Superior Clamping and Gripping

SCHUNK®

Product Information

Compensation unit AGE-F

Flat. Flexible. Compact.

Compensation unit AGE-F

Compensation unit with X-Y lateral compliance and integrated spring return

Field of application

Palletizing, joining, and assembly of workpieces

Advantages – Your benefits

Spring reset in three different spring strengths. for a defined, centric position at a repeat accuracy of 0.02 mm

Direct assembly of grippers no need for additional adapter plates

Cross roller guides for smooth compensation at low compensation forces

Adjustable compensation stroke for minimizing interfering contours

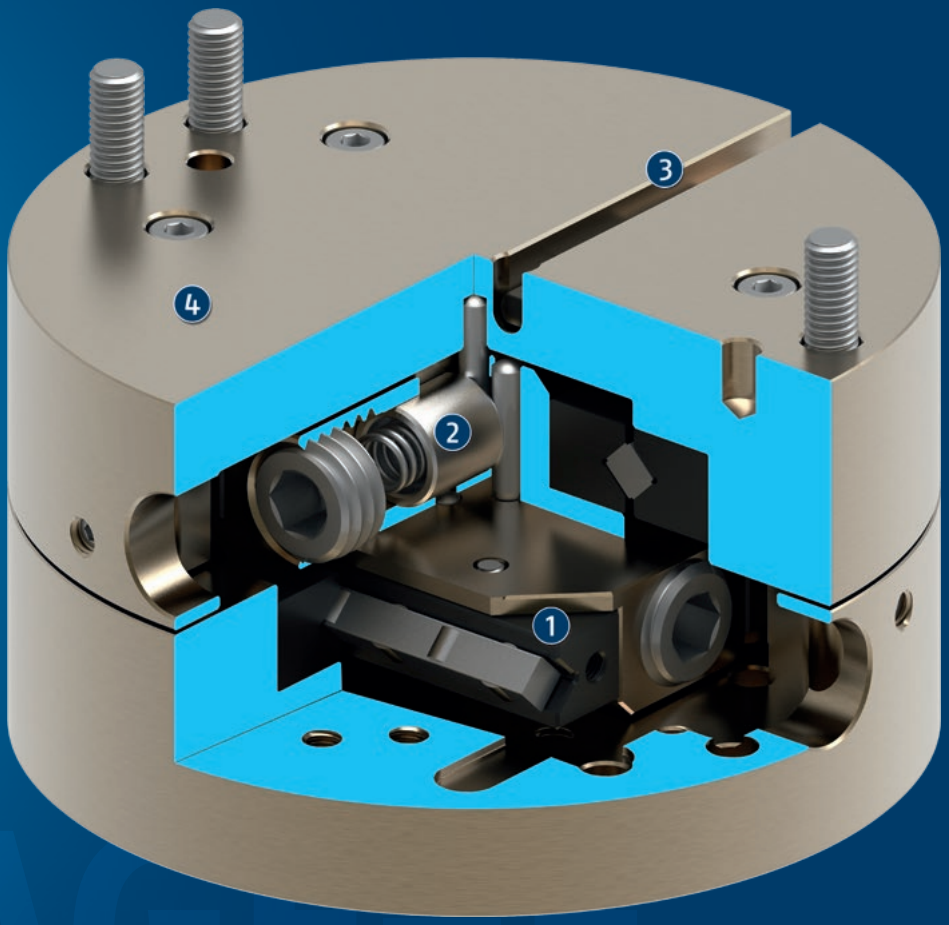
Sizes
Quantity: 4

Handling weight
1.5 .. 32 kg

Compensation XY
±1.5 .. 5 mm

Functional description

The compensation unit AGE-F enables the activation of the linear movement in the X and Y axis of the robots or handling units. For example, this allows axis offset of workpieces to be compensated and centrically aligned again.



① **Linear guide**
smooth-running cross roller guidance

② **Spring-actuated reset**
Different spring forces for centering without pneumatics

③ **Slot for magnetic switch**
for monitoring the compensating stroke in X and Y direction

④ **Housing**
is weight-optimized due to the use of high-strength aluminum alloy

General notes about the series

Guidance system: smoothly running cross roller guides

Monitoring: by magnetic switch

Actuation: spring return with spring forces

Housing: hard anodized aluminum alloy, functional parts made of hardened steel

Scope of delivery: including robot-sided mounting screws

Warranty: 24 months

Harsh environmental conditions: Please note that use under harsh environmental conditions (e.g. in the coolant area, cast and grinding dust) can considerably reduce the service life of the units, and we will not take over any warranty. However, in many cases we can find a solution. Please contact us for assistance.

Handling weight: is the weight of the total load attached to the flange. When designing, the permissible forces and moments have to be paid attention to. Please note that exceeding the recommended handling weight will shorten the lifespan.

Application example

Compensation unit for mounting a pin in a bore with a roughly toleranced position. The compensation unit compensates for the planar offset without turning or tilting the workpiece.

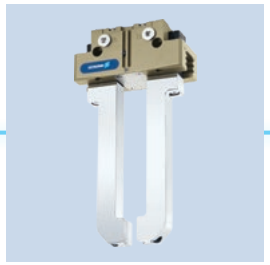
1. Compensation unit AGE-F
2. 2-finger parallel gripper PGN-plus

SCHUNK offers more ...

The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.

Quick change system

Manual change system



Universal gripper

Universal gripper

Magnetic switches

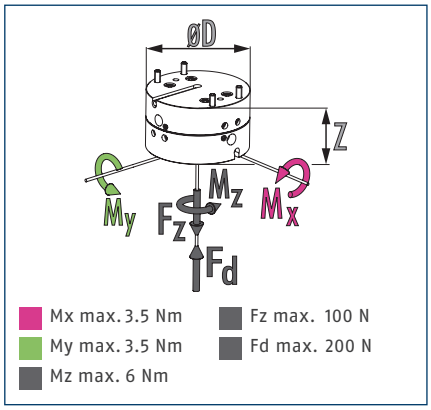
Angular gripper

ⓘ For more information on these products can be found on the following product pages or at schunk.com.

AGE-F 031

Compensation unit

Dimensions and maximum loads

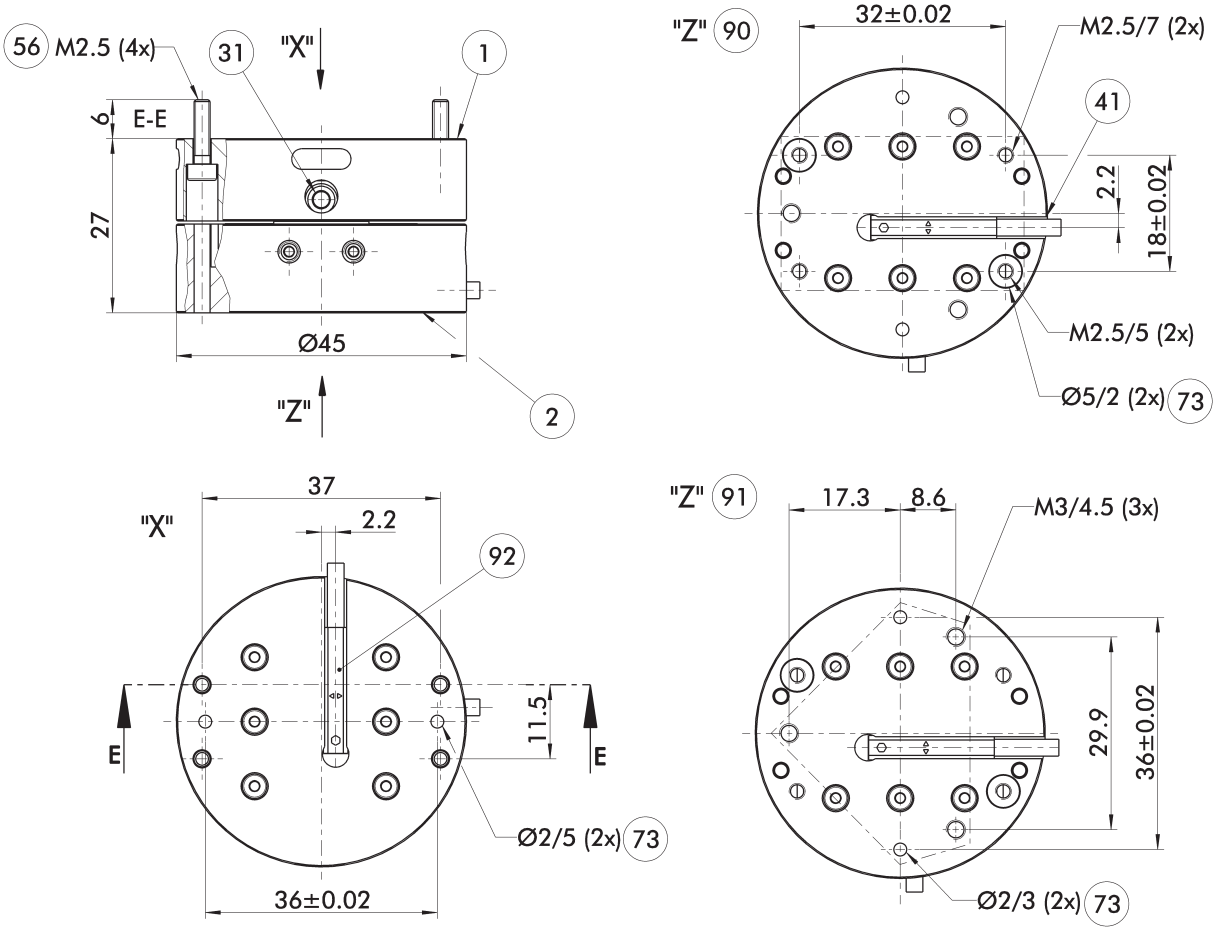


ⓘ This is the max. total of all moments and loads (acceleration forces and torques, process forces etc.), which can affect a compensation unit, in order to ensure error-free function.

Technical data

Description		AGE-F-XY-031-1	AGE-F-XY-031-2	AGE-F-XY-031-3
ID		0324900	0324901	0324902
Compensation XY	[mm]	±1.5	±1.5	±1.5
Recommended handling weight	[kg]	1.5	1.5	1.5
Min. resetting force	[N]	1.5	4	5.5
Max. resetting force	[N]	3.5	5.5	7
Spring rate	[N/mm]	1	1	1.3
Repeat accuracy	[mm]	±0.01	±0.01	±0.01
Weight	[kg]	0.123	0.123	0.123
Min./max. ambient temperature	[°C]	5/80	5/80	5/80
Dimensions Ø D x Z	[mm]	45 x 27	45 x 27	45 x 27

Main view



The main view shows the product with proximity switch. It is optional. If a gripper is screwed onto the unit, the gripper cannot be monitored due to the interfering contour.

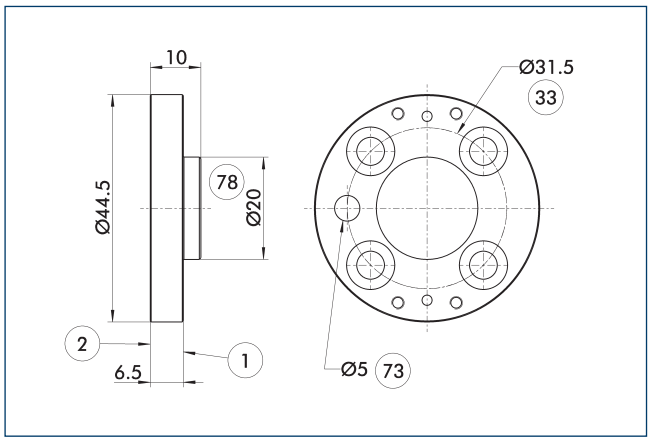
ⓘ Screws for robot-sided mounting are already fitted

(1) Robot-side connection
(2) Tool-side connection
(31) Stop for stroke limitation
(41) Optional proximity switch
(56) Included in the scope of delivery
(73) Fit for centering pins
(90) Connection diagram PGN-plus 40
(91) Connection diagram PZN-plus 40
(92) Magnetic switches

AGE-F 031

Compensation unit

Adapter plate ISO 9409-31.5-4-M5

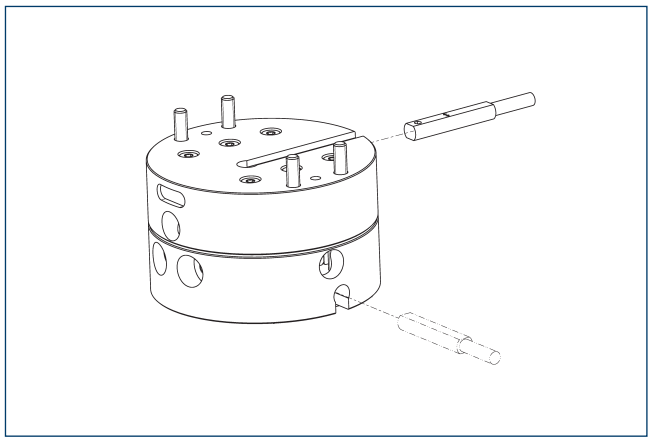


(1) Robot-side connection
(2) Tool-side connection
(33) DIN ISO-9409 bolt circle
(73) Fit for centering pins
(78) Fit for centering

Robot-side adapter plate to mount the OPR to a mounting pattern according to ISO 9409-31.5-4-M5.

Description	ID	Height
		[mm]
Robot side		
A-AGE-F-XY-031	0324903	10

Sensor system



End position monitoring for mounting in the C-slot.

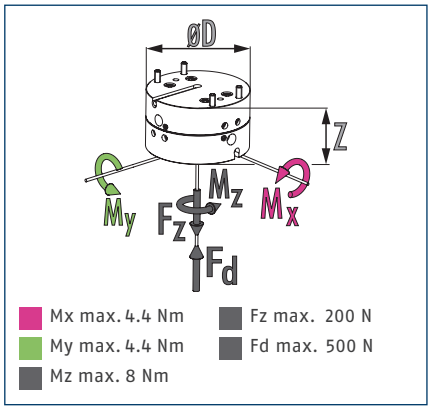
Description	ID	Often combined
Programmable magnetic switch		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
Connection cables		
KA GLN0804-LK-00500-A	0307767	●
KA GLN0804-LK-01000-A	0307768	
KA WLN0804-LK-00500-A	0307765	
KA WLN0804-LK-01000-A	0307766	
clip for plug/socket		
CLI-M8	0301463	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	

ⓘ Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

AGE-F 040

Compensation unit

Dimensions and maximum loads

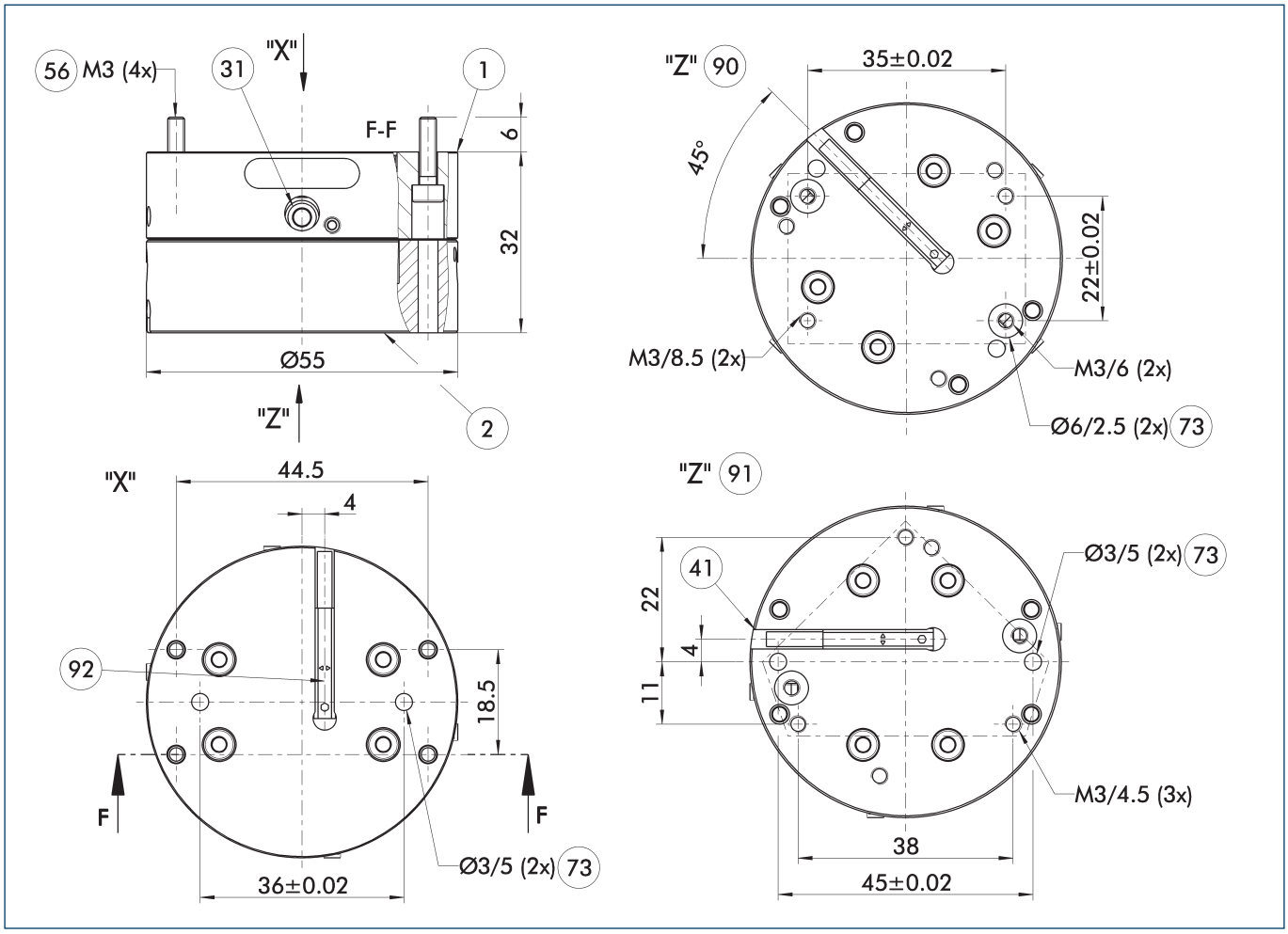


ⓘ This is the max. total of all moments and loads (acceleration forces and torques, process forces etc.), which can affect a compensation unit, in order to ensure error-free function.

Technical data

Description		AGE-F-XY-040-1	AGE-F-XY-040-2	AGE-F-XY-040-3
ID		0324920	0324921	0324922
Compensation XY	[mm]	±2	±2	±2
Recommended handling weight	[kg]	4	4	4
Min. resetting force	[N]	3	4	4.5
Max. resetting force	[N]	5	7	9
Spring rate	[N/mm]	0.5	1.3	2
Repeat accuracy	[mm]	±0.01	±0.01	±0.01
Weight	[kg]	0.23	0.23	0.23
Min./max. ambient temperature	[°C]	5/80	5/80	5/80
Dimensions Ø D x Z	[mm]	55 x 32	55 x 32	55 x 32

Main view



The main view shows the product with proximity switch. It is optional. If a gripper is screwed onto the unit, the gripper cannot be monitored due to the interfering contour.

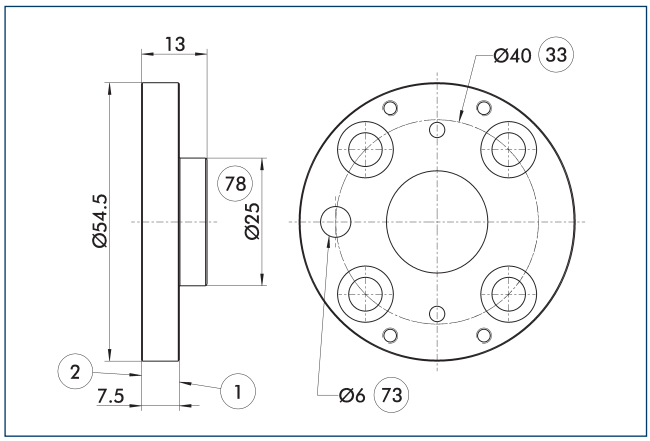
ⓘ Screws for robot-sided mounting are already fitted

(1) Robot-side connection
(2) Tool-side connection
(31) Stop for stroke limitation
(41) Optional proximity switch
(56) Included in the scope of delivery
(73) Fit for centering pins
(90) Connection diagram PGN-plus 50
(91) Connection diagram PZN-plus 50
(92) Magnetic switches

AGE-F 040

Compensation unit

Adapter plate ISO 9409-40-4-M6

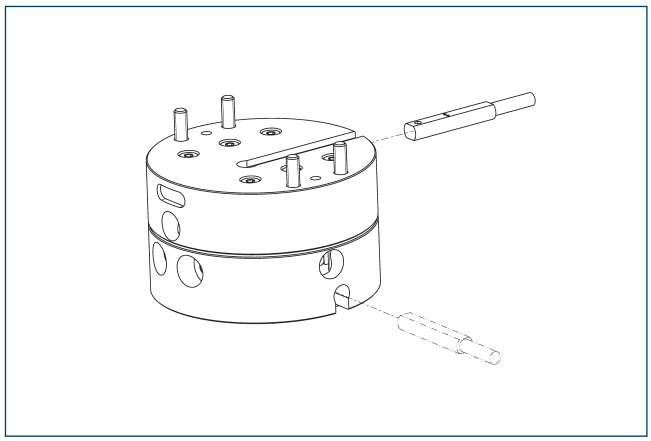


(1) Robot-side connection
(2) Tool-side connection
(33) DIN ISO-9409 bolt circle
(73) Fit for centering pins
(78) Fit for centering

Tool-side adapter plate with ISO 9409 screw connection pattern.

Description	ID	Height
		[mm]
Robot side		
A-AGE-F-XY-040	0324923	13

Sensor system



End position monitoring for mounting in the C-slot.

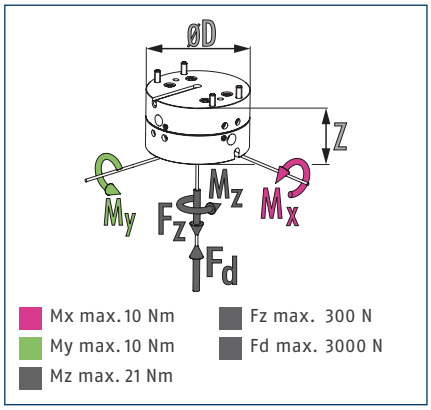
Description	ID	Often combined
Programmable magnetic switch		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
Connection cables		
KA GLN0804-LK-00500-A	0307767	●
KA GLN0804-LK-01000-A	0307768	
KA WLN0804-LK-00500-A	0307765	
KA WLN0804-LK-01000-A	0307766	
clip for plug/socket		
CLI-M8	0301463	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	

ⓘ Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

AGE-F 063

Compensation unit

Dimensions and maximum loads



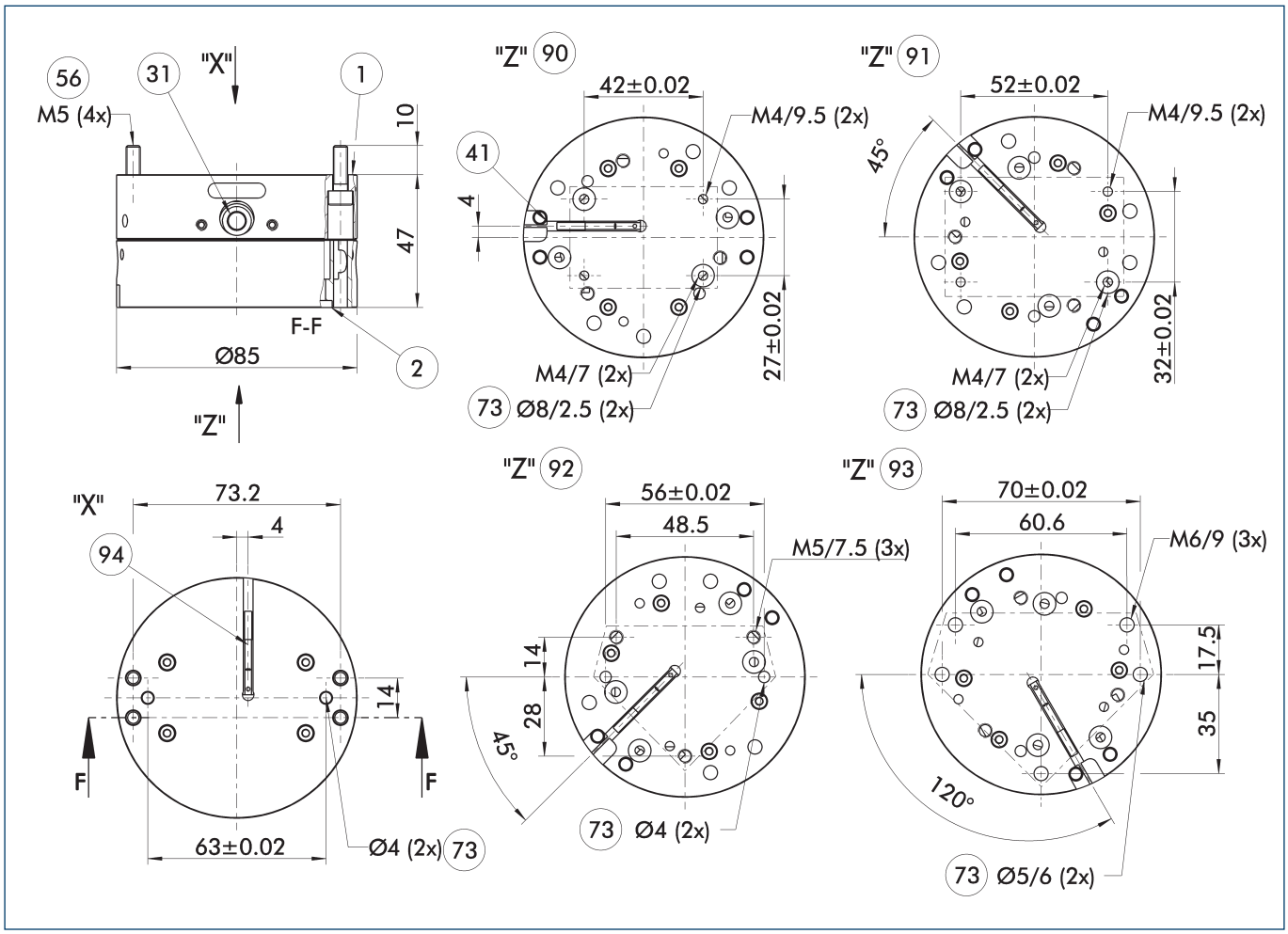
- Mx max. 10 Nm
- My max. 10 Nm
- Mz max. 21 Nm
- Fz max. 300 N
- Fd max. 3000 N

ⓘ This is the max. total of all moments and loads (acceleration forces and torques, process forces etc.), which can affect a compensation unit, in order to ensure error-free function.

Technical data

Description		AGE-F-XY-063-1	AGE-F-XY-063-2	AGE-F-XY-063-3
ID		0324940	0324941	0324942
Compensation XY	[mm]	±4	±4	±4
Recommended handling weight	[kg]	12.5	12.5	12.5
Min. resetting force	[N]	12	16	20
Max. resetting force	[N]	25	38	55
Spring rate	[N/mm]	2	4.8	6.8
Repeat accuracy	[mm]	±0.01	±0.01	±0.01
Weight	[kg]	0.78	0.78	0.78
Min./max. ambient temperature	[°C]	5/80	5/80	5/80
Dimensions Ø D x Z	[mm]	85 x 47	85 x 47	85 x 47

Main view



The main view shows the product with proximity switch. It is optional. If a gripper is screwed onto the unit, the gripper cannot be monitored due to the interfering contour.

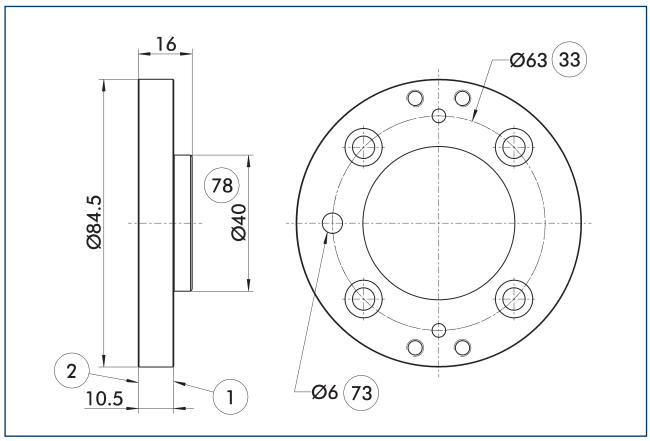
ⓘ Screws for robot-sided mounting are already fitted

(1) Robot-side connection
(2) Tool-side connection
(31) Stop for stroke limitation
(41) Optional proximity switch
(56) Included in the scope of delivery
(73) Fit for centering pins
(90) Connection diagram PGN-plus 64
(91) Connection diagram PGN-plus 80
(92) Connection diagram PZN-plus 64
(93) Connection diagram PZN-plus 80
(94) Magnetic switches

AGE-F 063

Compensation unit

Adapter plate ISO 9409-63-4-M6

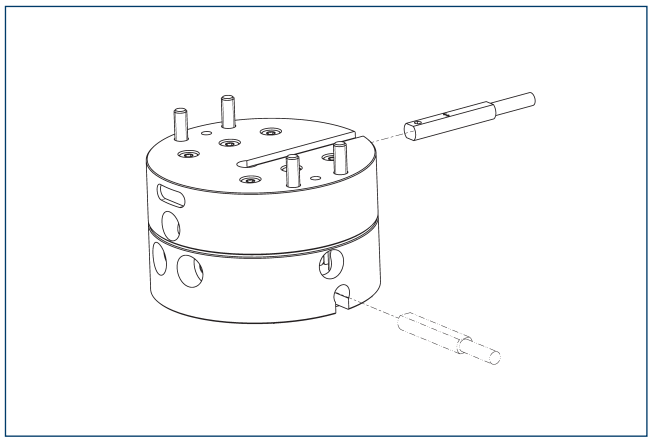


(1) Robot-side connection
(2) Tool-side connection
(33) DIN ISO-9409 bolt circle
(73) Fit for centering pins
(78) Fit for centering

Tool-side adapter plate with ISO 9409 screw connection pattern.

Description	ID	Height
		[mm]
Robot side		
A-AGE-F-XY-063	0324943	16

Sensor system



End position monitoring for mounting in the C-slot.

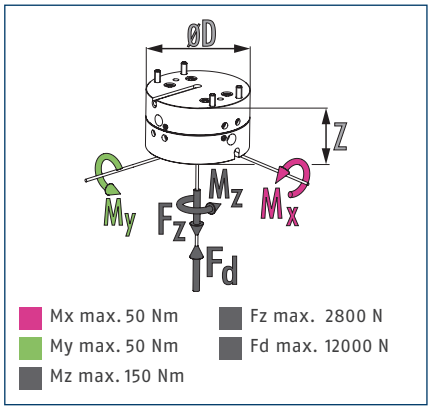
Description	ID	Often combined
Programmable magnetic switch		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
Connection cables		
KA GLN0804-LK-00500-A	0307767	●
KA GLN0804-LK-01000-A	0307768	
KA WLN0804-LK-00500-A	0307765	
KA WLN0804-LK-01000-A	0307766	
clip for plug/socket		
CLI-M8	0301463	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	

ⓘ Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

AGE-F 080

Compensation unit

Dimensions and maximum loads



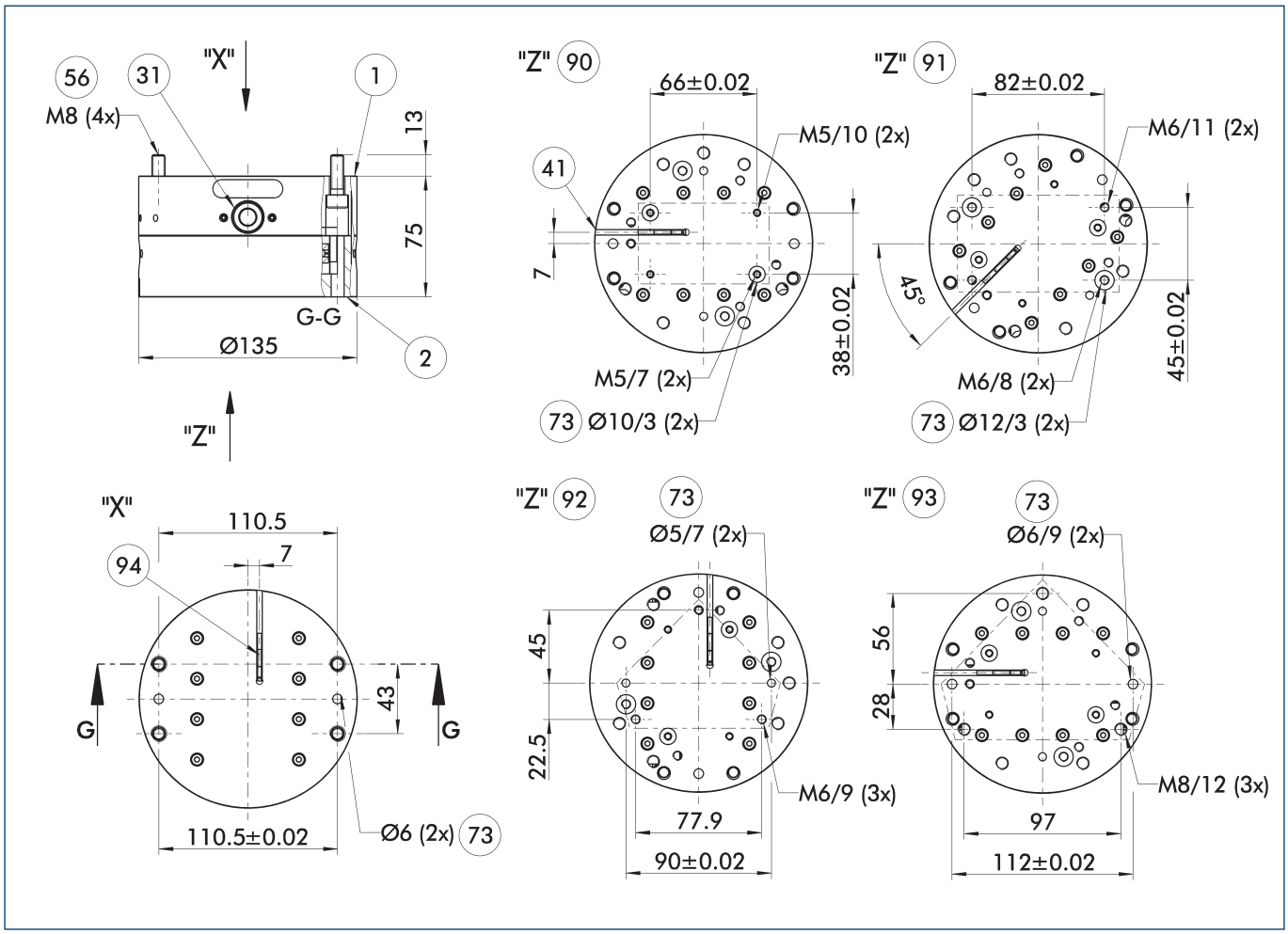
- Mx max. 50 Nm
- My max. 50 Nm
- Mz max. 150 Nm
- Fz max. 2800 N
- Fd max. 12000 N

ⓘ This is the max. total of all moments and loads (acceleration forces and torques, process forces etc.), which can affect a compensation unit, in order to ensure error-free function.

Technical data

Description		AGE-F-XY-080-1	AGE-F-XY-080-2	AGE-F-XY-080-3
ID		0324960	0324961	0324962
Compensation XY	[mm]	±5	±5	±5
Recommended handling weight	[kg]	32	32	32
Min. resetting force	[N]	39	85	90
Max. resetting force	[N]	70	130	150
Spring rate	[N/mm]	6.8	15	25
Repeat accuracy	[mm]	±0.01	±0.01	±0.01
Weight	[kg]	3.13	3.13	3.13
Min./max. ambient temperature	[°C]	5/80	5/80	5/80
Dimensions Ø D x Z	[mm]	135 x 75	135 x 75	135 x 75

Main view



The main view shows the product with proximity switch. It is optional. If a gripper is screwed onto the unit, the gripper cannot be monitored due to the interfering contour.

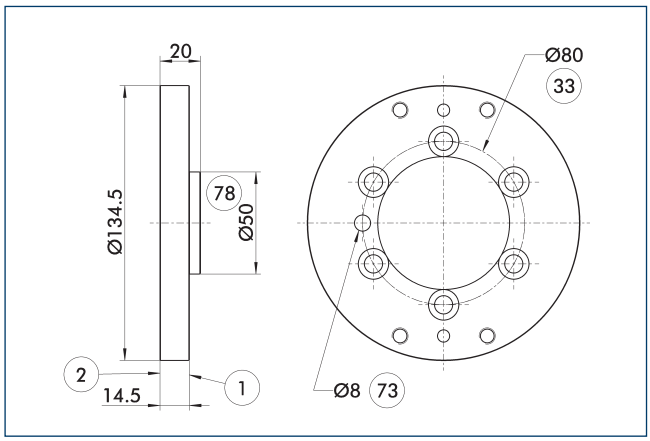
ⓘ Screws for robot-sided mounting are already fitted

(1) Robot-side connection
(2) Tool-side connection
(31) Stop for stroke limitation
(41) Optional proximity switch
(56) Included in the scope of delivery
(73) Fit for centering pins
(90) Connection diagram PGN-plus 100
(91) Connection diagram PGN-plus 125
(92) Connection diagram PZN-plus 100
(93) Connection diagram PZN-plus 125
(94) Magnetic switches

AGE-F 080

Compensation unit

Adapter plate ISO 9409-80-6-M8

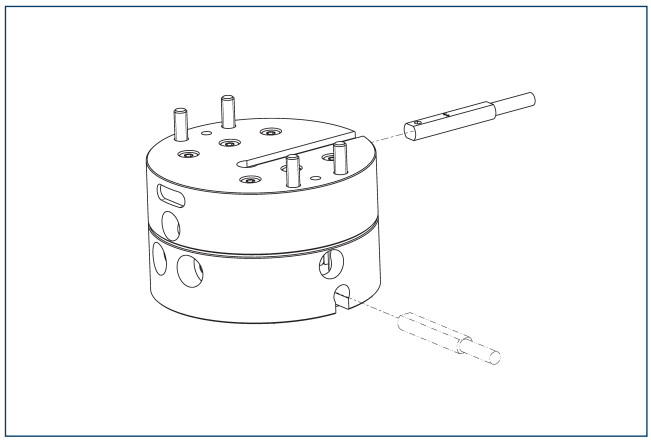


(1) Robot-side connection
(2) Tool-side connection
(33) DIN ISO-9409 bolt circle
(73) Fit for centering pins
(78) Fit for centering

Tool-side adapter plate with ISO 9409 screw connection pattern.

Description	ID	Height
		[mm]
Robot side		
A-AGE-F-XY-080	0324963	20

Sensor system



End position monitoring for mounting in the C-slot.

Description	ID	Often combined
Programmable magnetic switch		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
Connection cables		
KA GLN0804-LK-00500-A	0307767	●
KA GLN0804-LK-01000-A	0307768	
KA WLN0804-LK-00500-A	0307765	
KA WLN0804-LK-01000-A	0307766	
clip for plug/socket		
CLI-M8	0301463	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	

ⓘ Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

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Superior Clamping and Gripping

SCHUNK®

Product Information

Compensation unit XYZ AGE-S

Modular. Precise. Robust.

Compensation unit AGE-S-XYZ

Compensation unit compensating in XY- and Z-direction

Field of application

Palletizing, joining, and assembly of workpieces

Advantages – Your benefits

ISO mounting pattern for easy assembly to most types of robots without needing additional adapter plates

Three compensation directions in one unit compact design for minimum installation height

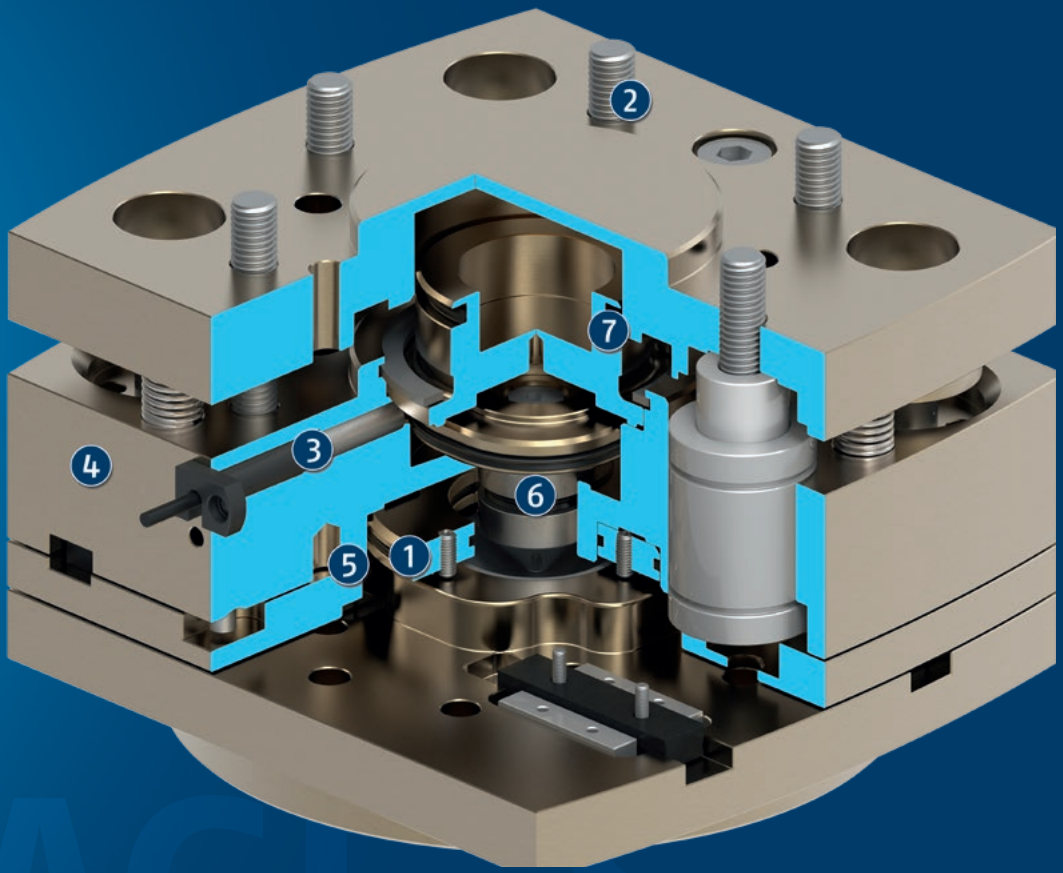
Centrical locking for fixing the unit rigidly in a defined, centric position

Pneumatic position storage for eccentric locking in a deflected position

Sizes	Handling weight	Compensation XY	Compensation Z
Quantity: 4	9 .. 160 kg	±4 .. 12 mm	10 .. 14 mm

Functional description

The compensation unit AGE-S extends the AGE series (AGE-XY/AGE-Z/AGE-F) for the medium and heavy load range, and provides perfect compensation in all automation tasks. Robust and high-precision linear guidances with excellent guiding stability permit maximum handling weights at maximum compensation paths.
During handling in XY- as well as Z-direction, the unit can be made rigid using the integrated pneumatic lock and eccentrically locked using the position memory in XY-direction.



① **Position memory**
pneumatically actuated locking in any eccentric position via frictional connection

② **Direct assembly**
by using a standardized ISO 9409 interface for robots

③ **Monitoring**
Stroke monitoring of the locking piston with electronic magnetic switch

④ **Housing**
is weight-optimized due to the use of high-strength aluminum alloy

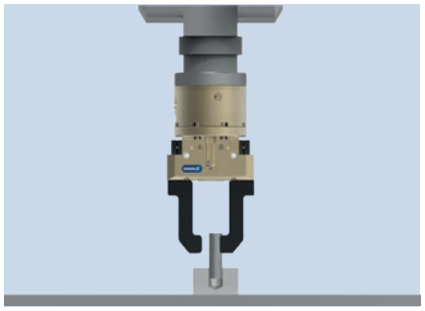
⑤ **Compensation body**
For compensating positioning errors in the XY-plane

⑥ **Centrical locking**
pneumatically actuated locking in centric position via form-fit locking

⑦ **Locking in Z-direction**
pneumatically driven locking of the Z-compensation in end position (extended)

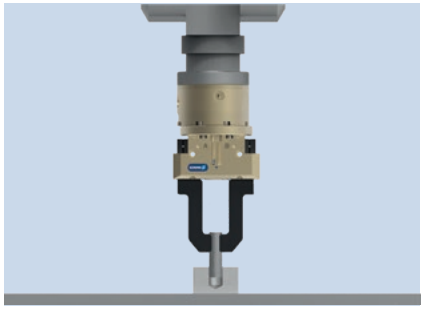
Detailed functional description

Workpiece removal: AGE unlocked – gripper opened



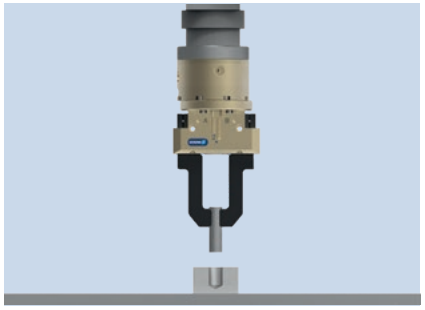
The robot travels towards th workpiece with a gripping unit consisting of an AGE (compensation unit) and gripper.
There is an offset due to tolerances/inaccuracies.

Workpiece removal: AGE unlocked – gripper closed



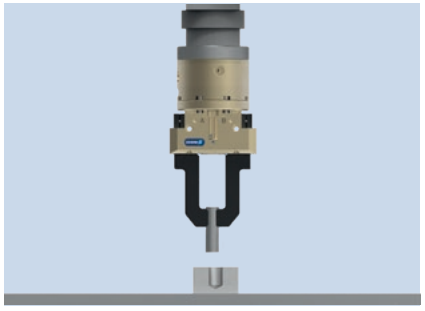
An unlocked AGE can be used to compensate the existing axial offset between the gripper and workpiece axes.

Workpiece removal: AGE locked (position memory) – gripper closed



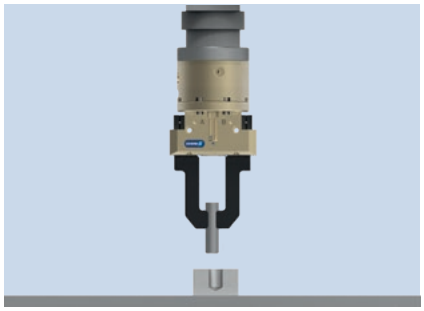
The robot removes the workpiece.
The deflected position of the AGE can be locked via the integrated position memory.

Workpiece removal: AGE centrically locked – gripper closed



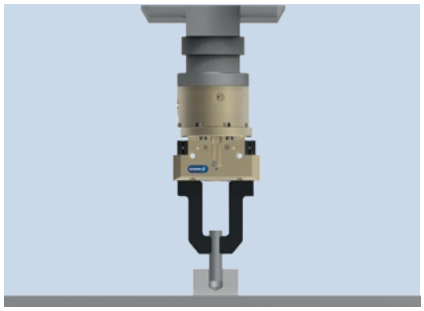
The position memory of the AGE is unlocked and the centered AGE lock is activated.
That renders the original axis offset, as the gripper and robot axis are now centered relative to one another.

Workpiece mounting: AGE centrically locked – gripper closed



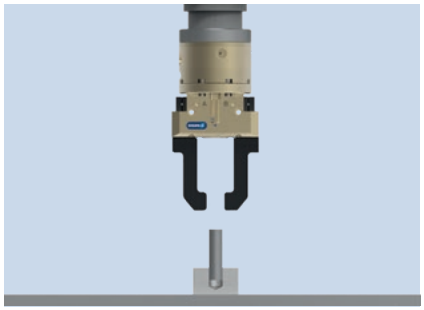
The robot travels towards th workpiece with a gripping unit consisting of an AGE (compensation unit) and gripper.
There is an offset due to tolerances/inaccuracies.

Workpiece mounting: AGE unlocked – gripper closed



An unlocked AGE can be used to compensate the existing axial offset between the gripper and workpiece axes and the workpiece can be joined.

Workpiece mounting: AGE unlocked – gripper opened



The robot moves away from the center of compliance with the gripper unit, the unit is then centrically locked, and the gripper is closed.

General notes about the series

Guidance system: robust linear guidances

Monitoring: XY locking and unlocking via a magnetic switch and Z-stroke via inductive proximity switch

Actuation: pneumatic, with filtered compressed air as per ISO 8573-1:2010 [7:4:4].

Housing: The housing consists of high-strength, hard-coated aluminum alloy. The functional components are made of hardened steel.

Scope of delivery: Robot-side mounting screws

Warranty: 24 months

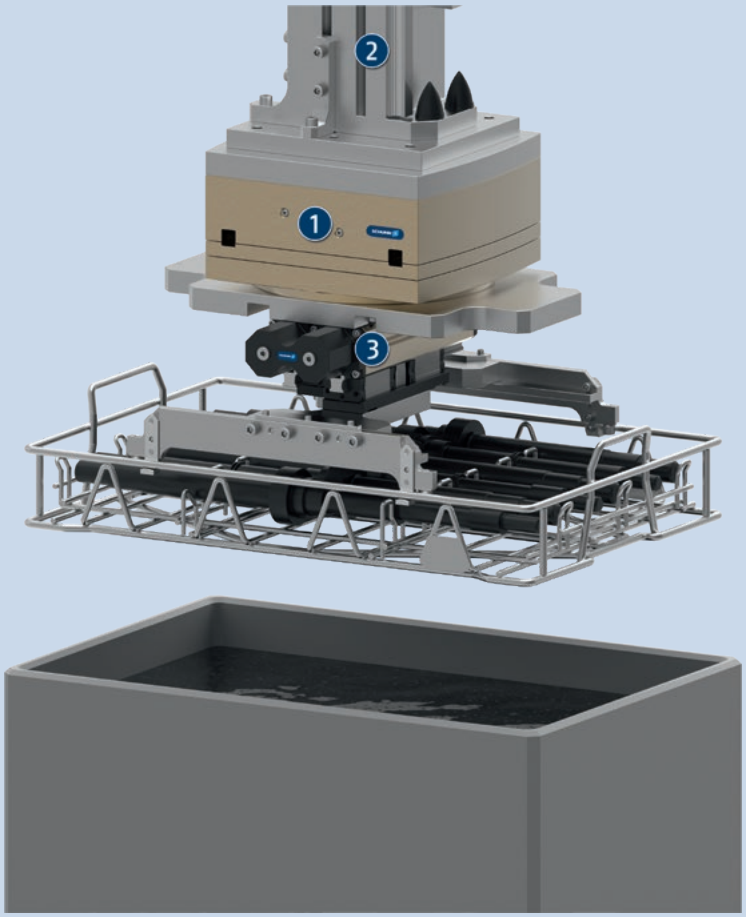
Harsh environmental conditions: Please note that use under harsh environmental conditions (e.g. in the coolant area, cast and grinding dust) can considerably reduce the service life of the units, and we will not take over any warranty. However, in many cases we can find a solution. Please contact us for assistance.

Handling weight: is the weight of the total load attached to the flange. When designing, the permissible forces and moments have to be paid attention to. Please note that exceeding the recommended handling weight will shorten the lifespan.

Application example

Picking and placing components in an undefined position, using the compensation unit and a long-stroke gripper.

1. Compensation unit AGE-S-XY
2. Linear Module Gamma 90
3. 2-finger long-stroke gripper PHL

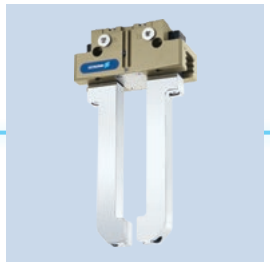


SCHUNK offers more ...

The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.

Quick change system

Anti-collision and overload protection sensor



Universal gripper

Universal gripper

Magnetic switches

Inductive proximity switches

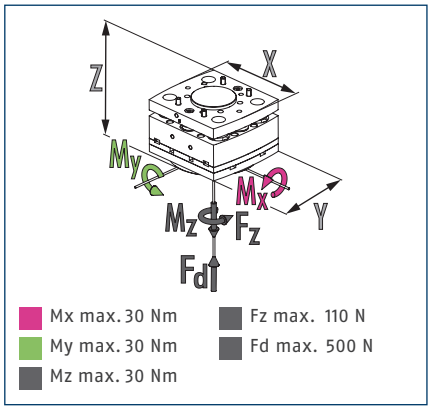
Magnetic gripper

ⓘ For more information on these products can be found on the following product pages or at schunk.com.

AGE-S 100

Compensation unit XYZ

Dimensions and maximum loads



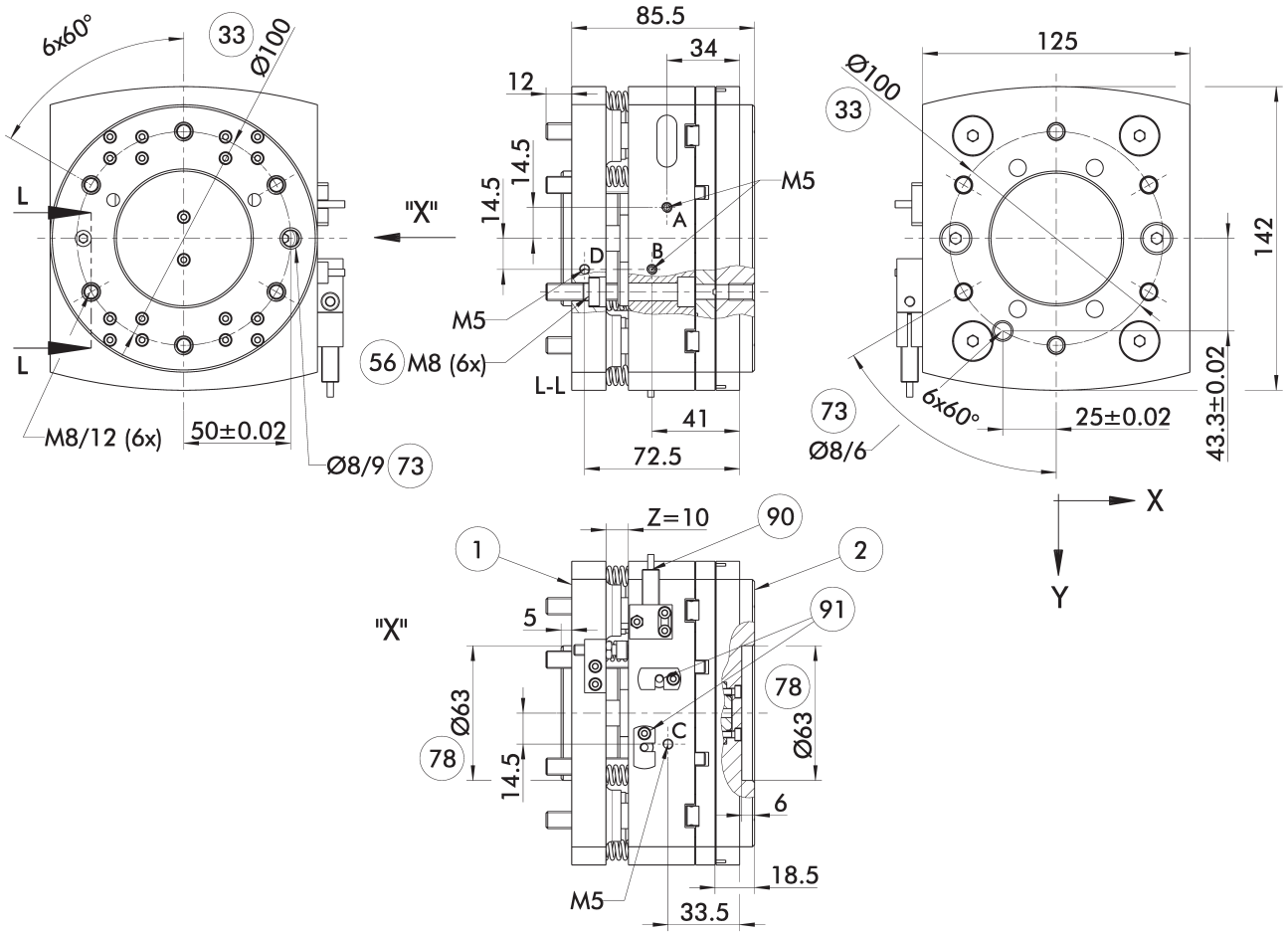
- Mx max. 30 Nm
- My max. 30 Nm
- Mz max. 30 Nm
- Fz max. 110 N
- Fd max. 500 N

ⓘ This is the max. total of all moments and loads (acceleration forces and torques, process forces etc.), which can affect a compensation unit, in order to ensure error-free function.

Technical data

Description		AGE-S-XYZ-100-0	AGE-S-XYZ-100-P	AGE-S-XY-100-0	AGE-S-XY-100-P	AGE-S-Z-100-0
ID		0324502	0324504	0324500	0324503	0324501
Compensation XY	[mm]	±4	±4	±4	±4	
Compensation Z	[mm]	10	10			10
Recommended handling weight, vertical	[kg]	9	9	9	9	9
Recommended handling weight, horizontal	[kg]	5.5	5.5	5.5	5.5	5.5
Locking force	[N]	800	800	800	800	
Position memory piston force	[N]		1100		1100	
Max. radial force, position storage	[N]		126		126	
Stroke Z	[N]	800	800			800
Min. spring force	[N]	240	240			240
Min./nom./max. operating pressure	[bar]	2.5/6/8	2.5/6/8	2.5/6/8	2.5/6/8	2.5/6/8
Repeat accuracy	[mm]	0.1	0.1	0.1	0.1	0.1
Robot-side connection		ISO 9409-1-100-6-M8	ISO 9409-1-100-6-M8	ISO 9409-1-100-6-M8	ISO 9409-1-100-6-M8	ISO 9409-1-100-6-M8
Tool-side connection		ISO 9409-1-100-6-M8	ISO 9409-1-100-6-M8	ISO 9409-1-100-6-M8	ISO 9409-1-100-6-M8	ISO 9409-1-100-6-M8
Weight	[kg]	3.6	3.6	2.6	2.6	3.2
Min./max. ambient temperature	[°C]	5/60	5/60	5/60	5/60	5/60
Dimensions X x Y x Z	[mm]	142 x 125 x 85.5	142 x 125 x 85.5	142 x 125 x 59	142 x 125 x 59	142 x 125 x 79

Main view



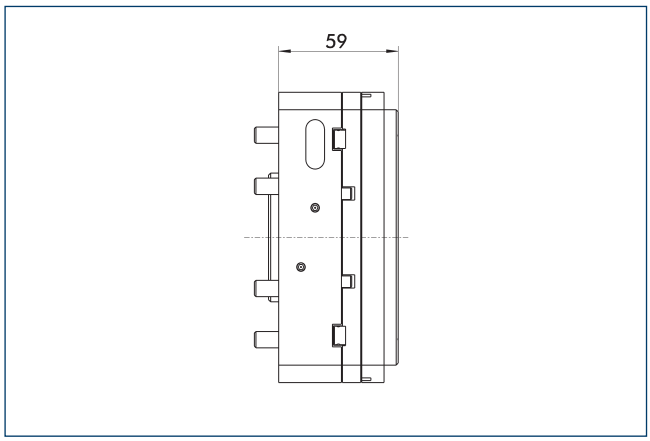
The main view shows the product with proximity switch. It is optional.

A, a Air connection unlocked
B, b Air connection locked
C, c Air connection position memory XY
D, d Air connection locked Z
(1) Robot-side connection
(2) Tool-side connection
(33) DIN ISO-9409 bolt circle
(56) Included in the scope of delivery
(73) Fit for centering pins
(78) Fit for centering
(90) Sensor IN ...
(91) MMS-K 65

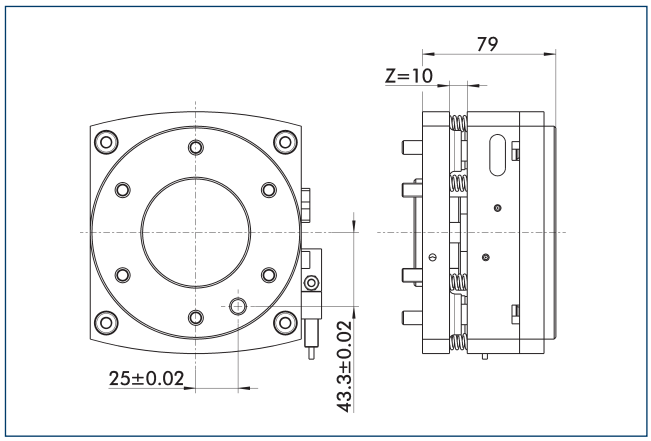
AGE-S 100

Compensation unit XYZ

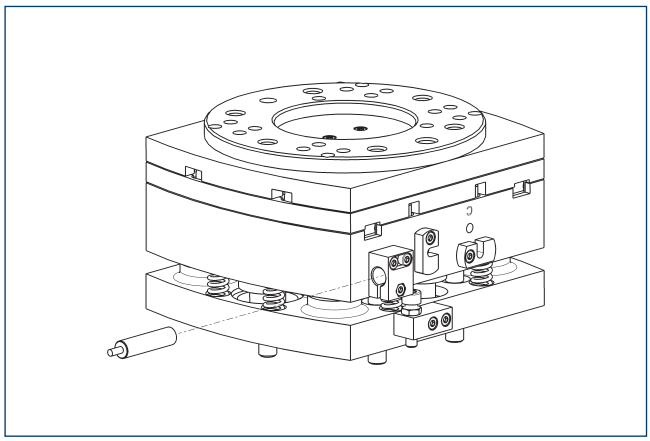
Dimensional change AGE-S-100-XY



Dimensional change AGE-S-100-Z



Sensor systems for Z-stroke

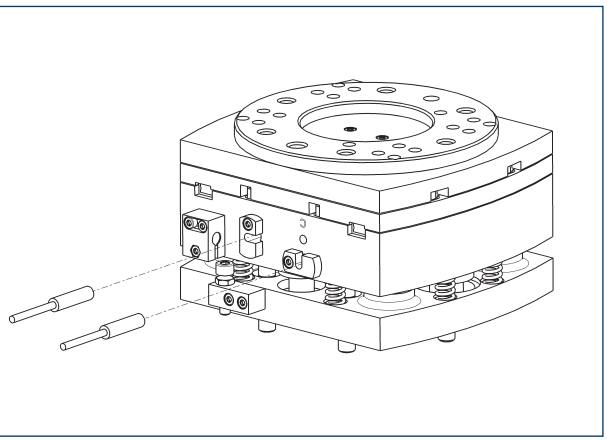


Can be directly mounted for Z-stroke or end position monitoring

Description	ID	Often combined
Inductive proximity switches		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	
INK 80-S	0301550	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
KA BW12-L 3P-0300-PNP	0301503	
KA BW12-L 3P-0500-PNP	0301507	
clip for plug/socket		
CLI-M12	0301464	
CLI-M8	0301463	
Cable extension		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	
Sensor distributor		
V2-M12	0301776	●
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

ⓘ Per unit one sensor (closer/S) is required, optionally a cable extension.

Sensor systems for centric locking



Sensor monitoring of the locking device

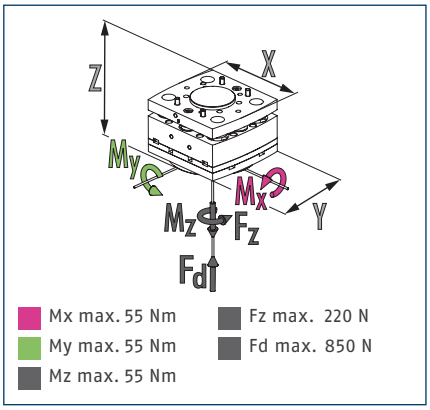
Description	ID	
Electronic magnetic switch		
MMSK 65-S-PNP	0301423	

ⓘ Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

AGE-S 125

Compensation unit XYZ

Dimensions and maximum loads



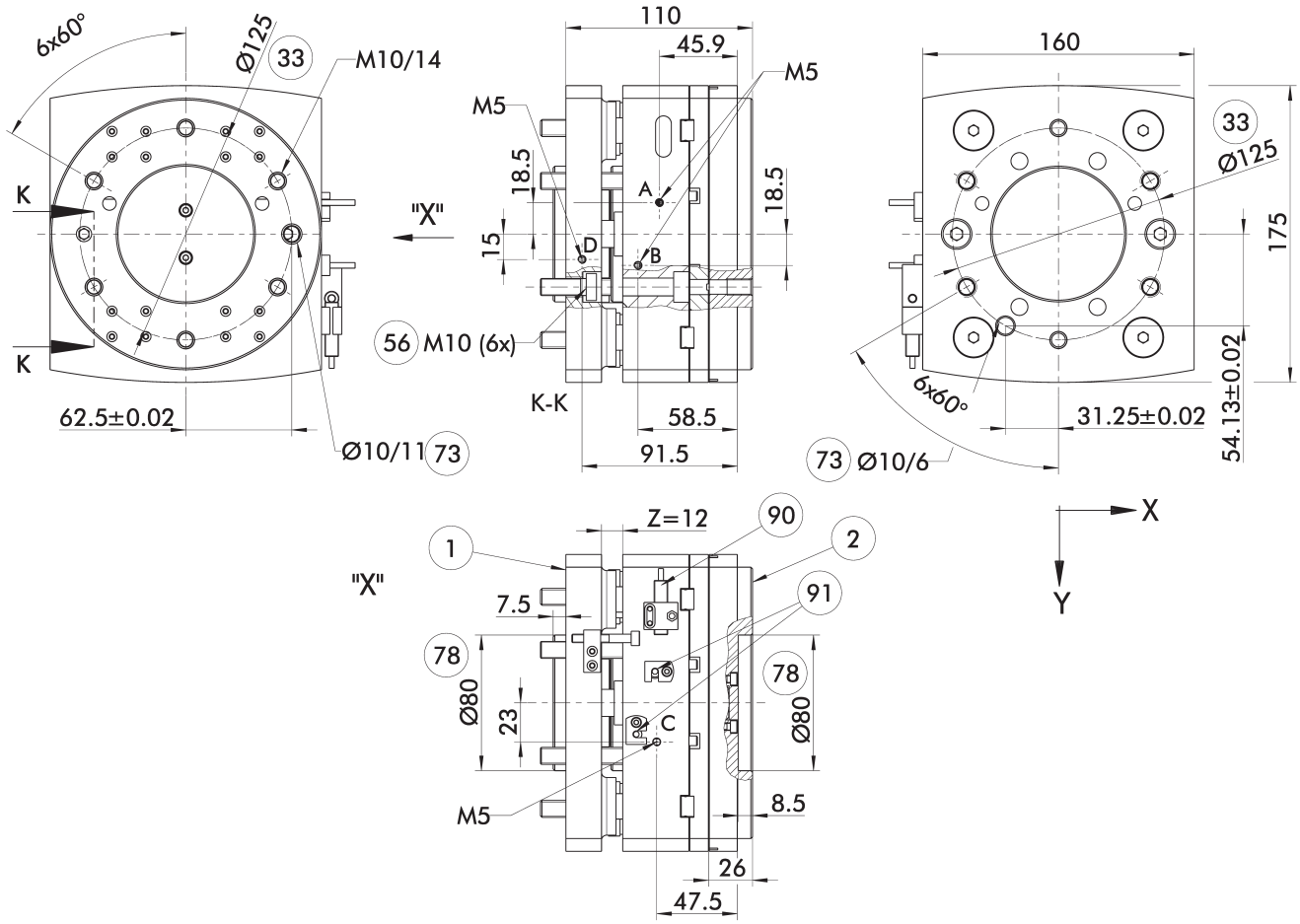
- Mx max. 55 Nm
- My max. 55 Nm
- Mz max. 55 Nm
- Fz max. 220 N
- Fd max. 850 N

ⓘ This is the max. total of all moments and loads (acceleration forces and torques, process forces etc.), which can affect a compensation unit, in order to ensure error-free function.

Technical data

Description		AGE-S-XYZ-125-O	AGE-S-XYZ-125-P	AGE-S-XY-125-O	AGE-S-XY-125-P	AGE-S-Z-125-O
ID		0324527	0324529	0324525	0324528	0324526
Compensation XY	[mm]	±7	±7	±7	±7	
Compensation Z	[mm]	12	12			12
Recommended handling weight, vertical	[kg]	18	18	18	18	18
Recommended handling weight, horizontal	[kg]	11	11	11	11	11
Locking force	[N]	1100	1100	1100	1100	
Position memory piston force	[N]		1700		1700	
Max. radial force, position storage	[N]		198		198	
Stroke Z	[N]	1200	1200			1200
Min. spring force	[N]	360	360	0	0	360
Min./nom./max. operating pressure	[bar]	2.5/6/8	2.5/6/8	2.5/6/8	2.5/6/8	2.5/6/8
Repeat accuracy	[mm]	0.1	0.1	0.1	0.1	0.1
Robot-side connection		ISO 9409-1-125-6-M10	ISO 9409-1-125-6-M10	ISO 9409-1-125-6-M10	ISO 9409-1-125-6-M10	ISO 9409-1-125-6-M10
Tool-side connection		ISO 9409-1-125-6-M10	ISO 9409-1-125-6-M10	ISO 9409-1-125-6-M10	ISO 9409-1-125-6-M10	ISO 9409-1-125-6-M10
Weight	[kg]	7.4	7.4	5.3	5.3	6
Min./max. ambient temperature	[°C]	5/60	5/60	5/60	5/60	5/60
Dimensions X x Y x Z	[mm]	175 x 160 x 110	175 x 160 x 110	175 x 160 x 76.5	175 x 160 x 76.5	175 x 160 x 96.5

Main view



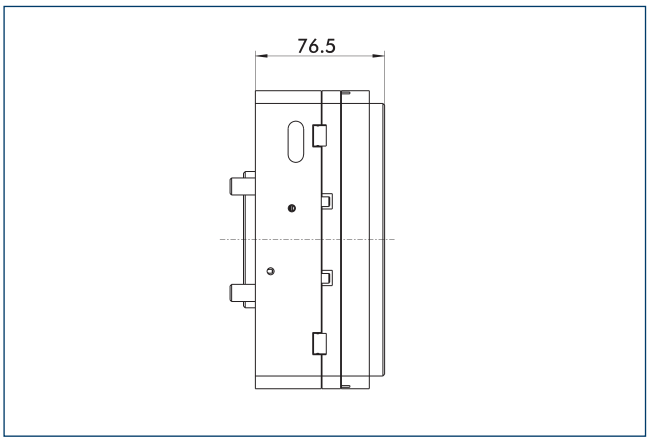
The main view shows the product with proximity switch. It is optional.

A, a Air connection unlocked
B, b Air connection locked
C, c Air connection position memory XY
D, d Air connection locked Z
(1) Robot-side connection
(2) Tool-side connection
(33) DIN ISO-9409 bolt circle
(56) Included in the scope of delivery
(73) Fit for centering pins
(78) Fit for centering
(90) Sensor IN ...
(91) MMS-K 65

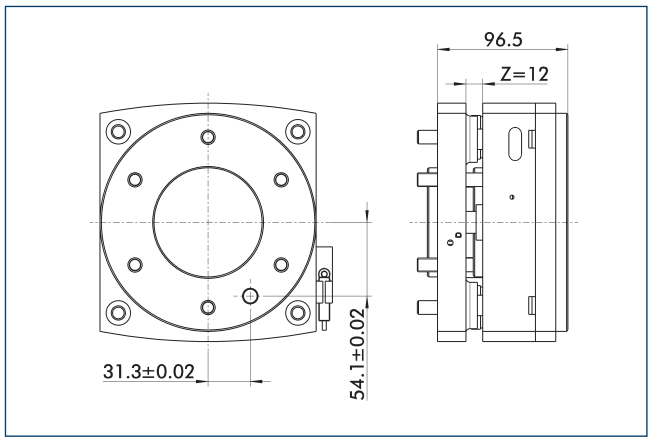
AGE-S 125

Compensation unit XYZ

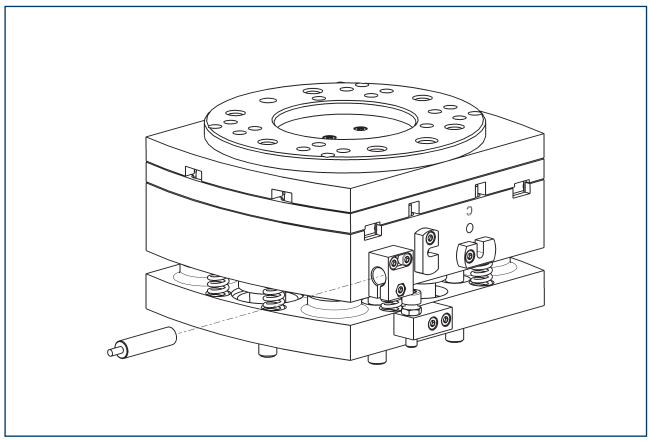
Dimensional change AGE-S-125-XY



Dimensional change AGE-S-125-Z



Sensor systems for Z-stroke

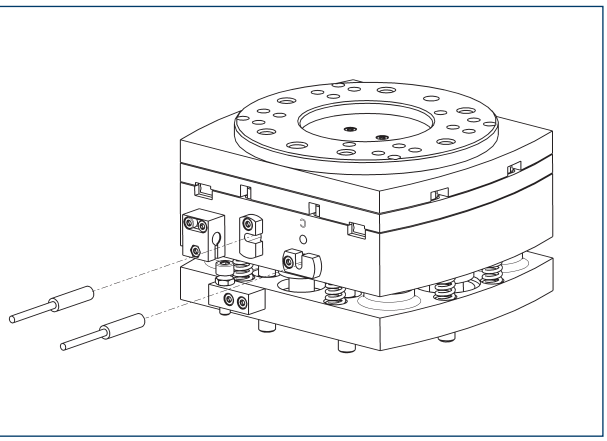


Can be directly mounted for Z-stroke or end position monitoring

Description	ID	Often combined
Inductive proximity switches		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	
INK 80-S	0301550	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
KA BW12-L 3P-0300-PNP	0301503	
KA BW12-L 3P-0500-PNP	0301507	
clip for plug/socket		
CLI-M12	0301464	
CLI-M8	0301463	
Cable extension		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	
Sensor distributor		
V2-M12	0301776	●
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

ⓘ Per unit one sensor (closer/S) is required, optionally a cable extension.

Sensor systems for centric locking



Sensor monitoring of the locking device

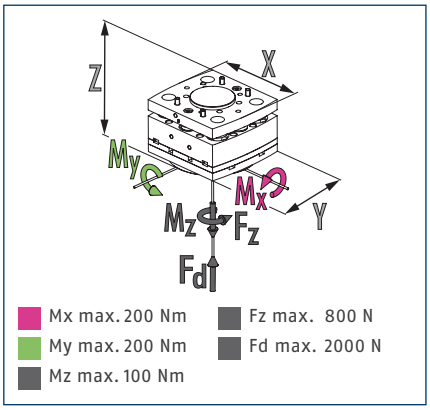
Description	ID	
Electronic magnetic switch		
MMSK 65-S-PNP	0301423	

ⓘ Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

AGE-S 160

Compensation unit XYZ

Dimensions and maximum loads



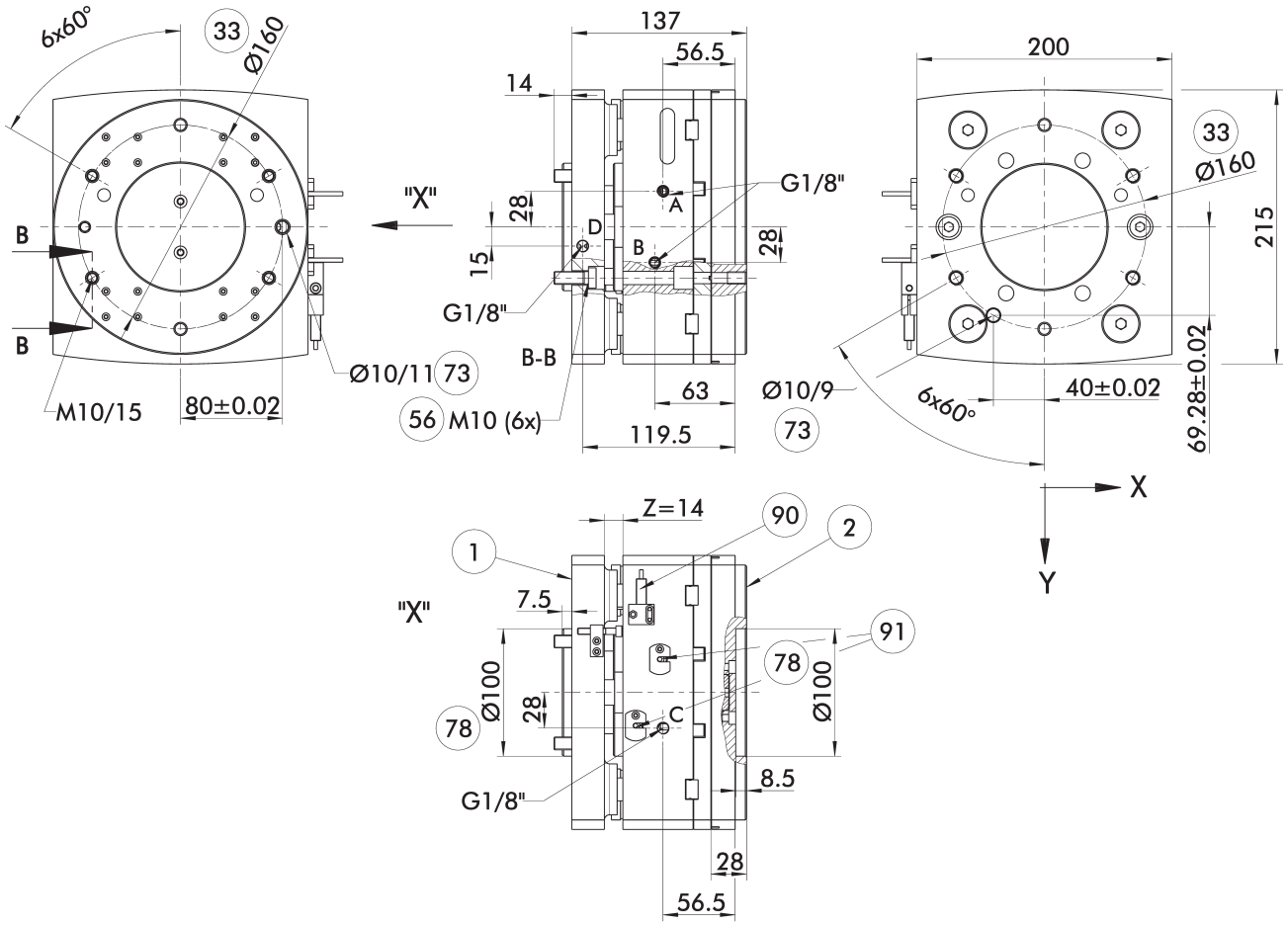
- Mx max. 200 Nm
- My max. 200 Nm
- Mz max. 100 Nm
- Fz max. 800 N
- Fd max. 2000 N

ⓘ This is the max. total of all moments and loads (acceleration forces and torques, process forces etc.), which can affect a compensation unit, in order to ensure error-free function.

Technical data

Description		AGE-S-XYZ-160-0	AGE-S-XYZ-160-P	AGE-S-XY-160-0	AGE-S-XY-160-P	AGE-S-Z-160-0
ID		0324562	0324564	0324560	0324563	0324561
Compensation XY	[mm]	±10	±10	±10	±10	
Compensation Z	[mm]	14	14			14
Recommended handling weight, vertical	[kg]	60	60	60	60	60
Recommended handling weight, horizontal	[kg]	40	40	40	40	40
Locking force	[N]	1800	1800	1800	1800	
Position memory piston force	[N]		2900		2900	
Max. radial force, position storage	[N]		309		309	
Stroke Z	[N]	1900	1900			1900
Min. spring force	[N]	640	640			640
Min./nom./max. operating pressure	[bar]	2.5/6/8	2.5/6/8	2.5/6/8	2.5/6/8	2.5/6/8
Repeat accuracy	[mm]	0.1	0.1	0.1	0.1	0.1
Robot-side connection		ISO 9409-1-160-6-M10	ISO 9409-1-160-6-M10	ISO 9409-1-160-6-M10	ISO 9409-1-160-6-M10	ISO 9409-1-160-6-M10
Tool-side connection		ISO 9409-1-160-6-M10	ISO 9409-1-160-6-M10	ISO 9409-1-160-6-M10	ISO 9409-1-160-6-M10	ISO 9409-1-160-6-M10
Weight	[kg]	14.5	14.5	10.5	10.5	11.8
Min./max. ambient temperature	[°C]	5/60	5/60	5/60	5/60	5/60
Dimensions X x Y x Z	[mm]	215 x 200 x 137	215 x 200 x 137	215 x 200 x 97	215 x 200 x 97	215 x 200 x 123

Main view



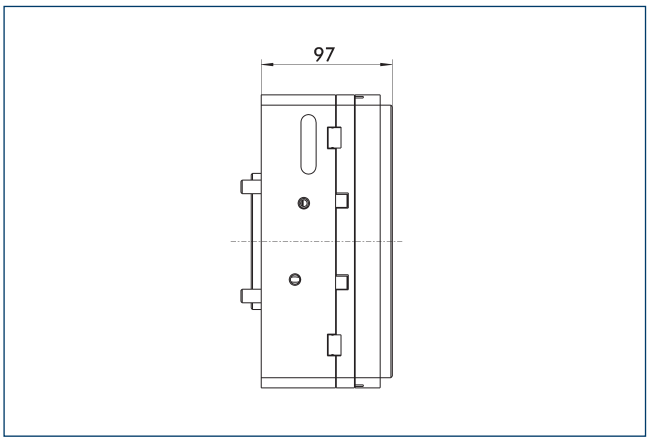
The main view shows the product with proximity switch. It is optional.

A, a Air connection unlocked
B, b Air connection locked
C, c Air connection position memory XY
D, d Air connection locked Z
(1) Robot-side connection
(2) Tool-side connection
(33) DIN ISO-9409 bolt circle
(56) Included in the scope of delivery
(73) Fit for centering pins
(78) Fit for centering
(90) Sensor IN ...
(91) MMS-K 65

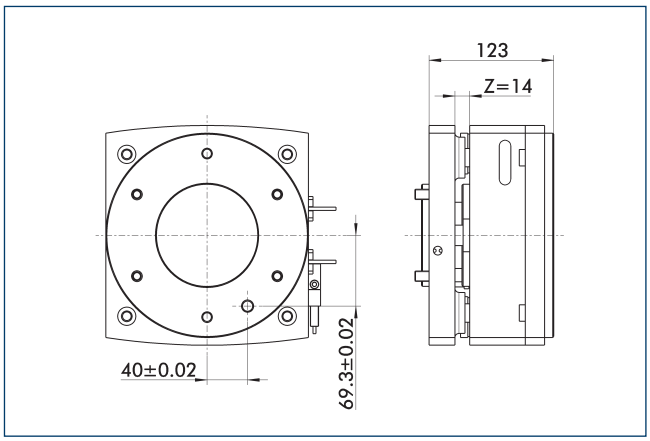
AGE-S 160

Compensation unit XYZ

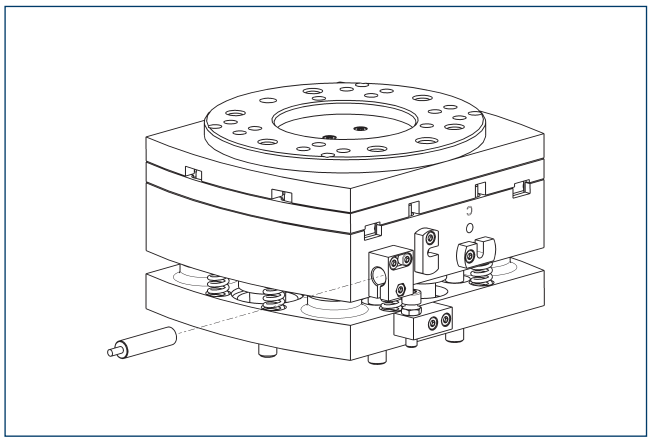
Dimensional change AGE-S-160-XY



Dimensional change AGE-S-160-Z



Sensor systems for Z-stroke

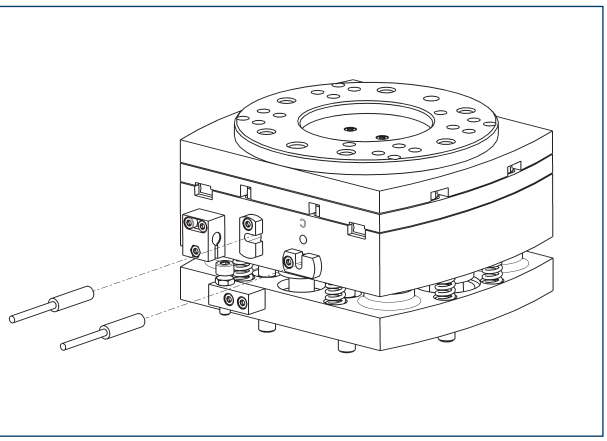


Can be directly mounted for Z-stroke or end position monitoring

Description	ID	Often combined
Inductive proximity switches		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	
INK 80-S	0301550	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
KA BW12-L 3P-0300-PNP	0301503	
KA BW12-L 3P-0500-PNP	0301507	
clip for plug/socket		
CLI-M12	0301464	
CLI-M8	0301463	
Cable extension		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	
Sensor distributor		
V2-M12	0301776	●
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

ⓘ Per unit one sensor (closer/S) is required, optionally a cable extension.

Sensor systems for centric locking



Sensor monitoring of the locking device

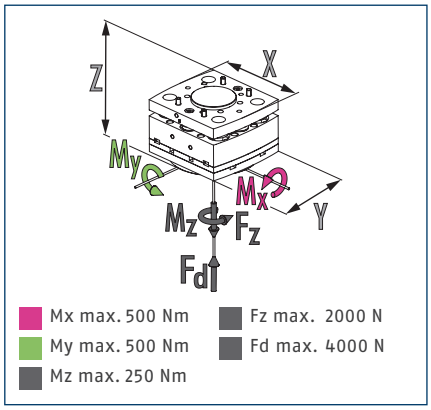
Description	ID	
Electronic magnetic switch		
MMSK 65-S-PNP	0301423	

ⓘ Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

AGE-S 200

Compensation unit XYZ

Dimensions and maximum loads



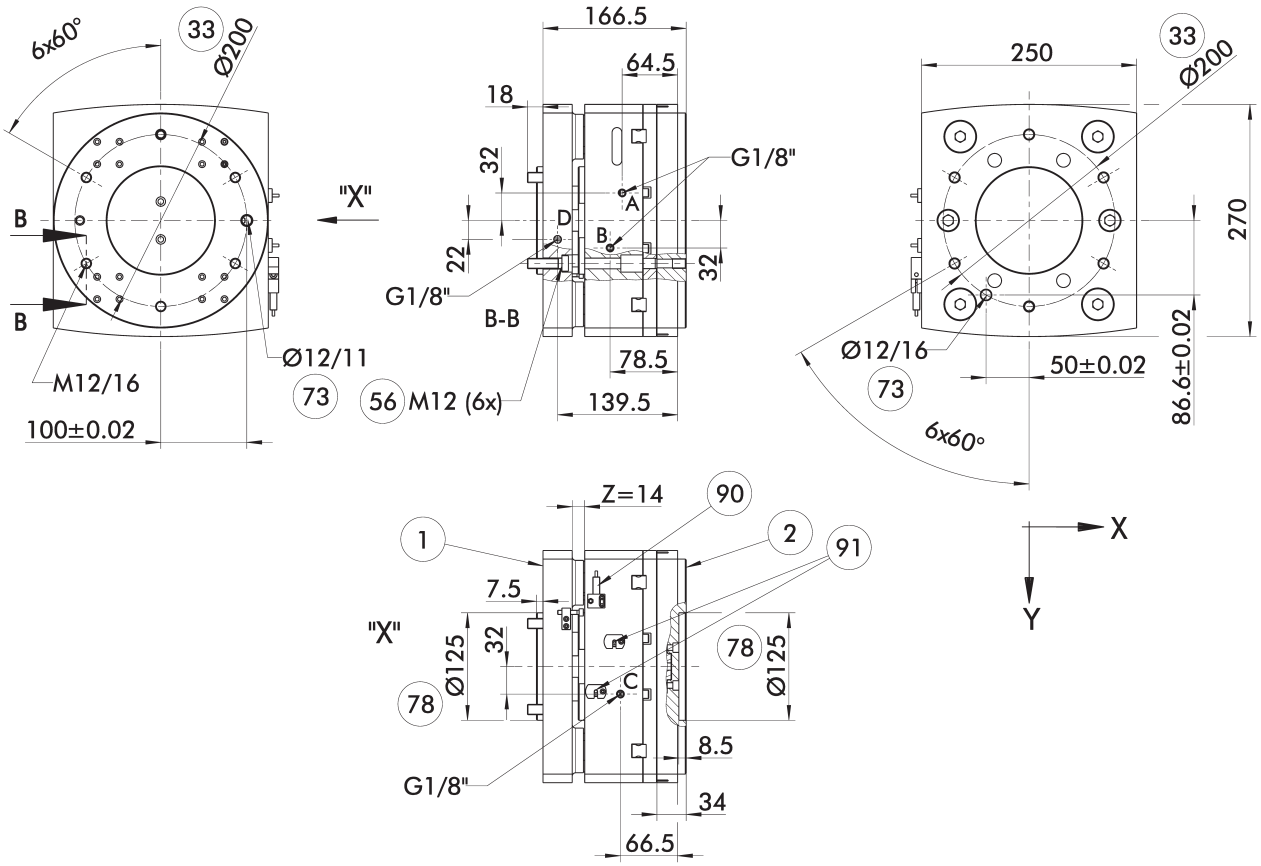
- Mx max. 500 Nm
- My max. 500 Nm
- Mz max. 250 Nm
- Fz max. 2000 N
- Fd max. 4000 N

ⓘ This is the max. total of all moments and loads (acceleration forces and torques, process forces etc.), which can affect a compensation unit, in order to ensure error-free function.

Technical data

Description		AGE-S-XYZ-200-0	AGE-S-XYZ-200-P	AGE-S-XY-200-0	AGE-S-XY-200-P	AGE-S-Z-200-0
ID		0324602	0324604	0324600	0324603	0324601
Compensation XY	[mm]	±12	±12	±12	±12	
Compensation Z	[mm]	14	14			14
Recommended handling weight, vertical	[kg]	160	160	160	160	160
Recommended handling weight, horizontal	[kg]	100	100	100	100	100
Locking force	[N]	2700	2700	2700	2700	
Position memory piston force	[N]		4500		4500	
Max. radial force, position storage	[N]		492		492	
Stroke Z	[N]	3000	3000			3000
Min. spring force	[N]	1100	1100			1100
Min./nom./max. operating pressure	[bar]	2.5/6/8	2.5/6/8	2.5/6/8	2.5/6/8	2.5/6/8
Repeat accuracy	[mm]	0.1	0.1	0.1	0.1	0.1
Robot-side connection		ISO 9409-1-200-6-M12	ISO 9409-1-200-6-M12	ISO 9409-1-200-6-M12	ISO 9409-1-200-6-M12	ISO 9409-1-200-6-M12
Tool-side connection		ISO 9409-1-200-6-M12	ISO 9409-1-200-6-M12	ISO 9409-1-200-6-M12	ISO 9409-1-200-6-M12	ISO 9409-1-200-6-M12
Weight	[kg]	29.5	29.5	21	21	23.5
Min./max. ambient temperature	[°C]	5/60	5/60	5/60	5/60	5/60
Dimensions X x Y x Z	[mm]	270 x 250 x 166.5	270 x 250 x 166.5	270 x 250 x 118	270 x 250 x 118	270 x 250 x 146

Main view



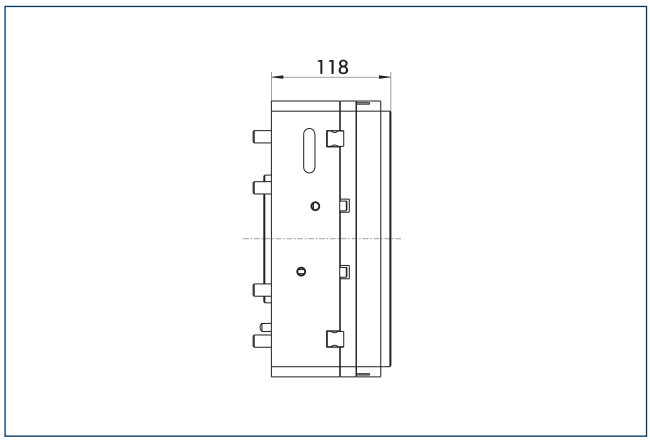
The main view shows the product with proximity switch. It is optional.

A, a Air connection unlocked
B, b Air connection locked
C, c Air connection position memory XY
D, d Air connection locked Z
(1) Robot-side connection
(2) Tool-side connection
(33) DIN ISO-9409 bolt circle
(56) Included in the scope of delivery
(73) Fit for centering pins
(78) Fit for centering
(90) Sensor IN ...
(91) MMS-K 65

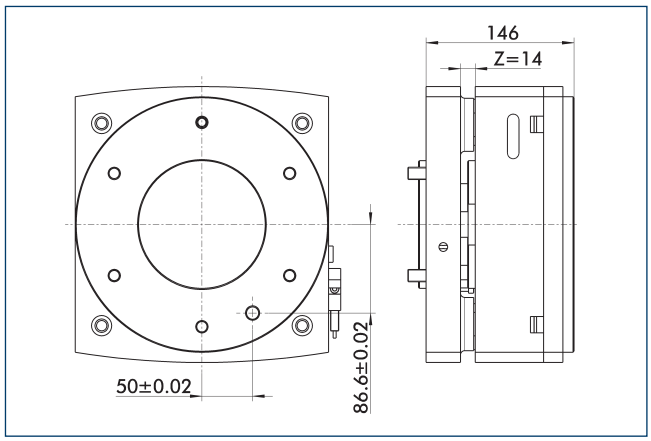
AGE-S 200

Compensation unit XYZ

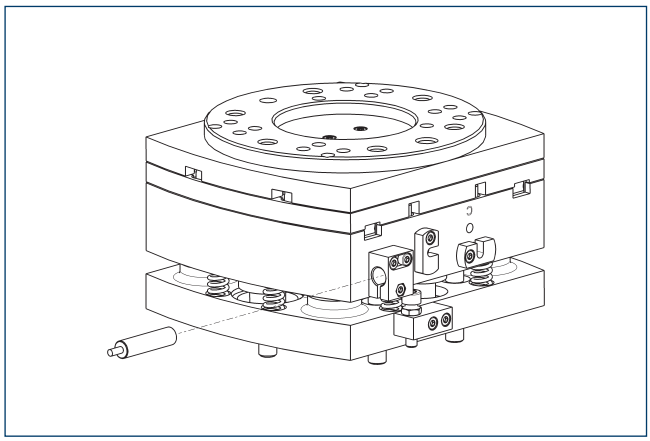
Dimensional change AGE-S-200-XY



Dimensional change AGE-S-200-Z



Sensor systems for Z-stroke

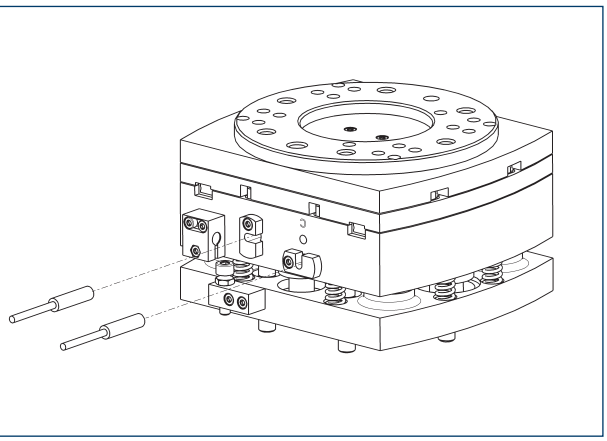


Can be directly mounted for Z-stroke or end position monitoring

Description	ID	Often combined
Inductive proximity switches		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	
INK 80-S	0301550	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
KA BW12-L 3P-0300-PNP	0301503	
KA BW12-L 3P-0500-PNP	0301507	
clip for plug/socket		
CLI-M12	0301464	
CLI-M8	0301463	
Cable extension		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	
Sensor distributor		
V2-M12	0301776	●
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

ⓘ Per unit one sensor (closer/S) is required, optionally a cable extension.

Sensor systems for centric locking



Sensor monitoring of the locking device

Description	ID	
Electronic magnetic switch		
MMSK 65-S-PNP	0301423	

ⓘ Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

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Product Information

Compensation unit AGE-U

Flexible. Compact. Robust.

Compensation Unit AGE-U

Compensation unit with rotation and angle compensation for adaptation of end effector to the position of the component

Field of application

Best suited for use in assembly, loading and unloading or bin picking applications

Advantages – Your benefits

Deflection both while in rotation and at an angle compensate for inaccuracies in the position of the workpiece and saves time, cost and effort by simplifying robot programming

Centric reset allows components to be placed in a defined position

Spring-supported reset of the unit can be adjusted via compressed air for optimum deflection

ISO mounting pattern equipped with ISO standard both robot-side and tool-side A direct screw connection to conventional robot types is possible without an additional adapter plate

Monitoring of locking increases the process reliability and simplifies commissioning

Sizes	Handling weight	Deflection	Rotary compensation angle
Quantity: 1	5 kg	±3°	±8°

Functional description

The compensation unit enables compensation of angle and rotation. Workpieces can be gripped despite positional offset and locational uncertainty. The flexibility of the unit can be pressurized with compressed air and adjusted via the air connection. The unit can be locked centrally and rigidly at maximum pressure.

① **Housing**
made of anodized aluminum for weight optimization

② **Locking piston**
pneumatically actuated locking in centric position

③ **Integrated piston stroke monitoring**
Stroke monitoring of the locking piston with magnetic switches

④ **Spring for pre-clamping**

General notes about the series

Actuation: Spring return with spring forces and compressed air

Housing: hard anodized aluminum alloy, functional parts made of hardened steel

Scope of delivery: including robot-sided mounting screws

Warranty: 24 months

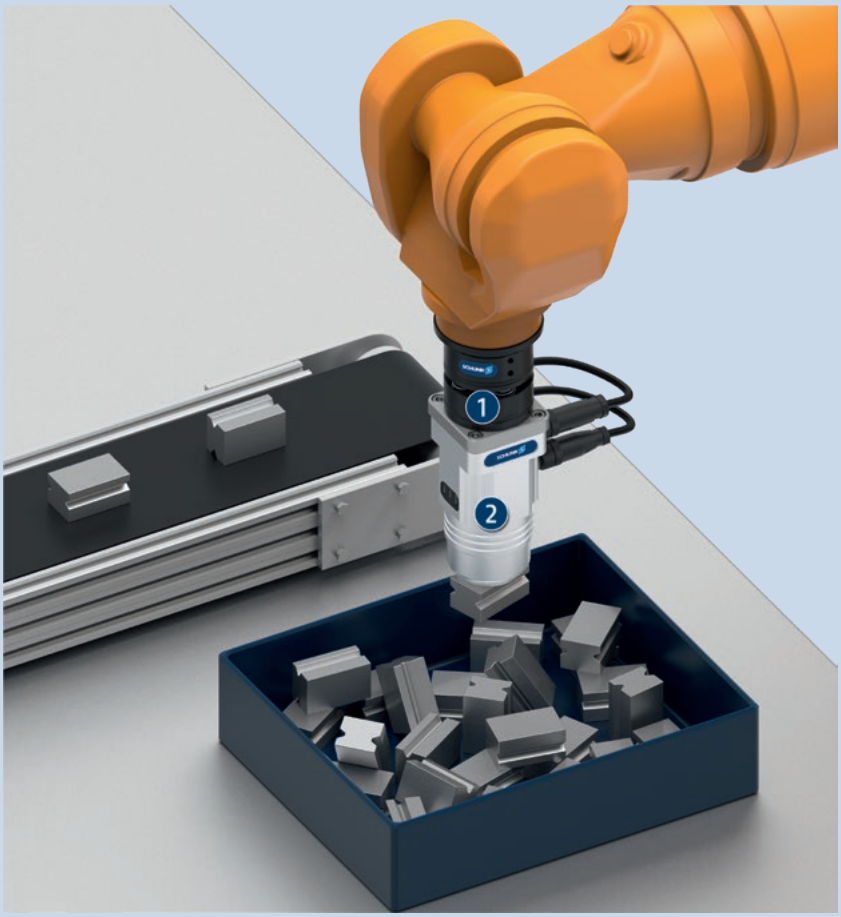
Harsh environmental conditions: Please note that use under harsh environmental conditions (e.g. in the coolant area, cast and grinding dust) can considerably reduce the service life of the units, and we will not take over any warranty. However, in many cases we can find a solution. Please contact us for assistance.

Handling weight: is the weight of the total load attached to the flange. When designing, the permissible forces and moments have to be paid attention to. Please note that exceeding the recommended handling weight will shorten the lifespan.

Application example

Handling unit for gripping ferromagnetic workpieces without a defined position from a bin

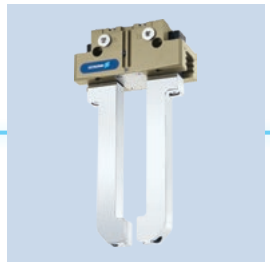
1. Compensation Unit AGE-U
2. Magnetic gripper EMH



SCHUNK offers more ...

The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.

Magnetic switches



Parallel gripper

Centric Grippers

Electric magnetic gripper

ⓘ For more information on these products can be found on the following product pages or at schunk.com.

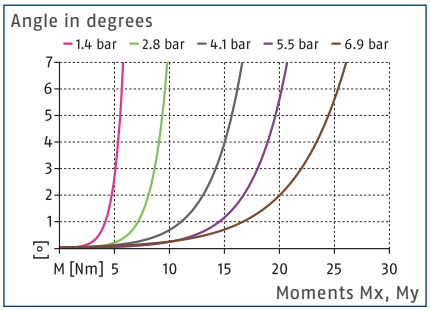
Options and special information

Optional protective boot: A protective cover is available for the compensation unit. The protective cover can be ordered and retrofitted.

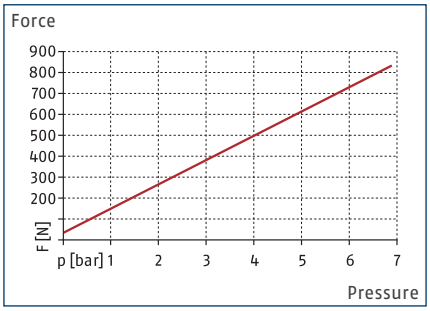
AGE-U 050

Compensation unit

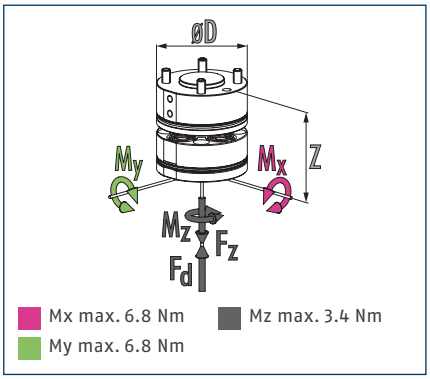
Load chart



Compensation force Fd



Dimensions and maximum loads



ⓘ This is the max. total of all moments and loads (acceleration forces and torques, process forces etc.), which can affect a compensation unit, in order to ensure error-free function.

Technical data

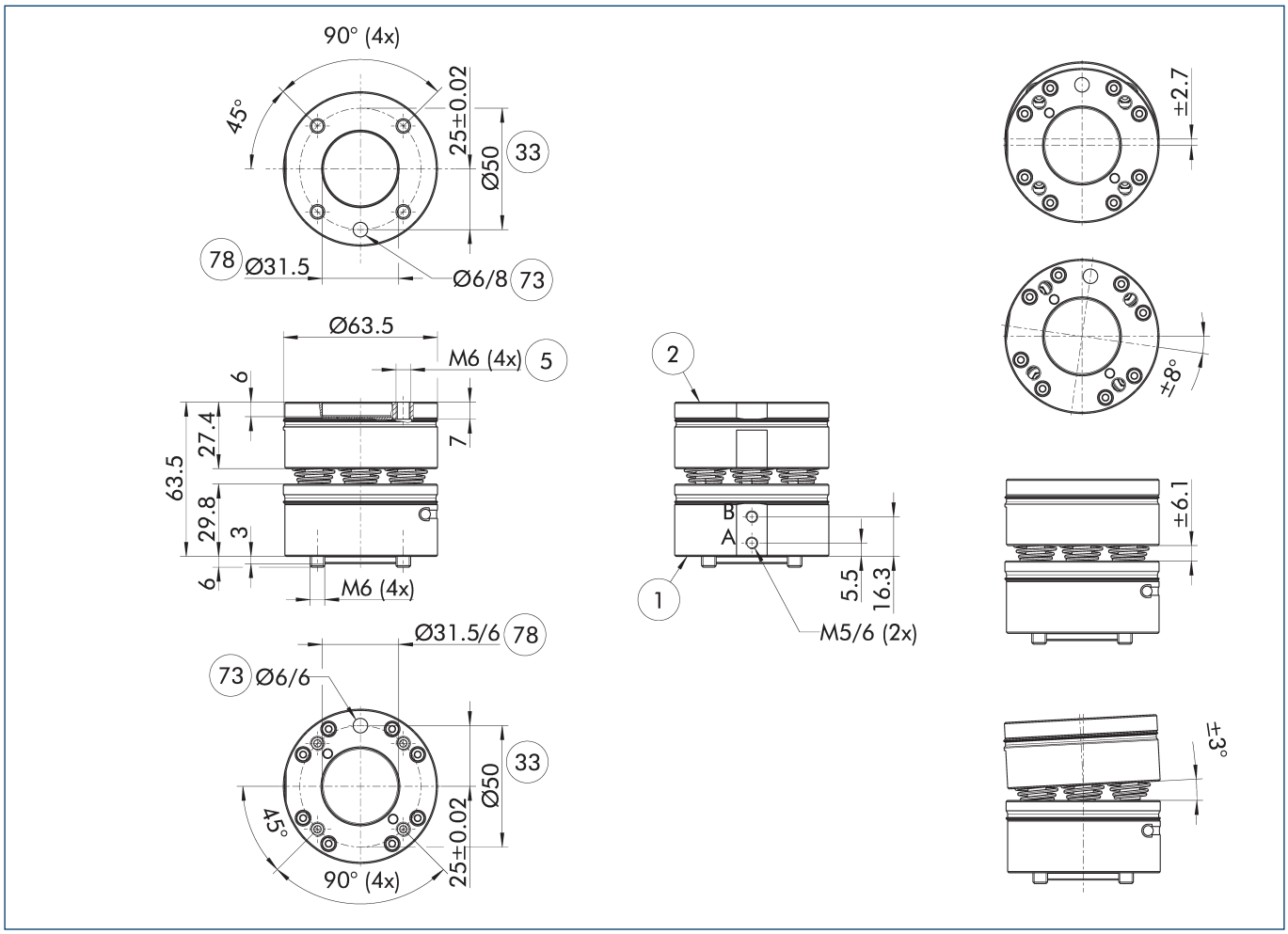
Description		AGE-U 050
ID		1312860
Compensation XY*	[mm]	±2.7
Compensation Z	[mm]	6.1
Angular deflection	[°]	±3
Deflection rotatory	[°]	±8
Recommended handling weight	[kg]	5
Min./max. spring force	[N]	36/92
min./max. operating pressure range adjustment	[bar]	0.3/2.1
min./max. locking operating pressure	[bar]	4.1/6.9
Robot-side connection		ISO 9409-1-50-4-M6
Tool-side connection		ISO 9409-1-50-4-M6
Weight	[kg]	0.6

* During compensation in the X-Y direction, the product contracts minimally due to the cone on the overload pin along the Z axis. For further information on the product, see the operating manual.

ⓘ The indicated angular deflections are maximum values and depend on the operating pressure. In the locked state, the moment load caused by the mass of the customer-side tool and the acceleration must not lead to any deflection, otherwise the maximum number of load cycles is reduced, and the compensation unit can be damaged.

ⓘ Compensating outside the operating pressure range for adjusting the stiffness reduces the maximum number of load cycles and may result in damage to the compensation unit.

Main view



The drawing shows the unit in standard design, without considering any dimensions of the options described below.

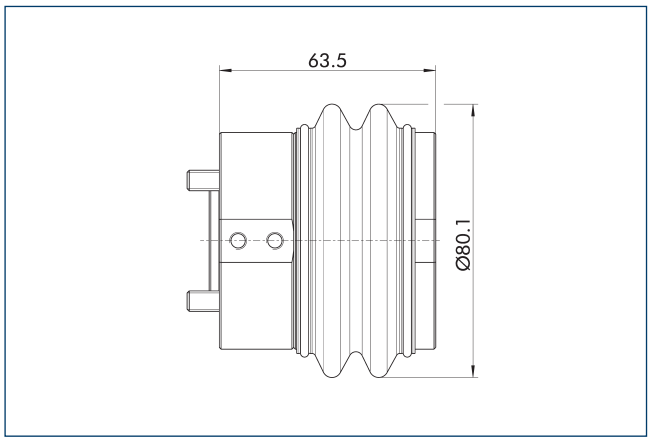
A, a Air connection locked

(1) Robot-side connection
(2) Tool-side connection
(5) Through hole for connection with screws
(33) DIN ISO-9409 bolt circle
(73) Fit for centering pins
(78) Fit for centering

AGE-U 050

Compensation unit

Protective cover AGE-U 50

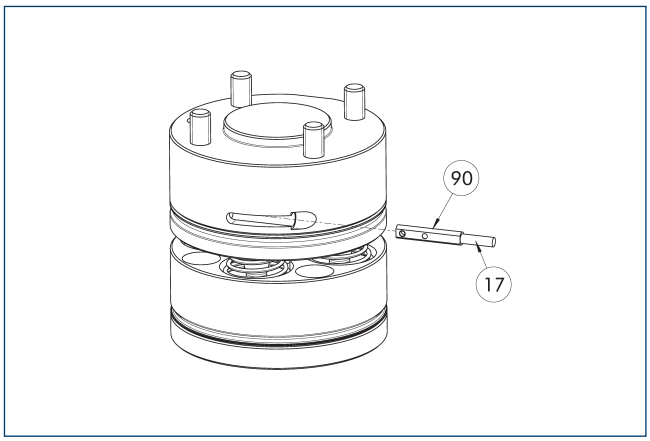


The protective cover protects the AGE-U against coolant for applications up to IP65.

Description	ID	
Protection cover		
AGE-U-050-S	1349416	

ⓘ The protective cover can be ordered as an accessory and retrofitted to the AGE-U.

Electronic magnetic switch MMS



(17) Cable outlet (90) Sensor MMS 22..

End position monitoring for mounting in the C-slot.

Description	ID	Often combined
Electronic magnetic switch		
MMS 22-S-M8-PNP	0301032	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
clip for plug/socket		
CLI-M8	0301463	
Cable extension		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
Sensor distributor		
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

ⓘ One sensor is required per unit for monitoring two positions.
Extension cables and sensor distributors are optionally available.
Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor systems.

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Product Information

Compensation unit XY AGE-XY

Compact. Smooth. Robust.

Compensation unit AGE-XY

Compensation unit with X-Y lateral compliance

Field of application

Palletizing, joining, and assembly of workpieces

Advantages – Your benefits

ISO mounting pattern for easy assembly to most types of robots without needing additional adapter plates

Robust sliding guide for high moment load at minimum space

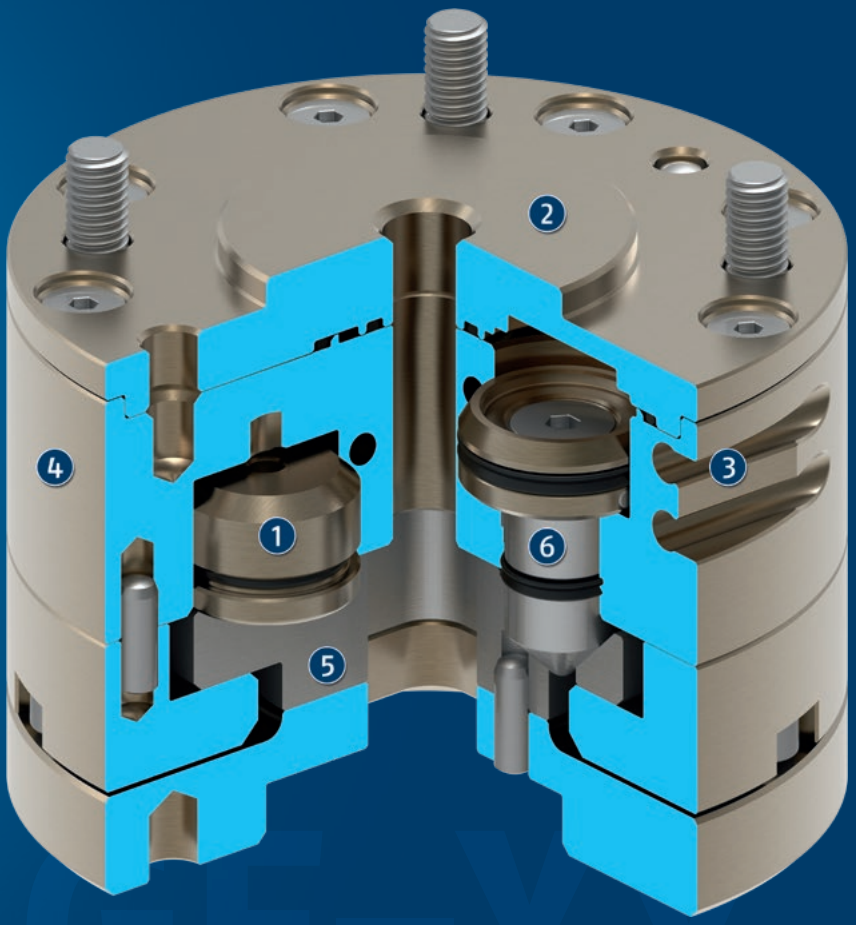
Centrical locking for centering the unit in a defined position

Pneumatic position storage for eccentric locking in a deflected position

Sizes	Handling weight	Compensation XY	Rotary compensation angle
Quantity: 3	6 .. 15 kg	±2.5 .. 4 mm	±12 .. 16°

Functional description

The compensation unit AGE-XY allows the release of the linear movement in the X- and Y-axis by robots or handling units. After the compensation process, the workpiece can be centrically aligned again.



① **Position memory**
pneumatically actuated locking in any eccentric position via frictional connection

② **Direct assembly**
by using a standardized ISO 9409 interface for robots

③ **Monitoring**
Stroke monitoring of the locking piston with magnetic switches

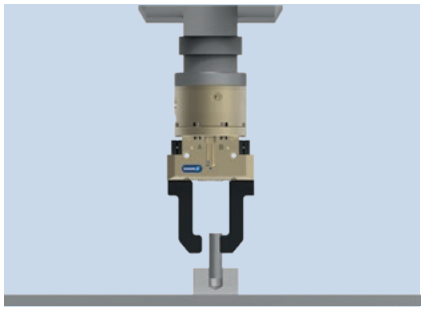
④ **Housing**
is weight-optimized due to the use of high-strength aluminum alloy

⑤ **Compensation body**
for compensation of rotational deviations and position errors on the XY plane

⑥ **Centrical locking**
pneumatically actuated locking in centric position via form-fit locking

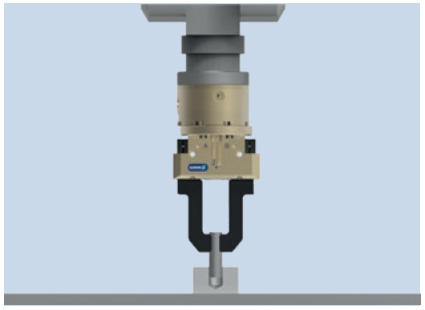
Detailed functional description

Workpiece removal: AGE unlocked – gripper opened



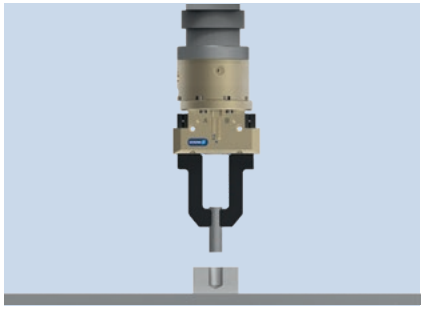
The robot travels towards th workpiece with a gripping unit consisting of an AGE (compensation unit) and gripper.
There is an offset due to tolerances/inaccuracies.

Workpiece removal: AGE unlocked – gripper closed



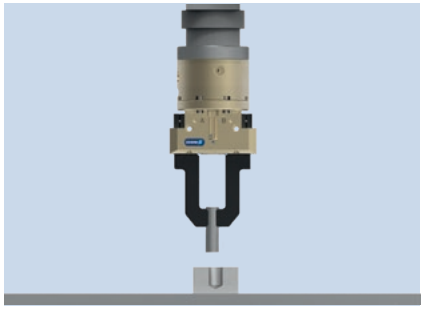
An unlocked AGE can be used to compensate the existing axial offset between the gripper and workpiece axes.

Workpiece removal: AGE locked (position memory) – gripper closed



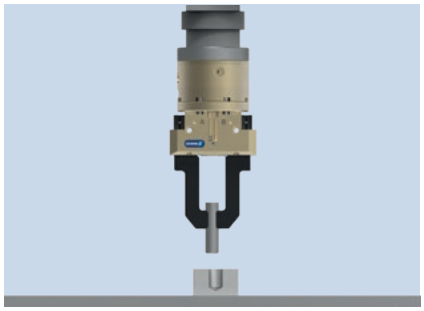
The robot removes the workpiece.
The deflected position of the AGE can be locked via the integrated position memory.

Workpiece removal: AGE centrically locked – gripper closed



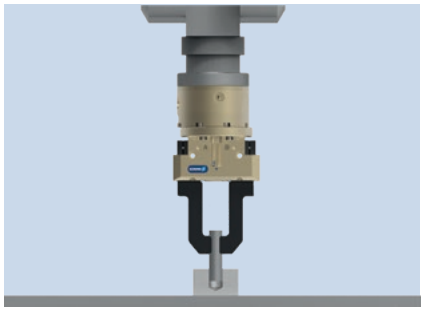
The position memory of the AGE is unlocked and the centered AGE lock is activated.
That renders the original axis offset, as the gripper and robot axis are now centered relative to one another.

Workpiece mounting: AGE centrically locked – gripper closed



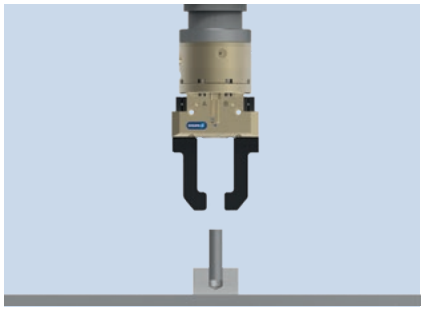
The robot travels towards th workpiece with a gripping unit consisting of an AGE (compensation unit) and gripper.
There is an offset due to tolerances/inaccuracies.

Workpiece mounting: AGE unlocked – gripper closed



An unlocked AGE can be used to compensate the existing axial offset between the gripper and workpiece axes and the workpiece can be joined.

Workpiece mounting: AGE unlocked – gripper opened



The robot moves away from the center of compliance with the gripper unit, the unit is then centrically locked, and the gripper is closed.

General notes about the series

Guidance system: Robust sliding guide

Monitoring: by magnetic switch

Actuation: pneumatic, with filtered compressed air as per ISO 8573-1:2010 [7:4:4].

Housing: hard anodized aluminum alloy, functional parts made of hardened steel

Scope of delivery: Robot-side mounting screws

Warranty: 24 months

Harsh environmental conditions: Please note that use under harsh environmental conditions (e.g. in the coolant area, cast and grinding dust) can considerably reduce the service life of the units, and we will not take over any warranty. However, in many cases we can find a solution. Please contact us for assistance.

Handling weight: is the weight of the total load attached to the flange. When designing, the permissible forces and moments have to be paid attention to. Please note that exceeding the recommended handling weight will shorten the lifespan.

Application example

Compensation unit for mounting a pin in a bore with a roughly toleranced position. The compensation unit compensates for the planar offset without turning or tilting the workpiece.

1. 2-finger parallel gripper PGF with top finger and workpiece
2. Compensation unit AGE-XY

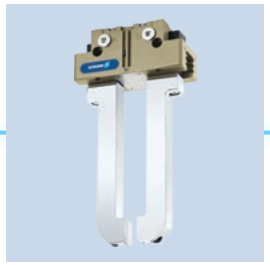
SCHUNK offers more ...

The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.

Quick change system

Manual change system

Anti-collision and overload protection sensor



Universal gripper

Magnetic switches

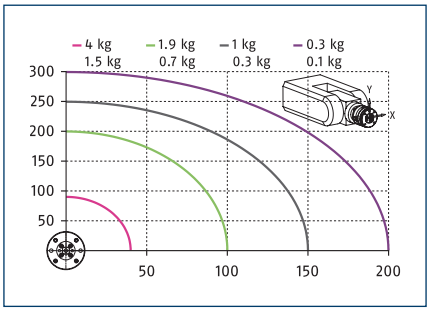
Universal gripper

ⓘ For more information on these products can be found on the following product pages or at schunk.com.

AGE-XY 050

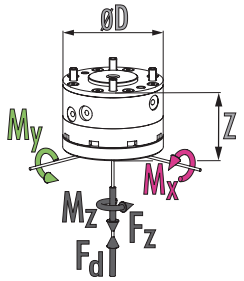
Compensation unit XY

Load chart



ⓘ Position of the allowable center of mass as a function of the payload for horizontal applications. A higher value of mass is valid for centrical locking, and a lower value of mass for position storage.

Dimensions and maximum loads



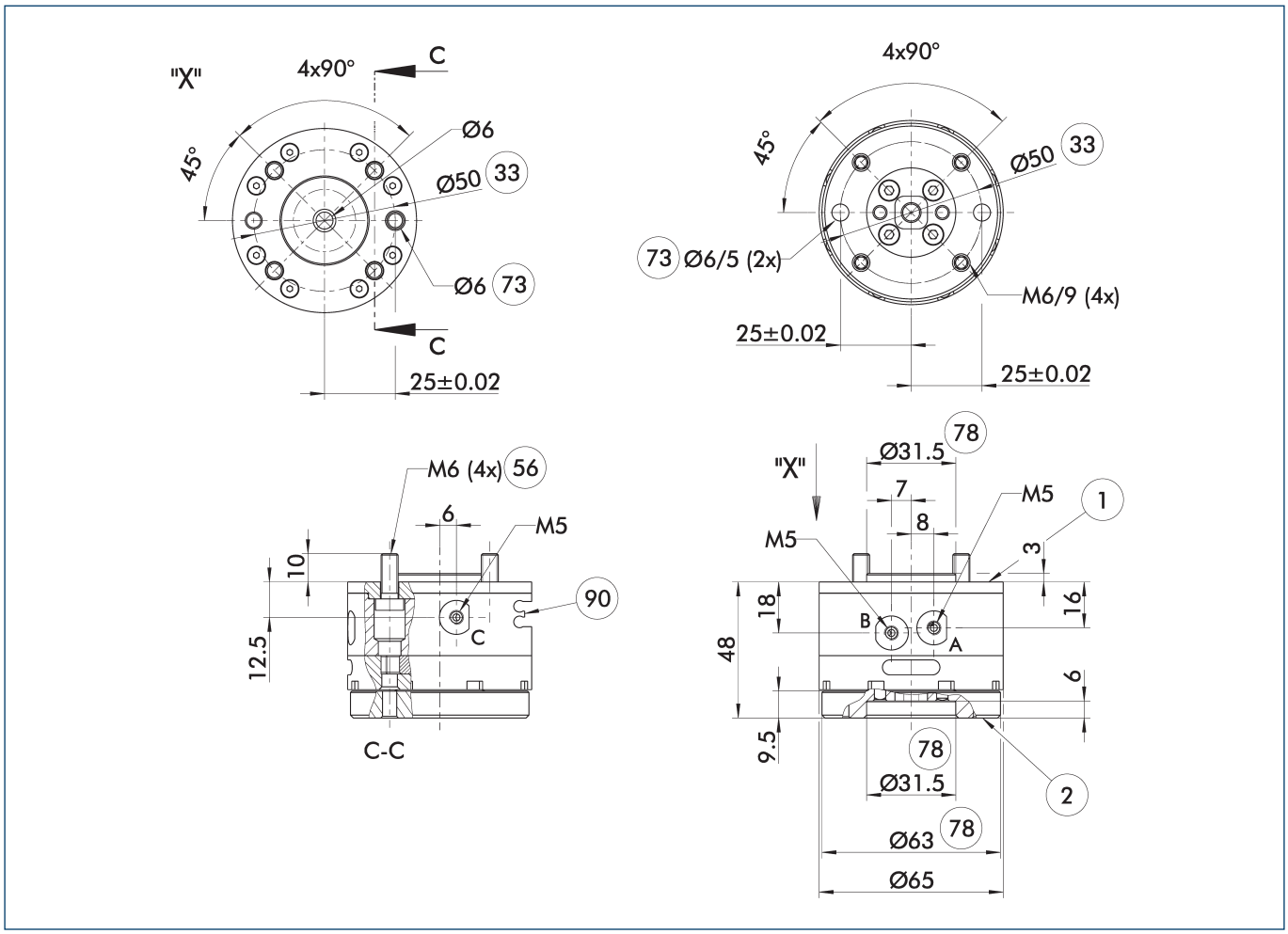
Mx max. 16 Nm
My max. 16 Nm
Mz max. 3.5 Nm
Fz max. 300 N
Fd max. 1700 N

ⓘ This is the max. total of all moments and loads (acceleration forces and torques, process forces etc.), which can affect a compensation unit, in order to ensure error-free function.

Technical data

Description		AGE-XY-050	AGE-XY-050-P
ID		0324450	0324451
Compensation XY	[mm]	±2.5	±2.5
Deflection rotatory	[°]	±12	±12
Recommended handling weight, vertical	[kg]	6	6
Recommended handling weight, horizontal	[kg]	4	4
Recommended handling weight position storage	[kg]		1.5
Locking force	[N]	235	235
Max. load force locked	[N]	130	130
Position memory piston force	[N]		180
Max. radial force, position storage	[N]		45
Rotation moment position storage	[Nm]		1.2
Max. distance shifting force Z	[mm]	120	120
Min./nom./max. operating pressure	[bar]	2.5/6/8	2.5/6/8
Repeat accuracy	[mm]	0.1	0.1
Robot-side connection		ISO 9409-1-50-4-M6	ISO 9409-1-50-4-M6
Weight	[kg]	0.46	0.47
Min./max. ambient temperature	[°C]	5/60	5/60
Dimensions Ø D x Z	[mm]	65 x 48	65 x 48

Main view



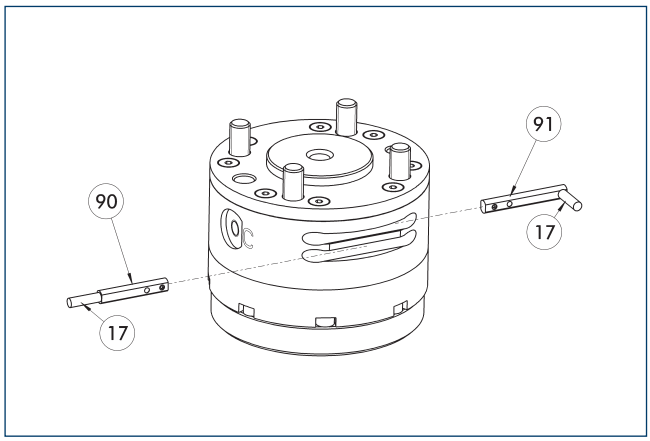
The main view shows the unit in its basic version.

A, a Air connection unlocked
B, b Air connection locked
C, c Air connection position memory XY
(1) Robot-side connection
(2) Tool-side connection
(33) DIN ISO-9409 bolt circle
(56) Included in the scope of delivery
(73) Fit for centering pins
(78) Fit for centering
(90) Slot for magnetic switch

AGE-XY 050

Compensation unit XY

Sensor system



17 Cable outlet
91 Sensor MMS 22...-SA
90 Sensor MMS 22..

End position monitoring for mounting in the C-slot.

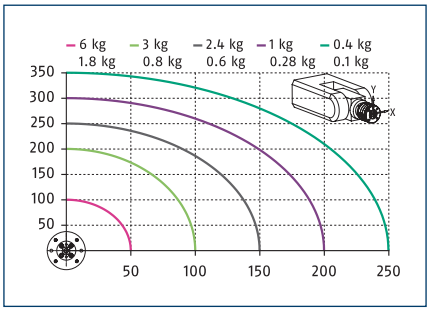
Description	ID	Often combined
Electronic magnetic switch		
MMS 22-S-M8-PNP	0301032	●
MMSK 22-S-PNP	0301034	
Electronic magnetic switches with lateral cable outlet		
MMS 22-S-M8-PNP-SA	0301042	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
clip for plug/socket		
CLI-M8	0301463	
Cable extension		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
Sensor distributor		
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

ⓘ Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

AGE-XY 063

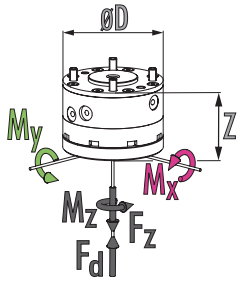
Compensation unit XY

Load chart



ⓘ Position of the allowable center of mass as a function of the payload for horizontal applications. A higher value of mass is valid for centrical locking, and a lower value of mass for position storage.

Dimensions and maximum loads



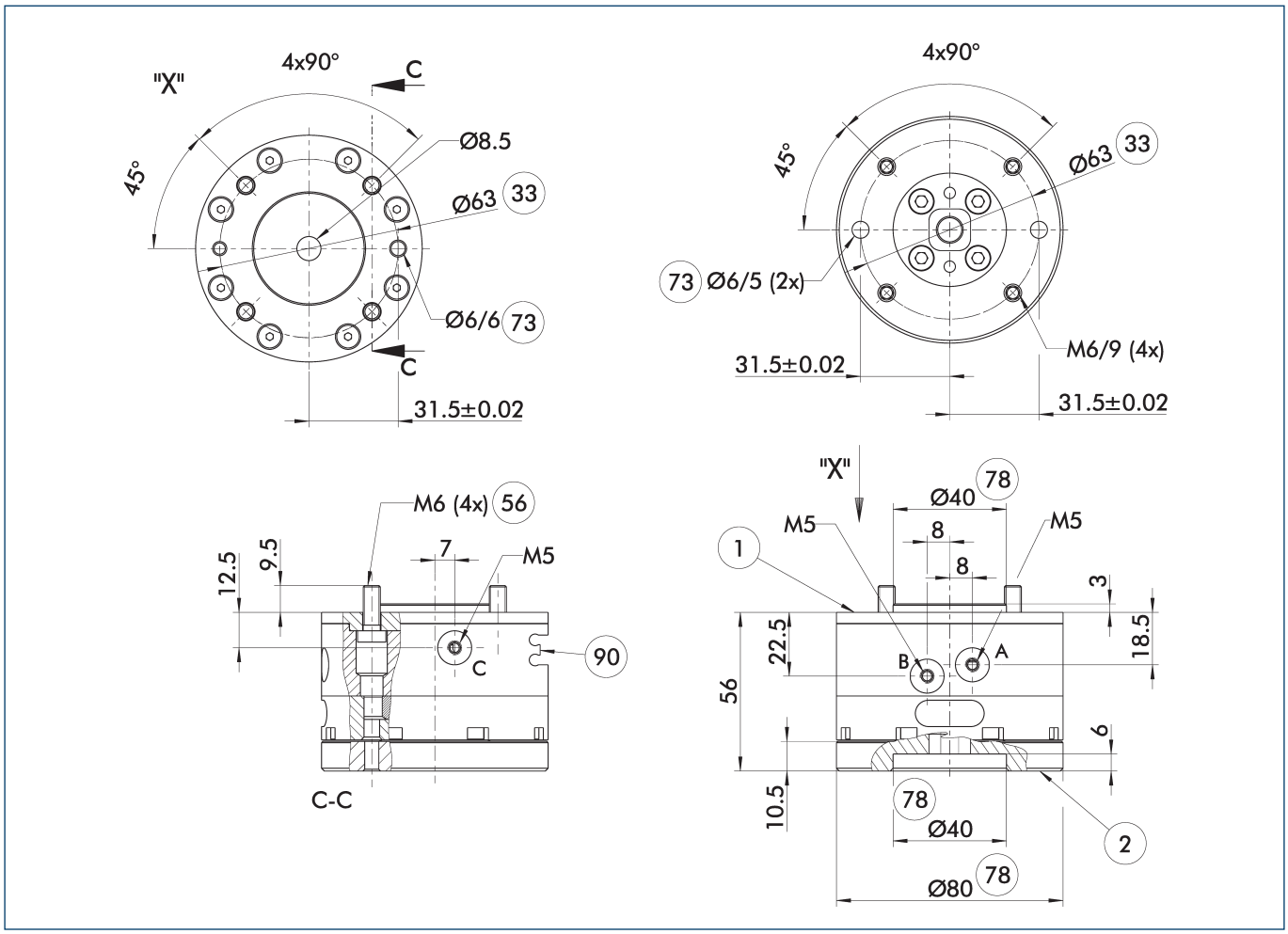
Mx max. 26 Nm
My max. 26 Nm
Mz max. 6 Nm
Fz max. 450 N
Fd max. 2600 N

ⓘ This is the max. total of all moments and loads (acceleration forces and torques, process forces etc.), which can affect a compensation unit, in order to ensure error-free function.

Technical data

Description		AGE-XY-063	AGE-XY-063-P
ID		0324463	0324464
Compensation XY	[mm]	±3	±3
Deflection rotatory	[°]	±12	±12
Recommended handling weight, vertical	[kg]	9	9
Recommended handling weight, horizontal	[kg]	6	6
Recommended handling weight position storage	[kg]		1.8
Locking force	[N]	370	370
Max. load force locked	[N]	200	200
Position memory piston force	[N]		235
Max. radial force, position storage	[N]		50
Rotation moment position storage	[Nm]		1.7
Max. distance shifting force Z	[mm]	160	160
Min./nom./max. operating pressure	[bar]	2.5/6/8	2.5/6/8
Repeat accuracy	[mm]	0.1	0.1
Robot-side connection		ISO 9409-1-63-4-M6	ISO 9409-1-63-4-M6
Weight	[kg]	0.83	0.85
Min./max. ambient temperature	[°C]	5/60	5/60
Dimensions Ø D x Z	[mm]	80 x 56	80 x 56

Main view



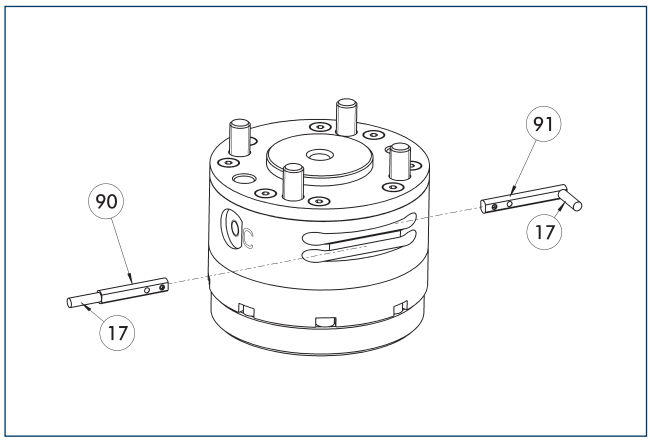
The main view shows the unit in its basic version.

A, a Air connection unlocked
B, b Air connection locked
C, c Air connection position memory XY
(1) Robot-side connection
(2) Tool-side connection
(33) DIN ISO-9409 bolt circle
(56) Included in the scope of delivery
(73) Fit for centering pins
(78) Fit for centering
(90) Slot for magnetic switch

AGE-XY 063

Compensation unit XY

Sensor system



17 Cable outlet
91 Sensor MMS 22...-SA
90 Sensor MMS 22..

End position monitoring for mounting in the C-slot.

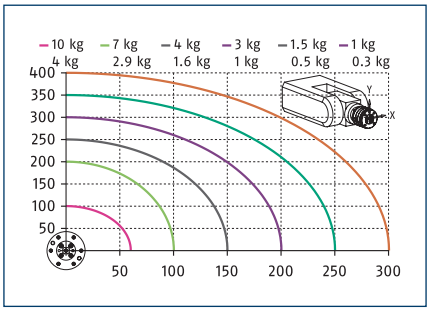
Description	ID	Often combined
Electronic magnetic switch		
MMS 22-S-M8-PNP	0301032	●
MMSK 22-S-PNP	0301034	
Electronic magnetic switches with lateral cable outlet		
MMS 22-S-M8-PNP-SA	0301042	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
clip for plug/socket		
CLI-M8	0301463	
Cable extension		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
Sensor distributor		
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

ⓘ Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

AGE-XY 080

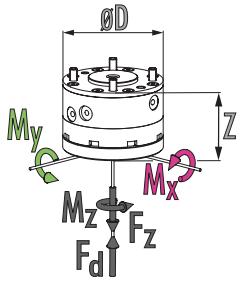
Compensation unit XY

Load chart



ⓘ Position of the allowable center of mass as a function of the payload for horizontal applications. A higher value of mass is valid for centrical locking, and a lower value of mass for position storage.

Dimensions and maximum loads



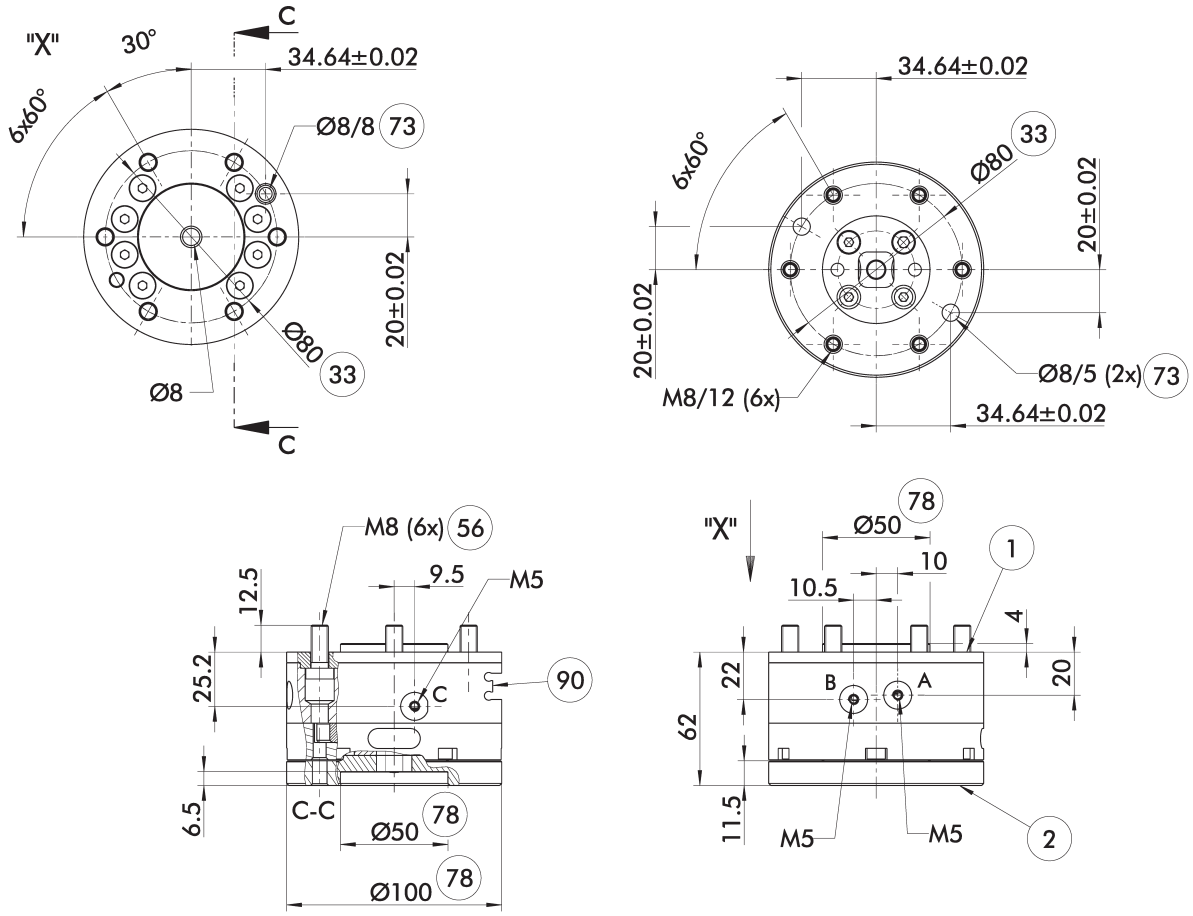
- Mx max. 30 Nm
- My max. 30 Nm
- Mz max. 9 Nm
- Fz max. 750 N
- Fd max. 3200 N

ⓘ This is the max. total of all moments and loads (acceleration forces and torques, process forces etc.), which can affect a compensation unit, in order to ensure error-free function.

Technical data

Description		AGE-XY-080	AGE-XY-080-P
ID		0324480	0324481
Compensation XY	[mm]	±4	±4
Deflection rotatory	[°]	±16	±16
Recommended handling weight, vertical	[kg]	15	15
Recommended handling weight, horizontal	[kg]	10	10
Recommended handling weight position storage	[kg]		4
Locking force	[N]	580	580
Max. load force locked	[N]	310	310
Position memory piston force	[N]		580
Max. radial force, position storage	[N]		145
Rotation moment position storage	[Nm]		4
Max. distance shifting force Z	[mm]	200	200
Min./nom./max. operating pressure	[bar]	2.5/6/8	2.5/6/8
Repeat accuracy	[mm]	0.1	0.1
Robot-side connection		ISO 9409-1-80-6-M8	ISO 9409-1-80-6-M8
Weight	[kg]	1.49	1.5
Min./max. ambient temperature	[°C]	5/60	5/60
Dimensions Ø D x Z	[mm]	100 x 62	100 x 62

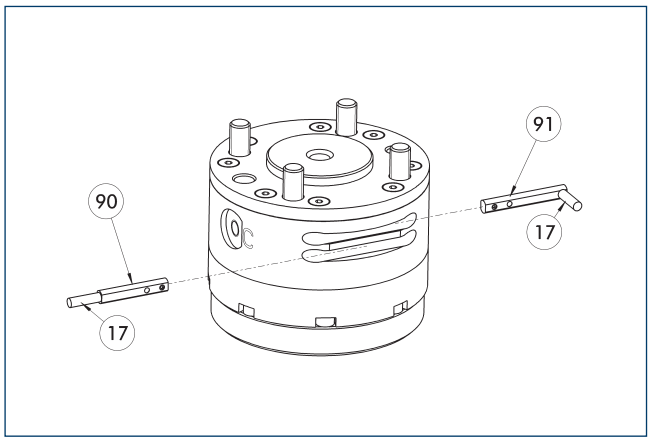
Main view



The main view shows the unit in its basic version.

A, a Air connection unlocked
B, b Air connection locked
C, c Air connection position memory XY
(1) Robot-side connection
(2) Tool-side connection
(33) DIN ISO-9409 bolt circle
(56) Included in the scope of delivery
(73) Fit for centering pins
(78) Fit for centering
(90) Slot for magnetic switch

Sensor system



17 Cable outlet
91 Sensor MMS 22...-SA
90 Sensor MMS 22..

End position monitoring for mounting in the C-slot.

Description	ID	Often combined
Electronic magnetic switch		
MMS 22-S-M8-PNP	0301032	●
MMSK 22-S-PNP	0301034	
Electronic magnetic switches with lateral cable outlet		
MMS 22-S-M8-PNP-SA	0301042	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
clip for plug/socket		
CLI-M8	0301463	
Cable extension		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
Sensor distributor		
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

ⓘ Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

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Product Information

Compensation unit Z AGE-Z 2

Compact. Compliant. Productive.

AGE-Z 2 compensation unit

Compensation unit compensating in Z-direction

Field of application

Palletizing, joining, and assembly of workpieces

Advantages – Your benefits

ISO mounting pattern for easy assembly to most types of robots without needing additional adapter plates

Locking for switching the unit rigidly in a defined, extended or retracted position

Compact design for minimum installation height

Can be combined with AGE-XY without additional adapter plate

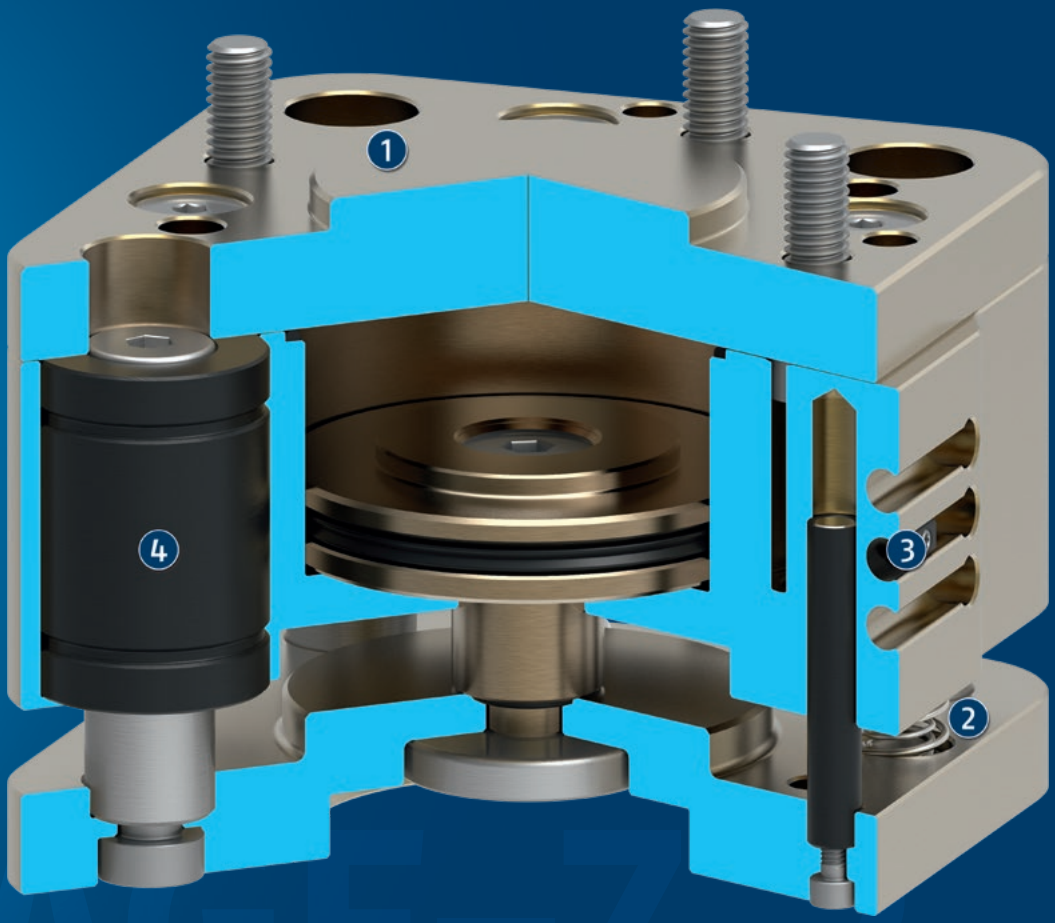
Sizes
Quantity: 3

Handling weight
5 .. 12 kg

Compensation Z
8 .. 10 mm

Functional description

The compensation unit AGE-Z 2 allows for Z-compensation of different collection and deposition positions. The compensation unit runs on a ball-guide that is free from play. Pressure springs determine the rigidity of the AGE-Z 2. It can be increased by additionally actuating the pneumatic cylinder.
The cylinder also ensures the unit to be locked in the event of dynamic movements. Monitoring of the retracted and the extended position is done by a magnetic switch.



① **Housing**
is weight-optimized due to the use of high-strength aluminum alloy

② **Pressure springs**
for defined pressure forces when depositing

③ **Monitoring groove**
Stroke monitoring of the locking piston with magnetic switches

④ **Scope-free ball bearings**
for great torque capacity at minimum size

General notes about the series

Guidance system: Scope-free ball bearings

Monitoring: via magnetic switch or inductive proximity sensor

Actuation: pneumatic, with filtered compressed air as per ISO 8573-1:2010 [7:4:4].

Housing: hard anodized aluminum alloy, functional parts made of hardened steel

Scope of delivery: Robot-side mounting screws

Warranty: 24 months

Harsh environmental conditions: Please note that use under harsh environmental conditions (e.g. in the coolant area, cast and grinding dust) can considerably reduce the service life of the units, and we will not take over any warranty. However, in many cases we can find a solution. Please contact us for assistance.

Handling weight: is the weight of the total load attached to the flange. When designing, the permissible forces and moments have to be paid attention to. Please note that exceeding the recommended handling weight will shorten the lifespan.

Application example

Handling tool with compensation unit and change system for handling of rotation-symmetrical workpieces with horizontal offset in set-down position.

1. AGE-Z 2 compensation unit
2. 3-finger centric gripper PZN-plus
3. Quick-change system SWS
4. Electric module
5. Cable connector

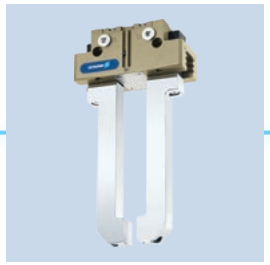
SCHUNK offers more ...

The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.

Quick change system

Manual change system

Anti-collision and overload protection sensor



Universal gripper

Magnetic switches

Inductive proximity switches

Electric magnetic gripper

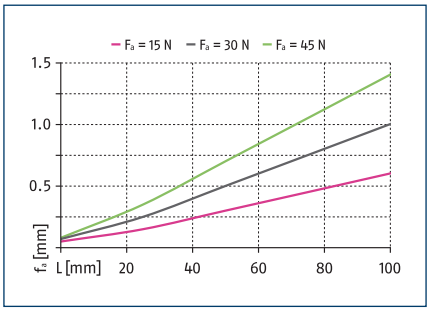
Universal gripper

ⓘ For more information on these products can be found on the following product pages or at schunk.com.

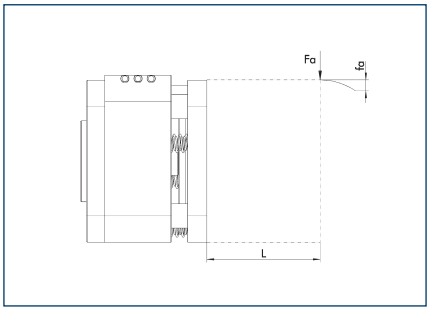
AGE-Z 2 50

Compensation unit Z

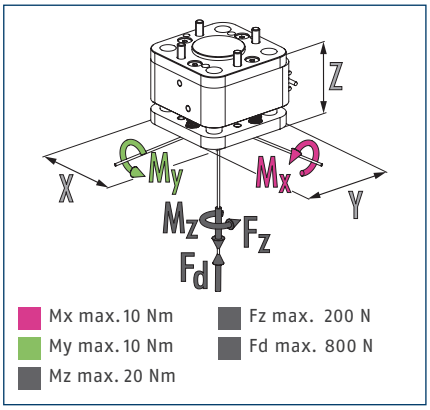
Load chart



Deflection



Dimensions and maximum loads



- Mx max. 10 Nm
- My max. 10 Nm
- Mz max. 20 Nm
- Fz max. 200 N
- Fd max. 800 N

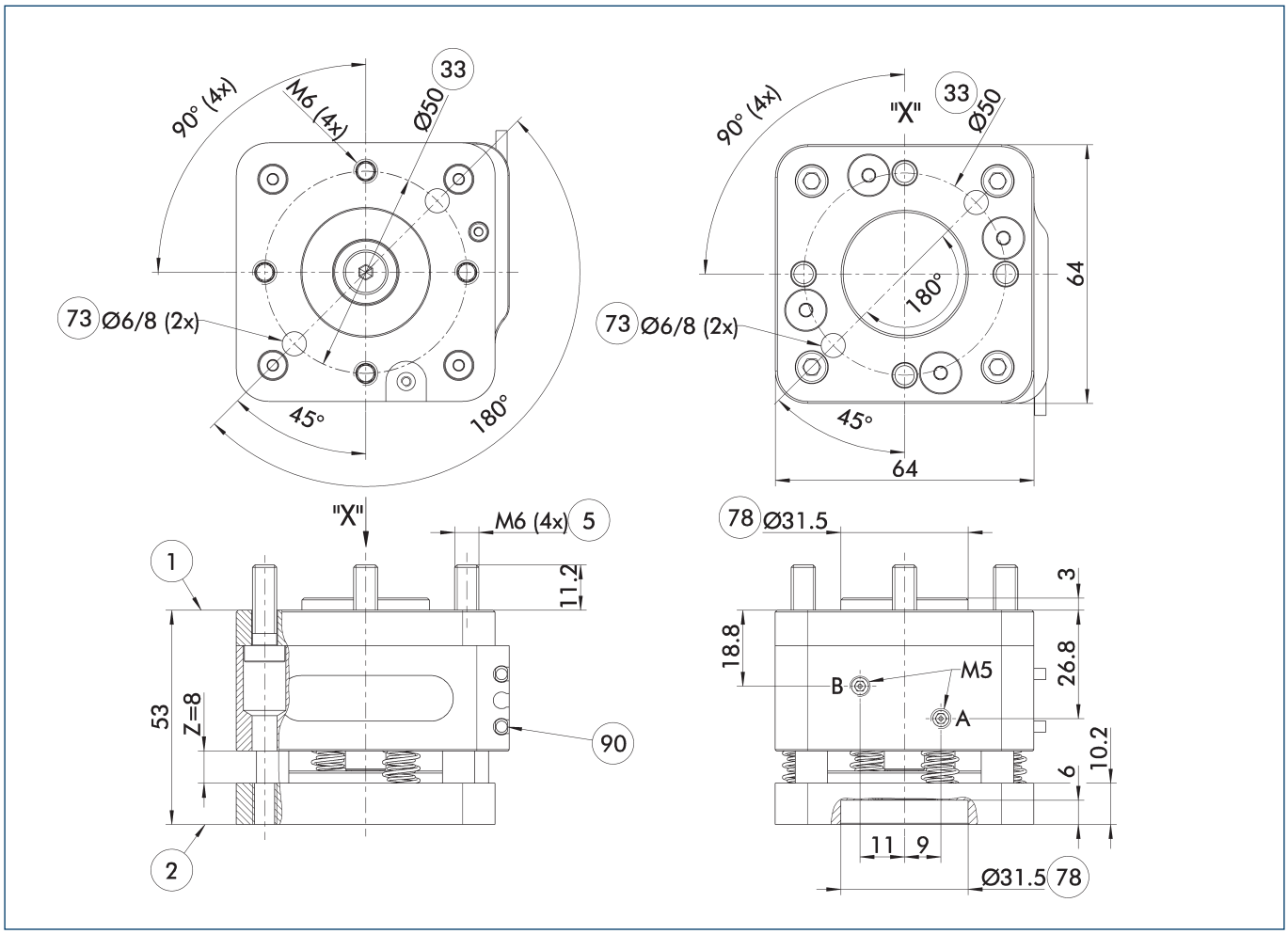
ⓘ This is the max. total of all moments and loads (acceleration forces and torques, process forces etc.), which can affect a compensation unit, in order to ensure error-free function.

Technical data

Description		AGE-Z 2-050-1	AGE-Z 2-050-2
ID		0324453	0324454
Compensation Z	[mm]	8	8
Recommended handling weight	[kg]	5	5
Locking force retracted at 6 bar	[N]	300	280
Locking force extended at 6 bar	[N]	500	500
Min. spring force	[N]	20	40
Max. spring force	[N]	40	60
Min./nom./max. operating pressure	[bar]	2.5/-/6	2.5/-/6
Repeat accuracy	[mm]	0.02	0.02
Robot-side connection		ISO 9409-1-50-4-M6	ISO 9409-1-50-4-M6
Weight	[kg]	0.55	0.55
Min./max. ambient temperature	[°C]	5/60	5/60
Dimensions X x Y x Z	[mm]	64 x 64 x 53	64 x 64 x 53

ⓘ The diagramm shows the AGE-Z 2 deflection under load and in the unlocked state.

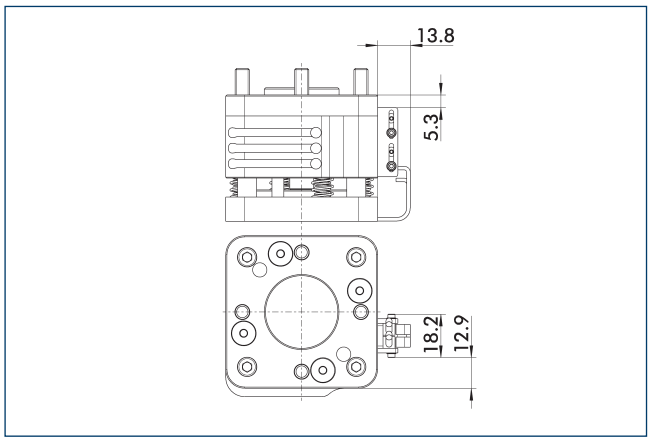
Main view



The main view shows the AGE-Z 2 in extended position.

A, a Retract unit
B, b Extend unit
(1) Robot-side connection
(2) Tool-side connection
(5) Through hole for connection with screws
(33) DIN ISO-9409 bolt circle
(73) Fit for centering pins
(78) Fit for centering
(90) Sensor MMS 22..

Attachment kit for proximity switch IN 5

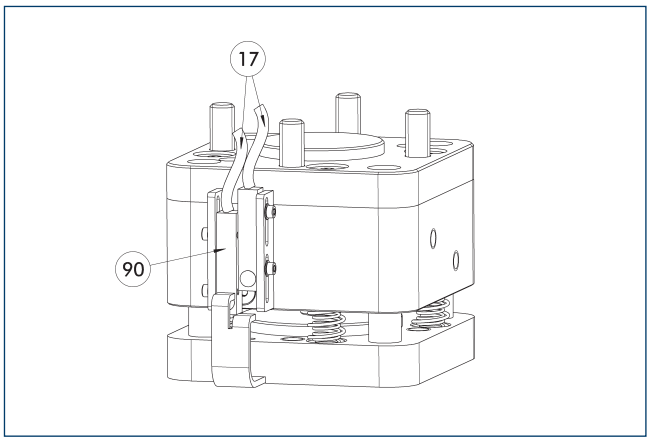


End position monitoring can be mounted with an attachment kit.

Description	ID	
Attachment kit for proximity switch		
AS-AGE-Z-2-IN5	0324490	

ⓘ This attachment kit needs to be ordered optionally as an accessory.

Inductive proximity switches IN5 by attachment kit



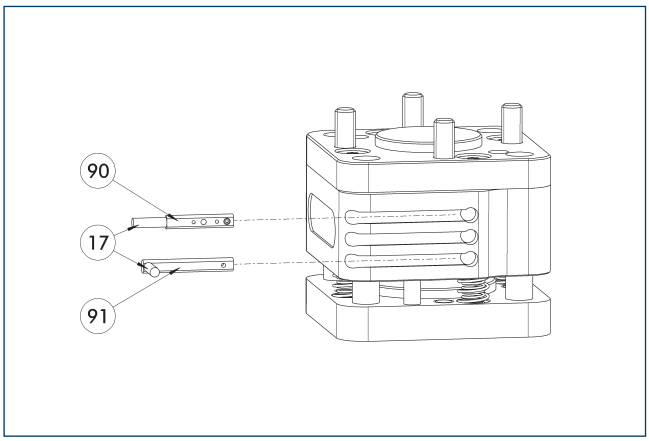
(17) Cable outlet

(90) Sensor IN ...

Description	ID	Often combined
Inductive proximity switches		
IN 5-S-M12	0301569	
IN 5-S-M8	0301469	●
INK 5-S	0301501	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
KA BW12-L 3P-0300-PNP	0301503	
KA BW12-L 3P-0500-PNP	0301507	
clip for plug/socket		
CLI-M12	0301464	
CLI-M8	0301463	
Cable extension		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	
Sensor distributor		
V2-M12	0301776	●
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

ⓘ Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

Electronic magnetic switch MMS



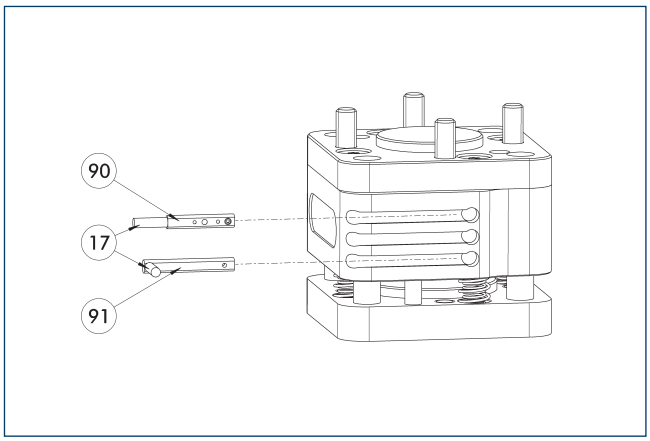
(17) Cable outlet
(90) Sensor MMS 22..
(91) Sensor MMS 22...-SA

End position monitoring for mounting in the C-slot.

Description	ID	Often combined
Electronic magnetic switch		
MMS 22-S-M8-PNP	0301032	●
MMSK 22-S-PNP	0301034	
Electronic magnetic switches with lateral cable outlet		
MMS 22-S-M8-PNP-SA	0301042	●
MMSK 22-S-PNP-SA	0301044	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
clip for plug/socket		
CLI-M8	0301463	
Cable extension		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
Sensor distributor		
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

ⓘ Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

Programmable magnetic switch MMS 22-PI1



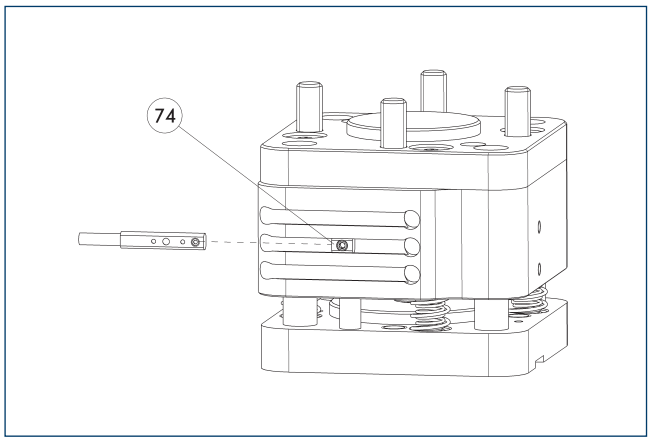
(17) Cable outlet
(90) Sensor MMS 22 PI1-...
(91) Sensor MMS 22 ..-PI1-...-SA

Position monitoring with one programmable position per sensor and integrated electronic system in the sensor. Can be programmed using MT magnetic teaching tool (included in the scope of delivery) or ST plug teaching tool (optional). End position monitoring for mounting in the C-slot. If the ST plug teaching tools are listed in the table provided, teaching is only possible with the ST teaching tools.

Description	ID	Often combined
Programmable magnetic switch		
MMS 22-PI1-S-M8-PNP	0301160	●
MMSK 22-PI1-S-PNP	0301162	
Programmable magnetic switch with lateral cable outlet		
MMS 22-PI1-S-M8-PNP-SA	0301166	●
MMSK 22-PI1-S-PNP-SA	0301168	
Programmable magnetic switch with stainless steel housing		
MMS 22-PI1-S-M8-PNP-HD	0301110	●
MMSK 22-PI1-S-PNP-HD	0301112	

ⓘ Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

MMS-P programmable magnetic switch



74 Limit stop for sensor

Position monitoring with two programmable positions per sensor. End position monitoring for mounting in the C-slot.

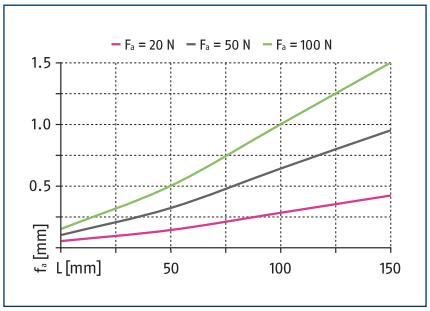
Description	ID	Often combined
Programmable magnetic switch		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
Connection cables		
KA GLN0804-LK-00500-A	0307767	●
KA GLN0804-LK-01000-A	0307768	
KA WLN0804-LK-00500-A	0307765	
KA WLN0804-LK-01000-A	0307766	
clip for plug/socket		
CLI-M8	0301463	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	

ⓘ One sensor is required per unit for monitoring two positions. Extension cables and sensor distributors are optionally available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor systems.

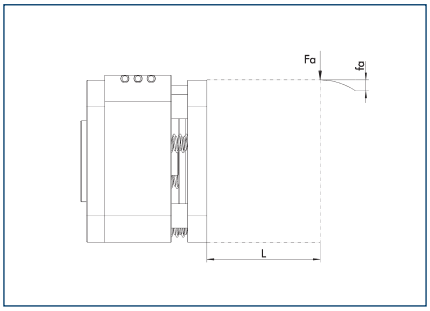
AGE-Z 2 63

Compensation unit Z

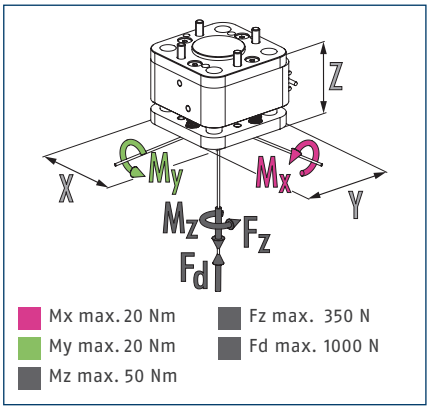
Load chart



Deflection



Dimensions and maximum loads



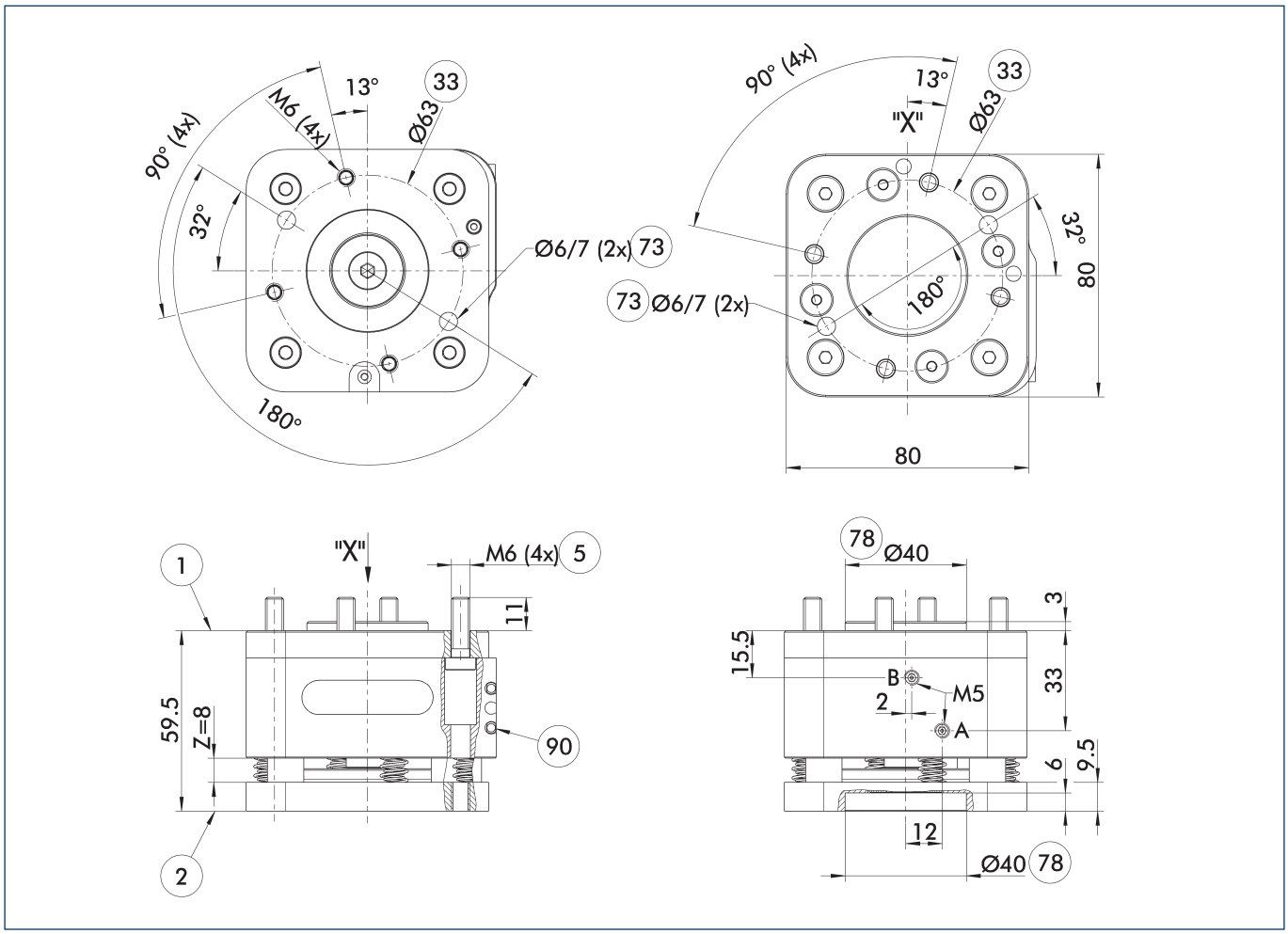
ⓘ This is the max. total of all moments and loads (acceleration forces and torques, process forces etc.), which can affect a compensation unit, in order to ensure error-free function.

Technical data

Description		AGE-Z 2-063-1	AGE-Z 2-063-2
ID		0324466	0324467
Compensation Z	[mm]	8	8
Recommended handling weight	[kg]	9	9
Locking force retracted at 6 bar	[N]	800	750
Locking force extended at 6 bar	[N]	900	900
Min. spring force	[N]	40	60
Max. spring force	[N]	60	100
Min./nom./max. operating pressure	[bar]	2.5/-/6	2.5/-/6
Repeat accuracy	[mm]	0.02	0.02
Robot-side connection		ISO 9409-1-63-4-M6	ISO 9409-1-63-4-M6
Weight	[kg]	0.8	0.8
Min./max. ambient temperature	[°C]	5/60	5/60
Dimensions X x Y x Z	[mm]	80 x 80 x 59.5	80 x 80 x 59.5

ⓘ The diagramm shows the AGE-Z 2 deflection under load and in the unlocked state.

Main view



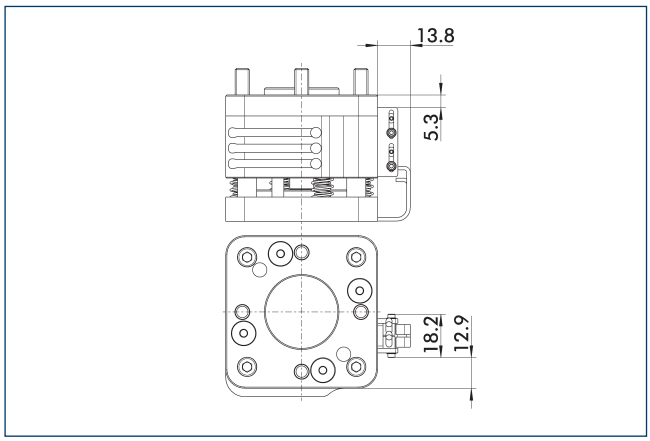
The main view shows the AGE-Z 2 in extended position.

A, a Retract unit
B, b Extend unit

(1) Robot-side connection
(2) Tool-side connection
(5) Through hole for connection with screws

(33) DIN ISO-9409 bolt circle
(73) Fit for centering pins
(78) Fit for centering
(90) Sensor MMS 22..

Attachment kit for proximity switch IN 5

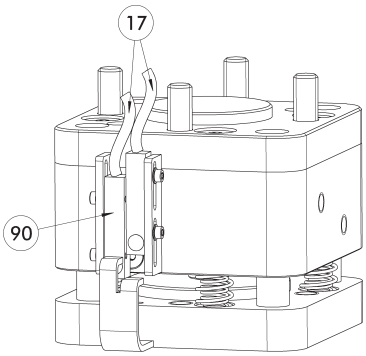


End position monitoring can be mounted with an attachment kit.

Description	ID	
Attachment kit for proximity switch		
AS-AGE-Z-2-IN5	0324490	

ⓘ This attachment kit needs to be ordered optionally as an accessory.

Inductive proximity switches IN5 by attachment kit



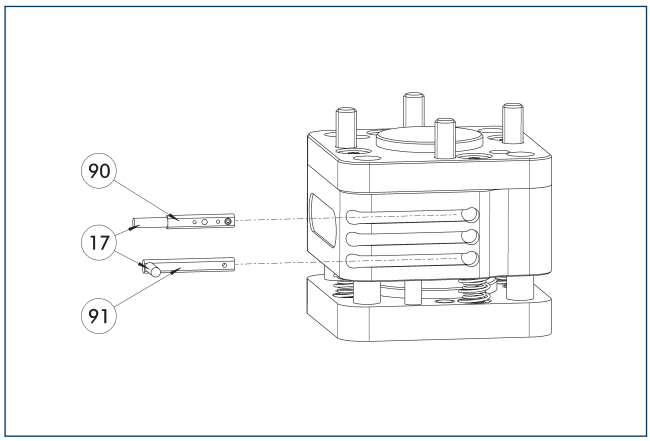
(17) Cable outlet

(90) Sensor IN ...

Description	ID	Often combined
Inductive proximity switches		
IN 5-S-M12	0301569	
IN 5-S-M8	0301469	●
INK 5-S	0301501	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
KA BW12-L 3P-0300-PNP	0301503	
KA BW12-L 3P-0500-PNP	0301507	
clip for plug/socket		
CLI-M12	0301464	
CLI-M8	0301463	
Cable extension		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	
Sensor distributor		
V2-M12	0301776	●
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

ⓘ Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

Electronic magnetic switch MMS



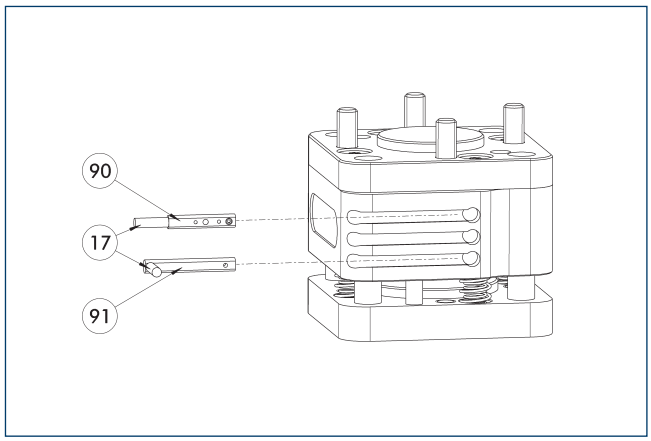
(17) Cable outlet
(91) Sensor MMS 22...-SA
(90) Sensor MMS 22..

End position monitoring for mounting in the C-slot.

Description	ID	Often combined
Electronic magnetic switch		
MMS 22-S-M8-PNP	0301032	●
MMSK 22-S-PNP	0301034	
Electronic magnetic switches with lateral cable outlet		
MMS 22-S-M8-PNP-SA	0301042	●
MMSK 22-S-PNP-SA	0301044	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
clip for plug/socket		
CLI-M8	0301463	
Cable extension		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
Sensor distributor		
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

ⓘ Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

Programmable magnetic switch MMS 22-PI1



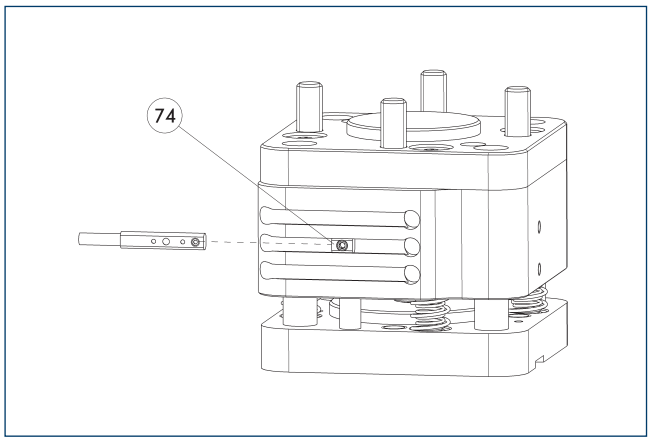
(17) Cable outlet
(91) Sensor MMS 22 ..-PI1-...-SA
(90) Sensor MMS 22 PI1-...

Position monitoring with one programmable position per sensor and integrated electronic system in the sensor. Can be programmed using MT magnetic teaching tool (included in the scope of delivery) or ST plug teaching tool (optional). End position monitoring for mounting in the C-slot. If the ST plug teaching tools are listed in the table provided, teaching is only possible with the ST teaching tools.

Description	ID	Often combined
Programmable magnetic switch		
MMS 22-PI1-S-M8-PNP	0301160	●
MMSK 22-PI1-S-PNP	0301162	
Programmable magnetic switch with lateral cable outlet		
MMS 22-PI1-S-M8-PNP-SA	0301166	●
MMSK 22-PI1-S-PNP-SA	0301168	
Programmable magnetic switch with stainless steel housing		
MMS 22-PI1-S-M8-PNP-HD	0301110	●
MMSK 22-PI1-S-PNP-HD	0301112	

ⓘ Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

MMS-P programmable magnetic switch



74 Limit stop for sensor

Position monitoring with two programmable positions per sensor. End position monitoring for mounting in the C-slot.

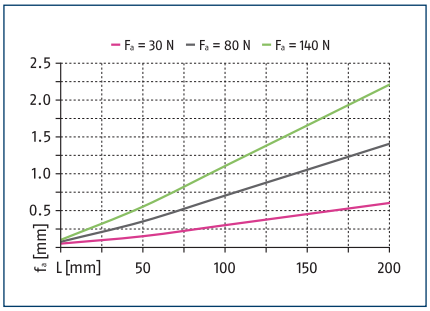
Description	ID	Often combined
Programmable magnetic switch		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
Connection cables		
KA GLN0804-LK-00500-A	0307767	●
KA GLN0804-LK-01000-A	0307768	
KA WLN0804-LK-00500-A	0307765	
KA WLN0804-LK-01000-A	0307766	
clip for plug/socket		
CLI-M8	0301463	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	

ⓘ One sensor is required per unit for monitoring two positions. Extension cables and sensor distributors are optionally available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor systems.

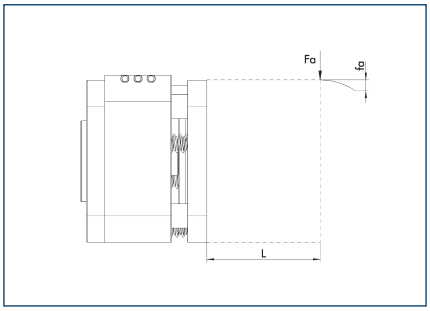
AGE-Z 2 80

Compensation unit Z

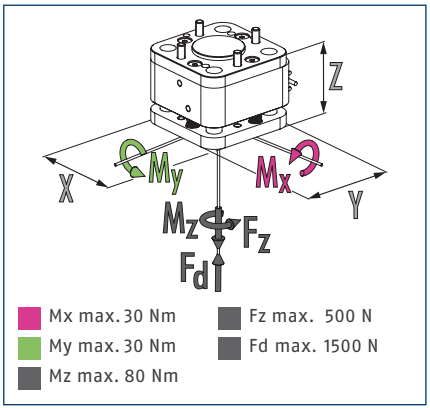
Load chart



Deflection



Dimensions and maximum loads



- Mx max. 30 Nm
- My max. 30 Nm
- Mz max. 80 Nm
- Fz max. 500 N
- Fd max. 1500 N

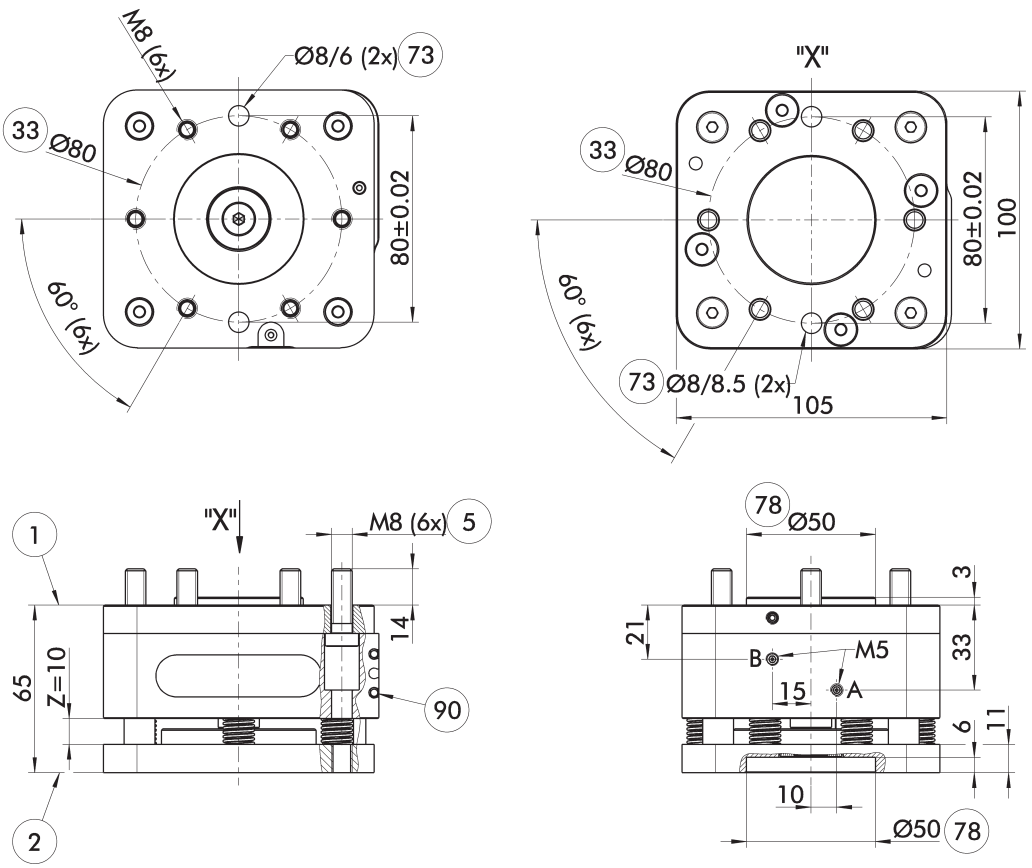
ⓘ This is the max. total of all moments and loads (acceleration forces and torques, process forces etc.), which can affect a compensation unit, in order to ensure error-free function.

Technical data

Description		AGE-Z 2-080-1	AGE-Z 2-080-2
ID		0324483	0324484
Compensation Z	[mm]	10	10
Recommended handling weight	[kg]	12	12
Locking force retracted at 6 bar	[N]	1450	1450
Locking force extended at 6 bar	[N]	1500	1500
Min. spring force	[N]	70	90
Max. spring force	[N]	100	120
Min./nom./max. operating pressure	[bar]	2.5/-/6	2.5/-/6
Repeat accuracy	[mm]	0.02	0.02
Robot-side connection		ISO 9409-1-80-6-M8	ISO 9409-1-80-6-M8
Weight	[kg]	1.7	1.7
Min./max. ambient temperature	[°C]	5/60	5/60
Dimensions X x Y x Z	[mm]	105 x 105 x 65	105 x 105 x 65

ⓘ The diagramm shows the AGE-Z 2 deflection under load and in the unlocked state.

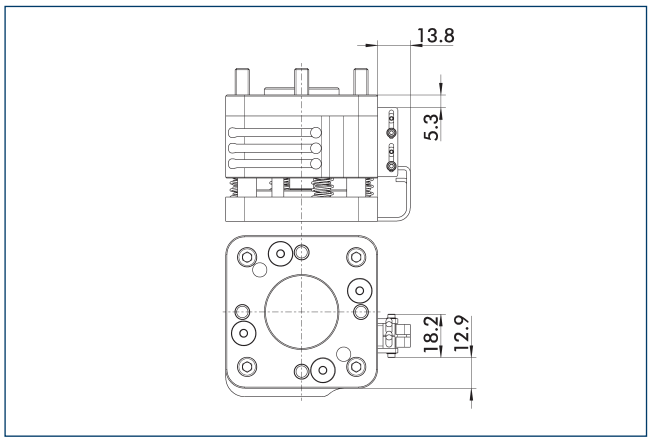
Main view



The main view shows the AGE-Z 2 in extended position.

A, a Retract unit
B, b Extend unit
(1) Robot-side connection
(2) Tool-side connection
(5) Through hole for connection with screws
(33) DIN ISO-9409 bolt circle
(73) Fit for centering pins
(78) Fit for centering
(90) Sensor MMS 22..

Attachment kit for proximity switch IN 5

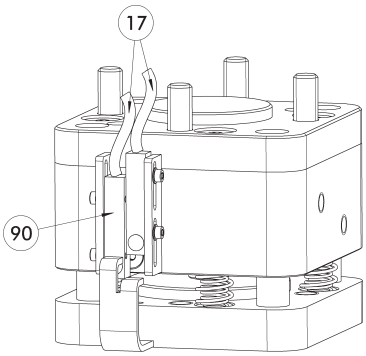


End position monitoring can be mounted with an attachment kit.

Description	ID	
Attachment kit for proximity switch		
AS-AGE-Z-2-IN5	0324490	

ⓘ This attachment kit needs to be ordered optionally as an accessory.

Inductive proximity switches IN5 by attachment kit



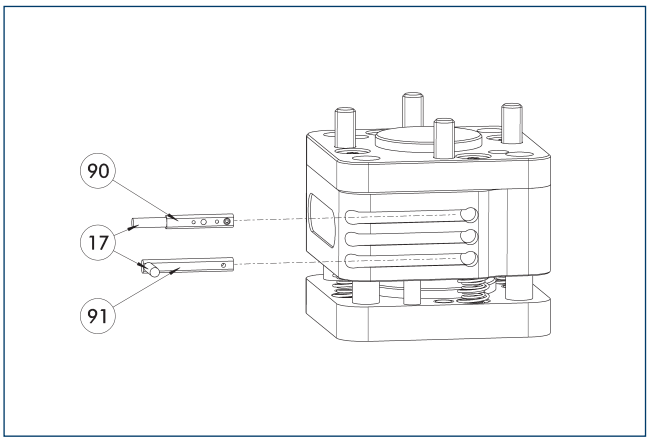
(17) Cable outlet

(90) Sensor IN ...

Description	ID	Often combined
Inductive proximity switches		
IN 5-S-M12	0301569	
IN 5-S-M8	0301469	●
INK 5-S	0301501	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
KA BW12-L 3P-0300-PNP	0301503	
KA BW12-L 3P-0500-PNP	0301507	
clip for plug/socket		
CLI-M12	0301464	
CLI-M8	0301463	
Cable extension		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	
Sensor distributor		
V2-M12	0301776	●
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

ⓘ Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

Electronic magnetic switch MMS



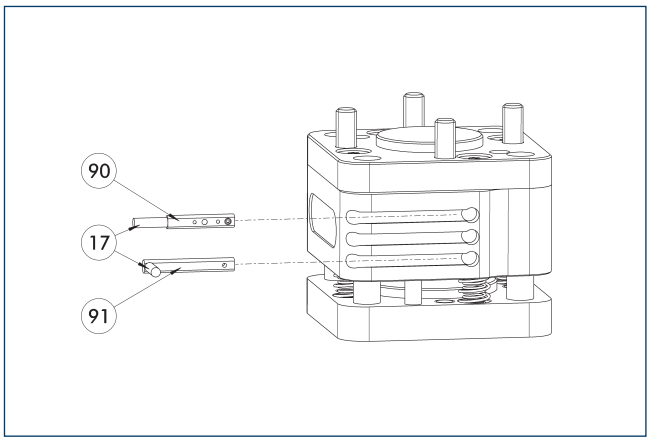
17 Cable outlet
91 Sensor MMS 22...-SA
90 Sensor MMS 22..

End position monitoring for mounting in the C-slot.

Description	ID	Often combined
Electronic magnetic switch		
MMS 22-S-M8-PNP	0301032	●
MMSK 22-S-PNP	0301034	
Electronic magnetic switches with lateral cable outlet		
MMS 22-S-M8-PNP-SA	0301042	●
MMSK 22-S-PNP-SA	0301044	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
clip for plug/socket		
CLI-M8	0301463	
Cable extension		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
Sensor distributor		
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

ⓘ Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

Programmable magnetic switch MMS 22-PI1



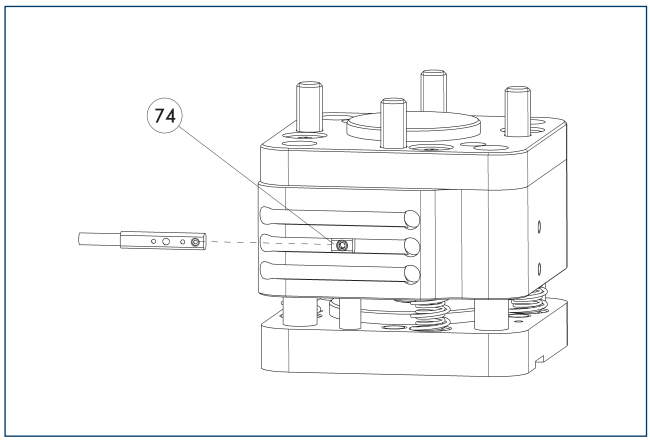
17 Cable outlet
91 Sensor MMS 22 ..-PI1-...-SA
90 Sensor MMS 22 PI1-...

Position monitoring with one programmable position per sensor and integrated electronic system in the sensor. Can be programmed using MT magnetic teaching tool (included in the scope of delivery) or ST plug teaching tool (optional). End position monitoring for mounting in the C-slot. If the ST plug teaching tools are listed in the table provided, teaching is only possible with the ST teaching tools.

Description	ID	Often combined
Programmable magnetic switch		
MMS 22-PI1-S-M8-PNP	0301160	●
MMSK 22-PI1-S-PNP	0301162	
Programmable magnetic switch with lateral cable outlet		
MMS 22-PI1-S-M8-PNP-SA	0301166	●
MMSK 22-PI1-S-PNP-SA	0301168	
Programmable magnetic switch with stainless steel housing		
MMS 22-PI1-S-M8-PNP-HD	0301110	●
MMSK 22-PI1-S-PNP-HD	0301112	

ⓘ Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

MMS-P programmable magnetic switch



74 Limit stop for sensor

Position monitoring with two programmable positions per sensor. End position monitoring for mounting in the C-slot.

Description	ID	Often combined
Programmable magnetic switch		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
Connection cables		
KA GLN0804-LK-00500-A	0307767	●
KA GLN0804-LK-01000-A	0307768	
KA WLN0804-LK-00500-A	0307765	
KA WLN0804-LK-01000-A	0307766	
clip for plug/socket		
CLI-M8	0301463	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	

ⓘ One sensor is required per unit for monitoring two positions. Extension cables and sensor distributors are optionally available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor systems.

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schunk.com

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Superior Clamping and Gripping

SCHUNK®

Product Information

Insertion unit FUS

Compliant. Precise. Reliable.

Insertion unit FUS

symmetrical insertion unit with centric locking and monitoring

Field of application

Assembly tasks with very little play among the parts to be aligned

Advantages – Your benefits

Pneumatic, centric locking puts the unit back to a defined zero position and protects the elastomers

Layered elastomer construction soft and flexible when aligning, rigid when pressing in

Compensates alignment errors thereby reducing the danger of jamming

Sizes
Quantity: 5

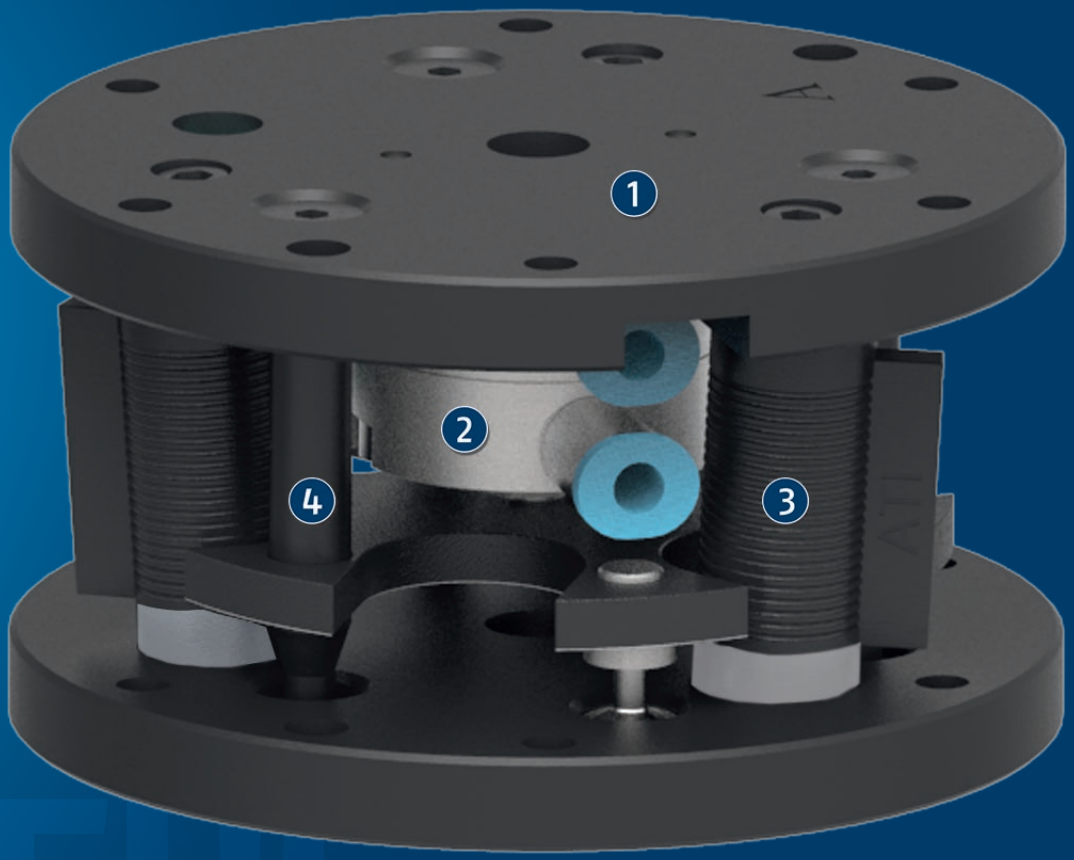
Compensation XY
1.7 .. 2.2 mm

Rotary compensation angle
2.5 .. 5°

Functional description

The FUS' function is based on the interaction between the two base plates, which are connected to each other by a set of three or six flexible elastomer elements. As a result, the FUS can compensate tolerances in the X and Y directions, allowing the correction of angle errors and causing a rotational compensation.

The FUS offers pneumatic locking to allow the compensation unit to be set to rigid. As a result, it is possible to prevent the tool or the gripper vibrating during movement of the robot arm or the linear axis. This increases the application's repeat accuracy and extends the service life of the elastomer elements.



① **Adapter flange**
individual screw connection diagrams can be easily integrated

② **Pneumatic locking**
for a rigid connection between the machine and tool sides

③ **Elastomers**
allows compensation movement

④ **Overload pin**
to protect the elastomers

General notes about the series

Monitoring: by inductive proximity switch

Actuation: pneumatic, with filtered compressed air as per ISO 8573-1:2010 [7:4:4].

Material: Elastomer material

Housing: Aluminum

Scope of delivery: without mounting screws

Warranty: 24 months

Harsh environmental conditions: Please note that use under harsh environmental conditions (e.g. in the coolant area, cast and grinding dust) can considerably reduce the service life of the units, and we will not take over any warranty. However, in many cases we can find a solution. Please contact us for assistance.

Handling weight: is the weight of the total load attached to the flange. When designing, the permissible forces and moments have to be paid attention to. Please note that exceeding the recommended handling weight will shorten the lifespan.

Application example

Handling unit for inserting a pin into a precisely fitting bore

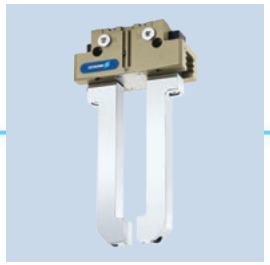
1. Insertion unit FUS
2. 3-finger centric gripper PZN-plus

SCHUNK offers more ...

The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.

Quick change system

Manual change system



Universal gripper

Universal gripper

Inductive proximity switches

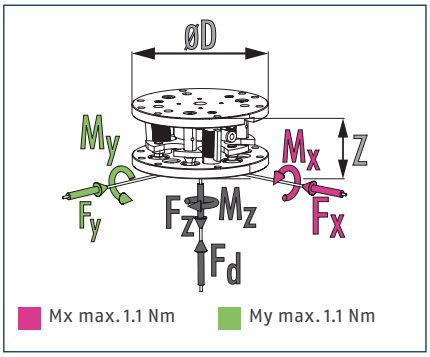
Angular gripper

ⓘ For more information on these products can be found on the following product pages or at schunk.com.

FUS 001-30

Insertion unit

Dimensions and maximum loads

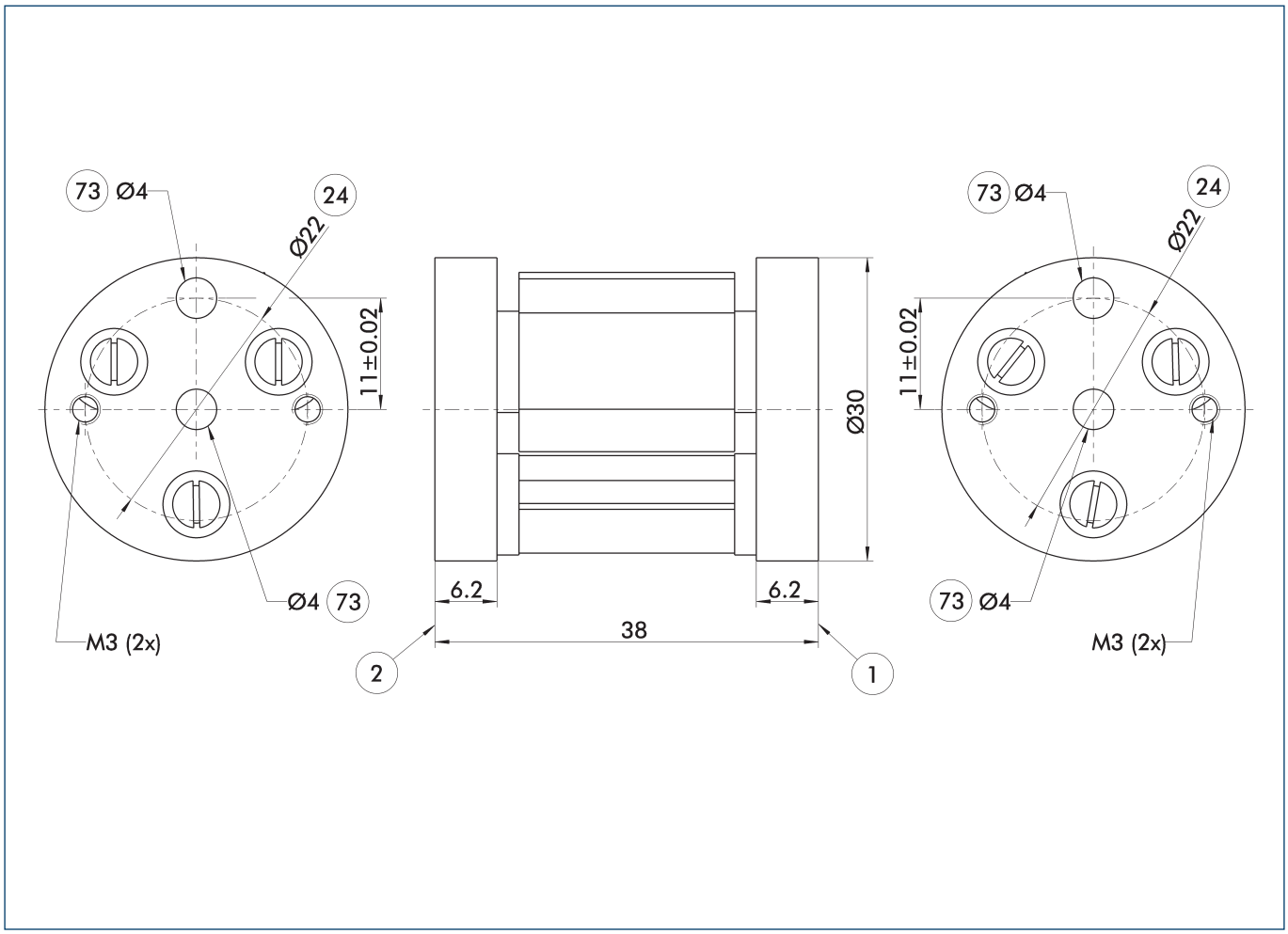


ⓘ The forces and torques are maximum values when unlocked and may occur simultaneously. When locked, only the loads caused by the weight and acceleration are permissible.

Technical data

Description		FUS-001-30
ID		0320280
Locking		Without locking
Compensation XY	[mm]	1.7
Angular deflection	[°]	1
Rotary compensation angle	[°]	4.5
Rigidity shift	[N/mm]	7.5
Compensation center distance	[mm]	23
Repeat accuracy	[mm]	±0.05
Weight	[kg]	0.05
Min./max. ambient temperature	[°C]	5/60
Max. force Fx/Fy vertical installation	[N]	22
Max. force Fx/Fy horizontal installation	[N]	3
Max. force Fd	[N]	160
Dimensions Ø D x Z	[mm]	30 x 38

Main view



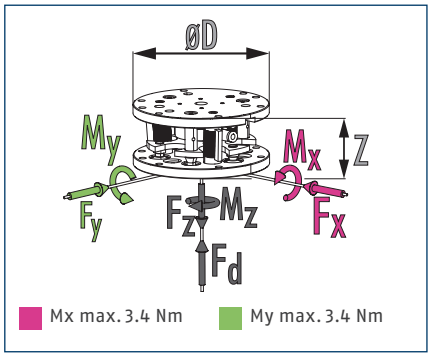
The main view shows the unit in its basic version.

1 Robot-side connection
2 Tool-side connection
24 Bolt circle
73 Fit for centering pins

FUS 001

Insertion unit

Dimensions and maximum loads

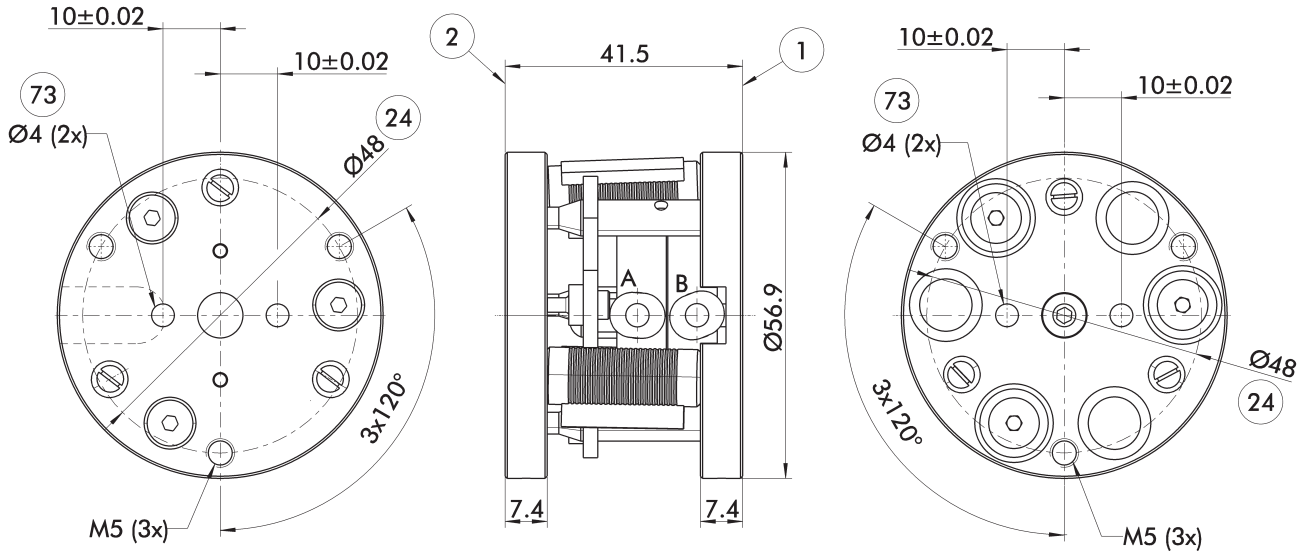


ⓘ The forces and torques are maximum values when unlocked and may occur simultaneously. When locked, only the loads caused by the weight and acceleration are permissible.

Technical data

Description		FUS-001
ID		0320518
Locking		with locking
Compensation XY	[mm]	1.7
Angular deflection	[°]	1
Rotary compensation angle	[°]	4.5
Rigidity shift	[N/mm]	1.7
Compensation center distance	[mm]	23
Repeat accuracy	[mm]	±0.026
Weight	[kg]	0.18
Min./max. operating pressure	[bar]	5/6
Min./max. ambient temperature	[°C]	5/60
Max. force Fx/Fy vertical installation	[N]	22
Max. force Fx/Fy horizontal installation	[N]	6.7
Locking moment Fz	[N]	22
Max. force Fd	[N]	360
Dimensions Ø D x Z	[mm]	56.9 x 41.5

Main view

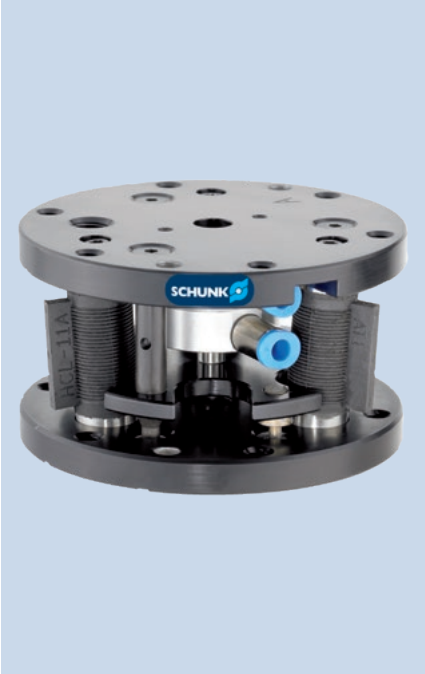


The main view shows the unit in its basic version.

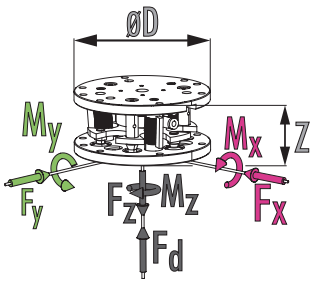
A, a Air connection locked
B, b Air connection unlocked
(1) Robot-side connection
(2) Tool-side connection
(24) Bolt circle
(73) Fit for centering pins

FUS 100

Insertion unit



Dimensions and maximum loads



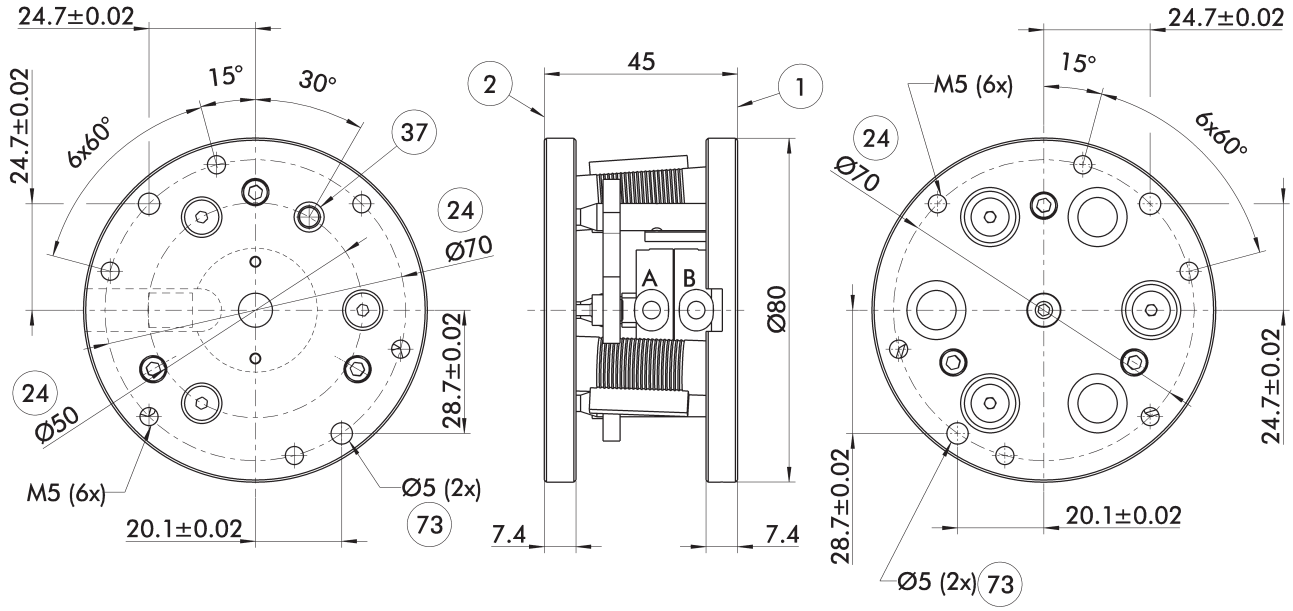
For values see technical data table

ⓘ The forces and torques are maximum values when unlocked and may occur simultaneously. When locked, only the loads caused by the weight and acceleration are permissible.

Technical data

Description		FUS-111B	FUS-112B	FUS-113B
ID		0320519	0320522	0320525
Locking		with locking	with locking	with locking
Compensation XY	[mm]	2.2	2.2	2.2
Angular deflection	[°]	1.1	1.1	1.1
Rotary compensation angle	[°]	5	5	5
Rigidity shift	[N/mm]	11	7	27
Compensation center distance	[mm]	120	69	61
Repeat accuracy	[mm]	±0.026	±0.026	±0.026
Weight	[kg]	0.31	0.31	0.31
Min./max. operating pressure	[bar]	5/6	5/6	5/6
Min./max. ambient temperature	[°C]	5/60	5/60	5/60
Max. force Fx/Fy vertical installation	[N]	45	45	80
Max. force Fx/Fy horizontal installation	[N]	8.9	8.9	27
Locking moment Fz	[N]	44	44	80
Max. force Fd	[N]	1300	530	1300
Dimensions Ø D x Z	[mm]	80 x 45	80 x 45	80 x 45
Moments Mx max./My max.	[Nm]	5.1/5.1	5.1/5.1	7.9/7.9

Main view



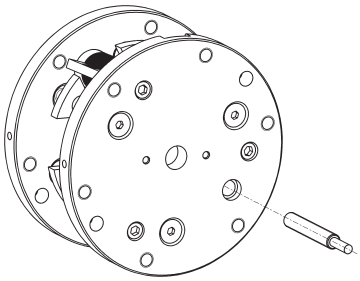
The main view shows the unit in its basic version.

A, a Air connection locked
B, b Air connection unlocked
(1) Robot-side connection
(2) Tool-side connection
(24) Bolt circle
(37) Sensor connection
(73) Fit for centering pins

FUS 100

Insertion unit

Sensor system



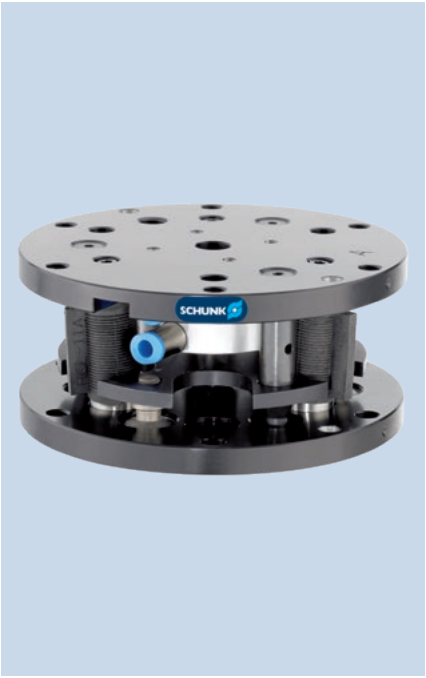
Locking sensor for monitoring the lock condition

Description	ID	Often combined
Inductive proximity switches		
IN 50-S-M12	0301575	
IN 50-S-M8	0301568	
INK 50-S	0301560	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
KA BW12-L 3P-0300-PNP	0301503	
KA BW12-L 3P-0500-PNP	0301507	
clip for plug/socket		
CLI-M12	0301464	
CLI-M8	0301463	
Cable extension		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	
Sensor distributor		
V2-M12	0301776	●
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

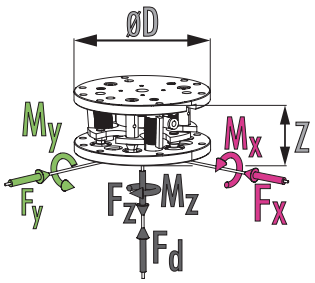
ⓘ Per unit one sensor (closer/S) is required, optionally a cable extension.

FUS 200

Insertion unit



Dimensions and maximum loads



For values see technical data table

ⓘ The forces and torques are maximum values when unlocked and may occur simultaneously. When locked, only the loads caused by the weight and acceleration are permissible.

Technical data

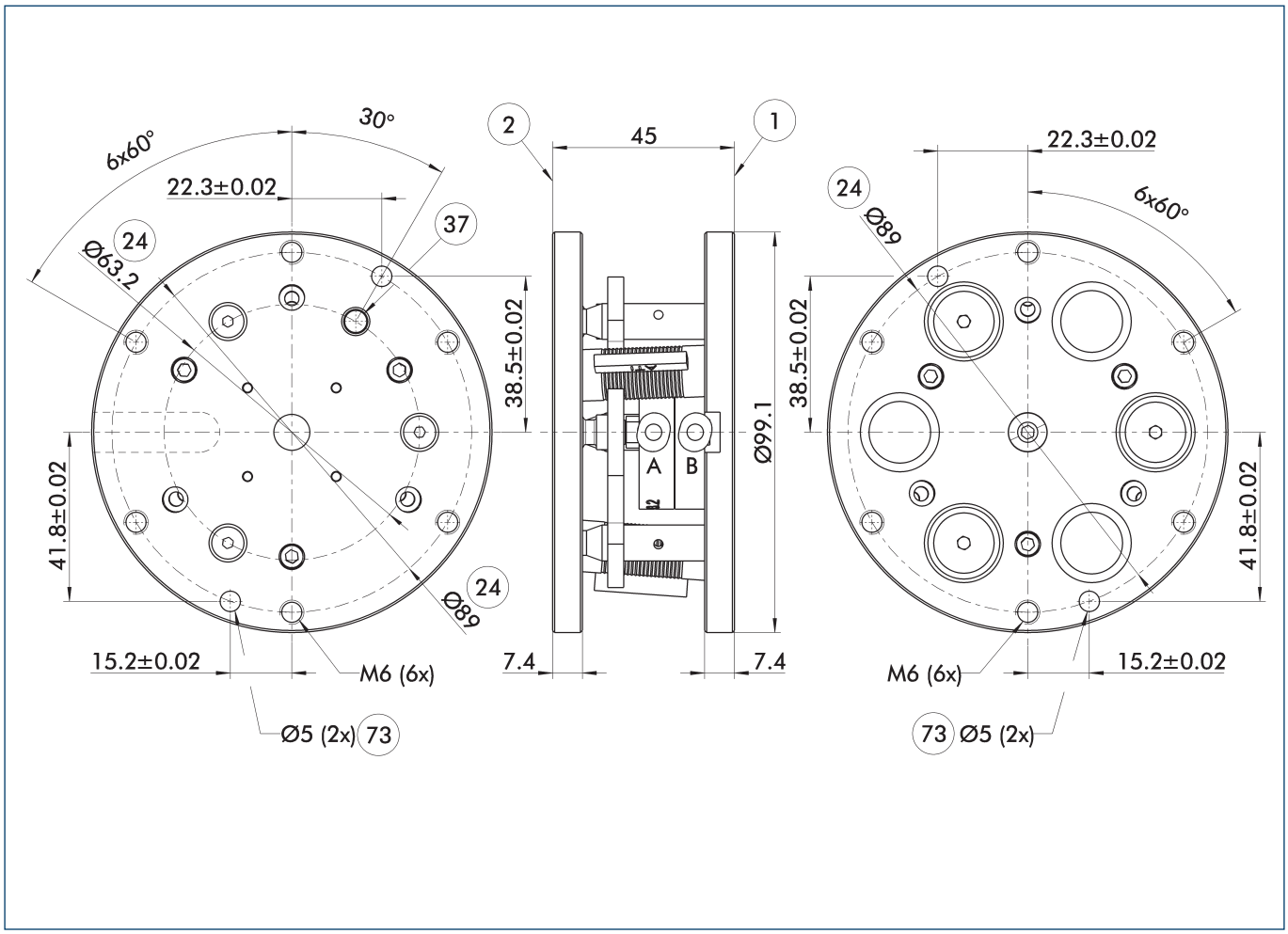
Description		FUS-211A	FUS-211B	FUS-211C	FUS-212A	FUS-212B	FUS-212C
ID		0320527	0320528	0320529	0320530	0320531	0320532
Locking		with locking	with locking	with locking	with locking	with locking	with locking
Compensation XY	[mm]	2.2	2.2	2.2	2.2	2.2	2.2
Angular deflection	[°]	1.1	1.1	1.1	1.1	1.1	1.1
Rotary compensation angle	[°]	4	4	4	4	4	4
Rigidity shift	[N/mm]	11	11	23	7	7	14
Compensation center distance	[mm]	140	150	150	81	91	86
Repeat accuracy	[mm]	±0.026	±0.026	±0.026	±0.026	±0.026	±0.026
Weight	[kg]	0.5	0.5	0.5	0.5	0.5	0.5
Min./max. operating pressure	[bar]	5/6	5/6	5/6	5/6	5/6	5/6
Min./max. ambient temperature	[°C]	5/60	5/60	5/60	5/60	5/60	5/60
Max. force Fx/Fy vertical installation	[N]	53	53	107	62	62	125
Max. force Fx/Fy horizontal installation	[N]	8.9	8.9	18	8.9	8.9	18
Locking moment Fz	[N]	53	53	110	62	62	120
Max. force Fd	[N]	1300	1400	2700	620	710	1300
Dimensions Ø D x Z	[mm]	99.1 x 45	99.1 x 45	99.1 x 45	99.1 x 45	99.1 x 45	99.1 x 45
Moments Mx max./My max.	[Nm]	6.8/6.8	7.3/7.3	14/14	6.8/6.8	7.3/7.3	14/14

Description		FUS-213A	FUS-213B	FUS-213C
ID		0320533	0320534	0320535
Locking		with locking	with locking	with locking
Compensation XY	[mm]	2.2	2.2	2.2
Angular deflection	[°]	1.1	1.1	1.1
Rotary compensation angle	[°]	4	4	4
Rigidity shift	[N/mm]	26	26	52
Compensation center distance	[mm]	74	82	79
Repeat accuracy	[mm]	±0.026	±0.026	±0.026
Weight	[kg]	0.5	0.5	0.5
Min./max. operating pressure	[bar]	5/6	5/6	5/6
Min./max. ambient temperature	[°C]	5/60	5/60	5/60
Max. force Fx/Fy vertical installation	[N]	98	98	196
Max. force Fx/Fy horizontal installation	[N]	27	27	54
Locking moment Fz	[N]	98	98	196
Max. force Fd	[N]	1360	1400	2770
Dimensions Ø D x Z	[mm]	99.1 x 45	99.1 x 45	99.1 x 45
Moments Mx max./My max.	[Nm]	8.5/8.5	9/9	17.5/17.5

FUS 200

Insertion unit

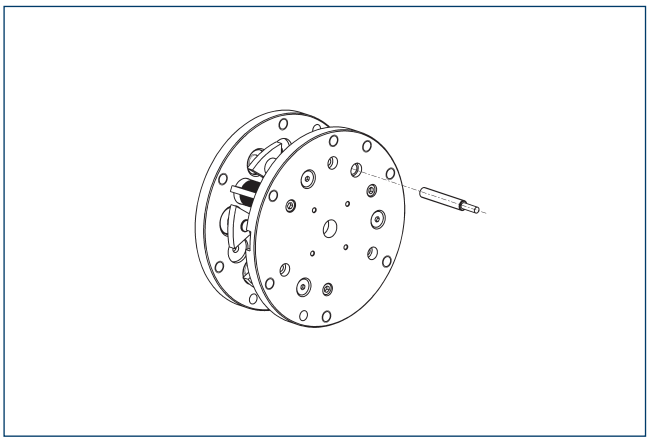
Main view



The main view shows the unit in its basic version.

A, a Air connection locked
B, b Air connection unlocked
(1) Robot-side connection
(2) Tool-side connection
(24) Bolt circle
(37) Sensor connection
(73) Fit for centering pins

Sensor system



Locking sensor for monitoring the lock condition

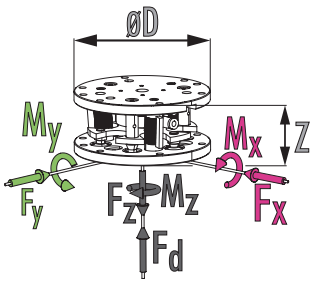
Description	ID	Often combined
Inductive proximity switches		
IN 50-S-M12	0301575	
IN 50-S-M8	0301568	
INK 50-S	0301560	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
KA BW12-L 3P-0300-PNP	0301503	
KA BW12-L 3P-0500-PNP	0301507	
clip for plug/socket		
CLI-M12	0301464	
CLI-M8	0301463	
Cable extension		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	
Sensor distributor		
V2-M12	0301776	●
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

ⓘ Per unit one sensor (closer/S) is required, optionally a cable extension.

FUS 400

Insertion unit

Dimensions and maximum loads



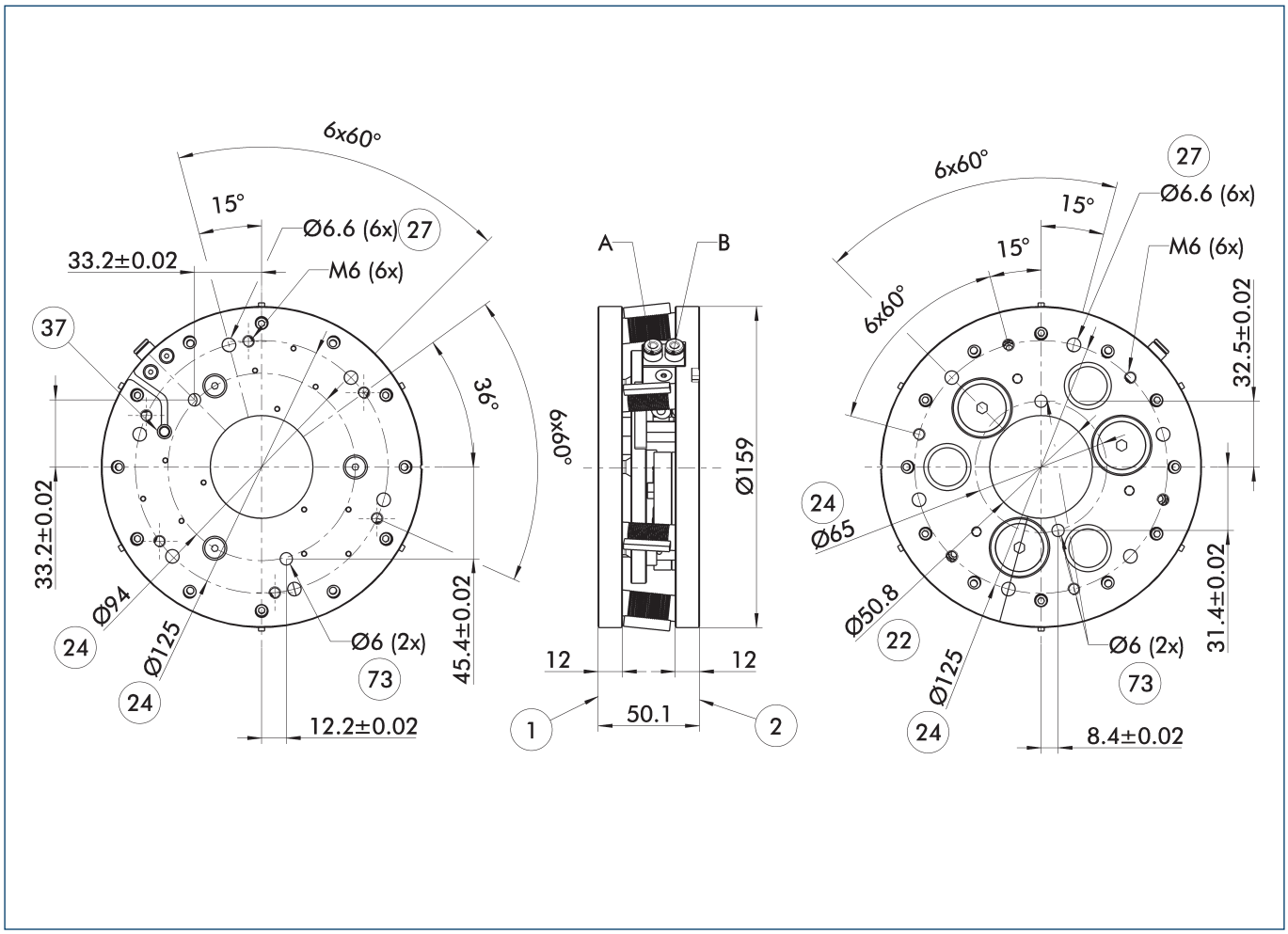
For values see technical data table

ⓘ The forces and torques are maximum values when unlocked and may occur simultaneously. When locked, only the loads caused by the weight and acceleration are permissible.

Technical data

Description		FUS-413C	FUS-413D
ID		0320338	0320339
Locking		with locking	with locking
Compensation XY	[mm]	2.2	2.2
Angular deflection	[°]	0.3	0.3
Rotary compensation angle	[°]	2.5	2.5
Rigidity shift	[N/mm]	60	120
Compensation center distance	[mm]	225	225
Repeat accuracy	[mm]	±0.026	±0.026
Weight	[kg]	1.6	1.8
Min./max. operating pressure	[bar]	5/6	5/6
Min./max. ambient temperature	[°C]	5/60	5/60
Max. force Fx/Fy vertical installation	[N]	196	391
Max. force Fx/Fy horizontal installation	[N]	27	54
Locking moment Fz	[N]	200	395
Max. force Fd	[N]	2750	5490
Dimensions Ø D x Z	[mm]	159 x 50.1	159 x 50.1
Moments Mx max./My max.	[Nm]	22.6/22.6	45.2/45.2

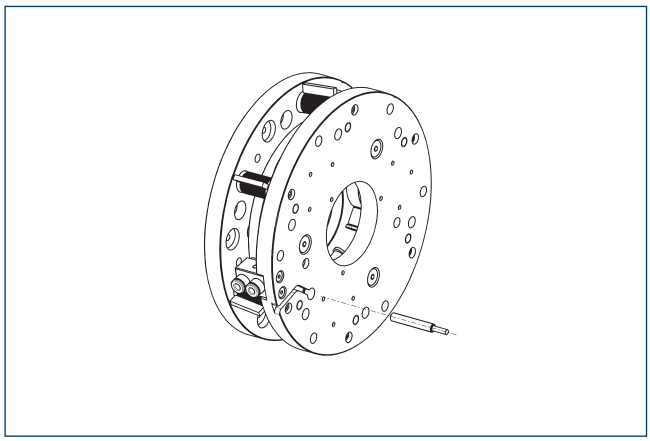
Main view



The main view shows the unit in its basic version.

A, a Air connection locked
B, b Air connection unlocked
(1) Robot-side connection
(2) Tool-side connection
(22) Center bore
(24) Bolt circle
(27) Through holes for screw connections
(37) Sensor connection
(73) Fit for centering pins

Sensor system



Locking sensor for monitoring the lock condition

Description	ID	Often combined
Inductive proximity switches		
IN 50-S-M12	0301575	
IN 50-S-M8	0301568	
INK 50-S	0301560	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
KA BW12-L 3P-0300-PNP	0301503	
KA BW12-L 3P-0500-PNP	0301507	
clip for plug/socket		
CLI-M12	0301464	
CLI-M8	0301463	
Cable extension		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	
Sensor distributor		
V2-M12	0301776	●
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

ⓘ Per unit one sensor (closer/S) is required, optionally a cable extension.

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Product Information

Tolerance compensation unit TCU-P

Compact. Flexible. Productive.

Tolerance compensation unit TCU-P

For compensation of small locational and positional deviations with mounting and handling applications

Field of application

for universal use in clean and slightly dirty environments, particularly in the fields of assembly automation and tool machine loading

Advantages – Your benefits

Compensation of workpiece-related tolerances and position inaccuracies reduced risk of jamming, necessary assembly forces are reduced and wear of the workpiece and handling device is minimized

Direct assembly of parallel grippers no need for additional adapter plates

Compact design low height and weight

Pneumatic locking long life time of the elastomers, rigid unit during travel

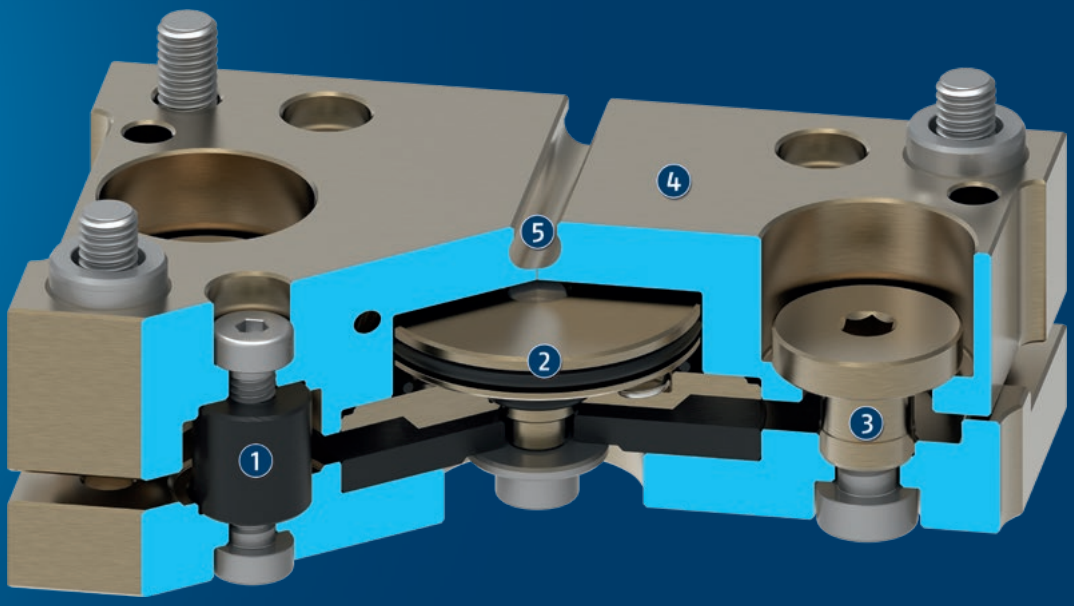
Monitoring of locking for process reliable sequences and shorter cycle times

Sizes	Workpiece weight	Deflection
Quantity: 8	3 .. 60 kg	±1°

Functional description

The function of the tolerance compensation unit (TCU) is based on interaction between the two base plates, which are connected to each other with a set of flexible elastomer elements. As a result, the TCU can compensate tolerances around the X, Y, and Z axes, allowing it to correct angular errors, and causing a rotational compensation.

A pneumatic locking is also available as an option to allow the compensation unit to be set to rigid. As a result, it is possible to prevent the tool or the gripper vibrating during movement of the robot arm or the linear axis. This increases the application's repeat accuracy and extends the service life of the elastomer elements.



① **Elastomer**
allows compensation movement

② **Locking mechanism**
for a rigid connection between the machine and tool sides

③ **Overload pin**
to protect the elastomers

④ **Interface machine side**
the same mounting pattern as on the tool side

⑤ **Monitoring groove**
for electronic magnetic switch

General notes about the series

Monitoring: by magnetic switch

Actuation: pneumatic, with filtered compressed air as per ISO 8573-1:2010 [7:4:4].

Material: Elastomer material

Housing: Aluminum alloy

Scope of delivery: Robot-side mounting screws

Warranty: 24 months

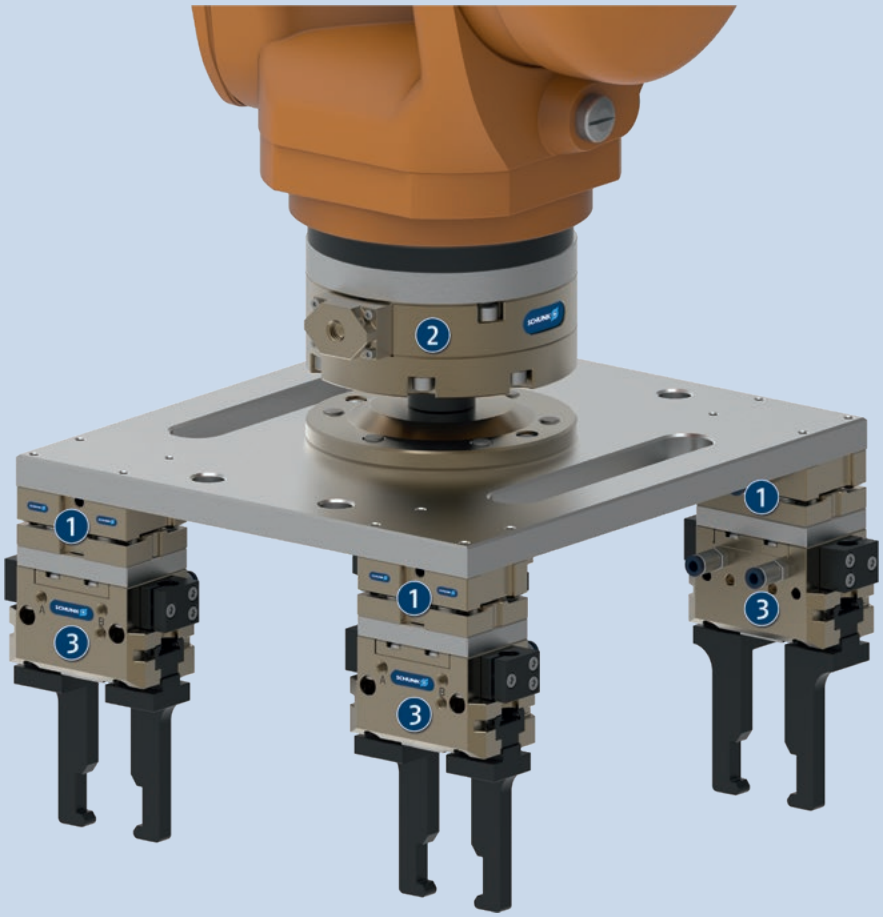
Harsh environmental conditions: Please note that use under harsh environmental conditions (e.g. in the coolant area, cast and grinding dust) can considerably reduce the service life of the units, and we will not take over any warranty. However, in many cases we can find a solution. Please contact us for assistance.

Handling weight: is the weight of the total load attached to the flange. When designing, the permissible forces and moments have to be paid attention to. Please note that exceeding the recommended handling weight will shorten the lifespan.

Application example

In applications where several grippers are used, the tolerance variations of the workpieces are compensated by the tolerance compensation units. The application is also monitored by a collision sensor.

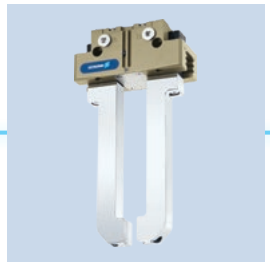
1. Tolerance compensation unit TCU
2. Collision sensor OPS
3. 2-finger parallel gripper JGP with workpiece-specific gripper fingers



SCHUNK offers more ...

The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.

Angular gripper



Universal gripper

Anti-collision and overload protection sensor

Pressure maintenance valve

Magnetic switches

ⓘ For more information on these products can be found on the following product pages or at schunk.com.

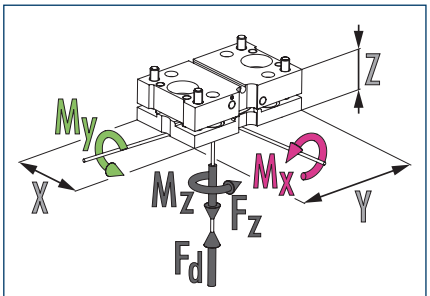
Options and special information

Monitoring of the locking: by magnetic switch
Connections: two plug-in connections for hose
Ambient temperature: -10 °C to 90 °C
Operating pressure: from 4 bar up to 8 bar

TCU-P 050

Tolerance compensation unit

Dimensions and maximum loads



Mx max. 15 Nm
Mz max. 15 Nm
My max. 5 Nm

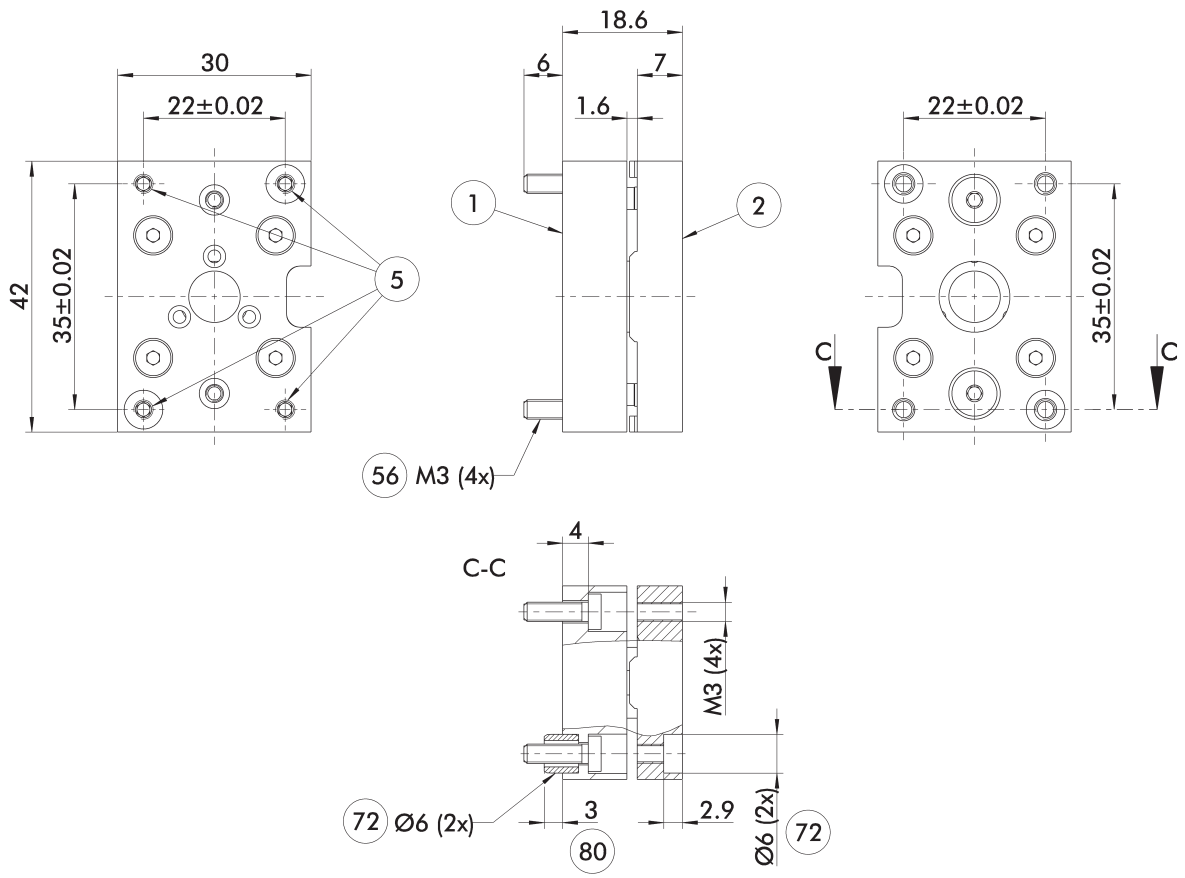
ⓘ The forces and torques are maximum values when unlocked and may occur simultaneously. When locked, only the loads caused by the weight and acceleration are permissible.

Technical data

Description		TCU-P-050-3-OV
ID		0324757
Locking		Without locking
Hardness of the elastomer	[Shore]	68
Deflection X	[°]	±1
Deflection Y	[°]	±1
Deflection Z	[°]	±1.5
Weight	[kg]	0.1
Min./max. ambient temperature	[°C]	-10/90
Max. force Fd	[N]	500
Direct connection to*		PGN-plus 50
Dimensions X x Y x Z	[mm]	30 x 42 x 18.6

* also suitable for other grippers with the same screw connection diagram

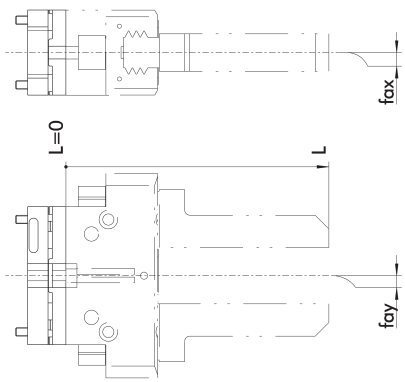
Main view without centric locking (0V)

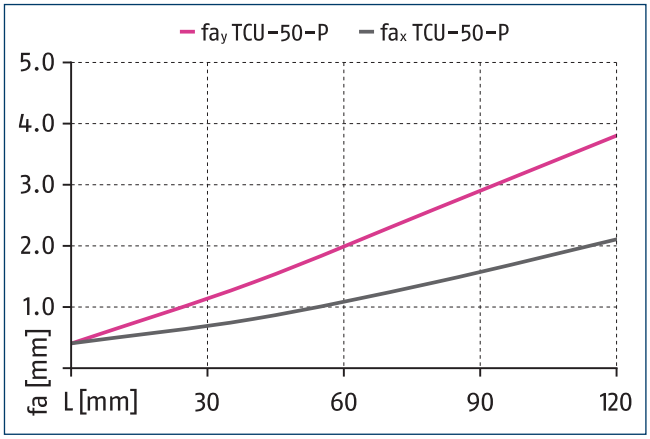


The main view shows the unit in its basic version.

1. Robot-side connection
2. Tool-side connection
5. Through hole for connection with screws
56. Included in the scope of delivery
72. Fit for centering sleeves
80. Depth of the centering sleeve hole in the counter part

Maximum deflection



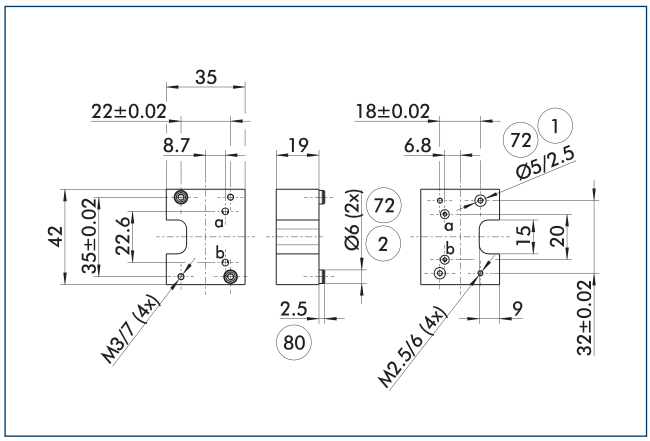


Deflection (fa) dependent upon the length (L) to the center of mass

TCU-P 050

Tolerance compensation unit

Adapter plate for PGN-plus 40

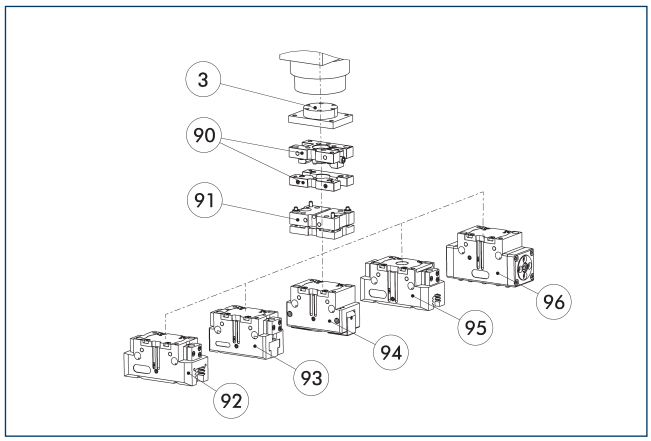


(1) Robot-side connection
(2) Tool-side connection
(72) Fit for centering sleeves
(80) Depth of the centering sleeve hole in the counter part

The adapter plate has integrated air feed-throughs in order to be able to use the hose-free direct connection of the appropriate gripper.

Description	ID	
Tool side		
A-CWA-050-040-P	0305754	

Modular system



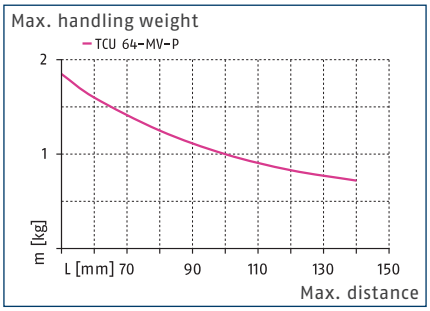
(3) Adapter plate
(90) Compact change system CWS
(91) Tolerance compensation unit TCU
(92) 2-finger parallel gripper PGN-plus
(93) JGP 2-finger parallel grippers
(94) 2-finger angular gripper PWG-plus
(95) 2-finger parallel gripper PGB
(96) Sealed DPG-plus gripper

The unit is part of a modular system in which various components such as grippers or compliant devices can be threaded to one another directly.

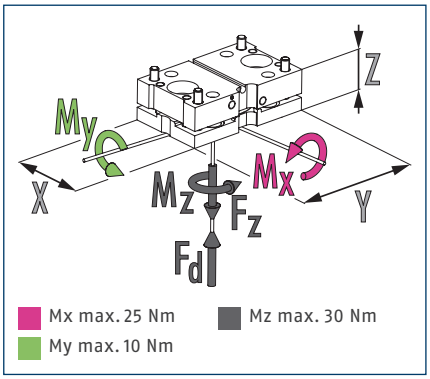
TCU-P 064

Tolerance compensation unit

Load chart



Dimensions and maximum loads



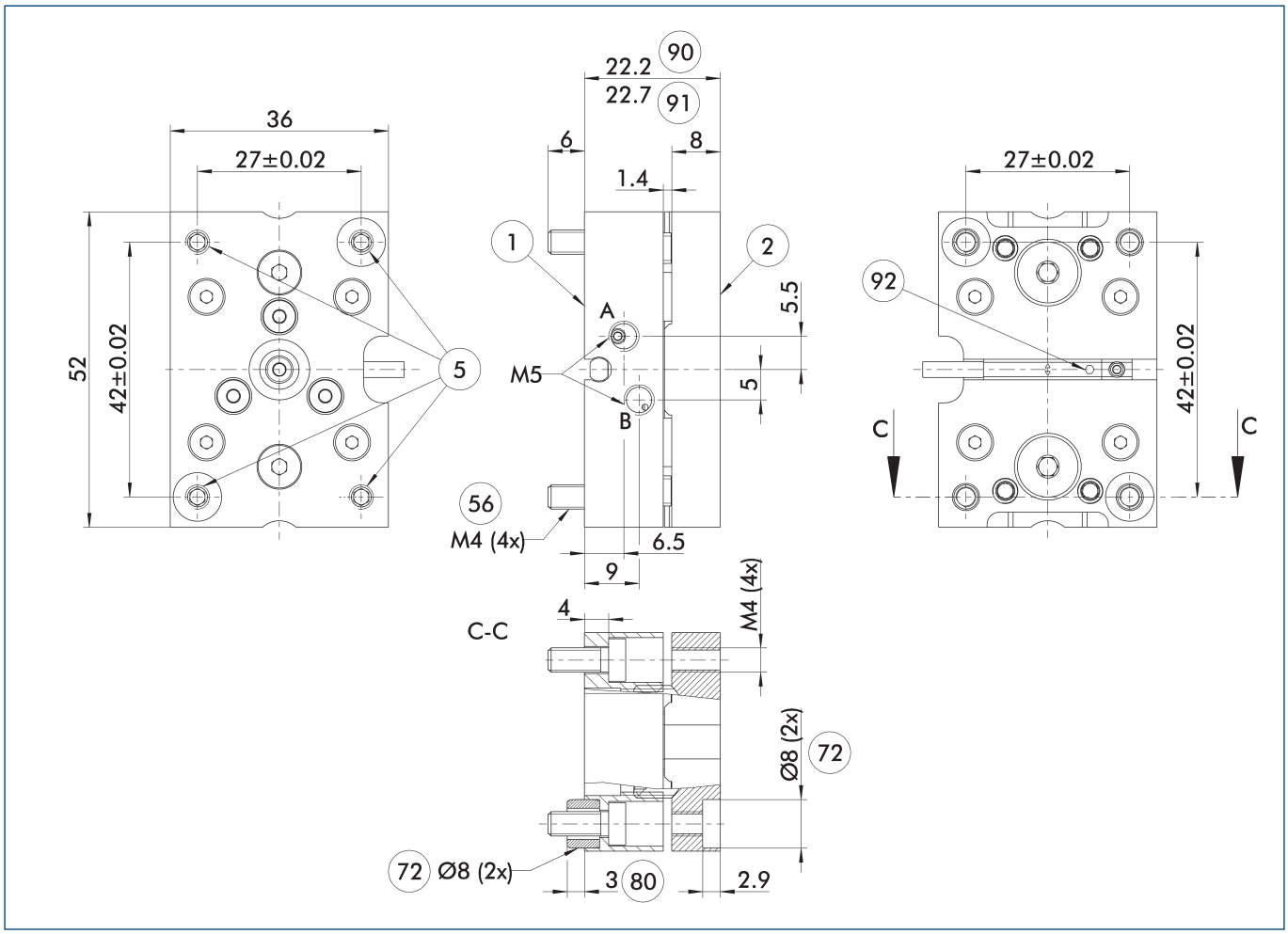
ⓘ The forces and torques are maximum values when unlocked and may occur simultaneously. When locked, only the loads caused by the weight and acceleration are permissible.

Technical data

Description		TCU-P-064-3-MV	TCU-P-064-3-OV
ID		0324774	0324775
Locking		with locking	Without locking
Hardness of the elastomer	[Shore]	68	68
Deflection X	[°]	±1	±1
Deflection Y	[°]	±1.5	±1.5
Deflection Z	[°]	±2	±2
Repeat accuracy	[mm]	0.1	
Weight	[kg]	0.1	0.08
Min./max. operating pressure	[bar]	4/8	
Min./max. ambient temperature	[°C]	-10/90	-10/90
Locking moment Mx	[Nm]	1	
Locking moment My	[Nm]	0.8	
Locking moment Mz	[Nm]	2	
Locking moment Fz	[N]	30	
Max. force Fd	[N]	1100	1100
Direct connection to*		PGN-plus 64	PGN-plus 64
Dimensions X x Y x Z	[mm]	36 x 52 x 22.2	36 x 52 x 19.5

* also suitable for other grippers with the same screw connection diagram

Main view with centric locking (MV)

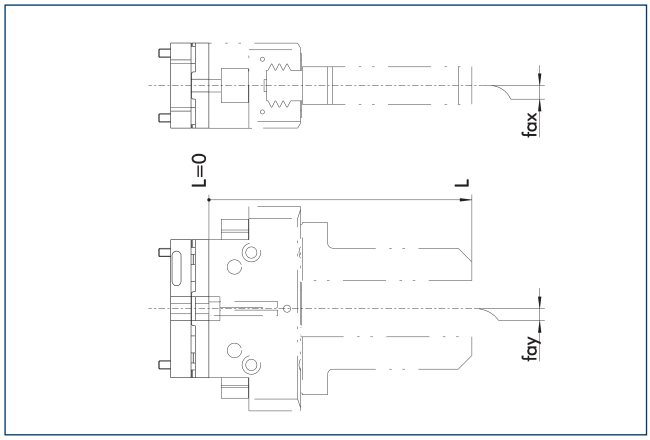


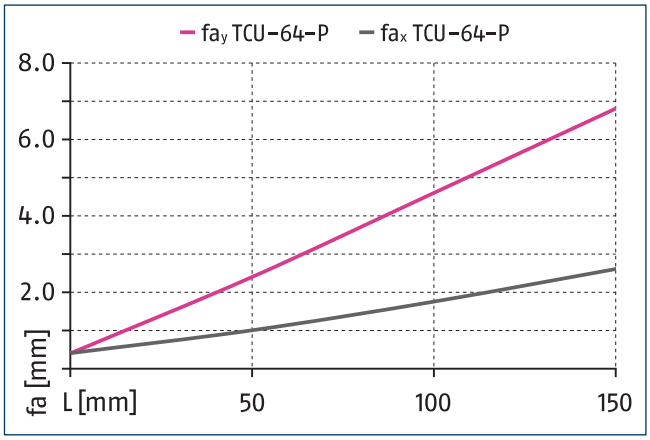
The main view shows the unit in its basic version.

A, a Air connection unlocked
B, b Air connection locked

(1) Robot-side connection
(2) Tool-side connection
(5) Through hole for connection with screws
(56) Included in the scope of delivery
(72) Fit for centering sleeves
(80) Depth of the centering sleeve hole in the counter part
(90) Unit locked
(91) Unit unlocked
(92) MMS-P

Maximum deflection



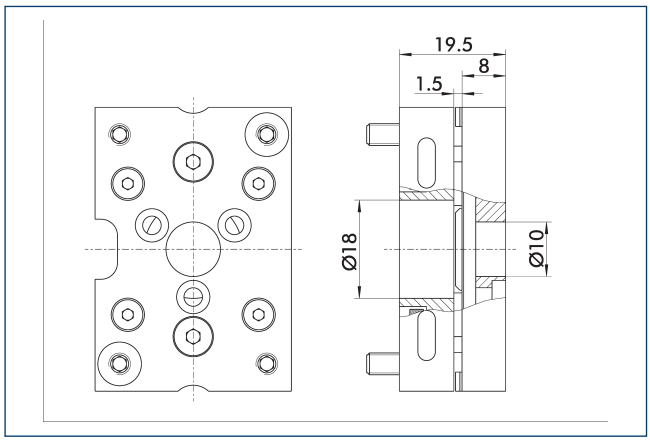


Deflection (fa) dependent upon the length (L) to the center of mass

TCU-P 064

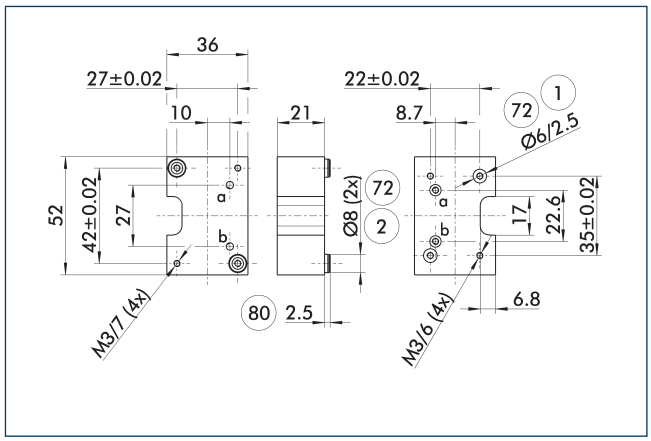
Tolerance compensation unit

Version without locking (0V)



Dimensional changes for the version without locking

Adapter plate for PGN-plus 50

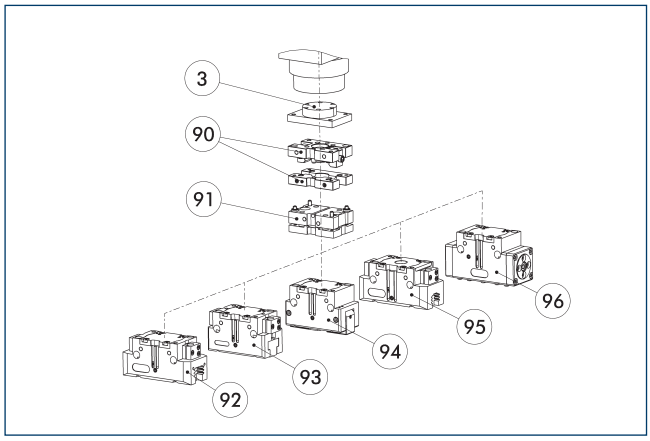


(1) Robot-side connection
(2) Tool-side connection
(72) Fit for centering sleeves
(80) Depth of the centering sleeve hole in the counter part

The adapter plate has integrated air feed-throughs in order to be able to use the hose-free direct connection of the appropriate gripper.

Description	ID	
Tool side		
A-CWA-064-050-P	0305768	

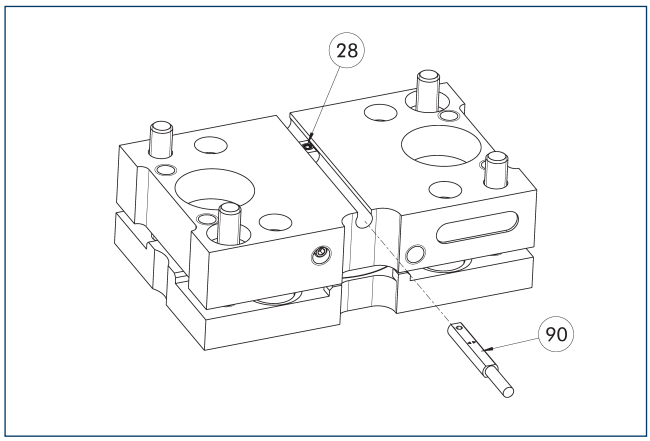
Modular system



(3) Adapter plate
(90) Compact change system CWS
(91) Tolerance compensation unit TCU
(92) 2-finger parallel gripper PGN-plus
(93) JGP 2-finger parallel grippers
(94) 2-finger angular gripper PWG-plus
(95) 2-finger parallel gripper PGB
(96) Sealed DPG-plus gripper

The unit is part of a modular system in which various components such as grippers or compliant devices can be threaded to one another directly.

Sensor system



28 Limit stop for sensor
90 Monitoring of locking

Position monitoring with two programmable positions per sensor. End position monitoring for mounting in the C-slot.

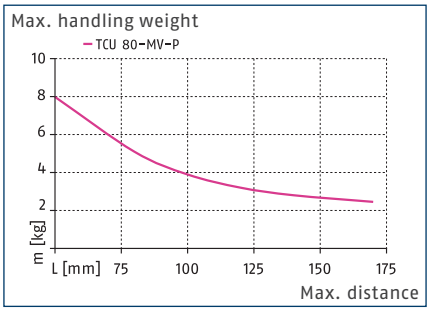
Description	ID	Often combined
Programmable magnetic switch		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
Connection cables		
KA GLN0804-LK-00500-A	0307767	●
KA GLN0804-LK-01000-A	0307768	
KA WLN0804-LK-00500-A	0307765	
KA WLN0804-LK-01000-A	0307766	
clip for plug/socket		
CLI-M8	0301463	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	

ⓘ One sensor is required per unit for monitoring two positions. Extension cables and sensor distributors are optionally available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor systems.

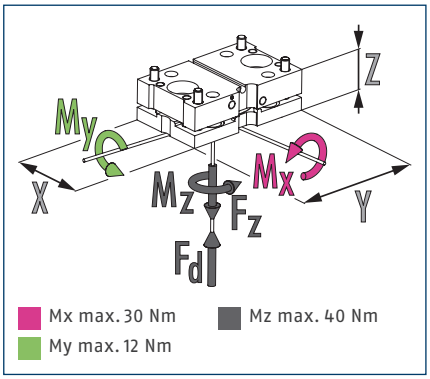
TCU-P 080

Tolerance compensation unit

Load chart



Dimensions and maximum loads



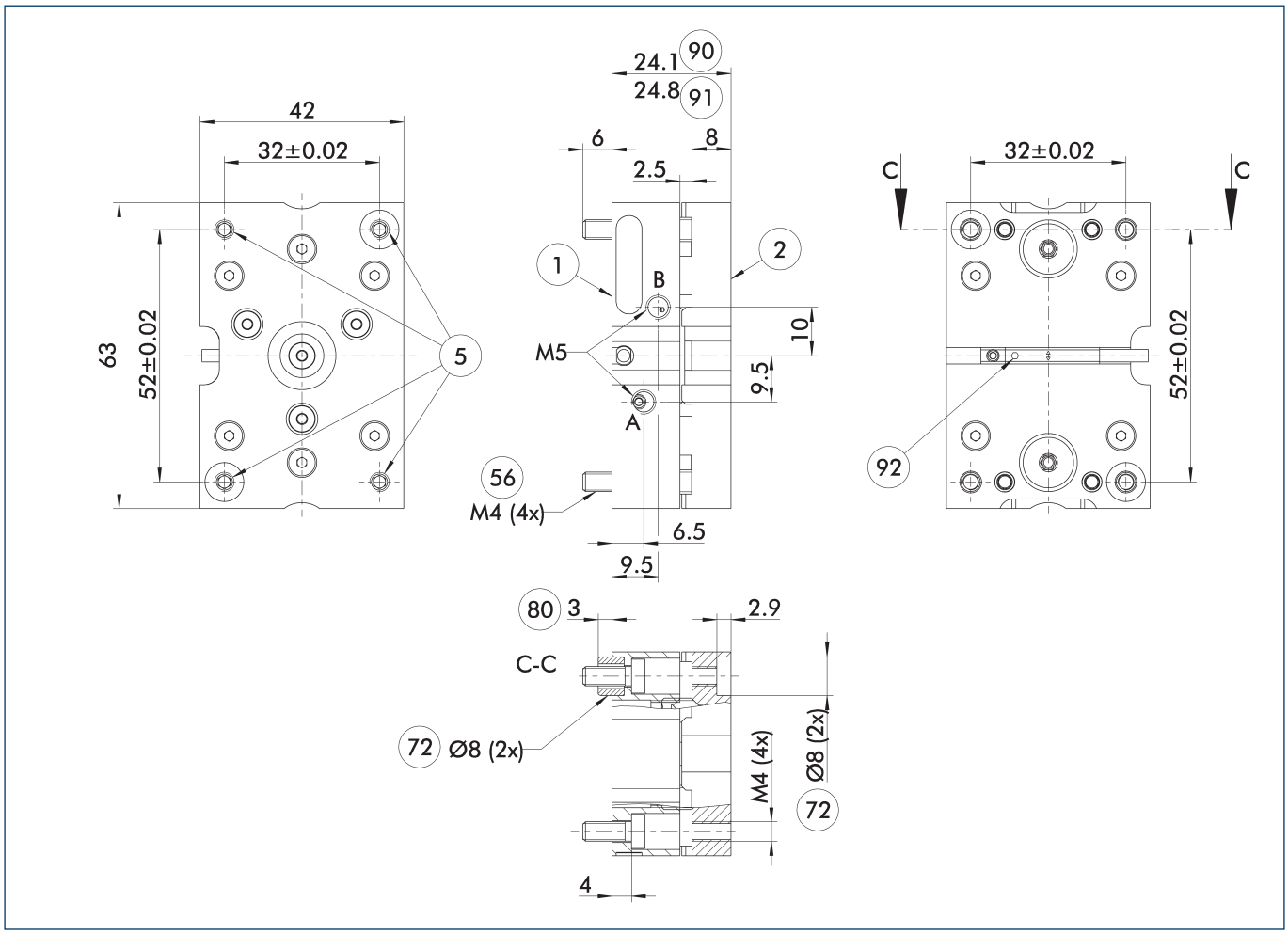
ⓘ The forces and torques are maximum values when unlocked and may occur simultaneously. When locked, only the loads caused by the weight and acceleration are permissible.

Technical data

Description		TCU-P-080-3-MV	TCU-P-080-3-OV
ID		0324792	0324793
Locking		with locking	Without locking
Hardness of the elastomer	[Shore]	68	68
Deflection X	[°]	±1	±1
Deflection Y	[°]	±1.5	±1.5
Deflection Z	[°]	±2	±2
Repeat accuracy	[mm]	0.1	
Weight	[kg]	0.15	0.1
Min./max. operating pressure	[bar]	4/8	
Min./max. ambient temperature	[°C]	-10/90	-10/90
Locking moment Mx	[Nm]	4	
Locking moment My	[Nm]	3	
Locking moment Mz	[Nm]	6	
Locking moment Fz	[N]	70	
Max. force Fd	[N]	1500	1500
Direct connection to*		PGN-plus 80	PGN-plus 80
Dimensions X x Y x Z	[mm]	42 x 63 x 24.1	42 x 63 x 19.6

* also suitable for other grippers with the same screw connection diagram

Main view with centric locking (MV)

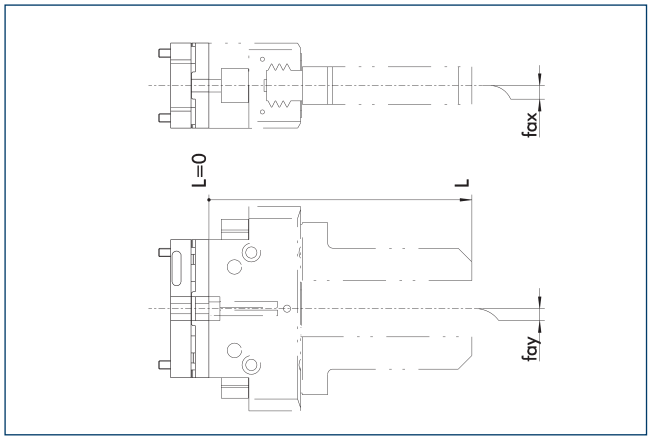


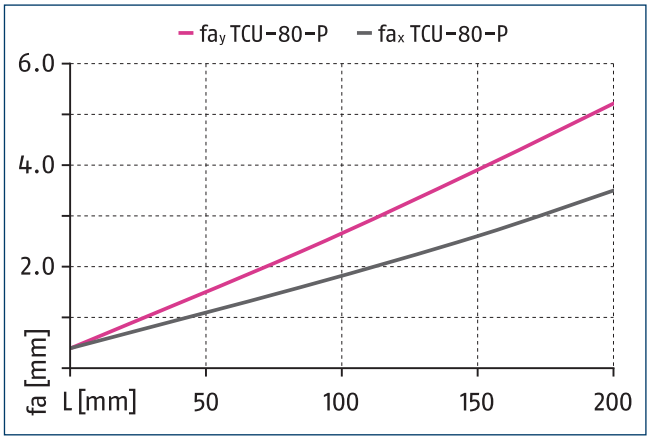
The main view shows the unit in its basic version.

A, a Air connection unlocked
B, b Air connection locked

(1) Robot-side connection
(2) Tool-side connection
(5) Through hole for connection with screws
(56) Included in the scope of delivery
(72) Fit for centering sleeves
(80) Depth of the centering sleeve hole in the counter part
(90) Unit locked
(91) Unit unlocked
(92) MMS-P

Maximum deflection



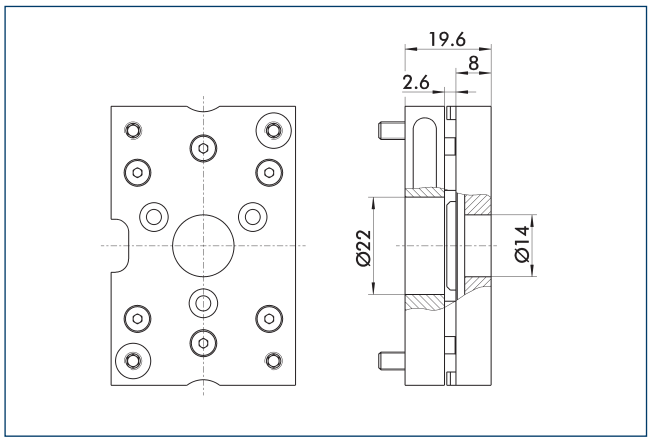


Deflection (fa) dependent upon the length (L) to the center of mass

TCU-P 080

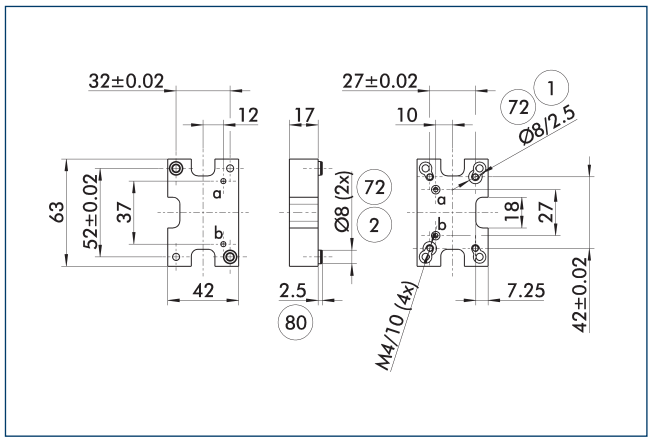
Tolerance compensation unit

Version without locking (0V)



Dimensional changes for the version without locking

Adapter plate for PGN-plus 64

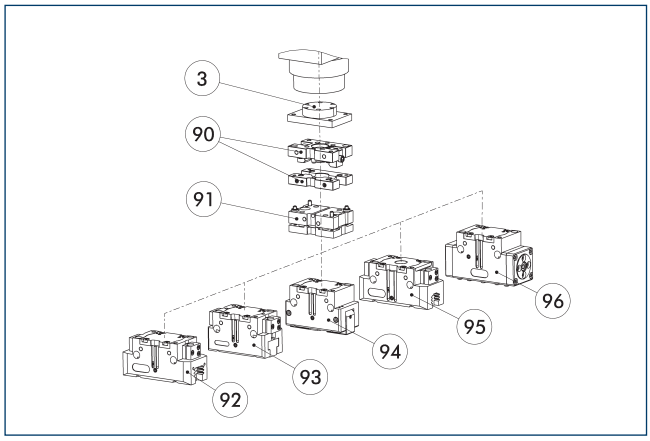


(1) Robot-side connection
(2) Tool-side connection
(72) Fit for centering sleeves
(80) Depth of the centering sleeve hole in the counter part

The adapter plate has integrated air feed-throughs in order to be able to use the hose-free direct connection of the appropriate gripper.

Description	ID	
Tool side		
A-CWA-080-064-P	0305784	

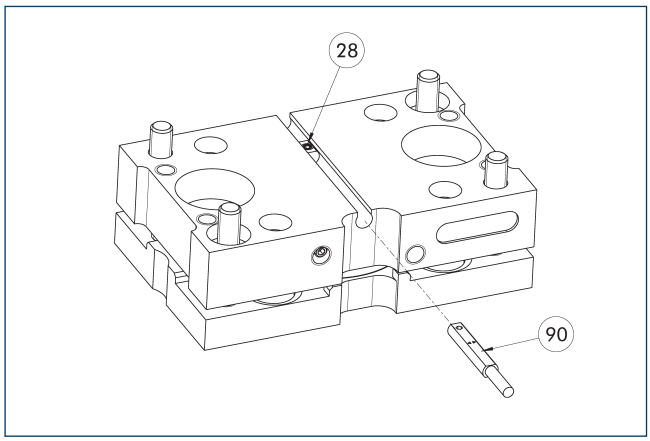
Modular system



(3) Adapter plate
(90) Compact change system CWS
(91) Tolerance compensation unit TCU
(92) 2-finger parallel gripper PGN-plus
(93) JGP 2-finger parallel grippers
(94) 2-finger angular gripper PWG-plus
(95) 2-finger parallel gripper PGB
(96) Sealed DPG-plus gripper

The unit is part of a modular system in which various components such as grippers or compliant devices can be threaded to one another directly.

Sensor system



28 Limit stop for sensor
90 Monitoring of locking

Position monitoring with two programmable positions per sensor. End position monitoring for mounting in the C-slot.

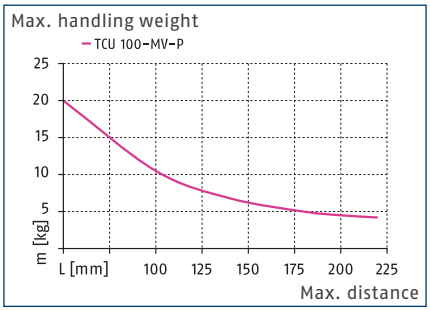
Description	ID	Often combined
Programmable magnetic switch		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
Connection cables		
KA GLN0804-LK-00500-A	0307767	●
KA GLN0804-LK-01000-A	0307768	
KA WLN0804-LK-00500-A	0307765	
KA WLN0804-LK-01000-A	0307766	
clip for plug/socket		
CLI-M8	0301463	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	

ⓘ One sensor is required per unit for monitoring two positions. Extension cables and sensor distributors are optionally available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor systems.

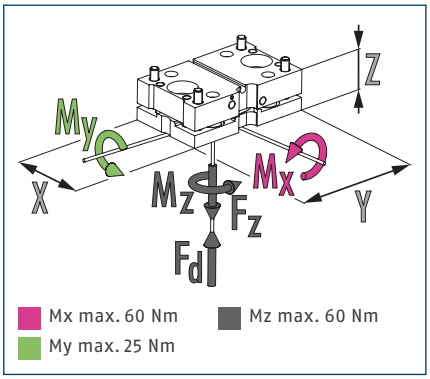
TCU-P 100

Tolerance compensation unit

Load chart



Dimensions and maximum loads



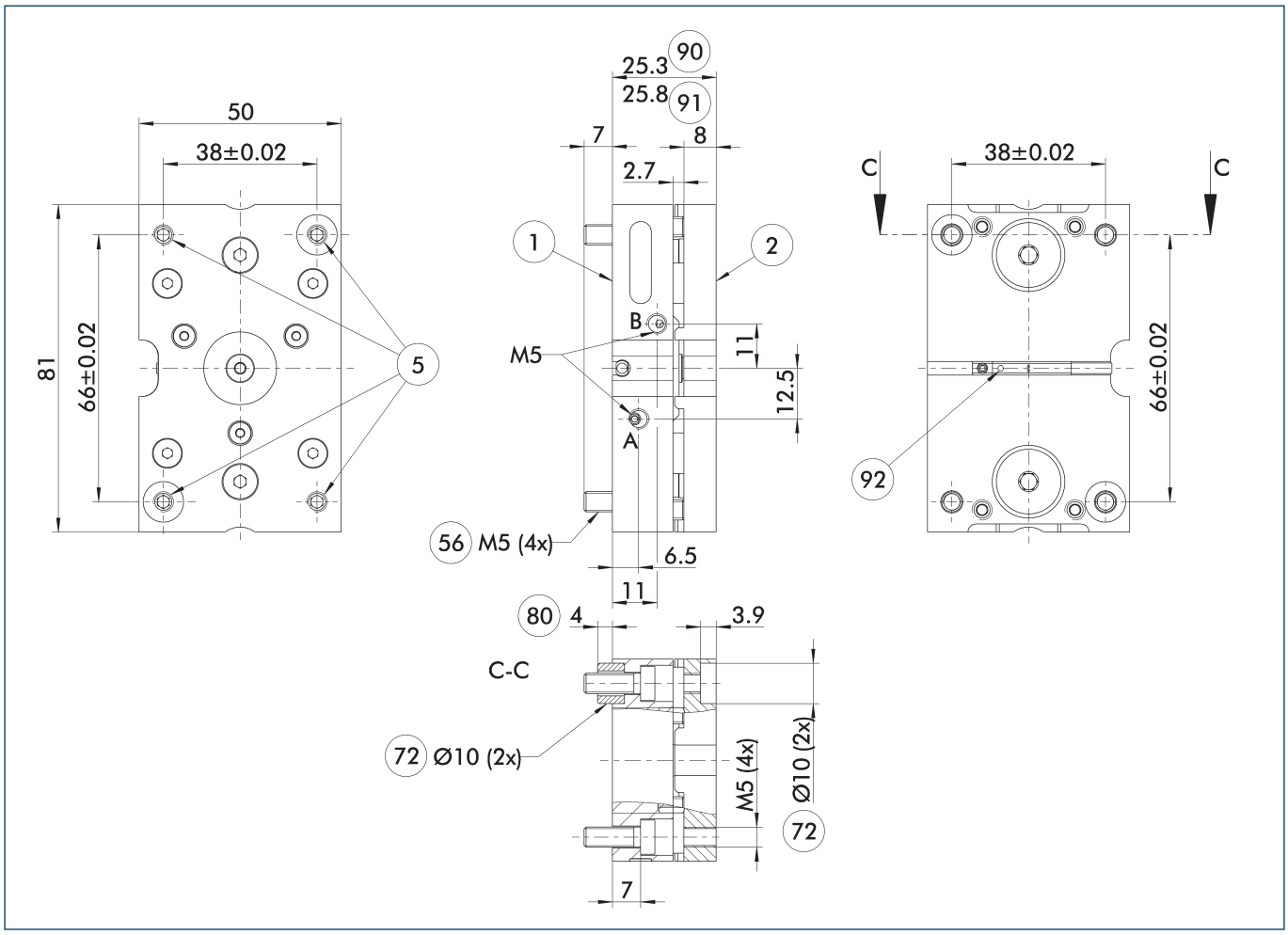
ⓘ The forces and torques are maximum values when unlocked and may occur simultaneously. When locked, only the loads caused by the weight and acceleration are permissible.

Technical data

Description		TCU-P-100-2-MV	TCU-P-100-3-OV
ID		0324808	0324811
Locking		with locking	Without locking
Hardness of the elastomer	[Shore]	68	68
Deflection X	[°]	±1	±1
Deflection Y	[°]	±1.5	±1.5
Deflection Z	[°]	±1.2	±1.2
Repeat accuracy	[mm]	0.05	
Weight	[kg]	0.27	0.22
Min./max. operating pressure	[bar]	4/8	
Min./max. ambient temperature	[°C]	-10/90	-10/90
Locking moment Mx	[Nm]	15	
Locking moment My	[Nm]	8	
Locking moment Mz	[Nm]	25	
Locking moment Fz	[N]	200	
Max. force Fd	[N]	2000	2000
Direct connection to*		PGN-plus 100	PGN-plus 100
Dimensions X x Y x Z	[mm]	50 x 81 x 25.3	50 x 81 x 22.6

* also suitable for other grippers with the same screw connection diagram

Main view with centric locking (MV)

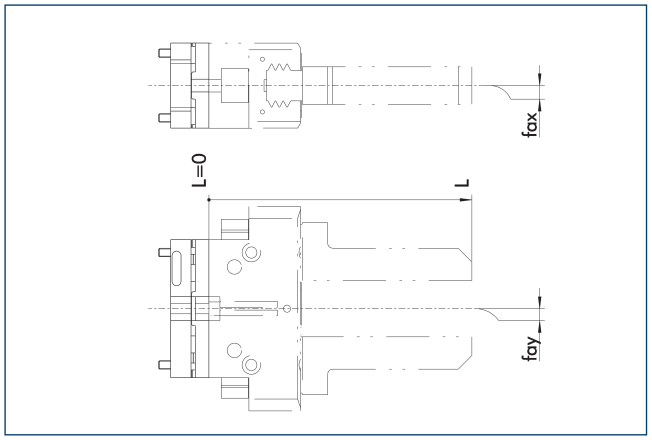


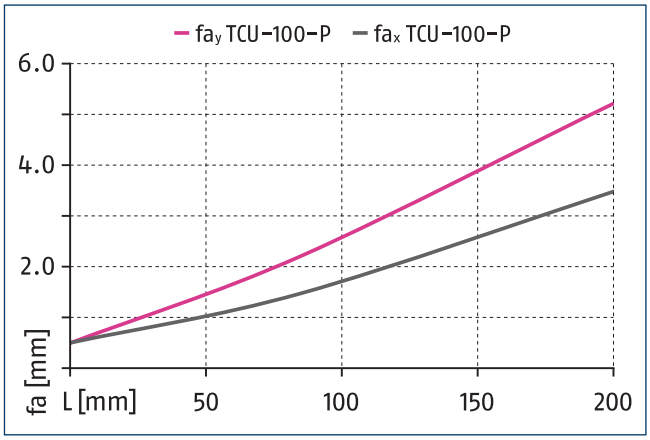
The main view shows the unit in its basic version.

A, a Air connection unlocked
B, b Air connection locked

(1) Robot-side connection
(2) Tool-side connection
(5) Through hole for connection with screws
(56) Included in the scope of delivery
(72) Fit for centering sleeves
(80) Depth of the centering sleeve hole in the counter part
(90) Unit locked
(91) Unit unlocked
(92) MMS-P

Maximum deflection



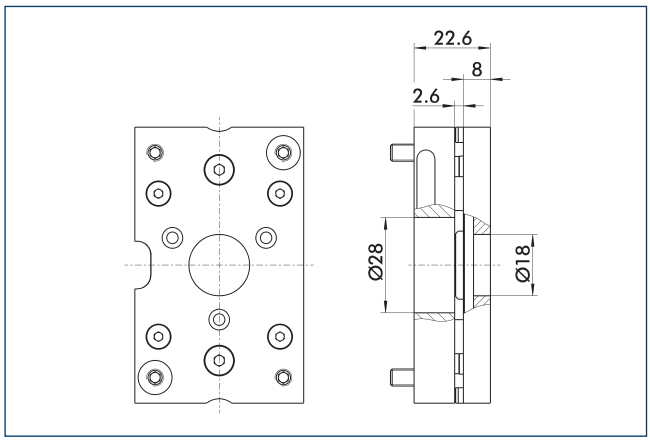


Deflection (fa) dependent upon the length (L) to the center of mass

TCU-P 100

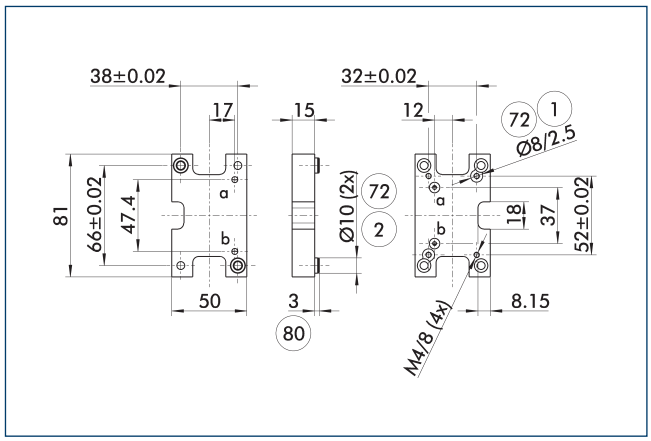
Tolerance compensation unit

Version without locking (0V)



Dimensional changes for the version without locking

Adapter plate PGN-plus 80

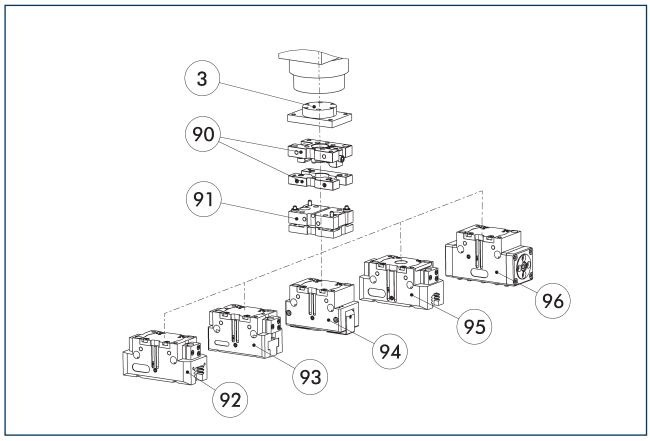


(1) Robot-side connection
(2) Tool-side connection
(72) Fit for centering sleeves
(80) Depth of the centering sleeve hole in the counter part

The adapter plate has integrated air feed-throughs in order to be able to use the hose-free direct connection of the appropriate gripper.

Description	ID	
Tool side		
A-CWA-100-080-P	0305804	

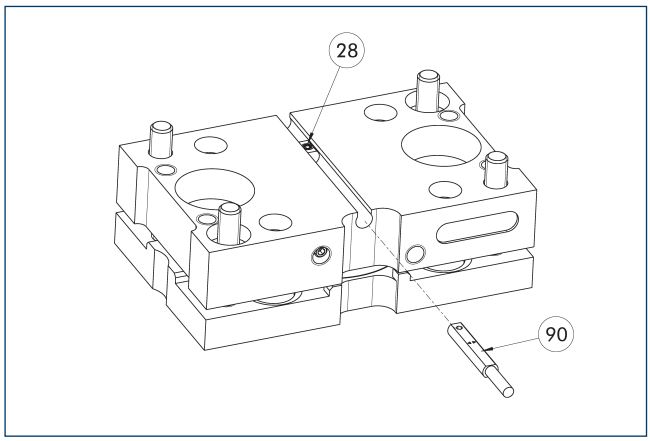
Modular system



(3) Adapter plate
(90) Compact change system CWS
(91) Tolerance compensation unit TCU
(92) 2-finger parallel gripper PGN-plus
(93) JGP 2-finger parallel grippers
(94) 2-finger angular gripper PWG-plus
(95) 2-finger parallel gripper PGB
(96) Sealed DPG-plus gripper

The unit is part of a modular system in which various components such as grippers or compliant devices can be threaded to one another directly.

Sensor system



(28) Limit stop for sensor (90) Monitoring of locking

Position monitoring with two programmable positions per sensor. End position monitoring for mounting in the C-slot.

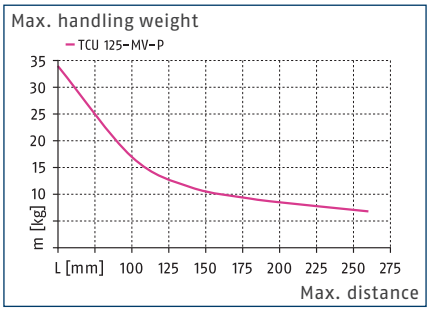
Description	ID	Often combined
Programmable magnetic switch		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
Connection cables		
KA GLN0804-LK-00500-A	0307767	●
KA GLN0804-LK-01000-A	0307768	
KA WLN0804-LK-00500-A	0307765	
KA WLN0804-LK-01000-A	0307766	
clip for plug/socket		
CLI-M8	0301463	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	

ⓘ One sensor is required per unit for monitoring two positions. Extension cables and sensor distributors are optionally available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor systems.

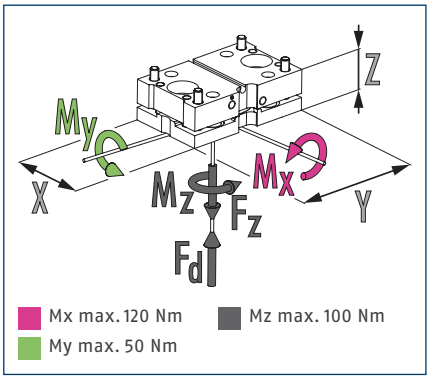
TCU-P 125

Tolerance compensation unit

Load chart



Dimensions and maximum loads



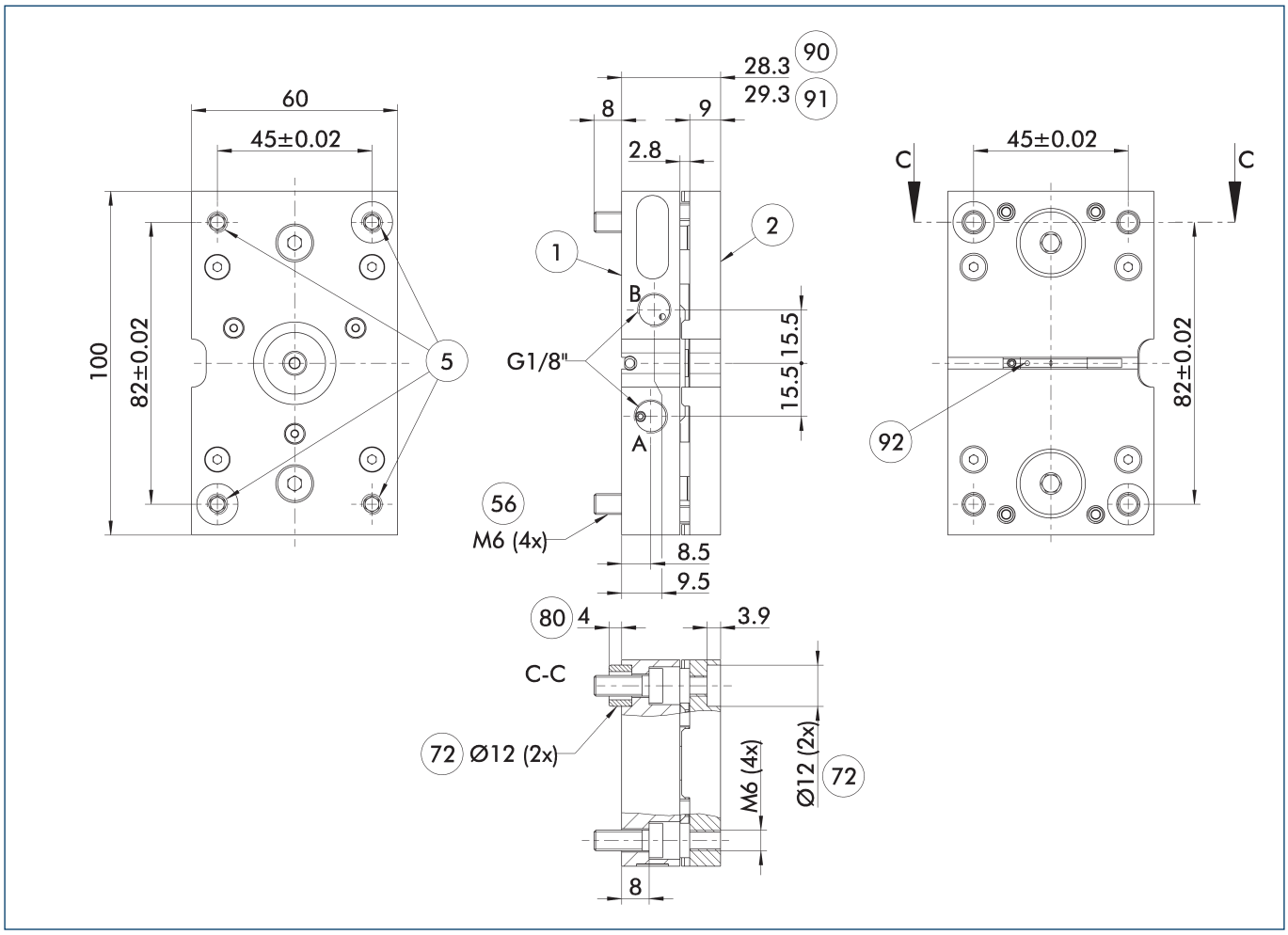
ⓘ The forces and torques are maximum values when unlocked and may occur simultaneously. When locked, only the loads caused by the weight and acceleration are permissible.

Technical data

Description		TCU-P-125-3-MV	TCU-P-125-3-OV
ID		0324828	0324829
Locking		with locking	Without locking
Hardness of the elastomer	[Shore]	68	68
Deflection X	[°]	±1	±1
Deflection Y	[°]	±1.5	±1.5
Deflection Z	[°]	±1.5	±1.5
Repeat accuracy	[mm]	0.05	
Weight	[kg]	0.4	0.3
Min./max. operating pressure	[bar]	4/8	
Min./max. ambient temperature	[°C]	-10/90	-10/90
Locking moment Mx	[Nm]	25	
Locking moment My	[Nm]	10	
Locking moment Mz	[Nm]	40	
Locking moment Fz	[N]	300	
Max. force Fd	[N]	2800	2800
Direct connection to*		PGN-plus 125	PGN-plus 125
Dimensions X x Y x Z	[mm]	60 x 100 x 28.3	60 x 100 x 23.6

* also suitable for other grippers with the same screw connection diagram

Main view with centric locking (MV)

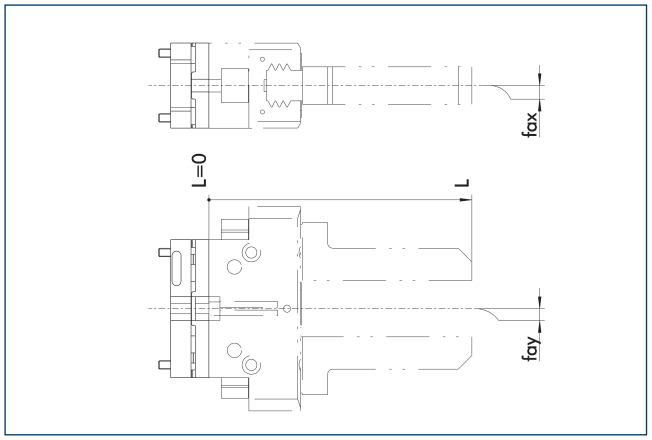


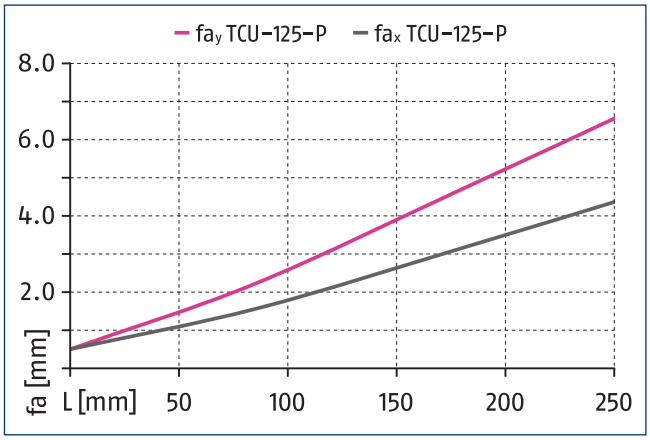
The main view shows the unit in its basic version.

A, a Air connection unlocked
B, b Air connection locked

(1) Robot-side connection
(2) Tool-side connection
(5) Through hole for connection with screws
(56) Included in the scope of delivery
(72) Fit for centering sleeves
(80) Depth of the centering sleeve hole in the counter part
(90) Unit locked
(91) Unit unlocked
(92) MMS-P

Maximum deflection



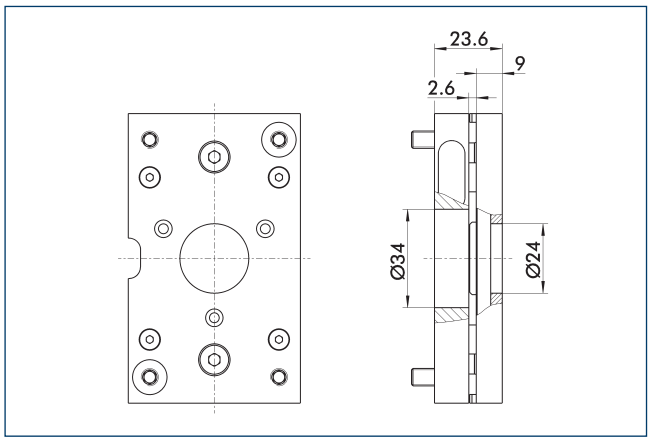


Deflection (fa) dependent upon the length (L) to the center of mass

TCU-P 125

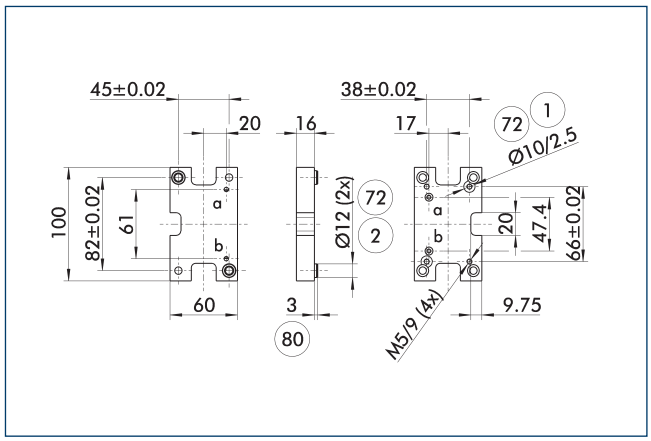
Tolerance compensation unit

Version without locking (0V)



Dimensional changes for the version without locking

Adapter plate for PGN-plus 100

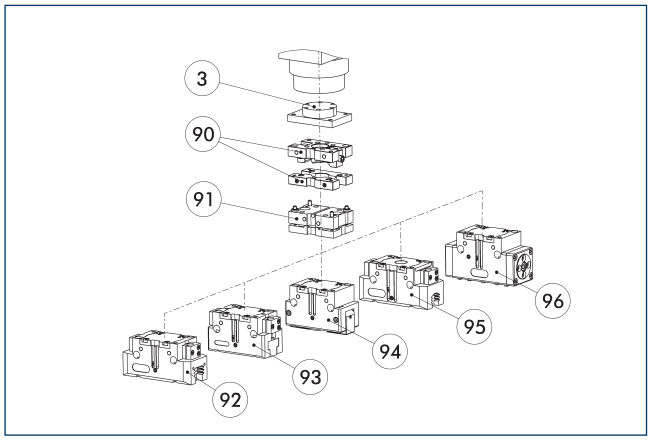


(1) Robot-side connection
(2) Tool-side connection
(72) Fit for centering sleeves
(80) Depth of the centering sleeve hole in the counter part

The adapter plate has integrated air feed-throughs in order to be able to use the hose-free direct connection of the appropriate gripper.

Description	ID	
Tool side		
A-CWA-125-100-P	0305829	

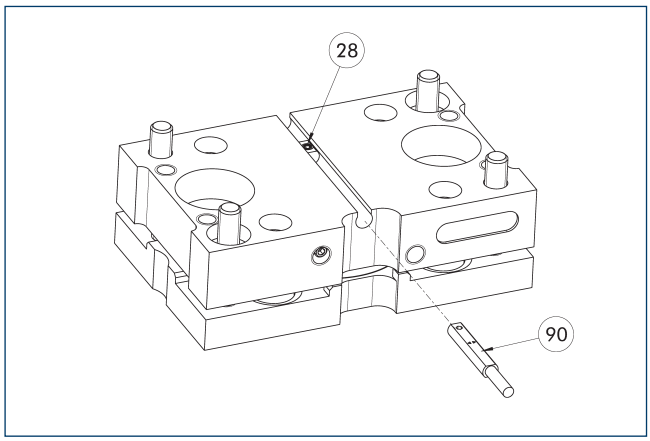
Modular system



(3) Adapter plate
(90) Compact change system CWS
(91) Tolerance compensation unit TCU
(92) 2-finger parallel gripper PGN-plus
(93) JGP 2-finger parallel grippers
(94) 2-finger angular gripper PWG-plus
(95) 2-finger parallel gripper PGB
(96) Sealed DPG-plus gripper

The unit is part of a modular system in which various components such as grippers or compliant devices can be threaded to one another directly.

Sensor system



28 Limit stop for sensor
90 Monitoring of locking

Position monitoring with two programmable positions per sensor. End position monitoring for mounting in the C-slot.

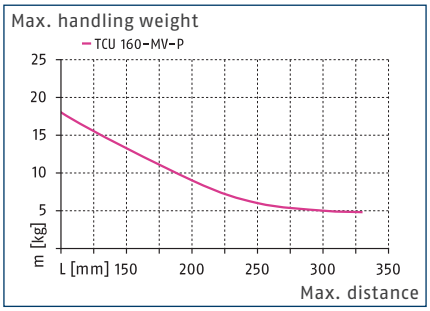
Description	ID	Often combined
Programmable magnetic switch		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
Connection cables		
KA GLN0804-LK-00500-A	0307767	●
KA GLN0804-LK-01000-A	0307768	
KA WLN0804-LK-00500-A	0307765	
KA WLN0804-LK-01000-A	0307766	
clip for plug/socket		
CLI-M8	0301463	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	

ⓘ One sensor is required per unit for monitoring two positions. Extension cables and sensor distributors are optionally available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor systems.

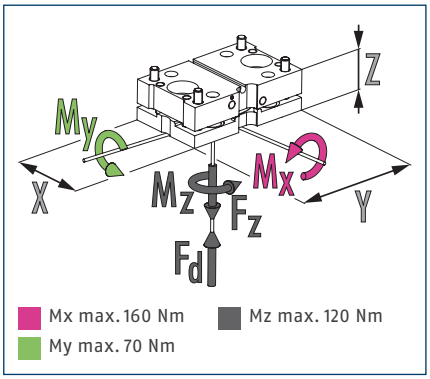
TCU-P 160

Tolerance compensation unit

Load chart



Dimensions and maximum loads



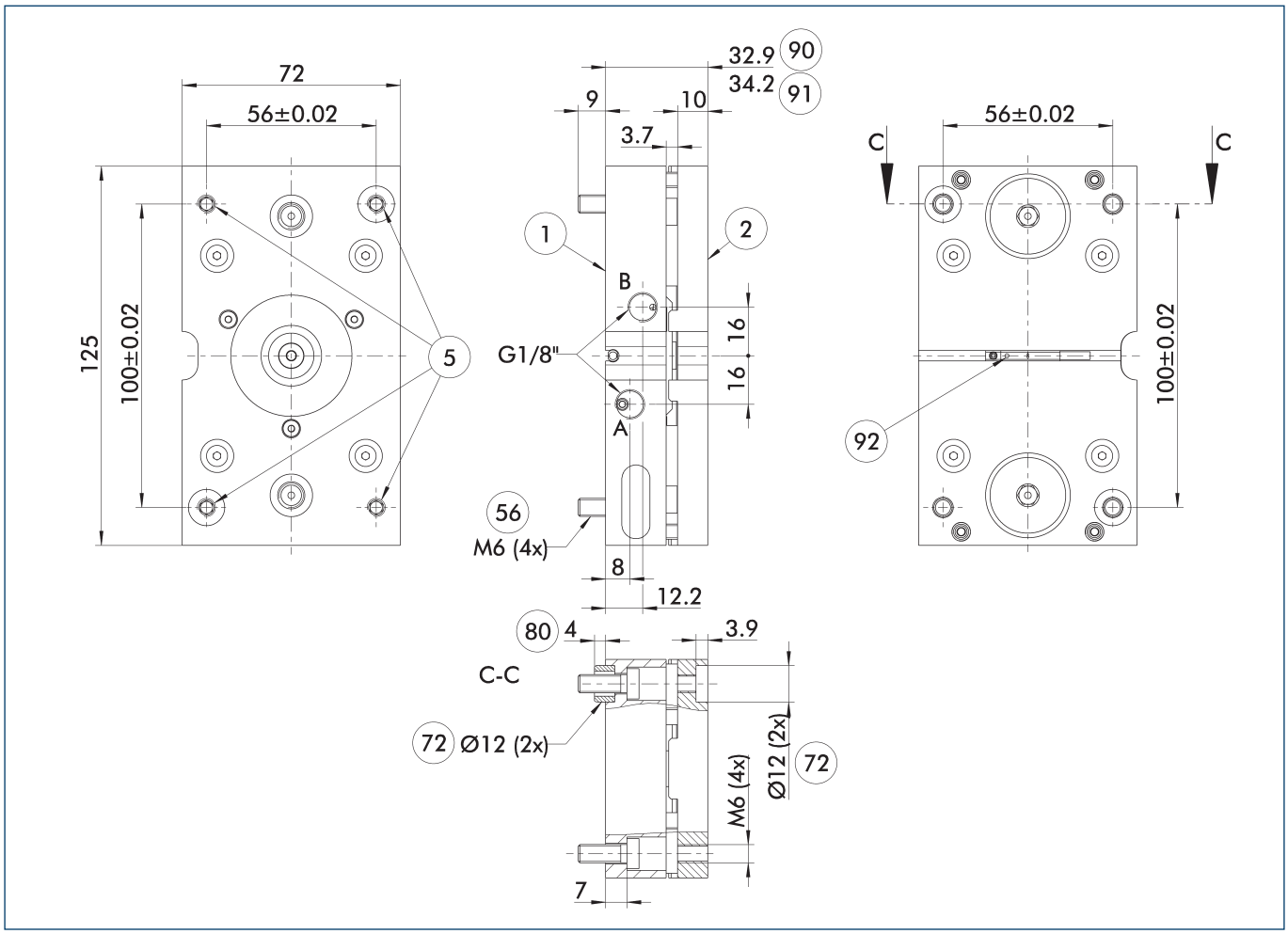
ⓘ The forces and torques are maximum values when unlocked and may occur simultaneously. When locked, only the loads caused by the weight and acceleration are permissible.

Technical data

Description		TCU-P-160-3-MV	TCU-P-160-3-OV
ID		0324846	0324847
Locking		with locking	Without locking
Hardness of the elastomer	[Shore]	68	68
Deflection X	[°]	±1	±1
Deflection Y	[°]	±2	±2
Deflection Z	[°]	±1.5	±1.5
Repeat accuracy	[mm]	0.02	
Weight	[kg]	0.7	0.55
Min./max. operating pressure	[bar]	4/8	
Min./max. ambient temperature	[°C]	-10/90	-10/90
Locking moment Mx	[Nm]	30	
Locking moment My	[Nm]	18	
Locking moment Mz	[Nm]	50	
Locking moment Fz	[N]	400	
Max. force Fd	[N]	4300	4300
Direct connection to*		PGN-plus 160	PGN-plus 160
Dimensions X x Y x Z	[mm]	72 x 125 x 32.9	72 x 125 x 32.4

* also suitable for other grippers with the same screw connection diagram

Main view with centric locking (MV)

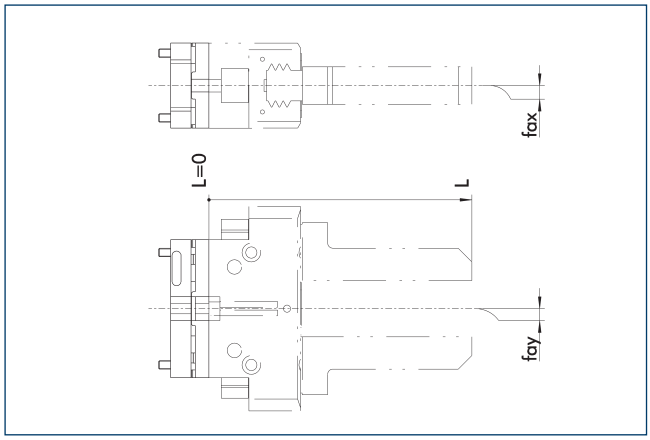


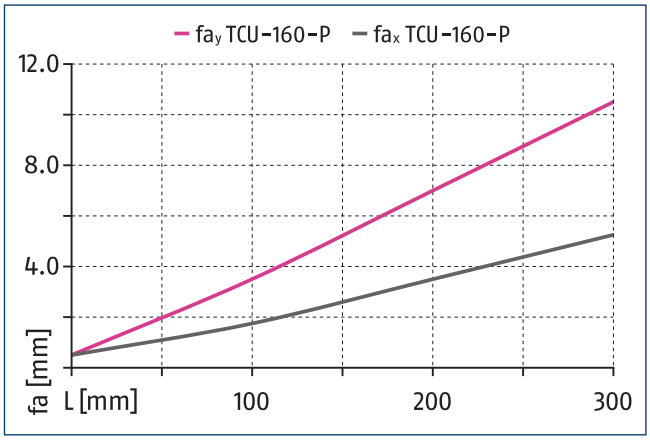
The main view shows the unit in its basic version.

A, a Air connection unlocked
B, b Air connection locked

(1) Robot-side connection
(2) Tool-side connection
(5) Through hole for connection with screws
(56) Included in the scope of delivery
(72) Fit for centering sleeves
(80) Depth of the centering sleeve hole in the counter part
(90) Unit locked
(91) Unit unlocked
(92) MMS-P

Maximum deflection



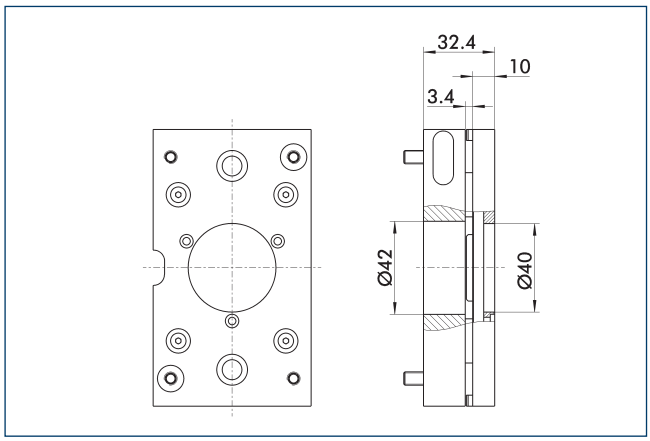


Deflection (fa) dependent upon the length (L) to the center of mass

TCU-P 160

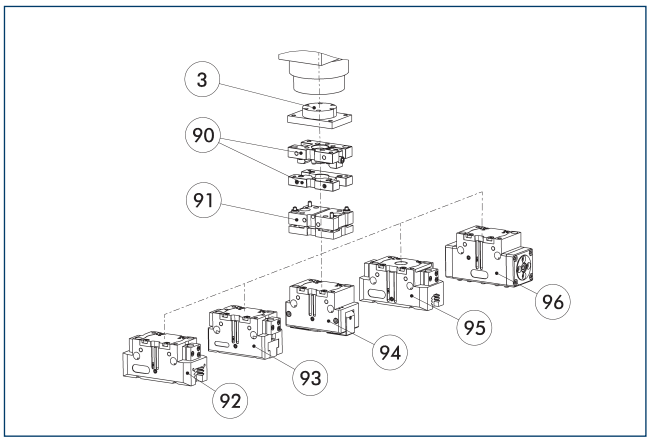
Tolerance compensation unit

Version without locking (0V)



Dimensional changes for the version without locking

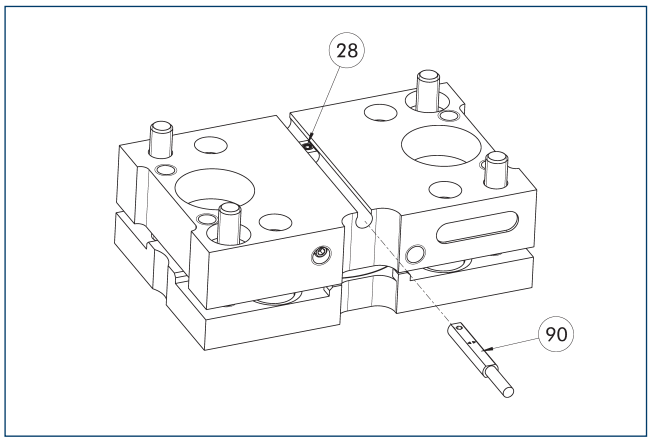
Modular system



(3) Adapter plate
(90) Compact change system CWS
(91) Tolerance compensation unit TCU
(92) 2-finger parallel gripper PGN-plus
(93) JGP 2-finger parallel grippers
(94) 2-finger angular gripper PWG-plus
(95) 2-finger parallel gripper PGB
(96) Sealed DPG-plus gripper

The unit is part of a modular system in which various components such as grippers or compliant devices can be threaded to one another directly.

Sensor system



(28) Limit stop for sensor (90) Monitoring of locking

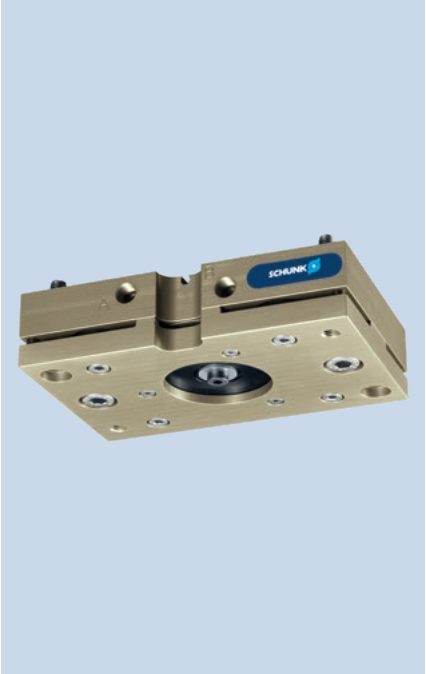
Position monitoring with two programmable positions per sensor. End position monitoring for mounting in the C-slot.

Description	ID	Often combined
Programmable magnetic switch		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
Connection cables		
KA GLN0804-LK-00500-A	0307767	●
KA GLN0804-LK-01000-A	0307768	
KA WLN0804-LK-00500-A	0307765	
KA WLN0804-LK-01000-A	0307766	
clip for plug/socket		
CLI-M8	0301463	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	

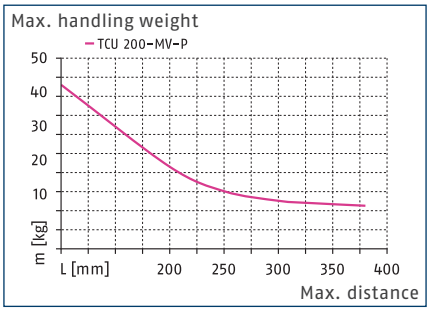
ⓘ One sensor is required per unit for monitoring two positions. Extension cables and sensor distributors are optionally available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor systems.

TCU-P 200

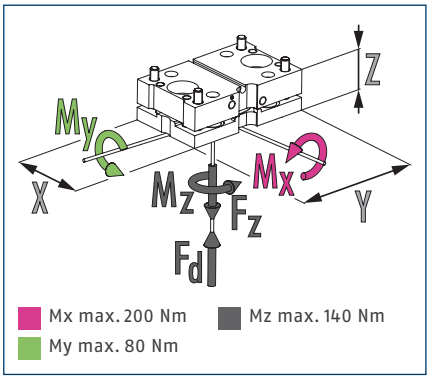
Tolerance compensation unit



Load chart



Dimensions and maximum loads



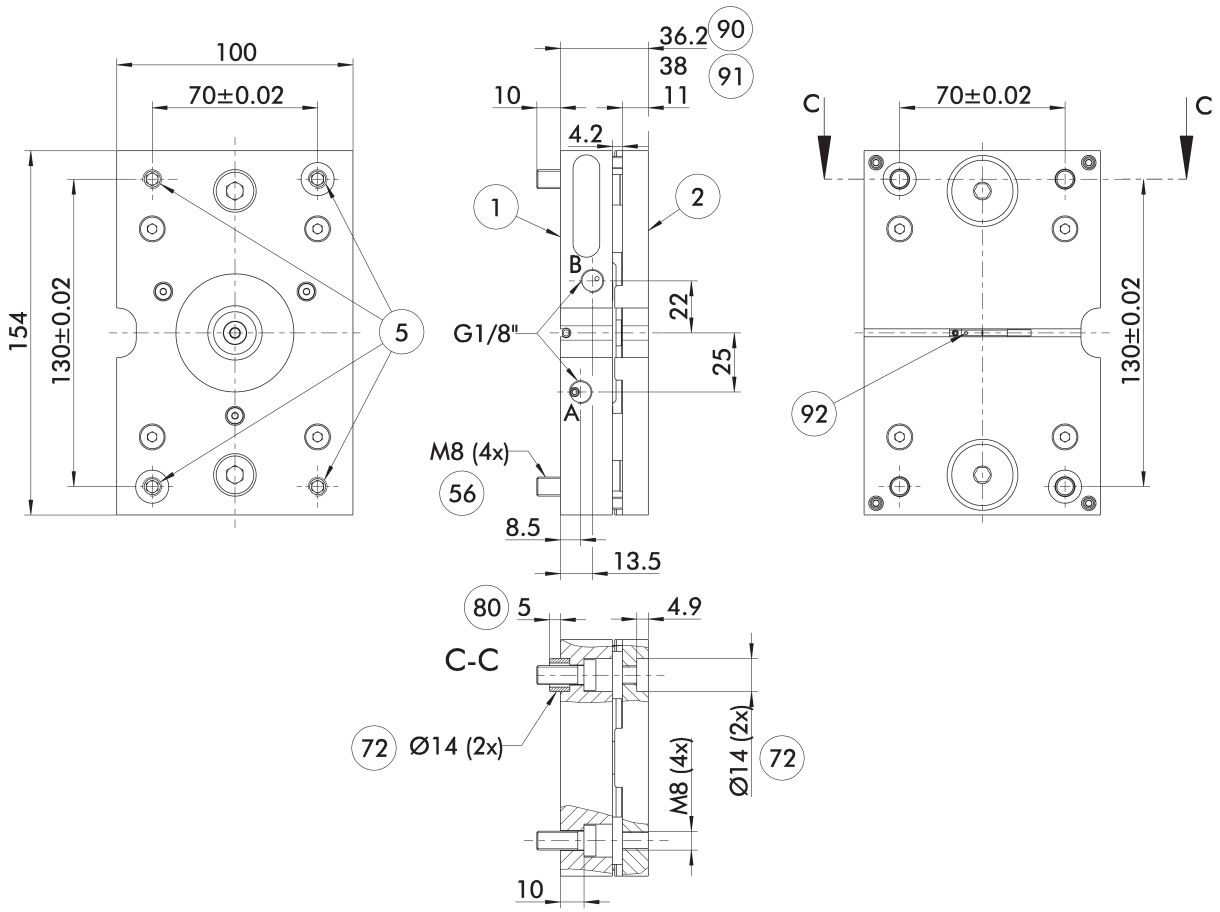
ⓘ The forces and torques are maximum values when unlocked and may occur simultaneously. When locked, only the loads caused by the weight and acceleration are permissible.

Technical data

Description		TCU-P-200-3-MV	TCU-P-200-3-OV
ID		0324864	0324865
Locking		with locking	Without locking
Hardness of the elastomer	[Shore]	68	68
Deflection X	[°]	±1	±1
Deflection Y	[°]	±2	±2
Deflection Z	[°]	±1.5	±1.5
Repeat accuracy	[mm]	0.02	
Weight	[kg]	1.3	1
Min./max. operating pressure	[bar]	4/8	
Min./max. ambient temperature	[°C]	-10/90	-10/90
Locking moment Mx	[Nm]	50	
Locking moment My	[Nm]	25	
Locking moment Mz	[Nm]	75	
Locking moment Fz	[N]	700	
Max. force Fd	[N]	5000	5000
Direct connection to*		PGN-plus 200	PGN-plus 200
Dimensions X x Y x Z	[mm]	100 x 154 x 36.2	100 x 154 x 34.9

* also suitable for other grippers with the same screw connection diagram

Main view with centric locking (MV)

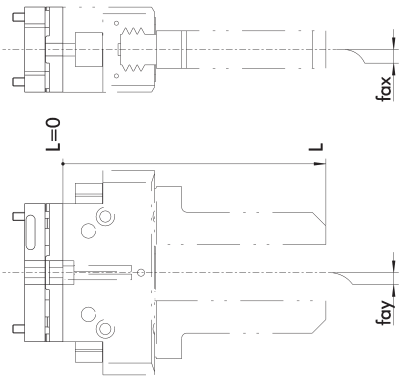


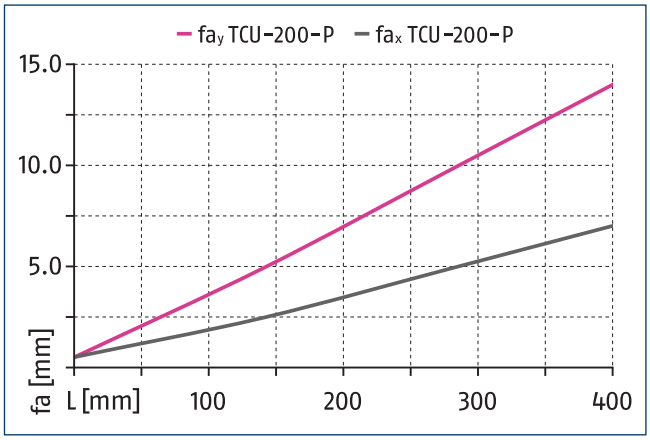
The main view shows the unit in its basic version.

A, a Air connection unlocked
B, b Air connection locked

(1) Robot-side connection
(2) Tool-side connection
(5) Through hole for connection with screws
(56) Included in the scope of delivery
(72) Fit for centering sleeves
(80) Depth of the centering sleeve hole in the counter part
(90) Unit locked
(91) Unit unlocked
(92) MMS-P

Maximum deflection



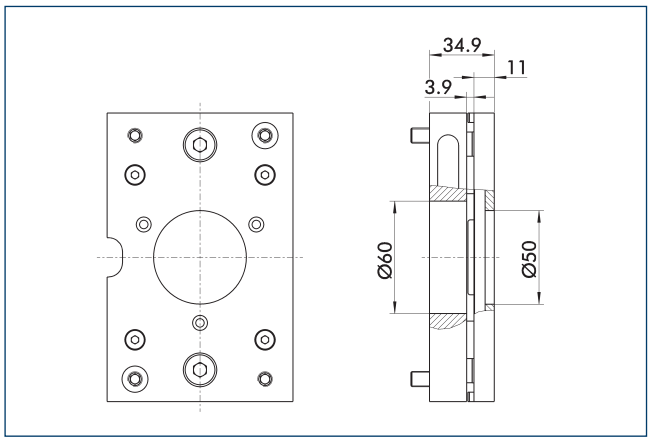


Deflection (fa) dependent upon the length (L) to the center of mass

TCU-P 200

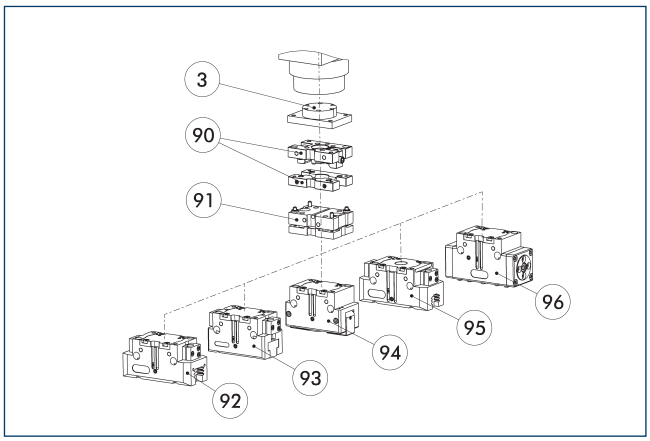
Tolerance compensation unit

Version without locking (0V)



Dimensional changes for the version without locking

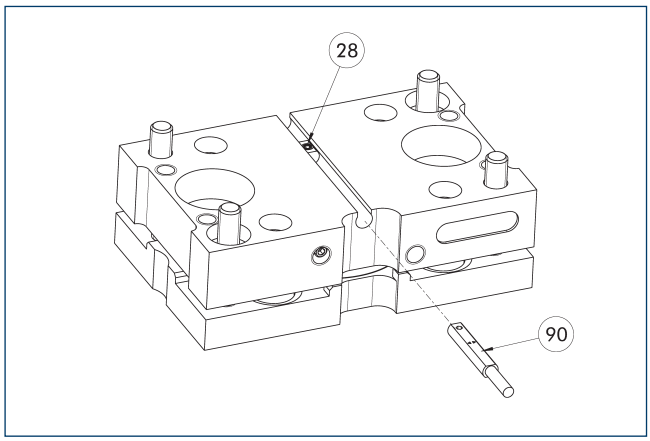
Modular system



(3) Adapter plate
(90) Compact change system CWS
(91) Tolerance compensation unit TCU
(92) 2-finger parallel gripper PGN-plus
(93) JGP 2-finger parallel grippers
(94) 2-finger angular gripper PWG-plus
(95) 2-finger parallel gripper PGB
(96) Sealed DPG-plus gripper

The unit is part of a modular system in which various components such as grippers or compliant devices can be threaded to one another directly.

Sensor system



28 Limit stop for sensor
90 Monitoring of locking

Position monitoring with two programmable positions per sensor. End position monitoring for mounting in the C-slot.

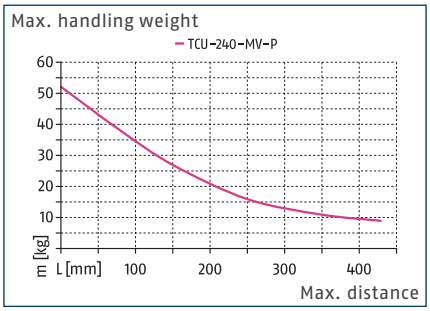
Description	ID	Often combined
Programmable magnetic switch		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
Connection cables		
KA GLN0804-LK-00500-A	0307767	●
KA GLN0804-LK-01000-A	0307768	
KA WLN0804-LK-00500-A	0307765	
KA WLN0804-LK-01000-A	0307766	
clip for plug/socket		
CLI-M8	0301463	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	

ⓘ One sensor is required per unit for monitoring two positions. Extension cables and sensor distributors are optionally available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor systems.

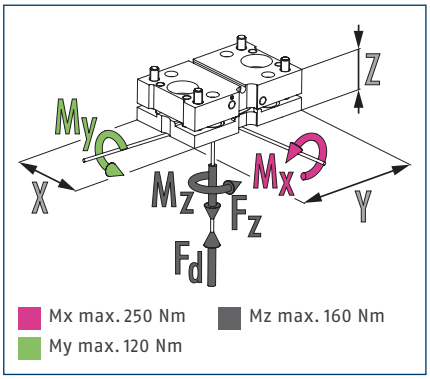
TCU-P 240

Tolerance compensation unit

Load chart



Dimensions and maximum loads



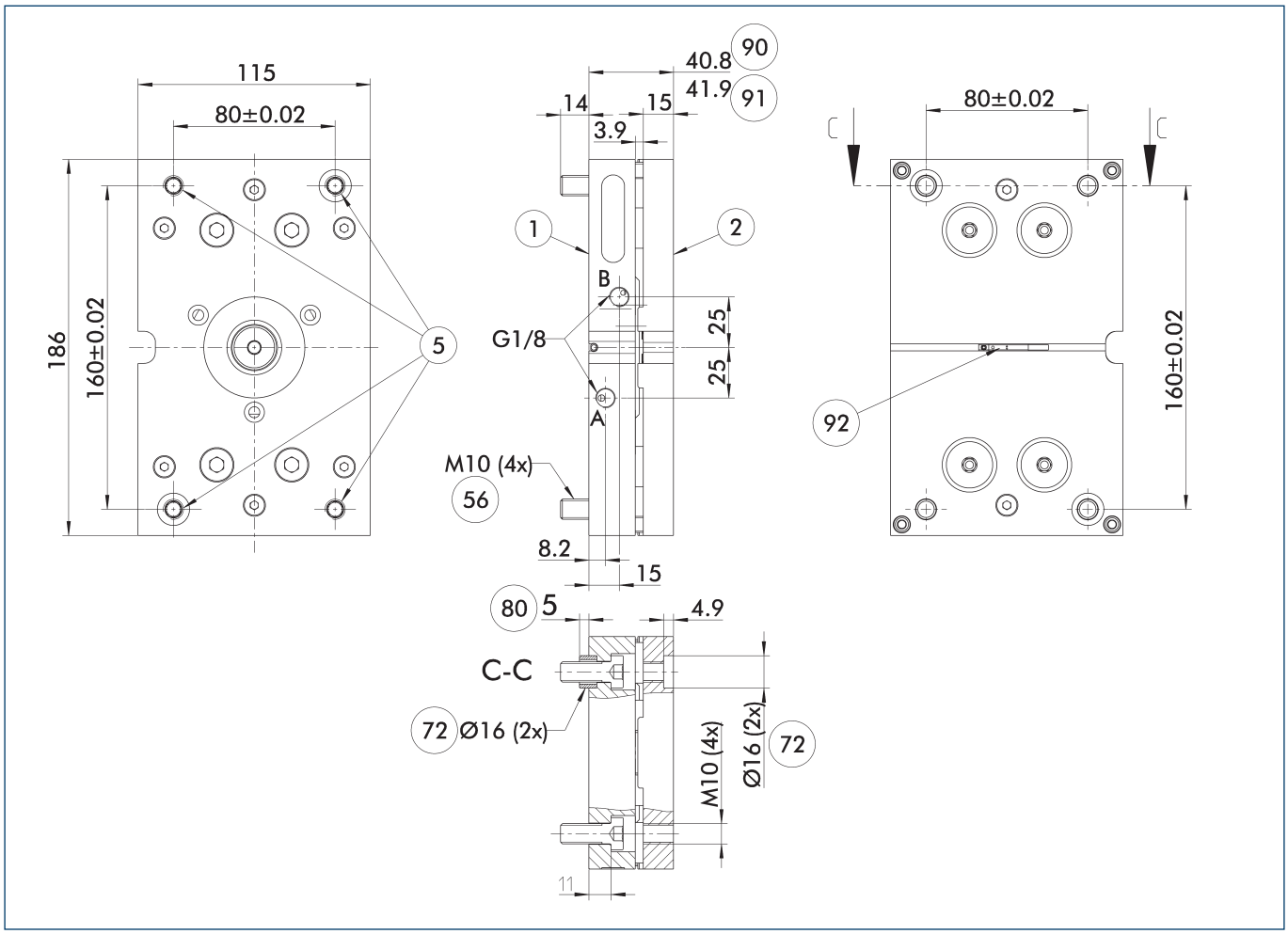
ⓘ The forces and torques are maximum values when unlocked and may occur simultaneously. When locked, only the loads caused by the weight and acceleration are permissible.

Technical data

Description		TCU-P-240-3-MV	TCU-P-240-3-OV
ID		0324730	0324731
Locking		with locking	Without locking
Hardness of the elastomer	[Shore]	68	68
Deflection X	[°]	±1	±1
Deflection Y	[°]	±1.5	±1.5
Deflection Z	[°]	±1	±1
Repeat accuracy	[mm]	0.02	
Weight	[kg]	2.1	1.8
Min./max. operating pressure	[bar]	4/8	
Min./max. ambient temperature	[°C]	-10/90	-10/90
Locking moment Mx	[Nm]	70	
Locking moment My	[Nm]	40	
Locking moment Mz	[Nm]	90	
Locking moment Fz	[N]	800	
Max. force Fd	[N]	6200	6200
Direct connection to*		PGN-plus 240	PGN-plus 240
Dimensions X x Y x Z	[mm]	115 x 186 x 40.8	115 x 186 x 42

* also suitable for other grippers with the same screw connection diagram

Main view with centric locking (MV)

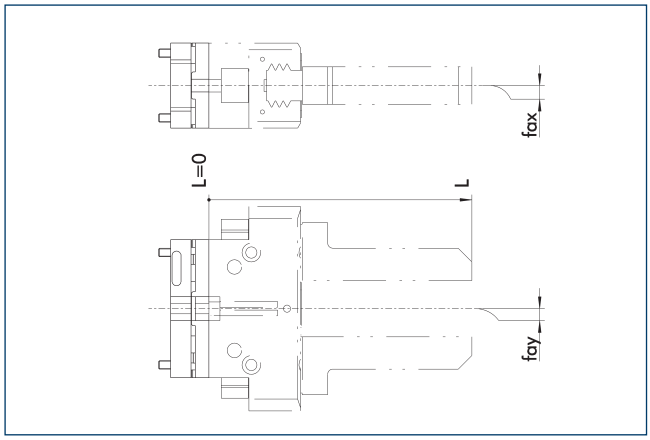


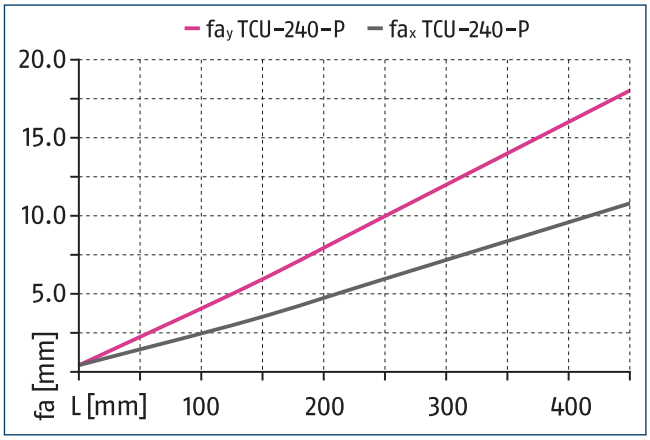
The main view shows the unit in its basic version.

A, a Air connection unlocked
B, b Air connection locked

(1) Robot-side connection
(2) Tool-side connection
(5) Through hole for connection with screws
(56) Included in the scope of delivery
(72) Fit for centering sleeves
(80) Depth of the centering sleeve hole in the counter part
(90) Unit locked
(91) Unit unlocked
(92) MMS-P

Maximum deflection



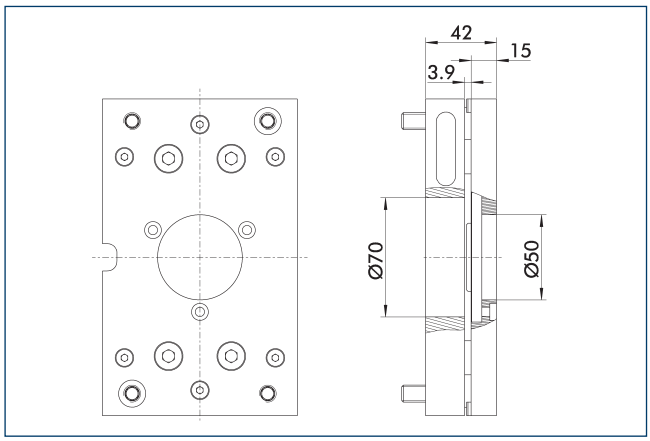


Deflection (fa) dependent upon the length (L) to the center of mass

TCU-P 240

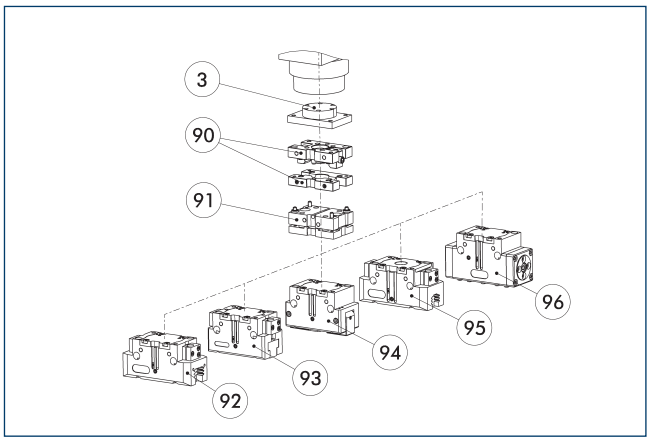
Tolerance compensation unit

Version without locking (0V)



Dimensional changes for the version without locking

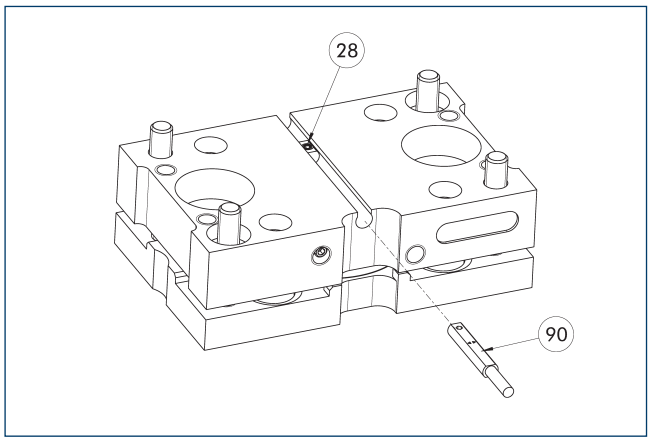
Modular system



(3) Adapter plate
(90) Compact change system CWS
(91) Tolerance compensation unit TCU
(92) 2-finger parallel gripper PGN-plus
(93) JGP 2-finger parallel grippers
(94) 2-finger angular gripper PWG-plus
(95) 2-finger parallel gripper PGB
(96) Sealed DPG-plus gripper

The unit is part of a modular system in which various components such as grippers or compliant devices can be threaded to one another directly.

Sensor system



28 Limit stop for sensor
90 Monitoring of locking

Position monitoring with two programmable positions per sensor. End position monitoring for mounting in the C-slot.

Description	ID	Often combined
Programmable magnetic switch		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
Connection cables		
KA GLN0804-LK-00500-A	0307767	●
KA GLN0804-LK-01000-A	0307768	
KA WLN0804-LK-00500-A	0307765	
KA WLN0804-LK-01000-A	0307766	
clip for plug/socket		
CLI-M8	0301463	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	

ⓘ One sensor is required per unit for monitoring two positions. Extension cables and sensor distributors are optionally available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor systems.

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Product Information

Tolerance compensation unit TCU-Z

Compact. Flexible. Productive.

Tolerance compensation unit TCU-Z

For compensation of small locational and positional deviations with mounting and handling applications

Field of application

for universal use in clean and slightly dirty environments, particularly in the fields of assembly automation and tool machine loading

Advantages – Your benefits

Compensation of workpiece-related tolerances and position inaccuracies reduced risk of jamming, necessary assembly forces are reduced and wear of the workpiece and handling device is minimized

Direct assembly of a centric gripper no need for additional adapter plates

Compact design low height and weight

Pneumatic locking long life time of the elastomers, rigid unit during travel

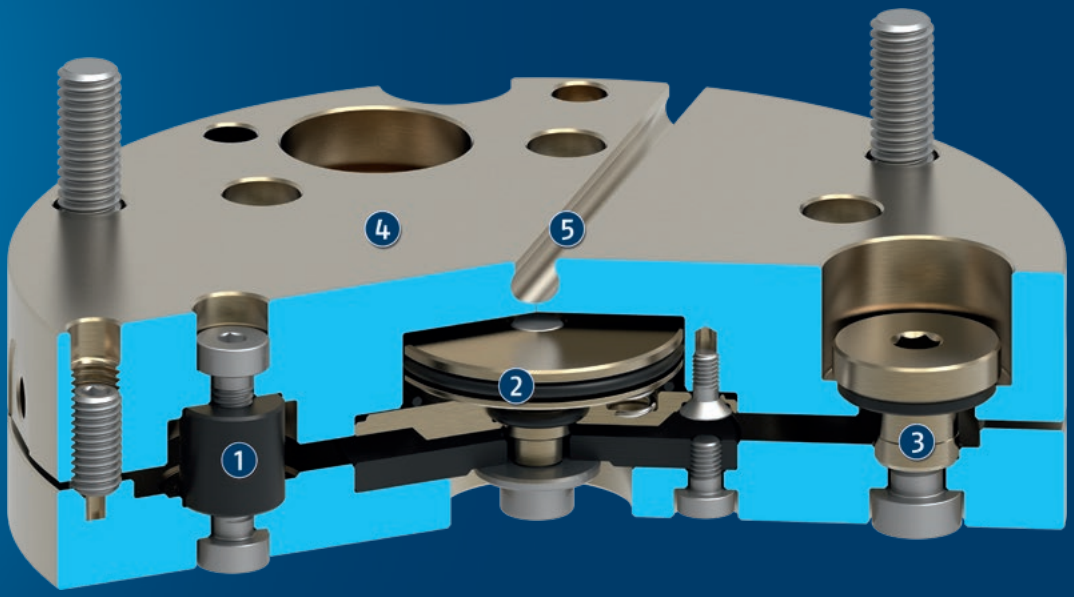
Monitoring of locking for process reliable sequences and shorter cycle times

Sizes	Workpiece weight	Deflection
Quantity: 7	3 .. 60 kg	±1°

Functional description

The function of the tolerance compensation unit (TCU) is based on interaction between the two base plates, which are connected to each other with a set of flexible elastomer elements. As a result, the TCU can compensate tolerances around the X, Y, and Z axes, allowing it to correct angular errors, and causing a rotational compensation.

A pneumatic locking is also available as an option to allow the compensation unit to be set to rigid. As a result, it is possible to prevent the tool or the gripper vibrating during movement of the robot arm or the linear axis. This increases the application's repeat accuracy and extends the service life of the elastomer elements.



① **Elastomer**
allows compensation movement

② **Locking mechanism**
for a rigid connection between the machine and tool sides

③ **Overload pin**
to protect the elastomers

④ **Interface machine side**
the same mounting pattern as on the tool side

⑤ **Monitoring groove**
for electronic magnetic switch

General notes about the series

Monitoring: by magnetic switch

Actuation: pneumatic, with filtered compressed air as per ISO 8573-1:2010 [7:4:4].

Material: Elastomer material

Housing: Aluminum alloy

Scope of delivery: Robot-side mounting screws

Warranty: 24 months

Harsh environmental conditions: Please note that use under harsh environmental conditions (e.g. in the coolant area, cast and grinding dust) can considerably reduce the service life of the units, and we will not take over any warranty. However, in many cases we can find a solution. Please contact us for assistance.

Handling weight: is the weight of the total load attached to the flange. When designing, the permissible forces and moments have to be paid attention to. Please note that exceeding the recommended handling weight will shorten the lifespan.

Application example

Insertion tool for assembly of small to medium-sized workpieces. The tool can be used in both clean and dirty environments. Due to its quick-change system, other tools can alternately be fixed to the robot flange.

1. Quick-change system SWS
2. Electric feed-through
3. Tolerance compensation unit TCU-Z
4. 3-finger centric gripper PZN-plus

SCHUNK offers more ...

The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.

Anti-collision and overload protection sensor

Universal gripper

Magnetic switches

ⓘ For more information on these products can be found on the following product pages or at schunk.com.

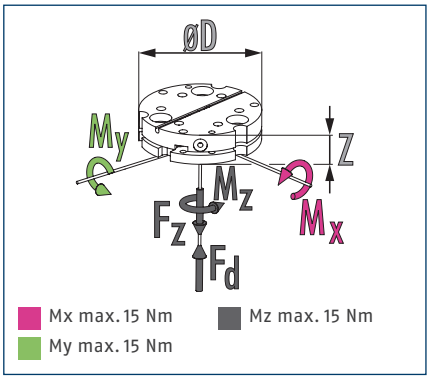
Options and special information

Monitoring of the locking: by magnetic switch
Connections: two plug-in connections for hose
Ambient temperature: –10 °C to 90 °C
Operating pressure: from 4 bar up to 8 bar

TCU-Z 050

Tolerance compensation unit

Dimensions and maximum loads



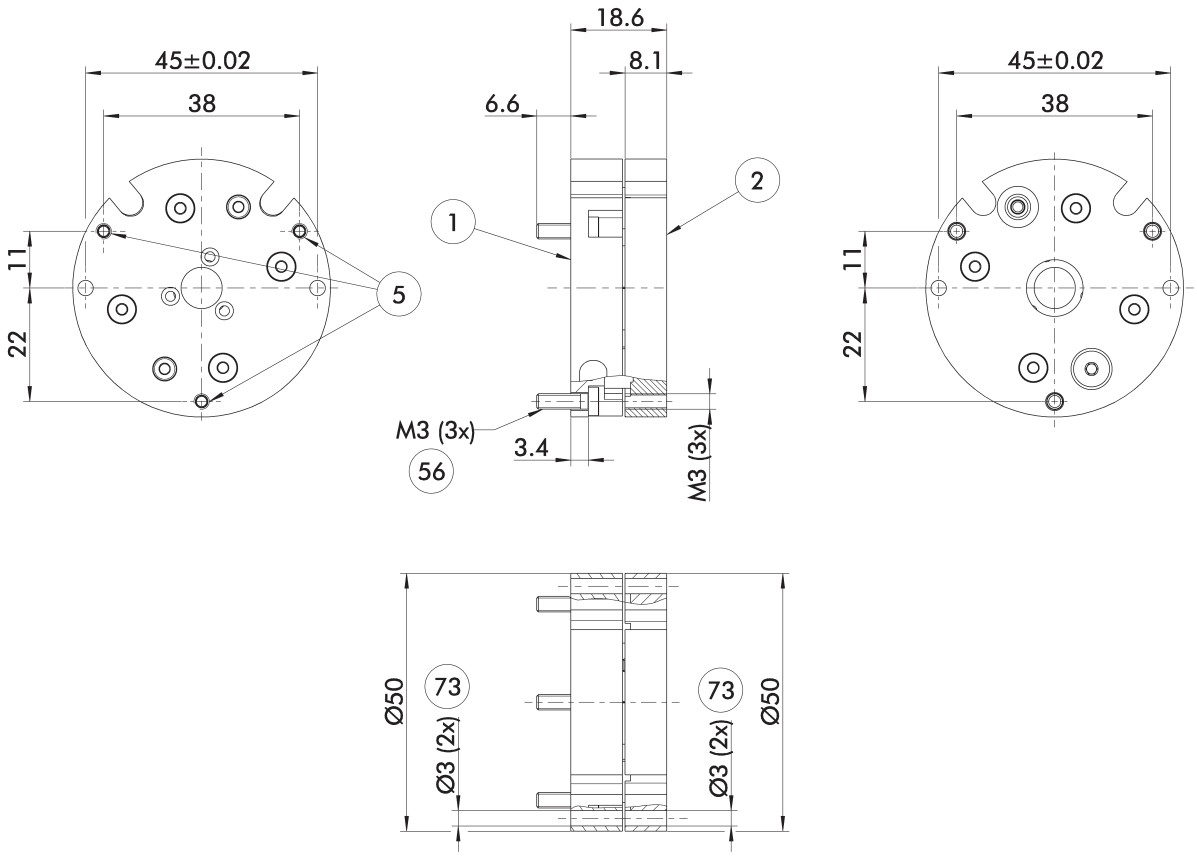
ⓘ The forces and torques are maximum values when unlocked and may occur simultaneously. When locked, only the loads caused by the weight and acceleration are permissible.

Technical data

Description		TCU-Z-050-3-OV
ID		0324749
Locking		Without locking
Hardness of the elastomer	[Shore]	68
Deflection X	[°]	±1
Deflection Y	[°]	±1
Deflection Z	[°]	±1.5
Weight	[kg]	0.09
Min./max. ambient temperature	[°C]	-10/90
Max. force Fd	[N]	500
Direct connection to*		PZN-plus 50
Dimensions Ø D x Z	[mm]	50 x 18.6

* also suitable for other grippers with the same screw connection diagram

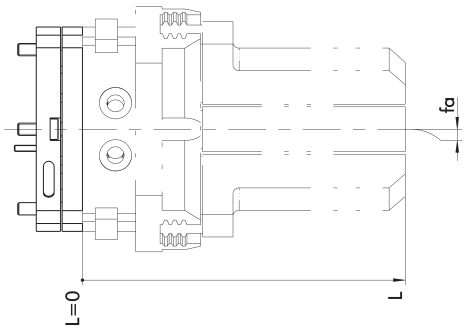
Main view without centric locking (0V)

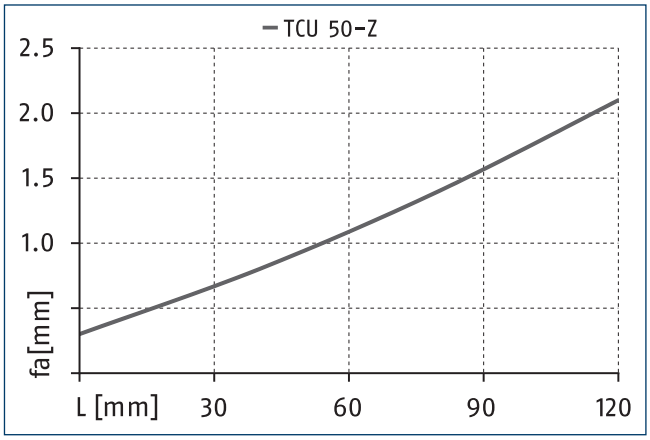


The main view shows the unit in its basic version.

(1) Robot-side connection
(2) Tool-side connection
(5) Through hole for connection with screws
(56) Included in the scope of delivery
(73) Fit for centering pins

Maximum deflection



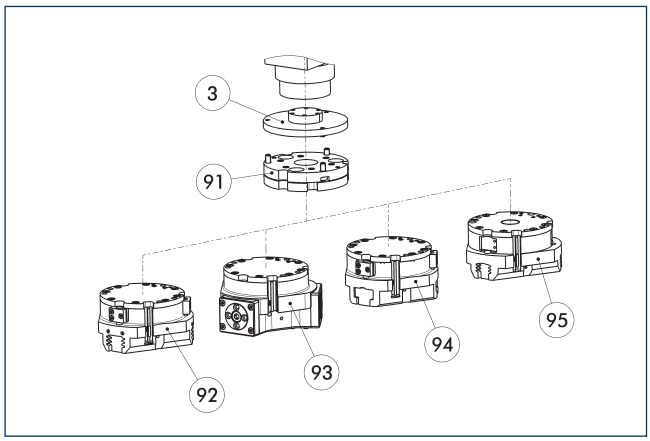


Deflection (fa) dependent upon the length (L) to the center of mass

TCU-Z 050

Tolerance compensation unit

Modular design



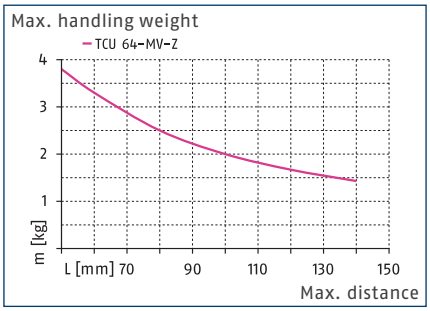
3 Adapter plate
91 Tolerance compensation unit TCU
92 3-finger centric gripper PZN-plus
93 Sealed gripper DPZ-plus
94 JGZ 3-finger centric grippers
95 3-finger centric gripper PZB-plus

The unit is part of a modular system in which various components such as grippers or compliant devices can be threaded to one another directly.

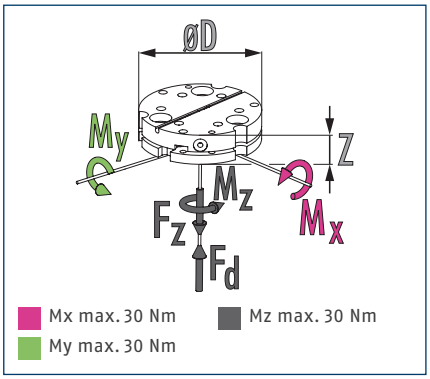
TCU-Z 064

Tolerance compensation unit

Load chart



Dimensions and maximum loads



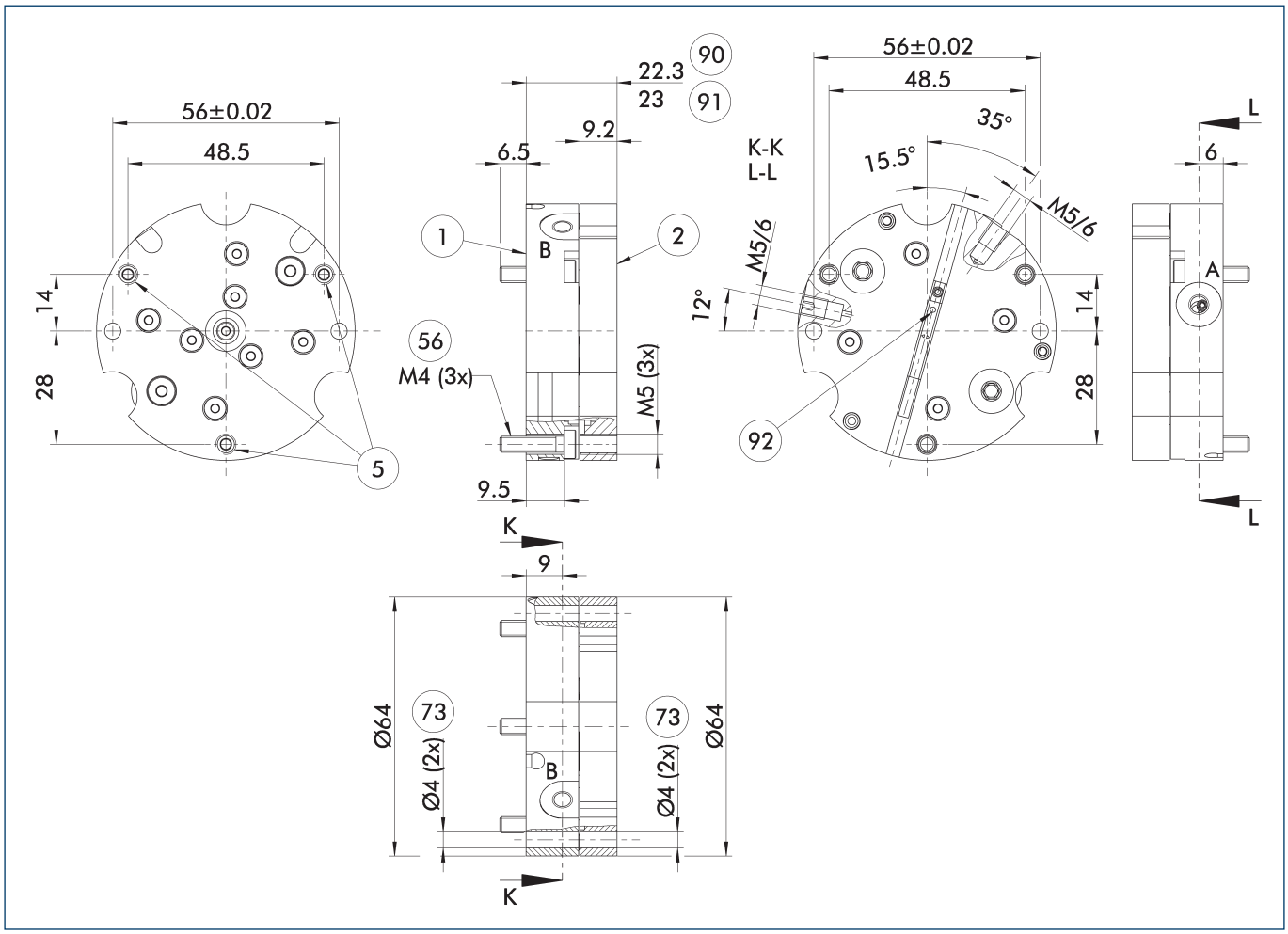
ⓘ The forces and torques are maximum values when unlocked and may occur simultaneously. When locked, only the loads caused by the weight and acceleration are permissible.

Technical data

Description		TCU-Z-064-3-MV	TCU-Z-064-3-OV
ID		0324766	0324767
Locking		with locking	Without locking
Hardness of the elastomer	[Shore]	68	68
Deflection X	[°]	±1	±1
Deflection Y	[°]	±1	±1
Deflection Z	[°]	±1	±1
Repeat accuracy	[mm]	0.1	
Weight	[kg]	0.18	0.15
Min./max. operating pressure	[bar]	4/8	
Min./max. ambient temperature	[°C]	-10/90	-10/90
Locking moment Mx	[Nm]	1	
Locking moment My	[Nm]	1	
Locking moment Mz	[Nm]	4	
Locking moment Fz	[N]	30	
Max. force Fd	[N]	1100	1100
Direct connection to*		PZN-plus 64	PZN-plus 64
Dimensions Ø D x Z	[mm]	64 x 22.3	64 x 19.6

* also suitable for other grippers with the same screw connection diagram

Main view with centric locking (MV)

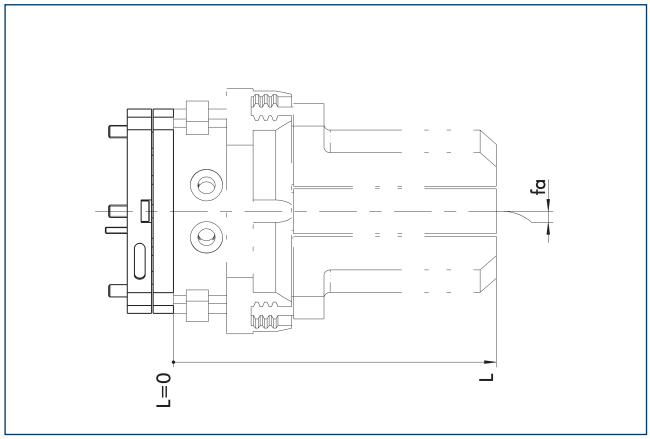


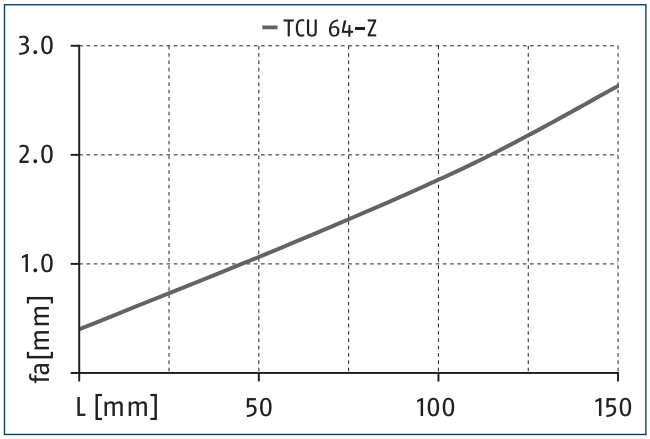
The main view shows the unit in its basic version.

A, a Air connection unlocked
B, b Air connection locked

(1) Robot-side connection
(2) Tool-side connection
(5) Through hole for connection with screws
(56) Included in the scope of delivery
(73) Fit for centering pins
(90) Unit locked
(91) Unit unlocked
(92) MMS-P

Maximum deflection



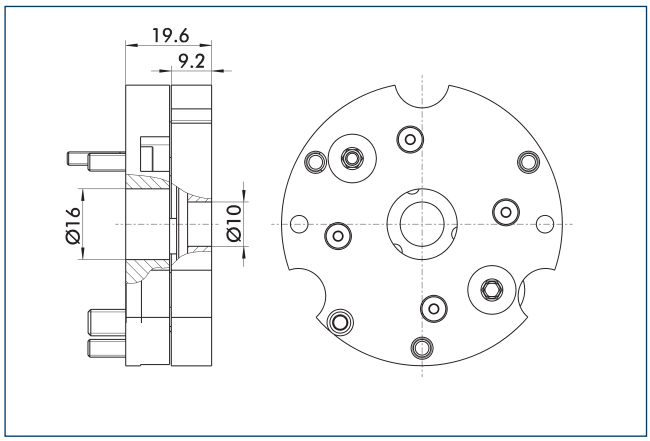


Deflection (fa) dependent upon the length (L) to the center of mass

TCU-Z 064

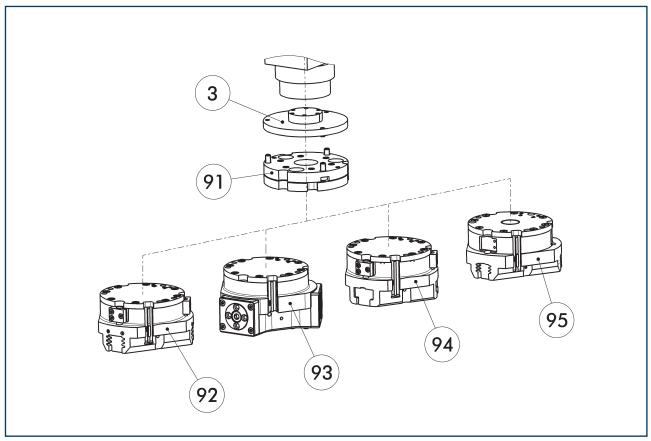
Tolerance compensation unit

Version without locking (0V)



Dimensional changes for the version without locking

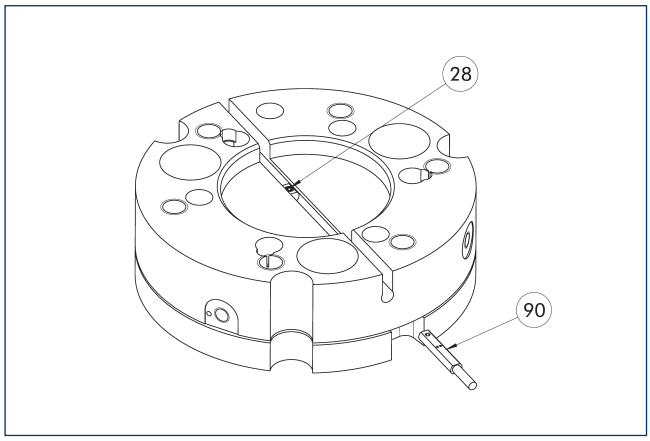
Modular design



(3) Adapter plate
(91) Tolerance compensation unit TCU
(92) 3-finger centric gripper PZN-plus
(93) Sealed gripper DPZ-plus
(94) JGZ 3-finger centric grippers
(95) 3-finger centric gripper PZB-plus

The unit is part of a modular system in which various components such as grippers or compliant devices can be threaded to one another directly.

Sensor system



(28) Limit stop for sensor
(90) Monitoring of locking

Position monitoring with two programmable positions per sensor. End position monitoring for mounting in the C-slot.

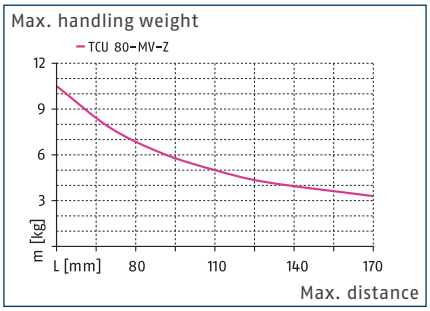
Description	ID	Often combined
Programmable magnetic switch		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
Connection cables		
KA GLN0804-LK-00500-A	0307767	●
KA GLN0804-LK-01000-A	0307768	
KA WLN0804-LK-00500-A	0307765	
KA WLN0804-LK-01000-A	0307766	
clip for plug/socket		
CLI-M8	0301463	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	

ⓘ One sensor is required per unit for monitoring two positions. Extension cables and sensor distributors are optionally available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor systems.

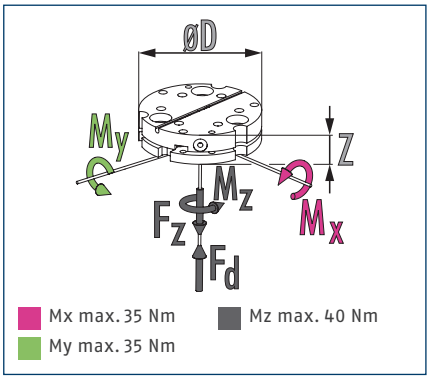
TCU-Z 080

Tolerance compensation unit

Load chart



Dimensions and maximum loads



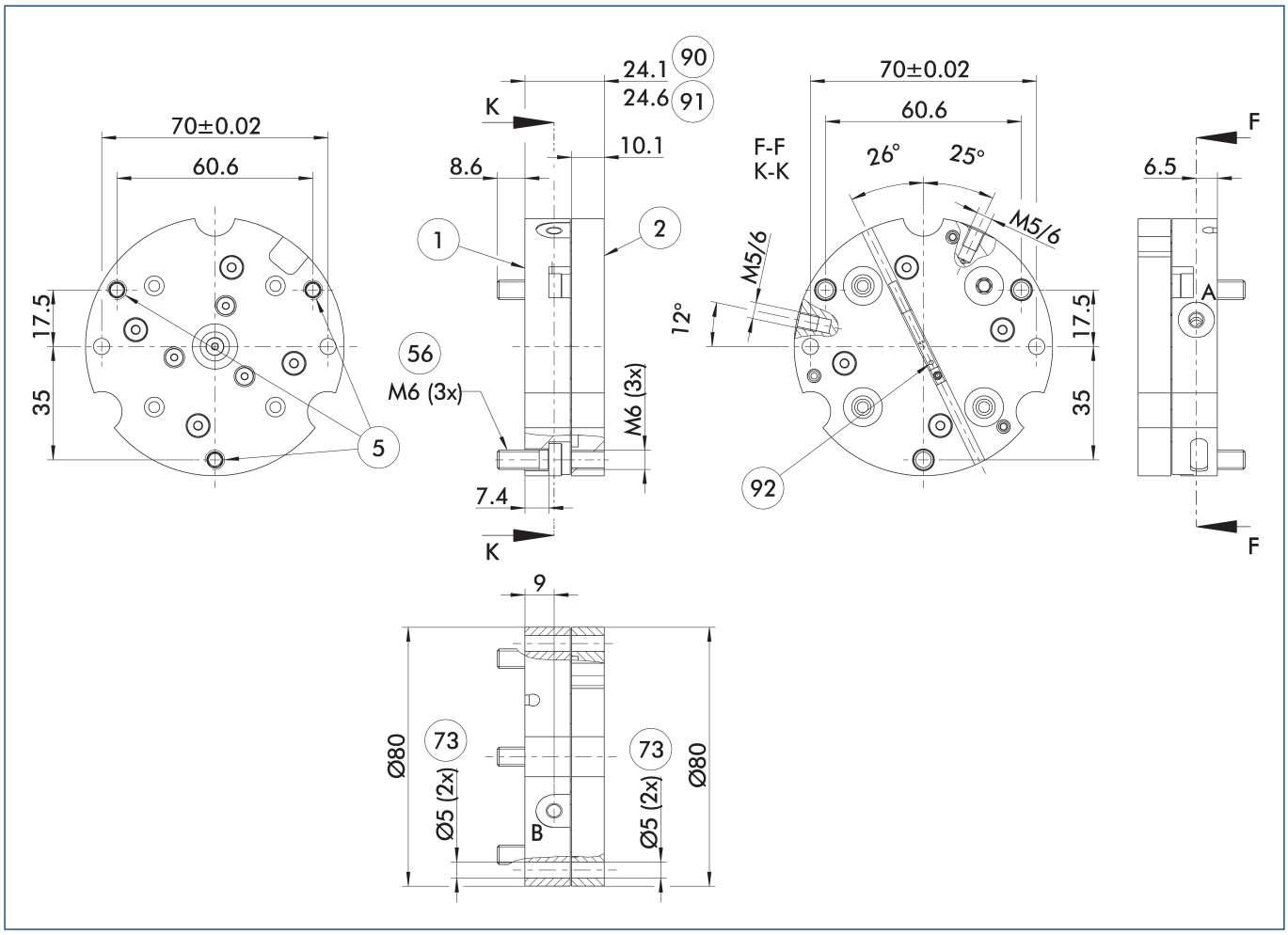
ⓘ The forces and torques are maximum values when unlocked and may occur simultaneously. When locked, only the loads caused by the weight and acceleration are permissible.

Technical data

Description		TCU-Z-080-3-MV	TCU-Z-080-3-OV
ID		0324784	0324785
Locking		with locking	Without locking
Hardness of the elastomer	[Shore]	68	68
Deflection X	[°]	±1	±1
Deflection Y	[°]	±1	±1
Deflection Z	[°]	±1	±1
Repeat accuracy	[mm]	0.05	
Weight	[kg]	0.25	0.3
Min./max. operating pressure	[bar]	4/8	
Min./max. ambient temperature	[°C]	-10/90	-10/90
Locking moment Mx	[Nm]	5	
Locking moment My	[Nm]	5	
Locking moment Mz	[Nm]	6	
Locking moment Fz	[N]	100	
Max. force Fd	[N]	1500	1500
Direct connection to*		PZN-plus 80	PZN-plus 80
Dimensions Ø D x Z	[mm]	80 x 24.1	80 x 20.4

* also suitable for other grippers with the same screw connection diagram

Main view with centric locking (MV)

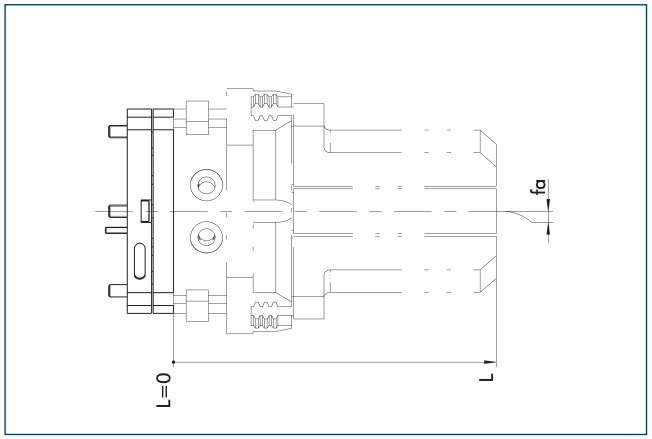


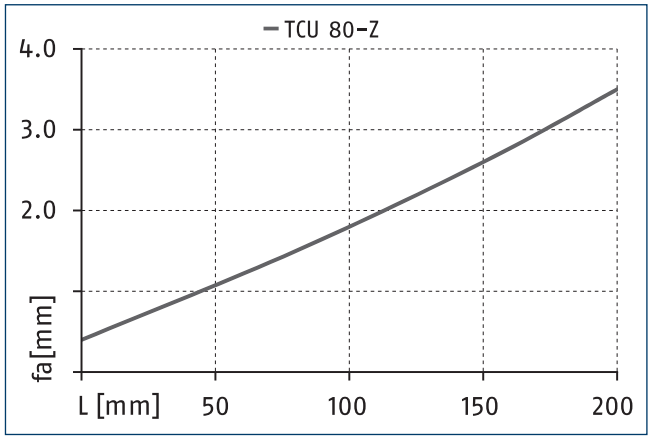
The main view shows the unit in its basic version.

A, a Air connection unlocked
B, b Air connection locked

(1) Robot-side connection
(2) Tool-side connection
(5) Through hole for connection with screws
(56) Included in the scope of delivery
(73) Fit for centering pins
(90) Unit locked
(91) Unit unlocked
(92) MMS-P

Maximum deflection



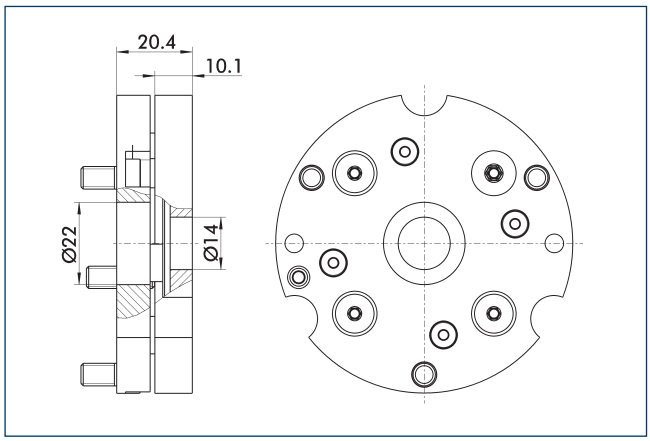


Deflection (fa) dependent upon the length (L) to the center of mass

TCU-Z 080

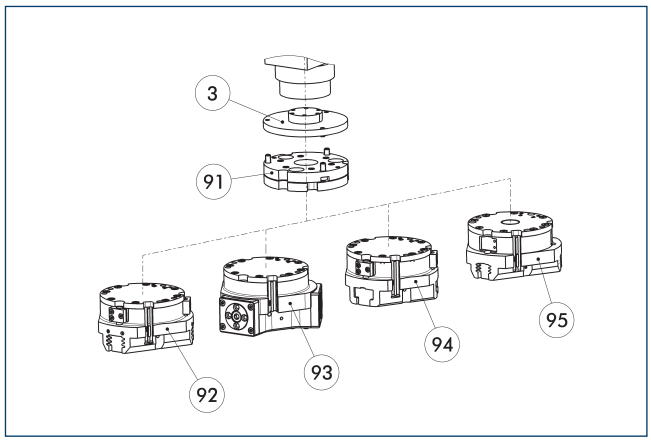
Tolerance compensation unit

Version without locking (0V)



Dimensional changes for the version without locking

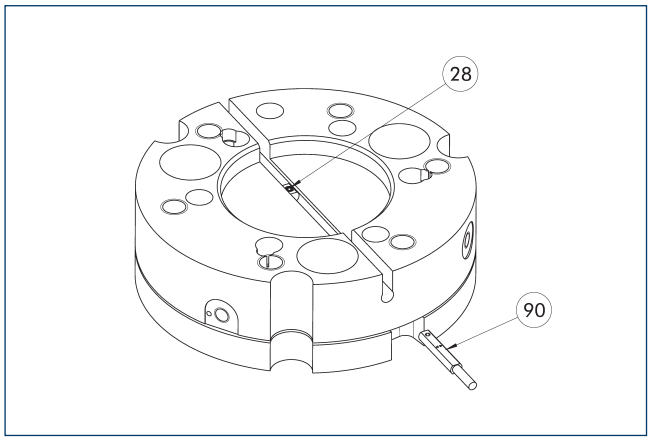
Modular design



(3) Adapter plate
(91) Tolerance compensation unit TCU
(92) 3-finger centric gripper PZN-plus
(93) Sealed gripper DPZ-plus
(94) JGZ 3-finger centric grippers
(95) 3-finger centric gripper PZB-plus

The unit is part of a modular system in which various components such as grippers or compliant devices can be threaded to one another directly.

Sensor system



(28) Limit stop for sensor
(90) Monitoring of locking

Position monitoring with two programmable positions per sensor. End position monitoring for mounting in the C-slot.

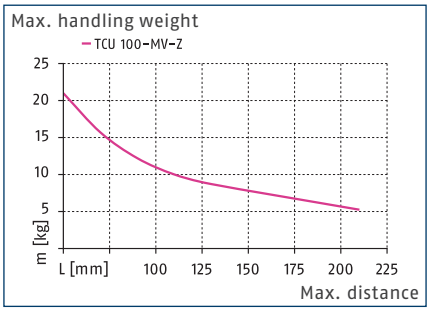
Description	ID	Often combined
Programmable magnetic switch		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
Connection cables		
KA GLN0804-LK-00500-A	0307767	●
KA GLN0804-LK-01000-A	0307768	
KA WLN0804-LK-00500-A	0307765	
KA WLN0804-LK-01000-A	0307766	
clip for plug/socket		
CLI-M8	0301463	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	

ⓘ One sensor is required per unit for monitoring two positions. Extension cables and sensor distributors are optionally available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor systems.

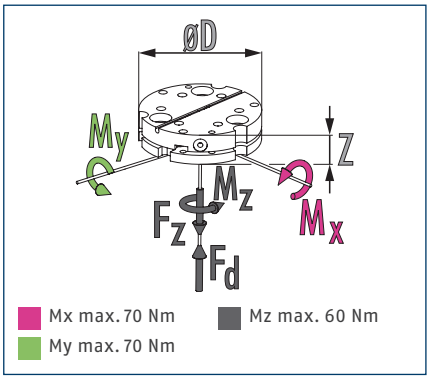
TCU-Z 100

Tolerance compensation unit

Load chart



Dimensions and maximum loads



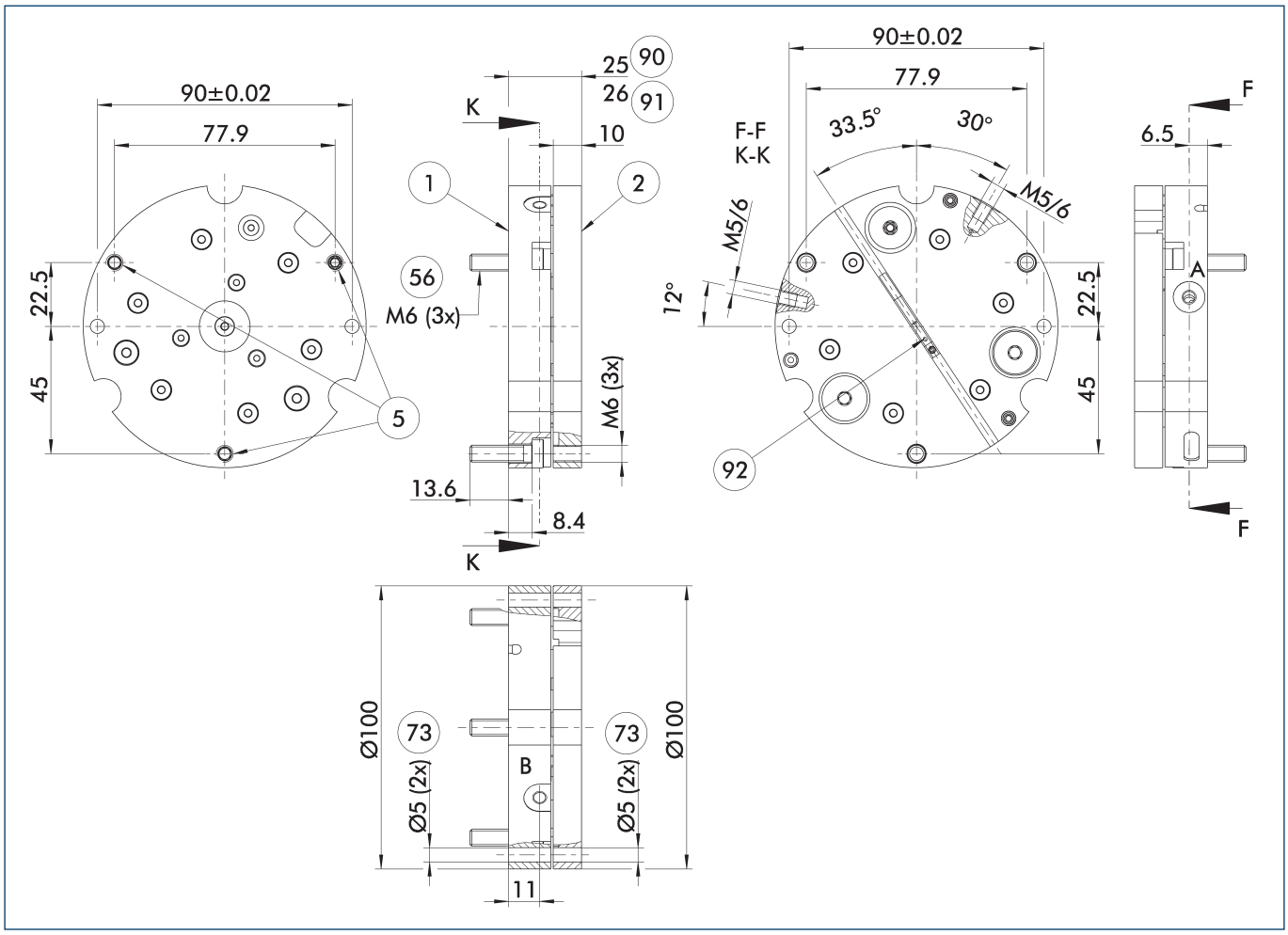
ⓘ The forces and torques are maximum values when unlocked and may occur simultaneously. When locked, only the loads caused by the weight and acceleration are permissible.

Technical data

Description		TCU-Z-100-2-MV	TCU-Z-100-2-OV
ID		0324798	0324799
Locking		with locking	Without locking
Hardness of the elastomer	[Shore]	68	68
Deflection X	[°]	±1	±1
Deflection Y	[°]	±1	±1
Deflection Z	[°]	±1	±1
Repeat accuracy	[mm]	0.05	
Weight	[kg]	0.48	0.47
Min./max. operating pressure	[bar]	4/8	
Min./max. ambient temperature	[°C]	-10/90	-10/90
Locking moment Mx	[Nm]	10	
Locking moment My	[Nm]	10	
Locking moment Mz	[Nm]	20	
Locking moment Fz	[N]	150	
Max. force Fd	[N]	2000	2000
Direct connection to*		PZN-plus 100	PZN-plus 100
Dimensions Ø D x Z	[mm]	100 x 25	100 x 22.6

* also suitable for other grippers with the same screw connection diagram

Main view with centric locking (MV)

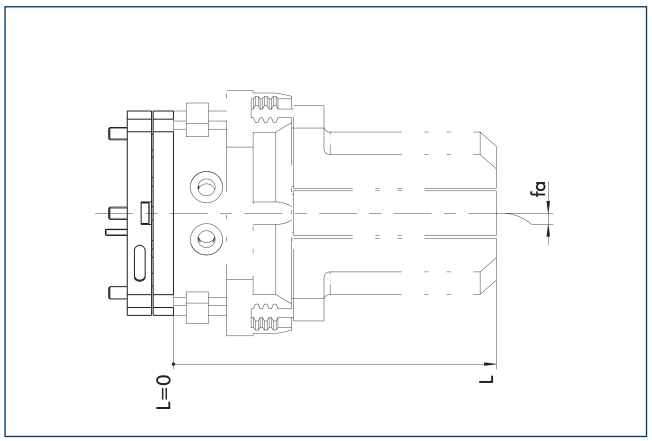


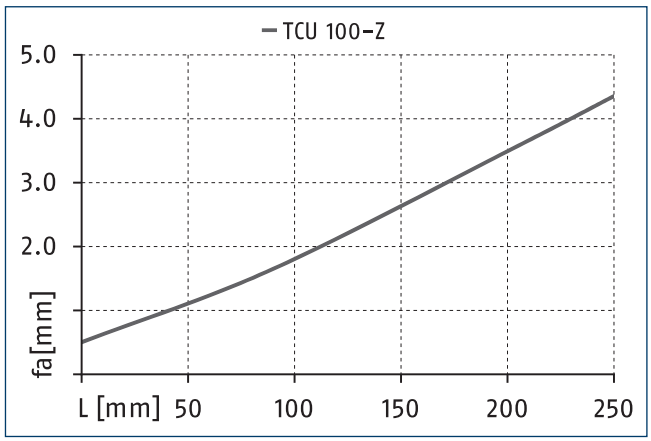
The main view shows the unit in its basic version.

A, a Air connection unlocked
B, b Air connection locked

(1) Robot-side connection
(2) Tool-side connection
(5) Through hole for connection with screws
(56) Included in the scope of delivery
(73) Fit for centering pins
(90) Unit locked
(91) Unit unlocked
(92) MMS-P

Maximum deflection



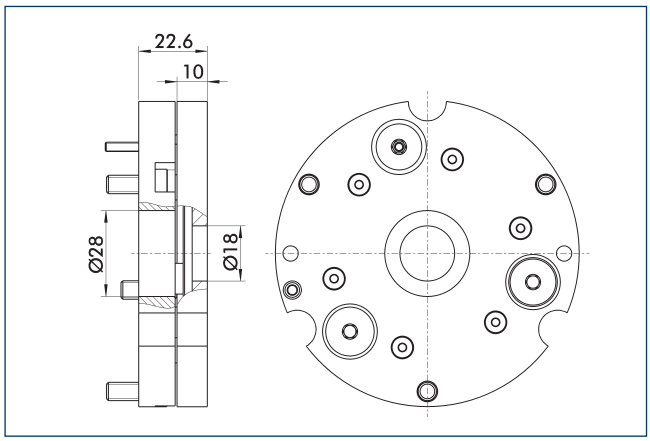


Deflection (fa) dependent upon the length (L) to the center of mass

TCU-Z 100

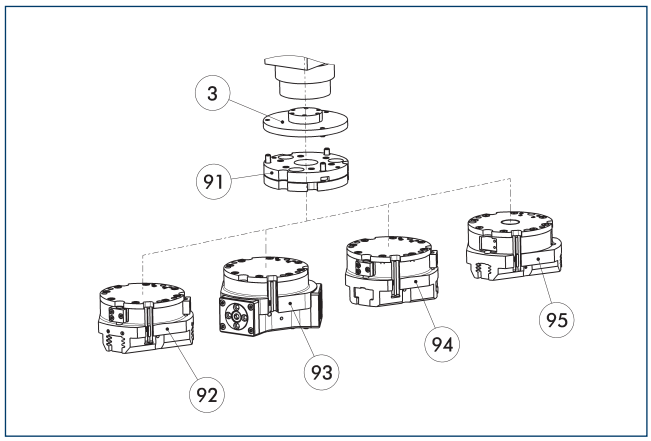
Tolerance compensation unit

Version without locking (0V)



Dimensional changes for the version without locking

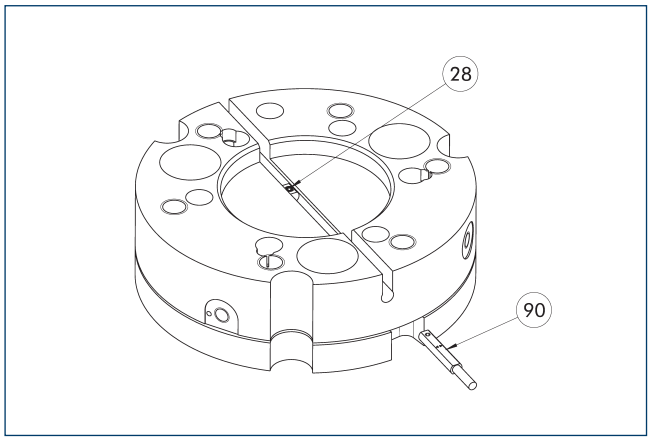
Modular design



(3) Adapter plate
(91) Tolerance compensation unit TCU
(92) 3-finger centric gripper PZN-plus
(93) Sealed gripper DPZ-plus
(94) JGZ 3-finger centric grippers
(95) 3-finger centric gripper PZB-plus

The unit is part of a modular system in which various components such as grippers or compliant devices can be threaded to one another directly.

Sensor system



(28) Limit stop for sensor
(90) Monitoring of locking

Position monitoring with two programmable positions per sensor. End position monitoring for mounting in the C-slot.

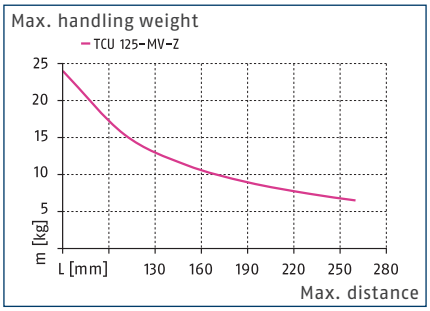
Description	ID	Often combined
Programmable magnetic switch		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
Connection cables		
KA GLN0804-LK-00500-A	0307767	●
KA GLN0804-LK-01000-A	0307768	
KA WLN0804-LK-00500-A	0307765	
KA WLN0804-LK-01000-A	0307766	
clip for plug/socket		
CLI-M8	0301463	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	

ⓘ One sensor is required per unit for monitoring two positions. Extension cables and sensor distributors are optionally available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor systems.

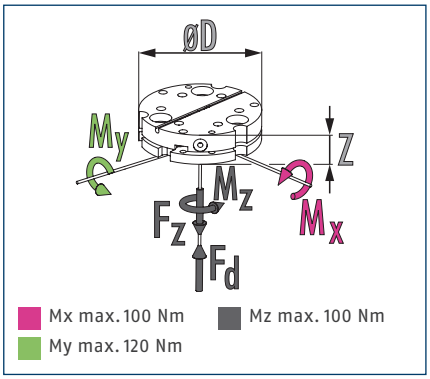
TCU-Z 125

Tolerance compensation unit

Load chart



Dimensions and maximum loads



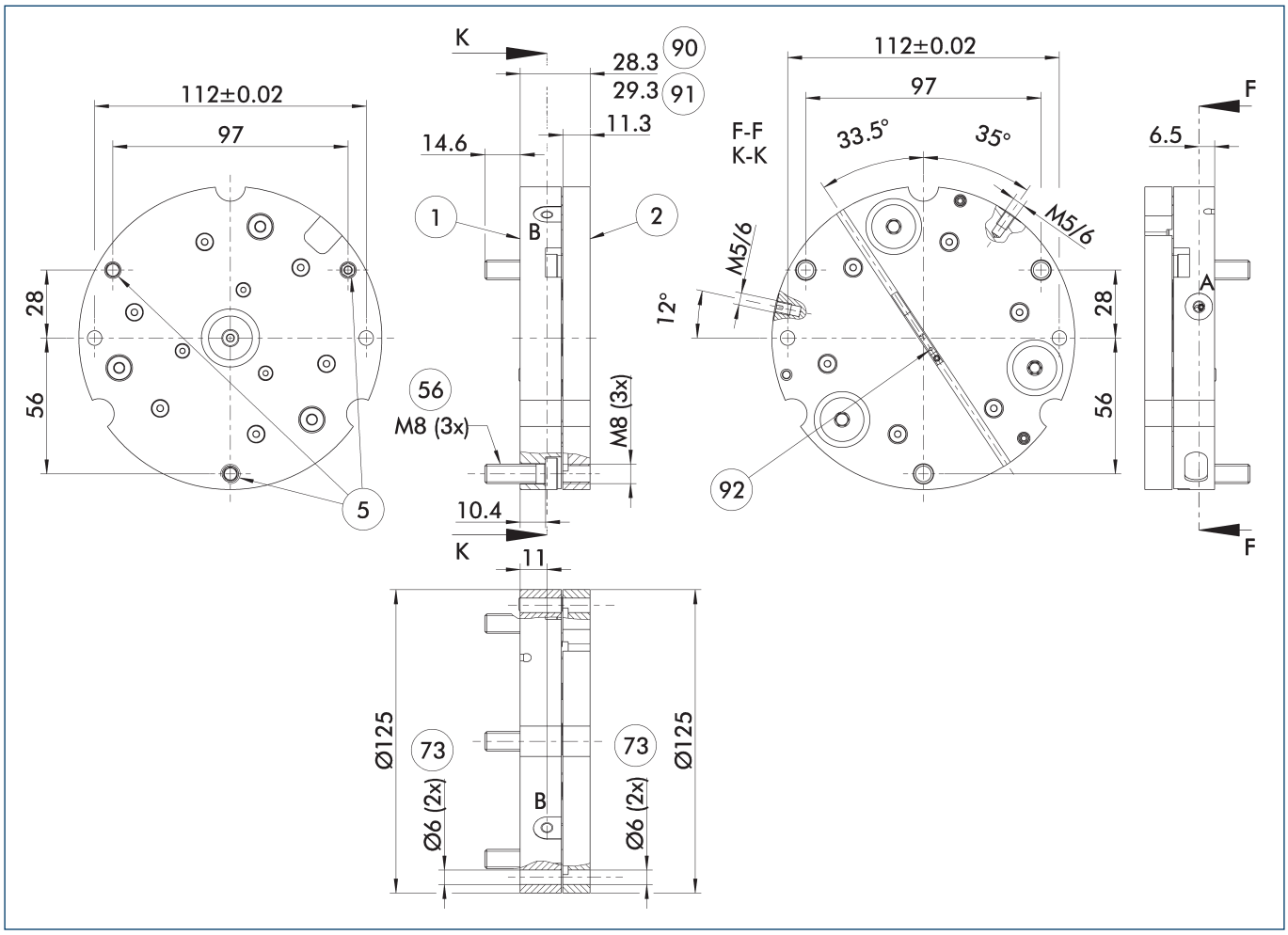
ⓘ The forces and torques are maximum values when unlocked and may occur simultaneously. When locked, only the loads caused by the weight and acceleration are permissible.

Technical data

Description		TCU-Z-125-3-MV	TCU-Z-125-3-OV
ID		0324820	0324821
Locking		with locking	Without locking
Hardness of the elastomer	[Shore]	68	68
Deflection X	[°]	±1	±1
Deflection Y	[°]	±1	±1
Deflection Z	[°]	±1	±1
Repeat accuracy	[mm]	0.05	
Weight	[kg]	0.85	0.65
Min./max. operating pressure	[bar]	4/8	
Min./max. ambient temperature	[°C]	-10/90	-10/90
Locking moment Mx	[Nm]	25	
Locking moment My	[Nm]	25	
Locking moment Mz	[Nm]	25	
Locking moment Fz	[N]	350	
Max. force Fd	[N]	2800	2800
Direct connection to*		PZN-plus 125	PZN-plus 125
Dimensions Ø D x Z	[mm]	125 x 28.3	125 x 23.6

* also suitable for other grippers with the same screw connection diagram

Main view with centric locking (MV)

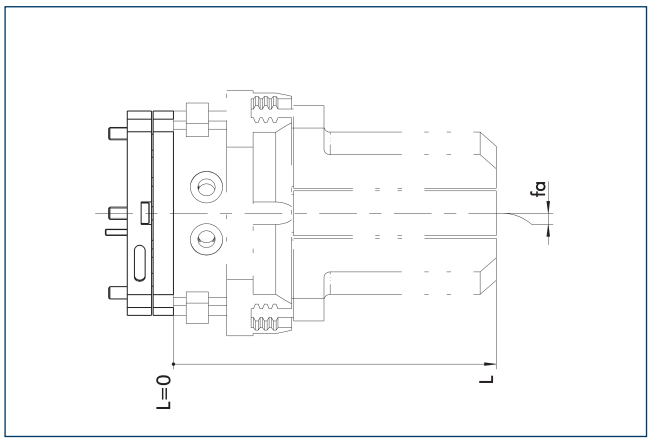


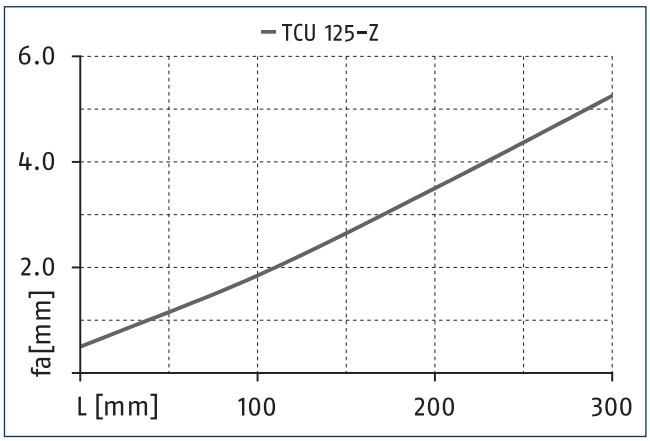
The main view shows the unit in its basic version.

A, a Air connection unlocked
B, b Air connection locked

(1) Robot-side connection
(2) Tool-side connection
(5) Through hole for connection with screws
(56) Included in the scope of delivery
(73) Fit for centering pins
(90) Unit locked
(91) Unit unlocked
(92) MMS-P

Maximum deflection



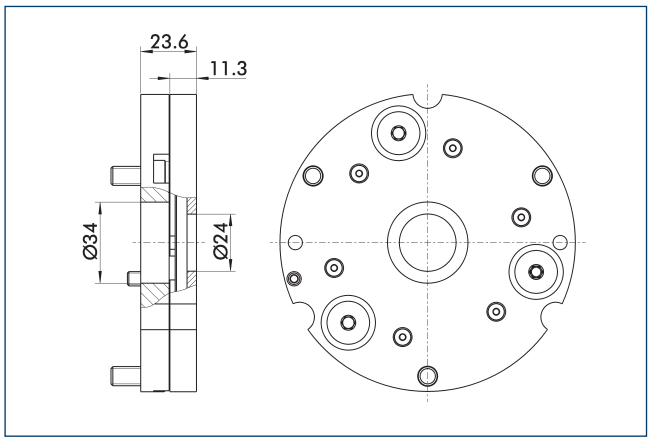


Deflection (fa) dependent upon the length (L) to the center of mass

TCU-Z 125

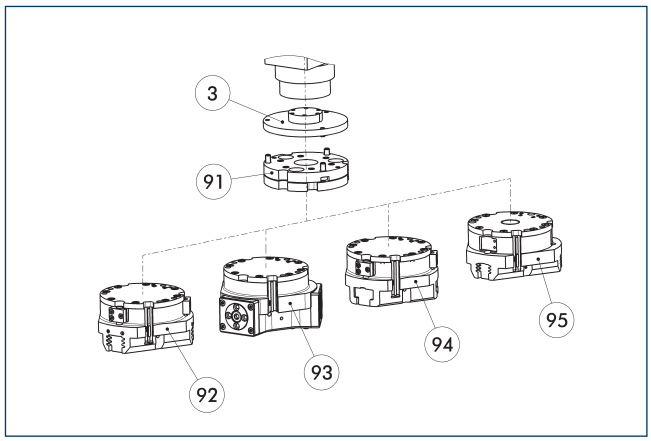
Tolerance compensation unit

Main view without centric locking (0V)



Dimensional changes for the version without locking

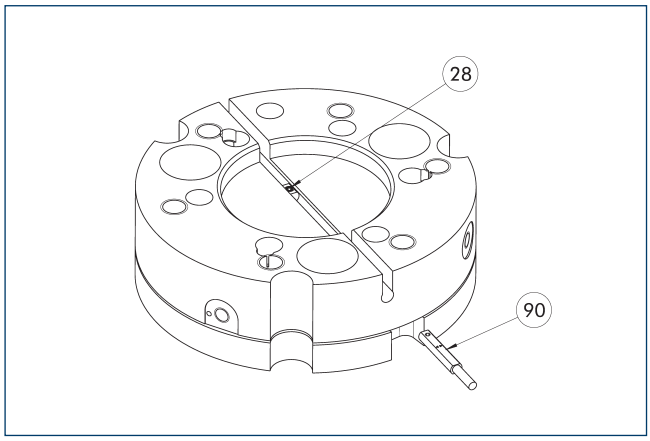
Modular design



3 Adapter plate
91 Tolerance compensation unit TCU
92 3-finger centric gripper PZN-plus
93 Sealed gripper DPZ-plus
94 JGZ 3-finger centric grippers
95 3-finger centric gripper PZB-plus

The unit is part of a modular system in which various components such as grippers or compliant devices can be threaded to one another directly.

Sensor system



28 Limit stop for sensor
90 Monitoring of locking

Position monitoring with two programmable positions per sensor. End position monitoring for mounting in the C-slot.

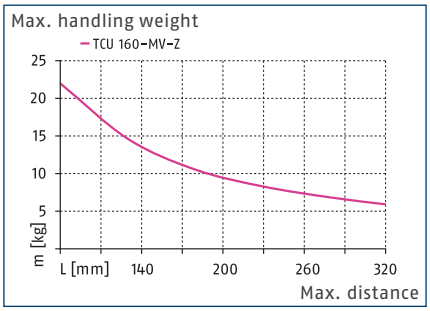
Description	ID	Often combined
Programmable magnetic switch		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
Connection cables		
KA GLN0804-LK-00500-A	0307767	●
KA GLN0804-LK-01000-A	0307768	
KA WLN0804-LK-00500-A	0307765	
KA WLN0804-LK-01000-A	0307766	
clip for plug/socket		
CLI-M8	0301463	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	

ⓘ One sensor is required per unit for monitoring two positions. Extension cables and sensor distributors are optionally available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor systems.

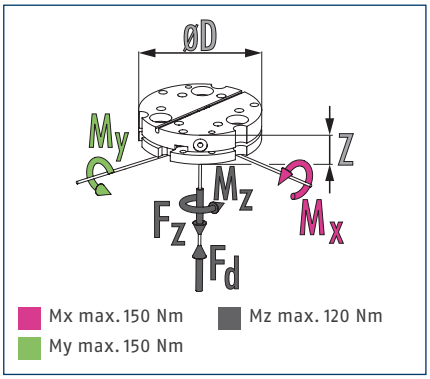
TCU-Z 160

Tolerance compensation unit

Load chart



Dimensions and maximum loads



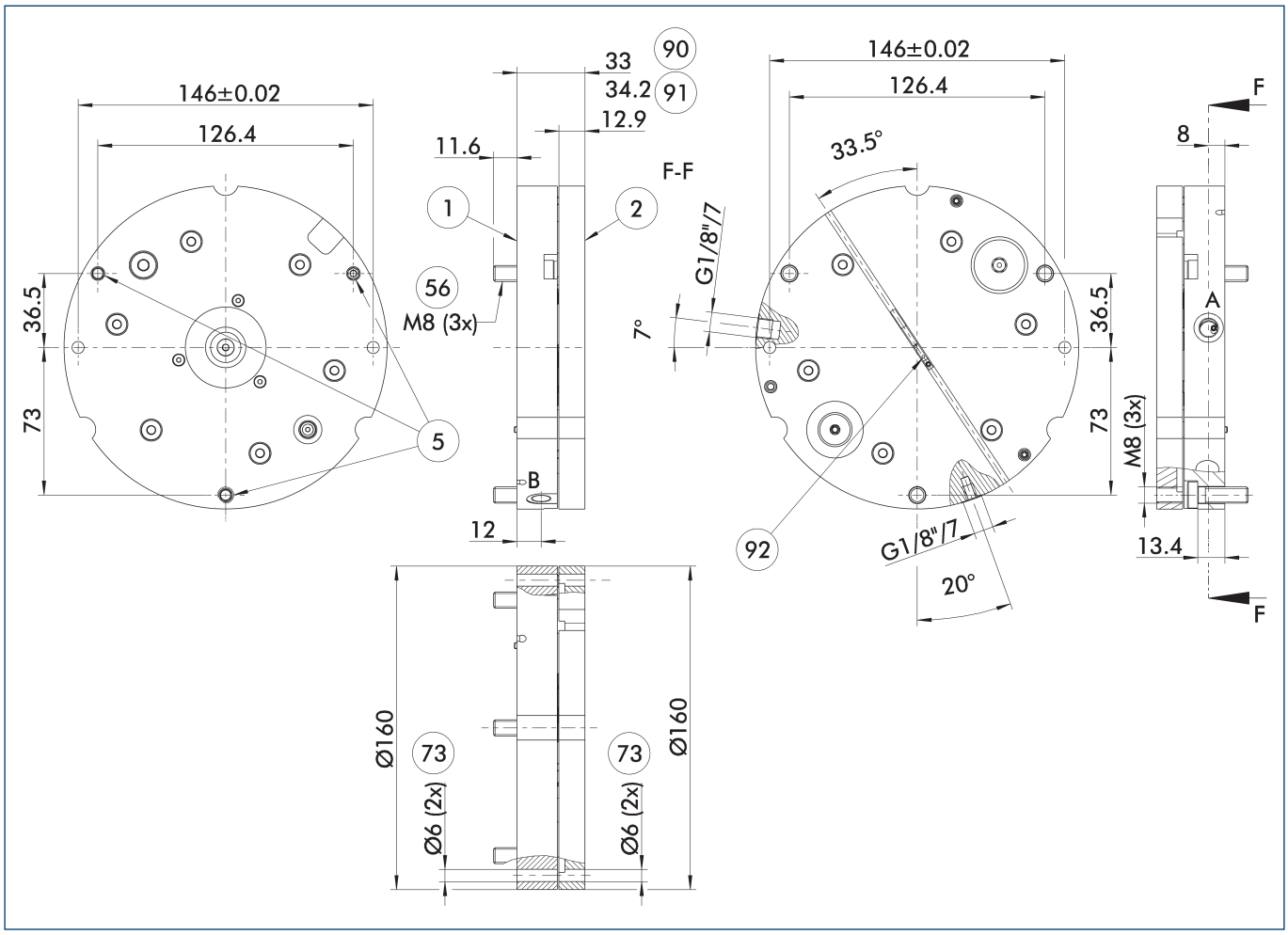
ⓘ The forces and torques are maximum values when unlocked and may occur simultaneously. When locked, only the loads caused by the weight and acceleration are permissible.

Technical data

Description		TCU-Z-160-3-MV	TCU-Z-160-3-OV
ID		0324838	0324839
Locking		with locking	Without locking
Hardness of the elastomer	[Shore]	68	68
Deflection X	[°]	±1	±1
Deflection Y	[°]	±1	±1
Deflection Z	[°]	±1	±1
Repeat accuracy	[mm]	0.05	
Weight	[kg]	1.63	1.35
Min./max. operating pressure	[bar]	4/8	
Min./max. ambient temperature	[°C]	-10/90	-10/90
Locking moment Mx	[Nm]	30	
Locking moment My	[Nm]	30	
Locking moment Mz	[Nm]	30	
Locking moment Fz	[N]	400	
Max. force Fd	[N]	4300	4300
Direct connection to*		PZN-plus 160	PZN-plus 160
Dimensions Ø D x Z	[mm]	160 x 33	160 x 28.5

* also suitable for other grippers with the same screw connection diagram

Main view with centric locking (MV)

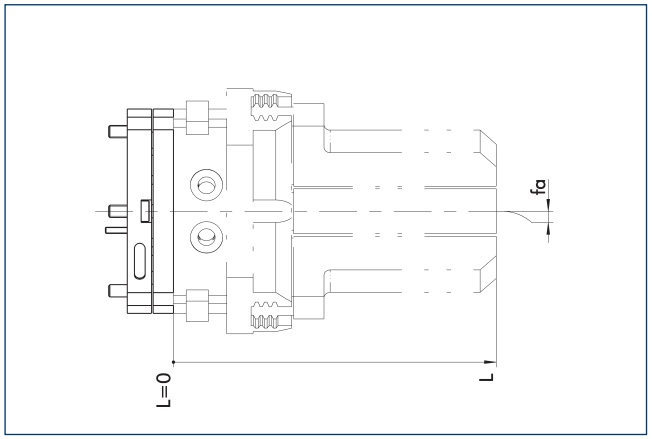


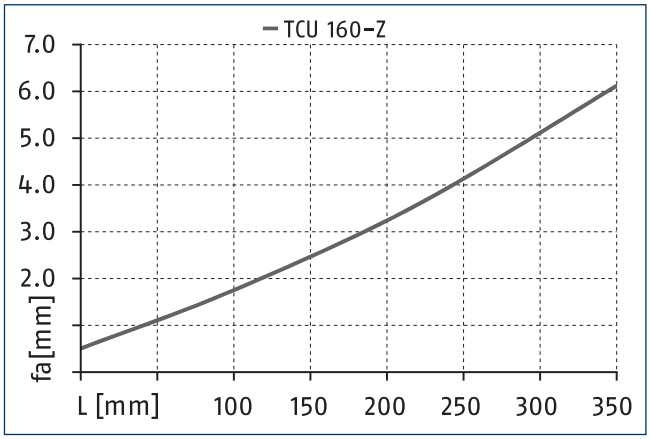
The main view shows the unit in its basic version.

A, a Air connection unlocked
B, b Air connection locked

(1) Robot-side connection
(2) Tool-side connection
(5) Through hole for connection with screws
(56) Included in the scope of delivery
(73) Fit for centering pins
(90) Unit locked
(91) Unit unlocked
(92) MMS-P

Maximum deflection



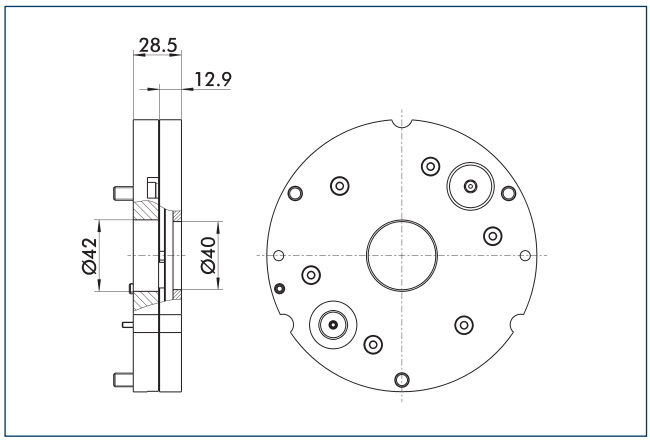


Deflection (fa) dependent upon the length (L) to the center of mass

TCU-Z 160

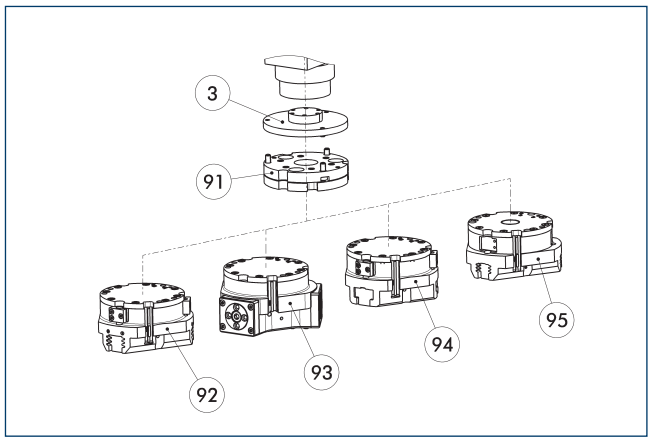
Tolerance compensation unit

Version without locking (0V)



Dimensional changes for the version without locking

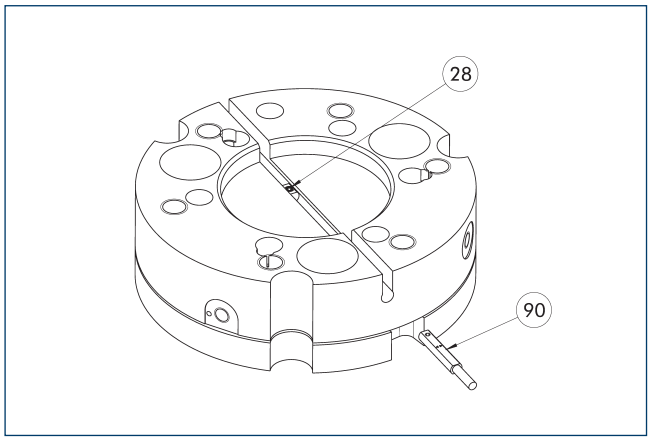
Modular design



(3) Adapter plate
(91) Tolerance compensation unit TCU
(92) 3-finger centric gripper PZN-plus
(93) Sealed gripper DPZ-plus
(94) JGZ 3-finger centric grippers
(95) 3-finger centric gripper PZB-plus

The unit is part of a modular system in which various components such as grippers or compliant devices can be threaded to one another directly.

Sensor system



(28) Limit stop for sensor
(90) Monitoring of locking

Position monitoring with two programmable positions per sensor. End position monitoring for mounting in the C-slot.

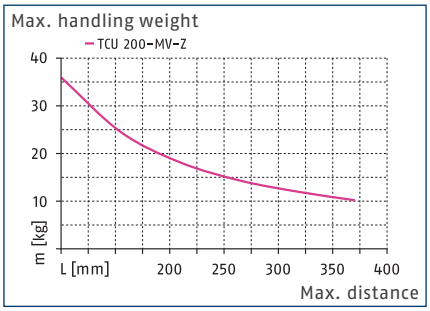
Description	ID	Often combined
Programmable magnetic switch		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
Connection cables		
KA GLN0804-LK-00500-A	0307767	●
KA GLN0804-LK-01000-A	0307768	
KA WLN0804-LK-00500-A	0307765	
KA WLN0804-LK-01000-A	0307766	
clip for plug/socket		
CLI-M8	0301463	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	

ⓘ One sensor is required per unit for monitoring two positions. Extension cables and sensor distributors are optionally available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor systems.

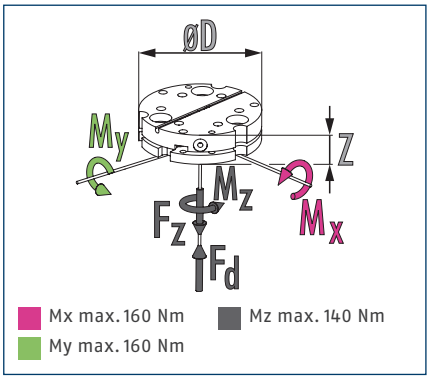
TCU-Z 200

Tolerance compensation unit

Load chart



Dimensions and maximum loads



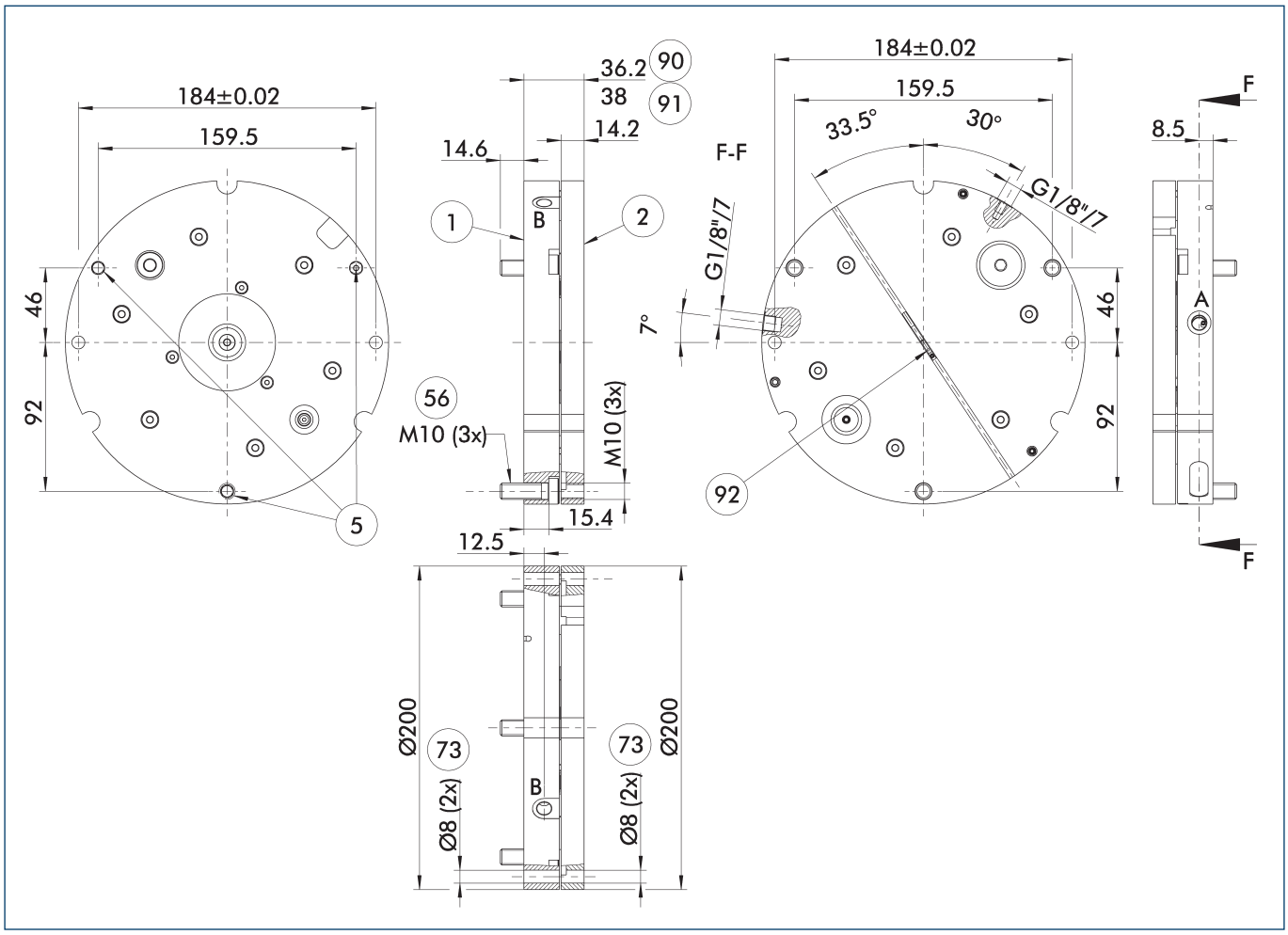
ⓘ The forces and torques are maximum values when unlocked and may occur simultaneously. When locked, only the loads caused by the weight and acceleration are permissible.

Technical data

Description		TCU-Z-200-3-MV	TCU-Z-200-3-OV
ID		0324856	0324857
Locking		with locking	Without locking
Hardness of the elastomer	[Shore]	68	68
Deflection X	[°]	±1	±1
Deflection Y	[°]	±1	±1
Deflection Z	[°]	±1	±1
Repeat accuracy	[mm]	0.02	
Weight	[kg]	2.75	2.45
Min./max. operating pressure	[bar]	4/8	
Min./max. ambient temperature	[°C]	-10/90	-10/90
Locking moment Mx	[Nm]	100	
Locking moment My	[Nm]	100	
Locking moment Mz	[Nm]	50	
Locking moment Fz	[N]	800	
Max. force Fd	[N]	5000	5000
Direct connection to*		PZN-plus 200	PZN-plus 200
Dimensions Ø D x Z	[mm]	200 x 36.2	200 x 28.5

* also suitable for other grippers with the same screw connection diagram

Main view with centric locking (MV)

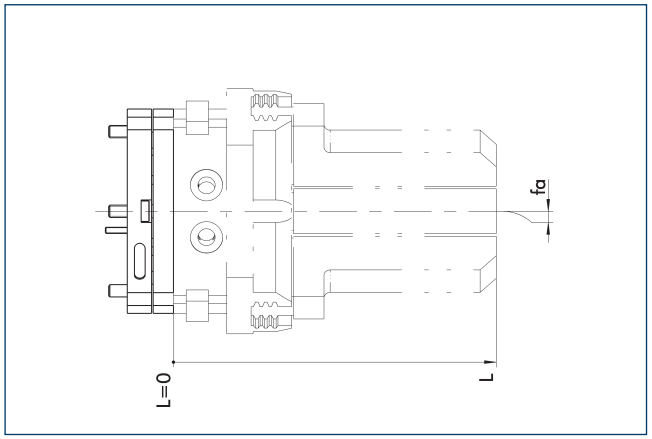


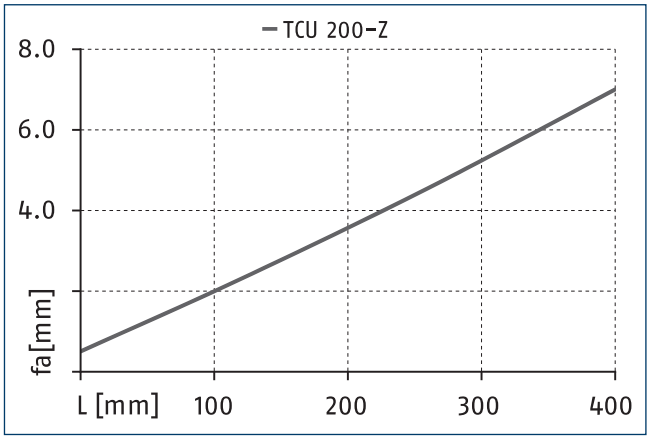
The main view shows the unit in its basic version.

A, a Air connection unlocked
B, b Air connection locked

(1) Robot-side connection
(2) Tool-side connection
(5) Through hole for connection with screws
(56) Included in the scope of delivery
(73) Fit for centering pins
(90) Unit locked
(91) Unit unlocked
(92) MMS-P

Maximum deflection



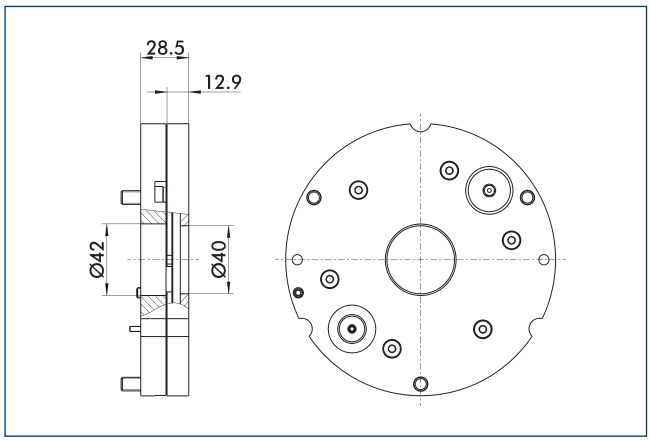


Deflection (fa) dependent upon the length (L) to the center of mass

TCU-Z 200

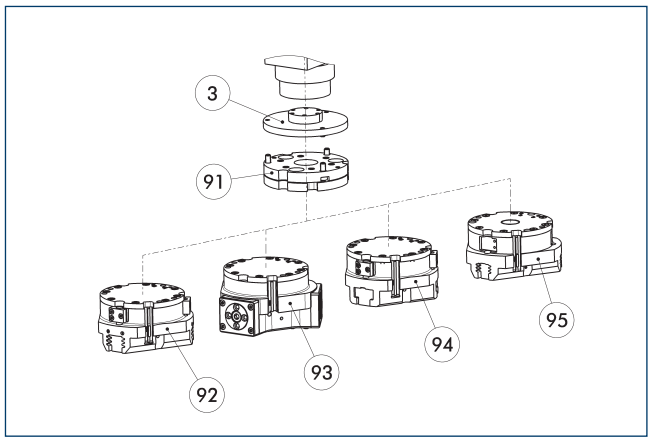
Tolerance compensation unit

Version without locking (0V)



Dimensional changes for the version without locking

Modular design



(3) Adapter plate
(91) Tolerance compensation unit TCU
(92) 3-finger centric gripper PZN-plus
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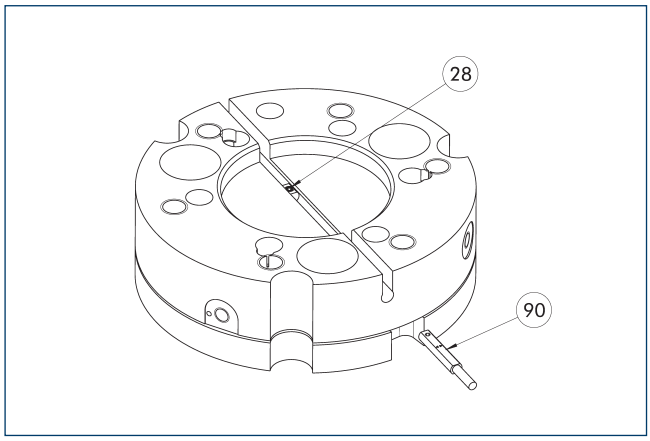
(94) JGZ 3-finger centric grippers
(95) 3-finger centric gripper PZB-plus

The unit is part of a modular system in which various components such as grippers or compliant devices can be threaded to one another directly.

Sensor system



(28) Limit stop for sensor
(90) Monitoring of locking

Position monitoring with two programmable positions per sensor. End position monitoring for mounting in the C-slot.

Description	ID	Often combined
Programmable magnetic switch		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
Connection cables		
KA GLN0804-LK-00500-A	0307767	●
KA GLN0804-LK-01000-A	0307768	
KA WLN0804-LK-00500-A	0307765	
KA WLN0804-LK-01000-A	0307766	
clip for plug/socket		
CLI-M8	0301463	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	

ⓘ One sensor is required per unit for monitoring two positions. Extension cables and sensor distributors are optionally available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor systems.

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