M1.6**	0.35	40	6.4	2.5	2.1	1.46
264365.0500	**M1.7**	0.35	40	6.8	2.5	2.1	1.55
264365.0600	**M1.8**	0.35	40	7.2	2.5	2.1	1.66
264365.0700	**M2**	0.4	45	8	2.8	2.1	1.85
264365.0800	**M2.5**	0.45	50	9	2.8	2.1	2.30

264390 FUTURO High-performance tap

Metric ISO fine thread





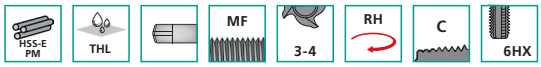


Made of HSS-E PM (High Speed Steel, contains approximately 5% to 8% cobalt, powder metallurgy sintered Variant), THL coating, For alloyed and stainless steels, spheroidal graphite cast iron, long-chipping aluminum cast and wrought alloys, long-chipping copper and brass alloys., with cylindrical shank with square end, According to thread standard MF (metric fine thread), Number of teeth 3 - 4, Cutting direction: right, Thread cutting edge form B, Thread tolerance zone 6HX
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), For tapping, For through-hole threads
Designs:
MF8...MF20: falling through shaft, DIN 374

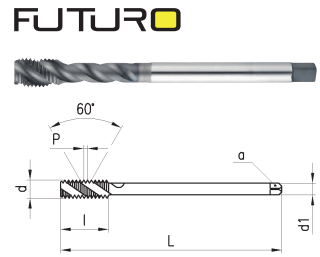
Order ID	d	P mm	DIN	L mm	l mm	d1 mm	a mm	Ø mm	teeth
264390.0100	**MF8**	**1**	374	90	16	6	4.9	7	3
264390.0200	**MF10**	**1.25**	374	90	18	7	5.5	9	3
264390.0300	**MF10**	**1**	374	100	18	7	5.5	8.8	3
264390.0400	**MF12**	**1.5**	374	100	22	9	7	11	4
264390.0500	**MF12**	**1.25**	374	100	22	9	7	10.8	4
264390.0600	**MF12**	**1**	374	100	22	9	7	10.5	4
264390.0700	**MF14**	**1.5**	374	100	22	11	9	12.5	4
264390.0800	**MF16**	**1.5**	374	100	22	12	9	14.5	4
264390.0900	**MF18**	**1.5**	374	110	25	14	11	16.5	4
264390.1000	**MF20**	**1.5**	374	125	25	16	12	18.5	4

264395 FUTURO High-performance tap

Metric ISO fine thread





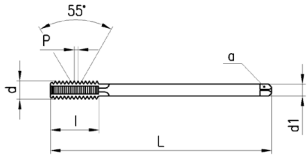


Made of HSS-E PM (High Speed Steel, contains approximately 5% to 8% cobalt, powder metallurgy sintered Variant), THL coating, For alloyed and stainless steels, spheroidal graphite cast iron, long-chipping aluminum cast and wrought alloys, long-chipping copper and brass alloys., with cylindrical shank with square end, According to thread standard MF (metric fine thread), Number of teeth 3 - 4, Cutting direction: right, Thread cutting edge form C, Thread tolerance zone 6HX
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), For tapping, For blind-hole threads
Designs:
MF8...MF20: falling through shaft, DIN 374

Order ID	d	P mm	DIN	L mm	l mm	d1 mm	a mm	Ø mm	teeth
264395.0100	**MF8**	**1**	374	90	12	6	4.9	7	3
264395.0200	**MF10**	**1.25**	374	90	12	7	5.5	9	3
264395.0300	**MF10**	**1**	374	90	14	7	5.5	8.8	3
264395.0400	**MF12**	**1.5**	374	100	14	9	7	11	4
264395.0500	**MF12**	**1.25**	374	100	14	9	7	10.8	4
264395.0600	**MF12**	**1**	374	100	1516	9	7	10.5	4
264395.0700	**MF14**	**1.5**	374	100	16	11	9	12.5	4
264395.0800	**MF16**	**1.5**	374	100	12.5	12	9	14.5	4
264395.0900	**MF18**	**1.5**	374	110	18	14	11	16.5	4
264395.1000	**MF20**	**1.5**	374	125	18	16	12	18.5	4

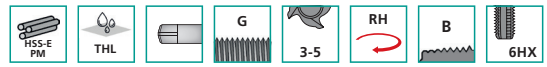
FUTURO





264460 FUTURO High-performance tap

Pipe thread





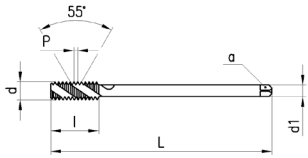
Made of HSS-E PM (High Speed Steel, contains approximately 5% to 8% cobalt, powder metallurgy sintered Variant), THL coating, For alloyed and stainless steels, spheroidal graphite cast iron, long-chipping aluminum cast and wrought alloys, long-chipping copper and brass alloys., with cylindrical shank with square end, According to thread standard G (cylindrical Whitworth thread), Number of teeth 3 - 5, Cutting direction: right, Thread cutting edge form B, Thread tolerance zone 6HX
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), For tapping, For through-hole threads

Designs:
G 1/8"...G 1": falling through shaft, DIN 5156

Order ID	d	P in	DIN	L mm	l mm	d1 mm	a mm	Ø mm	teeth
264460.0100	**G 1/8"**	28	5156	90	18	7	5.5	8.8	3
264460.0200	**G 1/4"**	19	5156	100	22	11	9	11.8	4
264460.0300	**G 3/8"**	19	5156	100	22	12	9	15.25	4
264460.0400	**G 1/2"**	14	5156	125	25	16	12	19	4
264460.0500	**G 5/8"**	14	5156	125	25	18	14.5	21	4
264460.0600	**G 3/4"**	14	5156	140	28	20	16	24.5	5
264460.0700	**G 1"**	11	5156	160	30	25	20	30.75	5

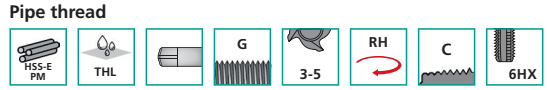
FUTURO





264465 FUTURO High-performance tap

Pipe thread





Made of HSS-E PM (High Speed Steel, contains approximately 5% to 8% cobalt, powder metallurgy sintered Variant), THL coating, For alloyed and stainless steels, spheroidal graphite cast iron, long-chipping aluminum cast and wrought alloys, long-chipping copper and brass alloys., with cylindrical shank with square end, According to thread standard G (cylindrical Whitworth thread), Number of teeth 3 - 5, Cutting direction: right, Thread cutting edge form C, Thread tolerance zone 6HX
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), For tapping, For blind-hole threads

Designs:
G 1/8"...G 1": falling through shaft, DIN 5156

Order ID	d	P in	DIN	L mm	l mm	d1 mm	a mm	Ø mm	teeth
264465.0100	**G 1/8"**	28	5156	90	13	7	5.5	8.8	3
264465.0200	**G 1/4"**	19	5156	100	16	11	9	11.8	4
264465.0300	**G 3/8"**	19	5156	100	16.5	12	9	15.25	4
264465.0400	**G 1/2"**	14	5156	125	20.5	16	12	19	4
264465.0500	**G 5/8"**	14	5156	125	20.5	18	14.5	21	4
264465.0600	**G 3/4"**	14	5156	140	21.5	20	16	24.5	5
264465.0700	**G 1"**	11	5156	160	25.5	25	20	30.75	5

FUTURO



264481 FUTURO tap drill assortment

VA





Made of HSS-E (High Speed Steel, contains approximately 5% to 8% cobalt), VAP coating, For martensitic and austenitic stainless steels up to 1200 N/mm², According to thread standard M (metric coarse thread), Cutting direction: right, Thread cutting edge form B, Thread tolerance zone 6H, delivered as a SET
Main application: Stainless steel (ISO M), For through-hole threads

Appropriate spare parts:
254181 FUTURO Twist drill Triangular shank for perfect grip
264230 FUTURO Machine tap Metric ISO thread

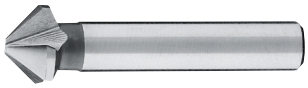
Order ID	Range	Contents pieces	Length mm	Width mm	Height mm
264481.0100	**M3...M12**	14	170	115	44

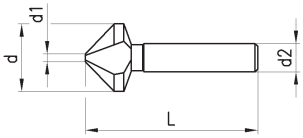
FUTURO

Countersinking, Reaming, Turning, Sawing and Separating

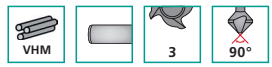
Countersinks	198-199
HSS reamers	200
Solid carbide reamers	201
Fine boring tools	202-205
Turning tools	206-213
Indexable inserts	214-228
Multifunction tool	229-230

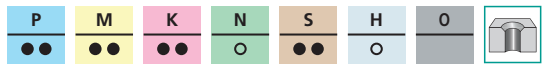
FUTURO





276250 FUTURO Solid carbide countersink 90°



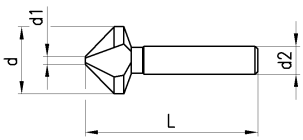


Made of solid hard metal, For high-strength steel, Hardox, grey cast iron, silicon-containing aluminium alloys and stainless steel., with cylindrical shank, Number of teeth 3, Countersink angle 90°
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Secondary application: Non-ferrous metals (ISO N), Main application: Superalloys (ISO S), Secondary application: Hardened steel (ISO H), For countersinking

Order ID	**d** **mm**	d1 mm	L mm	d2 mm
276250.0100	**4.3**	1.3	40	4
276250.0200	**5.3**	1.3	40	4
276250.0300	**6.3**	1.3	45	5
276250.0400	**8.3**	1.8	50	6
276250.0500	**10.4**	2.2	50	6
276250.0600	**12.4**	2.5	56	8
276250.0700	**16.5**	2.8	60	10
276250.0800	**20.5**	3	63	10

FUTURO





276050 FUTURO Countersink 90°

Anti-vibration





Made of HSS-E (High Speed Steel, contains approximately 5% to 8% cobalt), Coated, with cylindrical shank, According to DIN 335C, Number of teeth 3, with uneven pitch when lowering, Countersink angle 90°
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N), Main application: Superalloys (ISO S), Secondary application: Plastics and other materials (ISO O), For countersinking

Properties:
Uneven pitch for optimal countersinking results.
Special coating to increase the service life and improve the surface quality.

Tolerance d: z9

Order ID	**d** **mm**	d1 mm	L mm	d2 mm	Order ID	**d** **mm**	d1 mm	L mm	d2 mm
276050.0100	**4.3**	1.3	40	4	276050.0600	**16.5**	3.2	60	10
276050.0200	**6.3**	1.5	45	5	276050.0700	**20.5**	3.5	63	10
276050.0300	**8.3**	2.0	50	6	276050.0800	**25**	3.8	67	10
276050.0400	**10.4**	2.5	50	6	276050.0900	**31**	4.2	71	12
276050.0500	**12.4**	2.8	56	8					

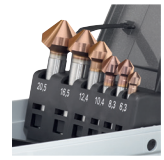
276051 FUTURO Assortment of countersinks 90°

Anti-vibration

HSS-E | DIN 335C | 3 | 90°

P	M	K	N	S	H	O
●●	●●	●●	●●	●●		○





Made of HSS-E (High Speed Steel, contains approximately 5% to 8% cobalt), Coated, with cylindrical shank, According to DIN 335C, Number of teeth 3, with uneven pitch when lowering, Countersink angle 90°
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N), Main application: Superalloys (ISO S), Secondary application: Plastics and other materials (ISO O), For countersinking

In a practical plastic box.
Properties:
Uneven pitch for optimal countersinking results.
Special coating to increase the service life and improve the surface quality.

Order ID	Contents, 1 unit each	Contents pieces
276051.0100	6.3/8.3/10.4/12.4/16.5/20.5	6

276056 FUTURO Assortment of countersinks 90°

Anti-vibration

HSS-E | DIN 335C | 3 | 90°

P	M	K	N	S	H	O
●●	●●	●●	●●	●●		○



Made of HSS-E (High Speed Steel, contains approximately 5% to 8% cobalt), Coated, According to DIN 335C, With three-faced grinding, Number of teeth 3, with uneven pitch when lowering, Countersink angle 90°
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N), Main application: Superalloys (ISO S), Secondary application: Plastics and other materials (ISO O), For countersinking

In a practical plastic box.
Properties:
Uneven pitch for optimal countersinking results, **with three clamping flats**.
Special coating to increase the service life and improve the surface quality.

Order ID	Contents, 1 unit each	Contents pieces
276056.0100	6.3/8.3/10.4/12.4/16.5/20.5	6

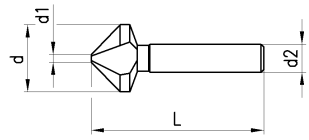
276055 FUTURO Countersink 90°

Anti-vibration

HSS-E | DIN 335C | 3 | 90°

P	M	K	N	S	H	O
●●	●●	●●	●●	●●		○





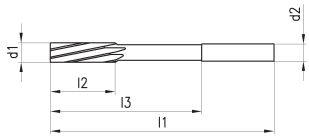
Made of HSS-E (High Speed Steel, contains approximately 5% to 8% cobalt), Coated, According to DIN 335C, With three-faced grinding, Number of teeth 3, with uneven pitch when lowering, Countersink angle 90°
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N), Main application: Superalloys (ISO S), Secondary application: Plastics and other materials (ISO O), For countersinking

Properties:
Uneven pitch for optimal countersinking results, **with three clamping flats**.
Special coating to increase the service life and improve the surface quality.

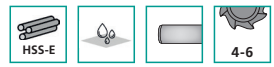
Tolerance d: z9

Order ID	**d** mm	d1 mm	L mm	d2 mm	Order ID	**d** mm	d1 mm	L mm	d2 mm
276055.0100	**6.3**	1.5	45	5	276055.0500	**16.5**	3.2	60	10
276055.0200	**8.3**	2.0	50	6	276055.0600	**20.5**	3.5	63	10
276055.0300	**10.4**	2.5	50	6	276055.0700	**25**	3.8	67	10
276055.0400	**12.4**	2.8	56	8	276055.0800	**31**	4.2	71	12

FUTURO



281851 FUTURO Machine reamer



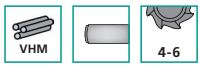


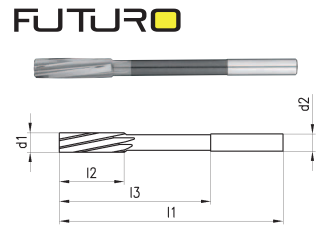
Made of HSS-E (High Speed Steel, contains approximately 5% to 8% cobalt), Coated, with cylindrical shank, Number of teeth 4 - 6
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), For through-hole holes

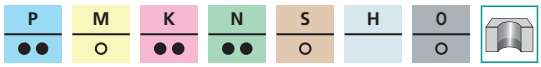
Order ID	**d1** **mm**	d2 mm	l1 mm	l2 mm	l3 mm	Tolerance	teeth
281851.0100	**0.98**	0.98	38	5	22	0 / + 0,003	4
281851.0200	**0.99**	0.99	38	5	22	0 / + 0,003	4
281851.0300	**1**	1	38	5	22	0 / + 0,003	4
281851.0400	**1.01**	1.01	40	7	22	0 / + 0,003	4
281851.0500	**1.02**	1.02	40	7	22	0 / + 0,003	4
281851.0600	**1.48**	1.48	40	7	24	0 / + 0,003	6
281851.0700	**1.49**	1.49	40	7	24	0 / + 0,003	6
281851.0800	**1.5**	1.5	40	7	24	0 / + 0,003	6
281851.0900	**1.51**	1.51	43	9	24	0 / + 0,003	6
281851.1000	**1.52**	1.52	43	9	24	0 / + 0,003	6
281851.1100	**1.98**	1.98	49	11	31	0 / + 0,003	6
281851.1200	**1.99**	1.99	49	11	31	0 / + 0,003	6
281851.1300	**2**	2	49	11	31	0 / + 0,003	6
281851.1400	**2.01**	2.01	49	11	31	0 / + 0,003	6
281851.1500	**2.02**	2.02	49	11	31	0 / + 0,003	6
281851.1600	**2.48**	2.48	57	14	38	0 / + 0,003	6
281851.1700	**2.49**	2.49	57	14	38	0 / + 0,003	6
281851.1800	**2.5**	2.5	57	14	38	0 / + 0,003	6
281851.1900	**2.51**	2.51	57	14	38	0 / + 0,003	6
281851.2000	**2.52**	2.52	57	14	38	0 / + 0,003	6
281851.2100	**2.98**	2.98	61	15	38	0 / + 0,003	6
281851.2200	**2.99**	2.99	61	15	38	0 / + 0,003	6
281851.2300	**3**	3	61	15	38	0 / + 0,003	6
281851.2400	**3.01**	3.01	65	16	38	0 / + 0,004	6
281851.2500	**3.02**	3.02	65	16	38	0 / + 0,004	6
281851.2600	**3.98**	4	75	19	51	0 / + 0,004	6
281851.2700	**3.99**	4	75	19	51	0 / + 0,004	6
281851.2800	**4**	4	75	19	51	0 / + 0,004	6
281851.2900	**4.01**	4	75	19	51	0 / + 0,004	6
281851.3000	**4.02**	4	75	19	51	0 / + 0,004	6
281851.3100	**4.98**	5	86	23	60	0 / + 0,004	6
281851.3200	**4.99**	5	86	23	60	0 / + 0,004	6
281851.3300	**5**	5	86	23	60	0 / + 0,004	6
281851.3400	**5.01**	5	86	23	60	0 / + 0,004	6
281851.3500	**5.02**	5	86	23	60	0 / + 0,004	6
281851.3600	**5.98**	6	93	26	73	0 / + 0,004	6
281851.3700	**5.99**	6	93	26	73	0 / + 0,004	6
281851.3800	**6**	6	93	26	73	0 / + 0,004	6
281851.3900	**6.01**	6	101	28	73	0 / + 0,005	6
281851.4000	**6.02**	6	101	28	73	0 / + 0,005	6
281851.4100	**6.98**	7	109	31	80	0 / + 0,005	6
281851.4200	**6.99**	7	109	31	80	0 / + 0,005	6
281851.4300	**7**	7	109	31	80	0 / + 0,005	6
281851.4400	**7.01**	7	109	31	80	0 / + 0,005	6
281851.4500	**7.02**	7	109	31	80	0 / + 0,005	6
281851.4600	**7.98**	8	117	33	86	0 / + 0,005	6
281851.4700	**7.99**	8	117	33	86	0 / + 0,005	6
281851.4800	**8**	8	117	33	86	0 / + 0,005	6
281851.4900	**8.01**	8	117	33	86	0 / + 0,005	6
281851.5000	**8.02**	8	117	33	86	0 / + 0,005	6
281851.5100	**8.98**	9	125	36	91	0 / + 0,005	6
281851.5200	**8.99**	9	125	36	91	0 / + 0,005	6
281851.5300	**9**	9	125	36	91	0 / + 0,005	6
281851.5400	**9.01**	9	125	36	91	0 / + 0,005	6
281851.5500	**9.02**	9	125	36	91	0 / + 0,005	6
281851.5600	**9.98**	10	133	38	99	0 / + 0,005	6
281851.5700	**9.99**	10	133	38	99	0 / + 0,005	6
281851.5800	**10**	10	133	38	99	0 / + 0,005	6
281851.5900	**10.01**	10	133	38	99	0 / + 0,005	6
281851.6000	**10.02**	10	133	38	99	0 / + 0,005	6

283800 FUTURO Solid carbide machine reamer

High-precision design





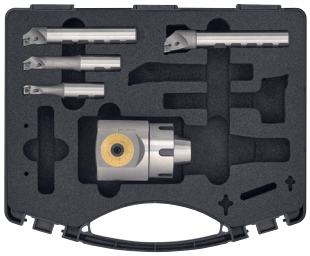


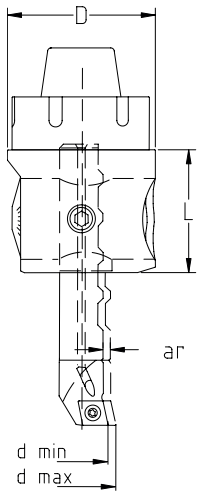
Made of solid hard metal, with cylindrical shank, Number of teeth 4 - 6
Main application: Steel (ISO-P), Secondary application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N), Secondary application: Superalloys (ISO S), Secondary application: Plastics and other materials (ISO O), For through-hole holes

Tolerance d1
0.70 mm...**3.00 mm**: 0 / + 0,003
3.01 mm...**6.00 mm**: 0 / + 0,004
6.01 mm...**10.25 mm**: 0 / + 0,005

d1 mm	d2 mm	l1 mm	l2 mm	l3 mm	Z
0.70...1.05	0.70	33	7	17	4
1.06...1.55	1.06	40	10	24	4
1.56...1.79	1.56	43	11	26	4
1.80...2.36	1.80	49	12	31	4
2.37...3.75	2.37	57	18	38	6
3.76...4.25	4	75	19	51	6
4.26...4.75	4.5	80	21	55	6
4.76...5.30	5	86	23	59	6
5.31...5.80	5.5	93	26	65	6
5.81...6.70	6	101	28	71	6
6.71...7.55	7	109	31	78	6
7.56...8.55	8	117	33	84	6
8.56...9.55	9	125	36	88	6
9.56...10.25	10	133	38	97	6

FUTURO





335400 FUTURO Precision boring set

dia. 9.75–30.1



For Fine turning

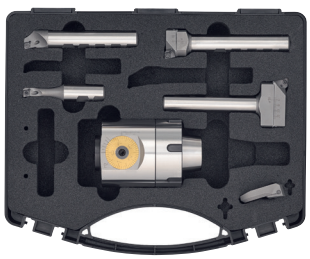
For easy milling of precision holes. Compatible with all standard ER32 tool holders.
Expandable to dia. 88.
Milling depth at dia. 9.75–30 mm, at dia. 30–82 mm

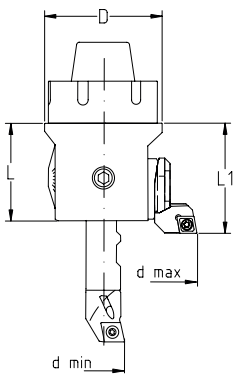
Consisting of:
335411.0010 FUTURO Boring bar with internal cooling T1 / Ø 9.75 - 15.1
335411.0012 FUTURO Boring bar with internal cooling T1 / Ø 14.75 - 20.1
335411.0014 FUTURO Boring bar with internal cooling T1 / Ø 19.75 - 25.1
335411.0016 FUTURO Boring bar with internal cooling T1 / Ø 24.75 - 30.1
335412.0016 FUTURO Boring head ER32

Ctting inserts must be ordered separately.

Order ID	d min. mm	d max. mm	Type	D mm	L mm	ar mm
335400.0100	9.75	30.1	ER 32	55	60	2.7

FUTURO





335405 FUTURO Precision boring set

dia. 9.75–101.1



For Fine turning
For easy milling of precision holes. Compatible with all standard ER40 tool holders.
Expandable to dia. 152.
Milling depth at dia. 9.75–30 mm, at dia. 30–82 mm

Consisting of:
335411.0010 FUTURO Boring bar with internal cooling T1 / Ø 9.75 - 15.1
335411.0014 FUTURO Boring bar with internal cooling T1 / Ø 19.75 - 25.1
335411.0018 FUTURO Shank for insert holder with internal cooling T2 / Ø 29.75 - 48.1
335411.0020 FUTURO Shank for insert holder with internal cooling T3 / Ø 47.75 - 88.1
335411.0022 FUTURO Insert holder with int. cooling, adjustable T2 / Ø 29.75 - 48.1
335411.0024 FUTURO Insert holder with int. cooling, adjustable T3 / Ø 47.75 - 88.1
335411.0026 FUTURO Insert holder with int. cooling, adjustable T4 / Ø 87.75 - 101.1
335412.0012 FUTURO Coolant insert for ER40
335412.0014 FUTURO Boring head ER40

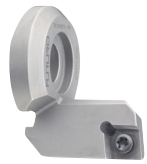
Order ID	d min. mm	d max. mm	Type	D mm	L mm	L1 mm
335405.0100	9.75	101.1	ER 40	63	50.5	57

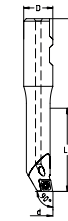
335411 FUTURO milling steels

for fine milling sets

Usable with:
335405 FUTURO Precision boring set dia. 9.75–101.1

Appropriate spare parts:
335425 FUTURO Spare part for fine boring head

Order ID	d min. mm	d max. mm	L mm	L1 mm	Type	Turning plates
335411.0010	9.75	15.1	75	30	T1	CC..0602..
335411.0012	14.75	20.1	90	51	T1	CC..0602..
335411.0014	19.75	25.1	105	72	T1	CC..0602..
335411.0016	24.75	30.1	115	82	T1	CC..0602..
335411.0018	-	-	115	85	T2	-
335411.0020	-	-	115	85	T3	-
335411.0022	29.75	48.1	-	-	T2/1	CC..0602..
335411.0024	47.75	88.1	-	-	T3/1	CC..0602..
335411.0026	87.75	101.1	-	-	T4	CC..09T3..
335411.0028	105.75	119	-	-	T4	CC..09T3..
335411.0030	125.75	139	-	-	T4	CC..09T3..

335412 FUTURO Accessories

for precision boring set

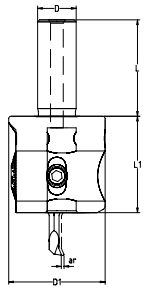
Is part of:
335400 FUTURO Precision boring set dia. 9.75–30.1
335405 FUTURO Precision boring set dia. 9.75–101.1

Order ID	Designation	
335412.0010	Spacer	
335412.0012	Coolant insert	
335412.0014	Milling head ER40	
335412.0016	Milling head ER32	

335415 FUTURO Micro boring head

dia. 0.3–19.1 digital





For Fine turning
For the perfect milling of even the smallest holes and holes that require extreme precision.

- Adjustment accuracy 0.001 mm
- No backlash
- No sensitive electronics in the head
- Simple to use
- Digital and analogue use

Included in delivery:
Digital display unit not included.
Cutting inserts not included.

Appropriate accessories:
335420 FUTURO Cutting insert
335421 FUTURO Cutting plate
335422 FUTURO Adapter for inserts
335422 FUTURO Display unit
335422 FUTURO Reducing sleeve

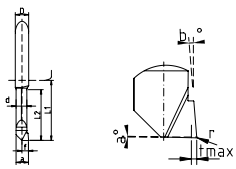
Digital display unit and cutting inserts must be ordered separately.

Order ID	d min. mm	d max. mm	D mm	D1 mm	L mm	L1 mm	Type	ar mm
335415.0100	0.3	19.1	16	32	40	32	digital und analog	2.5

335420 FUTURO Cutting inserts

for micro boring head





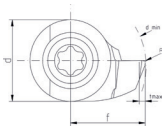
Order ID	d min. mm	d max. mm	d mm	L1 mm	L2 mm	t max. mm	r mm	f mm	a mm	b °	D mm	a °
335420.0010	0.3	0.7	0.15	11	1.2	0.03	-	0.15	0.25	5	4	1
335420.0012	0.6	1.1	0.46	11	2.5	0.05	-	0.30	0.55	5	4	1
335420.0014	1.0	2.3	0.65	11	4.0	0.1	0.05	0.50	0.95	5	4	1
335420.0016	2.2	3.3	1.55	11	6.0	0.2	0.05	1.10	2.00	5	4	1
335420.0018	3.2	4.3	2.55	11	10.2	0.2	0.05	1.60	3.00	5	4	1
335420.0020	3.9	7.1	3.45	16	15.2	0.3	0.05	1.95	3.70	5	4	1
335420.0022	5.2	6.3	4.25	21	20.3	0.5	0.05	2.60	5.00	5	7	1
335420.0024	6.2	7.3	5.25	21	20.3	0.5	0.05	3.10	6.00	5	7	1
335420.0026	6.9	12.1	6.25	26	25.4	0.5	0.20	3.45	6.70	5	7	1

335421 FUTURO Cutting plates

for micro boring head

Usable with:
335415 FUTURO Micro boring head dia. 0.3–19.1 digital





Order ID	d min. mm	d max. mm	d mm	t max. mm	R mm	f mm	Type
335421.0010	6.9	8.1	4.8	1.0	0.2	3.45	D07
335421.0012	7.9	9.1	4.8	1.0	0.2	3.95	D07
335421.0014	8.9	10.1	4.8	1.0	0.2	4.45	D07
335421.0016	9.9	12.1	7.0	1.0	0.2	4.95	D10
335421.0018	11.9	14.1	7.0	1.0	0.2	5.95	D10
335421.0020	3.9	19.1	7.0	1.0	0.2	6.95	D10

335422 FUTURO Accessories

for micro boring head

Usable with:
335415 FUTURO Micro boring head dia. 0.3–19.1 digital

Appropriate batteries:
335422.0016: 335422.0016 - digital (**NOT** included in scope of delivery).
155050.0400 - LR03 / 1.5 V (Micro / AAA) (**NOT** included in scope of delivery).





Order ID	d mm	D mm	L mm	L1 mm	L2 mm	L3 mm	Type	Length mm	Width mm	Height mm	Delivery
335422.0010	4.8	7	-	56	30	31	Shank	-	-	-	-
335422.0012	7	7	-	61	35	36	Shank	-	-	-	-
335422.0014	4	7	30	-	-	-	Sleeve	-	-	-	-
335422.0016	-	-	-	-	-	-	Display unit	80	28	24.5	**without** standard AAA battery

335425 FUTURO Spare part

for fine boring head

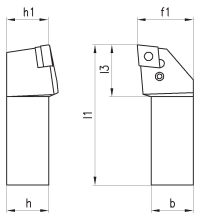


Order ID	Type	Dimension
335425.0010	Socket set screw	M5 x 16
335425.0012	Socket set screw	M10 x 8
335425.0014	Socket set screw	M10 x 12
335425.0016	Socket set screw	M10 x 16
335425.0018	Socket set screw	M10 x 18
335425.0020	Screw	M5 x 16
335425.0022	Screw	M10 x 25
335425.0024	Screw for insert	M2.5 x 6 (T7)
335425.0026	Screw for insert	M4 x 9 (T15)
335425.0028	Socket set screw	M6 X 5
335425.0030	Socket set screw	M6 X 10

310000 FUTURO Tool holder PCLNR

Angle of entry 95°, lever clamping system, angle of cut -6,5°, inclination angle -6.5°



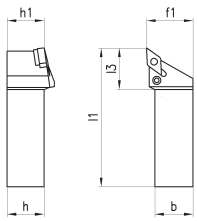


Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310000.0100	**CN..1204..**	**PCLNR 1616H12**	16	20	16	16	100	26
310000.0200	**CN..1204..**	**PCLNR 2020K12**	20	25	20	20	125	28
310000.0300	**CN..1204..**	**PCLNR 2525M12**	25	32	25	25	150	28
310000.0400	**CN..1606..**	**PCLNR 3232P16**	32	40	32	32	170	34
310000.0500	**CN..1906..**	**PCLNR 3232P19**	32	40	32	32	170	42
310000.0600	**CN..1606..**	**PCLNR 4040 S16**	40	50	40	40	250	45

310050 FUTURO Tool holder PDJNR

Angle of entry 93°, lever clamping system, angle of cut -6.25°, angle of inclination -6.75°



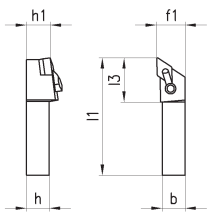


Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310050.0100	**DN..1104..**	**PDJNR 1616H11**	16	20	16	16	100	28
310050.0200	**DN..1104..**	**PDJNR 2020K11**	20	25	20	20	125	28
310050.0300	**DN..1104..**	**PDJNR 2525M11**	25	32	25	25	150	28
310050.0400	**DN..1104..**	**PDJNR 3225P11**	25	32	32	32	170	28
310050.0500	**DN..1506..**	**PDJNR 4025R15**	25	32	40	40	200	34

310070 FUTURO Tool holder MDJNR

Angle of entry 93°, wedge claw clamping system, angle of cut -6°, angle of inclination -7°



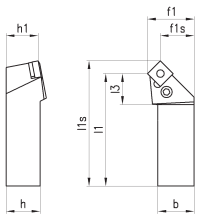


Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310070.0100	**DN..1506..**	**MDJNR 2020K 15-K**	20	25	20	20	125	34
310070.0200	**DN..1506..**	**MDJNR 2525M 15-K**	25	32	25	25	150	34
310070.0300	**DN..1506..**	**MDJNR 3225P 15-K**	25	32	32	32	170	34

310100 FUTURO Tool holder PSSNR

Angle of entry 45°, lever clamping system, angle of cut -5.75°, angle of inclination -5.75°



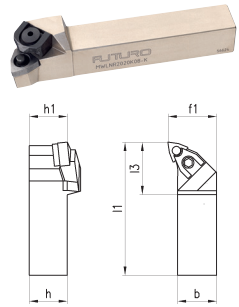


Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310100.0100	**SNM..1204..**	**PSSNR 2020K12**	20	25	20	20	125	28
310100.0200	**SNM..1204..**	**PSSNR 2525M12**	25	32	25	25	150	28
310100.0300	**SNM..1204..**	**PSSNR 3225P12**	25	32	32	32	170	28

310150 FUTURO Tool holder MWLNR

Angle of entry 95°, wedge clock clamping system, angle of cut -6.5°, angle of inclination -6.5°

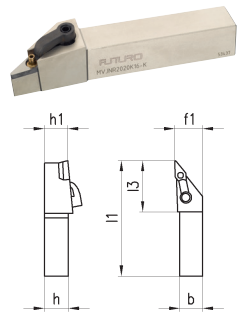
Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310150.0090	**WNMG 0604..**	**MWLNR 1616H06**	16	20	16	16	100	15
310150.0100	**WNMG 0604..**	**MWLNR 2020K06**	20	25	20	20	125	25
310150.0200	**WNMG 0604..**	**MWLNR 2525M06**	25	32	25	25	150	25
310150.0300	**WNM.. 0804..**	**MWLNR 2020K08-K**	20	25	20	20	125	34
310150.0400	**WNM.. 0804..**	**MWLNR 2525M08-K**	25	32	25	25	150	34
310150.0500	**WNM.. 0804..**	**MWLNR 3232P08-K**	32	40	32	32	170	34



310170 FUTURO Tool holder MVJNR

Angle of entry 93°, wedge claw clamping system, angle of cut -6°, inclination angle -6°

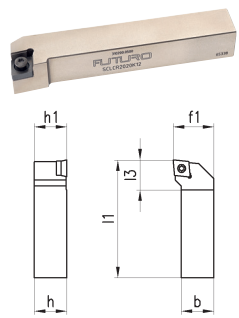
Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310170.0100	**VN..1604..**	**MVJNR 2020K 16-K**	20	25	20	20	125	43
310170.0200	**VN..1604..**	**MVJNR 2525M 16-K**	25	32	25	25	150	43
310170.0300	**VN..1604..**	**MVJNR 3225P 16-K**	25	32	32	32	170	43



310200 FUTURO Tool holder SCLCR

Angle of entry 95°, screw clamping, angle of cut 0°, angle of inclination 0°

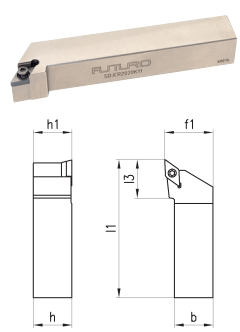
Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310200.0100	**CC..0602..**	**SCLCR 1010E06**	10	12	10	10	70	10
310200.0200	**CC..09T3..**	**SCLCR 1212F09**	12	16	12	12	80	16
310200.0300	**CC..09T3..**	**SCLCR 1616H09**	16	20	16	16	100	16
310200.0400	**CC..09T3..**	**SCLCR 2020K09**	20	25	20	20	125	16
310200.0500	**CC..1204..**	**SCLCR 2020K12**	20	25	20	20	125	25
310200.0600	**CC..1204..**	**SCLCR 2525M12**	25	32	25	25	150	25



310250 FUTURO Tool holder SDJCR

Adjustment angle 93°, screw clamping, angle of cut 0°, angle of inclination 0°

Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310250.0100	**DC..0702..**	**SDJCR 1010E07**	10	12	10	10	70	16
310250.0200	**DC..0702..**	**SDJCR 1212F07**	12	16	12	12	80	18
310250.0300	**DC..0702..**	**SDJCR 1616H07**	16	20	16	16	100	22
310250.0400	**DC..0702..**	**SDJCR 2020K07**	20	25	20	20	125	18
310250.0500	**DC..11T3..**	**SDJCR 1616H11**	16	20	16	16	100	22
310250.0600	**DC..11T3..**	**SDJCR 2020K11**	20	25	20	20	125	22
310250.0700	**DC..11T3..**	**SDJCR 2525M11**	25	32	25	25	150	22

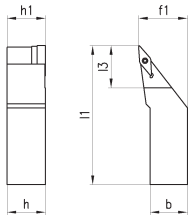


310300 FUTURO Tool holder SVJBR

Angle of entry 93°, screw clamping, angle of cut 0°, angle of inclination 0°

Notes: SVJBR...11: for insert thickness 2mm.





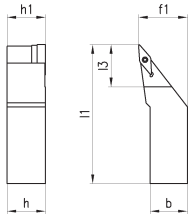
Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310300.0400	**VBMT1604..**	**SVJBR 2020K16**	20	25	20	20	125	37
310300.0500	**VBMT 1604..**	**SVJBR 2525M16**	25	32	25	25	150	37
310300.0600	**VBMT 1604..**	**SVJBR 3225P16**	25	32	32	32	170	37

310320 FUTURO Tool holder SVJCR

Angle of entry 93°, screw clamping, angle of cut 0°, angle of inclination 0°

Notes: SVJCR...11: for insert thickness 3 mm.



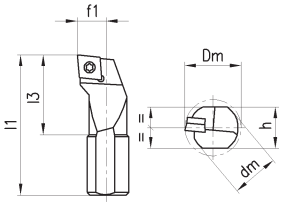


Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310320.0100	**VC.. 1103..**	**SVJCR 1212F11**	12	16	12	12	80	25
310320.0200	**VC..1103..**	**SVJCR 1616H11**	16	20	16	16	100	25
310320.0300	**VC..1103..**	**SVJCR 2020K11**	20	25	20	20	125	25
310320.0400	**VC.. 1604..**	**SVJCR 2525M16**	25	32	25	25	150	37
310320.0500	**VC.. 1604..**	**SVJCR 3225P16**	25	32	32	32	170	37

310350 FUTURO Boring bar SCLCR

Angle of entry 95°, screw clamping, steel boring bar, angle of cut 0°, angle of inclination -6° to -15°





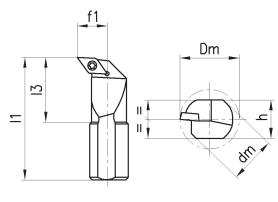
Order ID	Turning plate	Code	dm mm	Dm min. mm	f1 mm	h mm	l1 mm	l3 mm
310350.0102	**CC.. 0602..**	**A08K SCLCR06**	8	11	5	7	125	16
310350.0201	**CC.. 0602..**	**A10H SCLCR06**	10	13	7	9	100	20
310350.0301	**CC.. 0602..**	**A12M SCLCR06**	12	16	9	11	150	25
310350.0401	**CC.. 09T3..**	**A16M SCLCR09**	16	20	11	15	150	30
310350.0501	**CC.. 09T3..**	**A20S SCLCR09**	20	24	13	18	250	35
310350.0600	**CC.. 09T3..**	**A25R SCLCR09**	25	31	17	23	200	40
310350.0700	**CC.. 1204..**	**A32S SCLCR12**	32	39	22	30	250	45
310350.0800	**CC.. 1204..**	**A40T SCLCR12**	40	48	27	37	300	50

310400 FUTURO Boring bar SDUCR

With internal cooling

Angle of entry 93°, screw clamping, steel boring bar, angle of cut 0°, angle of inclination -6° to -15°





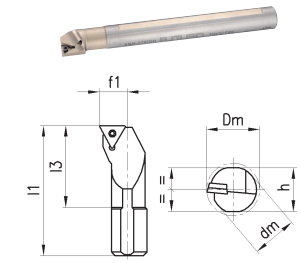
Order ID	Turning plate	Code	dm mm	Dm min. mm	f1 mm	h mm	l1 mm	l3 mm
310400.0100	**DC.. 0702..**	**S10M SDUCR07**	10	13	7	9	150	25
310400.0200	**DC.. 0702..**	**A12K SDUCR07**	12	16	9	11	125	25
310400.0300	**DC.. 0702..**	**A16M SDUCR07**	16	20	11	15	150	30
310400.0400	**DC.. 11T3..**	**A20Q SDUCR11**	20	24	13	18	180	35
310400.0500	**DC.. 11T3..**	**A25R SDUCR11**	25	31	17	23	200	40
310400.0600	**DC.. 11T3..**	**A32S SDUCR 11**	32	39	22	30	250	45
310400.0700	**DC.. 11T3..**	**A40T SDUCR 11**	40	48	27	37	300	50

310450 FUTURO Boring bar STFCR

With internal cooling

Angle of entry 90°, screw clamping, steel boring bar, angle of cut 0°, angle of inclination -6° to -15°

Order ID	Turning plate	Code	dm mm	Dm min. mm	f1 mm	h mm	l1 mm	l3 mm
310450.0080	**TC.. 0902..**	**A10H STFCR 09**	10	13	7	9	100	20
310450.0090	**TC.. 1102..**	**A12K STFCR11**	12	16	9	11	125	25
310450.0100	**TC.. 1102..**	**A16M STFCR11**	16	20	11	15	150	30
310450.0200	**TC.. 1102..**	**A20Q STFCR11**	20	24	13	18	180	35
310450.0301	**TC.. 16T3..**	**A25R STFCR 16**	25	31	17	23	200	40
310450.0400	**TC.. 16T3..**	**A32S STFCR 16**	32	39	22	30	250	45
310450.0500	**TC.. 16T3..**	**A40T STFCR16**	40	48	27	30	300	50



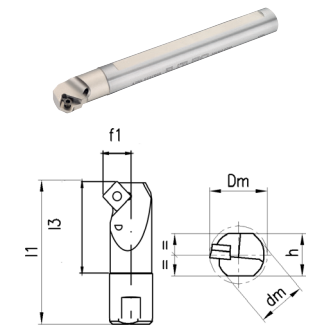
310360 FUTURO Boring bar SSSCR

With internal cooling

Angle of entry 45°, screw clamping, steel boring bar, angle of cut 0°, angle of inclination -8° to -15°

Corresponding inserts:
316650 FUTURO Indexable insert Type SC.. 7° positive, single-sided 90°

Order ID	Turning plate	Code	dm mm	Dm min. mm	f1 mm	h mm	l1 mm	l3 mm
310360.0101	**SC.. 09T3..**	**A16R SSSCR09**	16	20	11	15	150	30
310360.0201	**SC.. 09T3..**	**A20S SSSCR09**	20	24	13	18	180	35
310360.0300	**SC.. 09T3..**	**A25R SSSCR09**	25	31	17	23	200	40

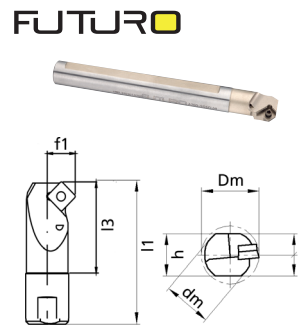


310361 FUTURO Boring bar SSSCL

With internal cooling

Angle of entry 45°, screw clamping, steel boring bar, angle of cut 0°, angle of inclination -8° to -15°

Order ID	Turning plate	Code	dm mm	Dm min. mm	f1 mm	h mm	l1 mm	l3 mm
310361.0100	**SC.. 09T3..**	**A16M SSSCL09**	16	20	11	15	150	30
310361.0200	**SC.. 09T3..**	**A20Q SSSCL09**	20	24	13	18	180	35
310361.0300	**SC.. 09T3..**	**A25R SSSCL09**	25	31	17	23	200	40

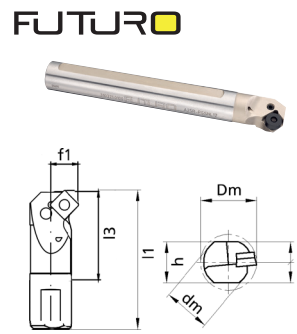


310371 FUTURO Boring bar PSSNL

With internal cooling

Angle of entry 45°, screw clamping, steel boring bar, angle of cut -3°, angle of inclination -11° to -15°

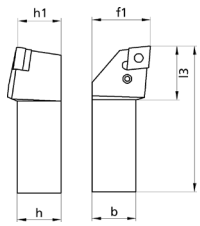
Order ID	Turning plate	Code	dm mm	Dm min. mm	f1 mm	h mm	l1 mm	l3 mm
310371.0100	**SNM.. 1204..**	**A25R PSSNL12**	25	31	17	23	200	40
310371.0200	**SNM.. 1204..**	**A32S PSSNL12**	32	39	22	30	250	45



310001 FUTURO Tool holder PCLNL

Angle of entry 95°, lever clamping system, angle of cut -6,5°, inclination angle -6.5°





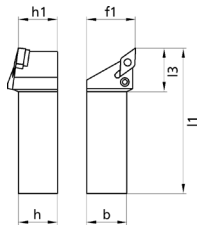
Corresponding inserts:
310915 FUTURO Indexable insert CBN CBN, disposable insert
316000 FUTURO Indexable insert Type CN. 0° negative

Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310001.0100	**CN..1204..**	**PCLNL 1616H12**	16	20	16	16	100	26
310001.0200	**CN..1204..**	**PCLNL 2020K12**	20	25	20	20	125	28
310001.0300	**CN..1204..**	**PCLNL 2525M12**	25	32	25	25	150	28
310001.0400	**CN..1606..**	**PCLNL 3232P16**	32	40	32	32	170	34
310001.0500	**CN..1906..**	**PCLNL 3232P19**	32	40	32	32	170	42
310001.0600	**CN..1606..**	**PCLNL 4040 S16**	40	50	40	40	250	45

310051 FUTURO Tool holder PDJNL

Angle of entry 93°, lever clamping system, angle of cut -6.25°, angle of inclination -6.75°





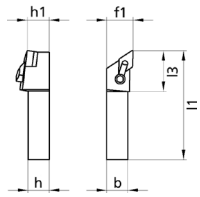
Corresponding inserts:
310920 FUTURO Indexable insert CBN CBN, disposable insert
316050 FUTURO Indexable insert Type DN. 0° negative

Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310051.0100	**DN..1104..**	**PDJNL 1616H11**	16	20	16	16	100	28
310051.0200	**DN..1104..**	**PDJNL 2020K11**	20	25	20	20	125	28
310051.0300	**DN..1104..**	**PDJNL 2525M11**	25	32	25	25	150	28
310051.0400	**DN..1104..**	**PDJNL 3225P11**	25	32	32	32	170	28
310051.0500	**DN..1506..**	**PDJNL 4025R15**	25	32	40	40	200	34

310071 FUTURO Tool holder MDJNL

Angle of entry 93°, wedge claw clamping system, angle of cut -6°, angle of inclination -7°





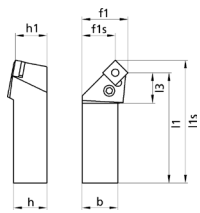
Corresponding inserts:
310920 FUTURO Indexable insert CBN CBN, disposable insert
316050 FUTURO Indexable insert Type DN. 0° negative

Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310071.0100	**DN..1506..**	**MDJNL 2020K 15-K**	20	25	20	20	125	34
310071.0200	**DN..1506..**	**MDJNL 2525M 15-K**	25	32	25	25	150	34
310071.0300	**DN..1506..**	**MDJNL 3225P 15-K**	25	32	32	32	170	34

310101 FUTURO Tool holder PSSNL

Angle of entry 45°, lever clamping system, angle of cut -5.75°, angle of inclination -5.75°





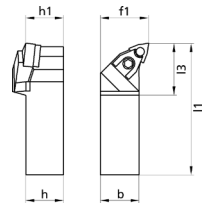
Corresponding inserts:
316100 FUTURO Indexable insert Type SN. 0° negative

Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310101.0100	**SNM..1204..**	**PSSNL 2020K12**	20	25	20	20	125	28
310101.0200	**SNM..1204..**	**PSSNL 2525M12**	25	32	25	25	150	28
310101.0300	**SNM..1204..**	**PSSNL 3225P12**	25	32	32	32	170	28

310151 FUTURO Tool holder MWLNL

Angle of entry 95°, wedge clock clamping system, angle of cut -6.5°, angle of inclination -6.5°





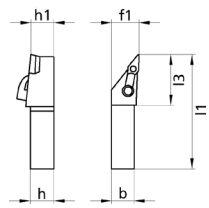
Corresponding inserts:
316250 FUTURO Indexable insert Type WN. 0° negative

Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310151.0090	**WNMG 0604..**	**MWLNL 1616H06**	16	20	16	16	100	15
310151.0100	**WNMG 0604..**	**MWLNL 2020K06**	20	25	20	20	125	25
310151.0200	**WNMG 0604..**	**MWLNL 2525M06**	25	32	25	25	150	25
310151.0300	**WNM.. 0804..**	**MWLNL 2020K08-K**	20	25	20	20	125	34
310151.0400	**WNM.. 0804..**	**MWLNL 2525M08-K**	25	32	25	25	150	34
310151.0500	**WNM.. 0804..**	**MWLNL 3232P08-K**	32	40	32	32	170	34

310171 FUTURO Tool holder MVJNL

Angle of entry 93°, wedge claw clamping system, angle of cut -6°, inclination angle -6°



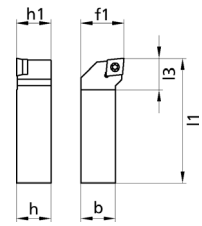


Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310171.0100	**VN..1604..**	**MVJNL 2020K 16-K**	20	25	20	20	125	43
310171.0200	**VN..1604..**	**MVJNL 2525M 16-K**	25	32	25	25	150	43
310171.0300	**VN..1604..**	**MVJNL 3225P 16-K**	25	32	32	32	170	43

310201 FUTURO Tool holder SCLCL

Angle of entry 95°, screw clamping, angle of cut 0°, angle of inclination 0°





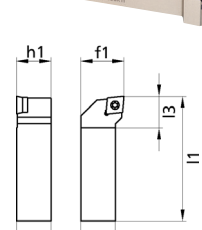
Corresponding inserts:
310905 FUTURO Indexable insert CBN CBN, disposable insert
316500 FUTURO Indexable insert Type CC.. 7° positive, Single-sided

Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310201.0100	**CC..0602..**	**SCLCL 1010E06**	10	12	10	10	70	10
310201.0200	**CC..09T3..**	**SCLCL 1212F09**	12	16	12	12	80	16
310201.0300	**CC..09T3..**	**SCLCL 1616H09**	16	20	16	16	100	16
310201.0400	**CC..09T3..**	**SCLCL 2020K09**	20	25	20	20	125	16
310201.0500	**CC..1204..**	**SCLCL 2020K12**	20	25	20	20	125	25
310201.0600	**CC..1204..**	**SCLCL 2525M12**	25	32	25	25	150	25

310251 FUTURO Tool holder SDJCL

Adjustment angle 93°, screw clamping, angle of cut 0°, angle of inclination 0°





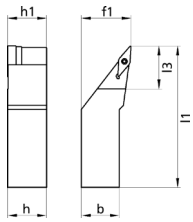
Appropriate spare parts:
425360 TORX® screwdriver WIHA

Corresponding inserts:
310900 FUTURO Indexable insert CBN CBN, disposable insert
316550 FUTURO Indexable insert Type DC.. 7° positive, single-sided

Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310251.0100	**DC..0702..**	**SDJCL 1010E07**	10	12	10	10	70	16
310251.0200	**DC..0702..**	**SDJCL 1212F07**	12	16	12	12	80	18
310251.0300	**DC..0702..**	**SDJCL 1616H07**	16	20	16	16	100	22
310251.0400	**DC..0702..**	**SDJCL 2020K07**	20	25	20	20	125	18
310251.0500	**DC..11T3..**	**SDJCL 1616H11**	16	20	16	16	100	22
310251.0600	**DC..11T3..**	**SDJCL 2020K11**	20	25	20	20	125	22
310251.0700	**DC..11T3..**	**SDJCL 2525M11**	25	32	25	25	150	22

310301 FUTURO Tool holder SVJBL





Angle of entry 93°, screw clamping, angle of cut 0°, angle of inclination 0°

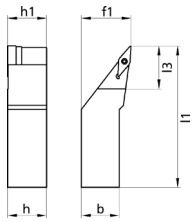
Appropriate spare parts:
425360 TORX® screwdriver WIHA

Corresponding inserts:
310910 FUTURO Indexable insert CBN CBN, disposable insert

Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310301.0100	**VBMT1604..**	**SVJBL 2020K16**	20	25	20	20	125	37
310301.0200	**VBMT1604..**	**SVJBL 2525M16**	25	32	25	25	150	37
310301.0300	**VBMT1604..**	**SVJBL 3225P16**	25	32	32	32	170	37

310321 FUTURO Tool holder SVJCL





Angle of entry 93°, screw clamping, angle of cut 0°, angle of inclination 0°

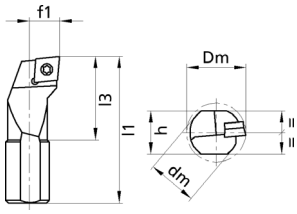
Appropriate spare parts:
425360 TORX® screwdriver WIHA

Corresponding inserts:
316750 FUTURO Indexable insert Type VC.. 7° positive, single-sided, rhombic, 35°

Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310321.0100	**VC.. 1103..**	**SVJCL 1212F11**	12	16	12	12	80	25
310321.0200	**VC.. 1103..**	**SVJCL 1616H11**	16	20	16	16	100	25
310321.0300	**VC..1103..**	**SVJCL 2020K11**	20	25	20	20	125	25
310321.0400	**VC..1604..**	**SVJCL 2525M16**	25	32	25	25	150	37
310321.0500	**VC..1604..**	**SVJCL 3225P16**	25	32	32	32	170	37

310351 FUTURO Boring bar SCLCL





With internal cooling

Angle of entry 95°, screw clamping, steel boring bar, angle of cut 0°, angle of inclination -6° to -15°

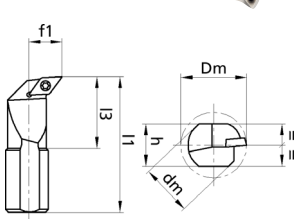
Appropriate spare parts:
425360 TORX® screwdriver WIHA

Corresponding inserts:
316500 FUTURO Indexable insert Type CC.. 7° positive, Single-sided

Order ID	Turning plate	Code	dm mm	Dm min. mm	f1 mm	h mm	l1 mm	l3 mm
310351.0100	**CC.. 0602..**	**A08F SCLCL06**	8	11	5	7	80	20
310351.0200	**CC.. 0602..**	**A10H SCLCL06**	10	13	7	9	100	25
310351.0300	**CC.. 0602..**	**A12K SCLCL06**	12	16	9	11	125	25
310351.0400	**CC.. 09T3..**	**A16M SCLCL09**	16	20	11	15	150	30
310351.0500	**CC.. 09T3..**	**A20Q SCLCL09**	20	24	13	18	180	35
310351.0600	**CC.. 09T3..**	**A25R SCLCL09**	25	31	17	23	200	40
310351.0700	**CC.. 1204..**	**A32S SCLCL12**	32	39	22	30	250	45
310351.0800	**CC.. 1204..**	**A40T SCLCL12**	40	48	27	37	300	50

310401 FUTURO Boring bar SDUCL





With internal cooling

Angle of entry 93°, screw clamping, steel boring bar, angle of cut 0°, angle of inclination -6° to -15°

Appropriate spare parts:
425360 TORX® screwdriver WIHA

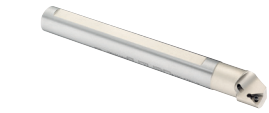
Corresponding inserts:
310900 FUTURO Indexable insert CBN CBN, disposable insert
316550 FUTURO Indexable insert Type DC.. 7° positive, single-sided

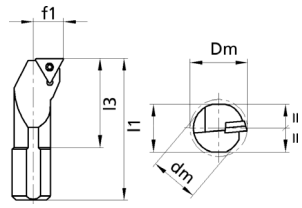
Order ID	Turning plate	Code	dm mm	Dm min. mm	f1 mm	h mm	l1 mm	l3 mm
310401.0100	**DC.. 0702..**	**A12K- SDUCL07**	10	13	7	9	150	25
310401.0200	**DC.. 0702..**	**A16M SDUCL07**	16	20	11	15	150	30
310401.0300	**DC.. 11T3..**	**A20Q SDUCL11**	20	24	13	18	180	35
310401.0400	**DC.. 11T3..**	**A25R SDUCL11**	25	31	17	23	200	40
310401.0500	**DC.. 11T3..**	**A32S SDUCL11**	12	16	9	11	125	25
310401.0600	**DC.. 11T3..**	**A40T SDUCL11**	40	48	27	37	300	50

310451 FUTURO Boring bar STFCL

With internal cooling

Angle of entry 90°, screw clamping, steel boring bar, angle of cut 0°, angle of inclination -6° to -15°





Appropriate spare parts:
425360 TORX® screwdriver WIHA

Corresponding inserts:
316700 FUTURO Indexable insert Type TC.. 7° positive, single-sided, triangular, 60°

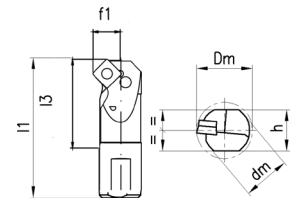
Order ID	Turning plate	Code	dm mm	Dm min. mm	f1 mm	h mm	l1 mm	l3 mm
310451.0080	**TC.. 0902..**	**A10H STFCL 09**	10	13	7	9	100	20
310451.0090	**TC.. 1102..**	**A12K STFCL11**	12	16	9	11	125	25
310451.0100	**TC.. 1102..**	**A16M STFCL11**	16	20	11	15	150	30
310451.0200	**TC.. 1102..**	**A20Q STFCL11**	20	24	13	18	180	35
310451.0300	**TC.. 16T3..**	**A25R STFCL 16**	25	31	17	23	200	40
310451.0400	**TC.. 16T3..**	**A32S STFCL 16**	32	39	22	30	250	45
310451.0500	**TC.. 16T3..**	**A40T STFCL16**	40	48	27	30	300	50

310370 FUTURO Boring bar PSSNR

With internal cooling

Angle of entry 45°, screw clamping, steel boring bar, angle of cut -3°, angle of inclination -11° to -15°

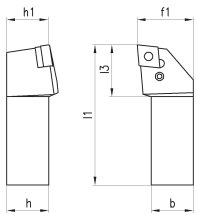




Order ID	Turning plate	Code	dm mm	Dm min. mm	f1 mm	h mm	l1 mm	l3 mm
310370.0100	**SNM.. 1204..**	**A25R PSSNR12**	25	31	17	23	200	40
310370.0200	**SNM.. 1204..**	**A32S PSSNR12**	32	39	22	30	250	45

FUTURO





310000 FUTURO Tool holder PCLNR

Angle of entry 95°, lever clamping system, angle of cut -6,5°, inclination angle -6.5°

Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310000.0100	**CN..1204..**	**PCLNR 1616H12**	16	20	16	16	100	26
310000.0200	**CN..1204..**	**PCLNR 2020K12**	20	25	20	20	125	28
310000.0300	**CN..1204..**	**PCLNR 2525M12**	25	32	25	25	150	28
310000.0400	**CN..1606..**	**PCLNR 3232P16**	32	40	32	32	170	34
310000.0500	**CN..1906..**	**PCLNR 3232P19**	32	40	32	32	170	42
310000.0600	**CN..1606..**	**PCLNR 4040 S16**	40	50	40	40	250	45

FUTURO



310915 FUTURO Indexable insert CBN

CBN, disposable insert



P	M	K	N	S	H	O
					●●	

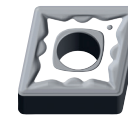
Cutting insert CNMA
Main application: Hardened steel (ISO H)

Order ID	Code	Type	l mm	s mm	r mm	H	M
310915.0100	**CNMA 120402**	**M**	12.9	4.76	0.2		●
310915.0200	**CNMA 120404**	**M**	12.9	4.76	0.4		●
310915.0300	**CNMA 120408**	**M**	12.9	4.76	0.8		●

316000 FUTURO Indexable insert Type CN.

0° negative

P	M	K	N	S	H	O
●●	●●	●●		●●		



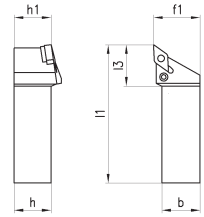
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Main application: Superalloys (ISO S)
Hardness - toughness: 10 = hard....40 = tough

Order ID	Type	Ins.	Radius mm	Type	Code	P	M	K	S	R	M	F
316000.0200	**CNMG**	**09**	**0.4**	**TM-M 25**	CNMG 090304 TM-M 25						●	
316000.0400	**CNMG**	**09**	**0.8**	**TM-M 25**	CNMG 090308 TM-M 25						●	
316000.0600	**CNGP**	**12**	**0.2**	**TM-F 25**	CNGP 120402 TM-F 25							●
316000.0800	**CNGP**	**12**	**0.4**	**TM-F 25**	CNGP 120404 TM-F 25							●
316000.1000	**CNMG**	**12**	**0.4**	**TM-M 25**	CNMG 120404 TM-M 25						●	
316000.1200	**CNMG**	**12**	**0.4**	**TP-F C10**	CNMG 120404 TP-F C10							●
316000.1400	**CNMG**	**12**	**0.4**	**TP-F 15**	CNMG 120404 TP-F 15							●
316000.1601	**CNMG**	**12**	**0.4**	**FPK25-HWC**	CNMG 120404-TPM FPK25-HWC						●	
316000.1801	**CNMG**	**12**	**0.4**	**FSM15-HWP**	CNMG 120404-TSM FSM15-HWP						●	
316000.2200	**CNMG**	**12**	**0.8**	**TK-M 20**	CNMG 120408 TK-M 20						●	
316000.2400	**CNMG**	**12**	**0.8**	**TK-R 20**	CNMG 120408 TK-R 20					●		
316000.2600	**CNGP**	**12**	**0.8**	**TM-F 25**	CNGP 120408 TM-F 25							●
316000.2800	**CNMG**	**12**	**0.8**	**TM-M 25**	CNMG 120408 TM-M 25						●	
316000.3000	**CNMG**	**12**	**0.8**	**TM-R 25**	CNMG 120408 TM-R 25					●		
316000.3200	**CNMG**	**12**	**0.8**	**TP-F C10**	CNMG 120408 TP-F C10							●
316000.3400	**CNMG**	**12**	**0.8**	**TP-F 15**	CNMG 120408 TP-F 15							●
316000.3601	**CNMG**	**12**	**0.8**	**FPK25-HWC**	CNMG 120408-TPM FPK25-HWC						●	
316000.3801	**CNMG**	**12**	**0.8**	**FPK25-HWC**	CNMG 120408-TPR FPK25-HWC					●		
316000.4000	**CNMG**	**12**	**0.8**	**TP-R 35**	CNMG 120408 TP-R 35					●		
316000.4401	**CNMG**	**12**	**0.8**	**FSM15-HWP**	CNMG 120408-TSM FSM15-HWP						●	
316000.4600	**CNMG**	**12**	**1.2**	**TK-M 20**	CNMG 120412 TK-M 20						●	
316000.4800	**CNMG**	**12**	**1.2**	**TM-R 25**	CNMG 120412 TM-R 25					●		
316000.5000	**CNMG**	**12**	**1.2**	**TP-F 15**	CNMG 120412 TP-F 15							●
316000.5200	**CNMG**	**12**	**1.2**	**TP-M 25**	CNMG 120412 TP-M 25						●	
316000.5201	**CNMG**	**12**	**1.2**	**FPK25-HWC**	CNMG 120412-TPM FPK25-HWC						●	
316000.5401	**CNMG**	**12**	**1.2**	**FPK25-HWC**	CNMG 120412-TPR FPK25-HWC					●		
316000.5600	**CNMG**	**12**	**1.2**	**TP-R 35**	CNMG 120412 TP-R 35					●		
316000.5800	**CNMG**	**16**	**0.8**	**TP-R 35**	CNMG 160608 TP-R 35					●		
316000.6000	**CNMG**	**16**	**1.2**	**TP-R 35**	CNMG 160612 TP-R 35					●		
316000.6200	**CNMG**	**19**	**1.2**	**TP-R 35**	CNMG 190612 TP-R 35					●		

310050 FUTURO Tool holder PDJNR

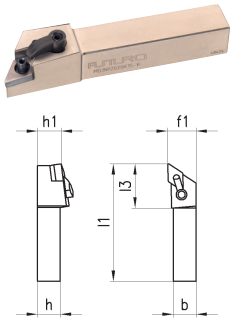
Angle of entry 93°, lever clamping system, angle of cut -6.25°, angle of inclination -6.75°





Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310050.0100	**DN..1104..**	**PDJNR 1616H11**	16	20	16	16	100	28
310050.0200	**DN..1104..**	**PDJNR 2020K11**	20	25	20	20	125	28
310050.0300	**DN..1104..**	**PDJNR 2525M11**	25	32	25	25	150	28
310050.0400	**DN..1104..**	**PDJNR 3225P11**	25	32	32	32	170	28
310050.0500	**DN..1506..**	**PDJNR 4025R15**	25	32	40	40	200	34

FUTURO

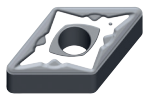


310070 FUTURO Tool holder MDJNR

Angle of entry 93°, wedge claw clamping system, angle of cut -6°, angle of inclination -7°

Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310070.0100	**DN..1506..**	**MDJNR 2020K 15-K**	20	25	20	20	125	34
310070.0200	**DN..1506..**	**MDJNR 2525M 15-K**	25	32	25	25	150	34
310070.0300	**DN..1506..**	**MDJNR 3225P 15-K**	25	32	32	32	170	34

FUTURO



316050 FUTURO Indexable insert Type DN.

0° negative

55° DNMG

P	M	K	N	S	H	O
●●	●●	●●		●●		

Cutting insert DNMG
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Main application: Superalloys (ISO S)
Hardness - toughness: 10 = hard....40 = tough

Order ID	Type	Ins.	Radius mm	Type	Code	P	M	K	S	R	M	F
316050.0200	**DNMG**	**11**	**0.4**	TM-M 25	DNMG 110404 TM-M 25						●	
316050.0400	**DNMG**	**11**	**0.4**	TP-F C10	DNMG 110404 TP-F C10							●
316050.0601	**DNMG**	**11**	**0.4**	FPK25-HWC	DNMG 110404-TPM FPK25-HWC						●	
316050.0800	**DNMG**	**11**	**0.8**	TM-M 25	DNMG 110408 TM-M 25						●	
316050.1000	**DNMG**	**11**	**0.8**	TP-M 25	DNMG 110408 TP-M 25						●	
316050.1001	**DNMG**	**11**	**0.8**	FPK25-HWC	DNMG 110408-TPM FPK25-HWC						●	
316050.1200	**DNGP**	**15**	**0.2**	TM-F 25	DNGP 150602 TM-F 25							●
316050.1400	**DNGP**	**15**	**0.4**	TM-F 25	DNGP 150604 TM-F 25							●
316050.1600	**DNMG**	**15**	**0.4**	TM-M 25	DNMG 150604 TM-M 25						●	
316050.1800	**DNMG**	**15**	**0.4**	TP-F C10	DNMG 150604 TP-F C10							●
316050.2000	**DNMG**	**15**	**0.4**	TP-F 15	DNMG 150604 TP-F 15							●
316050.2200	**DNMG**	**15**	**0.4**	TP-M 25	DNMG 150604 TP-M 25						●	
316050.2201	**DNMG**	**15**	**0.4**	FPK25-HWC	DNMG 150604-TPM FPK25-HWC						●	
316050.2400	**DNMG**	**15**	**0.8**	TK-M 20	DNMG 150608 TK-M 20						●	
316050.2600	**DNGP**	**15**	**0.8**	TM-F 25	DNGP 150608 TM-F 25							●
316050.2800	**DNMG**	**15**	**0.8**	TM-M 25	DNMG 150608 TM-M 25						●	
316050.3000	**DNMG**	**15**	**0.8**	TM-R 25	DNMG 150608 TM-R 25					●		
316050.3200	**DNMG**	**15**	**0.8**	TP-F 15	DNMG 150608 TP-F 15							●
316050.3401	**DNMG**	**15**	**0.8**	FPK25-HWC	DNMG 150608-TPM FPK25-HWC						●	
316050.3600	**DNMG**	**15**	**0.8**	TP-R 35	DNMG 150608 TP-R 35					●		
316050.3801	**DNMG**	**15**	**0.8**	FSM15-HWP	DNMG 150608-TSM FSM15 HWP						●	
316050.4200	**DNMG**	**15**	**1.2**	TP-M 25	DNMG 150612 TP-M 25						●	
316050.4400	**DNMG**	**15**	**1.2**	TP-R 35	DNMG 150612 TP-R 35					●		

310920 FUTURO Indexable insert CBN

CBN, disposable insert

55° DNMA



P	M	K	N	S	H	O
					●●	

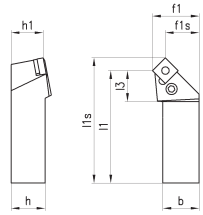
Cutting insert DNMA
Main application: Hardened steel (ISO H)

Order ID	Code	Type	l mm	s mm	r mm	H	M
310920.0100	**DNMA 150604**	**M**	15.5	6.35	0.4		●

310100 FUTURO Tool holder PSSNR

Angle of entry 45°, lever clamping system, angle of cut -5.75°, angle of inclination -5.75°





Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310100.0100	**SNM..1204..**	**PSSNR 2020K12**	20	25	20	20	125	28
310100.0200	**SNM..1204..**	**PSSNR 2525M12**	25	32	25	25	150	28
310100.0300	**SNM..1204..**	**PSSNR 3225P12**	25	32	32	32	170	28

316100 FUTURO Indexable insert Type SN.

0° negative

90° SNMG



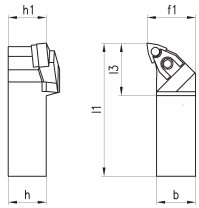
P	M	K	N	S	H	O
●●	●●	●●		●●		

Cutting insert SNMG
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Main application: Superalloys (ISO S)
Hardness - toughness: 10 = hard....40 = tough

Order ID	Type	Ins.	Radius mm	Type	Code	P	M	K	S	R	M	F
316100.0200	**SNMG**	**12**	**0.8**	TK-M 20	SNMG 120408 TK-M 20						●	
316100.0400	**SNMG**	**12**	**0.8**	TM-M 25	SNMG 120408 TM-M 25						●	
316100.0600	**SNMG**	**12**	**0.8**	TP-F 15	SNMG 120408 TP-F 15							●
316100.0801	**SNMG**	**12**	**0.8**	FPK25-HWC	SNMG 120408-TPM FPK25-HWC						●	
316100.1000	**SNMG**	**12**	**0.8**	TP-R 25	SNMG 120408 TP-R 25					●		
316100.1001	**SNMG**	**12**	**0.8**	FPK25-HWC	SNMG 120408-TPR FPK25-HWC					●		
316100.1200	**SNMG**	**12**	**0.8**	TS-M 10	SNMG 120408 TS-M 10						●	
316100.1201	**SNMG**	**12**	**0.8**	FSM15-HWP	SNMG 120408-TSM FSM15 HWP						●	
316100.1400	**SNMG**	**12**	**1.2**	TP-F 15	SNMG 120412 TP-F 15							●
316100.1600	**SNMG**	**12**	**1.2**	TP-M 25	SNMG 120412 TP-M 25						●	
316100.1601	**SNMG**	**12**	**1.2**	FPK25-HWC	SNMG 120412-TPM FPK25-HWC						●	

FUTURO



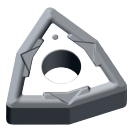


310150 FUTURO Tool holder MWLNR

Angle of entry 95°, wedge clock clamping system, angle of cut -6.5°, angle of inclination -6.5°

Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310150.0090	**WNMG 0604..**	**MWLNR 1616H06**	16	20	16	16	100	15
310150.0100	**WNMG 0604..**	**MWLNR 2020K06**	20	25	20	20	125	25
310150.0200	**WNMG 0604..**	**MWLNR 2525M06**	25	32	25	25	150	25
310150.0300	**WNM.. 0804..**	**MWLNR 2020K08-K**	20	25	20	20	125	34
310150.0400	**WNM.. 0804..**	**MWLNR 2525M08-K**	25	32	25	25	150	34
310150.0500	**WNM.. 0804..**	**MWLNR 3232P08-K**	32	40	32	32	170	34

FUTURO



316250 FUTURO Indexable insert Type WN.

0° negative

P	M	K	N	S	H	O
●●	●●	●●		●●		

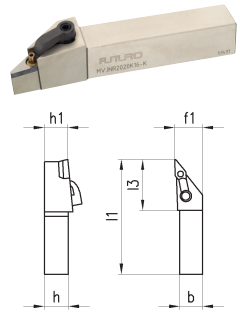
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Main application: Superalloys (ISO S)
Hardness - toughness: 10 = hard....40 = tough

Order ID	Type	Ins.	Radius mm	Type	Code	P	M	K	S	R	M	F
316250.0200	**WNMG**	**06**	**0.4**	TM-M 25	WNMG 060404 TM-M 25						●	
316250.0400	**WNMG**	**06**	**0.4**	TP-F 15	WNMG 060404 TP-F 15							●
316250.0600	**WNMG**	**06**	**0.4**	TP-M 25	WNMG 060404 TP-M 25						●	
316250.0601	**WNMG**	**06**	**0.4**	FPK25-HWC	WNMG 060404-TPM FPK25-HWC						●	
316250.0800	**WNMG**	**06**	**0.8**	TM-M 25	WNMG 060408 TM-M 25						●	
316250.1000	**WNMG**	**06**	**0.8**	TP-F 15	WNMG 060408 TP-F 15							●
316250.1200	**WNMG**	**06**	**0.8**	TP-M 25	WNMG 060408 TP-M 25						●	
316250.1201	**WNMG**	**06**	**0.8**	FPK25-HWC	WNMG 060408-TPM FPK25-HWC						●	
316250.1400	**WNGP**	**08**	**0.4**	TM-F 25	WNGP 080404 TM-F 25							●
316250.1600	**WNMG**	**08**	**0.4**	TM-M 25	WNMG 080404 TM-M 25						●	
316250.1800	**WNMG**	**08**	**0.4**	TP-F 15	WNMG 080404 TP-F 15							●
316250.2000	**WNMG**	**08**	**0.4**	TP-M 25	WNMG 080404 TP-M 25						●	
316250.2001	**WNMG**	**08**	**0.4**	FPK25-HWC	WNMG 080404-TPM FPK25-HWC						●	
316250.2400	**WNMG**	**08**	**0.8**	TK-M 20	WNMG 080408 TK-M 20						●	
316250.2600	**WNMG**	**08**	**0.8**	TK-R 20	WNMG 080408 TK-R 20					●		
316250.2800	**WNGP**	**08**	**0.8**	TM-F 25	WNGP 080408 TM-F 25							●
316250.3000	**WNMG**	**08**	**0.8**	TM-M 25	WNMG 080408 TM-M 25						●	
316250.3200	**WNMG**	**08**	**0.8**	TM-R 25	WNMG 080408 TM-R 25					●		
316250.3400	**WNMG**	**08**	**0.8**	TP-F 15	WNMG 080408 TP-F 15							●
316250.3601	**WNMG**	**08**	**0.8**	FPK25-HWC	WNMG 080408-TPM FPK25-HWC						●	
316250.3800	**WNMG**	**08**	**0.8**	TP-R 25	WNMG 080408 TP-R 25					●		
316250.3801	**WNMG**	**08**	**0.8**	FPK25-HWC	WNMG 080408-TPR FPK25-HWC					●		
316250.4000	**WNMG**	**08**	**0.8**	TP-R 35	WNMG 080408 TP-R 35					●		
316250.4200	**WNMG**	**08**	**0.8**	TS-M 10	WNMG 080408 TS-M 10						●	
316250.4201	**WNMG**	**08**	**0.8**	FSM15-HWP	WNMG 080408-TSM FSM15-HWP						●	
316250.4400	**WNMG**	**08**	**1.2**	TK-M 20	WNMG 080412 TK-M 20						●	
316250.4600	**WNMG**	**08**	**1.2**	TM-M 25	WNMG 080412 TM-M 25						●	
316250.4800	**WNMG**	**08**	**1.2**	TP-M 25	WNMG 080412 TP-M 25						●	
316250.4801	**WNMG**	**08**	**1.2**	FPK25-HWC	WNMG 080412-TPM FPK25-HWC						●	
316250.5000	**WNMG**	**08**	**1.2**	TP-R 25	WNMG 080412 TP-R 25					●		
316250.5001	**WNMG**	**08**	**1.2**	FPK25-HWC	WNMG 080412-TPR FPK25-HWC					●		

310170 FUTURO Tool holder MVJNR

Angle of entry 93°, wedge claw clamping system, angle of cut -6°, inclination angle -6°

Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310170.0100	**VN..1604..**	**MVJNR 2020K 16-K**	20	25	20	20	125	43
310170.0200	**VN..1604..**	**MVJNR 2525M 16-K**	25	32	25	25	150	43
310170.0300	**VN..1604..**	**MVJNR 3225P 16-K**	25	32	32	32	170	43



316200 FUTURO Indexable insert Type VN.

0° negative

P	M	K	N	S	H	0
●●	●●			●●		



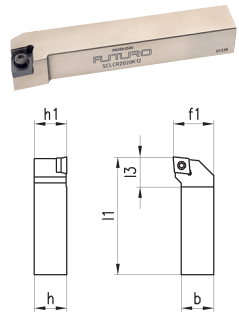
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Superalloys (ISO S)
Hardness - toughness: 10 = hard....40 = tough

Order ID	Type	Ins.	Radius mm	Type	Code	P	M	K	S	M	F
316200.0200	**VNGP**	**16**	**0.2**	TM-F 25	VNGP 160402 TM-F 25						●
316200.0400	**VNGP**	**16**	**0.4**	TM-F 25	VNGP 160404 TM-F 25						●
316200.0600	**VNMG**	**16**	**0.4**	TP-F 15	VNMG 160404 TP-F 15						●
316200.0800	**VNMG**	**16**	**0.4**	TP-M 25	VNMG 160404 TP-M 25					●	
316200.0801	**VNMG**	**16**	**0.4**	FPK25-HWC	VNMG 160404-TPM FPK25-HWC					●	
316200.1000	**VNMG**	**16**	**0.8**	TM-M 25	VNMG 160408 TM-M 25					●	
316200.1200	**VNMG**	**16**	**0.8**	TP-F 15	VNMG 160408 TP-F 15						●
316200.1401	**VNMG**	**16**	**0.8**	FPK25-HWC	VNMG 160408-TPM FPK25-HWC					●	
316200.1600	**VNMG**	**16**	**0.8**	TS-M 10	VNMG 160408 TS-M 10					●	
316200.1601	**VNMG**	**16**	**0.8**	FSM15-HWP	VNMG 160408-TSM FSM15 HWP					●	

310200 FUTURO Tool holder SCLCR

Angle of entry 95°, screw clamping, angle of cut 0°, angle of inclination 0°

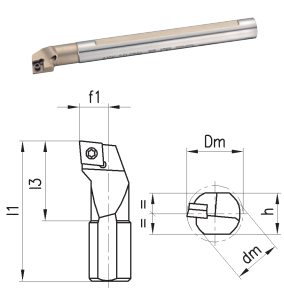
Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310200.0100	**CC..0602..**	**SCLCR 1010E06**	10	12	10	10	70	10
310200.0200	**CC..09T3..**	**SCLCR 1212F09**	12	16	12	12	80	16
310200.0300	**CC..09T3..**	**SCLCR 1616H09**	16	20	16	16	100	16
310200.0400	**CC..09T3..**	**SCLCR 2020K09**	20	25	20	20	125	16
310200.0500	**CC..1204..**	**SCLCR 2020K12**	20	25	20	20	125	25
310200.0600	**CC..1204..**	**SCLCR 2525M12**	25	32	25	25	150	25



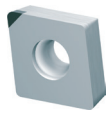
310350 FUTURO Boring bar SCLCR

Angle of entry 95°, screw clamping, steel boring bar, angle of cut 0°, angle of inclination -6° to -15°

Order ID	Turning plate	Code	dm mm	Dm min. mm	f1 mm	h mm	l1 mm	l3 mm
310350.0102	**CC.. 0602..**	**A08K SCLCR06**	8	11	5	7	125	16
310350.0201	**CC.. 0602..**	**A10H SCLCR06**	10	13	7	9	100	20
310350.0301	**CC.. 0602..**	**A12M SCLCR06**	12	16	9	11	150	25
310350.0401	**CC.. 09T3..**	**A16M SCLCR09**	16	20	11	15	150	30
310350.0501	**CC.. 09T3..**	**A20S SCLCR09**	20	24	13	18	250	35
310350.0600	**CC.. 09T3..**	**A25R SCLCR09**	25	31	17	23	200	40
310350.0700	**CC.. 1204..**	**A32S SCLCR12**	32	39	22	30	250	45
310350.0800	**CC.. 1204..**	**A40T SCLCR12**	40	48	27	37	300	50



FUTURO



310905 FUTURO Indexable insert CBN

CBN, disposable insert

80° CCMW

P	M	K	N	S	H	O
					●●	

Cutting insert CCMW
Main application: Hardened steel (ISO H)

Order ID	Code	Type	l mm	s mm	r mm	H	M
310905.0100	**CCMW 060202**	**M**	6.4	2.38	0.2		●
310905.0200	**CCMW 060204**	**M**	6.4	2.38	0.4		●
310905.0300	**CCMW 09T304**	**M**	9.7	3.97	0.4		●
310905.0400	**CCMW 09T308**	**M**	9.7	3.97	0.8		●

316500 FUTURO Indexable insert Type CC..

FUTURO

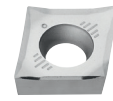
7° positive, Single-sided

P	M	K	N	S	H	O
●●	●●	●●	●●			

Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N)
Hardness - toughness: 10 = hard....40 = tough


TK


TM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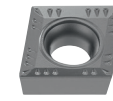
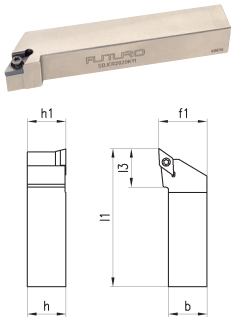

TP

Order ID	Type	Ins.	Radius mm	Type	Code	P	M	K	N	M	F	XF
316500.0200	**CCGT**	**06**	**0**	TM-XF 10	CCGT 060200 TM-XF 10							●
316500.0350	**CCGT**	**06**	**0.1**	TM-XF 10	CCGT 060201 TM-XF 10							●
316500.0500	**CCGT**	**06**	**0.1**	TN-F 15	CCGT 060201 TN-F 15						●	
316500.0650	**CCGT**	**06**	**0.1**	TN-F 15C	CCGT 060201 TN-F 15C						●	
316500.0800	**CCMT**	**06**	**0.2**	TM-F 25	CCMT 060202 TM-F 25						●	
316500.0950	**CCGT**	**06**	**0.2**	TN-F 15	CCGT 060202 TN-F 15						●	
316500.1100	**CCGT**	**06**	**0.2**	TN-F 15C	CCGT 060202 TN-F 15C						●	
316500.1251	**CCMT**	**06**	**0.2**	FPK25-HWC	CCMT 060202-TPF FPK25-HWC						●	
316500.1400	**CCMT**	**06**	**0.4**	TM-F 25	CCMT 060204 TM-F 25						●	
316500.1550	**CCMT**	**06**	**0.4**	TM-M 25	CCMT 060204 TM-M 25					●		
316500.1700	**CCGT**	**06**	**0.4**	TN-M 15	CCGT 060204 TN-M 15					●	●	
316500.1850	**CCGT**	**06**	**0.4**	TN-M 15C	CCGT 060204 TN-M 15C					●	●	
316500.2000	**CCMT**	**06**	**0.4**	TP-F C10	CCMT 060204 TP-F C10						●	
316500.2150	**CCMT**	**06**	**0.4**	TP-F 15	CCMT 060204 TP-F 15						●	
316500.2301	**CCMT**	**06**	**0.4**	FPK25-HWC	CCMT 060204-TPF FPK25-HWC						●	
316500.2451	**CCMT**	**06**	**0.4**	FPK25-HWC	CCMT 060204-TPM FPK25-HWC					●		
316500.2600	**CCMT**	**06**	**0.4**	TP-M 35	CCMT 060204 TP-M 35					●		
316500.2750	**CCGT**	**09**	**0**	TM-XF 10	CCGT 09T300 TM-XF 10							●
316500.2900	**CCGT**	**09**	**0.1**	TM-XF 10	CCGT 09T301 TM-XF 10							●
316500.3050	**CCMT**	**09**	**0.2**	TM-F 25	CCMT 09T302 TM-F 25						●	
316500.3200	**CCGT**	**09**	**0.2**	TN-F 15	CCGT 09T302 TN-F 15						●	
316500.3350	**CCGT**	**09**	**0.2**	TN-F 15C	CCGT 09T302 TN-F 15C						●	
316500.3501	**CCMT**	**09**	**0.2**	FPK25-HWC	CCMT 09T302-TPF FPK25-HWC						●	
316500.3650	**CCMT**	**09**	**0.4**	TK-M 20	CCMT 09T304 TK-M 20					●		
316500.3800	**CCMT**	**09**	**0.4**	TM-F 25	CCMT 09T304 TM-F 25						●	
316500.3950	**CCMT**	**09**	**0.4**	TM-M 25	CCMT 09T304 TM-M 25					●		
316500.4100	**CCMT**	**09**	**0.4**	TM-M 35	CCMT 09T304 TM-M 35					●		
316500.4250	**CCGT**	**09**	**0.4**	TN-M 15	CCGT 09T304 TN-M 15					●		
316500.4400	**CCGT**	**09**	**0.4**	TN-M 15C	CCGT 09T304 TN-M 15C					●		
316500.4550	**CCMT**	**09**	**0.4**	TP-F C10	CCMT 09T304 TP-F C10						●	
316500.4700	**CCMT**	**09**	**0.4**	TP-F 15	CCMT 09T304 TP-F 15						●	
316500.4851	**CCMT**	**09**	**0.4**	FPK25-HWC	CCMT 09T304-TPF FPK25-HWC						●	
316500.5001	**CCMT**	**09**	**0.4**	FPK25-HWC	CCMT 09T304-TPM FPK25-HWC					●		

Order ID	Type	Ins.	Radius mm	Type	Code	P	M	K	N	M	F	XF
316500.5150	**CCMT**	**09**	**0.4**	TP-M 35	CCMT 09T304 TP-M 35	■				●		
316500.5300	**CCMT**	**09**	**0.8**	TK-M 20	CCMT 09T308 TK-M 20			■		●		
316500.5450	**CCMT**	**09**	**0.8**	TM-M 25	CCMT 09T308 TM-M 25		■			●		
316500.5600	**CCMT**	**09**	**0.8**	TM-M 35	CCMT 09T308 TM-M 35		■			●		
316500.5750	**CCGT**	**09**	**0.8**	TN-M 15	CCGT 09T308 TN-M 15				■	●		
316500.5900	**CCGT**	**09**	**0.8**	TN-M 15C	CCGT 09T308 TN-M 15C		■		■	●		
316500.6050	**CCMT**	**09**	**0.8**	TP-F 15	CCMT 09T308 TP-F 15	■					●	
316500.6201	**CCMT**	**09**	**0.8**	FPK25-HWC	CCMT 09T308-TPF FPK25-HWC	■		■			●	
316500.6351	**CCMT**	**09**	**0.8**	FPK25-HWC	CCMT 09T308-TPM FPK25-HWC	■		■		●		
316500.6500	**CCMT**	**09**	**0.8**	TP-M 35	CCMT 09T308 TP-M 35	■				●		
316500.6650	**CCMT**	**12**	**0.4**	TM-M 25	CCMT 120404 TM-M 25		■			●		
316500.6800	**CCGT**	**12**	**0.4**	TN-M 15	CCGT 120404 TN-M 15				■	●		
316500.6950	**CCGT**	**12**	**0.4**	TN-M 15C	CCGT 120404 TN-M 15C		■		■	●		
316500.7101	**CCMT**	**12**	**0.4**	FPK25-HWC	CCMT 120404-TPM FPK25-HWC	■		■		●		
316500.7250	**CCMT**	**12**	**0.8**	TK-M 20	CCMT 120408 TK-M 20			■		●		
316500.7400	**CCMT**	**12**	**0.8**	TM-M 25	CCMT 120408 TM-M 25		■			●		
316500.7550	**CCGT**	**12**	**0.8**	TN-M 15	CCGT 120408 TN-M 15				■	●		
316500.7700	**CCGT**	**12**	**0.8**	TN-M 15C	CCGT 120408 TN-M 15C		■		■	●		
316500.7851	**CCMT**	**12**	**0.8**	FPK25-HWC	CCMT 120408-TPM FPK25-HWC	■		■		●		

FUTURO

310250 FUTURO Tool holder SDJCR

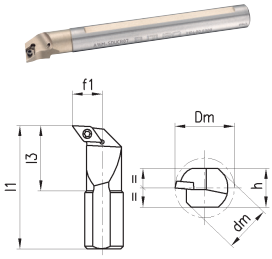


Adjustment angle 93°, screw clamping, angle of cut 0°, angle of inclination 0°

Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310250.0100	**DC..0702..**	**SDJCR 1010E07**	10	12	10	10	70	16
310250.0200	**DC..0702..**	**SDJCR 1212F07**	12	16	12	12	80	18
310250.0300	**DC..0702..**	**SDJCR 1616H07**	16	20	16	16	100	22
310250.0400	**DC..0702..**	**SDJCR 2020K07**	20	25	20	20	125	18
310250.0500	**DC..11T3..**	**SDJCR 1616H11**	16	20	16	16	100	22
310250.0600	**DC..11T3..**	**SDJCR 2020K11**	20	25	20	20	125	22
310250.0700	**DC..11T3..**	**SDJCR 2525M11**	25	32	25	25	150	22

FUTURO

310400 FUTURO Boring bar SDUCR



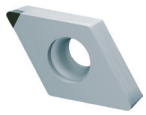
With internal cooling

Angle of entry 93°, screw clamping, steel boring bar, angle of cut 0°, angle of inclination -6° to -15°

Order ID	Turning plate	Code	dm mm	Dm min. mm	f1 mm	h mm	l1 mm	l3 mm
310400.0100	**DC.. 0702..**	**S10M SDUCR07**	10	13	7	9	150	25
310400.0200	**DC.. 0702..**	**A12K SDUCR07**	12	16	9	11	125	25
310400.0300	**DC.. 0702..**	**A16M SDUCR07**	16	20	11	15	150	30
310400.0400	**DC.. 11T3..**	**A20Q SDUCR11**	20	24	13	18	180	35
310400.0500	**DC.. 11T3..**	**A25R SDUCR11**	25	31	17	23	200	40
310400.0600	**DC.. 11T3..**	**A32S SDUCR 11**	32	39	22	30	250	45
310400.0700	**DC.. 11T3..**	**A40T SDUCR 11**	40	48	27	37	300	50

FUTURO

310900 FUTURO Indexable insert CBN



CBN, disposable insert



P	M	K	N	S	H	O
					●●	

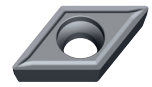
Cutting insert DCMW
Main application: Hardened steel (ISO H)

Order ID	Code	Type	l mm	s mm	r mm	H	M
310900.0100	**DCMW 070202**	**M**	7.75	2.38	0.2		●
310900.0300	**DCMW 11T302**	**M**	11.6	3.97	0.2		●
310900.0400	**DCMW 11T304**	**M**	11.6	3.97	0.4		●

316550 FUTURO Indexable insert Type DC..

7° positive, single-sided

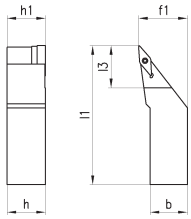
P	M	K	N	S	H	O
●●	●●	●●	●●			



Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N)
Hardness - toughness: 10 = hard....40 = tough

Order ID	Type	Ins.	Radius mm	Type	Code	P	M	K	N	M	F	XF
316550.0200	**DCGT**	**07**	**0**	TM-XF 10	DCGT 070200 TM-XF 10							●
316550.0350	**DCGT**	**07**	**0.1**	TM-XF 10	DCGT 070201 TM-XF 10							●
316550.0500	**DCGT**	**07**	**0.1**	TN-F 15	DCGT 070201 TN-F 15						●	
316550.0650	**DCGT**	**07**	**0.1**	TN-F 15C	DCGT 070201 TN-F 15C						●	
316550.0800	**DCMT**	**07**	**0.2**	TM-F 25	DCMT 070202 TM-F 25						●	
316550.0950	**DCGT**	**07**	**0.2**	TN-F 15	DCGT 070202 TN-F 15						●	
316550.1100	**DCGT**	**07**	**0.2**	TN-F 15C	DCGT 070202 TN-F 15C						●	
316550.1250	**DCMT**	**07**	**0.2**	TP-F 25	DCMT 070202 TP-F 25						●	
316550.1251	**DCMT**	**07**	**0.2**	FPK25-HWC	DCMT 070202-TPF FPK25-HWC						●	
316550.1400	**DCMT**	**07**	**0.4**	TM-F 25	DCMT 070204 TM-F 25						●	
316550.1550	**DCMT**	**07**	**0.4**	TM-M 25	DCMT 070204 TM-M 25					●		
316550.1700	**DCGT**	**07**	**0.4**	TN-M 15	DCGT 070204 TN-M 15					●		
316550.1850	**DCGT**	**07**	**0.4**	TN-M 15C	DCGT 070204 TN-M 15C					●		
316550.2000	**DCMT**	**07**	**0.4**	TP-F C10	DCMT 070204 TP-F C10						●	
316550.2150	**DCMT**	**07**	**0.4**	TP-F 25	DCMT 070204 TP-F 25						●	
316550.2151	**DCMT**	**07**	**0.4**	FPK25-HWC	DCMT 070204-TPF FPK25-HWC						●	
316550.2300	**DCMT**	**07**	**0.4**	TP-M 25	DCMT 070204 TP-M 25					●		
316550.2301	**DCMT**	**07**	**0.4**	FPK25-HWC	DCMT 070204-TPM FPK25-HWC					●		
316550.2450	**DCMT**	**07**	**0.4**	TP-M 35	DCMT 070204 TP-M 35					●		
316550.2600	**DCMT**	**07**	**0.8**	TM-M 25	DCMT 070208 TM-M 25					●		
316550.2750	**DCGT**	**11**	**0**	TM-XF 10	DCGT 11T300 TM-XF 10							●
316550.2900	**DCGT**	**11**	**0.1**	TM-XF 10	DCGT 11T301 TM-XF 10							●
316550.3050	**DCMT**	**11**	**0.2**	TM-F 25	DCMT 11T302 TM-F 25						●	
316550.3200	**DCGT**	**11**	**0.2**	TN-F 15	DCGT 11T302 TN-F 15						●	
316550.3350	**DCGT**	**11**	**0.2**	TN-F 15C	DCGT 11T302 TN-F 15C						●	
316550.3500	**DCMT**	**11**	**0.2**	TP-F 25	DCMT 11T302 TP-F 25						●	
316550.3501	**DCMT**	**11**	**0.2**	FPK25-HWC	DCMT 11T302-TPF FPK25-HWC						●	
316550.3650	**DCMT**	**11**	**0.4**	TK-M 20	DCMT 11T304 TK-M 20					●		
316550.3800	**DCMT**	**11**	**0.4**	TM-F 25	DCMT 11T304 TM-F 25						●	
316550.3950	**DCMT**	**11**	**0.4**	TM-M 25	DCMT 11T304 TM-M 25					●		
316550.4100	**DCMT**	**11**	**0.4**	TM-M 35	DCMT 11T304 TM-M 35					●		
316550.4250	**DCGT**	**11**	**0.4**	TN-M 15	DCGT 11T304 TN-M 15					●		
316550.4400	**DCGT**	**11**	**0.4**	TN-M 15C	DCGT 11T304 TN-M 15C					●		
316550.4550	**DCMT**	**11**	**0.4**	TP-F C10	DCMT 11T304 TP-F C10						●	
316550.4700	**DCMT**	**11**	**0.4**	TP-F 15	DCMT 11T304 TP-F 15						●	
316550.4851	**DCMT**	**11**	**0.4**	FPK25-HWC	DCMT 11T304-TPF FPK25-HWC						●	
316550.5001	**DCMT**	**11**	**0.4**	FPK25-HWC	DCMT 11T304-TPM FPK25-HWC					●		
316550.5150	**DCMT**	**11**	**0.4**	TP-M 35	DCMT 11T304 TP-M 35					●		
316550.5300	**DCMT**	**11**	**0.8**	TK-M 20	DCMT 11T308 TK-M 20					●		
316550.5450	**DCMT**	**11**	**0.8**	TM-F 25	DCMT 11T308 TM-F 25						●	
316550.5600	**DCMT**	**11**	**0.8**	TM-M 25	DCMT 11T308 TM-M 25					●		
316550.5750	**DCMT**	**11**	**0.8**	TM-M 35	DCMT 11T308 TM-M 35					●		
316550.5900	**DCGT**	**11**	**0.8**	TN-M 15	DCGT 11T308 TN-M 15					●		
316550.6050	**DCGT**	**11**	**0.8**	TN-M 15C	DCGT 11T308 TN-M 15C					●		
316550.6200	**DCMT**	**11**	**0.8**	TP-F 15	DCMT 11T308 TP-F 15						●	
316550.6350	**DCMT**	**11**	**0.8**	TP-F 25	DCMT 11T308 TP-F 25						●	
316550.6351	**DCMT**	**11**	**0.8**	FPK25-HWC	DCMT 11T308-TPF FPK25-HWC						●	
316550.6501	**DCMT**	**11**	**0.8**	FPK25-HWC	DCMT 11T308-TPM FPK25-HWC					●		
316550.6650	**DCMT**	**11**	**0.8**	TP-M 35	DCMT 11T308 TP-M 35					●		





310300 FUTURO Tool holder SVJBR

Angle of entry 93°, screw clamping, angle of cut 0°, angle of inclination 0°

Notes: SVJBR...11: for insert thickness 2mm.

Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310300.0400	**VBMT1604..**	**SVJBR 2020K16**	20	25	20	20	125	37
310300.0500	**VBMT 1604..**	**SVJBR 2525M16**	25	32	25	25	150	37
310300.0600	**VBMT 1604..**	**SVJBR 3225P16**	25	32	32	32	170	37



310910 FUTURO Indexable insert CBN

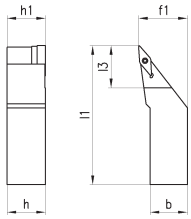
CBN, disposable insert

P	M	K	N	S	H	0
					●●	

Main application: Hardened steel (ISO H)

Order ID	Code	Type	l mm	s mm	r mm	H	M
310910.0100	**VBMW 160402**	**M**	16.6	4.76	0.2		●
310910.0200	**VBMW 160404**	**M**	16.6	4.76	0.4		●
310910.0300	**VBMW 160408**	**M**	16.6	4.76	0.8		●





310320 FUTURO Tool holder SVJCR

Angle of entry 93°, screw clamping, angle of cut 0°, angle of inclination 0°

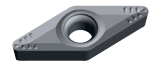
Notes: SVJCR...11: for insert thickness 3 mm.

Order ID	Turning plate	Code	b mm	f1 mm	h mm	h1 mm	l1 mm	l3 mm
310320.0100	**VC.. 1103..**	**SVJCR 1212F11**	12	16	12	12	80	25
310320.0200	**VC..1103..**	**SVJCR 1616H11**	16	20	16	16	100	25
310320.0300	**VC..1103..**	**SVJCR 2020K11**	20	25	20	20	125	25
310320.0400	**VC.. 1604..**	**SVJCR 2525M16**	25	32	25	25	150	37
310320.0500	**VC.. 1604..**	**SVJCR 3225P16**	25	32	32	32	170	37

316750 FUTURO Indexable insert Type VC..

7° positive, single-sided, rhombic, 35°

P	M	K	N	S	H	O
●●	●●		●●			



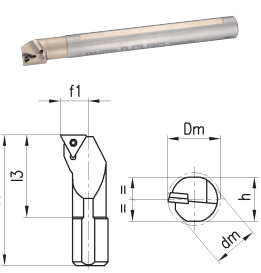
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Non-ferrous metals (ISO N)
Hardness - toughness: 10 = hard....40 = tough

Order ID	Type	Ins.	Radius mm	Type	Code	P	M	K	N	M	F	XF
316750.0200	**VCGT**	**11**	**0.0**	TM-XF 10	VCGT 110300 TM-XF 10							●
316750.0350	**VCGT**	**11**	**0.1**	TM-XF 10	VCGT 110301 TM-XF 10							●
316750.0500	**VCMT**	**11**	**0.2**	TM-F 25	VCMT 110302 TM-F 25						●	
316750.0650	**VCGT**	**11**	**0.2**	TN-F 15	VCGT 110302 TN-F 15						●	
316750.0800	**VCGT**	**11**	**0.2**	TN-F 15C	VCGT 110302 TN-F 15C						●	
316750.0951	**VCMT**	**11**	**0.2**	FPK25-HWC	VCMT 110302-TPF FPK25-HWC						●	
316750.1100	**VCMT**	**11**	**0.4**	TM-F 25	VCMT 110304 TM-F 25						●	
316750.1250	**VCMT**	**11**	**0.4**	TM-M 25	VCMT 110304 TM-M 25					●		
316750.1400	**VCMT**	**11**	**0.4**	TM-M 35	VCMT 110304 TM-M 35					●		
316750.1550	**VCGT**	**11**	**0.4**	TN-M 15	VCGT 110304 TN-M 15					●		
316750.1700	**VCGT**	**11**	**0.4**	TN-M 15C	VCGT 110304 TN-M 15C					●		
316750.1850	**VCMT**	**11**	**0.4**	TP-F 25	VCMT 110304 TP-F 25						●	
316750.1851	**VCMT**	**11**	**0.4**	FPK25-HWC	VCMT 110304-TPF FPK25-HWC						●	
316750.2001	**VCMT**	**11**	**0.4**	FPK25-HWC	VCMT 110304-TPM FPK25-HWC					●		
316750.2150	**VCMT**	**11**	**0.4**	TP-M 35	VCMT 110304 TP-M 35					●		
316750.2300	**VCMT**	**11**	**0.8**	TM-M 25	VCMT 110308 TM-M 25					●		
316750.2450	**VCMT**	**11**	**0.8**	TM-M 35	VCMT 110308 TM-M 35					●		
316750.2600	**VCMT**	**11**	**0.8**	TP-M 25	VCMT 110308 TP-M 25					●		
316750.2601	**VCMT**	**11**	**0.8**	FPK25-HWC	VCMT 110308-TPM FPK25-HWC					●		
316750.2750	**VCMT**	**11**	**0.8**	TP-M 35	VCMT 110308 TP-M 35					●		
316750.2900	**VCGT**	**13**	**0.2**	TN-F 15	VCGT 130302 TN-F 15						●	
316750.3050	**VCGT**	**13**	**0.2**	TN-F 15C	VCGT 130302 TN-F 15C						●	
316750.3200	**VCGT**	**13**	**0.4**	TN-M 15	VCGT 130304 TN-M 15					●		
316750.3350	**VCGT**	**13**	**0.4**	TN-M 15C	VCGT 130304 TN-M 15C					●		
316750.3500	**VCGT**	**16**	**0.0**	TM-XF 10	VCGT 160400 TM-XF 10							●
316750.3650	**VCGT**	**16**	**0.1**	TM-XF 10	VCGT 160401 TM-XF 10							●
316750.3800	**VCMT**	**16**	**0.4**	TM-F 25	VCMT 160404 TM-F 25						●	
316750.3950	**VCMT**	**16**	**0.4**	TM-M 25	VCMT 160404 TM-M 25					●		
316750.4100	**VCGT**	**16**	**0.4**	TN-M 15	VCGT 160404 TN-M 15					●		
316750.4250	**VCGT**	**16**	**0.4**	TN-M 15C	VCGT 160404 TN-M 15C					●		
316750.4401	**VCMT**	**16**	**0.4**	FPK25-HWC	VCMT 160404-TPF FPK25-HWC						●	
316750.4551	**VCMT**	**16**	**0.4**	FPK25-HWC	VCMT 160404-TPM FPK25-HWC					●		
316750.4700	**VCMT**	**16**	**0.4**	TP-M 35	VCMT 160404 TP-M 35					●		
316750.4850	**VCMT**	**16**	**0.8**	TM-M 25	VCMT 160408 TM-M 25					●		
316750.5000	**VCGT**	**16**	**0.8**	TN-M 15	VCGT 160408 TN-M 15					●		
316750.5150	**VCGT**	**16**	**0.8**	TN-M 15C	VCGT 160408 TN-M 15C					●		
316750.5300	**VCMT**	**16**	**0.8**	TP-M 25	VCMT 160408 TP-M 25					●		
316750.5301	**VCMT**	**16**	**0.8**	FPK25-HWC	VCMT 160408-TPM FPK25-HWC					●		
316750.5450	**VCMT**	**16**	**0.8**	TP-M 35	VCMT 160408 TP-M 35					●		
316750.5600	**VCGT**	**16**	**1.2**	TN-M 15	VCGT 160412 TN-M 15					●		
316750.5750	**VCGT**	**16**	**1.2**	TN-M 15C	VCGT 160412 TN-M 15C					●		

310450 FUTURO Boring bar STFCR

With internal cooling

Angle of entry 90°, screw clamping, steel boring bar, angle of cut 0°, angle of inclination -6° to -15°



Order ID	Turning plate	Code	dm mm	Dm min. mm	f1 mm	h mm	l1 mm	l3 mm
310450.0080	**TC.. 0902..**	**A10H STFCR 09**	10	13	7	9	100	20
310450.0090	**TC.. 1102..**	**A12K STFCR11**	12	16	9	11	125	25
310450.0100	**TC.. 1102..**	**A16M STFCR11**	16	20	11	15	150	30
310450.0200	**TC.. 1102..**	**A20Q STFCR11**	20	24	13	18	180	35
310450.0301	**TC.. 16T3..**	**A25R STFCR 16**	25	31	17	23	200	40
310450.0400	**TC.. 16T3..**	**A32S STFCR 16**	32	39	22	30	250	45
310450.0500	**TC.. 16T3..**	**A40T STFCR16**	40	48	27	30	300	50

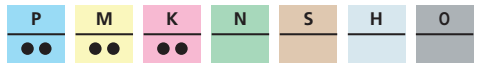
FUTURO



316700 FUTURO Indexable insert Type TC..

7° positive, single-sided, triangular, 60°





Cutting insert TCMT
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Cast materials (ISO K)
Hardness - toughness: 10 = hard....40 = tough

Order ID	Type	Ins.	Radius mm	Type	Code	P	M	K	M	F
316700.0350	**TCMT**	**09**	**0.4**	TM-M 25	TCMT 090204 TM-M 25				●	
316700.0500	**TCMT**	**09**	**0.4**	TP-M 25	TCMT 090204 TP-M 25	■			●	
316700.0501	**TCMT**	**09**	**0.4**	FPK25-HWC	TCMT 090204-TPM FPK25-HWC	■		■	●	
316700.0650	**TCMT**	**11**	**0.2**	TM-F 25	TCMT 110202 TM-F 25		■			●
316700.0800	**TCGT**	**11**	**0.2**	TP-F C10	TCGT 110202 TP-F C10	■	■			●
316700.0950	**TCMT**	**11**	**0.4**	TK-M 20	TCMT 110204 TK-M 20			■	●	
316700.1100	**TCMT**	**11**	**0.4**	TM-M 25	TCMT 110204 TM-M 25		■		●	
316700.1250	**TCMT**	**11**	**0.4**	TM-M 35	TCMT 110204 TM-M 35		■		●	
316700.1400	**TCMT**	**11**	**0.4**	TP-F C10	TCMT 110204 TP-F C10	■	■			●
316700.1550	**TCMT**	**11**	**0.4**	TP-M 25	TCMT 110204 TP-M 25	■			●	
316700.1551	**TCMT**	**11**	**0.4**	FPK25-HWC	TCMT 110204-TPM FPK25-HWC	■		■	●	
316700.1700	**TCMT**	**11**	**0.4**	TP-M 35	TCMT 110204 TP-M 35	■			●	
316700.1850	**TCMT**	**16**	**0.4**	TK-M 20	TCMT 16T304 TK-M 20			■	●	
316700.2000	**TCMT**	**16**	**0.4**	TM-M 25	TCMT 16T304 TM-M 25		■		●	
316700.2150	**TCMT**	**16**	**0.4**	TP-M 25	TCMT 16T304 TP-M 25	■			●	
316700.2151	**TCMT**	**16**	**0.4**	FPK25-HWC	TCMT 16T304-TPM FPK25-HWC	■		■	●	
316700.2300	**TCMT**	**16**	**0.4**	TP-M 35	TCMT 16T304 TP-M 35	■			●	
316700.2450	**TCMT**	**16**	**0.8**	TM-M 25	TCMT 16T308 TM-M 25		■		●	
316700.2600	**TCMT**	**16**	**0.8**	TP-M 25	TCMT 16T308 TP-M 25	■			●	
316700.2601	**TCMT**	**16**	**0.8**	FPK25-HWC	TCMT 16T308-TPM FPK25-HWC	■		■	●	
316700.2750	**TCMT**	**16**	**0.8**	TP-M 35	TCMT 16T308 TP-M 35	■			●	

316150 FUTURO Indexable insert Type TN.

0° negative

60° TNMG



P M K N S H O

Cutting insert TNMG
Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Main application: Superalloys (ISO S)
Hardness - toughness: 10 = hard....40 = tough

Order ID	Type	Ins.	Radius mm	Type	Code	P	M	K	S	R	M	F
316150.0200	**TNMG**	**16**	**0.4**	TM-M 25	TNMG 160404 TM-M 25		●				●	
316150.0400	**TNMG**	**16**	**0.4**	TP-F 15	TNMG 160404 TP-F 15	●						●
316150.0600	**TNMG**	**16**	**0.4**	TP-M 25	TNMG 160404 TP-M 25	●					●	
316150.0601	**TNMG**	**16**	**0.4**	FPK25-HWC	TNMG 160404-TPM FPK25-HWC	●		●			●	
316150.0800	**TNMG**	**16**	**0.8**	TK-M 20	TNMG 160408 TK-M 20			●			●	
316150.1000	**TNMG**	**16**	**0.8**	TM-M 25	TNMG 160408 TM-M 25		●				●	
316150.1200	**TNMG**	**16**	**0.8**	TM-R 25	TNMG 160408 TM-R 25		●			●		
316150.1400	**TNMG**	**16**	**0.8**	TP-F 15	TNMG 160408 TP-F 15	●						●
316150.1600	**TNMG**	**16**	**0.8**	TP-M 25	TNMG 160408 TP-M 25	●					●	
316150.1601	**TNMG**	**16**	**0.8**	FPK25-HWC	TNMG 160408-TPM FPK25-HWC	●		●			●	
316150.1800	**TNMG**	**16**	**0.8**	TP-R 25	TNMG 160408 TP-R 25	●				●		
316150.1801	**TNMG**	**16**	**0.8**	FPK25-HWC	TNMG 160408-TPR FPK25-HWC	●		●		●		
316150.2000	**TNMG**	**16**	**0.8**	TP-R 35	TNMG 160408 TP-R 35	●				●		
316150.2200	**TNMG**	**16**	**0.8**	TS-M 10	TNMG 160408 TS-M 10				●		●	
316150.2201	**TNMG**	**16**	**0.8**	FSM15-HWP	TNMG 160408-TSM FSM15 HWP		●		●		●	
316150.2400	**TNMG**	**16**	**1.2**	TK-M 20	TNMG 160412 TK-M 20			●			●	
316150.2600	**TNMG**	**16**	**1.2**	TP-M 25	TNMG 160412 TP-M 25	●					●	
316150.2601	**TNMG**	**16**	**1.2**	FPK25-HWC	TNMG 160412-TPM FPK25-HWC	●		●			●	
316150.2800	**TNMG**	**22**	**0.8**	TP-M 25	TNMG 220408 TP-M 25	●					●	
316150.2801	**TNMG**	**22**	**0.8**	FPK25-HWC	TNMG 220408-TPM FPK25-HWC	●		●			●	

316600 FUTURO Indexable insert Type RC..

7° positive

RCMT



P M K N S H O

Cutting insert RCMT
Main application: Steel (ISO-P)
Hardness - toughness: 10 = hard....40 = tough

Order ID	Type	Ins.	Radius mm	Type	Code	P	M
316600.0200	**RCMT**	**08**	**4**	TP-M 35	RCMT 0803MO TP-M 35	●	●
316600.0350	**RCMT**	**10**	**5**	TP-M 35	RCMT 1003MO TP-M 35	●	●
316600.0500	**RCMT**	**12**	**6**	TP-M 35	RCMT 1204MO TP-M 35	●	●



TM

316650 FUTURO Indexable insert Type SC..

7° positive, single-sided 90°

P	M	K	N	S	H	0
●●	●●	●●	●●			

Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Main application: Cast materials (ISO K), Main application: Non-ferrous metals (ISO N)

Appropriate tool holders:
310360 FUTURO Boring bar SSSCR With internal cooling
310361 FUTURO Boring bar SSSCL With internal cooling
Hardness - toughness: 10 = hard....40 = tough

Order ID	Type	Ins.	Radius mm	Type	Code	P	M	K	N	M	F
316650.0200	**SCMT**	**09**	**0.4**	TM-M 25	SCMT 09T304 TM-M 25					●	
316650.0350	**SCGT**	**09**	**0.4**	TN-M 15	SCGT 09T304 TN-M 15					●	
316650.0500	**SCGT**	**09**	**0.4**	TN-M 15C	SCGT 09T304 TN-M 15C					●	
316650.0651	**SCMT**	**09**	**0.4**	FPK25-HWC	SCMT 09T304-TPM FPK25-HWC					●	
316650.0800	**SCMT**	**09**	**0.8**	TK-M 20	SCMT 09T308 TK-M 20					●	
316650.0950	**SCMT**	**09**	**0.8**	TM-M 25	SCMT 09T308 TM-M 25					●	
316650.1101	**SCMT**	**09**	**0.8**	FPK25-HWC	SCMT 09T308-TPM FPK25-HWC					●	
316650.1250	**SCMT**	**09**	**0.8**	TP-M 35	SCMT 09T308 TP-M 35					●	
316650.1400	**SCMT**	**12**	**0.4**	TM-M 25	SCMT 120404 TM-M 25					●	
316650.1550	**SCMT**	**12**	**0.4**	TP-F 15	SCMT 120404 TP-F 15						●
316650.1701	**SCMT**	**12**	**0.4**	FPK25-HWC	SCMT 120404-TPM FPK25-HWC					●	
316650.1850	**SCMT**	**12**	**0.8**	TK-M 20	SCMT 120408 TK-M 20					●	
316650.2000	**SCMT**	**12**	**0.8**	TM-M 25	SCMT 120408 TM-M 25					●	
316650.2151	**SCMT**	**12**	**0.8**	FPK25-HWC	SCMT 120408-TPM FPK25-HWC					●	
316650.2300	**SCMT**	**12**	**0.8**	TP-M 35	SCMT 120408 TP-M 35					●	

316950 FUTURO Multifunction tool 1.5 x D

Right-handed



For machining with multi-function tools

One tool for four operations
- Drilling, flat drilling
- Internal turning
- External turning
- Face turning

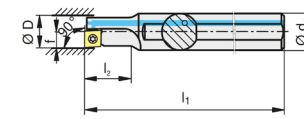
Benefits:
- Shorter preparation time
- Fewer clamping stations on the machine
- Reduction of the cutting plates

Appropriate accessories:
316957 FUTURO screw

Corresponding inserts:
316955 FUTURO indexable insert XOET
316956 FUTURO indexable insert XONT







Order ID	**D mm**	l2 mm	f mm	l1 mm	d mm	Turning plates
316950.0100	**8**	12	4	80	12	XONT 0402
316950.0200	**10**	15	5	90	12	XO..T 0502
316950.0300	**12**	18	6	100	16	XO..T 0602
316950.0400	**14**	21	7	110	16	XO..T 0703
316950.0500	**16**	24	8	125	20	XO..T 0803
316950.0600	**18**	27	9	135	25	XO..T 0904
316950.0700	**20**	30	10	150	25	XO..T 1004
316950.0800	**25**	37.5	12.5	180	32	XO..T 1305
316950.0900	**32**	48	16	200	40	XO..T 1706

316951 FUTURO Multifunction tool 2.25 x D

Right-handed



For machining with multi-function tools

One tool for four operations
- Drilling, flat drilling
- Internal turning
- External turning
- Face turning

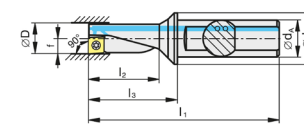
Benefits:
- Shorter preparation time
- Fewer clamping stations on the machine
- Reduction of the cutting plates

Appropriate accessories:
316957 FUTURO screw

Corresponding inserts:
316955 FUTURO indexable insert XOET
316956 FUTURO indexable insert XONT



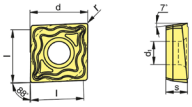




Order ID	**D mm**	l2 mm	l3 mm	f mm	l1 mm	d mm	d2 mm	Turning plates
316951.0100	**8**	18	22	4	60	10	15	XONT 0402
316951.0200	**10**	22.5	27.5	5	69.5	12	18	XO..T 0502
316951.0300	**12**	27	33	6	78	16	22	XO..T 0602
316951.0400	**14**	31.5	38.5	7	83.5	16	23	XO..T 0703
316951.0500	**16**	36	44	8	94	20	28	XO..T 0803
316951.0600	**18**	40.5	53.5	9	109.5	25	36	XO..T 0904
316951.0700	**20**	45	55	10	111	25	35	XO..T 1004
316951.0800	**25**	58.5	69	12.5	129	32	44	XO..T 1305
316951.0900	**32**	72	88	16	158	40	54	XO..T 1706

FUTURO





316955 FUTURO indexable insert XOET

P	M	K	N	S	H	O
			●●			○

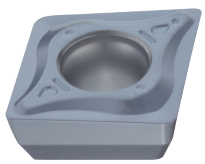
Main application: Non-ferrous metals (ISO N), Secondary application: Plastics and other materials (ISO O), For machining with multi-function tools

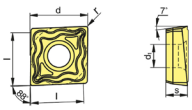
Types:
FN15HW: The uncoated carbide metal type for machining aluminium and other non-ferrous metals.

Appropriate tool holders:
316950 FUTURO Multifunction tool 1.5 x D Right-handed
316951 FUTURO Multifunction tool 2.25 x D Right-handed

Order ID	Code	Type	s mm	r mm	l mm	d mm	d1 mm	N	O
316955.0100	**XOET 050204-FN-TNM FN15HW**	**FN15HW**	2.1	0.4	5	5.8	2.2		
316955.0200	**XOET 060204-FN-TNM FN15HW**	**FN15HW**	2.9	0.4	6	6.5	2.5		
316955.0300	**XOET 070304-FN-TNM FN15HW**	**FN15HW**	3.9	0.4	7	7.6	2.8		
316955.0400	**XOET 080304-FN-TNM FN15HW**	**FN15HW**	3.9	0.4	8	8.5	3.4		
316955.0500	**XOET 090404-FN-TNM FN15HW**	**FN15HW**	4.7	0.4	9	9.6	3.4		
316955.0600	**XOET 100404-FN-TNM FN15HW**	**FN15HW**	4.7	0.4	10	10.6	4.4		
316955.0700	**XOET 130504-FN-TNM FN15HW**	**FN15HW**	5.5	0.4	12.5	13.5	5.3		
316955.0800	**XOET 170608-FN-TNM FN15HW**	**FN15HW**	6.3	0.8	16	17.5	5.3		

FUTURO





316956 FUTURO indexable insert XONT

P	M	K	N	S	H	O
●●	●●	○		●●		

Main application: Steel (ISO-P), Main application: Stainless steel (ISO M), Secondary application: Cast materials (ISO K), Main application: Superalloys (ISO S), For machining with multi-function tools

Types:
FPM30-HCP: TiAlN coated. The universal high-performance type for steel, austenitic steels and heat-resistant alloys.

Appropriate tool holders:
316950 FUTURO Multifunction tool 1.5 x D Right-handed
316951 FUTURO Multifunction tool 2.25 x D Right-handed

Order ID	Code	Type	s mm	r mm	l mm	d mm	d1 mm	P	M	K	S
316956.0100	**XONT 040204-ER-TPM FPM30-HCP**	**FPM30-HCP**	1.8	0.4	4	4.5	2.1				
316956.0200	**XONT 050204-EN-TPM FPM30-HCP**	**FPM30-HCP**	2.1	0.4	5	5.8	2.2				
316956.0300	**XONT 060204-EN-TPM FPM30-HCP**	**FPM30-HCP**	2.9	0.4	6	6.5	2.5				
316956.0400	**XONT 070304-EN-TPM FPM30-HCP**	**FPM30-HCP**	3.9	0.4	7	7.6	2.8				
316956.0500	**XONT 080304-EN-TPM FPM30-HCP**	**FPM30-HCP**	3.9	0.4	8	8.5	3.4				
316956.0600	**XONT 090404-EN-TPM FPM30-HCP**	**FPM30-HCP**	4.7	0.4	9	9.6	3.4				
316956.0700	**XONT 100404-EN-TPM FPM30-HCP**	**FPM30-HCP**	4.7	0.4	10	10.6	4.4				
316956.0800	**XONT 100408-EN-TPM FPM30-HCP**	**FPM30-HCP**	4.7	0.8	10	10.6	4.4				
316956.0900	**XONT 130504-EN-TPM FPM30-HCP**	**FPM30-HCP**	5.5	0.4	12.5	13.5	5.3				
316956.1000	**XONT 130508-EN-TPM FPM30-HCP**	**FPM30-HCP**	5.5	0.8	12.5	13.5	5.3				
316956.1100	**XONT 170608-EN-TPM FPM30-HCP**	**FPM30-HCP**	6.3	0.8	16	17.5	5.3				

FUTURO



316957 FUTURO screw

Usable with:
316950 FUTURO Multifunction tool 1.5 x D Right-handed
316951 FUTURO Multifunction tool 2.25 x D Right-handed

Order ID	Thread	Length mm	Spanners
316957.0100	M1.8	3.6	T06IP
316957.0200	M2	4.3	T06IP
316957.0300	M2.2	5	T07IP
316957.0400	M2.5	6	T08IP
316957.0500	M3	7	T09IP
316957.0600	M3.5	8.6	T15IP
316957.0700	M4.5	10.5	T20IP

FUTURO

Clamping Tools

Tool holders	232-240
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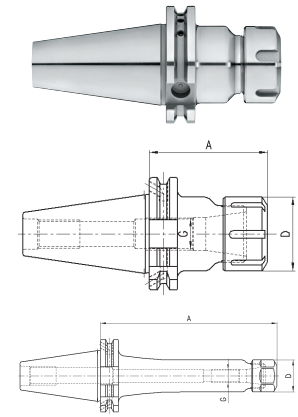
Mounting devices	242
Edge finders	243
NC labeling and cleaning tools	244



331034 FUTURO Draw-in collet chuck

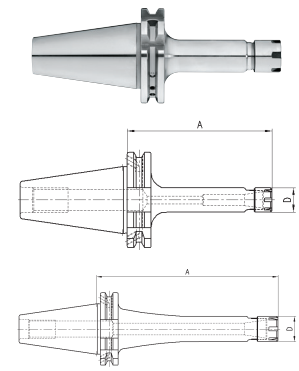
DIN 69871, Type AD/B, precision-balanced G2.5/ 25'000 min^{-1}.

Application: Clamping of tools with cylindrical shank in collet chuck type ER / ESX.
Version: With Balluff chip hole.

Package contents: With clamping nut, without key.

Order ID	Cone	Collet chucks	A mm	D mm	Clamping capacity mm	G
331034.0100	**SK 40**	**ER16**	**70**	28	0.5...10	M11x1
331034.0200	**SK 40**	**ER16**	**100**	28	0.5...10	M11x1
331034.0300	**SK 40**	**ER16**	**160**	28	0.5...10	M11x1
331034.0400	**SK 40**	**ER16**	**200**	28	0.5...10	M11x1
331034.0500	**SK 40**	**ER20**	**70**	34	0.5...13	M14x1
331034.0600	**SK 40**	**ER20**	**100**	34	0.5...13	M14x1
331034.0700	**SK 40**	**ER25**	**70**	42	0.5...16	M18x1.5
331034.0800	**SK 40**	**ER25**	**100**	42	0.5...16	M18x1.5
331034.0900	**SK 40**	**ER25**	**160**	42	0.5...16	M18x1.5
331034.1000	**SK 40**	**ER25**	**200**	42	0.5...16	M18x1.5
331034.1100	**SK 40**	**ER32**	**70**	50	1...20	M24x1.5
331034.1200	**SK 40**	**ER32**	**100**	50	1...20	M24x1.5
331034.1300	**SK 40**	**ER32**	**160**	50	1...20	M24x1.5
331034.1400	**SK 40**	**ER32**	**200**	50	1...20	M24x1.5
331034.1500	**SK 40**	**ER40**	**70**	63	2...30	M28x1.5
331034.1600	**SK 40**	**ER40**	**100**	63	2...30	M28x1.5
331034.1700	**SK 40**	**ER40**	**160**	63	2...30	M28x1.5

Note: ER16/ER20 with hexagon clamping nut



331036 FUTURO Mini - Draw-in collet chuck

DIN 69871, Type AD/B, precision-balanced G2.5/ 25'000 min^{-1}.

Application: Clamping of tools with cylindrical shank in collet chuck type ER / ESX.
Version: With Balluff chip hole.

Package contents: With clamping nut, without key.

Order ID	Cone	Collet chucks	A mm	D mm	Clamping capacity mm
331036.0100	**SK 40**	**ER11**	**100**	16	0.5...7
331036.0200	**SK 40**	**ER11**	**160**	16	0.5...7
331036.0300	**SK 40**	**ER16**	**100**	22	0.5...10
331036.0400	**SK 40**	**ER16**	**160**	22	0.5...10
331036.0500	**SK 40**	**ER25**	**100**	35	0.5...16
331036.0600	**SK 40**	**ER25**	**160**	35	0.5...16

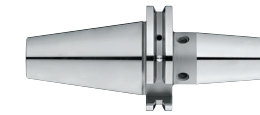
331061 FUTURO Shrink chuck 4.5°

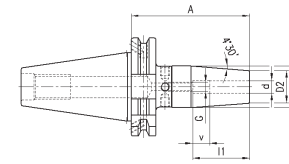
DIN 69871, Type AD/B, precision-balanced G2.5/ 25'000 min^{-1}.

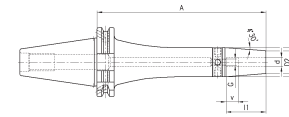
Application: For clamping of tools with cylindrical shank made of carbide (or HSS starting from 6mm) with shank tolerance min. h6. Suitable for induction shrink-fit devices.

Version: Made of high-temperature tool steel, with Balluff chip hole.

Package contents: Starting from Ø 6mm with length adjusting screw installed.







Order ID	Cone	d	A	D	D2	l1	V	G
		mm	mm	mm	mm	mm	mm	
331061.0100	SK 40	3	80	17	12	-	-	-
331061.0200	SK 40	4	80	17	12	-	-	-
331061.0300	SK 40	5	80	17	12	-	-	-
331061.0400	SK 40	6	80	27	21	37	10	M5
331061.0500	SK 40	6	120	27	21	37	10	M5
331061.0600	SK 40	6	130	27	21	37	10	M5
331061.0700	SK 40	6	160	27	21	37	10	M5
331061.0800	SK 40	6	200	27	21	37	10	M5
331061.0900	SK 40	8	80	27	21	37	10	M6
331061.1000	SK 40	8	120	27	21	37	10	M6
331061.1100	SK 40	8	130	27	21	37	10	M6
331061.1200	SK 40	8	160	27	21	37	10	M6
331061.1300	SK 40	8	200	27	21	37	10	M6
331061.1400	SK 40	10	80	32	24	42	10	M8x1
331061.1500	SK 40	10	120	32	24	42	10	M8x1
331061.1600	SK 40	10	130	32	24	42	10	M8x1
331061.1700	SK 40	10	160	32	24	42	10	M8x1
331061.1800	SK 40	10	200	32	24	42	10	M8x1
331061.1900	SK 40	12	80	32	24	48	10	M10x1
331061.2000	SK 40	12	120	32	24	48	10	M10x1
331061.2100	SK 40	12	130	32	24	48	10	M10x1
331061.2200	SK 40	12	160	32	24	48	10	M10x1
331061.2300	SK 40	12	200	32	24	48	10	M10x1
331061.2400	SK 40	14	80	34	27	48	10	M10x1
331061.2500	SK 40	14	120	34	27	48	10	M10x1
331061.2600	SK 40	14	130	34	27	48	10	M10x1
331061.2700	SK 40	14	160	34	27	48	10	M10x1
331061.2800	SK 40	14	200	34	27	48	10	M10x1
331061.2900	SK 40	16	80	34	27	51	10	M12x1
331061.3000	SK 40	16	120	34	27	51	10	M12x1
331061.3100	SK 40	16	130	34	27	51	10	M12x1
331061.3200	SK 40	16	160	34	27	51	10	M12x1
331061.3300	SK 40	16	200	34	27	51	10	M12x1
331061.3400	SK 40	18	80	42	33	51	10	M12x1
331061.3500	SK 40	18	120	42	33	51	10	M12x1
331061.3600	SK 40	18	130	42	33	51	10	M12x1
331061.3700	SK 40	18	160	42	33	51	10	M12x1
331061.3800	SK 40	18	200	42	33	51	10	M12x1
331061.3900	SK 40	20	80	42	33	53	10	M16x1
331061.4000	SK 40	20	120	42	33	53	10	M16x1
331061.4100	SK 40	20	130	42	33	53	10	M16x1
331061.4200	SK 40	20	160	42	33	53	10	M16x1
331061.4300	SK 40	20	200	42	33	53	10	M16x1
331061.4400	SK 40	25	100	53	44	59	10	M16x1
331061.4500	SK 40	25	120	53	44	59	10	M16x1
331061.4600	SK 40	25	130	53	44	59	10	M16x1
331061.4700	SK 40	25	160	53	44	59	10	M16x1
331061.4800	SK 40	25	200	53	44	59	10	M16x1
331061.4900	SK 40	32	100	53	44	63	10	M16x1

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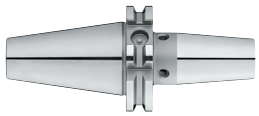

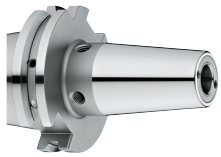

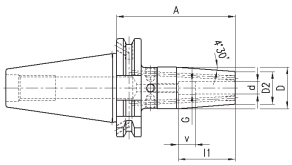

331062 FUTURO Shrink chuck 4.5° „TOOLFLUSH“

DIN 69871, Type AD/B, precision-balanced G2.5/ 25‘000 min^{-1}.

Application: For clamping of tools with cylindrical shank made of carbide (or HSS starting from 6mm) with shank tolerance min. h6. Suitable for induction shrink-fit devices.
For feeding coolant straight to the tool‘s cutting edge.

Version: Made of high-temperature tool steel, with Balluff chip hole and resealable coolant holes.

Package contents: With length adjusting screw (except for extra short version), incl. screws for sealing the coolant holes.

Order ID	Cone	d mm	A mm	D mm	D2 mm	l1 mm	V mm	G
331062.0100	**SK 40**	**6**	**80**	27	21	37	10	M5
331062.0200	**SK 40**	**6**	**120**	27	21	37	10	M5
331062.0250	**SK 40**	**6**	**130**	27	21	37	10	M5
331062.0300	**SK 40**	**8**	**80**	27	21	37	10	M6
331062.0400	**SK 40**	**8**	**120**	27	21	37	10	M6
331062.0450	**SK 40**	**8**	**130**	27	21	37	10	M6
331062.0500	**SK 40**	**10**	**65**	-	26	42	-	-
331062.0600	**SK 40**	**10**	**80**	32	24	42	10	M8x1
331062.0700	**SK 40**	**10**	**120**	32	24	42	10	M8x1
331062.0750	**SK 40**	**10**	**130**	32	24	42	10	M8x1
331062.0800	**SK 40**	**12**	**65**	-	26	48	-	-
331062.0900	**SK 40**	**12**	**80**	32	24	48	10	M10x1
331062.1000	**SK 40**	**12**	**120**	32	24	48	10	M10x1
331062.1050	**SK 40**	**12**	**130**	32	24	48	10	M10x1
331062.1100	**SK 40**	**14**	**80**	34	27	48	10	M10x1
331062.1200	**SK 40**	**14**	**120**	34	27	48	10	M10x1
331062.1250	**SK 40**	**14**	**130**	34	27	48	10	M10x1
331062.1300	**SK 40**	**16**	**65**	-	29	51	-	-
331062.1400	**SK 40**	**16**	**80**	34	27	51	10	M12x1
331062.1500	**SK 40**	**16**	**120**	34	27	51	10	M12x1
331062.1550	**SK 40**	**16**	**130**	34	27	51	10	M12x1
331062.1600	**SK 40**	**18**	**80**	42	33	51	10	M12x1
331062.1700	**SK 40**	**18**	**120**	42	33	51	10	M12x1
331062.1750	**SK 40**	**18**	**130**	42	33	51	10	M12x1
331062.1800	**SK 40**	**20**	**65**	-	35	53	-	-
331062.1900	**SK 40**	**20**	**80**	42	33	53	10	M16x1
331062.2000	**SK 40**	**20**	**120**	42	33	53	10	M16x1
331062.2050	**SK 40**	**20**	**130**	42	33	53	10	M16x1
331062.2100	**SK 40**	**25**	**75**	-	45	59	-	-
331062.2200	**SK 40**	**25**	**100**	53	44	59	10	M16x1

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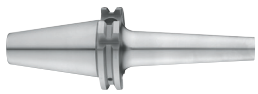
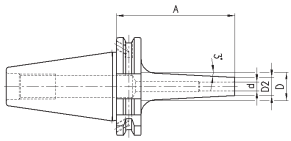




331063 FUTURO Shrink chuck 3° „SLIM“

DIN 69871, Type AD/B, precision-balanced G2.5/ 25‘000 min^{-1}.

Application: For clamping of tools with cylindrical shank made of carbide (or HSS starting from 6mm) with shank tolerance min. h6. Suitable for induction shrink-fit devices.
For reduced obstacle contours especially in toolmaking.

Version: Made of high-temperature tool steel, with Balluff chip hole.
Extra slim version.

Order ID	Cone	d mm	A mm	D mm	D2 mm	l1 mm
331063.0100	**SK 40**	**6**	**80**	19	12	37
331063.0200	**SK 40**	**6**	**120**	23	12	37
331063.0300	**SK 40**	**8**	**80**	21	14	37
331063.0400	**SK 40**	**8**	**120**	25	14	37
331063.0500	**SK 40**	**10**	**80**	23	16	42
331063.0600	**SK 40**	**10**	**120**	27	16	42
331063.0700	**SK 40**	**12**	**80**	25	18	48
331063.0800	**SK 40**	**12**	**120**	29	18	48

331105 FUTURO NC High-precision collet chuck extra slim

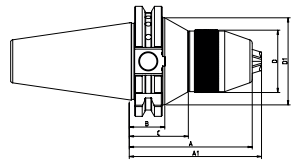
DIN 69871, type AD, precision-balanced G2.5/ 25,000 rpm.

Extra slim design
Concentricity ≤ 0.02 mm, precision-balanced G2.5/ 25,000 rpm.

Design: Clamping security regardless of rotational direction with high clamping force of up to 15 Nm thanks to worm gear.

Scope of delivery: Chuck key included.





Order ID	Cone	Clamping capacity mm	A mm	A1 mm	D mm	D1 mm	B mm	C mm	Thread G	Shape	Round material mm	Torque max. Nm
331105.0100	**SK 40**	**0.3...8**	70	74	36	50	21	35	M 16	AD	≤ 0.02	15
331105.0200	**SK 40**	**0.5...13**	76	82	44	50	21	30	M 16	AD	≤ 0.02	15
331105.0300	**SK 40**	**1...16**	80	90	51	51	21	23	M 16	AD	≤ 0.02	15
331105.0400	**SK 50**	**1...16**	80	90	51	72	21	23	M 24	AD	≤ 0.02	15
331105.0101	**SK 40**	**0.3...8**	70	74	36	50	21	35	M 16		≤ 0.02	15
331105.0201	**SK 40**	**0.5...13**	76	82	44	50	21	30	M 16		≤ 0.02	15
331105.0301	**SK 40**	**1...16**	80	90	51	51	21	23	M 16		≤ 0.02	15
331105.0401	**SK 50**	**1...16**	80	90	51	72	21	23	M 24		≤ 0.02	15

331104 FUTURO NC high-precision collet chuck

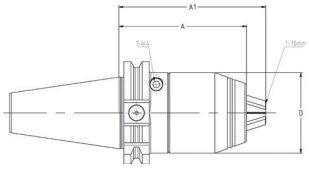
ISO 7388-1 (DIN 69871), type AD, precision-balanced G2.5/20,000 rpm.

Concentricity ≤ 0.03 mm

Usage: Clamping of drilling tools with cylindrical shank.
Design: Clamping safety independent of the direction of rotation with high clamping force thanks to the worm gear. Suitable for internal coolant feed.

Scope of delivery: without chuck key.





Order ID	Cone	Clamping capacity mm	A mm	A1 mm	D mm	Thread	Torque max. Nm
331104.0100	**SK 40**	**1.0...16**	80	92	50	M16	10

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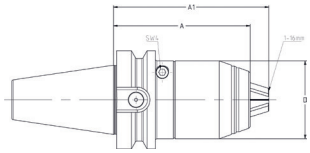


331354 FUTURO NC high-precision collet chuck

ISO 7388-2 (JIS B 6339), type AD, finely balanced G2.5/20,000 rpm.

BT (MAS) | JIS-B 6339 | ZENTRUM

with MAS-BT (steep taper) holder, According to JIS-B 6339, Cooling through the center

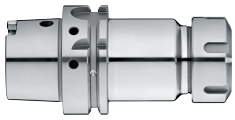
Concentricity ≤ 0.03 mm

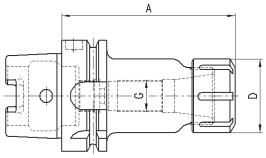
Usage: Clamping of drilling tools with cylindrical shank.
Design: Clamping safety independent of the direction of rotation with high clamping force thanks to the worm gear. Suitable for internal coolant feed.

Scope of delivery: without chuck key.

Order ID	Cone	Clamping capacity mm	A mm	A1 mm	D mm	Thread	Torque max. Nm
331354.0100	**BT 40**	**1.0…16**	88	100	50	M16	10

FUTURO





331512 FUTURO Collet chuck

DIN 69893, Type A, precision-balanced G2.5/ 25'000 min^{-1}.

HSK | Form A | DIN 69893 | ER | 25'000 | RFID

with HSK (hollow shank taper) holder, Shank shape HSK-A, According to DIN 69893, Workpiece-side mount with ER taper mount, Balanced for 25,000 rpm, RFID Ready (with Balluff chip hole)

Application: Clamping of tools with cylindrical shank in collet chuck type ER / ESX.
Version: With Balluff chip hole.

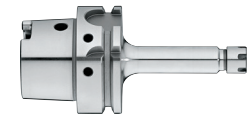
Package contents: With clamping nut, without key.

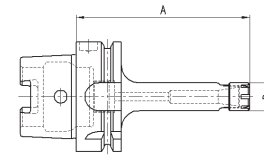
Order ID	Cone	Collet chucks	A mm	D mm	Clamping capacity mm	G
331512.0100	**HSK-A 63**	**ER11**	**75**	20	0.5…7	M8x1
331512.0200	**HSK-A 63**	**ER16**	**75**	28	0.5…10	M11x1
331512.0300	**HSK-A 63**	**ER16**	**100**	28	0.5…10	M11x1
331512.0350	**HSK-A 63**	**ER16**	**130**	28	0.5…10	M11x1
331512.0400	**HSK-A 63**	**ER16**	**160**	28	0.5…10	M11x1
331512.0450	**HSK-A 63**	**ER16**	**200**	28	0.5…10	M11x1
331512.0500	**HSK-A 63**	**ER25**	**75**	42	0.5…16	M18x1.5
331512.0600	**HSK-A 63**	**ER25**	**100**	42	0.5…16	M18x1.5
331512.0650	**HSK-A 63**	**ER25**	**130**	42	0.5…16	M18x1.5
331512.0700	**HSK-A 63**	**ER25**	**160**	42	0.5…16	M18x1.5
331512.0750	**HSK-A 63**	**ER25**	**200**	42	0.5…16	M18x1.5
331512.0800	**HSK-A 63**	**ER32**	**75**	50	1…20	M24x1.5
331512.0900	**HSK-A 63**	**ER32**	**100**	50	1…20	M24x1.5
331512.0950	**HSK-A 63**	**ER32**	**130**	50	1…20	M24x1.5
331512.1000	**HSK-A 63**	**ER32**	**160**	50	1…20	M24x1.5
331512.1050	**HSK-A 63**	**ER32**	**200**	50	1…20	M24x1.5
331512.1100	**HSK-A 63**	**ER40**	**85**	63	2…30	M28x1.5
331512.1200	**HSK-A 63**	**ER40**	**120**	63	2…30	M28x1.5
331512.1250	**HSK-A 63**	**ER40**	**130**	63	2…30	M28x1.5
331512.1300	**HSK-A 63**	**ER40**	**160**	63	2…30	M28x1.5

331513 FUTURO Mini - collet chuck

DIN 69893, Type A, precision-balanced G2.5/ 25'000 min^{-1}.

HSK | Form A | DIN 69893 | ER | 25'000 | RFID



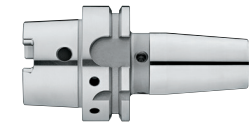


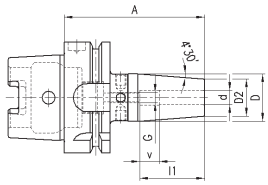
with HSK (hollow shank taper) holder, Shank shape HSK-A, According to DIN 69893, Workpiece-side mount with ER taper mount, Balanced for 25,000 rpm, RFID Ready (with Balluff chip hole)

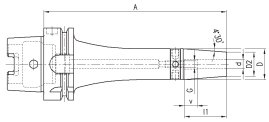
Application: Clamping of tools with cylindrical shank in collet chuck type ER / ESX.
Version: With Balluff chip hole.

Package contents: With clamping nut, without key.

Order ID	Cone	Collet chucks	A mm	D mm	Clamping capacity mm
331513.0050	**HSK-A 63**	**ER11**	**70**	16	0.5...7
331513.0100	**HSK-A 63**	**ER11**	**100**	16	0.5...7
331513.0150	**HSK-A 63**	**ER11**	**130**	16	0.5...7
331513.0200	**HSK-A 63**	**ER11**	**160**	16	0.5...7
331513.0250	**HSK-A 63**	**ER16**	**70**	22	0.5...10
331513.0300	**HSK-A 63**	**ER16**	**100**	22	0.5...10
331513.0350	**HSK-A 63**	**ER16**	**130**	22	0.5...10
331513.0400	**HSK-A 63**	**ER16**	**160**	22	0.5...10
331513.0420	**HSK-A 63**	**ER20**	**100**	28	0.5…13
331513.0425	**HSK-A 63**	**ER20**	**130**	28	0.5…13
331513.0430	**HSK-A 63**	**ER20**	**160**	28	0.5…13
331513.0500	**HSK-A 63**	**ER25**	**100**	35	0.5...16
331513.0550	**HSK-A 63**	**ER25**	**130**	35	0.5...16
331513.0600	**HSK-A 63**	**ER25**	**160**	35	0.5...16







331521 FUTURO Shrink chuck 4.5°

DIN 69893, Type A, precision-balanced G2.5/ 25'000 min^{-1}.

Application: For clamping of tools with cylindrical shank made of carbide (or HSS starting from 6mm) with shank tolerance min. h6. Suitable for induction shrink-fit devices.

Version: Made of high-temperature tool steel, with Balluff chip hole.

Package contents: Starting from Ø 6mm with length adjusting screw installed.

Order ID	Cone	d	A	D	D2	l1	V	G
		mm	mm	mm	mm	mm	mm	
331521.0100	**HSK-A 63**	**3**	**80**	17	12	-	-	-
331521.0200	**HSK-A 63**	**3**	**120**	17	12	-	-	-
331521.0300	**HSK-A 63**	**3**	**160**	17	12	-	-	-
331521.0400	**HSK-A 63**	**4**	**80**	17	12	-	-	-
331521.0500	**HSK-A 63**	**4**	**120**	17	12	-	-	-
331521.0600	**HSK-A 63**	**4**	**160**	17	12	-	-	-
331521.0700	**HSK-A 63**	**5**	**80**	17	12	-	-	-
331521.0800	**HSK-A 63**	**5**	**120**	17	12	-	-	-
331521.0900	**HSK-A 63**	**5**	**160**	17	12	-	-	-
331521.1000	**HSK-A 63**	**6**	**80**	27	21	37	10	M5
331521.1100	**HSK-A 63**	**6**	**120**	27	21	37	10	M5
331521.1200	**HSK-A 63**	**6**	**130**	27	21	37	10	M5
331521.1300	**HSK-A 63**	**6**	**160**	27	21	37	10	M5
331521.1400	**HSK-A 63**	**6**	**200**	27	21	37	10	M5
331521.1500	**HSK-A 63**	**8**	**80**	27	21	37	10	M6
331521.1600	**HSK-A 63**	**8**	**120**	27	21	37	10	M6
331521.1700	**HSK-A 63**	**8**	**130**	27	21	37	10	M6
331521.1800	**HSK-A 63**	**8**	**160**	27	21	37	10	M6
331521.1900	**HSK-A 63**	**8**	**200**	27	21	37	10	M6
331521.2000	**HSK-A 63**	**10**	**85**	32	24	42	10	M8x1
331521.2100	**HSK-A 63**	**10**	**120**	32	24	42	10	M8x1
331521.2200	**HSK-A 63**	**10**	**130**	32	24	42	10	M8x1
331521.2300	**HSK-A 63**	**10**	**160**	32	24	42	10	M8x1
331521.2400	**HSK-A 63**	**10**	**200**	32	24	42	10	M8x1
331521.2500	**HSK-A 63**	**12**	**90**	32	24	48	10	M10x1
331521.2600	**HSK-A 63**	**12**	**120**	32	24	48	10	M10x1
331521.2700	**HSK-A 63**	**12**	**130**	32	24	48	10	M10x1
331521.2800	**HSK-A 63**	**12**	**160**	32	24	48	10	M10x1
331521.2900	**HSK-A 63**	**12**	**200**	32	24	48	10	M10x1
331521.3000	**HSK-A 63**	**14**	**90**	34	27	48	10	M10x1
331521.3100	**HSK-A 63**	**14**	**120**	34	27	48	10	M10x1
331521.3200	**HSK-A 63**	**14**	**130**	34	27	48	10	M10x1
331521.3300	**HSK-A 63**	**14**	**160**	34	27	48	10	M10x1
331521.3400	**HSK-A 63**	**14**	**200**	34	27	48	10	M10x1
331521.3500	**HSK-A 63**	**16**	**95**	34	27	51	10	M12x1
331521.3600	**HSK-A 63**	**16**	**120**	34	27	51	10	M12x1
331521.3700	**HSK-A 63**	**16**	**130**	34	27	51	10	M12x1
331521.3800	**HSK-A 63**	**16**	**160**	34	27	51	10	M12x1
331521.3900	**HSK-A 63**	**16**	**200**	34	27	51	10	M12x1
331521.4000	**HSK-A 63**	**18**	**95**	42	33	51	10	M12x1
331521.4100	**HSK-A 63**	**18**	**120**	42	33	51	10	M12x1
331521.4200	**HSK-A 63**	**18**	**130**	42	33	51	10	M12x1
331521.4300	**HSK-A 63**	**18**	**160**	42	33	51	10	M12x1
331521.4400	**HSK-A 63**	**18**	**200**	42	33	51	10	M12x1
331521.4500	**HSK-A 63**	**20**	**100**	42	33	53	10	M16x1
331521.4600	**HSK-A 63**	**20**	**120**	42	33	53	10	M16x1
331521.4700	**HSK-A 63**	**20**	**130**	42	33	53	10	M16x1
331521.4800	**HSK-A 63**	**20**	**160**	42	33	53	10	M16x1
331521.4900	**HSK-A 63**	**20**	**200**	42	33	53	10	M16x1
331521.5000	**HSK-A 63**	**25**	**115**	53	44	59	10	M16x1
331521.5100	**HSK-A 63**	**25**	**160**	53	44	59	10	M16x1
331521.5200	**HSK-A 63**	**25**	**200**	53	44	59	10	M16x1
331521.5300	**HSK-A 63**	**32**	**120**	53	44	63	10	M16x1

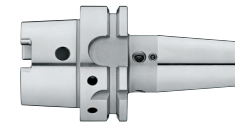
331522 FUTURO Shrink chuck 4.5° „TOOLFLUSH“

DIN 69893, Type A, precision-balanced G2.5/ 25‘000 min^{-1}.

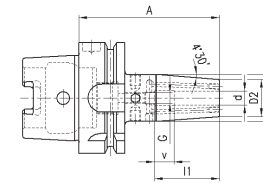
Application: For clamping of tools with cylindrical shank made of carbide (or HSS starting from 6mm) with shank tolerance min. h6. Suitable for induction shrink-fit devices.
For feeding coolant straight to the tool’s cutting edge.

Version: Made of high-temperature tool steel, with Balluff chip hole and resealable coolant holes.

Package contents: With length adjusting screw (except for extra short version), incl. screws for sealing the coolant holes.







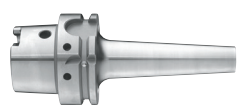
Order ID	Cone	d mm	A mm	D mm	D2 mm	l1 mm	V mm	G
331522.0010	**HSK-A 63**	**3**	**80**	17	12	-	-	-
331522.0020	**HSK-A 63**	**3**	**130**	17	12	-	-	-
331522.0030	**HSK-A 63**	**4**	**80**	17	12	-	-	-
331522.0040	**HSK-A 63**	**4**	**130**	17	12	-	-	-
331522.0050	**HSK-A 63**	**5**	**80**	17	12	-	-	-
331522.0060	**HSK-A 63**	**5**	**130**	17	12	-	-	-
331522.0100	**HSK-A 63**	**6**	**80**	27	21	37	10	M5
331522.0200	**HSK-A 63**	**6**	**120**	27	21	37	10	M5
331522.0250	**HSK-A 63**	**6**	**130**	27	21	37	10	M5
331522.0260	**HSK-A 63**	**6**	**160**	27	21	37	10	M5
331522.0300	**HSK-A 63**	**8**	**80**	27	21	37	10	M6
331522.0400	**HSK-A 63**	**8**	**120**	27	21	37	10	M6
331522.0450	**HSK-A 63**	**8**	**130**	27	21	37	10	M6
331522.0460	**HSK-A 63**	**8**	**160**	27	21	37	10	M6
331522.0500	**HSK-A 63**	**10**	**70**	33	26	42	-	-
331522.0600	**HSK-A 63**	**10**	**85**	32	24	42	10	M8x1
331522.0700	**HSK-A 63**	**10**	**120**	32	24	42	10	M8x1
331522.0750	**HSK-A 63**	**10**	**130**	32	24	42	10	M8x1
331522.0760	**HSK-A 63**	**10**	**160**	27	21	42	10	M8x1
331522.0800	**HSK-A 63**	**12**	**70**	33	26	48	-	-
331522.0900	**HSK-A 63**	**12**	**90**	32	24	48	10	M10x1
331522.1000	**HSK-A 63**	**12**	**120**	32	24	48	10	M10x1
331522.1050	**HSK-A 63**	**12**	**130**	32	24	48	10	M10x1
331522.1060	**HSK-A 63**	**12**	**160**	27	21	48	10	M10x1
331522.1100	**HSK-A 63**	**14**	**90**	34	27	48	10	M10x1
331522.1200	**HSK-A 63**	**14**	**120**	34	27	48	10	M10x1
331522.1250	**HSK-A 63**	**14**	**130**	34	27	48	10	M10x1
331522.1300	**HSK-A 63**	**16**	**75**	37	29	51	-	-
331522.1400	**HSK-A 63**	**16**	**95**	34	27	51	10	M12x1
331522.1500	**HSK-A 63**	**16**	**120**	34	27	51	10	M12x1
331522.1550	**HSK-A 63**	**16**	**130**	34	27	51	10	M12x1
331522.1560	**HSK-A 63**	**16**	**160**	27	21	51	10	M12x1
331522.1600	**HSK-A 63**	**18**	**95**	42	33	51	10	M12x1
331522.1700	**HSK-A 63**	**18**	**120**	42	33	51	10	M12x1
331522.1750	**HSK-A 63**	**18**	**130**	42	33	51	10	M12x1
331522.1800	**HSK-A 63**	**20**	**75**	43	35	53	-	-
331522.1900	**HSK-A 63**	**20**	**100**	42	33	53	10	M16x1
331522.2000	**HSK-A 63**	**20**	**120**	42	33	53	10	M16x1
331522.2050	**HSK-A 63**	**20**	**130**	42	33	53	10	M16x1
331522.2060	**HSK-A 63**	**20**	**160**	27	21	53	10	M16x1
331522.2100	**HSK-A 63**	**25**	**85**	50	45	59	-	-
331522.2200	**HSK-A 63**	**25**	**115**	53	44	59	10	M16x1

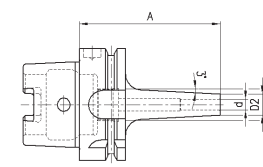
331523 FUTURO Shrink chuck 3° „SLIM“

DIN 69893, Type A, precision-balanced G2.5/ 25‘000 min^{-1}.

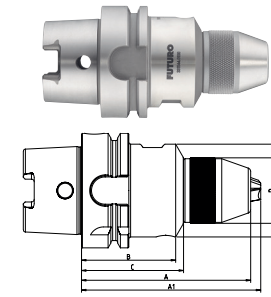
Application: For clamping of tools with cylindrical shank made of carbide (or HSS starting from 6mm) with shank tolerance min. h6. Suitable for induction shrink-fit devices.
For reduced obstacle contours especially in toolmaking.

Version: Made of high-temperature tool steel, with Balluff chip hole.
Extra slim version.





Order ID	Cone	d mm	A mm	D mm	D2 mm	l1 mm
331523.0010	**HSK-A 63**	**3**	**80**	14	9	-
331523.0020	**HSK-A 63**	**3**	**120**	18	9	-
331523.0030	**HSK-A 63**	**4**	**80**	15	10	-
331523.0040	**HSK-A 63**	**4**	**120**	19	10	-
331523.0050	**HSK-A 63**	**5**	**80**	16	11	-
331523.0060	**HSK-A 63**	**5**	**120**	20	11	-
331523.0100	**HSK-A 63**	**6**	**80**	18	12	37
331523.0200	**HSK-A 63**	**6**	**120**	22	12	37
331523.0300	**HSK-A 63**	**8**	**80**	20	14	37
331523.0400	**HSK-A 63**	**8**	**120**	24	14	37
331523.0500	**HSK-A 63**	**10**	**80**	22	16	42
331523.0600	**HSK-A 63**	**10**	**120**	26	16	42
331523.0700	**HSK-A 63**	**12**	**80**	24	18	48
331523.0800	**HSK-A 63**	**12**	**120**	28	18	48



331544 FUTURO NC High-precision collet chuck extra slim

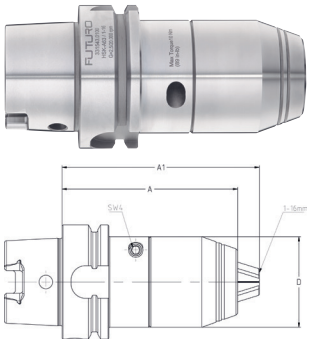
DIN 69893, type A, precision-balanced G2.5/25,000 rpm.

Extra slim design.
Concentricity ≤ 0.02 mm, precision-balanced G2.5/ 25,000 rpm.

Design: Clamping security regardless of rotational direction with high clamping force of up to 15 Nm thanks to worm gear.

Scope of delivery: Chuck key included.

Order ID	Cone	Clamping capacity mm	A mm	A1 mm	D mm	D1 mm	B mm	C mm	Torque max. Nm
331544.0100	**HSK-A63**	**0.3...8**	93	99	35	51	52	56	15
331544.0200	**HSK-A63**	**0.5...13**	101	110	43	51	49	54	15
331544.0300	**HSK-A63**	**1...16**	104	115	50	56	49	50	15
331544.0101	**HSK-A63**	**0.3...8**	93	99	35	51	52	56	15
331544.0201	**HSK-A63**	**0.5...13**	101	110	43	51	49	54	15
331544.0301	**HSK-A63**	**1...16**	104	115	50	56	49	50	15



331543 FUTURO NC high-precision collet chuck

DIN 69893, type A, precision-balanced G2.5/20,000 rpm.

HSK | Form A | DIN 69893 | ZENTRUM | RFID

with HSK (hollow shank taper) holder, Shank shape HSK-A, According to DIN 69893, Cooling through the center, RFID Ready (with Balluff chip hole)

Concentricity ≤ 0.03 mm

Usage: Clamping of drilling tools with cylindrical shank.
Design: Clamping safety independent of the direction of rotation with high clamping force thanks to the worm gear. Suitable for internal coolant feed.

Scope of delivery: without chuck key.

Order ID	Cone	Clamping capacity mm	A mm	A1 mm	D mm	Torque max. Nm
331543.0100	**HSK-A 63**	**1.0…16**	98	110	50	10

410670 FUTURO NC high pressure vice

Compact NC high pressure vice, ground on one side, with power intensifier, mechanical/mechanical manually operated.



- Basic side clamping
- Long cast iron body (GGG) with chip grooves
- Drive spindle with default clamping force
- Stable chip protection against ingress of chips

Scope of delivery: With stepped jaws and crank handle.

Order ID		410670.0100
Jaw width	**mm**	**125**
Clamping width	**mm**	**0...312**
Clamping force	kN	40
Jaw height	mm	40
Length	mm	463
Width	mm	126
Height	mm	140
Weight	kg	41



334240 FUTURO Mounting device

The tools can be swivelled, without resetting, into the optimal position for every desired operation.

Package content: **does not include tool holders**.

Order ID	Size	Base plate mm
334240.0100	**1**	120 X 120

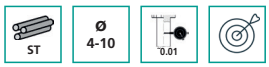


334250 FUTURO Tool holders

Tool holders for mounting device.

Order ID	Size
334250.0100	**SK 30**
334250.0200	**SK 40**
334250.0300	**HSK 63**
334250.0400	**VDI 20**
334250.0500	**VDI 30**

337100 FUTURO Edge finder





Made of steel, Nominal size Ø 4 - 10 mm, Concentricity accuracy ≤0.01 mm, Execution with the highest precision

For aligning reference surfaces or edges, alignment precision 0.01 mm.

Order ID	Type	Shaft Ø mm	Probe heads	Probe heads Ø mm
337100.0100	**B-1**	10	1	10
337100.0200	**B-2**	10	2	10 / 4
337100.0300	**A**	6	1	6

337220 FUTURO 2-D edge finder







F337220.0100 F337220.0200

Made of steel, with cylindrical shank, Nominal size Ø 16 - 20 mm, Concentricity accuracy ≤0.01 mm, Execution with the highest precision, Battery-operated version

For precise alignment of reference surfaces or edges, to determine bore midpoints centered on the work spindle, alignment precision 0.01 mm, with light.

Procedure
When the probe ball comes into contact with the workpiece, the batteries (in the shaft) light the lamp when workpiece, workpiece mount and tool mount are in electrical contact with each other.
Design: Functional parts hardened and ground.

Order ID	Shaft Ø mm	Probe heads Ø mm	Length mm
337220.0100	**16**	10	94
337220.0200	**20**	10	94

337230 FUTURO 3-D edge finder





F337230.0100 F337230.0200

For precise alignment of reference surfaces or edges, to determine bore midpoints centered on the work spindle, alignment precision 0.01 mm, with light.

Procedure
When the probe ball comes into contact with the workpiece, the batteries (in the shaft) light the lamp when workpiece, workpiece mount and tool mount are in electrical contact with each other.
Design: Functional parts hardened and ground.

Order ID	Shaft Ø mm	Probe heads Ø mm	Length mm
337230.0100	**16**	10	106
337230.0200	**20**	10	106



417370 FUTURO Cleaning propeller

Chip blower

Ø 20 | BLACK

with Weldon shank, Nominal size Ø 20 mm, With cooling, Color Black
for cleaning

For efficient cleaning of mounting tools, workpieces and machine tables.

- Improves process reliability through automated cleaning
- Compressed air is not used
- No chips or coolants outside the machine

The air volume is regulated via the speed. Speed range: 5000–8000 rpm
Attention: Tool may only be used in closed machines.

Order ID	Shaft Ø mm	Ø mm	Overall length mm	Max. Speed min^{-1}
417370.0100	20	260	190	8000



417371 FUTURO replacement parts for cleaning propeller

for cleaning
Suitable for:
417370 FUTURO Cleaning propeller Chip blower

Order ID	Type	Contents
417371.0100	**1 / 260**	1x propeller with positioning and spring retaining pin
417371.0200	**4 / 260**	4x propeller with positioning and spring retaining pin
417371.0300	**Set M**	1x hook washer, 1x step washer, 1x lock nut, 4x springs

FUTURO

Assembly Technology

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FUTURO

Assembly Technology

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FUTURO



318400 Flat hand file FUTURO



Engineer's file in high-quality steel, with double cut, for work on ferrous and non-ferrous metals.

Order ID	Length in	Cut	Length mm	Profile mm
318400.0270	**8"**	**3 smooth**	200	20 x 5
318400.0340	**10"**	**2 second cut**	250	25 x 5.5
318400.0200	**8"**	**1 bastard**	200	22 x 5
318400.0300	**10"**	**1 bastard**	250	26 x 6.5

FUTURO



318440 Half-round file FUTURO



Engineer's file in high-quality steel, with double cut, for work on ferrous and non-ferrous metals.

Order ID	Length in	Cut	Length mm	Profile mm
318440.0110	**6"**	**1 bastard**	150	16 x 4.7
318440.0310	**10"**	**1 bastard**	250	26.5 x 7.5
318440.0370	**10"**	**3 smooth**	250	26.5 x 7.5
318440.0410	**12"**	**1 bastard**	300	31 x 9
318440.0440	**12"**	**2 second cut**	300	31 x 9
318440.0470	**12"**	**3 smooth**	300	31 x 9

FUTURO



318480 Three square file FUTURO



Engineer's file in high-quality steel, with double cut, for work on ferrous and non-ferrous metals.

Order ID	Length in	Cut	Length mm	Profile mm
318480.0140	**6"**	**2 second cut**	150	11
318480.0210	**8"**	**1 bastard**	200	15.5
318480.0240	**8"**	**2 second cut**	200	15.5
318480.0340	**10"**	**2 second cut**	250	17.5

FUTURO

318520 Square file FUTURO



Engineer's file in high-quality steel, with double cut, for work on ferrous and non-ferrous metals.

Order ID	Length in	Cut	Length mm	Profile mm
318520.0110	**6"**	**1 bastard**	150	6
318520.0210	**8"**	**1 bastard**	200	8
318520.0240	**8"**	**2 second cut**	200	8
318520.0310	**10"**	**1 bastard**	250	10
318520.0340	**10"**	**2 second cut**	250	10
318520.0370	**10"**	**3 smooth**	250	10
318520.0410	**12"**	**1 bastard**	300	12
318520.0430	**12"**	**2 second cut**	300	12

FUTURO

318560 Round file FUTURO



Engineer's file in high-quality steel, with double cut, for work on ferrous and non-ferrous metals.

Order ID	Length in	Cut	Length mm	Ø mm
318560.0110	**6"**	**1 bastard**	150	6
318560.0210	**8"**	**1 bastard**	200	8
318560.0240	**8"**	**2 second cut**	200	8
318560.0370	**10"**	**3 smooth**	250	10
318560.0440	**12"**	**2 second cut**	300	12
318560.0300	**10"**	**1 bastard**	250	10

320602 Three-square incurved scraper FUTURO

DIN 8350 form C, in alloyed tool steel, working faces ground, coated shank, with wooden handle, beaded retaining collar.



Order ID	**Blade length mm**	Blade width mm	Overall length mm
320602.0100	**100**	14	200
320602.0200	**150**	14	250
320602.0300	**200**	16	300

320606 Three-square bearing scraper FUTURO

In alloyed tool steel, working faces ground, coated shank, with wooden handle, beaded retaining collar.



Order ID	**Blade length mm**	Scraper length mm	Blade width mm	Overall length mm
320606.0100	**150**	75	8	250
320606.0200	**200**	95	10	300

320625 Scraper for precision mechanics FUTURO

Three-lipped incurved scraper blade, black plastic handle and plastic protective cap.



Order ID	**Blade length mm**	Overall length mm	Blade width mm
320625.0100	**25**	150	8

320635 Flat scraper FUTURO

In alloyed tool steel, working faces ground, coated shank, with wooden handle, beaded retaining collar.



Order ID	**Blade length mm**	Blade width mm	Thickness mm	Overall length mm
320635.0100	**150**	20	5	250
320635.0200	**200**	20	5	300
320635.0300	**250**	25	6	350



320420 Diamond needle file FUTURO



Flat hand, with round steel shank.

Appropriate accessories:
320800 Tool handle

Order ID	Grain size	Length mm	Cut length mm	Profile mm
320420.0050	**D91**	140	70	5.1 x 1.4
320420.0100	**D126**	140	70	5.1 x 1.4



320430 Diamond needle file FUTURO



Halfround, with round steel shank.

Appropriate accessories:
320800 Tool handle

Order ID	Grain size	Length mm	Cut length mm	Profile mm
320430.0050	**D91**	140	70	5.4 x 1.9
320430.0100	**D126**	140	70	5.4 x 1.9



320440 Diamond needle file FUTURO



Triangular, with round steel shank.

Appropriate accessories:
320800 Tool handle

Order ID	Grain size	Length mm	Cut length mm	Profile mm
320440.0050	**D91**	140	70	3.9
320440.0100	**D126**	140	70	3.9



320450 Diamond needle file FUTURO



Round, with round steel shank.

Appropriate accessories:
320800 Tool handle

Order ID	Grain size	Length mm	Cut length mm	Profile mm
320450.0050	**D91**	140	70	3
320450.0100	**D126**	140	70	3



320460 Diamond needle file FUTURO



Square, with round steel shank.

Appropriate accessories:
320800 Tool handle

Order ID	Grain size	Length mm	Cut length mm	Profile mm
320460.0050	**D91**	140	70	2.5
320460.0100	**D126**	140	70	2.5

320480 Set of diamond needle files FUTURO





5-piece, in plastic bag.
Contents: 1 diamond needle file of each of the following shapes: flat hand, half-round, triangular, square, round.

Order ID	Grain size	Length mm	Cut length mm	Application
320480.0100	**D 91**	140	70	Fine filing
320480.0200	**D 126**	140	70	Universal

320250 Diamond flat hand file FUTURO





Diamond precision file with strong square tang. **File handle not required.**For work on hardened steels, carbide, glass, ceramics, fibreglass, graphite and epoxy materials.

Is part of:
320260 Set of diamond files FUTURO

Order ID	Grain size	Length mm	Cut length mm	Profile mm
320250.0100	**D126**	220	110	10.4 x 2.8
320250.0200	**D181**	220	110	10.4 x 2.8

320252 Diamond half-round file FUTURO





Diamond precision file with strong square tang. **File handle not required.**For work on hardened steels, carbide, glass, ceramics, fibreglass, graphite and epoxy materials.

Is part of:
320260 Set of diamond files FUTURO

Order ID	Grain size	Length mm	Cut length mm	Profile mm
320252.0100	**D126**	220	110	12.6 x 3.9
320252.0200	**D181**	220	110	12.6 x 3.9

320254 Diamond three square file FUTURO





Diamond precision file with strong square tang. **File handle not required.**For work on hardened steels, carbide, glass, ceramics, fibreglass, graphite and epoxy materials.

Is part of:
320260 Set of diamond files FUTURO

Order ID	Grain size	Length mm	Cut length mm	Profile mm
320254.0100	**D126**	220	110	9.7
320254.0200	**D181**	220	110	9.7

320256 Diamond square file FUTURO





Diamond precision file with strong square tang. **File handle not required.**For work on hardened steels, carbide, glass, ceramics, fibreglass, graphite and epoxy materials.

Is part of:
320260 Set of diamond files FUTURO

Order ID	Grain size	Length mm	Cut length mm	Profile mm
320256.0100	**D126**	220	110	6.1
320256.0200	**D181**	220	110	6.1

FUTURO

320258 Diamond round file FUTURO



Diamond precision file with strong square tang. **File handle not required.**For work on hardened steels, carbide, glass, ceramics, fibreglass, graphite and epoxy materials.

Is part of:
320260 Set of diamond files FUTURO

Order ID	Grain size	Length mm	Cut length mm	Profile mm
320258.0100	**D126**	220	110	6.8
320258.0200	**D181**	220	110	6.8

FUTURO



320260 Set of diamond files FUTURO



5-piece, in plastic case. Diamond precision files with strong square tang. **File handle not required.** For work on hardened steels, carbide, glass, ceramics, fibreglass, graphite and epoxy materials.

Consisting of:
320250 Diamond flat hand file FUTURO
320252 Diamond half-round file FUTURO
320254 Diamond three square file FUTURO
320256 Diamond square file FUTURO
320258 Diamond round file FUTURO

Order ID	Grain size	Length mm	Cut length mm	Application
320260.0100	**D126**	220	110	General-purpose
320260.0200	**D181**	220	110	Rough filing

FUTURO

320490 Diamond escapement file FUTURO



Flat hand, mini precision file for tool, die and instrument making, for work on very small profiles. With round steel handle; can be used without handle.

Is part of:
320498 Set of diamond escapement files FUTURO

Order ID	Grain size	Length mm	Cut length mm	Profile mm
320490.0100	**D30**	140	40	3.9 x 1.1
320490.0200	**D54**	140	40	3.9 x 1.1
320490.0300	**D91**	140	40	3.9 x 1.1

FUTURO

320491 Diamond escapement file FUTURO



Half-round, mini precision file for tool, die and instrument making, for work on very small profiles. With round steel handle; can be used without handle.

Is part of:
320498 Set of diamond escapement files FUTURO

Order ID	Grain size	Length mm	Cut length mm	Profile mm
320491.0100	**D30**	140	40	4.3 x 1.8
320491.0200	**D54**	140	40	4.3 x 1.8
320491.0300	**D91**	140	40	4.3 x 1.8

320492 Diamond escapement file FUTURO





Three-square, mini precision file for tool, die and instrument making, for work on very small profiles. With round steel handle; can be used without handle.

Is part of:
320498 Set of diamond escapement files FUTURO

Order ID	Grain size	Length mm	Cut length mm	Profile mm
320492.0100	**D30**	140	40	3.1
320492.0200	**D54**	140	40	3.1
320492.0300	**D91**	140	40	3.1

320493 Diamond escapement file FUTURO





Square, mini precision file for tool, die and instrument making, for work on very small profiles. With round steel handle; can be used without handle.

Is part of:
320498 Set of diamond escapement files FUTURO

Order ID	Grain size	Length mm	Cut length mm	Profile mm
320493.0100	**D30**	140	40	2.0
320493.0200	**D54**	140	40	2.0
320493.0300	**D91**	140	40	2.0

320494 Diamond escapement file FUTURO





Round, mini precision file for tool, die and instrument making, for work on very small profiles. With round steel handle; can be used without handle.

Is part of:
320498 Set of diamond escapement files FUTURO

Order ID	Grain size	Length mm	Cut length mm	Profile mm
320494.0100	**D30**	140	40	1.7
320494.0200	**D54**	140	40	1.7
320494.0300	**D91**	140	40	1.7

320498 Set of diamond escapement files FUTURO





5-piece, in plastic case. Mini precision files for tool, die and instrument making, for work on very small profiles. With round steel handle; can be used without handle.

Consisting of:
320490 Diamond escapement file FUTURO
320491 Diamond escapement file FUTURO
320492 Diamond escapement file FUTURO
320493 Diamond escapement file FUTURO
320494 Diamond escapement file FUTURO

Appropriate accessories:
320800 Tool handle

Order ID	Grain size	Length mm	Cut length mm	Application
320498.0100	**D30**	140	40	Fine finishing
320498.0200	**D54**	140	40	Finishing
320498.0300	**D91**	140	40	Pre-sanding



320499 Set of diamond slot files FUTURO

10 pieces, in plastic case. Precision slot files, extremely flat, specially designed for use in slots and grooves that cannot be accessed with standard diamond files.

Order ID	**Parts**	Length mm	Cut length mm
320499.0100	**10**	170	50



320486 Diamond flex file FUTURO

Maximum flexibility, **with metal body**, ideal for fine grinding of concave and convex surfaces or in narrow slits with limited accessibility.

Order ID	**Thickness mm**	Grain size	Length mm	Cut length mm	Width mm
320486.0100	**0.17**	D15	180	50	12.7
320486.0200	**0.20**	D30	180	50	12.7
320486.0300	**0.27**	D15	180	50	12.7
320486.0400	**0.30**	D30	180	50	12.7
320486.0500	**0.40**	D54	180	50	12.7
320486.0600	**0.50**	D54	180	50	12.7
320486.0700	**0.60**	D91	180	50	12.7
320486.0800	**0.80**	D91	180	50	12.7
320486.0900	**0.90**	D126	180	50	12.7



320482 Diamond flex file FUTURO

Maximum flexibility, **with plastic body**, ideal for fine grinding of concave and convex surfaces or in narrow slits with limited accessibility, special grind point covering enables better transport of removed material.

Order ID	**Grain size**	Length mm	Cut length mm	Thickness mm	Width mm
320482.0100	**D46**	170	88	1.7	14
320482.0200	**D76**	170	88	1.7	14
320482.0300	**D126**	170	88	1.7	14

488080 Cut-off wheel high performance FUTURO

EHT



Straight version (form 41), abrasive corundum A, **very well suited for structural steel, hardened, high-alloy and high-tensile steel and stainless steel**. For cutting sheet metal, profiles and solid material. Powerful cut-off wheel with a extremely long service life and high cutting performance with free-hand angle grinders of all power classes. Less burr formation and fewer flying sparks. Iron and sulphur-free, specially protected against moisture-related ageing processes.

Sales unit = **pack of 25**

Order ID	**Ø x width mm**	Hole mm
488080.0100	**115 x 1.0**	22.23
488080.0200	**125 x 1.0**	22.23
488080.0300	**230 x 1.9**	22.23

489100 Abrasive flap wheel high performance Z FUTURO

PFC



Conical design, abrasives made of sharp-edged, self-sharpening zircon corundum, **very well suited for steel, suitable for stainless steel**. Tool for universal grinding tasks such as surface grinding and welding seam processing with a very high service life and a maximum amount of stock removal. Iron and sulphur-free.

Sales unit = **pack of 10**

Order ID	**Ø mm**	Grain	Hole mm	Order ID	**Ø mm**	Grain	Hole mm
489100.0100	**115**	40	22.23	489100.0400	**125**	40	22.23
489100.0200	**115**	60	22.23	489100.0500	**125**	60	22.23
489100.0300	**115**	80	22.23	489100.0600	**125**	80	22.23

489110 Abrasive flap wheel high performance C FUTURO

PFC



Conical design, abrasives made of **microcrystalline, sharp-edged ceramic grain**. Fast and aggressive grinding with very high cutting performance and also a greater contact surface due to extra long slats. **Very well suited for tempered steels, pawl surfaces and titanium**, especially good for edge grinding. Iron and sulphur-free.

Sales unit = **pack of 10**

Order ID	**Ø mm**	Grain	Hole mm	Order ID	**Ø mm**	Grain	Hole mm
489110.0100	**125**	40	22.23	489110.0300	**125**	80	22.23
489110.0200	**125**	60	22.23				

489120 Abrasive flap wheel High Perfection Z FUTURO

PFC



Conical design, simple grinding **with full visibility**. Thanks to the three recesses, the abrasive flap wheel becomes transparent when turning. This enables **permanent control of the material removal** and therefore a perfect result. Abrasives made of sharp-edged, self-sharpening zircon corundum, **very well suited for steel, suitable for stainless steel**. Tool for universal grinding tasks such as surface grinding and welding seam processing with a very high service life and a maximum amount of stock removal. Iron and sulphur-free.

Sales unit = **pack of 10**

Order ID	**Ø mm**	Grain	Hole mm	Order ID	**Ø mm**	Grain	Hole mm
489120.0100	**125**	40	22.23	489120.0300	**125**	80	22.23
489120.0200	**125**	60	22.23				

480155 Diamond lapping compound FUTURO

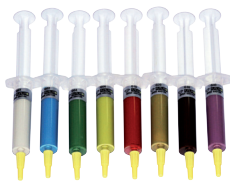


Syringes of 5 g, concentration 50. For economical polishing, lapping and fine grinding of steel, tungsten carbide, boron carbide, chrome plating, Stellites, sapphire, ruby, quartz, ceramics, plastics, etc.; oil- and water-soluble, ready to use.

Suitable for:
480156 Diamond lapping compound set FUTURO

Order ID	Diamond grain µm	Colour	Type
480155.0100	**0...1**	**grey**	G01
480155.0200	**0...2**	**blue**	G02
480155.0300	**2...6**	**green**	G04
480155.0400	**4...8**	**yellow**	G06
480155.0500	**6...12**	**red**	G10
480155.0600	**15...30**	**light brown**	G20
480155.0700	**20...40**	**dark brown**	G30
480155.0800	**35...45**	**purple**	G40

480156 Diamond lapping compound set FUTURO



Complete set with 8 diamond grinding compounds 0...45 µm, for economical polishing, lapping and fine grinding of steel, tungsten carbide, boron carbide, chrome plating, Stellites, sapphire, ruby, quartz, ceramics, plastics, etc.; oil- and water-soluble, ready to use, **in syringes of 5 g, concentration 50.**

Order ID	Diamond grain µm	Type
480156.0100	**0...1, 0...2, 2...6, 4...8, 6...12, 15...30, 20...40, 35...45**	G01 - G40

482135 Diamond hand lap FUTURO



Diamond hand file, resin-bonded, for work on carbides, HSS, PCD, PCBN, ceramics and for lapping tool blades.

Suitable for:
482136 Diamond hand lap set FUTURO

Order ID	Grain size	Length mm	Coating mm	Colour
482135.0100	**D7**	150	30 x 10 x 2	grey
482135.0200	**D15**	150	30 x 10 x 2	blue
482135.0300	**D20**	150	30 x 10 x 2	green
482135.0400	**D30**	150	30 x 10 x 2	yellow
482135.0500	**D54**	150	30 x 10 x 2	red
482135.0600	**D76**	150	30 x 10 x 2	light brown
482135.0700	**D107**	150	30 x 10 x 2	dark brown
482135.0800	**D126**	150	30 x 10 x 2	purple

482136 Diamond hand lap set FUTURO



Complete set with 8 diamond hand laps, resin-bonded, **in aluminium bench rack,** black-anodized, for work on carbides, HSS, PCD, PCBN, ceramics and for lapping tool blades.

Appropriate spare parts:
482135 Diamond hand lap FUTURO

Order ID	Grain size	Coating mm	Length mm
482136.0100	**D7, D15, D20, D30, D54, D76, D107, D126**	30 x 10 x 2	150

482531 Non-woven abrasive FUTURO

Outstanding cleaning action, for use by hand, with orbital sander or power drill (with clamping chuck), wet or dry. Sheet can be cut to size.



Designs:
482531.0150 Medium S very durable; for finish effect, for coarse cleaning and heavy rust removal, cleaning of welds
482531.0250 Very Fine A for general cleaning work. The non-woven most commonly used; for rust removal, cleaning before welding, removal of wood fibres before priming
482531.0350 Ultra Fine S for base conditioning before painting, for matting paints and varnishes, and to create a special finish on aluminium
VPE: 10 pieces

Order ID	Type	Grain size	Length x Width mm	Colour
482531.0150	**Medium S**	110	152 x 229	anthracite
482531.0250	**Very Fine A**	320	152 x 229	red
482531.0350	**Ultra Fine S**	600	152 x 229	grey

482710 Non-woven abrasive roll FUTURO

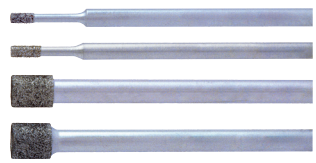
Universal abrasive, can be used wet and dry on both sides, very flexible around contours, protects materials. Use by hand, with orbital sander or with power drill (with clamping chuck).



Order ID	Type	Grain size	Colour	Roller width mm	Tape length m
482710.0050	**Medium S**	110	anthracite	100	10
482710.0100	**Medium A**	120	red	100	10
482710.0200	**Fine A**	180	red	100	10
482710.0300	**Very Fine A**	320	red	100	10
482710.0600	**Ultra Fine S**	600	grey	100	10

483282 CBN cylindrical mounted point FUTURO

Electroplated abrasive, for grinding hard-to-cut, long-chipping materials, hardened steel, tool steel, die steel, superalloys, chrome-nickel steel from 58 to 65 HRC; cutting speed 10-35 m/s.



Order ID	Ø mm	Head length mm	Grain	Length mm	Shaft Ø mm
483282.0100	**1**	5	B126	55	3
483282.0200	**1.5**	5	B126	55	3
483282.0300	**2**	5	B126	55	3
483282.0400	**2.5**	5	B126	55	3
483282.0500	**3**	5	B126	55	3
483282.0600	**4**	5	B126	55	3
483282.0700	**6**	8	B126	60	6
483282.0800	**8**	10	B126	60	6
483282.0900	**10**	10	B126	60	6
483282.1000	**12**	10	B126	60	6
483282.1100	**15**	10	B126	60	6

483285 CBN ball mounted point FUTURO

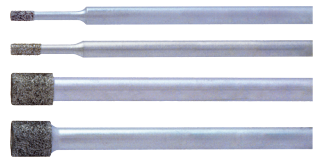
Electroplated abrasive, for grinding hard-to-cut, long-chipping materials, hardened steel, tool steel, die steel, superalloys, chrome-nickel steel from 58 to 65 HRC; cutting speed 10-35 m/s.



Order ID	Ø mm	Grain	Length mm	Shaft Ø mm
483285.0100	**1**	B126	45	3
483285.0200	**2**	B126	45	3
483285.0300	**3**	B126	45	3
483285.0400	**4**	B126	45	3
483285.0500	**5**	B126	45	3
483285.0600	**6**	B126	45	3

483465 Diamond cylindrical mounted point FUTURO

Electroplated abrasive, for grinding hardened and non-hardened steel, carbide, glass, carbon, plastic, and brittle, hard and short-chipping materials; cutting speed 12-20 m/s.



Order ID	Ø mm	Head length mm	Grain	Length mm	Shaft Ø mm
483465.0100	**1**	5	D126	55	3
483465.0200	**1.5**	5	D126	55	3
483465.0300	**2**	5	D126	55	3
483465.0400	**2.5**	5	D126	55	3
483465.0500	**3**	5	D126	55	3
483465.0600	**4**	5	D126	55	3
483465.0700	**6**	8	D126	60	6
483465.0800	**8**	10	D126	60	6
483465.0900	**10**	10	D126	60	6
483465.1000	**12**	10	D126	60	6
483465.1100	**15**	10	D126	60	6



483470 Diamond ball mounted point FUTURO

Electroplated abrasive, for grinding hardened and non-hardened steel, carbide, glass, carbon, plastic, and brittle, hard and short-chipping materials; cutting speed 12-20 m/s.

Order ID	Ø mm	Grain	Length mm	Shaft Ø mm
483470.0100	**1**	D126	45	3
483470.0200	**2**	D126	45	3
483470.0300	**3**	D126	45	3
483470.0400	**4**	D126	45	3
483470.0500	**5**	D126	45	3
483470.0600	**6**	D126	45	3

420195 Adjustable wrench FUTURO



Precisely manufactured from high-quality chrome-vanadium steel, chrome-plated, polished head, with lasered scale. Slim design, jaw position 15°: Ideal for hard-to-reach places. Large opening: Depending on the wrench size **, between 30% and 48% larger jaw opening**. Precise grip: The **special 3-edge design grips perfectly with no play**. Ergonomics: The larger shaped handle fits comfortably in the hand and allows high torques to be applied. Perfect protection: The **integrated edge protectors protect screws and nuts** against wear.

Order ID	**Length mm**	Clamping width mm	for Screws
420195.0100	**150**	28	M1.6...M16
420195.0200	**200**	32	M1.6...M20
420195.0300	**250**	43	M2...M24

421310 Combination wrench FUTURO



In accordance with DIN 3113A/ISO 3318, chrome-vanadium steel, chrome-plated, satin finish, ring wrench offset by 15°.

Order ID	**Wrench size mm**	Length mm	Order ID	**Wrench size mm**	Length mm
421310.0100	**5.5**	105	421310.1400	**18**	225
421310.0200	**6**	105	421310.1500	**19**	235
421310.0300	**7**	115	421310.1600	**20**	245
421310.0400	**8**	125	421310.1700	**21**	255
421310.0500	**9**	135	421310.1800	**22**	265
421310.0600	**10**	145	421310.1900	**23**	275
421310.0700	**11**	155	421310.2000	**24**	285
421310.0800	**12**	165	421310.2100	**25**	295
421310.0900	**13**	175	421310.2200	**27**	315
421310.1000	**14**	185	421310.2300	**30**	345
421310.1100	**15**	195	421310.2400	**32**	365
421310.1200	**16**	205	421310.2500	**36**	405
421310.1300	**17**	215			

421315 Combination wrench FUTURO



In accordance with DIN 3113A/ISO 3318, **inch dimensions**, chrome-vanadium steel, chrome-plated, satin finish, ring wrench offset by 15°.

Order ID	**Wrench size in**	Length mm	Order ID	**Wrench size in**	Length mm
421315.0100	**1/4"**	105	421315.0800	**11/16**	225
421315.0200	**5/16**	125	421315.0900	**3/4**	235
421315.0300	**3/8**	145	421315.1000	**13/16**	255
421315.0400	**7/16**	155	421315.1100	**7/8**	265
421315.0500	**1/2**	175	421315.1200	**15/16**	285
421315.0600	**9/16**	185	421315.1300	**1**	295
421315.0700	**5/8**	205			

421070 Double open-end wrench FUTURO



In accordance with DIN 3110/ISO 10102, chrome-vanadium steel, chrome-plated, satin finish.

Order ID	**Wrench size mm**	Length mm
421070.0100	**5.5 x 7**	123
421070.0200	**6 x 7**	123
421070.0300	**8 x 9**	140
421070.0400	**8 x 10**	140
421070.0500	**10 x 11**	156
421070.0600	**10 x 13**	172
421070.0700	**12 x 13**	172
421070.0800	**12 x 14**	180
421070.0900	**13 x 14**	180
421070.1000	**14 x 15**	190
421070.1100	**14 x 17**	195
421070.1200	**16 x 17**	204
421070.1300	**16 x 18**	221
421070.1400	**17 x 19**	221
421070.1500	**18 x 19**	221
421070.1600	**20 x 22**	237
421070.1700	**21 x 23**	247
421070.1900	**22 x 24**	247
421070.2000	**24 x 26**	263
421070.2100	**24 x 27**	263
421070.2300	**27 x 30**	286
421070.2400	**30 x 32**	298
421070.2500	**32 x 36**	350
421070.2600	**36 x 41**	380

FUTURO



421375 Combination wrench set FUTURO

In accordance with DIN 3113A/ISO 3318, chrome-vanadium steel, chrome-plated, satin finish, ring wrench offset by 15°.

Order ID	Number of wrenches	Size mm	containing mm
421375.0100	**10**	5.5...19	5.5 6 7 8 10 13 16 17 18 19
421375.0200	**14**	5.5...27	5.5 6 7 8 10 13 16 17 18 19 21 22 24 27

FUTURO

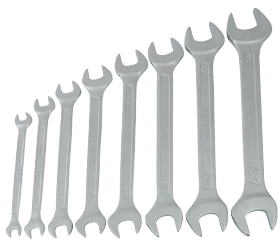


421385 Combination wrench set FUTURO

In accordance with DIN 3113A/ISO 3318, **inch dimensions**, chrome-vanadium steel, chrome-plated, satin finish, ring wrench offset by 15°.

Order ID	Number of wrenches	Size	containing in
421385.0100	**13**	1/4"...1"	1/4 5/16 3/8 7/16 1/2 9/16 5/8 11/16 3/4 13/16 7/8 15/16 1

FUTURO



421145 Double open-end wrench set FUTURO

In accordance with DIN 3110/ISO 10102, chrome-vanadium steel, chrome-plated, satin finish.

Order ID	Number of wrenches	Size mm	containing mm
421145.0100	**8**	6 x 7...20 x 22	6 x 7 8 x 9 10 x 11 12 x 13 14 x 15 16 x 17 18 x 19 20 x 22
421145.0200	**10**	6 x 7...30 x 32	6 x 7 8 x 9 10 x 11 12 x 13 14 x 15 16 x 17 18 x 19 20 x 22 24 x 27 30 x 32

FUTURO



421557 Combination ratchet wrench FUTURO



In chrome-vanadium steel, drop-forged, chrome-plated. Ring end offset 15°, **reversible,** return angle just 5°, **with special profile** for metric hex, metric double hex, inch hex, metric square, external TORX® screws. Slim form, thus also ideal for cramped and narrow spaces.

Order ID	Wrench size mm	Ring size mm	Ring size in	Ring size for TORX® screws	Square piece, ring size mm	Length mm
421557.0100	**8**	8	5/16"	E10	7	140
421557.0200	**9**	9	11/32"	E11	7	150
421557.0300	**10**	10	3/8"	E12	8	160
421557.0400	**11**	11	7/16"	E14	9	165
421557.0500	**12**	12	15/32"	-	10	170
421557.0600	**13**	13	1/2"	E16	11	180
421557.0700	**14**	14	9/16"	E18	11	185
421557.0800	**15**	15	19/32"	-	12	200
421557.0900	**16**	16	5/8"	E20	13	210
421557.1000	**17**	17	21/32"	-	14	220
421557.1100	**18**	18	11/16"	E22	15	230
421557.1200	**19**	19	3/4"	E24	16	245

FUTURO



421558 Combination ratchet wrench set FUTURO



In chrome-vanadium steel, drop-forged, chrome-plated. Ring end offset 15°, **reversible,** return angle just 5°, **with special profile** for metric hex, metric double hex, inch hex, metric square, external TORX® screws. Slim form, thus also ideal for cramped and narrow spaces.

Order ID	Number of wrenches	Wrench size mm
421558.0300	**10**	8 10 11 13 14 15 16 17 18 19

421505 Combination ratchet wrench FUTURO



Chrome-vanadium steel, matt chrome-plated, heavy-duty industrial quality, **flat form, without reversing lever**, thus also suitable for cramped and narrow spaces. Right/left reversing by turning the wrench over., return angle only 5°

Order ID	**Wrench size mm**	Head mm	Ring height mm	Ring Ø mm	Length mm
421505.0100	**5.5**	4.1	6.4	14	127
421505.0200	**6**	4.1	6.4	14	128
421505.0300	**7**	4.2	6.6	16.6	140
421505.0400	**8**	4.3	6.6	16.6	140
421505.0500	**9**	4.7	7.0	18.4	149
421505.0600	**10**	5.0	7.4	20	158
421505.0700	**11**	5.3	7.8	21.8	165
421505.0800	**12**	5.5	8.3	22.7	171
421505.0900	**13**	6.0	8.8	24.7	178
421505.1000	**14**	6.5	9.1	27	190
421505.1100	**15**	6.7	9.5	28.3	199
421505.1200	**16**	7.0	10.0	30	208
421505.1300	**17**	7.0	10.3	31.8	225
421505.1400	**18**	8.0	10.8	32.6	236
421505.1500	**19**	8.5	11.4	33.8	247
421505.1700	**22**	9.0	13.1	40	289
421505.1800	**24**	9.6	14.6	46	322
421505.1900	**27**	10.5	15.6	52.5	358
421505.2000	**30**	11.3	17.2	58.5	401

421515 Combination ratchet wrench set FUTURO



Chrome-vanadium steel, matt chrome-plated, heavy-duty industrial quality. **Flat form, without reversing lever,** thus also suitable for cramped and narrow spaces. Right/left reversing by turning the wrench over. Return angle only 5°, **in nylon roll-up bag.**

Order ID	**Set of pieces**	Size mm	containing mm
421515.0300	**10**	8...19	8 9 10 11 13 14 16 17 18 19

421515.0300



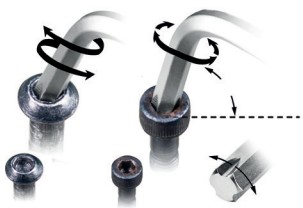
424035 Hex L key FUTURO SmartHEX

Chrome-molybdenum vanadium steel, chrome-plated, ends deburred, **long design with hexagon ball head and magnet on the long end**. For socket head screws. This nifty L key is a problem-solver for all kinds of applications; the special SmartHEX hexagon profile protects socket head screws from being rounded out and **holding the key at an angle loosens stripped and rusted hexagon screws** effortlessly without having to compromise on tightening torque.

Order ID	**Wrench size** mm	Side length mm
424035.0100	**1.5**	62 x 14
424035.0200	**2**	75 x 16
424035.0300	**2.5**	85 x 18
424035.0400	**3**	90 x 20
424035.0500	**4**	100 x 25
424035.0600	**5**	115 x 28
424035.0700	**6**	135 x 32
424035.0800	**8**	150 x 36
424035.0900	**10**	170 x 40

424045 Hex L key set FUTURO SmartHEX



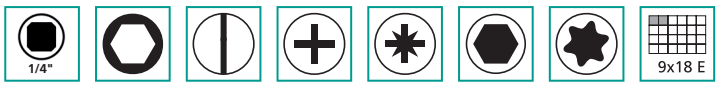


9 pieces, chrome-molybdenum vanadium steel, chrome-plated, ends deburred, **long design with hexagon ball head and magnet on the long end**. For socket head screws. This nifty L key is a problem-solver for all kinds of applications; the special SmartHEX hexagon profile protects socket head screws from being rounded out and **holding the key at an angle loosens stripped and rusted hexagon screws** effortlessly without having to compromise on tightening torque. In plastic holder.

Order ID	**Number of wrenches**	with wrenches mm
424045.0100	**9**	1.5 2 2.5 3 4 5 6 8 10

426150 Socket wrench set FUTURO 1/4“

Swiss Mountain Structure







FUTURO socket wrench set 44-piece – uncompromising professional quality in perfection

The FUTURO socket wrench set stands for **highest quality, maximum functionality** and a well-thought-out design down to the last detail. Manufactured from high-quality chrome-vanadium steel and satin chrome-plated, the set offers excellent durability, high load capacity and optimal corrosion protection – even in tough continuous use.
A special highlight is the **specially developed 2K handle with SwissMountain structure**. This ensures **excellent GRIP, optimal power transmission and safe working** – even with oily or wet hands. The fine-toothed mechanism enables efficient working even at small working angles.
The 44-piece set is consistently designed for 1/4“ drive and is ideal for assembly, service and precision work in industry, trade and workshop. The compact size makes the set particularly **mobile and perfect for use on the go**.
The socket wrench set is supplied in a robust ABS case with custom-fit foam insert. All tools are clearly fixed, immediately ready to hand and missing parts are recognisable at a glance. A **sturdy toothed hinge** and the comfortable two-hand push lock ensure long-lasting use and safe handling in everyday work.

Highlights:
- Manufactured from satin chrome-plated chrome-vanadium steel for **maximum durability**, high load capacity and reliable corrosion protection in professional use
- Ergonomic **2K handle with SwissMountain structure** for excellent GRIP, optimal power transmission and safe working – even with oily or wet hands.
- Efficient working thanks to **fine-toothed mechanism with small return angle** – ideal for precise working in confined spaces.
- Complete 44-piece set for 1/4“ drive: **All common sizes** for precision work compactly combined in one case.
- Foam insert **compatible with LISTA and FUTURO drawers** (dimension marking E) **compatible**
- Robust ABS case with custom-fit foam insert and **integrated NFC chip for digital product information or personalisation** – perfect for modern workshop and fleet concepts.
- Well-thought-out design, **durable case mechanism with toothed hinge for flat positioning** and comfortable two-hand push lock – uncompromising quality from FUTURO.

FUTURO stands for professional tool solutions at the highest level – developed for users who make no compromises on quality, ergonomics and reliability.

Order ID		426150.0100
Parts		44
Reversible ratchet	**in**	**1/4**
Spin type speeder	in	1/4
Sliding tee bar	mm	115
Extensions	mm	50 / 150
Universal joint	in	1/4
Hex 1/4“		4 4.5 5 5.5 6 7 8 9 10 11 12 13 14
For outside TORX® 1/4“		E4 E5 E6 E7 E8 E10
For TORX® 1/4“		T10 T15 T20 T25 T30 T40
Inside hexagon	mm	3 4 5 6
Phillips 1/4“		PH1 PH2 PH3
Pozidriv 1/4“		PZ1 PZ2 PZ3
Slot 1/4“		5.5 8.0
Coupler		E 6.3 - 1/4“



428210 Hexagon socket wrench set FUTURO 1/2“

Swiss Mountain Structure



FUTURO Socket Set 37-piece – uncompromising professional quality in perfection

The FUTURO socket set represents the **highest quality, maximum functionality**, and a well-thought-out design down to the last detail. Made from high-quality chrome-vanadium steel and satin chrome-plated, the set offers excellent durability, high load capacity, and optimal corrosion protection—even in tough continuous use.

A special highlight is the **specially developed 2K handle in SwissMountain structure**. This ensures **excellent GRIP, optimal power transmission, and safe working**—even with oily or wet hands. The fine-toothed mechanism allows efficient work even at a small working angle.

The 37-piece set is consistently designed for 1/2“ drive and is ideal for industry, crafts, workshops, and demanding users who expect powerful and precise screw connections.

The socket set is delivered in a robust ABS case with a custom-fit foam insert. All tools are clearly fixed, immediately ready to hand, and missing parts are recognizable at a glance. A **stable tooth hinge** and the comfortable two-hand push closure ensure long-lasting use and safe handling in everyday work.

Highlights:

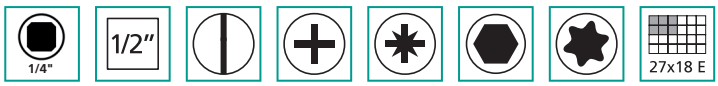
- Made from satin chrome-plated chrome-vanadium steel for **maximum durability**, high load capacity, and reliable corrosion protection in professional use.
- Ergonomic **2K handle with SwissMountain structure** for excellent GRIP, optimal power transmission, and safe working—even with oily or wet hands.
- Efficient work thanks to **fine-toothed mechanism with a small return angle**—ideal for precise work in confined construction spaces.
- Consistently designed for 1/2“—ideal **for demanding screw connections, high torques**, and professional applications in industry and workshops.
- Foam insert **compatible with LISTA and FUTURO drawers** (dimension marking E)
- Robust ABS case with custom-fit foam insert and **integrated NFC chip for digital product information or personalization**—perfect for modern workshop and fleet concepts.
- Thoughtful design, **durable case mechanism with tooth hinge for flat support** and comfortable two-hand push closure—uncompromising quality from FUTURO.

FUTURO stands for professional tool solutions at the highest level—developed for users who make no compromises in quality, ergonomics, and reliability.

Order ID		428210.0100
Parts		37
Reversible ratchet	**in**	**1/2“**
Sliding tee bar	mm	300
Extensions	mm	130 255
Universal joint	in	1/2“
Hex 1/2“		8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 24 27 30 32
For TORX® 1/2“		T25 T30 T40 T45 T50 T55
Inside hexagon	mm	5...14

428200 Hexagon socket wrench set FUTURO 1/4" + 1/2"

Swiss Mountain Structure





FUTURO Socket Set 70-piece – uncompromising professional quality in perfection

The FUTURO socket set represents the **highest quality, maximum functionality**, and a well-thought-out design down to the last detail. Made from high-quality chrome-vanadium steel and satin chrome-plated, the set offers excellent durability, high load capacity, and optimal corrosion protection – even in tough continuous use.

A special highlight is the **specially developed 2K handle in SwissMountain structure**. This ensures **excellent GRIP, optimal power transmission, and safe working** – even with oily or wet hands. The fine-toothed mechanism allows efficient work even at a small working angle.

The 70-piece set covers a wide range of applications with 1/4" and 1/2" drive and is ideal for industry, crafts, workshops, and demanding DIY enthusiasts.

The socket set is delivered in a robust ABS case with a precisely fitting foam insert. All tools are clearly fixed, immediately ready to hand, and missing parts are recognizable at a glance. A **stable tooth hinge** and the comfortable two-hand push closure ensure long-lasting use and safe handling in everyday work.

Highlights:

- Made from satin chrome-plated chrome-vanadium steel for **maximum durability**, high load capacity, and reliable corrosion protection in professional use
- Ergonomic **2K handle with SwissMountain structure** for excellent GRIP, optimal power transmission, and safe working – even with oily or wet hands.
- Efficient working thanks to **fine-toothed mechanism with a small return angle** – ideal for precise work in confined construction spaces.
- Combination of **1/4" and 1/2" drive** covers a wide range of applications for industry, crafts, workshops, and ambitious DIY enthusiasts.
- Foam insert **compatible with LISTA and FUTURO drawers** (dimension marking E)
- Robust ABS case with precisely fitting foam insert and **integrated NFC chip for digital product information or personalization** – perfect for modern workshop and fleet concepts.
- Thoughtful design, **durable case mechanism with tooth hinge for flat support** and comfortable two-hand push closure – uncompromising quality from FUTURO.

FUTURO stands for professional tool solutions at the highest level – developed for users who make no compromises in quality, ergonomics, and reliability.

Order ID		428200.0100
Parts		70
Reversible ratchet	**in**	**1/4" + 1/2"**
Spin type speeder	in	1/4"
Sliding tee bar	mm	115
Universal joint	in	1/4" + 1/2"
Extensions	mm	50 150 130 255
Hex 1/4"		4 4.5 5 5.5 6 7 8 9 10 11 12 13 14
Hex 1/2"		15 16 17 18 19 21 22 24 27 30 32
For outside TORX® 1/4"		E4 E5 E6 E7 E8 E10
Inside hexagon	mm	3...14
For TORX® 1/4"		T10 T15 T20 T25 T30 T40
For TORX® 1/2"		T45 T50 T55
Phillips 1/4"		PH1 PH2 PH3
Pozidriv 1/4"		PZ1 PZ2 PZ3
Slot 1/4"		3.5 5.5 8.0
Coupler		E 6.3 - 1/4"

FUTURO



426960 Reversible ratchet FUTURO

Swiss Mountain Structure



FUTURO Reversible Ratchet 1/4" – Professional Quality for the Highest Demands

The FUTURO reversible ratchet impresses with high-quality craftsmanship, precise mechanics, and an ergonomic design. Made from **robust, high-quality chrome-vanadium steel** and satin chrome-plated, it offers **maximum durability**, high load capacity, and an elegant finish – ideal for daily professional use.

The ergonomic 2K handle with innovative, **specially developed SwissMountain soft component structure** ensures optimal grip and **secure, fatigue-free power transmission** – even during longer tasks or challenging conditions. The finely toothed mechanism with 72 teeth allows for efficient and precise work even in confined spaces, thanks to a return angle of only 5°.

Highlights:

- Premium Material & Finish: Made from chrome-vanadium steel, satin chrome-plated – **durable, resilient, and corrosion-resistant**.
- Ergonomic 2K Handle: **SwissMountain soft component structure** for secure grip, optimal power transmission, and fatigue-free work.
- Finely Toothed Mechanism: 72 teeth for a **minimal return angle** of only 5° – precise work even in tight spaces.
- Robust & Professional: Designed **for daily use under demanding conditions**.
- Compact & Agile: Ideal for assembly, service, and fine work in industry, crafts, and workshops.
- **Integrated NFC chip for digital product information or personalization** – perfect for modern workshop and fleet concepts.
- Perfect Combination of Precision and Comfort: **Robustness meets ergonomic design** – for efficient and pleasant work.

A tool that combines robustness, precision, and user comfort at the highest level – typical FUTURO.

Order ID	Drive	Ratchet wheel teeth	Overall length mm
426960.0100	1/4"	72	153

FUTURO



426965 Spin type speeder FUTURO

Swiss Mountain Structure



FUTURO Socket Handle 1/4" – precise power transmission with ergonomic comfort

The FUTURO socket handle impresses with its **robust design, precise workmanship, and ergonomic design** for professional use. Made from high-quality chrome-vanadium steel and satin chrome-plated, it offers high durability, excellent longevity, and reliable corrosion protection.

The ergonomic 2K handle with an innovative, **specially developed SwissMountain soft component structure** ensures maximum grip and **comfortable, fatigue-free work** – even during longer use. The **handle base with a 19 mm wrench size** and an **integrated cross hole** allows for the insertion of a sliding handle or screwdriver blade for the safe application of higher torques.

Highlights:

- Premium Material & Finish: Made from chrome-vanadium steel, satin chrome-plated – **durable, resilient, and corrosion-resistant**.
- Ergonomic 2K Handle: **SwissMountain soft component structure** for secure grip, optimal power transmission, and fatigue-free work.
- Flexible Use: **Handle base with 19 mm wrench size** and cross hole for sliding handle or screwdriver blade for higher torques.
- Robust & Professional: Designed **for daily use under demanding conditions**.
- **Integrated NFC chip for digital product information or personalization** – perfect for modern workshop and fleet concepts.
- Perfect combination of precision and comfort: **Robustness meets ergonomic design** – for efficient and pleasant work.

A tool that combines stability, precision, and user-friendliness at a high level – typical FUTURO.

Order ID	**Drive**	Overall length mm
426965.0100	**1/4"**	160

428430 Reversible ratchet FUTURO

Swiss Mountain Structure





FUTURO Reversible Ratchet 1/2" – Professional Quality for the Highest Demands

The FUTURO reversible ratchet impresses with its robust construction, **powerful mechanics**, and ergonomic design for demanding applications. Made from high-quality chrome-vanadium steel and satin chrome-plated, it offers **maximum durability, high load capacity**, and an elegant finish – ideal for professional continuous use.

The ergonomic 2K handle with an innovative, **specially developed SwissMountain soft component structure** ensures optimal grip and a **secure, fatigue-free power transmission** – even during longer tasks or challenging conditions. The finely toothed mechanism with 72 teeth allows efficient and precise work even in confined spaces, thanks to a return angle of only 5°.

Highlights:

- Premium Material & Finish: Made from chrome-vanadium steel, satin chrome-plated – **durable, resilient, and corrosion-resistant**.
- Ergonomic 2K Handle: **SwissMountain soft component structure** for secure grip, optimal power transmission, and fatigue-free work.
- Finely Toothed Mechanism: 72 teeth for a **minimal return angle** of only 5° – precise work even in tight spaces.
- Integrated **Grip Recess**: Additionally supports power transmission and allows secure application of high torques.
- Robust & Professional: Designed **for daily use under demanding conditions**.
- Robust & professional: Specifically developed for **tough continuous use** in workshops, industry, and crafts.
- **Integrated NFC chip for digital product information or personalization** – perfect for modern workshop and fleet concepts.
- Perfect combination of precision and comfort: **Robustness meets ergonomic design** – for efficient and pleasant work.

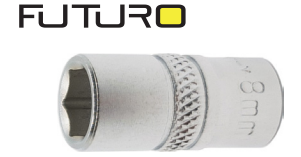
A tool that combines robustness, precision, and user comfort at the highest level – typical FUTURO.

Order ID	Drive	Ratchet wheel teeth	Overall length mm
428430.0100	1/2"	72	270

426900 Hexagon socket wrench bit FUTURO







FUTURO Hexagon Insert 1/4" – Professional Quality for the Highest Demands

The FUTURO Hexagon Insert stands for precise fit, high load capacity, and top quality in professional use. **Manufactured according to DIN 3124 / ISO 2725-1** from high-quality chrome-vanadium steel, it impresses with maximum stability, high wear resistance, and long service life.
The satin chrome finish provides optimal corrosion protection, while the **grippy cross-knurling** allows for a secure hold and comfortable handling even with oily or dirty hands. The **internal hexagon with rounded corners** ensures powerful, material-friendly power transmission and reduces wear on the screw and tool.

Highlights:
- **High-Quality Material & Compliance**: Made from chrome-vanadium steel according to DIN 3124 / ISO 2725-1 – maximum stability, wear resistance, and long service life.
- **Ergonomic Handling**: Grippy cross-knurling for a secure hold and comfortable working, even with oily or dirty hands.
- **Material-Friendly Power Transmission**: Rounded internal hexagon corners reduce wear on the screw and tool – precise, efficient, and durable.

Compliance, robustness, and user-friendliness at the highest level – typical FUTURO.

Order ID	**Wrench size mm**	Length mm	Order ID	**Wrench size mm**	Length mm
426900.0100	**4**	25	426900.0800	**9**	25
426900.0200	**4.5**	25	426900.0900	**10**	25
426900.0300	**5**	25	426900.1000	**11**	25
426900.0400	**5.5**	25	426900.1100	**12**	25
426900.0500	**6**	25	426900.1200	**13**	25
426900.0600	**7**	25	426900.1300	**14**	25
426900.0700	**8**	25			



426905 Socket wrench bit for TORX® FUTURO screws



FUTURO socket insert for Torx® screws 1/4" – Professional quality for the highest demands

The FUTURO socket insert for Torx® screws stands for **precise fit, high load capacity, and top quality** in professional use. Made from high-quality chrome-vanadium steel, it impresses with maximum stability, high wear resistance, and long service life.

The satin chrome finish ensures optimal corrosion protection, while the **grippy cross-knurling** allows for a **secure hold and comfortable handling even with oily or dirty hands**. The precisely manufactured insert ensures powerful, material-friendly power transmission and reduces wear on the screw and tool.

Highlights:
- **High-quality material**: Precisely manufactured from chrome-vanadium steel – maximum stability, wear resistance, and long service life.
- **Ergonomic handling**: Grippy cross-knurling for a secure hold and comfortable working, even with oily or dirty hands.

Robustness and user-friendliness at the highest level – typical FUTURO.

Order ID	For outside TORX®	Length mm
426905.0100	**E4**	25
426905.0200	**E5**	25
426905.0300	**E6**	25
426905.0400	**E7**	25
426905.0500	**E8**	25
426905.0600	**E10**	25



426910 Hexagon insert bit FUTURO



FUTURO Hex Bit Socket 1/4" – Professional Quality for the Highest Demands

The FUTURO hex bit socket for hexagon socket screws stands for precise fit, high load capacity, and top quality in professional use. Made from high-quality chrome-vanadium steel, it impresses with maximum stability, high wear resistance, and long service life.

The satin chrome finish provides optimal corrosion protection, while the **grippy cross-knurling** allows for a secure hold and comfortable handling even with oily or dirty hands. The **precisely manufactured socket** ensures powerful, material-friendly power transmission and reduces wear on the screw and tool.

Highlights:
- **High-Quality Material**: Precisely made from chrome-vanadium steel – maximum stability, wear resistance, and long service life.
- **Ergonomic Handling**: Grippy cross-knurling for a secure hold and comfortable working, even with oily or dirty hands.

Robustness and user-friendliness at the highest level – typical FUTURO.

Order ID	Wrench size mm	Length mm	Order ID	Wrench size mm	Length mm
426910.0100	**3**	37	426910.0400	**6**	37
426910.0200	**4**	37	426910.0500	**8**	37
426910.0300	**5**	37			

426915 Insert bit for TORX® screws FUTURO





FUTURO bit insert for Torx® screws 1/4" – Professional quality for the highest demands

The FUTURO bit insert for Torx® screws stands for precise fit, high load capacity, and top quality in professional use. Made from high-quality chrome-vanadium steel, it impresses with maximum stability, high wear resistance, and long service life.

The satin chrome finish ensures optimal corrosion protection, while the **grippy cross-knurling** allows for a secure hold and comfortable handling even with oily or dirty hands. The **precisely manufactured insert** ensures powerful, material-friendly power transmission and reduces wear on the screw and tool.

Highlights:
- **High-quality material**: Precisely made from chrome-vanadium steel – maximum stability, wear resistance, and long service life.
- **Ergonomic handling**: Grippy cross-knurling for a secure hold and comfortable working, even with oily or dirty hands.

Robustness and user-friendliness at the highest level – typical FUTURO.

Order ID	for TORX® screws	Length mm	Order ID	for TORX® screws	Length mm
426915.0100	**T10**	37	426915.0400	**T25**	37
426915.0200	**T15**	37	426915.0500	**T30**	37
426915.0300	**T20**	37	426915.0600	**T40**	37

426920 Phillips screwdriver bit FUTURO





FUTURO Pin Insert for Phillips-Recess® Screws 1/4" – Professional Quality for the Highest Demands

The FUTURO pin insert for Phillips-Recess® screws stands for precise fit, high load capacity, and top quality in professional use. Made from high-quality chrome-vanadium steel, it impresses with maximum stability, high wear resistance, and long service life.

The satin chrome finish ensures optimal corrosion protection, while the **grippy cross-knurling** allows for a secure hold and comfortable handling even with oily or dirty hands. The **precisely manufactured insert** ensures powerful, material-friendly power transmission and reduces wear on the screw and tool.

Highlights:
- **High-Quality Material**: Precisely crafted from chrome-vanadium steel – maximum stability, wear resistance, and long service life.
- **Ergonomic Handling**: Grippy cross-knurling for a secure hold and comfortable working, even with oily or dirty hands.

Robustness and user-friendliness at the highest level – typical FUTURO.

Order ID	Phillips	Length mm	Order ID	Phillips	Length mm
426920.0100	**PH1**	37	426920.0300	**PH3**	37
426920.0200	**PH2**	37			

426925 Pozidriv screwdriver bit FUTURO





FUTURO bit insert for Pozidriv/Supadriv® screws 1/4" – Professional quality for the highest demands

The FUTURO bit insert for Pozidriv/Supadriv® screws stands for precise fit, high load capacity, and top quality in professional use. Made from high-quality chrome-vanadium steel, it impresses with maximum stability, high wear resistance, and long service life.

The satin chrome finish ensures optimal corrosion protection, while the **grippy cross knurling** allows for a secure hold and comfortable handling even with oily or dirty hands. The **precisely manufactured insert** ensures powerful, material-friendly power transmission and reduces wear on the screw and tool.

Highlights:
- **High-quality material**: Precisely made from chrome-vanadium steel – maximum stability, wear resistance, and long service life.
- **Ergonomic handling**: Grippy cross knurling for a secure hold and comfortable working, even with oily or dirty hands.

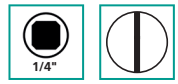
Robustness and user-friendliness at the highest level – typical FUTURO.

Order ID	Pozidriv	Length mm	Order ID	Pozidriv	Length mm
426925.0100	**PZ1**	37	426925.0300	**PZ3**	37
426925.0200	**PZ2**	37			

FUTURO



426930 Slotted screwdriver bit FUTURO



FUTURO Pin Insert for Slotted Screws 1/4" – Professional Quality for the Highest Demands

The FUTURO pin insert for slotted screws stands for precise fit, high load capacity, and top quality in professional use. Made from high-quality chrome-vanadium steel, it impresses with maximum stability, high wear resistance, and long service life.

The satin chrome finish ensures optimal corrosion protection, while the **grippy cross-knurling** allows for a secure hold and comfortable handling even with oily or dirty hands. The **precisely manufactured insert** ensures powerful, material-friendly power transmission and reduces wear on the screw and tool.

Highlights:
- **High-Quality Material**: Precisely made from chrome-vanadium steel – maximum stability, wear resistance, and long service life.
- **Ergonomic Handling**: Grippy cross-knurling for a secure hold and comfortable work, even with oily or dirty hands.

Robustness and user-friendliness at the highest level – typical FUTURO.

Order ID	Tip width mm	Tip thickness mm	Length mm
426930.0100	**3.5**	**0.6**	37
426930.0200	**5.5**	**1.0**	37
426930.0300	**8**	**1.2**	37

FUTURO



426935 Holder for socket wrench bits FUTURO



FUTURO Holder for Socket Inserts 1/4" – Professional Quality for the Highest Demands

The FUTURO socket holder stands for precise fit, high load capacity, and top quality in professional use. Made from high-quality chrome-vanadium steel, it impresses with maximum stability, high wear resistance, and long service life. The **precisely manufactured holder** ensures powerful, material-friendly power transmission and is equipped with a **connection hexagon 1/4" E 6.3** and a **square drive 1/4"** – ideal for versatile use with common socket inserts.

Highlights:
- **High-Quality Material**: Precisely crafted from chrome-vanadium steel – maximum stability, wear resistance, and long service life.
- **Standardized Drives**: With connection hexagon 1/4" E 6.3 and square drive 1/4" – compatible with a variety of tools and inserts.

Robustness and user-friendliness at the highest level – typical FUTURO.

Order ID	Length mm	Square drive	Outside hexagon mm
426935.0100	**25**	1/4"	C 6.3 / 1/4"

FUTURO



426945 Sliding handle FUTURO



FUTURO Sliding Handle 1/4" – Professional Quality for the Highest Demands

The FUTURO sliding handle stands for maximum control, high load capacity, and reliable quality in daily professional use. Made from high-quality **chrome-vanadium steel, chrome-plated**, it offers high corrosion resistance, excellent wear resistance, and long service life. The sliding handle position allows for optimal power distribution and flexible adaptation to different work situations. Thanks to the **ball locking mechanism**, socket inserts sit securely and reliably—even in demanding applications. The sliding handle complies with **DIN 3122** and **ISO 3315** standards, ensuring precise fit and maximum safety in use.

Highlights:

- **High-Quality Material**: Made from chrome-vanadium steel, chrome-plated—robust, durable, and corrosion-resistant.
- **Flexible Power Transmission**: Movable sliding handle for optimal leverage and controlled work.
- **Secure Locking**: Ball locking mechanism for a firm fit of socket inserts.
- **Standard-Compliant Quality**: Complies with DIN 3122 and ISO 3315—for precise fit and professional use.

Thoughtful functionality and uncompromising quality—typical FUTURO.

Order ID	Length mm
426945.0100	**115**

426950 Extension FUTURO





FUTURO Extension 1/4“ – Professional Quality for the Highest Demands

The FUTURO Extension stands for precise fit, high load capacity, and top quality in professional use. Made from high-quality chrome-vanadium steel, it impresses with maximum stability, high wear resistance, and long service life.
The satin chrome finish provides optimal corrosion protection, while the **grippy cross-knurling** allows for a secure hold and comfortable handling even with oily or dirty hands. The **precisely manufactured insert** ensures powerful, material-friendly power transmission.

Highlights:

- **High-Quality Material**: Precisely crafted from chrome-vanadium steel – maximum stability, wear resistance, and long service life.
- **Ergonomic Handling**: Grippy cross-knurling for a secure hold and comfortable working, even with oily or dirty hands.

Robustness and user-friendliness at the highest level – typical FUTURO.

Order ID	Length mm	Order ID	Length mm
426950.0100	**50**	426950.0200	**150**

426955 Universal joint FUTURO





FUTURO Universal Joint 1/4“ – Professional Quality for the Highest Demands

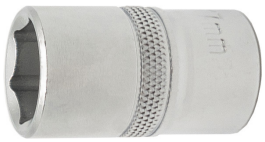
The FUTURO universal joint enables flexible work even in hard-to-reach places and stands for high durability and reliable professional quality. Made from high-quality **chrome-vanadium steel**, **chrome-plated**, it impresses with high corrosion resistance, excellent wear resistance, and a long service life. The movable construction allows optimal power transmission even at oblique angles. Thanks to the **ball lock**, socket inserts sit securely and firmly—even in demanding applications. The universal joint complies with **DIN 3123** and **ISO 3316** standards, ensuring precise fit, high safety, and reliable use in a professional environment.

Highlights:

- **High-Quality Material**: Made from chrome-vanadium steel, chrome-plated—robust, durable, and corrosion-resistant.
- **High Flexibility**: Movable universal joint for effective work in confined and hard-to-reach areas.
- **Secure Locking**: Ball lock for a firm hold of socket inserts.
- **Standard-Compliant Quality**: Complies with DIN 3123 and ISO 3316—for precise fit and professional use.

Thoughtful functionality and uncompromising quality—typical FUTURO.

Order ID	Length mm
426955.0100	**40**



428400 Hexagon socket wrench bit FUTURO



FUTURO Hexagon Socket 1/2" – Professional Quality for the Highest Demands

The FUTURO Hexagon Socket stands for precise fit, high load capacity, and top quality in professional use. **Manufactured according to DIN 3124 / ISO 2725-1** from high-quality chrome-vanadium steel, it impresses with maximum stability, high wear resistance, and long service life.

The satin chrome finish ensures optimal corrosion protection, while the **grippy cross-knurling** allows for a secure hold and comfortable handling even with oily or dirty hands. The **internal hexagon with rounded corners** ensures powerful, material-friendly power transmission and reduces wear on the screw and tool.

Highlights:

- **High-Quality Material & Compliance**: Made from chrome-vanadium steel according to DIN 3124 / ISO 2725-1 – maximum stability, wear resistance, and long service life.
- **Ergonomic Handling**: Grippy cross-knurling for a secure hold and comfortable work, even with oily or dirty hands.
- **Material-Friendly Power Transmission**: Rounded internal hexagon corners reduce wear on the screw and tool – precise, efficient, and durable.

Compliance, robustness, and user-friendliness at the highest level – typical FUTURO.

Order ID	**Wrench size mm**	Length mm	Order ID	**Wrench size mm**	Length mm
428400.0100	**8**	38	428400.1100	**18**	38
428400.0200	**9**	38	428400.1200	**19**	38
428400.0300	**10**	38	428400.1300	**20**	38
428400.0400	**11**	38	428400.1400	**21**	38
428400.0500	**12**	38	428400.1500	**22**	40
428400.0600	**13**	38	428400.1600	**24**	40
428400.0700	**14**	38	428400.1700	**27**	45
428400.0800	**15**	38	428400.1800	**30**	45
428400.0900	**16**	38	428400.1900	**32**	45
428400.1000	**17**	38			



428405 Hexagon insert bit FUTURO



FUTURO Hex Bit Socket 1/2" – Professional Quality for the Highest Demands

The FUTURO hex bit socket for hexagon socket screws stands for precise fit, high load capacity, and top quality in professional use. Made from high-quality chrome-vanadium steel, it impresses with maximum stability, high wear resistance, and long service life.

The satin chrome finish ensures optimal corrosion protection, while the **grippy cross-knurling** allows for a secure hold and comfortable handling even with oily or dirty hands. The **precisely manufactured socket** ensures powerful, material-friendly power transmission and reduces wear on the screw and tool.

Highlights:

- **High-Quality Material**: Precisely crafted from chrome-vanadium steel – maximum stability, wear resistance, and long service life.
- **Ergonomic Handling**: Grippy cross-knurling for a secure hold and comfortable working, even with oily or dirty hands.

Robustness and user-friendliness at the highest level – typical FUTURO.

Order ID	**Wrench size mm**	Length mm
428405.0100	**5**	55
428405.0200	**6**	55
428405.0300	**7**	55
428405.0400	**8**	55
428405.0500	**10**	55
428405.0600	**12**	55
428405.0700	**14**	55

428410 Insert bit for TORX® screws FUTURO







FUTURO Pin Insert for Torx® Screws 1/2" – Professional Quality for the Highest Demands

The FUTURO pin insert for Torx® screws stands for precise fit, high load capacity, and top quality in professional use. Made from high-quality chrome-vanadium steel, it impresses with maximum stability, high wear resistance, and long service life.

The satin chrome finish ensures optimal corrosion protection, while the **grippy cross-knurling** allows for a secure hold and comfortable handling even with oily or dirty hands. The **precisely manufactured insert** ensures powerful, material-friendly power transmission and reduces wear on the screw and tool.

Highlights:
- **High-Quality Material**: Precisely made from chrome-vanadium steel – maximum stability, wear resistance, and long service life.
- **Ergonomic Handling**: Grippy cross-knurling for a secure hold and comfortable work, even with oily or dirty hands.

Robustness and user-friendliness at the highest level – typical FUTURO.

Order ID	for TORX® screws	Length mm	Order ID	for TORX® screws	Length mm
428410.0100	**T25**	55	428410.0400	**T45**	55
428410.0200	**T30**	55	428410.0500	**T50**	55
428410.0300	**T40**	55	428410.0600	**T55**	55

428415 Sliding handle FUTURO





FUTURO Sliding Handle 1/2" – Professional Quality for the Highest Demands

The FUTURO sliding handle stands for maximum control, high load capacity, and reliable quality in daily professional use. Made from high-quality **chrome-vanadium steel, chrome-plated**, it offers high corrosion resistance, excellent wear resistance, and long service life. The sliding handle position allows for optimal power distribution and flexible adaptation to different work situations. Thanks to the **ball locking mechanism**, socket inserts sit securely and reliably—even in demanding applications. The sliding handle complies with **DIN 3122** and **ISO 3315** standards, ensuring precise fit and maximum safety in use.

Highlights:

- **High-Quality Material**: Made from chrome-vanadium steel, chrome-plated—robust, durable, and corrosion-resistant.
- **Flexible Power Transmission**: Movable sliding handle for optimal leverage and controlled work.
- **Secure Locking**: Ball locking mechanism for a firm fit of socket inserts.
- **Standard-Compliant Quality**: Complies with DIN 3122 and ISO 3315—for precise fit and professional use.

Thoughtful functionality and uncompromising quality—typical FUTURO.

Order ID	Length mm
428415.0100	**300**

428420 Extension FUTURO





FUTURO Extension 1/2" – Professional Quality for the Highest Demands

The FUTURO Extension stands for precise fit, high load capacity, and top quality in professional use. Made from high-quality chrome-vanadium steel, it impresses with maximum stability, high wear resistance, and long service life. The satin chrome finish ensures optimal corrosion protection, while the **grippy cross-knurlin**g allows for a secure hold and comfortable handling even with oily or dirty hands. The **precisely manufactured inser**t ensures powerful, material-friendly power transmission.

Highlights:
- **High-Quality Mater**ial: Precisely made from chrome-vanadium steel – maximum stability, wear resistance, and long service life.
- **Ergonomic Handling**: Grippy cross-knurling for a secure hold and comfortable working, even with oily or dirty hands.

Robustness and user-friendliness at the highest level – typical FUTURO.

Order ID	Length mm
428420.0100	**125**
428420.0200	**250**



428425 Universal joint FUTURO

1/2"

FUTURO Universal Joint 1/2" – Professional Quality for the Highest Demands

The FUTURO universal joint allows flexible work even in hard-to-reach places and stands for high durability and reliable professional quality. Made from high-quality **chrome-vanadium steel, chrome-plated**, it impresses with high corrosion resistance, excellent wear resistance, and long service life. The movable design allows optimal power transmission even at oblique angles. Thanks to the **ball locking**, socket inserts sit securely and firmly—even in demanding applications. The universal joint complies with **DIN 3123** and **ISO 3316** standards, ensuring precise fit, high safety, and reliable use in a professional environment.

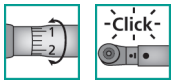
Highlights:

- **High-Quality Material**: Made from chrome-vanadium steel, chrome-plated—robust, durable, and corrosion-resistant.
- **High Flexibility**: Movable universal joint for effective work in confined and hard-to-reach areas.
- **Secure Locking**: Ball locking for a firm hold of socket inserts.
- **Standard-Compliant Quality**: Complies with DIN 3123 and ISO 3316—for precise fit and professional use.

Thoughtful functionality and uncompromising quality—typical FUTURO.

Order ID	Length mm
428425.0100	**75**

431210 Torque wrench FUTURO



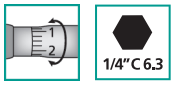


431210.0260

For controlled clockwise and anti-clockwise tightening, robust ratchet with push-through square, automatic actuation with audible signal. Double micrometer scale Nm and lbf/ft allows for exact, error-free setting. Quick adjustment, ergonomic 2-component handle, **accuracy of ±3%** from measured value (more accurate than DIN EN ISO 6789), with declaration of conformity to DIN EN ISO 6789-1:2017.

Order ID	**Range Nm**	Division Nm	Drive	Length mm	Weight kg	Working range lb/ft
431210.0260	**20...100**	1	1/2"	375	0.8	15...75
431210.0460	**40...200**	1	1/2"	460	1.0	30...150
431210.0660	**60...300**	1	1/2"	590	1.4	45...220
431210.0700	**60...340**	1	1/2"	680	1.55	45...255

432055 Torque screwdriver FUTURO

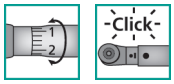




With scale, easy to set the required torque value using adjustment wheel at the end of the handle, ergonomic two-component grip, slip clutch, triggers at the exact moment it reaches the set torque, over-tightening impossible. Supplied with interchangeable bit holder for 1/4" bits C 6.3, with declaration of conformity according to DIN EN ISO 6789-1:2017.

Order ID	**Range Nm**	Division Nm	Hexagon socket	Length mm
432055.0100	**0.3...1.5**	0.1	1/4"	155
432055.0200	**0.6...3.0**	0.5	1/4"	155
432055.0300	**1.2...6.0**	0.5	1/4"	155

431205 Torque wrench FUTURO





For controlled clockwise tightening, with ratchet wrench, automatic actuation with audible signal. Double micrometer scale Nm and lbf/in / lbf/ft allows for exact, error-free setting. Quick adjustment, ergonomic 2-component handle, **accuracy of ±3%** from measured value (more accurate than DIN EN ISO 6789), with declaration of conformity to DIN EN ISO 6789-1:2017.

Order ID		431205.0160	431205.0260
Range	**Nm**	**4...20**	**10...50**
Division	Nm	0.05	0.1
Drive		1/4"	3/8"
Length	mm	230	329
Weight	kg	0.4	0.5
Working range	lb/ft	-	6...40
Working range	lbf/in	10...180	-





FUTURO connected App

946000 Electronic torque/rotational angle wrench FUTURO connected with Bluetooth®



Tested to DIN EN ISO 6789. Torque accuracy in clockwise direction ±2%, anti-clockwise direction ±3%. Rotation angle: ±1° for the measuring range up to 100°, ±1% for the measuring range from 100° upwards. Bright 2.8-inch TFT screen with a stable viewing angle and double scale torque/rotational angle, displayed in Nm, lbf/ft, lbfin, battery and memory display. Peak value and tracking (continuous) values are displayed. Can be programmed with up to 100 individual screw cases and 10 sequences with up to 10 screw cases each directly on the wrench or via the app. Memory storage for up to 1000 measured values with time stamp. Data output via Bluetooth or USB-C, password protection can be set, haptic warning signals (vibration), optical (colour displayed on the screen and 360° LED ring) and acoustic (buzzer). Simple to enter the actual dimension, splash-proof IP40 display. First-class ergonomics and high power transmission with 2C grip, resistant to oils, greases, fuels, brake fluids and Skydrol. Load counter, calibration reminder. Automatic adjustment of the date and time when connected to the app.

FUTURO connected
Bluetooth data transmission to satisfy all requirements:

- Data transfer at the touch of a button: Measurement results are transferred to the active field on computer, regardless of whether it is in an Excel file, Word file or other software. The value is entered in the active field as if entered from the keyboard.
- Significant time savings: Automatic transmission of the measured value eliminates the need for manual input and eliminates errors.
- Flexible handling: Bluetooth wireless communication means that no cables hinder your movements.
- Easy connection: no software required. A device with a Bluetooth connection is all you need.
- Mobile app for iOS and Android available from the Apple App Store and Google Play Store

For more information about **FUTURO connected**, go to: https://info.brw.ch/futuro-connected-tools

Scope of delivery:
USB-C data cable, 1 lithium-ion battery type 18650 3.6 V, 3400 mAh, plastic case

Order ID	**Torque range Nm**	Square drive	Display	Resolution Nm	Resolution angle	Data output	Protection class
946000.0100	**2.4...12**	1/4"	Nm, lbf·ft, lbf·in	0.01	0.1°	USB-C, Bluetooth®	IP40
946000.0200	**6...30**	1/4"	Nm, lbf·ft, lbf·in	0.01	0.1°	USB-C, Bluetooth®	IP40
946000.0300	**10...50**	3/8"	Nm, lbf·ft, lbf·in	0.01	0.1°	USB-C, Bluetooth®	IP40
946000.0400	**20...100**	1/2"	Nm, lbf·ft, lbf·in	0.1	0.1°	USB-C, Bluetooth®	IP40
946000.0500	**40...200**	1/2"	Nm, lbf·ft, lbf·in	0.1	0.1°	USB-C, Bluetooth®	IP40
946000.0600	**68...340**	1/2"	Nm, lbf·ft, lbf·in	0.1	0.1°	USB-C, Bluetooth®	IP40



432060 Torque screwdriver FUTURO



With micrometer setting, effective for clockwise and anticlockwise tightening, **trigger mechanism prevents any overtightening,** non-fatiguing operation thanks to short trigger distance, setting ring fixes selected values, rotary ball-shaped coupling for use in series production; precise, compact design. **Female hex drive for bits 1/4" C6.3 + E6.3. Accuracy ±6%** according to DIN EN ISO 6789:2017 Part 2, with factory test certificate.

Appropriate accessories:
437350 Slotted-screw blade PB Swiss Tools
437380 Phillips blade PB Swiss Tools
437410 Pozidriv blade PB Swiss Tools
437440 Hexagon blade
437460 TORX® blade PB Swiss Tools
437475 TORX®Plus blade PB Swiss Tools
437500 Coupler PB Swiss Tools
437510 Socket wrench blade PB Swiss Tools
437515 Socket wrench blade PB Swiss Tools
437720 Slotted-screw blade PB Swiss Tools
437760 Phillips blade PB Swiss Tools
437810 Pozidriv blade PB Swiss Tools
437860 Hexagon blade PB Swiss Tools
437920 TORX® blade PB Swiss Tools
437950 TORX® blade with borehole PB Swiss Tools

Order ID	**Working range cN·m**	**Working range Nm**	Scale divisions cN·m	Handle Ø mm	Length mm
432060.0100	**24...120**	-	1	25.4	170
432060.0200	-	**1...6**	10	34	186
432060.0300	-	**4...9**	10	34	186

431720 Ratchet insert FUTURO

1/4" 3/8" 1/2"

DIN 3120/ISO 1174-1, chromium-vanadium steel, chrome plated. Reversible right/left, for torque wrenches. Quick-release function by means of a push button.

Order ID	Drive	Plug connection mm	Ratchet wheel teeth
431720.0100	**1/4"**	9 x 12	72
431720.0200	**3/8"**	9 x 12	72
431720.0300	**1/2"**	9 x 12	72
431720.0400	**1/2"**	14 x 18	72



431725 Ratchet insert HD FUTURO

3/4"

DIN 3120/ISO 1174-1, chromium-vanadium steel, chrome plated, matt satin finish. Reversible right/left, for torque wrenches.

Order ID	Drive	Plug connection mm	Ratchet wheel teeth
431725.0100	**3/4"**	14 x 18	48



431730 Open-end insert FUTURO - 9 x 12 mm

DIN 3120/ISO 1174-1, chromium-vanadium steel, chrome plated, matt satin finish. For torque wrenches **with a 9 x 12 mm plug connection**.

Order ID	Wrench size mm	Plug connection mm	Continuous loading max. Nm
431730.0100	**7**	9 x 12	9.2
431730.0200	**8**	9 x 12	13.3
431730.0300	**9**	9 x 12	18.5
431730.0400	**10**	9 x 12	24.8
431730.0500	**11**	9 x 12	32.3
431730.0600	**12**	9 x 12	41.3
431730.0700	**13**	9 x 12	51.6
431730.0800	**14**	9 x 12	63.5
431730.0900	**15**	9 x 12	77.0
431730.1000	**16**	9 x 12	92.3
431730.1100	**17**	9 x 12	110
431730.1200	**18**	9 x 12	129
431730.1300	**19**	9 x 12	150
431730.1400	**24**	9 x 12	260
431730.1500	**27**	9 x 12	260
431730.1600	**30**	9 x 12	260
431730.1700	**32**	9 x 12	260



431740 Open-end insert FUTURO - 14 x 18 mm

DIN 3120/ISO 1174-1, chromium-vanadium steel, chrome plated, matt satin finish. For torque wrenches **with a 14 x 18 mm plug connection**.

Order ID	Wrench size mm	Plug connection mm	Continuous loading max. Nm
431740.0100	**13**	14 x 18	51.6
431740.0200	**14**	14 x 18	63.5
431740.0300	**15**	14 x 18	77.0
431740.0400	**16**	14 x 18	92.3
431740.0500	**17**	14 x 18	110
431740.0600	**18**	14 x 18	129
431740.0700	**19**	14 x 18	150
431740.0800	**21**	14 x 18	198
431740.0900	**22**	14 x 18	225
431740.1000	**24**	14 x 18	287
431740.1100	**27**	14 x 18	340
431740.1200	**30**	14 x 18	340
431740.1300	**32**	14 x 18	340
431740.1400	**34**	14 x 18	340
431740.1500	**36**	14 x 18	340
431740.1600	**38**	14 x 18	340
431740.1700	**41**	14 x 18	340



431760 Open-ring insert FUTURO - 9 x 12 mm



DIN 3120/ISO 1174-1, chromium-vanadium steel, chrome plated, matt satin finish. For torque wrenches **with a 9 x 12 mm plug connection**.

Order ID	**Wrench size** mm	Plug connection mm	Continuous loading max. Nm
431760.0100	**10**	9 x 12	30
431760.0200	**11**	9 x 12	35
431760.0300	**12**	9 x 12	40
431760.0400	**13**	9 x 12	45
431760.0500	**14**	9 x 12	55
431760.0600	**16**	9 x 12	75
431760.0700	**17**	9 x 12	85
431760.0800	**18**	9 x 12	95
431760.0900	**19**	9 x 12	105
431760.1000	**21**	9 x 12	130
431760.1100	**22**	9 x 12	145

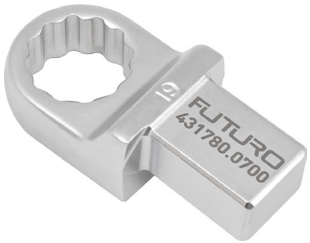
431770 Ring insert FUTURO - 9 x 12 mm



DIN 3120/ISO 1174-1, chromium-vanadium steel, chrome plated, matt satin finish. For torque wrenches **with a 9 x 12 mm plug connection**.

Order ID	**Wrench size** mm	Plug connection mm	Continuous loading max. Nm
431770.0100	**7**	9 x 12	25.3
431770.0200	**8**	9 x 12	35.0
431770.0300	**10**	9 x 12	58.2
431770.0400	**11**	9 x 12	73.0
431770.0500	**12**	9 x 12	89.1
431770.0600	**13**	9 x 12	108
431770.0700	**14**	9 x 12	128
431770.0800	**15**	9 x 12	151
431770.0900	**16**	9 x 12	175
431770.1000	**17**	9 x 12	200
431770.1100	**18**	9 x 12	230
431770.1200	**19**	9 x 12	260
431770.1300	**21**	9 x 12	300
431770.1400	**22**	9 x 12	300
431770.1500	**24**	9 x 12	300

431780 Ring insert FUTURO - 14 x 18 mm



DIN 3120/ISO 1174-1, chromium-vanadium steel, chrome plated, matt satin finish. For torque wrenches **with a 14 x 18 mm plug connection**.

Order ID	**Wrench size** mm	Plug connection mm	Continuous loading max. Nm
431780.0100	**13**	14 x 18	108
431780.0200	**14**	14 x 18	128
431780.0300	**15**	14 x 18	151
431780.0400	**16**	14 x 18	175
431780.0500	**17**	14 x 18	202
431780.0600	**18**	14 x 18	231
431780.0700	**19**	14 x 18	262
431780.0800	**21**	14 x 18	330
431780.0900	**22**	14 x 18	330
431780.1000	**24**	14 x 18	330
431780.1100	**27**	14 x 18	340
431780.1200	**30**	14 x 18	340
431780.1300	**32**	14 x 18	340
431780.1400	**34**	14 x 18	340
431780.1500	**36**	14 x 18	340
431780.1600	**41**	14 x 18	340

431790 Adapter insert FUTURO



Chrome-vanadium steel, chrome plated, matt satin finish. For torque wrenches with plug connection.

Order ID	**Plug connection** mm	**Square socket** mm	Continuous loading max. Nm
431790.0100	**9 x 12**	**14 x 18**	200
431790.0200	**14 x 18**	**9 x 12**	200

435340 Pozidriv screwdriver FUTURO



For **Pozidriv and Supadriv** screws, chrome-vanadium steel, chrome-plated, with ergonomic **2-component power handle** with non-slip Santoprene® surface for good grip.

Order ID	Size	Blade length mm	Blade Ø mm	Length mm
435340.0400	**3-150**	150	8	270



440282 Telephone pliers VDE FUTURO

1000 V

Made of high-quality tempered tool steel, chrome-plated, extra-long cutting edge for flat and round cables, partially serrated gripping surface, **1000-volt insulation**, **VDE-tested**, corresponds to standard DIN EN 60900, with ergonomic two-component grip sleeves.

Order ID	**Length** mm	Jaw length mm	for medium-hard wire mm	for hard wire mm	for piano wire mm
440282.0100	**160**	59	2.5	1.8	1.2
440282.0200	**200**	84	3.2	2.2	1.6



449333 Wire strippers VDE FUTURO

1000 V

Made of high-quality tempered tool steel, chrome-plated, precision cutting prism for even cutting of the cable insulation. An easy to use adjusting screw allows the stripping diameter to be set. Opening spring for effortless and sensitive handling of the pliers. **1000-volt insulation**, **VDE-tested**, corresponds to standard DIN EN 60900, with ergonomic two-component grip sleeves.

Order ID	**Length** mm	for cable Ø mm	for strands and conductors mm²
449333.0100	**160**	5	10



440053 Heavy-duty combination pliers FUTURO

Made of high-quality tempered tool steel, chrome-plated, extra-long cutting edge (HRC 65) for flat and round cables, with ergonomic two-component grip sleeves.

Order ID		440053.0100	440053.0200
Length	mm	180	200
Jaw length	mm	37	38
for medium-hard wire	mm	3.4	3.8
for hard wire	mm	2.5	2.8
for piano wire	mm	2.0	2.3



440317 Radio pliers FUTURO

Made of high-quality tempered tool steel, chrome-plated, tip curved approx. 40°, extra-long cutting edge for flat and round cables, gripping surface partially serrated, with ergonomic two-component grip sleeves.

Order ID		440317.0100	440317.0200
Length	**mm**	**160**	**200**
Jaw length	mm	79	50
for medium-hard wire	mm	2.5	3.2
for hard wire	mm	1.8	2.2
for piano wire	mm	1.2	1.6



441773 Diagonal cutters VDE FUTURO

1000 V

Made of high-quality tempered tool steel, chrome-plated, low wear lap joint, riveted and able to withstand high loads. Precision cutting edge with face ground cutting surface and cutting edge with chamfer, **1000-volt insulation**, **VDE-tested**, corresponds to standard DIN EN 60900, with ergonomic two-component grip sleeves.

Order ID	**Length** mm	Jaw length mm	for medium-hard wire mm	for hard wire mm	for piano wire mm
441773.0100	**140**	19	2.5	1.8	1.4
441773.0200	**160**	21	2.8	2.0	1.6



440133 Heavy-duty combination pliers VDE FUTURO

1000 V

Made of high-quality tempered tool steel, chrome-plated, extra-long cutting edge for flat and round cables, **1000-volt insulation**, **VDE-tested**, corresponds to standard DIN EN 60900, with ergonomic two-component grip sleeves.

Order ID	**Length** mm	Jaw length mm	for medium-hard wire mm	for hard wire mm	for piano wire mm
440133.0100	**180**	37	3.4	2.5	2.0
440133.0200	**200**	38	3.8	2.8	2.3

445047 Circlip pliers for internal rings FUTURO



Made of high-quality hardened tool steel, chrome-plated, **straight shape**, drop-forged **with cylindrical precision tips made of special steel for significantly longer tool life compared to turned tips**. For the application/removal of circlips inside in holes, plastic-coated handles.

Order ID	Type	for circlips mm	Length mm
445047.0100	**J0**	8...13	140
445047.0200	**J1**	12...25	140
445047.0300	**J2**	19...60	180
445047.0400	**J3**	40...100	240
445047.0500	**J4**	85...140	310

443056 Multigrip pliers FUTURO



Made of high-quality tempered tool steel, chrome-plated, box type, precision adjustment joint, providing optimum adaptation to the gripped object, plastic-coated handles.

Order ID	Length mm	for tubes Ø mm	Hexagonal mm
443056.0100	**250**	50.8	50
443056.0200	**300**	63.5	63

441407 Multigrip pliers VDE FUTURO



1000 V

Made of high-quality tempered tool steel, chrome-plated, box type, precision adjustment joint, providing optimal adaptation to the gripped object, **1000-volt insulation**, **VDE-tested**, corresponds to standard DIN EN 60900, with ergonomic two-component grip sleeves.

Order ID	Length mm	for tubes Ø mm	Hexagonal mm
441407.0100	**250**	50.8	50

440132 Combination pliers VDE FUTURO



1000 V

Made of high-quality tempered tool steel, chrome-plated, extra-long cutting edge for flat and round cables, **1000-volt insulation**, **VDE-tested**, corresponds to standard DIN EN 60900, with ergonomic two-component grip sleeves.

Order ID	Length mm	Jaw length mm	for medium-hard wire mm	for hard wire mm	for piano wire mm
440132.0100	**160**	35	3.1	2.0	1.6
440132.0200	**180**	37	3.4	2.2	1.8
440132.0300	**200**	41	3.8	2.5	2.0

445127 Circlip pliers for external rings FUTURO



Made of high-quality hardened tool steel, chrome-plated, **straight shape**, drop-forged **with cylindrical precision tips made of special steel for significantly longer tool life compared to turned tips**. For the application/removal of circlips on shafts or axles, plastic-coated handles.

Order ID	Type	for circlips mm	Length mm
445127.0100	**A0**	3...10	140
445127.0200	**A1**	10…25	140
445127.0300	**A2**	19…60	180
445127.0400	**A3**	40…100	240
445127.0500	**A4**	85…140	310

440658 Long flat-nose pliers FUTURO



Made of high-quality tempered tool steel, extra-long head, chrome-plated, serrated gripping surfaces, with ergonomic two-component grip sleeves.

Order ID	Length mm	Jaw length mm
440658.0100	**160**	56



440362 Radio pliers VDE FUTURO

1000 V

Made of high-quality tempered tool steel, chrome-plated, tip curved at approx. 40°, extra-long cutting edge for flat and round cables, partially serrated gripping surface, **1000-volt insulation**, **VDE-tested**, corresponds to standard DIN EN 60900, with ergonomic two-component grip sleeves.

Order ID	**Length** mm	Jaw length mm	for medium-hard wire mm	for hard wire mm	for piano wire mm
440362.0100	**160**	79	2.5	1.8	1.2
440362.0200	**200**	50	3.2	2.2	1.6



441774 Heavy-duty diagonal cutters VDE FUTURO

1000 V

Made of high-quality tempered tool steel, chrome-plated, low wear lap joint, riveted and able to withstand high loads. Precision cutting edge with face ground cutting surface and cutting edge with chamfer, **1000-volt insulation**, **VDE-tested**, corresponds to standard DIN EN 60900, with ergonomic two-component grip sleeves.

Order ID	**Length** mm	Jaw length mm	for medium-hard wire mm	for hard wire mm	for piano wire mm
441774.0100	**160**	21	3.5	2.5	2.0
441774.0200	**180**	23	3.8	2.7	2.3
441774.0300	**200**	25	4.2	3.0	2.5



441647 Heavy-duty diagonal cutters FUTURO

Made of high-quality tempered tool steel, chrome-plated, low wear lap joint, riveted and able to withstand high loads. Precision cutting edge (HRC 65) with face ground cutting surface and cutting edge without chamfer, with opening spring and ergonomic two-component grip sleeves.

Order ID		441647.0100	441647.0200	441647.0300
Length	**mm**	**160**	**180**	**200**
Jaw length	mm	21	23	25
for medium-hard wire	mm	3.5	3.8	4.2
for hard wire	mm	2.5	2.7	3.0
for piano wire	mm	2.0	2.3	2.5



445067 Circlip pliers for internal rings FUTURO

Made of high-quality hardened tool steel, chrome-plated, **angled shape**, drop-forged **with cylindrical precision tips made of special steel for significantly longer tool life compared to turned tips**. For the application/removal of circlips inside in holes, plastic-coated handles.

Order ID	**Type**	for circlips mm	Length mm
445067.0100	**J01**	8...13	140
445067.0200	**J11**	12...25	140
445067.0300	**J21**	19...60	180
445067.0400	**J31**	40...100	240
445067.0500	**J41**	85...140	310



441719 Diagonal cutters FUTURO

Made of high-quality tempered tool steel, chrome-plated, low wear lap joint, riveted and able to withstand high loads. Precision cutting edge with face ground cutting surface and cutting edge without chamfer, with opening spring and ergonomic two-component grip sleeves.

Order ID		441719.0100	441719.0200
Length	**mm**	**140**	**160**
Jaw length	mm	19	21
for medium-hard wire	mm	2.5	2.8
for hard wire	mm	1.8	2.0
for piano wire	mm	1.4	1.6



440237 Telephone pliers FUTURO

Made of high-quality tempered tool steel, chrome-plated, extra-long cutting edge for flat and round cables, gripping surface partially serrated, with ergonomic two-component grip sleeves.

Order ID		440237.0100	440237.0200
Length	**mm**	**160**	**200**
Jaw length	mm	59	84
for medium-hard wire	mm	2.5	3.2
for hard wire	mm	1.8	2.2
for piano wire	mm	1.2	1.6

440057 Combination pliers FUTURO

Made of high-quality tempered tool steel, chrome-plated, extra-long cutting edge (HRC 65) for flat and round cables, with ergonomic two-component grip sleeves.

Order ID		440057.0100	440057.0200	440057.0300
Length	mm	160	180	200
Jaw length	mm	35	37	41
for medium-hard wire	mm	3.1	3.4	3.8
for hard wire	mm	2.0	2.2	2.5
for piano wire	mm	1.6	1.8	2.0



445145 Circlip pliers for external rings FUTURO

Made of high-quality hardened tool steel, chrome-plated, **angled shape**, drop-forged **with cylindrical precision tips made of special steel for significantly longer tool life compared to turned tips**. For the application/removal of circlips on shafts or axles, plastic-coated handles.

Order ID	Type	for circlips mm	Length mm
445145.0100	**A01**	3...10	140
445145.0200	**A11**	10…25	140
445145.0300	**A21**	19…60	180
445145.0400	**A31**	40…100	240
445145.0500	**A41**	85…140	310



440185 Pliers set FUTURO

4-piece, made of high-quality tempered tool steel, chrome-plated, in box.

Consisting of:
440057.0200: 1 pieces Combination pliers FUTURO 180 mm
440237.0200: 1 pieces Telephone pliers FUTURO 200 mm
441719.0200: 1 pieces Diagonal cutters FUTURO 160 mm
443056.0100: 1 pieces Multigrip pliers FUTURO 250 mm

Order ID	Parts
440185.0100	**4**



440190 Pliers set VDE FUTURO

1000 V

3-piece, made of high-quality tempered tool steel, chrome-plated, **1000-volt insulation**, **VDE-tested**, corresponds to standard DIN EN 60900, in box.

Consisting of:
440132.0200: 1 pieces Combination pliers VDE FUTURO 180 mm
440282.0200: 1 pieces Telephone pliers VDE FUTURO 200 mm
441773.0200: 1 pieces Diagonal cutters VDE FUTURO 160 mm

Order ID	Parts
440190.0100	**3**



445180 Circlip pliers set FUTURO

4-piece, made of high-quality tempered tool steel, chrome-plated, in roll-up case.

445180.0100 consisting of:
445047.0300: 1 pieces Circlip pliers FUTURO for internal rings J2, 19–60 mm
445067.0300: 1 pieces Circlip pliers FUTURO for internal rings J21, 19–60 mm
445127.0300: 1 pieces Circlip pliers FUTURO For external rings A2, 19...60 mm
445145.0300: 1 pieces Circlip pliers FUTURO For external rings A21, 19–60 mm
445180.0200 consisting of:
445047.0200: 1 pieces Circlip pliers FUTURO for internal rings J1, 12–25 mm
445047.0300: 1 pieces Circlip pliers FUTURO for internal rings J2, 19–60 mm
445127.0200: 1 pieces Circlip pliers FUTURO For external rings A1, 10...25 mm
445127.0300: 1 pieces Circlip pliers FUTURO For external rings A2, 19...60 mm

Order ID	Parts
445180.0100	**4**
445180.0200	**4**



445180.0100

FUTURO



446175 Flat-nose electronics pliers FUTURO

Special tool steel, drop-forged, hardened and tempered, finely polished, black-oxide finish, handles PVC-dipped, **long, smooth jaws.**

Order ID	**Length** mm	Jaw width mm	Jaw length mm
446175.0100	**130**	6.5	33.5

FUTURO



446749 Electronics diagonal cutters FUTURO

Oval mini cutting head, high-quality ball bearing steel, induction-hardened cutting edges 63 HRC, anti-glare, scratch-free satin finish, ergonomic multi-component grip coverings with soft, comfortable grip surface, electrically conductive, dissipative. Double leaf springs made of stainless steel, high precision and strength thanks to an overlap joint with screw. Nuts made from hardened alloyed steel.

Order ID	**Length** mm	for soft wire mm	for medium-hard wire mm	for hard wire mm
446749.0100	**120**	0.2...1.2	0.1...1.0	0.03...0.6
446749.0200	**120**	0.1...1.2	0.1...1.0	-
446749.0300	**120**	0.1...1.0	0.1...0.8	-

FUTURO



446751 Electronics diagonal cutters FUTURO

Oval cutting head, high-quality ball bearing steel, induction-hardened cutting edges 63 HRC, anti-glare, scratch-free satin finish, ergonomic multi-component grip coverings with soft, comfortable grip surface, electrically conductive, dissipative. Double leaf springs made of stainless steel, high precision and strength thanks to an overlap joint with screw. Nuts made from hardened alloyed steel.

Order ID	**Length** mm	for soft wire mm	for medium-hard wire mm	for hard wire mm
446751.0100	**120**	0.3...1.6	0.1...1.3	0.03...0.7
446751.0200	**120**	0.2...1.6	0.1...1.2	-
446751.0300	**120**	0.2...1.2	0.1...1.0	-

FUTURO



447565 Electronics oblique cutters FUTURO

For maximum accessibility and visibility in confined spaces, cutting edges angled 50° with small chamfers, high-quality ball bearing steel, induction-hardened cutting edges 63 HRC, anti-glare, scratch-free satin finish, ergonomic multi-component grip coverings with soft, comfortable grip surface, electrically conductive, dissipative. Double leaf springs made of stainless steel, high precision and strength thanks to an overlap joint with screw. Nuts made from hardened alloyed steel.

Order ID	**Length** mm	for soft wire mm	for medium-hard wire mm
447565.0100	**125**	0.1...1.2	0.1...0.6

FUTURO



447572 Electronics diagonal cutters FUTURO

Pointed mini cutting head, high-quality ball bearing steel, induction-hardened cutting edges 63 HRC, anti-glare, scratch-free satin finish, ergonomic multi-component grip coverings with soft, comfortable grip surface, electrically conductive, dissipative. Double leaf springs made of stainless steel, high precision and strength thanks to an overlap joint with screw. Nuts made from hardened alloyed steel.

Order ID	**Length** mm	for soft wire mm	for medium-hard wire mm	for hard wire mm
447572.0100	**120**	0.2...1.2	0.1...1.0	0.03...0.6
447572.0200	**120**	0.1...1.2	0.1...1.0	-
447572.0300	**120**	0.1...1.0	0.1...0.8	-

447574 Electronics diagonal cutters FUTURO



Pointed cutting head, high-quality ball bearing steel, induction-hardened cutting edges 63 HRC, anti-glare, scratch-free satin finish, ergonomic multi-component grip coverings with soft, comfortable grip surface, electrically conductive, dissipative. Double leaf springs made of stainless steel, high precision and strength thanks to an overlap joint with screw. Nuts made from hardened alloyed steel.

Order ID	**Length mm**	for soft wire mm	for medium-hard wire mm	for hard wire mm
447574.0100	**120**	0.3...1.6	0.1...1.2	0.03...0.7
447574.0200	**120**	0.2...1.2	0.1...1.0	-

447576 Electronics diagonal cutters FUTURO



Flat, pointed mini cutting head without cutting chamfers for increased accessibility in confined spaces, high-quality ball bearing steel, induction-hardened cutting edges 63 HRC, anti-glare, scratch-free satin finish, ergonomic multi-component grip coverings with soft, comfortable grip surface, electrically conductive, dissipative. Double leaf springs made of stainless steel, high precision and strength thanks to an overlap joint with screw. Nuts made from hardened alloyed steel.

Order ID	**Length mm**	for soft wire mm	for medium-hard wire mm
447576.0100	**120**	0.1...0.8	0.1...0.4

446170 Flat-nose electronics pliers FUTURO



Short, smooth jaws with fine tips and inside edges, high-quality ball bearing steel, induction-hardened gripping jaws 45 HRC, anti-glare, scratch-free satin finish, ergonomic multi-component grip coverings with soft, comfortable grip surface, electrically conductive, dissipative. Double leaf springs made of stainless steel, high precision and strength thanks to an overlap joint with screw. Nuts made from hardened alloyed steel.

Order ID	**Length mm**
446170.0100	**130**

446185 Flat-nose electronics pliers FUTURO



Long jaws with fine tips and inside edges, high-quality ball bearing steel, induction-hardened gripping jaws 45 HRC, anti-glare, scratch-free satin finish, ergonomic multi-component grip coverings with soft, comfortable grip surface, electrically conductive, dissipative. Double leaf springs made of stainless steel, high precision and strength thanks to an overlap joint with screw. Nuts made from hardened alloyed steel.

Order ID	**Length mm**	Order ID	**Length mm**
446185.0100	**140**	446185.0200	**140**

446555 Round-nose electronics pliers FUTURO



Round jaws, suitable both for terminals and for forming loops with cables or wire, high-quality ball bearing steel, induction-hardened gripping jaws 45 HRC, anti-glare, scratch-free satin finish, ergonomic multi-component grip coverings with soft, comfortable grip surface, electrically conductive, dissipative. Double leaf springs made of stainless steel, high precision and strength thanks to an overlap joint with screw. Nuts made from hardened alloyed steel.

Order ID	**Length mm**
446555.0100	**135**

FUTURO



446294 Snipe-nose electronics pliers FUTURO

Short, smooth jaws, high-quality ball bearing steel, induction-hardened gripping jaws 45 HRC, anti-glare, scratch-free satin finish, ergonomic multi-component grip coverings with soft, comfortable grip surface, electrically conductive, dissipative. Double leaf springs made of stainless steel, high precision and strength thanks to an overlap joint with screw. Nuts made from hardened alloyed steel.

Order ID	Length mm
446294.0100	**130**

FUTURO



446296 Snipe-nose electronics pliers FUTURO

Long, reinforced jaws, high-quality ball bearing steel, induction-hardened gripping jaws 45 HRC, anti-glare, scratch-free satin finish, ergonomic multi-component grip coverings with soft, comfortable grip surface, electrically conductive, dissipative. Double leaf springs made of stainless steel, high precision and strength thanks to an overlap joint with screw. Nuts made from hardened alloyed steel.

Order ID	Length mm
446296.0100	**135**
446296.0200	**135**

448748 Precision tweezer set FUTURO

5-piece, low-carbon austenitic steel, anti-magnetic, good corrosion resistance to most chemicals, salts and acids, supplied in a case with foam insert



Appropriate spare parts:
448732 Precision tweezers FUTURO

Order ID	Parts
448748.0100	**5**

448732 Precision tweezers FUTURO

Type SA, low-carbon austenitic steel, anti-magnetic, good corrosion resistance to most chemicals, salts and acids

Suitable for:
448748 Precision tweezer set FUTURO

Order ID	Type	Length mm
448732.0100	**00.SA**	120
448732.0200	**2A.SA**	120
448732.0300	**3C.SA**	110
448732.0400	**5.SA**	110
448732.0500	**7.SA**	120
448732.0600	**AA.SA**	130
448732.0700	**SS.SA**	140

448732.0100

448732.0200

448732.0300

448732.0400

448732.0500

448732.0600

448732.0700

448946 SMD tweezer set FUTURO

5-piece, low-carbon austenitic steel, anti-magnetic, good corrosion resistance to most chemicals, salts and acids, supplied in a case with foam insert



Appropriate spare parts:
448936 SMD tweezers FUTURO

Order ID	Parts
448946.0100	**5**

448936 SMD tweezers FUTURO

Type SM.SA, easy handling of the smallest SMD components, low-carbon austenitic steel, anti-magnetic, good corrosion resistance to most chemicals, salts and acids

Suitable for:
448946 SMD tweezer set FUTURO

Order ID	Type	Length mm
448936.0100	**SM103.SA**	115
448936.0200	**SM107.SA**	120
448936.0300	**SM108.SA**	120
448936.0400	**SM111.SA**	115
448936.0500	**SM115.SA**	115

448936.0100

448936.0200

448936.0300

448936.0400

448936.0500

FUTURO



448772.0100



448772.0200



448772.0300



448772.0400

448772 Precision tweezers FUTURO

Type CFR.SA, tweezers developed specifically for the electronics industry, significant cost savings with **interchangeable, durable and self-aligning replacement tips** made of polyamide, reinforced with carbon fibre, anti-magnetic stainless steel handles, ideally suited to handling sensitive electronic components, as well as ceramic and glass parts where non-metallic scratching is not critical

Appropriate accessories:
448784 Set of replacement tips FUTURO

Appropriate spare parts:
448784 Set of replacement tips FUTURO

Order ID	Type	Length mm	Order ID	Type	Length mm
448772.0100	**249CFR.SA**	130	448772.0500	**7CFR.SA**	130
448772.0200	**259CFR.SA**	130	448772.0600	**00CFR.SA**	130
448772.0300	**2ACFR.SA**	130	448772.0700	**3CFR.SA**	130
448772.0400	**5CFR.SA**	130	448772.0800	**246CFR.SA**	125

FUTURO



448784.0100 448784.0200



448784.0300 448784.0400



448784.0500

448784 Set of replacement tips FUTURO

Type CF, polyamide replacement tips reinforced with carbon fibre material, heat-stabilised, very high tensile and bending strength, low friction, self-lubricating properties, good chemical resistance to oils, greases, fuels and non-polar solvents, not resistant to strong acids, alkalis and heat. **Includes three mounting screws per pair.**

Usable with:
448772 Precision tweezers FUTURO

Suitable for:
448772 Precision tweezers FUTURO

Order ID	Type	Length mm	Order ID	Type	Length mm
448784.0100	**A249CF**	40	448784.0500	**A7CF**	40
448784.0200	**A259CF**	40	448784.0600	**A00CF**	40
448784.0300	**A2ACF**	40	448784.0700	**A3CF**	40
448784.0400	**A5CF**	40	448784.0800	**A246CF**	36

452450 Nylon hammer FUTURO





Robust soft-face mallet for straightening workpieces on machine tables and for gentle blows during assembly work. Thanks to integrated **rebound damping** through movable weights in the hammer head, it enables **precise blows without rebound** - powerful and controlled. The replaceable striking inserts are made of particularly tough, wear-resistant nylon (74 ±5 Shore D) and guarantee an exceptionally long service life - even under intensive use. Tubular steel handle with non-slip, ergonomically shaped plastic grip. Replaceable, splinter-free nylon inserts.

Appropriate spare parts:
452455 Nylon head FUTURO

Order ID	**Head Ø mm**	Head length mm	Weight g
452450.0100	**30**	110	610
452450.0200	**40**	115	800
452450.0300	**50**	115	1140

452455 Nylon head FUTURO

Nylon inserts made of particularly tough, wear-resistant nylon (74 ±5 Shore D).



Suitable for:
452450 Nylon hammer FUTURO

Order ID	**Ø mm**	Weight g
452455.0100	**30**	16
452455.0200	**40**	31
452455.0300	**50**	52

452030 Cross pein hammer FUTURO

DIN 1041, painted head, face and pein fine-ground, with steel handle protection sleeve and double-cambered hickory handle.



Order ID	**Weight g**	Order ID	**Weight g**
452030.0100	**200**	452030.0500	**800**
452030.0200	**300**	452030.0600	**1000**
452030.0300	**400**	452030.0700	**1500**
452030.0400	**500**	452030.0800	**2000**

452118 Club hammer FUTURO

DIN 6475, with steel handle protection sleeve and cambered hickory handle.



Appropriate spare parts:
452820 Handles for club hammers

Order ID	**Weight g**	Order ID	**Weight g**
452118.0100	**1000**	452118.0200	**1500**

452661 Copper hammer FUTURO

Ground on all sides, with hickory handle.



Order ID	**Weight g**	Order ID	**Weight g**
452661.0100	**250**	452661.0500	**1500**
452661.0200	**500**	452661.0600	**2000**
452661.0300	**750**	452661.0700	**2500**
452661.0400	**1000**		

452071 Cross pein hammer FUTURO

DIN 1041, painted head, face and pein fine-ground, with unbreakable fibreglass handle.



Order ID	**Weight g**	Order ID	**Weight g**
452071.0100	**300**	452071.0200	**500**

500



452264 Nylon head FUTURO

per piece.

Order ID	Head Ø mm	Order ID	Head Ø mm
452264.0100	**25**	452264.0300	**35**
452264.0200	**30**	452264.0400	**40**



452125.0100

452125 Club hammer FUTURO with fibreglass handle

DIN 6475, with unbreakable fibreglass handle.

Order ID	Weight g	Order ID	Weight g
452125.0100	**1000**	452125.0200	**1500**

453045 Taper punch FUTURO

DIN 6458 B, in chrome-vanadium air-hardening steel, octagonal shank, fully tempered, ground and polished, rounded edges. Impact head tempering to DIN standard largely eliminates chipping and bulge formation.



Order ID	Ø mm	Length mm	Shaft thickness mm
453045.0100	**1**	120	10
453045.0200	**2**	120	10
453045.0300	**3**	120	10
453045.0400	**4**	120	10
453045.0500	**5**	120	10
453045.0600	**6**	120	10
453045.0700	**8**	120	10

453050 Taper punch set FUTURO

Set of 5 taper punches Ø 1...5 mm and 1 centre punch size 4, in plastic holder. In chrome-vanadium air-hardening steel, octagonal shank, fully tempered, ground and polished, rounded edges. Impact head tempering to DIN standard largely eliminates chipping and bulge formation.





Order ID	Size
453050.0100	**1, 2, 3, 4, 5**

453475 Parallel pin punch FUTURO

DIN 6450, in chrome-vanadium air-hardening steel, octagonal shank, fully tempered, ground and polished, rounded edges. Impact head tempering to DIN standard largely eliminates chipping and bulge formation.





Order ID	Ø mm	Mandrel length mm	Length mm	Shaft thickness mm	Order ID	Ø mm	Mandrel length mm	Length mm	Shaft thickness mm
453475.0100	**2**	30	150	10	453475.0700	**7**	50	150	10
453475.0200	**2.5**	30	150	10	453475.0800	**8**	50	150	10
453475.0300	**3**	40	150	10	453475.0900	**9**	50	150	12
453475.0400	**4**	50	150	10	453475.1000	**10**	50	150	14
453475.0500	**5**	50	150	10	453475.1100	**12**	50	150	14
453475.0600	**6**	50	150	10	453475.1200	**14**	50	150	16

453480 Parallel pin punch set FUTURO

Set of 6 parallel pin punches in plastic holder. **DIN 6450,** in chrome-vanadium air-hardening steel, octagonal shank, fully tempered, ground and polished, rounded edges. Impact head tempering to DIN standard largely eliminates chipping and bulge formation.





Order ID	Size mm
453480.0100	**3 4 5 6 8 10**

453491 Parallel pin punch with guide sleeve FUTURO

Chrome-vanadium steel, zinc chromated, guide sleeve knurled, punch pin hardened. Ø 0.9 to 4.9 mm with loose guide sleeve, Ø 5.9 mm with fixed sleeve.





Order ID	Ø mm	Order ID	Ø mm
453491.0100	**0.9**	453491.0500	**2.8**
453491.0200	**1.4**	453491.0600	**3.4**
453491.0300	**1.8**	453491.0700	**3.9**
453491.0400	**2.4**	453491.0900	**5.9**



453631 Rivet die FUTURO

DIN 6435, in chrome-vanadium air-hardening steel, for rivets to DIN 660. Octagonal shank, fully tempered, ground and polished. Impact head tempering to DIN standard largely eliminates chipping and bulge formation.

Order ID	**for Ø**
453631.0100	**2**
453631.0200	**3**
453631.0300	**4**
453631.0400	**5**
453631.0500	**6**



453641 Rivet setter FUTURO

DIN 6434, in chrome-vanadium air-hardening steel, suitable for rivets to DIN 660, 661, 662 and 674. Octagonal shank, fully tempered, ground and polished. Impact head tempering to DIN standard largely eliminates chipping and bulge formation.

Order ID	**for Ø**	Ø Hole mm
453641.0100	**2**	2.5
453641.0200	**3**	3.5
453641.0300	**4**	4.5
453641.0400	**5**	6
453641.0500	**6**	7



454025 Centre punch FUTURO

DIN 7250, in chrome-vanadium air-hardening steel, octagonal shank, fully tempered, ground and polished. Impact head tempering to DIN standard largely eliminates chipping and bulge formation.

Order ID	**Ø** **mm**	Length mm	Shaft thickness mm
454025.0100	**3**	100	8
454025.0200	**4**	120	10
454025.0300	**5**	120	10



454030 Centre punch with carbide tip FUTURO

in chrome-vanadium steel.

Order ID	**Size**	Length mm	Shaft thickness mm
454030.0100	**3**	120	10



454110 Automatic centre punch FUTURO

In free-machining steel, nickel-plated, self-impacting, precision model, with interchangeable hardened tip, adjustable impact force.

Order ID	**Length** **mm**	Impact strength kg
454110.0150	**125**	6...13



454115 Replacement centre punch tips FUTURO

Suitable for:
454110 Automatic centre punch FUTURO

Order ID	**Ø** **mm**
454115.0150	**4**
454115.0200	**6**



454305 Flat chisel FUTURO

DIN 6453, in chrome-vanadium air-hardening steel, flat oval, fully tempered, polished chisel tip. Impact head tempering to DIN standard largely eliminates chipping and bulge formation.

Order ID	**Edge width** **mm**	Length mm	Shaft thickness mm
454305.0100	**18**	125	17x11
454305.0200	**18**	150	17x11
454305.0300	**21**	175	20x12
454305.0400	**24**	200	23x13
454305.0500	**27**	350	23x13
454305.0600	**30**	500	26x13

454325 Cross-cut chisel FUTURO

DIN 6451, in chrome-vanadium air-hardening steel, flat oval, fully tempered, polished chisel tip. Impact head tempering to DIN standard largely eliminates chipping and bulge formation.



Order ID	Edge width mm	Length mm	Shaft thickness mm
454325.0100	**4**	100	14x9
454325.0200	**5**	125	17x11
454325.0300	**6**	150	17x11
454325.0400	**7**	175	17x11
454325.0500	**8**	200	20x12
454325.0600	**9**	250	23x13

454395 Electrician's chisel FUTURO

In chrome-vanadium air-hardening steel, octagonal shank, fully tempered, polished chisel tip. Impact head tempering to DIN standard largely eliminates chipping and bulge formation.



Order ID	Edge width mm	Length mm	Shaft thickness mm
454395.0100	**10**	250	8
454395.0200	**12**	250	10
454395.0300	**14**	250	12

454571 Grooving chisel FUTURO

Like **DIN 6455,** in chrome-vanadium air-hardening steel, octagonal shank, fully tempered, polished chisel tip. Impact head tempering to DIN standard largely eliminates chipping and bulge formation.



Order ID	Edge width mm	Length mm	Shaft thickness mm
454571.0100	**2**	150	10
454571.0200	**3**	150	10
454571.0300	**4**	150	10
454571.0400	**5**	150	12
454571.0500	**6**	150	12

454581 Brick chisel FUTURO

DIN 7254 B, in chrome-vanadium air-hardening steel, octagonal shank, fully tempered, polished chisel tip. Impact head tempering to DIN standard largely eliminates chipping and bulge formation.



Order ID	Edge width mm	Length mm	Shaft thickness mm
454581.0100	**26**	300	18
454581.0200	**30**	400	20

454591 Point chisel FUTURO

DIN 7256 B, in chrome-vanadium air-hardening steel, octagonal shank, fully tempered, polished chisel tip. Impact head tempering to DIN standard largely eliminates chipping and bulge formation.



Order ID	Length mm	Shaft thickness mm
454591.0100	**300**	18

557135 Wrecking bar FUTURO

Hexagon, special tool steel, forged, hardened, red powder coated.



Order ID	Length mm	Hexagonal mm
557135.0100	**800**	18

453560 Parallel pin punch set FUTURO

In robust metal case, **with guide sleeve**, made of chrome-vanadium steel, zinc-chromated, guide sleeve corded, hardened driver pin. Ø 0.9 to 3.9 mm with loose guide sleeve, Ø 5.9 mm with fixed sleeve.



Appropriate spare parts:
453491 Parallel pin punch with guide sleeve FUTURO

Order ID	Parts	Ø mm
453560.0100	**8**	0.9 1.4 1.8 2.4 2.8 3.4 3.9 5.9



457050 Safety knife FUTURO

Robust safety knife made of impact-resistant ABS plastic with ergonomic 2-component handles.**Both cutting edges are shielded** so that your fingers are especially protected. Replaceable **2-in-1 blade** with lugs for piercing (e.g. in cardboard and film) and corners on the blade head for parcel tape. Sharp cutting edge for easy cutting of cardboard, foil or adhesive tape.

Appropriate spare parts:
457052.0100 Spare blades FUTURO 45 mm, pack of 5

Order ID	**Length mm**	Cutting depth mm
457050.0100	**165**	7.5



457052 Spare blades FUTURO

2-in-1 blade with noses for piercing (e.g. in cardboard and foil) and corners at the blade head for parcel tape. Sharp cutting edge for easy cutting of cardboard, foil or adhesive tapes. Pack of 5 pieces.

Suitable for:
457050.0100 Safety knife FUTURO 165 mm

Order ID	**Cutting depth mm**	Blade width mm
457052.0100	**7.5**	45



457185 Universal knife FUTURO

Practical, robust universal knife with hardened die-cast zinc housing and clip. Metal blade guide with sliding mechanism, supplied with 1 blade made of high-quality SK2 steel.

Order ID	**Blade width mm**	Length mm
457185.0100	**9**	133



457170.0100



457170.0200

457170 Universal knife FUTURO

Robust, hardened die-cast zinc housing with ribbed, ergonomic soft-touch handle for safe working, metal blade guide with sliding mechanism, supplied with 1 blade made of high-quality SK2 steel.

Appropriate accessories:
457191 Replacement blades FUTURO

Order ID	**Blade width mm**	Length mm
457170.0100	**9**	133
457170.0200	**18**	155



457180 Universal knife FUTURO

Practical, robust universal knife with manganese steel housing and clip. The multifunction tip can be used e.g. as a staple remover. With blade guide with sliding mechanism, supplied with 1 blade made of high-quality SK2 steel.

Order ID	**Blade width mm**	Length mm
457180.0100	**9**	140



457191 Replacement blades FUTURO

Blades made of high-quality SK2 steel with impressive sharpness yet highly robust and flexible. **Pack of 10 blades.**

Order ID	**Blade width mm**
457191.0100	**9**
457191.0200	**18**
457191.0300	**19**

457160 Universal safety knife FUTURO

Robust, hardened die-cast zinc housing with ergonomic soft-touch handle for safe working, metal blade guide. **Two-part push-button mechanism**; automatic locking of the blade in the selected position, front button for blade extension without locking, with automatic blade retraction; supplied with 1 blade made of high-quality SK2 steel.

Order ID	**Blade width mm**	Length mm
457160.0100	**9**	165
457160.0200	**18**	195



457160.0100



457160.0200

457150 Safety knife FUTURO

Robust, hardened die-cast zinc housing with ergonomic soft-touch handle for safe working. **Automatic blade retraction** after each cutting process for maximum safety; faster, tool-less blade changes, supplied with 1 blade made of high-quality SK2 steel.



Appropriate accessories:
457191 Replacement blades FUTURO

Order ID	**Length mm**
457150.0100	**162**

461225 Universal hand deburrer set FUTURO



Rotating deburring blades Ø 3.2 mm and Ø 6 mm and triangular scraper, universal deburrer set in practical plastic case with foam insert for many different applications.

Order ID	Scope of delivery
461225.0100	1 x Universal deburrer with multi-component handle FUTURO (Ø 3.2 mm) 1 x Universal deburrer with multi-component handle FUTURO (Ø 6 mm) 1 x Universal deburrer with comfort handle FUTURO (Ø 3.2 mm) 1 x Triangular scraper with ergonomic acetal body handle FUTURO (3 mm) 1 Pack of 6 heavy-duty deburrer blades FUTURO Ø 6 mm (3 each of R-10S and R-15S INOX) 1 Pack of 10 deburrer blades FUTURO Ø 3.2 mm (2 each of C-10, C-20, C-101, C-15 and C-30)

461925 Universal deburrer set FUTURO



Rotating blades P Ø 2.6 mm, for internal and external deburring of metals and plastics.

Appropriate accessories:
461360 Replacement blade FUTURO

Order ID	Length mm	Designation
461925.0100	120	Hexagonal handle with quick-change chuck. Robust deburrer with powder-coated handle and practical protective cap, which protects the blade and also serves as an ergonomic handle. **With mounted HSS blade P-1 and ten spare blades P-1**

461930 Universal deburrer set FUTURO



Rotating blades C Ø 3.2 mm, for internal and external deburring of metals and plastics.

Appropriate accessories:
461380 Replacement blade FUTURO

Order ID	Length mm	Designation
461930.0100	125	Hexagonal handle with quick-change chuck. Robust deburrer with powder-coated handle and practical protective cap, which protects the blade and also serves as an ergonomic handle. **With mounted HSS blade C-10 and ten spare blades C-10**

461700 Universal deburrer FUTURO



Rotating blades P Ø 2.6 mm, for internal and external deburring of metals and plastics.

Appropriate accessories:
461360 Replacement blade FUTURO

Order ID	Length mm	Designation
461700.0100	150	Multi-component handle and replaceable blades, steel holder up to 100 mm extendable for hard-to-reach places; with 1 HSS blade each of P-1, P-2, P-3

461705 Universal deburrer FUTURO



Rotating blades C Ø 3.2 mm, for internal and external deburring of metals and plastics.

Appropriate accessories:
461380 Replacement blade FUTURO

Order ID	Length mm	Designation
461705.0100	165	Multi-component handle and replaceable blades, steel holder up to 100 mm extendable for hard-to-reach places; with 1 HSS blade each of C-10, C-20, C-30, C-15, C-35

461710 Universal deburrer FUTURO



Rotating blades C Ø 3.2 mm, for internal and external deburring of metals and plastics.

Appropriate accessories:
461380 Replacement blade FUTURO

Order ID	Length mm	Designation
461710.0100	145	Multi-component handle and replaceable blades that can be stored in the handle, metal blade holder, not extendable; with 1 HSS blade each of C-10, C-20, C-30

461715 Universal deburrer FUTURO

Rotating blades C Ø 3.2 mm, for internal and external deburring of metals and plastics.



Appropriate accessories:
461380 Replacement blade FUTURO

Order ID	Length mm	Designation
461715.0100	130	Comfort handle with soft sleeve and ergonomic hand rest with ball head, replaceable blades, metal blade holder, with mounted HSS blade C-10

461720 Universal deburrer FUTURO

HEAVY DUTY

Rotating blades R Ø 6 mm, for internal and external deburring of metals and plastics.



extra strong blades

Appropriate accessories:
461740 Replacement blade FUTURO

Order ID	Length mm	Designation
461720.0100	155	Multi-component handle and replaceable blades that can be stored in the handle, metal blade holder, not extendable; with 1 HSS blade each of R-10(S) and R-15(S)

461765 Universal deburrer FUTURO

Rotating blades P Ø 2.6 mm, for internal and external deburring of metals and plastics.



Appropriate accessories:
461360 Replacement blade FUTURO

Order ID	Length mm	Designation
461765.0100	120	Economical deburrer, 12 mm hexagonal handle with steel blade holder, replaceable blades, with 1 HSS blade P-1

461770 Universal deburrer FUTURO

Rotating blades C Ø 3.2 mm, for internal and external deburring of metals and plastics.



Appropriate accessories:
461380 Replacement blade FUTURO

Order ID	Length mm	Designation
461770.0100	135	Economical deburrer, 12 mm hexagonal handle with steel blade holder, replaceable blades, with 1 HSS blade C-10

461360 Replacement blade FUTURO

Rotating blades P Ø 2.6 mm, in HSS, for external, internal and key slot deburring. Also suitable for CP GRAT EX, NOGA and VARGUS tools. **Each blade laser marked** for easy assignment.



P-1 HSS / 310



P-2 HSS / 320



P-3 HSS / 330



P-6 HSS / 360

Usable with:
461010 Universal deburring tool NOGA
461700 Universal deburrer FUTURO
461765 Universal deburrer FUTURO
461925 Universal deburrer set FUTURO

Order ID	**Type**	Designation
461360.0100	**P-1 HSS**	Universal blade for steel, aluminium, copper, plastic, etc. Clockwise rotation
461360.0200	**P-2 HSS**	For cast iron and brass, works in both directions of rotation
461360.0300	**P-3 HSS**	Deburrs thin-walled material on the inside and outside in a single operation up to 6 mm material thickness, clockwise rotation
461360.0500	**P-6 HSS**	for reverse deburring and for hard-to-reach places, direction of rotation right

FUTURO



C-10 HSS / E 100



C-15 INOX



C-20 HSS / E 200



C-30 HSS / E 300



C-30 HSS (L+R)



C-35 HSS / E 350



C-60 HSS / E 600



C-101 HSS



C-102 STAR

461380 Replacement blade FUTURO

Rotating blades C Ø 3.2 mm, in HSS, for steel and aluminium, for external, internal and keyway deburring. Also suitable for CP GRAT EX, NOGA and VARGUS tools. **Each blade laser marked** for easy assignment.

Usable with:
461025 Universal deburring tool NOGA
461705 Universal deburrer FUTURO
461710 Universal deburrer FUTURO
461715 Universal deburrer FUTURO
461735 Hand deburrer set FUTURO
461770 Universal deburrer FUTURO
461930 Universal deburrer set FUTURO

Order ID	Type	Designation
461380.0100	**C-10 HSS**	For metals and plastics, for internal and external deburring, clockwise rotation
461380.0110	**C-10 TIN**	with TiN coating, for hard, tough metals and plastics, for internal and external deburring, direction of rotation right
461380.0120	**C-10 STAR**	with TiAlN coating for the toughest applications and longest service life when machining metals and plastics, for internal and external deburring, direction of rotation right
461380.0150	**C-15 INOX**	for INOX and hard plastics, direction of rotation left and right
461380.0170	**C-15 INOX STAR**	with TiAlN coating for the toughest applications and longest service life when machining stainless steel and hard plastics, for internal and external deburring, direction of rotation left and right
461380.0200	**C-20 HSS**	for cast iron and brass, works in both directions of rotation
461380.0220	**C-20 TIN**	with TiN coating, for hard, tough cast iron and brass, works in both directions of rotation
461380.0250	**C-20 STAR**	with TiAlN coating for the toughest applications and longest service life when machining cast iron and brass, works in both directions of rotation
461380.0300	**C-30 HSS**	Deburrs thin-walled material on the inside and outside in a single operation, clockwise rotation
461380.0350	**C-30 HSS (L+R)**	Deburs thin-walled material internally and externally in one step, direction of rotation left and right
461380.0370	**C-35 HSS**	deburs straight external edges on most materials, direction of rotation left and right
461380.0380	**C-60 HSS**	for reverse deburring up to a thickness of 20 mm and in hard-to-reach places, direction of rotation right
461380.0390	**C-101 HSS**	for deburring small holes from 1.5 mm in steel and aluminium
461380.0400	**C-101 STAR**	for deburring small holes from 1.5 mm in steel and aluminium, long service life with TiAlN coating
461380.0500	**C-102 STAR**	for deburring small holes from 3 mm in steel and aluminium, long service life with TiAlN coating

FUTURO



R-10S



R-15S INOX

461740 Replacement blade FUTURO

HEAVY DUTY

Rotating blades R Ø 6 mm, made from HSS (M2). Also suitable for CP GRAT EX tools. **Each blade laser marked** for easy assignment.

Usable with:
461720 Universal deburrer FUTURO

Order ID	Type	Designation
461740.0100	**R-10S**	Universal blade extra strong, for particularly tough internal and external deburring applications involving steel, aluminium, copper, zinc etc., direction of rotation right
461740.0200	**R-15S INOX**	Universal blade extra strong, for particularly tough internal and external deburring applications involving stainless steel, cast iron, brass etc., direction of rotation left and right

FUTURO



461775 Triangular scraper FUTURO

For metals and plastics.

Appropriate accessories:
461745 Replacement scraper blade FUTURO

Order ID	Designation
461775.0100	Long-lasting triangular scraper with ergonomic acetal body handle and ball knob, replaceable blades, blade extendable, with 1 triangular scraper Ø 3 x 75 mm

461745 Replacement scraper blade FUTURO

For triangular scraper, made from HSS.

SCR-3 HSS (75 mm)



SCR-3 HSS (50 mm)



SCR-345

Usable with:
461775 Triangular scraper FUTURO

Order ID	Type	Designation
461745.0100	**SCR-3 HSS**	Triangular scraper Ø 3.2 x 75 mm
461745.0200	**SCR-3 HSS**	Triangular scraper Ø 3.2 x 50 mm, also suitable for NOGA tools
461745.0250	**SCR-3 HSS STAR**	Triangular scraper Ø 3.2 x 50 mm, with TiAlN coating for the toughest use and longest service life when working on metals and plastics. Also suitable for NOGA tools
461745.0300	**SCR-345**	Internal scraper, 45° angled Ø 3.2 x 73 mm

461735 Hand deburrer set FUTURO

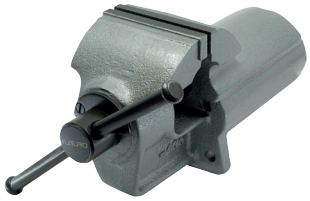
Promotional set with rotating blades C Ø 3.2 mm, for internal and external deburring of metals and plastics.



Appropriate accessories:
461380 Replacement blade FUTURO

Order ID	Designation
461735.0100	Multi-component handle and interchangeable blades, with 2 HSS blades each of C-10, C-20, C-101 and 1 blade each of C-30, C-15, C-35 and C-10(C)

FUTURO



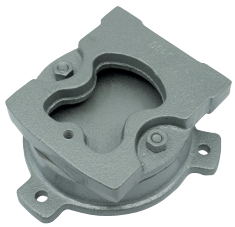
413970 Workbench vice FUTURO

Parallel vice, opens to the rear, made using the special casting process. Ideal as a standard workbench vice with a high level of clamping accuracy. Interchangeable serrated jaws with a hardened surface. Long prismatic precision guide. Stable, concealed spindle bearing protects against dirt. Smooth-running spindle with trapezoidal thread ensures the jaws open extra rapidly. Machined anvil surface.

Appropriate accessories:
413882 Vice jaws
413975 Swivel plate FUTURO
413980 Vice lift FUTURO
413985 Replacement jaws FUTURO

Order ID	**Jaw width mm**	Clamping width mm	Weight kg
413970.0100	**80**	110	6
413970.0200	**100**	140	11
413970.0300	**120**	185	18
413970.0400	**150**	220	25

FUTURO



413975 Swivel plate FUTURO

Suitable for workbench vice FUTURO.

Usable with:
413970 Workbench vice FUTURO

Order ID	**for type**	Weight kg
413975.0100	**80 mm**	2.5
413975.0200	**100 mm**	4.0
413975.0300	**120 mm**	5.5
413975.0400	**150 mm**	8.0

FUTURO



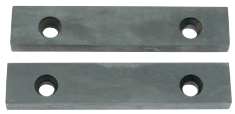
413980 Vice lift FUTURO

Suitable for workbench vice FUTURO. With gas spring.

Usable with:
413970 Workbench vice FUTURO

Order ID	**for type**	Order ID	**for type**
413980.0100	**80 mm**	413980.0300	**120 mm**
413980.0200	**100 mm**	413980.0400	**150 mm**

FUTURO



413985 Replacement jaws FUTURO

In pairs, suitable for workbench vices FUTURO.

Usable with:
413970 Workbench vice FUTURO

Order ID	**Jaw width mm**	Order ID	**Jaw width mm**
413985.0100	**80**	413985.0500	**80**
413985.0200	**100**	413985.0600	**100**
413985.0300	**120**	413985.0700	**120**
413985.0400	**150**	413985.0800	**150**

419620 Screw clamp FUTURO

Robust malleable cast iron screw clamp with a clamping force of up to 5500 N, stable hollow profile rail with fluting, high-quality and ergonomic two-component handle for high force transmission, protective caps on the clamping surfaces.

Order ID	Clamping width mm	Capacity mm	Rail mm
419620.0100	**120**	**60**	20 x 5
419620.0200	**160**	**80**	25 x 6
419620.0300	**200**	**100**	27 x 7
419620.0400	**250**	**120**	29 x 9
419620.0500	**300**	**120**	29 x 9
419620.0600	**400**	**120**	29 x 9



419625 All-steel screw clamp FUTURO

Robust all-steel screw clamp with a clamping force of up to 5000 N, tempered sliding and fixed clamp for spring and elastic clamping, high-quality and ergonomic two-component handle for high force transmission.

Order ID	Clamping width mm	Capacity mm	Rail mm
419625.0100	**120**	**60**	13.5 x 6.5
419625.0200	**160**	**80**	16 x 7.5
419625.0300	**200**	**100**	19.5 x 9.5
419625.0400	**250**	**120**	22 x 10.5
419625.0500	**300**	**120**	25 x 12
419625.0600	**400**	**120**	25 x 12



FUTURO



466740 Screw extractor FUTURO

For broken-off screws and pins, in vanadium steel, black-oxide finish.

Order ID	Size	for Screws	Length mm	Ø max. mm	Ø min. mm	Twist drill mm
466740.0100	**1**	**M3...M6**	50	3.6	1.75	2.5
466740.0200	**2**	**M6...M8**	57	5	2.2	3
466740.0300	**3**	**M8...M11**	64	6.5	3.3	4.5
466740.0400	**4**	**M11...M14**	71	8.8	4.75	6
466740.0500	**5**	**M14...M18**	78	11	5.36	8
466740.0600	**6**	**M18...M24**	85	15	9.50	11
466740.0700	**7**	**M24...M33**	92	19	12.70	13.5
466740.0800	**8**	**M33...M45**	100	24.0	17.50	18.5

FUTURO

466745 Screw extractor set FUTURO

For broken-off screws and pins, in vanadium steel, black-oxide finish, in plastic case.



466745.0300

Appropriate spare parts:
466740 Screw extractor FUTURO

Order ID	Size	for Screws mm
466745.0100	**1...5**	M3...M11
466745.0200	**1...6**	M3...M24
466745.0300	**1...8**	M3...M45

470490 Rack and pinion press FUTURO

Constant pressure over the entire stroke; direct force transfer enables sensitive pressing; ram secured against turning; stroke setting via adjusting screw or stop; lever home position adjustable 360°; long, honed, high precision ram guide; adjustable return force. Rack and pinion presses are ideal for press-fitting long parts and for creating long joins.

Order ID		470490.0100	470490.0200
Pressure	**kN**	**1.5**	**2.5**
Stroke	mm	40	50
Working height	mm	40...235	42...290
Spindle bore	mm	10 H7	10 H7
Capacity	mm	63	80
Table surface	mm	100 x 65	157 x 115
T-slot	mm	10	12
Height	mm	355	450
Weight	kg	8.5	21



1.5

470550 Toggle lever press FUTURO

Factory-set pressure point; press head easily height-adjustable; hardened and ground ram; long, honed, high precision ram guide; ground press table.
Toggle presses reach their rated force only at the end of the ram stroke. With the toggle lever mechanism, a relatively low force of about 150 N is enough to produce the high working pressure of the press. For this reason they are used in applications where the full force of the press is only required for a short distance at the end of the stroke, e.g. in component assembly, punching, riveting, embossing, gluing etc.

Order ID		470550.0100	470550.0200	470550.0300	470550.0400
Pressure	**kN**	**5**	**7.5**	**15**	**25**
Stroke	mm	40	40	60	60
Working height	mm	45...220	53...265	43...170	65...295
Spindle bore	mm	10 H7	10 H7	10 H7	10 H7
Capacity	mm	63	80	100	100
Table surface	mm	100 x 65	157 x 115	175 x 140	185 x 145
T-slot	mm	10	12	12	12
Height	mm	355	450	580	570
Weight	kg	10	20	43	46



5

470572 Return spring FUTURO

in packs of 5 pieces.

Suitable for:
470490 Rack and pinion press FUTURO
470550 Toggle lever press FUTURO

Order ID	for kN	Order ID	for kN
470572.0100	**5**	470572.0500	**1.5**
470572.0200	**7.5**	470572.0600	**2.5**
470572.0300	**15 / 25**		



for rack and pinion press



for toggle lever press



496435 Air engraving pen FUTURO

For marking metals, glass, plastics, ceramic, stone, etc. Powerful marking even on hardened tool steel by means of tungsten carbide stylus. Extremely low vibration level, simple stylus exchange. Supplied including engraving stylus and air supply hose 2.5 m.

Appropriate accessories:
496440 Engraving stylus

Order ID		496435.0100
Type		**6100**
Frequency	Hz	540
Ø x length	mm	17 x 160
Sound pressure level	dB(A)	65
Air consumption	l/min	54
Threaded connection		R 1/4“ a
Weight	g	150

550305 Tool case FUTURO

Very rugged, hard shell tool case, made from scratch-, impact- and break-resistant polypropylene, solid aluminium frame, with 2 metal locks; 1 tool pallet with FLEXIPOUCHES tool holders on both sides, 1 base compartment with **FLEXI POUCHES** tool holders on both sides, metal frame for maximum stability, ergonomic rubber coated handle, document wallet, base compartment with adjustable dividers, address frame **(tools not included)**.
FLEXI POUCHES: an extremely elastic band for improved hold on the tools, suitable for broadest possible range of sizes. The tools are always in the right position, even if you turn the case over.

Order ID	**Type**	Dimensions mm	Support capacity kg	Weight kg
550305.0100	**215PTS**	465 x 352 x 215	25	5.3



550448 Wheeled tool case FUTURO



Very rugged, hard-shell tool case, made from polypropylene resistant to scratching, impact and breakage, solid aluminium frame, with 2 metal locks; 1 main board with **FLEXI POUCHES** tool holders on both sides, 1 bottom tray with **FLEXI POUCHES** tool holders on one side, ergonomic rubber coated handle, document wallet, base compartment with adjustable dividers, address frame, wheels with ball bearings, telescopic handle, **tools not included**.
FLEXI POUCHES: An extremely elastic band for improved hold on the tools, suitable for broadest possible range of sizes. The tools are always in the right position, even if you turn the case over.

Order ID	**Internal size mm**	Support capacity kg	Weight kg
550448.0100	**465 x 352 x 255**	25	6



550497 Accessories FUTURO

PSS system: Professional Storage System; rubber rails keep the tool in place; light, resistant and elastic.

Order ID	Designation	
550497.0100	**Foam** 3 inserts 465 x 352 x 30 mm, entire surface prepunched with 15 x 15 mm raster 1 insert 465 x 352 x 10 mm, not prepunched 2 inserts 140 x 352 x 30 mm for filling the base compartment in case	
550497.0200	**Tool board** with 12 tool holders and 2 PSS systems on the front, rubber band for 18 tools at the rear, size: 465 x 352 x 215 mm	
550497.0300	**Small parts box** made of Polypropylene, impact-resistant, with 6 compartments, size 163 x 120 x 30 mm	
550497.0400	**Small parts box** made of Polypropylene, impact-resistant, with 13 compartments, size 163 x 120 x 30 mm	
550497.0500	**Small parts box** made of Polypropylene, impact-resistant, without partitions, size 163 x 120 x 30 mm	



554415 2-in-1 Transport trolley FUTURO

Practical aid to everyday work as **a transport trolley or a bag cart**, **can be folded up in seconds in only 2 motions**. When used as a transport trolley with a large loading area, it can be pushed by the handle securely and comfortably on 4 wheels. Perfect for luggage, bulky packages, stacking containers etc. When used as a bag cart, it uses 2 easy-running, hard rubber wheels for fast loading and unloading of heavy goods and for convenient transport over steps, drops, curb edges etc. Ideal for business premises, offices and households. Robust design made of steel, aluminium and plastic, powder coated.

Appropriate accessories:
554265 Folding box FUTURO

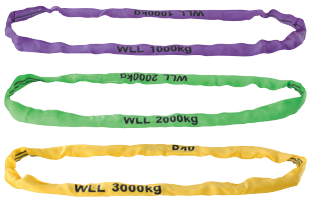
Order ID		554415.0100
Load capacity of platform trolley	kg	120
Load capacity of bag trolley	kg	70
Platform trolley dimensions	mm	450 x 778 x 920
Bag trolley dimension	mm	450 x 416 x 1100
Platform size	mm	390 x 570
Dimensions when folded	mm	389 x 643 x 117
Weight	kg	7.7



550760 Padlock FUTURO

Heavy, solid brass lock **keyed differently,**with genuine pin cylinder, lock body in a single block, steel hasp nickel-plated and hardened, automatic engagement, each lock with 2 nickel-plated brass keys.

Order ID	**Crate width** mm	Clamp Ø mm	Inside clamp height mm	Inside clamp length mm
550760.0100	**25**	4.0	14	13
550760.0200	**30**	4.5	18	16
550760.0300	**40**	6.5	23	22



553121 Round sling FUTURO

Made from polyester, with interwoven indication of the load capacity and **a special fabric structure that provides maximum protection against wear** to ensure a much longer service life. EN 1492-2

Order ID	**Load capacity single** t	**Working length** m	Color
553121.0100	**1**	**1**	purple
553121.0200	**1**	**1.5**	purple
553121.0300	**1**	**2**	purple
553121.0400	**2**	**1**	green
553121.0500	**2**	**1.5**	green
553121.0600	**2**	**2**	green
553121.0700	**2**	**2.5**	green
553121.0800	**3**	**1.0**	yellow
553121.0900	**3**	**1.5**	yellow
553121.1000	**3**	**2.0**	yellow
553121.1200	**3**	**3**	yellow
553121.1300	**3**	**4**	yellow



553131 Round sling FUTURO

Made from polyester, **single ply** with printed indication of the load capacity. EN 1492-2

Order ID	**Load capacity single** t	**Working length** m	Color
553131.0100	**1**	**1.0**	purple
553131.0200	**1**	**1.5**	purple
553131.0300	**1**	**2.0**	purple
553131.0400	**2**	**1.0**	green
553131.0500	**2**	**1.5**	green
553131.0600	**2**	**2.0**	green
553131.0700	**2**	**2.5**	green
553131.0800	**3**	**1.0**	yellow
553131.0900	**3**	**1.5**	yellow
553131.1000	**3**	**2.0**	yellow
553131.1200	**3**	**3.0**	yellow
553131.1300	**3**	**4.0**	yellow

553186 Lifting strap FUTURO

With reinforced loops, two-ply, EN 1492-1

Order ID	Load capacity single t	Width mm	Working length m	Color
553186.0100	1	30	1	purple
553186.0200	1	30	2	purple
553186.0300	1	30	3	purple
553186.0400	1	30	4	purple
553186.0500	1	30	5	purple
553186.0700	2	60	1	green
553186.0800	2	60	2	green
553186.0900	2	60	3	green
553186.1000	2	60	4	green
553186.1100	2	60	5	green
553186.1200	2	60	6	green
553186.1300	3	90	1	yellow
553186.1400	3	90	2	yellow
553186.1500	3	90	3	yellow
553186.1600	3	90	4	yellow
553186.1700	3	90	5	yellow



553226 Lashing and securing strap FUTURO

Made from polyester, for securing loads of all types, quick and easy to use, two-piece strap, carabiner hook and ratchet at each end, EN 12195-2

Order ID	Tensile force strapping kN	Tensile force straight pull kN	Total length m	Width mm	Color
553226.0100	5	2.5	3	25	orange
553226.0200	20	10	6	35	blue



553226.0100 553226.0200

553256 Strap FUTURO

for securing loads of all types, quick and easy to use, high-strength polyester strap, one piece, with ratchet. EN 12195-2

Order ID	Tensile force strapping kN	Total length m	Width mm	Color
553256.0050	10	3	25	orange
553256.0100	10	5	25	orange
553256.0200	10	7	25	orange
553256.0250	20	4	35	blue
553256.0300	20	6	35	blue
553256.0400	20	8	35	blue



553261 Strap FUTURO

For securing loads of all types, quick and easy to use, with clamp lock. EN 12195-2

Order ID	Tensile force strapping kN	Total length m	Width mm	Color
553261.0100	2.5	2	25	orange
553261.0200	2.5	3	25	orange
553261.0300	2.5	4	25	orange



553236 Lashing strap FUTURO

Made from polyester, for securing loads of all types, quick and easy to use, two-piece strap, claw hook and ratchet at each end. EN 12195-2

Order ID	Tensile force straight pull kN	Tensile force strapping kN	Total length m	Width mm	Color
553236.0100	5	10	3	25	orange
553236.0200	10	20	6	35	blue
553236.0300	25	50	8	50	blue



553236.0100 553236.0200



553236.0300



518096 Caulking gun FUTURO

High-quality and robust caulking gun for all 310-ml Euro cartridges. The modern mechanical system with a gear ratio of **26:1** enables precise, fast and energy-saving work even when working with highly viscous materials. **The non-drip feature prevents drops** forming when the pressure on the gun is released.

Order ID	**Dimensions** mm	Weight g
518096.0100	**400 x 220**	620

561172 LED torch FUTURO





High light output with SAMSUNG LED chip, 2 light modes (Low Power/High Power). **Angled lamp head, clip and a strong magnetic base for versatile use as torch and work light**. Splash proof, extremely robust aluminium housing, can withstand falls from up to 1 meter in height. The rubberised application on the handle, the on/off switch and the magnetic base reduce the risk of scratching delicate surfaces and ensure optimal grip even with wet or oily hands.

Appropriate batteries:
2 pieces 155050.0400 - LR03 / 1.5 V (Micro / AAA) (included in scope of delivery).

Order ID		561172.0200
Length	**mm**	**152**
Ø	mm	17.5
Luminous flux	lm	200 / 60
Light output	cd	650
Beam approx.	m	52
Luminous period	h	2.5 / 10
Protection class		IPX4
Weight	g	51

561173 Rechargeable LED torch FUTURO

with additional UV light





Universal rechargeable LED torch with SAMSUNG LED and additional **UV light chip (395 nm)**. 3 light modes (Low Power/Mid Power/High Power). **Angled lamp head, clip and a strong magnetic base for versatile use as torch and work light**. Splash proof, extremely robust aluminium housing, can withstand falls from up to 1 meter in height. The rubberised application on the handle, the on/off switch and the magnetic base reduce the risk of scratching delicate surfaces and ensure optimal grip even with wet or oily hands. On/Off switch with integrated battery indicator, the battery is replaceable and is easily charged via the supplied USB cable.

Order ID		561173.0300
Length	**mm**	**160**
Ø	mm	29
Battery		1 x Typ 18650 Li-Ion
Battery voltage	V	3.6
Battery capacity	Ah	2.6
Luminous flux	lm	900 / 400 / 90
Light output	cd	2000
Beam approx.	m	89
Luminous period	h	3 / 4 / 20
Protection class		IP54
Weight	g	155

561626 Replacement battery FUTURO



Li-ion replacement battery for FUTURO battery-powered LED spotlights.

Order ID	**Battery capacity Ah**	Battery voltage V
561626.0100	**4.4**	7.4
561626.0200	**8.8**	7.4

FUTURO





561155 Cordless LED torch and inspection lamp FUTURO

IP 54

Perfect LED lamp for every tool box. The **Interchangeable lamp head with a quick-change system** means it can be used as a normal torch with a beam range of 150 m or as an inspection light at 24 m.

Appropriate accessories:
561157 Accessories for cordless LED torch and inspection lamp FUTURO

Order ID		561155.0100
Light output	**lm**	**350**
Beam approx.	m	150
Luminous period	h	1.5...5.5
Length	mm	353
Protection class		IP54
Weight	g	200
Batteries		1 x 18650 3.7 V Li-Ion

FUTURO



561157.0100 561157.0200

561157 Accessories for cordless LED torch and inspection lamp FUTURO

Usable with:
561155 Cordless LED torch and inspection lamp FUTURO

Order ID	**Light output** lm	Length mm
561157.0100	**3**	420
561157.0200	**200**	400

FUTURO



561177 Rechargeable LED torch FUTURO

350 LUMEN | IP 54 | USB TYPE C

Universal rechargeable LED torch. 2 light modes (Low Power/High Power). **Angled lamp head, clip and a strong magnetic base for versatile use as a torch and work light**. Dust-protected, splash proof, extremely robust aluminium housing, can withstand falls from up to 1 metre in height. The rubberised applications on the handle and the magnetic base reduce the risk of scratching delicate surfaces and ensure optimal grip even with wet or oily hands. On/Off switch with integrated battery indicator, the battery is replaceable and is easily charged via the supplied USB cable.

Scope of delivery:
561177.0100 Belt pouch and USB-C cable

Order ID		561177.0100
Length	**mm**	**152**
Ø	mm	19
Battery		1 x Typ 10840 Li-Ion
Battery voltage	V	3.7
Battery capacity	Ah	0.6
Luminous flux	lm	350 / 90
Beam approx.	m	89
Luminous period	h	1.5 / 3.5
Protection class		IP54
Weight	g	72

575045 Oil-free air turbine grinder FUTURO

with rotary valve, oil-free. Elastic spindle bearing, without wearing parts in the drive. For **fine machining**, for finishing, deburring, etc.; high-revs, light, quiet, ergonomic housing shape, high concentric accuracy, exhaust free of oil mist, maintenance-friendly (no blade replacement)**.** Supplied together with hose unit and plug-in nipple to European standard (Cejn 320).

Appropriate accessories:
870005 Service unit CEJN, 870010 Service unit CEJN

Order ID		575045.0100
Type		**GTV 1000**
Idle speed	min^{-1}	100 000
Power	W	100
HM rotary cutter Ø	mm	3
Ø x length	mm	30 x 120
Mounted points Ø	mm	5
Collet chuck type / Ø	mm	ZG 5 / 3
Sound pressure level	dB(A)	70
Air consumption	l/min	318
Weight	kg	0.21



GTV 1000



GTK 1000 / GTK 652 D



GT 652 D

575125 Air die grinder FUTURO

with rotary valve for longer work phases, **tool-and-die-maker version,** for fine machining, for finishing, deburring, etc. High-revs, light, handy, silent and cold-insulated. High concentric accuracy, air exits to the rear with integrated noise damping. Must be operated with oiled air. Supplied with hose unit and plug-in nipple to European standard (Cejn 320).

Appropriate accessories:
870000 Service unit CEJN
870005 Service unit CEJN

Order ID		575125.0120	575125.0200
Type		**G 813 D**	**G551 D**
Idle speed	min^{-1}	80 000	55 000
Ø x length	mm	18 x 120	15 x 123
Power	W	100	100
HM rotary cutter Ø	mm	4	6
Mounted points Ø	mm	6	8
Collet chuck type / Ø	mm	ZG 5 / 3	ZG 5 / 3
Sound pressure level	dB(A)	76	73
Air consumption	l/min	120	120
Weight	kg	0.2	0.45



G 852 D

575325 Air angle grinder FUTURO

Light and handy, long service life, compact size for work in tight spaces. Built-in speed control, exhaust towards rear, safety lever valve. Must be operated with oiled air.

Appropriate accessories:
870000 Service unit CEJN, 870005 Service unit CEJN

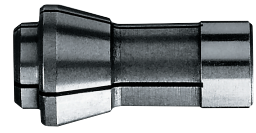
Order ID		575325.0100
Type		**4100**
Idle speed	min^{-1}	20 000
Power	W	200
Collet chuck type / Ø	mm	6
for discs up to Ø	mm	75
Mounted points Ø	mm	24
HM rotary cutter Ø	mm	12
Air consumption	l/min	510
Sound pressure level	dB(A)	82
Threaded connection		G 1/4"
Hose width	mm	8
Weight	kg	0.55



575502 Collet chuck FUTURO

Suitable for:
575325 Air angle grinder FUTURO

Order ID	**Ø mm**
575502.0100	**6**



577250 Air ratchet wrench FUTURO



2100



2101



2102

Universal tool for efficient screw assembly, also for work in hard-to-reach areas; adjustable for clockwise/anticlockwise operation. Cold-insulated soft handle, air exhaust and air supply connection can be rotated 360°. Must be operated with oiled air.

Appropriate accessories:
870000 Service unit CEJN, 870005 Service unit CEJN

Order ID		577250.0100	577250.0300
Type		**2100**	**2102**
Square drive		1/4"	1/2"
Screw size		M8	M10
Working range	Nm	3...25	5...70
Total length	mm	200	270
Idle speed	min^{-1}	220	180
Sound pressure level	dB(A)	82	84
Air consumption	l/min	490	490
Hose width	mm	8	10
Threaded connection		1/4" BSP	1/4" BSP
Weight	kg	0.6	1.3

577400 Air impact wrench FUTURO



1111

Optimal impact mechanism (twin clutch) for maximum reliability and added power with low weight; adjustable torque; reversible clockwise/anticlockwise; with comfort handle, reduces vibrations and insulates against cold. 4-step impact strength control.

Order ID		577400.0550
Type		**1205**
Screw size		M24
Torque max.	Nm	1625
Opt. working range	Nm	270...900
Square drive		3/4"
Idle speed	min^{-1}	6000
Air consumption	l/min	546
Sound pressure level	dB(A)	90
Threaded connection		3/8"
Hose width	mm	13
Length	mm	210
Weight	kg	3.6

FUTURO

Shop furniture, Equipment and Supplies

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541655 Individual drawer latch FUTURO

Individual right-side latch, for FUTURO drawers.

Order ID	Designation
541655.0200	For aluminium drawer handle



541655.0200

541710 Work cabinet FUTURO

36x36E 717x725mm | 100 kg | RAL 5015 | RAL 7035

Suitable for use as a vertical workstation, with beech tabletop, **drawer and pull-out shelf (85%) and** usable dimensions of cabinet 660 x 670 x 770.

Order ID	Height [mm]	Width [mm]	Depth [mm]	Drawers	Units U	Colour	
541710.0100	1040	717	725	1 x 75	36 x 36	Sky blue RAL 5015	
541710.0210	1040	717	725	1 x 75	36 x 36	Light grey RAL 7035	

550703 Assembly case FUTURO

Metal case, suitable for both indoors and outdoors and for vehicle transport, with metal compartment. Colour: RAL 5015 blue.

Order ID	**Width mm**	Depth mm	Height mm	Weight kg
550703.0100	**1135**	715	565	67
550703.0200	**1855**	845	565	118



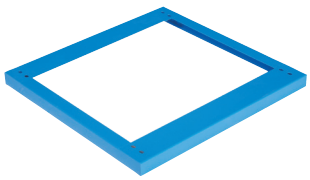
550703.0200

541305 Housing Base FUTURO

RAL 5015 | RAL 7035

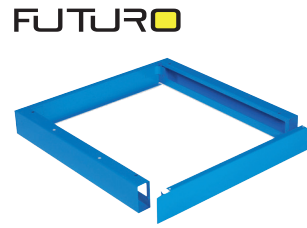
Made of sheet steel for height compensation with FUTURO drawer cabinets.

Order ID	**Colour**	Units U	Height mm	Width mm	Depth mm	for cabinet width x depth mm
541305.0300	**Sky blue RAL 5015**	36 x 27	50	717	540	717 x 572
541305.0500	**Sky blue RAL 5015**	36 x 36	50	717	693	717 x 725
541305.0700	**Sky blue RAL 5015**	54 x 36	50	1023	693	1023 x 725
541305.0410	**Light grey RAL 7035**	36 x 27	50	717	540	717 x 572
541305.0610	**Light grey RAL 7035**	36 x 36	50	717	693	717 x 725
541305.0810	**Light grey RAL 7035**	54 x 36	50	1023	693	1023 x 725



541307 Lift truck base including shield FUTURO

RAL 5015 RAL 7035



Made of sheet steel including shield, for height compensation. Allows lift trucks or forklift trucks to reach under and transport fully loaded cabinets. The base is bolted to the housing bottom.

Order ID	Colour	Units U	Height mm	Width mm	Depth mm	for cabinet width x depth mm
541307.0100	**Sky blue RAL 5015**	36 x 27	100	717	506	717 x 572
541307.0310	**Sky blue RAL 5015**	36 x 36	100	717	659	717 x 725
541307.0500	**Sky blue RAL 5015**	54 x 36	100	1023	659	1023 x 725
541307.0210	**Light grey RAL 7035**	36 x 27	100	717	506	717 x 572
541307.0410	**Light grey RAL 7035**	36 x 36	100	717	659	717 x 725
541307.0610	**Light grey RAL 7035**	54 x 36	100	1023	659	1023 x 725

541317 Retaining lip with rubber mat FUTURO

RAL 5015 RAL 7035



For drawer cabinets LISTA. Made of sheet steel, with retaining lip on 3 sides, including grooved mat.

Order ID	Units U	Colour	Width mm	Depth mm	Height mm
541317.0100	**27 x 36**	blue RAL5015	564	725	15
541317.0300	**36 x 27**	blue RAL5015	717	572	15
541317.0500	**36 x 36**	blue RAL5015	717	725	15
541317.0700	**54 x 36**	blue RAL5015	1023	725	15
541317.0210	**27 x 36**	Light grey RAL 7035	564	725	15
541317.0410	**36 x 27**	Light grey RAL 7035	717	572	15
541317.0610	**36 x 36**	Light grey RAL 7035	717	725	15
541317.0810	**54 x 36**	Light grey RAL 7035	1023	725	15

541318 Rubber mat FUTURO



Suitable for:
541317 Retaining lip with rubber mat FUTURO

Order ID	Units U	Width mm	Depth mm	Height mm
541318.0100	**27 x 36 / 36 x 27**	559	720	3
541318.0200	**36 x 36**	712	720	3
541318.0300	**54 x 36**	1018	720	3

FUTURO

541283 Drawer cabinet FUTURO

36x36E
717x725mm

75 kg

RAL 5015

RAL 7035

Robust sheet steel housing, **fully extendible drawers**, with individual drawer locks, with cylinder lock and two keys, cabinet cover not included.

Appropriate accessories:
541305 Housing Base FUTURO
541307 Lift truck base including shield FUTURO
541317 Retaining lip with rubber mat FUTURO
541655 Individual drawer latch FUTURO
542617 Partition material set FUTURO
542619 Partition material set FUTURO
542621 Partition material set FUTURO
542622 Partition material set FUTURO
542623 Partition material set FUTURO
542625 Partition material set FUTURO
542627 Partition material set FUTURO
542970 Non-slip mat

Appropriate spare parts:
541636 Replacement lock cylinder FUTURO
542850 Labels

Order ID	Total height [mm]	Width [mm]	Depth [mm]	Number of drawers	Drawers front height [mm]	Drawers effective heigth [mm]	Drawers shell height [mm]	Drawers carrying capacity [kg]	Drawers usable area [mm]	Colour	
541283.0100	850	717	725	1 2 2 1 1	50 75 100 150 200	30 60 85 135 185	30 50 75 125 168	75 75 75 75 75	612 x 612	Sky blue RAL 5015	
541283.0200	850	717	725	1 2 2 1 1	50 75 100 150 200	30 60 85 135 185	30 50 75 125 168	75 75 75 75 75	612 x 612	Light grey RAL 7035	
541283.0300	1000	717	725	1 2 2 2 1	50 75 100 150 200	30 60 85 135 185	30 50 75 125 168	75 75 75 75 75	612 x 612	Sky blue RAL 5015	
541283.0400	1000	717	725	1 2 2 2 1	50 75 100 150 200	30 60 85 135 185	30 50 75 125 168	75 75 75 75 75	612 x 612	Light grey RAL 7035	

541325 Drawer cabinet FUTURO



Robust sheet steel housing, **fully extendible drawers**, with individual drawer locks, with cylinder lock and two keys, cabinet cover not included.

Appropriate accessories:
541305 Housing Base FUTURO
541307 Lift truck base including shield FUTURO
541317 Retaining lip with rubber mat FUTURO
542700 Partition material set LISTA
542702 Partition material set LISTA
542704 Partition material set LISTA
542755 Slotted wall FUTURO
542765 Metal devider FUTURO
542777 Dividing wall FUTURO
542782 Tray part FUTURO
542792 Tray wall FUTURO

Appropriate spare parts:
541636 Replacement lock cylinder FUTURO
542850 Labels

Order ID	Total height [mm]	Width [mm]	Depth [mm]	Number of drawers	Drawers front height [mm]	Drawers effective heigth [mm]	Drawers shell height [mm]	Drawers carrying capacity [kg]	Drawers usable area [mm]	Colour	
541325.0100	1000	1023	725	2 4 1 1	75 100 150 200	60 85 135 185	50 75 125 168	75 kg 75 kg 75 kg 75	918 x 612	Sky blue RAL 5015	
541325.0200	1000	1023	725	2 4 1 1	75 100 150 200	60 85 135 185	50 75 125 168	75 kg 75 kg 75 kg 75	918 x 612	Light grey RAL 7035	

541158 Workbench drawer FUTURO

27x36E 564x725mm | 75 kg | RAL 5015 | RAL 7035

Robust sheet steel housing that can be screwed in under the workbench, **fully extending drawer**, with cylinder lock and two keys

Appropriate accessories:
542493 Partition material set FUTURO
542970 Non-slip mat
543460 Fixing bolt set

Appropriate spare parts:
541636 Replacement lock cylinder FUTURO
542850 Labels

Order ID	Total height [mm]	Width [mm]	Depth [mm]	Number of drawers	Drawers front height [mm]	Drawers effective heigth [mm]	Drawers shell height [mm]	Drawers carrying capacity [kg]	Drawers usable area [mm]	Colour	
541158.0100	170	575	725	1	100	85	75	75	459 x 612	Sky blue RAL 5015	
541158.0200	170	575	725	1	100	85	75	75	459 x 612	Light grey RAL 7035	

541180 Drawer cabinet FUTURO

27x36E
564x725mm

75 kg

RAL 5015

RAL 7035

Robust sheet steel housing, **fully extendible drawers**, with individual drawer locks, with cylinder lock and two keys, cabinet cover not included.



RAL 5015 / 1000 mm

RAL 7035 / 1000 mm

Appropriate accessories:
541317 Retaining lip with rubber mat FUTURO
541655 Individual drawer latch FUTURO
542485 Partition material set FUTURO
542486 Partition material set FUTURO
542487 Partition material set FUTURO
542488 Partition material set FUTURO
542490 Partition material set FUTURO
542493 Partition material set FUTURO
542970 Non-slip mat
543460 Fixing bolt set

Appropriate spare parts:
541636 Replacement lock cylinder FUTURO
542850 Labels

Order ID	Total height [mm]	Width [mm]	Depth [mm]	Number of drawers	Drawers front height [mm]	Drawers effective heigth [mm]	Drawers shell height [mm]	Drawers carrying capacity [kg]	Max. load capacity [kg]	Units U	Drawers usable area [mm]	Colour	
541180.0100	383	564	725	1 1 1	50 100 150	30 85 135	30 75 125	75 75 75	450	27 x 36	459 x 612	Sky blue RAL 5015	
541180.0200	383	564	725	1 1 1	50 100 150	30 85 135	30 75 125	75 75 75	450	27 x 36	459 x 612	Light grey RAL 7035	
541180.0230	850	564	725	1 2 2 1 1	50 75 100 150 200	30 60 85 135 185	30 50 75 135 168	100 100 100 100 100	650	27 x 36	459 x 612	Sky blue RAL 5015	
541180.0260	850	564	725	1 2 2 1 1	50 75 100 150 200	30 60 85 135 185	30 50 75 135 168	100 100 100 100 100	650	27 x 36	459 x 612	Light grey RAL 7035	
541180.0300	1000	564	725	2 4 1 1	75 100 150 200	60 85 135 185	50 75 125 168	75 75 75 75	900	27 x 36	459 x 612	Sky blue RAL 5015	
541180.0400	1000	564	725	2 4 1 1	75 100 150 200	60 85 135 185	50 75 125 168	75 75 75 75	900	27 x 36	459 x 612	Light grey RAL 7035	

541248 Drawer cabinet FUTURO

36x27E
717x572mm

75 kg

RAL 5015

RAL 7035

Solid sheet steel construction, **all drawers fully extendable,** with individual drawer locks, central locking with cylinder lock and two keys, drawer bottom without holes, cabinet cover not included.

Appropriate accessories:
541305 Housing Base FUTURO
541307 Lift truck base including shield FUTURO
541317 Retaining lip with rubber mat FUTURO
541655 Individual drawer latch FUTURO
542485 Partition material set FUTURO
542486 Partition material set FUTURO
542487 Partition material set FUTURO
542488 Partition material set FUTURO
542490 Partition material set FUTURO
542493 Partition material set FUTURO

Appropriate spare parts:
541636 Replacement lock cylinder FUTURO
542850 Labels

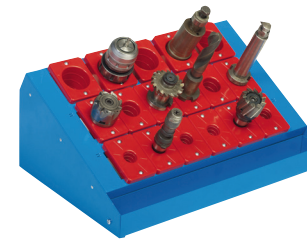
Order ID	Total height [mm]	Width [mm]	Depth [mm]	Number of drawers	Drawers front height [mm]	Drawers effective heigth [mm]	Drawers shell height [mm]	Drawers carrying capacity [kg]	Drawers usable area [mm]	Colour	
541248.0100	1000	717	572	2 1 3 1	75 100 150 200	60 85 135 178	50 75 125 168	75 75 75 75	612 x 459	Sky blue RAL 5015	
541248.0200	1000	717	572	2 1 3 1	75 100 150 200	60 85 135 178	50 75 125 168	75 75 75 75	612 x 459	Light grey RAL 7035	

542035 NC bench stand FUTURO

RAL 5015 RAL 7035

Sheet steel, with 3 tracks. Ideal for placement on workbenches or cabinets, for example.

Appropriate accessories:
542015 Tool holder FUTURO
Partitioning schemes see NC tool holder.



Order ID	Colour	Width mm	Depth mm	Height mm
542035.0100	**azure RAL 5015**	600	400	255
542035.0210	**Light grey RAL 7035**	600	400	255

541855 General purpose cabinet with roller shutter FUTURO

RAL 5015 RAL 7035

For storage of tools and accessories: clearly organized, dust free and lockable; side panels slotted on the inside for attaching tool changing frames. Housing cover with integrated aluminium roller shutter. Drawers and pull-out shelves with full extension. **Tool holders not included.**

Appropriate accessories:
542015 Tool holder FUTURO



541855.0100



541855.0300

Order ID	Colour	Width mm	Depth mm	Height mm	Units U	with drawers	Tray adjustment	Pull-out shelf	Tool changing frame
541855.0100	**azure RAL 5015**	1025	633	2000	54 x 27	2x 150	-	-	4
541855.0210	**Light grey RAL 7035**	1025	633	2000	54 x 27	2 x 150	-	-	4
541855.0300	**azure RAL 5015**	1025	633	2000	54 x 27	1 x 75 1 x 150	1	1	4
541855.0410	**Light grey RAL 7035**	1025	633	2000	54 x 27	1 x 75 1 x 150	1	1	4

541990 CNC transport cart FUTURO

RAL 5015 RAL 7035

For secure transport, good manoeuvrability, sheet steel, with slotted side panels for attaching tool changing frames and insert frames. With push handle, 2 fixed and 2 swivel castors (Ø 125 mm) including 2 with locking brake.



541990.0100



541990.0300

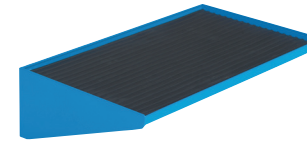
Order ID	Colour	Width mm	Depth mm	Height mm	Load carrying capacity kg
541990.0100	**azure RAL 5015**	745	510	870	450
541990.0210	**Light grey RAL 7035**	745	510	870	450
541990.0300	**azure RAL 5015**	745	510	870	450
541990.0410	**Light grey RAL 7035**	745	510	870	450

541995 Console tray FUTURO

RAL 5015 RAL 7035

sheet steel, with PVC grooved mat.

Usable with:
541990 CNC transport cart FUTURO



blue

Order ID	Colour	Width mm	Depth mm	Height mm
541995.0100	**azure RAL 5015**	510	300	135
541995.0210	**Light grey RAL 7035**	510	300	135

FUTURO



blue

542025 Plan box FUTURO

RAL 5015 RAL 7035

Sheet steel.

Usable with:
541990 CNC transport cart FUTURO

Order ID	Colour	Width mm	Depth mm	Height mm
542025.0100	**azure RAL 5015**	312	44	190
542025.0210	**Light grey RAL 7035**	312	44	190

FUTURO



542005.0100

542005 Tool changing frame FUTURO

Metal frame, with safety handles, **tool holders not included.** For installation on transport unit or in universal cabinet with pair of frame rails.

Appropriate accessories:
542012 Pair of frame rails FUTURO
542015 Tool holder FUTURO
Usable with:
541990 CNC transport cart FUTURO
Partitioning schemes see NC tool holder.

Order ID	Length mm	Width mm	Height mm	Load carrying capacity kg
542005.0100	**598**	120	145	100
542005.0200	**937**	120	145	100

FUTURO



ISO-30 ISO-40



ISO-50 HSK-40



HSK-50 HSK-63



VDI-30/ VDI-40/
VDI-50

542015 Tool holder FUTURO

Can be fitted in a support in any combination. The holders are screwed together.
Specification: quality plastic, coulor red. Including fixing screws.

Usable with:
541855 General purpose cabinet with roller shutter FUTURO, 541856 Vertical pull-out cabinet FUTURO, 541990 CNC transport cart FUTURO, 542002 Insert frame FUTURO, 542005 Tool changing frame FUTURO, 542035 NC bench stand FUTURO

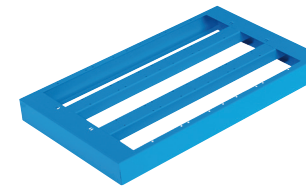
Order ID	for tool shaft	for frame	Number per frame
542015.0100	**ISO-SK 30**	542005 - 589 mm 542005 - 937 mm 542002 - 598 x 358 mm 542002 - 598 x 478 mm 542035 - 600 x 400 mm	6 10 18 24 18
542015.0200	**ISO-SK 40**	542005 - 589 mm 542005 - 937 mm 542002 - 598 x 358 mm 542002 - 598 x 478 mm 542035 - 600 x 400 mm	6 10 18 24 18
542015.0300	**ISO-SK 50**	542005 - 589 mm 542005 - 937 mm 542002 - 598 x 358 mm 542002 - 598 x 478 mm 542035 - 600 x 400 mm	5 8 15 20 15
542015.0400	**HSK 40**	542005 - 589 mm 542005 - 937 mm 542002 - 598 x 358 mm 542002 - 598 x 478 mm 542035 - 600 x 400 mm	8 13 24 32 24
542015.0500	**HSK 50**	542005 - 589 mm 542005 - 937 mm 542002 - 598 x 358 mm 542002 - 598 x 478 mm 542035 - 600 x 400 mm	7 11 21 28 21
542015.0600	**HSK 63**	542005 - 589 mm 542005 - 937 mm 542002 - 598 x 358 mm 542002 - 598 x 478 mm 542035 - 600 x 400 mm	6 10 18 24 18
542015.0700	**VDI 30**	542005 - 589 mm 542005 - 937 mm 542002 - 598 x 358 mm 542002 - 598 x 478 mm 542035 - 600 x 400 mm	5 8 15 20 15
542015.0800	**VDI 40**	542005 - 589 mm 542005 - 937 mm 542002 - 598 x 358 mm 542002 - 598 x 478 mm 542035 - 600 x 400 mm	5 8 15 20 15

542002 Insert frame FUTURO

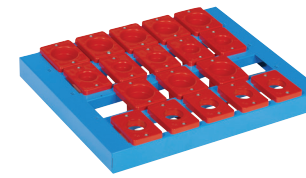
RAL 5015 RAL 7035

Appropriate accessories:
542015 Tool holder FUTURO
Usable with:
541990 CNC transport cart FUTURO
Partitioning schemes see NC tool holder.

Order ID	Lanes	Colour	Width mm	Depth mm	Height mm	Load carrying capacity kg
542002.0100	**3**	**azure RAL 5015**	598	358	60	150
542002.0210	**3**	**Light grey RAL 7035**	598	358	60	150
542002.0300	**4**	**azure RAL 5015**	598	478	60	150
542002.0410	**4**	**Light grey RAL 7035**	598	478	60	150



3 / blue



4 / Example of use

542012 Pair of frame rails FUTURO

To hold the tool changing frames in the transport cart and in the general purpose cabinet.

Order ID	Version	for length mm
542012.0100	**horizontal**	589
542012.0200	**Inclined**	589
542012.0300	**horizontal**	937
542012.0350	**horizontal (suitable for models from 2021)**	937
542012.0400	**Inclined**	937
542012.0450	**Inclined (suitable for models from 2021)**	937



straight

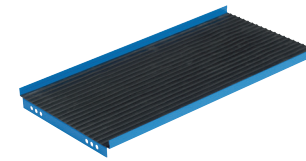
542022 Adjustable tray FUTURO

RAL 5015 RAL 7035

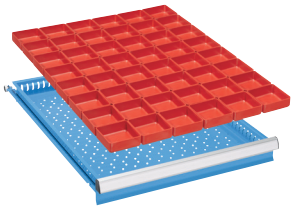
Sheet steel, with lip on two sides and PVC grooved mat.

Usable with:
541990 CNC transport cart FUTURO

Order ID	Colour	Width mm	Depth mm	Height mm
542022.0100	**azure RAL 5015**	600	305	20
542022.0210	**Light grey RAL 7035**	600	305	20



FUTURO



542485 Partition material set FUTURO

27x36E
564x725mm

For drawers with usable dimensions 459 x 612 mm;
Comprising: 48 insert boxes 75 x 75 mm.

E = partition units (17 mm grid)

Order ID	for drawers front height mm	Height mm
542485.0100	**50**	26
542485.0200	**75**	52
542485.0300	**100**	71

FUTURO



542486 Partition material set FUTURO

27x36E
564x725mm

For drawers with usable dimensions 459 x 612 mm; **Comprising:** 24 insert boxes 75 x 150 mm.

E = partition units (17 mm grid)

Order ID	for drawers front height mm	Height mm
542486.0100	**50**	26
542486.0200	**75**	52
542486.0300	**100**	71

FUTURO



542487 Partition material set FUTURO

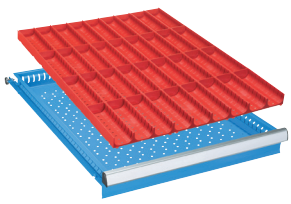
27x36E
564x725mm

For drawers with usable dimensions 459 x 612 mm;
Comprising: 12 insert boxes 150 x 150 mm.

E = partition units (17 mm grid)

Order ID	for drawers front height mm	Height mm
542487.0100	**50**	26
542487.0200	**75**	52
542487.0300	**100**	71

FUTURO



542488 Partition material set FUTURO

27x36E
564x725mm

For drawers with usable dimensions 459x612 mm. **Consisting of:** 12 trays, 3-part 32 tray walls

E = partition units (17 mm grid)

Order ID	for drawers front height mm	Height mm
542488.0100	**50...300**	26

FUTURO



542490 Partition material set FUTURO

27x36E
564x725mm

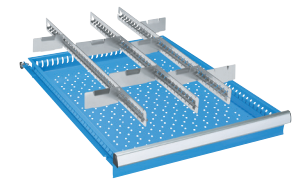
For drawers with usable dimensions 459x612 mm. **Consisting of:** 8 trays, 3-part 24 tray walls 4 trays, 2-part 8 tray walls

E = partition units (17 mm grid)

Order ID	for drawers front height mm	Height mm
542490.0100	**50...300**	26

542493 Partition material set FUTURO

27x36E
564x725mm



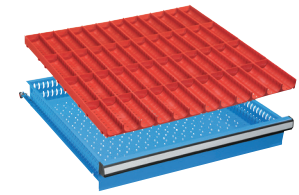
For drawers with usable dimensions 459x612 mm. **Consisting of**: 3 slotted walls 36 E 2 dividing plates 9 E 6 dividing plates 6 E

E = partition units (17 mm grid)

Order ID	for drawers front height mm	Order ID	for drawers front height mm
542493.0100	**50**	542493.0300	**100**
542493.0200	**75**	542493.0400	**150**

542617 Partition material set FUTURO

36x36E
717x725mm



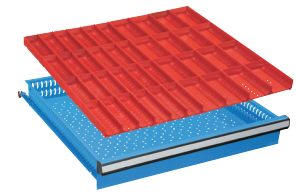
For drawers with usable dimensions 612x612 mm. **Consisting of:**
16 trays, 3-part
48 tray walls

E = partition units (17 mm grid)

Order ID	for drawers front height mm	Height mm
542617.0100	**50...300**	26

542619 Partition material set FUTURO

36x36E
717x725mm



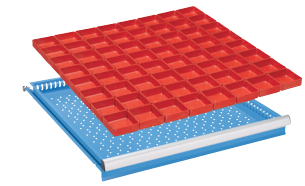
For drawers with usable dimensions 612x612 mm. **Consisting of:**
8 trays, 3-part
24 tray walls
8 trays, 2-part
16 tray walls

E = partition units (17 mm grid)

Order ID	for drawers front height mm	Height mm
542619.0100	**50...300**	26

542621 Partition material set FUTURO

36x36E
717x725mm



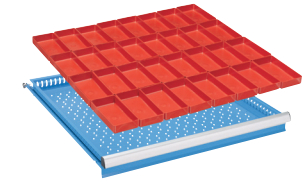
For drawers with usable dimensions 612 x 612 mm, **comprising:**
64 insert boxes 75 x 75 mm.

E = partition units (17 mm grid)

Order ID	for drawers front height mm	Height mm
542621.0100	**50**	26
542621.0200	**75**	52
542621.0300	**100**	71

542622 Partition material set FUTURO

36x36E
717x725mm



For drawers with usable dimensions 612 x 612 mm, **comprising:**
32 insert boxes 75 x 150 mm.

E = partition units (17 mm grid)

Order ID	for drawers front height mm	Height mm
542622.0100	**50**	26
542622.0200	**75**	52
542622.0300	**100**	71

FUTURO



542623 Partition material set FUTURO

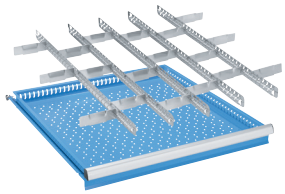
36x36E
717x725mm

For drawers with usable dimensions 612 x 612 mm, **comprising:**
16 insert boxes 150 x 150 mm.

E = partition units (17 mm grid)

Order ID	**for drawers front height mm**	Height mm
542623.0100	**50**	26
542623.0200	**75**	52
542623.0300	**100**	71

FUTURO



542625 Partition material set FUTURO

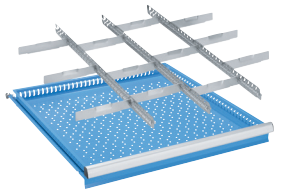
36x36E
717x725mm

For drawers with usable dimensions 612 x 612 mm, **comprising:**
5 slotted walls 36E,
18 dividing walls 6E.

E = partition units (17 mm grid)

Order ID	**for drawers front height mm**	Height mm
542625.0100	**50**	26
542625.0200	**75**	52
542625.0300	**100**	71

FUTURO



542627 Partition material set FUTURO

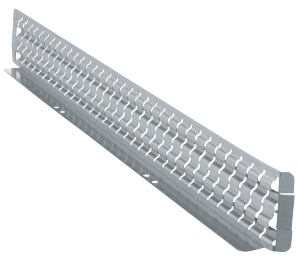
36x36E
717x725mm

For drawers with usable dimensions 612 x 612 mm, **comprising:**
3 slotted walls 36E,
12 dividing walls 9E.

E = partition units (17 mm grid)

Order ID	**for drawers front height mm**	Height mm
542627.0100	**50**	26
542627.0200	**75**	52
542627.0300	**100**	71
542627.0400	**150**	124

FUTURO



542755 Slotted wall FUTURO

Galvanized sheet steel, for lengthwise and crosswise division of drawers in combination with dividing plates; slot grid 17 mm (1 E).

Order ID	**for drawers front height mm**	**Units U**	Length mm	Height mm
542755.0100	**50**	**27**	456	35
542755.0200	**75**	**27**	456	50
542755.0300	**100...125**	**27**	456	77
542755.0400	**150**	**27**	456	125
542755.0500	**200**	**27**	456	165
542755.0600	**50**	**36**	610	35
542755.0700	**75**	**36**	610	50
542755.0800	**100...125**	**36**	610	77
542755.0900	**150**	**36**	610	125
542755.1000	**200**	**36**	610	165

542765 Metal devider FUTURO

Aluminium, for fine subdivision of drawers in combination with slotted walls.

Order ID	for drawers front height mm	Units U	Length mm	Height mm
542765.0100	**50**	**6**	99	28
542765.0200	**75**	**6**	99	48
542765.0300	**100...125**	**6**	99	72
542765.0400	**150**	**6**	99	122
542765.0500	**50**	**9**	150	28
542765.0600	**75**	**9**	150	48
542765.0700	**100...125**	**9**	150	72
542765.0800	**150**	**9**	150	122
542765.0900	**200**	**9**	150	165
542765.1000	**50**	**12**	201	28
542765.1100	**75**	**12**	201	48
542765.1200	**100...125**	**12**	201	72
542765.1300	**150**	**12**	201	122
542765.1400	**200**	**12**	201	165

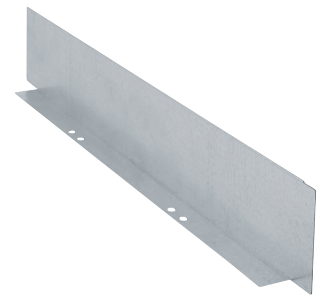


542777 Dividing wall FUTURO

Galvanized sheet steel, for lengthwise and crosswise division of drawers into large compartments (cannot be combined with dividing plates).

Other sizes are available.

Order ID	for drawers front height mm	Units U	Length mm	Height mm
542777.0100	**50**	**27**	459	26
542777.0200	**75**	**27**	459	50
542777.0300	**100...125**	**27**	459	75
542777.0400	**150**	**27**	459	125
542777.0500	**200**	**27**	459	165
542777.0600	**50**	**36**	610	26
542777.0700	**75**	**36**	610	50
542777.0800	**100...125**	**36**	610	75
542777.0900	**150**	**36**	610	125
542777.1000	**200**	**36**	610	165

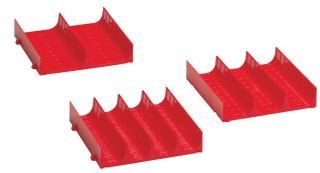


542782 Tray part FUTURO

For storage of small to medium-sized cutting and measuring tools.

Appropriate accessories:
542792 Tray wall FUTURO

Order ID	part	Tool Ø max. mm	Length mm	Width mm	Units U
542782.0100	**2**	70	153	153	9 x 9
542782.0200	**3**	45	153	153	9 x 9
542782.0300	**4**	33	153	153	9 x 9



542792 Tray wall FUTURO

For crosswise subdivision of the plastic tray parts.
Sold in: pack of 10.

Appropriate accessories:
542920 Labelling tabs LISTA

Order ID	for tray part	Tool Ø max. mm
542792.0100	**2 parts**	70
542792.0200	**3 parts**	45
542792.0300	**4 parts**	33

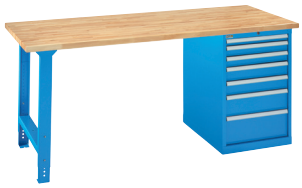


FUTURO

543377 Workbench FUTURO

27x36E
564x725mm

RAL 5015 RAL 7035



RAL 5015



RAL 7035

With drawer cabinet 27 x 36 E, 7 drawers (partial extension (85%), load capacity 100 kg). **Workbench top in beechwood** (not cross-glued) and workbench trestle.

Other sizes and versions available upon request.

Order ID		543377.0100	543377.0110	543377.0200	543377.0410
Length	**mm**	**1500**	**1500**	**2000**	**2000**
Colour		**RAL 5015**	**RAL 7035**	**RAL 5015**	**RAL 7035**
Depth	mm	800	800	800	800
Height	mm	890	890	890	890
Sheet thickness	mm	40	40	40	40
Drawers in right cabinet		1 x 50 2 x 75 2 x 100 1 x 150 1 x 200	1 x 50 2 x 75 2 x 100 1 x 150 1 x 200	1 x 50 2 x 75 2 x 100 1 x 150 1 x 200	1 x 50 2 x 75 2 x 100 1 x 150 1 x 200
Working size	mm	459 x 612	459 x 612	459 x 612	459 x 612

FUTURO

543560 Beech plate FUTURO



Solid, stable and distortion-free beech plate. The surface is treated with solvent-free biological hard wax, making it resistant to water spray and largely resistant to oils and greases. Beech plates are suitable for extremely high loads. The plate is constructed with preassembly boreholes incl. M 10 inside thread.

Other dimensions and plates with pre-assembly are available.

Order ID	**Length** **mm**	Depth mm	Sheet thickness mm
543560.0100	**1500**	800	40
543560.0200	**2000**	800	40

FUTURO

543580 Rear panel FUTURO



Medium-density wood plate, colourless primed.

Order ID	**Length** **mm**	Height mm
543580.0100	**1500**	100
543580.0200	**2000**	100

FUTURO

543582 Pair of side panels FUTURO



Medium-density wood plate, colourless primed, **as pair**.

Order ID	**Length** **mm**	Height mm
543582.0100	**815**	100

543590 Workbench trestle FUTURO

RAL 5015 RAL 7035

Stable sheet steel construction of pressed profiles, neatly welded, with holes for fastening the plate; height adjustable in 25mm intervals. **Scope of delivery includes single workbench foot including screw connection** for the table top.

Order ID	Colour	Adjustable height mm	Depth mm	Load capacity kg	Width mm
543590.0100	**Light blue RAL 5012**	755 ...1130	725	400	80
543590.0210	**Light grey RAL 7035**	755 ...1130	725	400	80



RAL 5015 RAL 7035

543376 Workbench FUTURO

27x36E 564x725mm

RAL 5015 RAL 7035

With drawer cabinet 27 x 36 E, 3 drawers (full extension, load capacity 100 kg). **Workbench top in beechwood** (but with preassembly, not cross-glued) and workbench trestle.

Other sizes and versions available upon request.



RAL 5015



RAL 7035

Order ID		543376.0100	543376.0210	543376.0300	543376.0410
Length	**mm**	**1500**	**1500**	**2000**	**2000**
Colour		**RAL 5015**	**RAL 7035**	**RAL 5015**	**RAL 7035**
Depth	mm	800	800	800	800
Adjustable height	mm	750...1150	750...1150	750...1150	750...1150
Sheet thickness	mm	40	40	40	40
Drawers in left cabinet		1 x 50 1 x 100 1 x 150	1 x 50 1 x 100 1 x 150	1 x 50 1 x 100 1 x 150	1 x 50 1 x 100 1 x 150
Working size	mm	459 x 612	459 x 612	459 x 612	459 x 612
Units U		27 x 36		27 x 36	

543465 Shelf FUTURO

For installation between two workbench bases FUTURO.

Order ID	Length mm	Width mm	Sheet thickness mm	payload kg
543465.0100	**1305**	650	25	130
543465.0200	**1805**	650	25	85



FUTURO





Example of use

543850 Height-adjustable workbench FUTURO

RAL 7035

Design product with ergonomic properties for functional and comfortable working. Base frame: powder-coated steel structure **light grey RAL 7035**, with levelling feet, laminated table top 28 mm.
Electrical height adjustment from 720 to 1070 mm, with memory operation, stores 4 table heights

Order ID	**Length mm**	Depth mm	Height adjustment mm	payload kg
543850.0100	**1500**	750	720 ... 1070	300
543850.0200	**2000**	750	750 ... 1150	300

540628 Mobile workbench FUTURO

27x36E
564x725mm

RAL 5015 RAL 7035

With drawer cabinet 27 x 36 E, 3 drawers (partial extension (85%), load capacity 100kg). **Workbench top in beechwood** (but with preassembly, not cross-glued) and workbench trestle with 2 fixed and 2 swivel castors (rubber) with locking mechanism and pushing handle.

Other sizes and versions available upon request.

Order ID		540628.0100	540628.0210
Length	**mm**	**2000**	**2000**
Colour		**RAL 5015 blue**	**Light grey RAL 7035**
Depth	mm	800	800
Height	mm	870	870
Sheet thickness	mm	40	40
Drawers in left cabinet		1 x 50 1 x 100 1 x 150	1 x 50 1 x 100 1 x 150
Working size	mm	459 x 612	
Max. load capacity	kg	450	450



RAL 5015



RAL 7035

540630 Mobile workbench FUTURO

27x36E
564x725mm

RAL 5015 RAL 7035

With drawer cabinet (27x36E), with individual drawer retention and individual locking on the right, cylinder lock, 2 keys and **(drawers with partial extension (85%), load capacity 100 kg**). **Workbench top in beechwood** (but with preassembly, not cross-glued) and 2 fixed and 2 swivelling castors (rubber) with push rod.

Other sizes and versions available upon request.

Order ID		540630.0100	540630.0200	540630.0300
Length	**mm**	**1200**	**1200**	**1200**
Colour		**RAL 5015 blue**	**RAL 5015 blue**	**RAL 5015 blue**
Depth	mm	800	800	800
Height	mm	910	910	910
Sheet thickness	mm	40	40	40
Drawers in left cabinet		-	2 x 75 1 x 100 2 x 150	-
Drawers in right cabinet		2 x 75 1 x 100 2 x 150	2 x 75 1 x 100 2 x 150	1 x 50 5 x 100
Working size	mm	459 x 612	459 x 612	459 x 612
Max. load capacity	kg	450	450	450

Order ID		540630.0120	540630.0220	540630.0320
Length	**mm**	**1200**	**1200**	**1200**
Colour		**Light grey RAL 7035**	**Light grey RAL 7035**	**Light grey RAL 7035**
Depth	mm	800	800	800
Height	mm	910	910	910
Sheet thickness	mm	40	40	40
Drawers in left cabinet		-	2 x 75 1 x 100 2 x 150	-
Drawers in right cabinet		2 x 75 1 x 100 2 x 150	2 x 75 1 x 100 2 x 150	1 x 50 5 x 100
Working size	mm	459 x 612	459 x 612	459 x 612
Max. load capacity	kg	450	450	450



540630.0100



540630.0210



540630.0300

FUTURO

543445 Mobile workbench FUTURO

RAL 5015 RAL 7035

Mobile assembly station, 35 mm tabletop of beech wood, with 2 fixed and 2 swivel castors (rubber Ø 150 mm) with locking mechanism, pushing handle, sheet steel base tray.



blau RAL 5015



RAL 7035

Order ID		543445.0100	543445.0210
Colour		**blue RAL 5015**	**Light grey RAL 7035**
Width	mm	1000	1000
Depth	mm	700	700
Height	mm	910	910
Sheet thickness	mm	35	35
payload	kg	450	450

541790 Tool cabinet FUTURO

RAL 7035

Double door cabinet, sheet steel construction with perforated outer panels, powder-coated, 3 adjustable shelves, 1 drawer 100 mm, cylinder lock with 2 keys.

Appropriate accessories:
541845 Accessories FUTURO
541847 Tool holder set FUTURO

Order ID	Width mm	Depth mm	Height mm	Capacity per shelf kg	Colour
541790.0110	**1023**	**555**	**2000**	100	Light grey RAL 7035



541797 Material cabinet FUTURO

RAL 7035 RAL 5015

Sheet steel housing, powder-coated with textured surface, with lockable hinged doors and adjustable shelves.

Order ID	Width mm	Depth mm	Height mm	Trays	Capacity per shelf kg	Colour
541797.0060	**600**	**400**	**1800**	4	80	Light grey RAL 7035
541797.0090	**600**	**400**	**1800**	4	40	Light blue RAL 5015
541797.0110	**1000**	**400**	**2000**	4	100	Light grey RAL 7035
541797.0200	**1000**	**400**	**2000**	4	100	Light blue RAL 5015



541797.0110

541800 Material cabinet with sliding door FUTURO

RAL 7035 RAL 5015

Sheet steel housing, powder-coated with textured surface, with lockable sliding doors and adjustable shelves.

Order ID	Width mm	Depth mm	Height mm	Trays	Capacity per shelf kg	Colour
541800.0060	**1200**	**500**	**1000**	2	80	Light grey RAL 7035
541800.0080	**1200**	**500**	**1000**	2	80	Light grey RAL 7035
541800.0110	**1200**	**500**	**2000**	4	80	Light grey RAL 7035
541800.0150	**1200**	**500**	**2000**	4	80	Light grey RAL 7035



541800.0110

541805 Shelf FUTURO

RAL 7035 RAL 5015

For FUTURO materials cabinets, includes 4 shelf supports.

Order ID	Dimensions mm	Capacity per shelf kg	Colour
541805.0210	**1200 x 500**	50	Light grey RAL 7035
541805.0250	**1200 x 500**	50	Light blue RAL 5015
541805.0310	**1200 x 500**	50	Light grey RAL 7035
541805.0450	**600 x 400**	80	Light blue RAL 5015
541805.0470	**600 x 400**	80	Galvanised
541805.0510	**994 x 520**	100	Light grey RAL 7035
541805.0550	**994 x 520**	100	Light blue RAL 5015
541805.0180	**1000 x 400**	65	



FUTURO



541822 Roller shutter cabinet FUTURO

RAL 7035

Sheet steel housing, two roller shutter door (left and right), cylinder lock with 2 keys, 4 adjustable shelves

Order ID	Width mm	Depth mm	Height mm	Tray adjustment	Capacity per shelf kg	Colour
541822.0110	**1200**	**500**	**2000**	4	50	Light grey RAL 7035

FUTURO



541862 Cupboard for cleaning supplies FUTURO

RAL 7035 RAL 5015

Sheet steel housing, powder-coated with textured surface, with 2 lockable hinged doors, 1 full-width fixed shelf with clothes rack, 3 small adjustable shelves.

Order ID	Width mm	Depth mm	Height mm	Capacity per shelf kg	Colour
541862.0100	**1000**	**400**	**2000**	100	Light grey RAL 7035
541862.0200	**1000**	**400**	**2000**	100	Light blue RAL 5015

FUTURO



552798 Environmental cabinet FUTURO

RAL 7035

For safe storage of fluids representing an environmental hazard, in sheet steel, powder-coated RAL 7035 grey; with 2 hinged doors, air vent slots, with 4 removable pans, galvanized, adjustable, designed for connection to earth.

Order ID	Width mm	Depth mm	Height mm	Contents l	Capacity per shelf l
552798.0100	**1023**	**555**	**2000**	400	40

FUTURO



552807 Environmental cabinet FUTURO

For the safe storage of flammable and environmentally hazardous liquids; with 2 hinged doors, outer body made of sheet steel, powder-coated in orange **RAL 2004**; reinforced housing with ventilation slots, edges rounded for increased safety, inner body with chemically resistant surface, lockable, 3 adjustable shelves, pull-out spill tray (capacity approx. 38 liters); prepared for grounding connection.

Order ID	Width mm	Depth mm	Height mm	Adjustable trays	Capacity per shelf kg
552807.0100	**1023**	**555**	**2000**	3	60

541864 Battery charging cabinet FUTURO

RAL 7035



Ideal as a central power supply for batteries and electrical appliances.

Consisting of:
Solid panel hinged doors
4x shelves
2x power ducts on back wall each with 5 sockets CH (230V) and 2 USB charging connections

Height: 2000 mm
Width: 1023 mm
Depth: 555 mm
Load capacity: 80 kg per tray

Connection cable plug T23 16A

More colours available on request
Please note that a residual current circuit breaker must be provided on site. Never charge batteries unattended and only use the chargers specified by the battery manufacturer.

Order ID	Width mm	Depth mm	Height mm
541864.0100	1023	555	2000

541865 Battery compartment cabinet FUTURO

RAL 7035 RAL 2004



Ideal as a central power supply for batteries and electrical appliances.

Consisting of:
8 individually lockable compartments
Per compartment: 1x socket CH (230V) and 2 USB charging connections
Housing in light grey RAL 7035 and compartments in orange RAL 2004

Housing dimensions:
Height: 1800 mm
Width: 810 mm
Depth: 500 mm

Compartment dimensions:
Height: 390 mm
Width: 360 mm
Depth: 470 mm

Connection cable plug T12 10A

Please note that a residual current circuit breaker must be provided on site. Never charge batteries unattended and only use the chargers specified by the battery manufacturer.

Order ID	Width mm	Depth mm	Height mm
541865.0100	810	500	1800

541856 Vertical pull-out cabinet FUTURO

RAL 7035 RAL 5015 200 kg

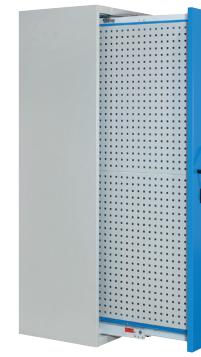
FUTURO Vertical pull-out cabinets are suitable for space-saving storage of tools. They therefore provide an ideal storage option for warehouses, manufacturing and operations.

Customisable

Housing height: 2006 mm
Housing width: 1026 mm
Housing depths: 728 mm

More colours available on request



Order ID	Version	Width mm	Depth mm	Height mm
541856.0100	Housing	1026	728	2006
541856.0200	Pull-out drawer	238	693	1900
541856.0300	NC holder	200	615	40
541856.0400	Storage containers	200	615	40
541856.0500	Perforated board	20	649	861

FUTURO



541801 Heavy-duty cabinet FUTURO

RAL 7035 RAL 5010

Cabinets for really heavy loads. Extremely stable, welded steel construction which is hard-soldered at the corners.
Impact-resistant and scratch-resistant plastic coating
Opening angle of 200°
Double-walled reinforced doors
Shelf load capacity 160 kg, total load-bearing capacity up to 1.65 t

Made in Germany

Order ID	**Width mm**	**Depth mm**	**Height mm**	Version
541801.0100	**1000**	**600**	**1950**	4x shelves, load capacity 160 kg
541801.0200	**1000**	**600**	**1950**	3x shelves, load capacity 160 kg 1x drawer H 100, load capacity 110 kg 2x drawer H 125, load capacity 110 kg

541873 Clothes locker FUTURO

RAL 7035

Sheet steel housing on base, one hat shelf with clothes rod per compartment, doors with label frame, umbrella stand, ventilation slits and cylinder lock, powder-coated

Order ID	**Compartments**	Width mm	Depth mm	Height mm	Compartment width mm
541873.0110	**1**	315	500	1800	300
541873.0210	**2**	606	500	1800	300
541873.0310	**3**	900	500	1800	300
541873.0410	**4**	1200	500	1800	300



40

541877 Wardrobes-benches FUTURO

RAL 7035

Sheet steel construction, can be compiled with wooden boards.

Order ID	**Length mm**	Width mm	Height mm
541877.0100	**1000**	320	485
541877.0200	**2000**	320	485



2742

FUTURO

541825 Container cabinet FUTURO



541825.0110



541825.0210

RAL 7035

Cabinet housing in welded sheet steel with lockable hinged doors, powder-coated, adjustable shelves of galvanized sheet steel, load capacity 50 kg, **includes storage bins, blue.**

Order ID		541825.0110	541825.0210
Width	mm	675	675
Depth	mm	250	250
Height	mm	1575	2025
Trays		11	15
Container size 1	mm	103 x 168 x 75 mm	103 x 168 x 75 mm
Container size 2	mm	147 x 235 x 125 mm	147 x 235 x 125 mm
Number of containers size 1		36	54
Number of containers size 2		24	28
Capacity per shelf	kg	50	50

546050 Universal boltless shelving FUTURO

RAL 7035

Universal shelving system, powder-coated, light grey RAL 7038. Easy assembly without bolts, can be expanded as desired.

Other sizes are available.

Order ID	**Width mm**	Depth mm	Height mm	Field width mm	Force capacity per shelf kg
546050.0110	**1000**	400	2000	1000	120
546050.0210	**2000**	400	2000	1000	120



200

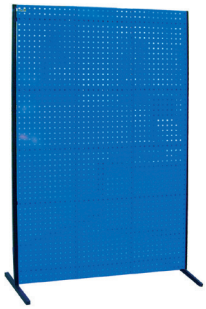
546065 Accessories FUTURO

Order ID	**Type**	Designation
546065.0100	**10**	Wall holder, for mounting vertical frames on the wall
546065.0200	**20**	Mounting hooks for connecting two vertical frames
546065.0300	**30**	Shelf supports, per piece (4 pieces per shelf)



10 20 30

FUTURO



541840 Peg board FUTURO

RAL 5015

The peg board system for efficient tool storage and space management; peg boards of heavy sheet steel, powder-coated in RAL 5015 blue, square holes; base element consisting of: 3 peg boards, 2 side stands and 2 cross struts.

Appropriate accessories:
541845 Accessories FUTURO
541847 Tool holder set FUTURO
Partition

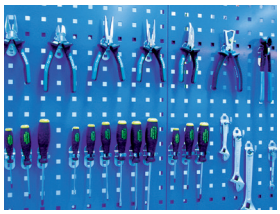
Order ID	Width mm	Height mm
541840.0100	1500	2000

FUTURO

541842 Peg board FUTURO

RAL 5015 RAL 7035

Walls made of perforated plates for efficient tool storage; easy wall mounting and can be removed as required; the plates are reinforced on the back with specially shaped supports and perforated on both sides; suitable for very high loads.
Impact-resistant and scratch-resistant plastic coating.
Made in Germany.



Example application



RAL 5015



RAL 7035

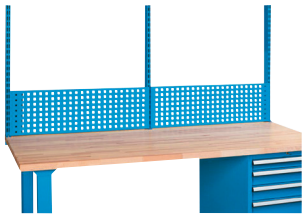
Appropriate accessories:
541845 Accessories FUTURO
541847 Tool holder set FUTURO
Available upon request as partitions, movable walls, with trolley or with workshop cabinet and pull-out cabinet.

Order ID	**Dimensions mm**	**Colour**
541842.0700	**500 mm x 2000**	
541842.0750	**40 mm x 40**	
541842.0800	**40 mm x 2000**	
541842.0100	**500 x 450**	**azure RAL 5015**
541842.0200	**500 x 450**	**light grey RAL 7035**
541842.0300	**1000 x 450**	**azure RAL 5015**
541842.0400	**1000 x 450**	**light grey RAL 7035**
541842.0500	**1500 x 450**	**light grey RAL 7035**
541842.0600	**2000 x 450**	**light grey RAL 7035**

FUTURO

541843 Peg board FUTURO

RAL 5015



Example application

For workbenches, for efficient tool storage, peg boards of heavy sheet steel, powder-coated, with square holes 11 x 11 mm, spaced 38 mm apart.

Appropriate accessories:
541845 Accessories FUTURO
541847 Tool holder set FUTURO

Usable with:
543376 Workbench FUTURO
543377 Workbench FUTURO
Partition

Order ID	**Width mm**	Height mm	Colour	Scope of delivery
541843.0100	**1500**	1000	Sky blue RAL 5015	3 peg boards length 1500 mm 2 side supports height 1000 mm
541843.0200	**2000**	1000	Sky blue RAL 5015	6 peg boards length 1000 mm 3 side supports height 1000 mm

541845 Accessories FUTURO

For peg board systems, for efficient tool storage, easy to assemble, expandable as desired.

Order ID	Type	Designation
541845.0100	**10**	Peg board hook Length 35 mm, Ø 6 mm
541845.0200	**20**	Peg board hook Length 75 mm, Ø 6 mm
541845.0300	**30**	Peg board hook Length 50 mm, Ø 6 mm
541845.0400	**40**	Peg board hook Length 100 mm, Ø 6 mm
541845.0450	**45**	Peg board hook Length 150 mm, Ø 6 mm
541845.0480	**48**	Peg board hook Length 35 mm, width 35 mm
541845.0500	**50**	Peg board hook Length 50 mm, width 35 mm
541845.0600	**60**	Peg board hook Length 75 mm, width 35 mm
541845.0650	**65**	Peg board hook Length 75 mm, width 35 mm
541845.0700	**70**	Tool holder Ø 13 mm
541845.0800	**80**	Tool holder Ø 19 mm
541845.0810	**81**	Tool holder Ø 25 mm
541845.0890	**89**	Plier holder width 35 mm, depth 20 mm
541845.0900	**90**	Plier holder, width 55 mm, depth 20 mm
541845.0940	**94**	Machine holder, inner Ø 40 mm
541845.0950	**95**	Machine holder Ø 80 mm
541845.0960	**96**	Tube holder, width 35 mm, Ø 100 mm
541845.0970	**97**	Magnetic holder Ø 40 mm
541845.1000	**100**	Wrench holder for 10 wrenches,W x D x H 145 x 50 x 220 mm
541845.1020	**102**	Wrench holder for 8 spanners, height 50 mm, width 130/60 mm, depth 150 mm
541845.1110	**111**	Shelf length 350 mm, width 125 mm, height 15 mm
541845.1120	**112**	Storage box length 320 mm, width 135 mm, height 55 mm
541845.1210	**121**	Shelf length 445 mm, width 150 mm, height 15 mm
541845.1250	**125**	Wall hanging rail for storage container, for 1 box
541845.1300	**130**	Wall rail for storage bins 547120 and 547601, width 435 mm
541845.1400	**140**	Hex socket holder, for 9 sockets Length 200 mm, depth 25 mm, height 50/70 mm
541845.1500	**150**	Socket wrench holder length 390 mm, depth 45 mm, height 30 mm, for 12 socket wrenches: 9 x Ø 25 mm, 1 x Ø 27 mm, 32 mm and 35 mm
541845.1600	**160**	Screwdriver holder for 6 parts Length 200 mm, depth 30 mm, height 40 mm
541845.1700	**170**	Can holder for 3 cans Ø 70 mm, width 300 mm
541845.1800	**180**	Saw holder for 4 saw bows, per piece, (kindly order in pairs)
541845.1900	**190**	Drill bit / hex socket holder for 14 parts, height 35 mm, width 200/390 mm, depth 30 mm.
541845.2000	**200**	Spray bottle holder, Ø 52 mm, width 76 mm
541845.2100	**210**	Base plate for individual solutions
541845.5000	**500**	Locking screw for locking all fasteners
541845.0460	**46**	Peg board hook Length 200 mm, Ø 6 mm
541845.0945	**945**	Machine holder, inner Ø 60 mm
541845.0660	**66**	Cable holder Length 200 mm, width 35 mm
541845.0955	**55**	Tube holder width 35 mm, diameter 60 mm
541845.0690	**69**	Tool holder Ø 10 mm
541845.0680	**68**	Tool holder Ø 6 mm
541845.0750	**75**	Tool holder Ø 16 mm



10 + 20



30 + 40 + 45



48 + 50 + 60



70 + 80



90



95



100



110 + 120



130



140

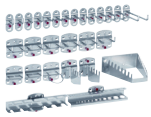
FUTURO



10



18



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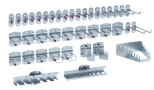

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541847 Tool holder set FUTURO

For perforated wall systems, for efficient tool storage, easy to mount, can be removed as required.
Impact-resistant and scratch-resistant plastic coating.
Made in Germany.

Order ID	Type	Designation
541847.0100	**10**	**10-piece set:** 7 tool holders with diagonal end, 2 double tool holders, 1 tool clip
541847.0200	**18**	**18-piece set:** 5 tool holders with diagonal end, 2 tool holders with perpendicular end, 3 double tool holders, 3 tool clips, 2 pliers holders, 1 drill holder, 1 wrench holder, 1 screwdriver holder
541847.0210	**18**	Assortment **18 pieces:** 5 tool holders with slanted end, 2 tool holders with perpendicular end, 3 double tool holders, 3 tool clamps, 2 pliers holders, 1 drill holder, 1 wrench holder, 1 screwdriver holder
541847.0300	**28**	**28-piece** set: 6 tool holders with diagonal end, 8 tool holders with perpendicular end, 6 double tool holders, 2 pliers holders, 1 drill holder, 1 spanner holder, 1 screwdriver holder, 1 drill holder, 2 saw holders
541847.0400	**40**	**40-piece set:** 9 tool holders with diagonal end, 12 tool holders with perpendicular end, 9 double tool holders, 3 pliers holders, 2 engine holders, 1 wrench holder, 1 screwdriver holder, 1 drill holder, 2 saw holders

FUTURO



541841 Roller shutter-tool cabinet FUTURO

RAL 5015

For hanging or standing, with square holes 11 x 101mm, spacing 38 mm, blue.

Appropriate accessories:
541845 Accessories FUTURO
Partition

Order ID	Width mm	Depth mm	Height mm
541841.0100	**967**	200	835

FUTURO



541844 Perforated board trolley FUTURO

RAL 5010 RAL 7035

The perforated board trolley is used for the systematic, central storage and provision of tools, small parts and structural materials.
The standard version of the perforated board trolley features 4 external perforated boards with familiar 10 x 10 mm square holes and can be fitted with tool holders, tray holders and other practical perforated board accessories for any application.

Mobile with four steering rollers, two of which have brakes to EN 1757-3. Grey trackless rollers.

Door with cylinder lock and two keys

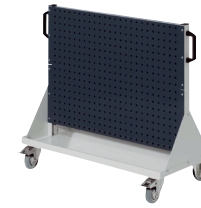
Impact-resistant and scratch-resistant plastic coating.
Made in Germany.

Appropriate accessories:
541845 Accessories FUTURO
541847 Tool holder set FUTURO

Order ID	Version	Width mm	Depth mm	Height mm
541844.0100	Empty	700	700	2175
541844.0200	With shelves, galvanized	700	700	2175

541849 Perforated board trolley FUTURO

RAL 7016 RAL 5010





The perforated board trolley FUTURO, equipped with four perforated boards, is a practical rolling storage unit for materials and tools — your useful helper in the workshop, factory and assembly hall.
It is really practical and saves you time. Work processes can be organised anywhere. Chassis in light grey RAL 7035, standard with two fixed wheels and two swivelling wheels with brakes in compliance with EN 1757-3, grey, non-marking wheels
Double-sided perforated board and ergonomic handles
Impact and scratch-resistant plastic coating

More sizes and colours available on request

Order ID	Height mm
541849.0100	**890**
541849.0200	**1230**



547120 Storage bin FUTURO

Polyethylene, impervious to acids and alkalis, resistant to temperatures from -20° to +80°, impact-resistant, **blue colour**, cadmium-free.

Order ID	Width mm	Depth mm	Height mm
547120.0100	**103**	**168**	**75**
547120.0200	**147**	**235**	**125**
547120.0300	**210**	**360**	**145**
547120.0400	**310**	**508**	**200**

493401 Painter's spatula FUTURO

Forged, with handle of rosewood and brass-plated ferrule.

Order ID	Width mm	Order ID	Width mm
493401.0100	20	493401.0400	50
493401.0200	30	493401.0500	60
493401.0300	40		



493403 Painter's spatula FUTURO

Hardened steel, semi flexible ground blade, permanently hammered in, brass-plated ferrule, large waxed natural beech wood handle.

Order ID	Width mm	Order ID	Width mm
493403.0100	30	493403.0400	60
493403.0200	40	493403.0500	80
493403.0300	50	493403.0600	100



493410 Painter's spatula FUTURO

Blade and ferrule **in brass,** blade permanently hammered in, fine-ground, **non-sparking,** large waxed natural beech wood handle.

Order ID	Width mm	Order ID	Width mm
493410.0100	40	493410.0200	60



Brass

493415 Painter's spatula FUTURO

Stainless steel, fine-polished, semi flexible-ground, with plastic handle, **for the food and beverage industry** tested according to EU regulations, each blade labelled with glass-and-fork symbol.

Order ID	Width mm	Order ID	Width mm
493415.0100	40	493415.0400	100
493415.0200	60	493415.0500	120
493415.0300	80		



493417 Bump trowel FUTURO

Hardened steel, **rigid blade**, **blade thickness 1.4mm**, ground, highly polished, hand-friendly lacquered wooden handle.

Order ID	Width mm	Order ID	Width mm
493417.0100	50	493417.0300	70
493417.0200	60		



493420 Finishing spatula FUTURO

Japan-finishing spatula, steel, flexible, blade thickness 0.31 mm, hardness, plastic backbone, hardness II, plastic backbone acid-resistant.

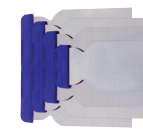
Order ID	Width mm	Order ID	Width mm
493420.0100	50	493420.0300	100
493420.0200	80	493420.0400	120



493421 Finishing spatula set FUTURO

Japan-finishing spatula, steel, flexible, blade thickness 0.31 mm, hardness, plastic backbone, hardness II, plastic backbone acid-resistant.

Order ID	Width mm
493421.0100	50, 80, 100 + 120



493423 Finishing spatula set FUTURO

Japan-finishing spatula, **stainless steel**, flexible, blade thickness 0.31 mm, hardness II, plastic backbone acid-resistant.

Order ID	Width mm
493423.0100	50, 80, 100 + 120





551210 Microfibre cloth for glass cleaning FUTURO

Super-fine high-tech microfibre cloth with very high dirt absorption capacity, **specifically designed to clean glass surfaces.** per piece.

Order ID	Length mm	Width mm	Colour
551210.0100	400	400	blue

551790 Stacking container FUTURO

Solid-wall transport and stacking container, for collecting materials in plants and warehouses. Rugged sheet steel construction, blue RAL 5015.

Order ID	Length mm	Width mm	Height mm	payload kg
551790.0100	800	600	530	600
551790.0200	1000	800	800	1000



600 kg 1000 kg

554265 Folding box FUTURO

Practical and versatile all-purpose box. Compact design made from durable plastic, quick folding for space-saving storage when not in use.

Order ID	**Dimensions mm**
554265.0200	**570 x 410 x 272**





552760 Mobile spill deck FUTURO

For storing and moving **2 x 200 l drums**, 2 fixed and 2 swivel castors, in sheet steel, painted RAL 2004 orange, with hot-dip galvanized grating.

Order ID		552760.0100
Contents	l	210
Width	mm	860
Depth	mm	1360
Height	mm	440
payload	kg	300
For barrels	pieces	2
Length	mm	1360



2

552790 Spill deck FUTURO

For safe storage and filling of 200 l drums in accordance with regulations. In sheet steel, painted RAL 2004 orange, **with hot-dip galvanized grating**.

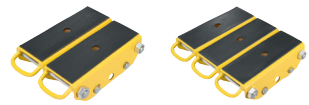
Appropriate accessories:
552795 Accessories

Order ID	**Contents** l	Width mm	Height mm	Depth mm
552790.0050	**210**	860	430	860
552790.0100	**210**	1340	330	850
552790.0200	**280**	1340	300	1250

554219 Transport rollers FUTURO

For easy and safe transport of heavy objects, stable steel-welded construction, with handles, support plates with antislip rubber covering, large nylon rollers with ball bearings.

Order ID		554219.0100
Carrying capacity	**t**	**4**
Carrier plate	mm	230 x 270
Height	mm	110
Axes		2
Rollers		4
Roller size	mm	82 x 100
Weight	kg	17



554219.0100 554219.0200

554251 Transporter FUTURO

For safe in-plant transport of machines and heavy items; rugged construction, transport rollers of nylon, gentle on floors. Support surfaces covered with antislip rubber, for greater stability and to protect the transported items. **Set consisting of 1 adjustable and 1 steerable chassis.**

Order ID		554251.0100	554251.0200
Carrying capacity total max.	**t**	**8**	**16**
Width	mm	300...1000	400...1300
Drawbar length	mm	800	1100
Rollers		4	8
Weight	kg	28	72
Carrier plate	mm	140 x 120	200 x 160
Rotary table Ø	mm	150	160
Overal size	mm	230 x 230 x 110	560 x 420 x 110



554251.0200

554271 Transporter FUTURO

Ideal for easy and safe transport of **loads of up to three tons**, stable steel construction, handles of round bar steel, large rollers of nylon: wear-resistant and elastic; low rolling resistance; load-bearing pallets with antislip rubber covering; **colour: RAL 1023 yellow**.

Order ID		554271.0100
Carrying capacity	**t**	**3**
Carrier plate	mm	180 x 150
Width x depth	mm	305 x 231
Height	mm	108
Axes		2
Rollers		4
Roller size	mm	86 x 90
Weight	kg	14.4





554401.0100

554401 Folding hand truck FUTURO

Small and light, **folds open and closed in seconds** , for space-saving storage; large, stable toe plate made from cast aluminium, also suitable for large-volume goods; material combination using aluminium, steel tubing and glass-reinforced plastic for high load capacities while weighing very little itself; wheels with polymer tyres.

Order ID		554401.0100	554401.0200	554401.0300	554401.0400
payload	**kg**	**60**	**90**	**125**	**200**
Width open / folded	mm	386	485	484	590
Height open / folded	mm	1005 / 630	1080 / 797	1080 / 780	1280 / 1010
Thickness folded	mm	55	60	65	90 / 170
Wheels Ø	mm	130	175	175	205
Shovel (L x W)	mm	386 x 280	485 x 277	484 x 348	590 x 400
Weight	kg	3.2	4.74	6.8	10.5

554280 Platform cart FUTURO

Multifunctional, practical transport trolley/furniture dolly **with telescopic handle** for various applications in the workshop, warehouse, office and household. **Several trolleys can be connected together to create a larger transport surface**. Suitable for high load capacities of up to 135 kilogrammes yet also features a low dead weight. The four silent TPR wheels can be easily folded in using a lever. The trolley's space-saving design allows it to be conveniently stowed in tight spaces such as the boot of vehicles.



Appropriate accessories:
554265.0200 Folding box FUTURO 570 x 410 x 272 mm

Order ID	Platform size mm	Load carrying capacity kg	Dimensions mm
554280.0100	**600 x 450**	135	600 x 450 x 170 / 77

540851 Portable scissor lift table FUTURO

This FUTURO portable lift platform can be used to carry out many operations in manufacturing and assembly more cost-effectively and at the optimal height. Stable, welded steel construction, platform of sheet steel, heavy-duty hydraulic system with foot operation, 2 swivel castors and 2 fixed castors, with wheel locking mechanism; **RAL 1023 yellow**.

Order ID		540851.0100
Length	**mm**	**850**
Width	mm	500
Lift range	mm	285...880
Platform size	mm	815 x 500
Wheel Ø	mm	125
Load carrying capacity	kg	500
Weight	kg	81



540851.0100

540865 Rolling table FUTURO

Rugged, solidly welded sheet steel construction, 2 fixed and 2 swivel castors, with push handle, RAL 5015 blue.

Other sizes and versions are available.

Order ID		540865.0100	540865.0200	540865.0300
Trays		**2**	**3**	**3**
L x W x H	**mm**	**920 x 600 x 840**	**920 x 600 x 840**	**1000 x 600 x 840**
Wheel Ø	mm	125	125	125
Force capacity per shelf	kg	100	100	140
Load carrying capacity	kg	200	300	420
Weight	kg	28.1	38.0	44.2



540865.0200

597022 Platform cart FUTURO

Folds open and closed in seconds, for space-saving storage, for high load capacities while weighing very little itself; wheels fold in in folded state; with non-slip load surface, 3 carry handles integrated into the platform, aluminium frame, low-noise wheels with polymer tyres, 2 fixed and 2 swivel castors.



Appropriate accessories:
554265 Folding box FUTURO

Order ID	Platform size mm	Load carrying capacity kg	Wheel Ø mm	Weight kg
597022.0100	**680 x 410**	120	100	6.7

FUTURO



554475 Pallet lift truck FUTURO

Fork length 800 mm

Especially suitable for confined spaces due to its length; ideal for loading and unloading transport vehicles, **with locking brake**. Frame and forks in deformation-free monocoque construction, hydraulic hand pump with maintenance-free bearings, rugged steel tube drawbar with counterbearing for pushing. Operating lever for the functions: lifting - moving - lowering. Steered wheels in solid rubber, PU rollers, tandem; **yellow RAL 1023**.

Order ID	**Carrying capacity t**	Lift height mm	**Fork length mm**	Weight kg
554475.0100	**2**	85...200	**800**	71

FUTURO



554478 Pallet lift truck FUTURO

Quicklift model for rapid lifting, pump 5 x = maximum lifting height; frame and forks in deformation-free monocoque construction, low-maintenance hydraulic unit, stable steel tube drawbar with counter bearing for pushing; operating lever for the functions lift - move - lower; steered wheels in solid rubber, swivelling tandem rollers in polyurethane and positioning rollers with additional metal guide, **colour: yellow RAL 1023**.

Order ID	**Carrying capacity t**	Lift height mm	**Fork length mm**	Weight kg
554478.0100	**2**	85...200	**1150**	78

FUTURO



554481 Pallet lift truck FUTURO

Frame and forks in deformation-free monocoque construction, hydraulic hand pump with maintenance-free bearings, rugged steel tube drawbar with counterbearing for pushing. Operating lever for the functions: lifting - moving - lowering. Steered wheels in solid rubber, PU rollers, tandem; **yellow RAL 1023**.

Order ID	**Carrying capacity t**	Lift height mm	**Fork length mm**	Weight kg
554481.0200	**2.5**	85...200	**1150**	77

554485 Pallet lift truck FUTURO

Suitable for lifting, order picking and transporting **of long loads such as pallets**. Frame and forks in deformation-free monocoque construction, hydraulic hand pump with maintenance-free bearings, rugged steel tube drawbar with counterbearing for pushing. Operating lever for the functions: lifting - moving - lowering. Steered wheels in solid rubber, PU rollers, tandem; **yellow RAL 1023**.

Order ID	**Carrying capacity** **t**	Lift height mm	**Fork length** **mm**	Weight kg
554485.0100	**1.5**	85...200	**2000**	92



554496 High-lift pallet truck FUTURO

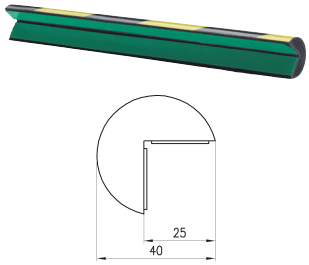
Suitable for lifting, order picking and transporting of loads and pallets. Properties include smooth, even raising and lowering, simple handling, safety and dependability. Specially designed for use on hard and flat surfaces, frame and forks in deformation-free monocoque construction, rugged steel tube drawbar, operating lever for the functions: lifting - moving - lowering. Steered wheels and fork rollers in PU, quick lift function; **yellow RAL 1023**.

Order ID	**Carrying capacity** **t**	Lift height mm	**Fork length** **mm**	Weight kg
554496.0200	**1**	85...715	**1170**	122



554496.0200

FUTURO

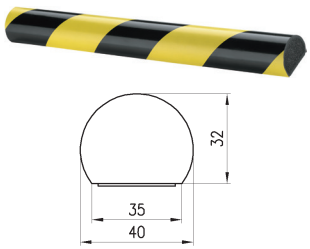


557905 Warning and protection profile FUTURO

Warning and protection profile A in flexible polyurethane integral moulded foam, for indoors and outdoors, can be cut to size individually, with yellow/black warning colouring, self-adhesive.

Order ID	Type	Length mm
557905.0100	**A**	1500

FUTURO

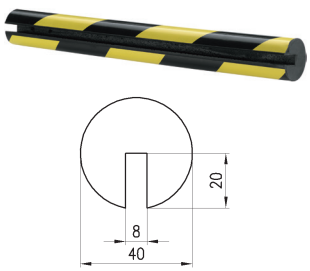


557910 Warning and protection profile FUTURO

Warning and protection profile C in flexible polyurethane integral moulded foam, for indoors and outdoors, can be cut to size individually, with yellow/black warning colouring, self-adhesive.

Order ID	Type	Length mm
557910.0100	**C**	1500

FUTURO



557915 Warning and protection profile FUTURO

Warning and protection profile B in flexible polyurethane integral moulded foam, for indoors and outdoors, can be cut to size individually, with yellow/black warning colouring.

Order ID	Type	Length mm
557915.0100	**B**	1500

FUTURO

Personal Protective Equipment

Hand protection **354-358**



530180 Cotton gloves FUTURO

per pair, **of fine cotton tricot, for fine work,** e.g. in precision mechanics, décolletage, apparatus construction; also for protection against fingerprints.

Appropriate accessories:
530448 NERIOX fastening clip

50% cotton, 50% polyester

CE Category I

Order ID	Size
530180.0060	6
530180.0080	7
530180.0090	8
530180.0100	9
530180.0200	10
530180.0300	11



530252 Knitted nylon gloves with nubs, FUTURO



As pair, palm and fingertips with black fine-knit **nitrile microfoam coating. Nubbed grip print on palm**. For work that requires high abrasion resistance and good sense of touch.

Appropriate accessories:
530448 NERIOX fastening clip
CE Category II
EN 388:4141
Pack of 12 pairs
Price per pair

Order ID	Size	Order ID	Size
530252.0100	8	530252.0300	10
530252.0200	9	530252.0400	11



530281 Cut protection gloves FUTURO B

White



Fine-knit fabric (gauge 13) with elastane, palm and fingertips reinforced with thin, grey PU coating, **touchscreen compatible**, elasticated cuff, comfortable to wear, high abrasion resistance and good cut protection, mechanical strength, good tactile sensitivity and grip with **outstanding protection against sharp parts**.

Cut protection class B

Appropriate accessories:
530448 NERIOX fastening clip

CE category II
EN 388:2016 4X42B
Price per pair

Order ID	Size	Order ID	Size
530281.0100	6	530281.0400	9
530281.0200	7	530281.0500	10
530281.0300	8	530281.0600	11

530228 Knitted nylon gloves FUTURO

grey





per pair, palm and fingertips reinforced with thin grey PU coating, elastic cuff, high abrasion resistance **with good cut protection**, mechanical resilience, good tactile touch and grip with optimal protection against sharp-edged parts.

Appropriate accessories:
530448 NERIOX fastening clip
CE Category II
EN 388:4X43B
Pack of 12 pairs
Price per pair

Order ID	Size	Order ID	Size
530228.0050	**7**	530228.0300	**10**
530228.0100	**8**	530228.0400	**11**
530228.0200	**9**	530228.0500	**12**

530160 Cotton gloves FUTURO



per pair, **of cotton fabric with molleton on the inside**, knit cuff; all-purpose gloves for light, general work; sheet metal and other metalwork, work with heavy fouling and to protect materials from fingerprints.

Appropriate accessories:
530448 NERIOX fastening clip
CE Category I

Order ID	Size
530160.0080	**8**
530160.0100	**10**

530185 Cotton gloves FUTURO

Premium



per pair, **of fine cotton tricot 180 g/m2, for fine work,** e.g. in precision mechanics, décolletage, apparatus construction; also for protection against fingerprints.

Appropriate accessories:
530448 NERIOX fastening clip
CE Category I

Order ID	Size
530185.0060	**6**
530185.0080	**7**
530185.0090	**8**
530185.0200	**10**
530185.0400	**12**
530185.0500	**13**

530265 Nylon knitted gloves FUTURO

Touch screen, grey





Fine-knit fabric (gauge 15) with elastane, palm and fingertips feature black nitrile microfoam coating, particularly breathable, **particularly good sense of touch, touch screen compatible**, **high abrasion resistance,** very good fit and reliable grip and comfortable to wear.

Appropriate accessories:
530448 NERIOX fastening clip

Alternatively also available:
530005 Polyester knitted gloves NERIOX Grip
CE Category II
EN 388:4131X
Pack of 1 pair
Price per pair

Order ID	Size	Order ID	Size
530265.0100	**7**	530265.0400	**10**
530265.0200	**8**	530265.0500	**11**
530265.0300	**9**		



530266 Nylon knitted gloves FUTURO

Touch screen, white

sold by the pair, palm and fingertips reinforced with thin white PU coating, elasticated cuff, **touch screen compatible, for work requiring high abrasion resistance and extremely sensitive touch**; suitable for precision work.

Appropriate accessories:
530448 NERIOX fastening clip
CE Category II
EN 388:4131X
Pack of 1 pair
Price per pair

Order ID	Size	Order ID	Size
530266.0100	6	530266.0400	9
530266.0200	7	530266.0500	10
530266.0300	8	530266.0600	11



530267 Nylon knitted gloves FUTURO

Touch screen, grey

sold by the pair, palm and fingertips reinforced with thin, grey PU coating, elasticated cuff, **touch screen compatible, for work requiring high abrasion resistance and extremely sensitive touch**; suitable for precision work.

Appropriate accessories:
530448 NERIOX fastening clip
CE Category II
EN 388:4131X
Pack of 1 pair
Price per pair

Order ID	Size	Order ID	Size
530267.0100	6	530267.0400	9
530267.0200	7	530267.0500	10
530267.0300	8	530267.0600	11



530268 Nylon knitted gloves FUTURO

Touch screen, black

sold by the pair, palm and fingertips reinforced with thin, black PU coating, elasticated cuff, **touch screen compatible, for work requiring high abrasion resistance and extremely sensitive touch**; suitable for precision work.

Appropriate accessories:
530448 NERIOX fastening clip
CE Category II
EN 388:4131X
Pack of 1 pair
Price per pair

Order ID	Size	Order ID	Size
530268.0100	6	530268.0400	9
530268.0200	7	530268.0500	10
530268.0300	8	530268.0600	11

530269 Nylon knitted gloves FUTURO

Touch screen, white




sold by the pair, seamless white nylon knit fabric, **touch screen compatible, palm reinforced with thin, grey nitrile coating,** elasticated cuff.




Appropriate accessories:
530448 NERIOX fastening clip
CE Category II
EN 388:4121X
Pack of 1 pair
Price per pair

Order ID	Size	Order ID	Size
530269.0400	**9**	530269.0500	**10**

530340 Cut protection gloves FUTURO D

Touchscreen, blue




Ultimate protection and maximum comfort with high-performance cut protection gloves that have been specially developed to optimally protect hands during demanding work.



- **Fine knit 18 gauge:** The glove is made from a finely knitted material with a thickness of 18 gauge, which ensures a perfect fit and excellent dexterity.
- **Coating:** The palms are coated with a rough nitrile foam that not only provides excellent grip but is also durable and abrasion-resistant.
- **Reinforced crook of thumb:** For added protection and increased durability, the crook of the thumb is reinforced to maximise resilience in one of the most stressed areas of the glove.
- **Touchscreen-compatible:** Thanks to the special coating, you can easily operate your touchscreen devices without having to remove your gloves.
- **Cuff:** The black, striped cuff ensures a secure fit and a stylish appearance.
- **Size-coded cuff colour:** The cuff is colour-coded to identify the size of the glove at a glance, making selection and handling easier.
- **Cut protection class D:** These gloves meet the requirements of cut protection class D and therefore offer excellent protection against cuts and abrasion.

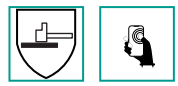
CE category II
EN ISO 21420:2020
EN 388:2016 4X43D
Price per pair

Order ID	Size
530340.0100	**7**
530340.0200	**8**
530340.0300	**9**
530340.0400	**10**
530340.0500	**11**



530330 Cut protection gloves FUTURO C

Touchscreen, green



Outstanding comfort, protection and cut resistance with our fine knit gloves, which are made from a durable 18-gauge material. These gloves are not only flexible and breathable, but also offer optimum protection thanks to their black PU coating and cut protection class C.

- **Fine knit 18 gauge:** The finely knitted material provides an ideal combination of flexibility and durability, ensuring a comfortable fit and high level of comfort.
- **PU coating:** The black polyurethane coating on the palms and fingers provides excellent grip and protection against abrasion without restricting mobility.
- **Cut protection class C:** Our gloves feature enhanced class C cut protection, reliably protecting your hands from sharp objects and cuts.
- **Touchscreen:** With our special coating, you can easily operate touchscreen devices without having to remove your gloves.
- **Cuff:** The black, striped cuff ensures a secure fit and prevents dirt or foreign objects from entering the gloves.
- **Size-coded cuff colour:** The colour of the cuff varies depending on the size of the gloves for easy identification and selection.

CE category II
EN ISO 21420:2020
EN 388:2016 4X43C
Price per pair

Order ID	Size
530330.0100	7
530330.0200	8
530330.0300	9
530330.0400	10
530330.0500	11



530350 FUTURO F cut protection glove

Touchscreen, anthracite



Ultimate protection and maximum comfort with high-performance cut protection gloves that have been specially developed to optimally protect hands during demanding work.

- **Fine knit 18 gauge:** The glove is made from a finely knitted material with a thickness of 18 gauge, which ensures a perfect fit and excellent dexterity.
- **Coating:** The palms are coated with a rough nitrile foam that not only provides excellent grip but is also durable and abrasion-resistant.
- **Reinforced crook of thumb:** For added protection and increased durability, the crook of the thumb is reinforced to maximise resilience in one of the most stressed areas of the glove.
- **Touchscreen-compatible:** Thanks to the special coating, you can easily operate your touchscreen devices without having to remove your gloves.
- **Cuff:** The black, striped cuff ensures a secure fit and a stylish appearance.
- **Size-coded cuff colour:** The cuff is colour-coded to identify the size of the glove at a glance, making selection and handling easier.
- **Cut protection class F:** These gloves meet the requirements of cut protection class F and therefore offer excellent protection against cuts and abrasion.

CE category II
EN ISO 21420:2020
EN 388:2016 4X43F
Price per pair

Order ID	Size
530350.0100	7
530350.0200	8
530350.0300	9
530350.0400	10
530350.0500	11

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