

Feeding Technology



Feeding systems for handheld tools

Efficient and intelligent feeding with eacy feed, the new generation vibratory bowl feeder.

- **Approx. 80 % energy savings**
- **Efficiency and worldwide application - one design for all markets**

Our feeding systems consist of modules that are adapted to each other: one feeder with integrated controller, a handheld screwdriver or press-insertion devices and all other add-on components that fit the customer's application.

This proven system with an extreme high feed rate, allows a rational and process-optimized assembly.



EACY FEED - THE VIBRATORY BOWL FEEDER FOR THE NEXT GENERATION

e for efficiency

eacy feed – new generation vibratory bowl feeder with approx. 80 % reduction in power consumption due to efficient “low energy technology”!

Sustainable design!

a for assembly

eacy feed – new generation vibratory bowl feeder with ergonomic handling by means of an optimised module.

User-friendly operation!

eacy

c for communication

eacy feed – new generation vibratory bowl feeder with intelligent communication capabilities for application in a smart factory/ Industry 4.0 environment.

Intelligent automation!

y for yield

eacy feed – new generation vibratory bowl feeder with optimised, technical efficiency due to robust design and tried and tested modular components.

Reliable assembly!

Efficient and intelligent feeding

The innovative feeder eacy feed provides ideal specifications for the sustainable production of tomorrow: With its approx. 80 % power saving accomplishment the eacy feed is extremely energy efficient. For manual assembly applications, eacy feed offers flexible and efficient solutions along with top quality DEPRAG screwdrivers.

APPROX. 80 % ENERGY SAVINGS

- the revolutionary controller and the new drive allow for the extraordinary energy efficiency of eacy feed
- a significant reduction in power consumption is attained due to the 24 V oscillating magnets, thereby realising energy savings of around 80 %



USER FRIENDLY

eacy feed guarantees optimal assembly conditions with ergonomic and comfortable operation. The controller PFC100 enables customised settings without mechanical alterations.

- clear and easy operation via controller
- option of frequency and amplitude regulation via controller
- works to the individual working rhythm of the operator, with storage of up to 10 separate data sets

Efficiency and worldwide application

We have developed an innovative feeder in eacy feed which is distinguished by its energy efficiency and countless application possibilities. The 24 V technology of the drive enables worldwide application. All you need is a universal power supply. Country specific variations are a thing of the past. Thanks to the 24 V technology, eacy feed ensures reliable running even in areas with poor network availability.

LOW CONSUMPTION AND TOP FLEXIBILITY

- revolutionary controller enables around 80 % less power consumption
- new controller and vibratory drive based on 24 V/DC voltage
- universal power unit (115 V – 230 V)
- independent from the local alternating current frequency
- one design for all markets

PERFECT VIBRATION INTENSITY

For monitoring and regulation of the vibration intensity an acceleration sensor is mounted on the vibratory drive.

- ensures stable output, independent from fill-level
- no need for readjustments
- supports ideal vibration behaviour and minimises material wear
- simplified reloading procedure
- accommodates all bowl sizes



Controller PFC100

SIMPLER FOR THE FITTER AND OPERATOR

If several operators are using the same feeder at the same time, the efficiency of the process can often be compromised by the varying working speeds of each individual. DEPRAG feeders cleverly adapt to the individual working speeds of each operator. Once entered via the simple display, the specific operating parameters of each person are saved (storage of up to ten data sets) and can be recalled when there is a shift change. No one feels held back and no one feels overstretched.

PRECISION AND TIMING

The fill volume influences the feed rate in standard vibratory spiral feeders. If the feed bowl is full, the system works at a slower rate and if it is emptier the rate speeds up. As with the previous generation, the eacy feed is also fitted with a measurement transducer which records the oscillation amplitude in the feed bowl. This thereby adaptively regulates the feeder depending on the fill volume – ensuring reliability as the screws are continuously in readiness for processing.

The feed rate is adjustable using twelve different waveforms. The amplitude or frequency can be set in an instant. Individual settings can be used for example, to optimise the feed volume or reduce the noise level of the feeder. The adjustments can be carried out quickly and without mechanical intervention. When using eacy feed the required settings can simply be selected on the relevant controller.

SOFTWARE SOLUTIONS

PFC100 Manager – the parameterization software for PFC100 controllers

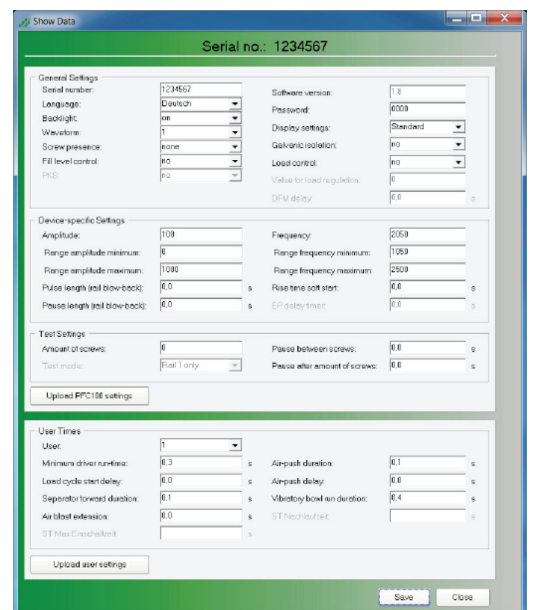
The PFC100 Manager facilitates the reading and saving of parameters as text files **for every PFC100 controller**. Saved parameters can be transferred to any PFC100 controller **quickly and simply using the PFC100 Manager**.

The PFC100 Manager software is supplied on CD. The connection cable 385520B required to connect PC and PFC100 controller is also supplied.

Available languages: German and English

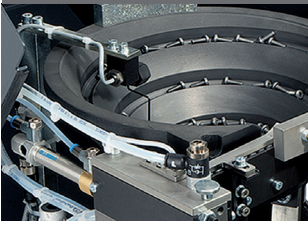
Part number:
Software PFC100 Manager, including connection cable – part no. 121759
Activation key for the software – part no. 122000

Further information can be found in our catalog D3900E or on our website www.deprag.com.



FEEDERS FOR HANDHELD TOOLS

Vibratory bowl feeder



DEPRAG feeders with a vibratory drive are particularly suitable for screws from < M1 to M8.

Shaft lengths of 5 mm to 50 mm can be processed.

For counter-sunk head screws especially, vibratory bowl feeders are a functional solution. The high output of DEPRAG vibratory bowl feeders distinguishes them from other feeding systems.

Size:

0.15 l Feed volume

0.75 l Feed volume

1.20 l Feed volume

2.50 l Feed volume

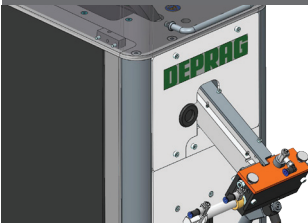
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Sword feeder



Sword feeders or segment feeders are used when components are particularly sensitive and a more gentle feeding environment is required. They are also extremely quiet. Our sword feeders can be used for screw sizes M2 to M6. They are ideal for screws up to 25 mm in length.

Balls with a diameter of 1 to 12 mm can also be fed.

Size:

0.15 l Feed volume

1.50 l Feed volume

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Step feeder



DEPRAG step feeders are suitable for almost every type of feed part. Specifically designed for longer screws (e.g. countersunk screws from 25 mm long), the step feeder is a great alternative to the vibratory spiral feeder and sword feeder.

→ Catalog D3835E

Pick-and-Place feeding system



If feeding via a hose system is not possible e.g. if the screw has a non favourable ratio in relation to the head diameter vs overall length, then we offer special solutions such as a pick-and-place procedure with vacuum pick or gripper pick devices.

Customised solution

Please contact our sales representatives.

Screw presenter



Screw presenters are mainly used for applications where an automatic screwfeeding machine is not cost-effective due to low volume. A screw presenter can process screws with thread-sizes from M1 to M5 and a shaft-length of up to 25-mm. Even screws that cannot be fed through a feedhose, due to unfavorable dimensions, can be processed with a screw presenter.

→ Catalog D3840E

Screwdrivers for the feeding system



Our feeders can be used in combination with almost any electric or pneumatic screwdriver of the MICROMAT/MINIMAT range. Additionally we also offer screwdrivers with ESD compliance.

Information

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Press-insertion device for the feeding system



Our handheld press-insertion tools are combined with the suitable feeder. Our press-insertion systems are an adaptive solution for different applications.

Some of the connection-elements, such as rivets, pins, sleeves and balls can be processed with this system both process reliable and efficient.

Information

D3821E

FEEDERS FOR HANDHELD TOOLS

The DEPRAG Feed Module enables fatigue-free processing due to the integrated bit stroke.

Information and technical data

Catalog D3837E

DEPRAG FEED MODULE

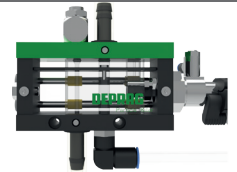


The DEPRAG Concept for Technical Cleanliness - specifically designed components.

Information and technical data

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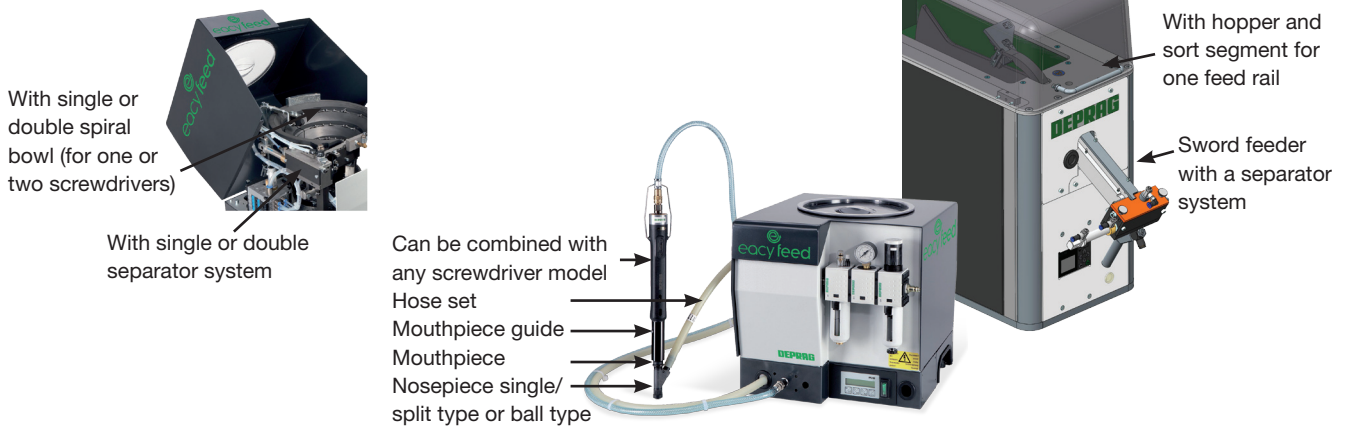
CleanFeed Concept



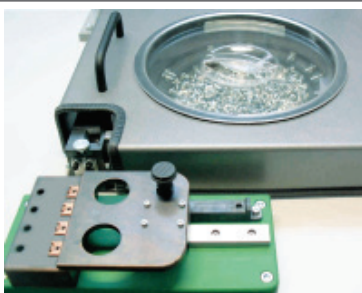
STRUCTURE OF A DEPRAG FEEDING SYSTEM

DEPRAG feeding systems consist of the feed bowl unit, screw separator, an air connection and air maintenance unit, a mains power switch and electronic controller, 2 m standard length hose set, the mouthpiece guide and the mouthpiece as well as an appropriate screwdriver receiver (adapter) and a sound enclosure cover.

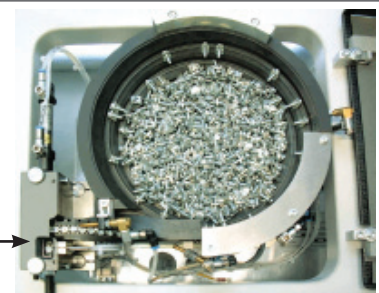
With either vibratory bowl feeder or sword feeder



If feeding with a hose system is not possible, we offer special solutions, such as the pick-and-place procedure



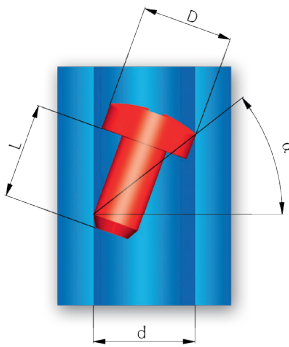
Defined pick position with integrated screw pick control option



GUIDELINE FOR THE SELECTION OF A SUITABLE FEEDER

STEP 1: Feeding criteria

Basically all "shaft-heavy" screws with a head which fulfils the following criteria are suitable for processing with our feed systems:



Feeding criteria:
 $\alpha > 30^\circ$

$d \sim D + 0.5 \text{ mm}$

Approximate formula:

$L > D + 2 \text{ mm}$

d = Internal diameter
feed hose
 D = Screw head diameter
 L = Screw shaft length

STEP 2: Screw quality

For reliable feeding machines a DIN quality standard (allowable 3% bad parts) is not always sufficient.

Higher levels of screw/fastener quality improve the feeder's reliability.

The goal should be a quality grade of 10 ppm ("parts per million"). I.e. in every 100,000 screws there can be 1 bad part.

STEP 3: Which feeding principle is best suited to your application?

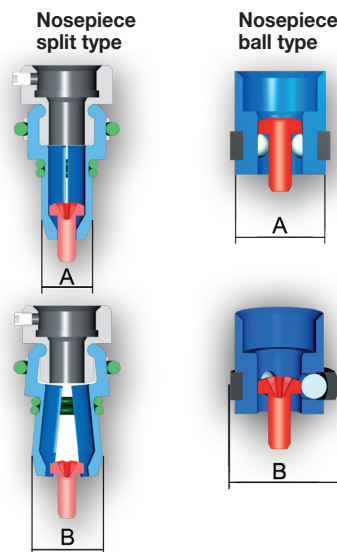
A vibratory spiral bowl is particularly suited to screws with awkward dimensions or those with special feed rate requirements.

The sword feeder is applied when extremely gentle handling of the parts is required or when very low noise level is a must.

If feeding with a hose system is not possible we also offer pick-and-place procedure.

STEP 4: Determining the screw receiver

At the end of the mouthpiece there is a nosepiece ball type (1 or 2 rows) or a nosepiece split type, mounted to receive and position the screw.



D = Head diameter
 d = Shaft diameter
 n = Space required to open

$A = D + 2.5 \text{ mm}$
 $B = A + D - d/2$

$B = 3D - 2d + 5 \text{ mm}$

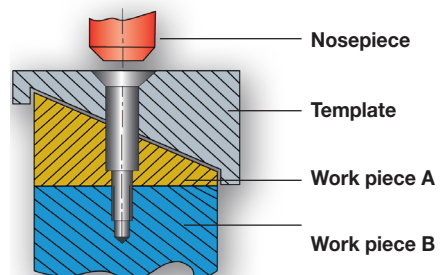
$n = A \times B$

$n = \varnothing B$

STEP 5: Space available on the component

For effective use of the handheld screw feeders the space available around the screw head on the assembled components is very important.

There is a certain space requirement for the nosepiece split type and ball type. An even surface simplifies the positioning and handling of the tool. Slanted surfaces with small diameter recessed screw-holes can only be accessed with templates which are available as optional equipment.



STEP 6: Single or multiple feeding / screwdrivers?

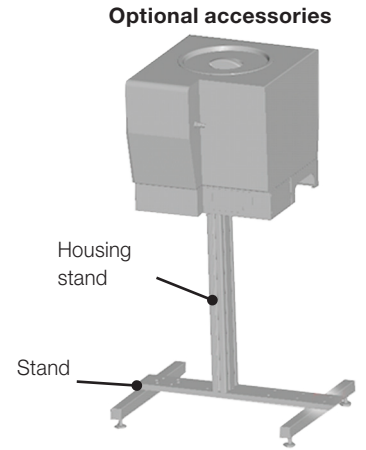
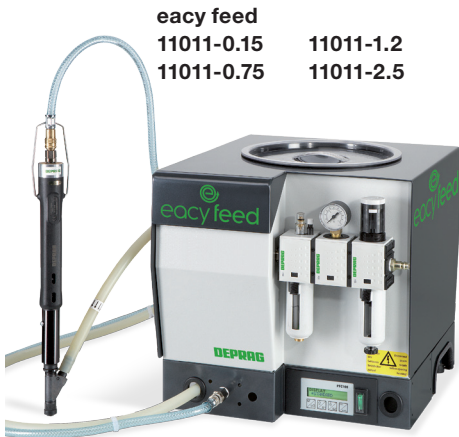
Using a dual spiral vibratory bowl (type 1522 and 1622) one feeding machine can supply two separate screw outlet positions/screwdrivers. Compared to the investment of two single feeding machines, investment in a twin device saves approximately 25 %.

STEP 7: Specification

For the correct specification of your screw feeding machine the following data is required:

- Voltage / frequency
- Choice of screwdriver model (torque and speed)
- Screw dimension and screw type (if available – DIN no.)
- Torque (if known)
- Details dimensions of assembly components
- Hose length (if over the standard length of 2 m).

To process your order we require sample screws (approx. 1 feed bowl volume) and if possible some samples of the part to be assembled.



Material to be fed		Screws or nuts						
Standard version	Type	11011-0.15	11022-0.15	11011-0.75	11022-0.75	11011-1.2	11011-2.5	11022-2.5
Control unit		PFC100 Controller						
Transport Principle		Vibratory Bowl Feeders *)						
Amount of connectable drivers		1	2	1	2	1	1	2
Feed rate	Parts/min	45	2 x 45	45	2 x 45	25	30	2 x 30
Filling capacity	liter/gal.	0.15 / 0.04	0.15 / 0.04	0.75 / 0.2	0.75 / 0.2	1.2 / 0.32	2.5 / 0.66	2.5 / 0.66
Voltage	V/Hz	24 Volt DC			24 Volt DC			
Power consumption	W	max. 50		max. 50		max. 150		
Air pressure requirement	bar/PSI	6 / 85.2						
Air connection size	mm/in.	10 / ³ / ₈	10 / ³ / ₈	10 / ³ / ₈	10 / ³ / ₈	10 / ³ / ₈	10 / ³ / ₈	10 / ³ / ₈
Dimensions W x D x H	mm	296 x 360 x 289		360 x 414 x 368			547 x 600 x 294	
	in.	11 ²¹ / ₃₂ x 14 ³ / ₁₆ x 11 ³ / ₈		14 ³ / ₁₆ x 16 ⁵ / ₁₆ x 14 ¹ / ₂			21 ¹⁷ / ₃₂ x 23 ⁵ / ₈ x 11 ³⁷ / ₆₄	
Weight	kg/lbs	appr. 18/39.6	appr. 20/44	appr. 32/71	appr. 34/75	appr. 40/88	appr. 60/132	
Feedhose length standard	m/ft.	4 / 13.2	4 / 13.2	4 / 13.2	4 / 13.2	4 / 13.2	4 / 13.2	4 / 13.2
Feedhose length max.	m/ft.	8 / 26.4	8 / 26.4	8 / 26.4	8 / 26.4	8 / 26.4	8 / 26.4	8 / 26.4
Technical details on screws:								
Max. head diameter	mm/in.	5 / ¹³ / ₆₄	4 / ⁵ / ₃₂	12 / ¹⁵ / ₃₂	8 / ⁵ / ₁₆	12 / ¹⁵ / ₃₂	16 / ⁵ / ₈	14 / ³⁵ / ₆₄
Max. shaft length	mm/in.	8 / ⁵ / ₁₆	8 / ⁵ / ₁₆	35 / ¹ / ₈	25 / ⁶³ / ₆₄	50 / ¹ / ₃₂	60 / ² / ₃₂	60 / ² / ₃₂
Range of shaft diameter	mm/in.	1.2-2.5 / 0.048-0.1	1.2-2.5 / 0.048-0.1	1.5-7/0.06-0.27	1.5-7/0.06-0.27	3-7 / 0.12-0.28	4-8 / 0.16-0.31	4-8 / 0.16-0.31
Technical details on nuts:								
max. AF	mm/in.	4 / ⁵ / ₃₂	3 / 0.12	10 / ³ / ₈	8 / ⁵ / ₁₆	11 / 0.43	13 / 0.5	13 / 0.5
max. height	mm/in.	3 / 0.12	2 / 0.08	5 / ¹³ / ₆₄	4 / ⁵ / ₃₂	6 / 0.23	8 / ⁵ / ₁₆	8 / ⁵ / ₁₆
Included in delivery:		Power unit 105535A		Power unit 105535A		Power unit 2041061		
Required accessories:		Power cable 812587 (EU) or Power cable 812295 (US)		Power cable 812587 (EU) or Power cable 812295 (US)		Power cable 812587 (EU) or Power cable 812295 (US)		
Optional accessories:								
Housing stand		102483A		3641392A	3641392A		345680A	
Stand (required for housing stand)		994449		994449	994449		999309	
Fill level indicator		414965J		414965A	414965A		414965D	
Retaining plate		9198574		9198574	9198577		-	
More optional accessories:		Hopper (see brochure D3850E) Special mouthpiece for critical screw head diameter to length relation Part template for positioning						

*) with plastic vibratory bowl

Our software solutions undergo continuous improvements. We recommend that you regularly update your software. In this way you will always receive the most up-to-date security updates, upgraded features and drivers. With the most current version of the software you can be sure that your device is optimally prepared for Industry 4.0.



A connecting cable is required to connect external controller with feeder. Part number will be assigned in case of an order.
 Every feeding system contains all required attachments for the screwdriver such as mouthpiece guide, mouthpiece, locking sleeve and bits.
 Various specialised versions are available depending on application and the screwdriver in use.

TECHNICAL DATA SWORD FEEDER

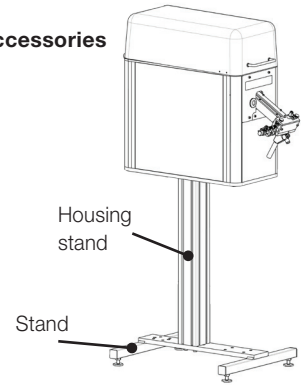


11811-1.5



Screws

Optional accessories



Housing stand

Stand

Material to be fed		Screws	
Sword Feeder with integrated controller	Type	1811-0.15-x*) Controller 6	11811-1.5 PFC18L Controller (insulation IP30)
Amount of connectable drivers		1	1
Feed rate	Parts/min	30	30
Filling capacity	liter/gal.	0.15 / 0.04	1.5 / 0.4
Voltage	V/Hz	230/50, 115/60	24 Volt DC
Power consumption	W	20	50
Air pressure requirement	bar/PSI	6.3 / 90	6 / 85.2
Air connection size	mm/in.	10 / ³ / ₈	10 / ³ / ₈
Dimensions W x D x H	mm	320 x 255 x 260	267 x 704 x 550
	in.	12 ¹⁹ / ₃₂ x 10 ³ / ₆₄ x 10 ¹⁵ / ₆₄	10 ³³ / ₆₄ x 27 ²³ / ₃₂ x 21 ²¹ / ₃₂
Weight	kg/lbs	12 / 26.4	approx. 30 / 66
Feedhose length standard	m/ft.	2 / 6.6	2 / 6.6
Feedhose length max	m/ft.	5 / 16.4	8 / 26.24
Technical details on screws:			
Max. head diameter	mm/in.	5 / ¹³ / ₆₄	12 / ¹⁵ / ₃₂
Max. shaft length	mm/in.	8 / ⁹ / ₁₆	25 ⁶³ / ₆₄
Range of shaft diameter	mm/in.	1-2.5 / 0.04-0.1	2 - 6.3 / 0.08 - 0.25
Included in delivery:		-	Power unit 105535A
Required accessories:		-	Power cable 812587(EU) or power cable 812295(US)
*) x = Voltage Supply (1: 230 V / 50 Hz, 2: 115 V / 60 Hz)			
Optional accessories:		Hopper (see brochure D3850E)	
Additional function controls		screw presence control, inlet control, fill level height	-
Housing stand	Part no.	-	3641393A
Stand (required for housing stand)	Part no.	-	994449
Retaining plate	Part no.	-	9198574



A connecting cable is required to connect external controller with feeder. Part number will be assigned in case of an order.

Every feeding system contains all required attachments for the screwdriver such as mouthpiece guide, mouthpiece, locking sleeve and bits. Various specialised versions are available depending on application and the screwdriver in use.

SPECIAL SOLUTIONS

Please contact our sales representatives if you cannot find a screwdriving technique suitable to your application in this description of our standard solutions.

As well as our standard solutions de-scribed in this brochure we also offer customer specific and application specific solutions.

AVOID ABRASION



Low abrasion, component friendly feeding of connection elements with a DEPRAG sword feeder.

Dirt particles can cause damage to products or product related systems. Therefore: avoid abrasion, reduce abrasion or target and remove abrasion! These are the essential requirements for screw assembly in cleanrooms to ensure a high quality result for the assembled components. The DEPRAG CleanFeed concept provides an all-encompassing solution.

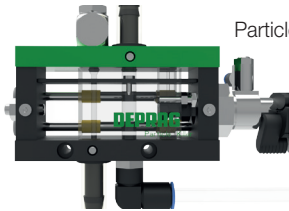
Your Advantage:

Integrated concept for Technical Cleanliness!
The complete program of all required components from a single source.

Function:

The component is stopped at position 1 and particulates on the auto fed part (e.g. screw) are extracted via vacuum. The particulates are collected by an exchangeable filter element (which is visible through a viewing pane). In position 2 the cleaned component is presented either to the auto assembly module tooling (Inline Variant) or to a pick position (Pick&Place Variant).

REDUCE ABRASION

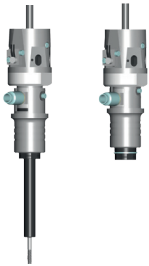


Particle Killer

Application of the following equipment can help to produce the optimal results:

- Pre-cleaned assembly components (e.g. Arnold Cleancon® screws) - fewer particulates due to an additional cleaning process
- DEPRAG HSF Sword Feeder - vibration free part feeding and therefore less particle generation
- DEPRAG Particle Killer - debris in the autofeed process is reduced selectively
- DEPRAG SFM-V vacuum screwdriving module - debris created during the assembly process is extracted using vacuum sources

REMOVE ABRASION



Vacuum suction

Technical data

	Inline Variant	Pick&Place Variant
Required control components	Pneumatic Valve/Vacuum Generator	Pneumatic Valve/Vacuum Generator
Connections	24VDC PNP	24VDC PNP
Dimensions (LxWxH) mm	170 x 30 x 120 (without hoses)	540 (due to 160 mm load stroke) x 50 x 125 (without hoses)
		<p>Pick to light</p>

MINIMAT-EC-SERVO-SCREWDRIVER with highest processing control

electronically controlled screwdriver with brushless direct-current motor and integrated sensor technology for torque and angle; cabled power supply - the stationary screwdriver in combination with components (e.g. handle) is suitable for the manual use

→ catalog D3161E

MINIMAT-EC-SCREWDRIVER with processing control

electronically controlled screwdriver with brushless direct-current motor, torque measurement based on a highly accurate measurement of the motor current; cabled power supply

→ catalog D3490E

ELECTRIC SCREWDRIVER with mechanical shut-off clutch

drive with brushless direct-current motor, shut-off via mechanical shut-off clutch

→ catalog D3480E

MICROMAT-Z/MINIMAT-Z - PNEUMATIC SCREWDRIVER

shut-off via highly accurate mechanical shut-off clutch

→ catalog D3420E and D3430E

ERGOMAT-Z -the pneumatic AUTO STROKE SCREWDRIVER

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MICROMAT-FZ/MINIMAT-FZ - PNEUMATIC SCREWDRIVER WITH MULTI FUNCTION CONTROL

handheld screwdrivers in connection with a function controller and the pneumatic control; a complete solution for the process reliability of manual assemblies.

→ catalog D3440E

SENSOMAT-Z - PNEUMATIC HANDHELD SCREWDRIVER with a mechanical clutch-function

→ catalog D3460E

ERGOMAT-Z – THE AUTO STROKE SCREWDRIVER FOR FEEDERS

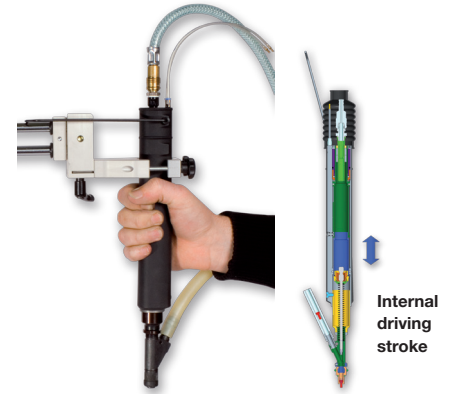
When using feeders with hand-screwdrivers, it is necessary for the bit to retract, so that a new screw can fall into the feed-channel.

With the ERGOMAT-Z driver, this stroke is performed automatically within the driver.

The two components, clutch bearing and mouthpiece guide, are already integrated in the screwdriver housing. The stroke of the driver is activated by the feeder immediately after the screw is fed. The driver with the bit is positioned immediately above the screw head. When the screwdriver starts the screw cannot be pushed back into the mouth-piece. Because of the integrated stroke, the hand can guide the driver much closer to the screw hole.

Both features simplify the positioning process and ease handling.

Additionally, the ERGOMAT-Z driver has all the advantages of the MINIMAT screwdriver series.



ERGOMAT-Z

Bit drives precisely down behind the screw head

Technical data ERGOMAT-Z

Screwdriver model		Motor Size 1			
Screwdriver right rotation, right shut-off	Type	347V-218	347V-318	347V-518	347V-718
Push-to-start	Part no.	406859A	406859B	406859C	406859G
Torque min.	Nm/in.lbs	0.3 / 2.7	0.3 / 2.7	0.2 / 1.8	0.2 / 1.8
Torque max.	Nm/in.lbs	1 / 8.85	1.4 / 12.4	2 / 17.7	2.5 / 22.1
Speed, idling	rpm	1900	1300	900	640
Air consumption	m ³ /min/cfm	0.23 / 8	0.23 / 8	0.23 / 8	0.23 / 8
Main body dia.	mm/in.	32/38 – 1 ¹ / ₄ / 1 ¹ / ₂	32/38 – 1 ¹ / ₄ / 1 ¹ / ₂	32/38 – 1 ¹ / ₄ / 1 ¹ / ₂	32/38 – 1 ¹ / ₄ / 1 ¹ / ₂
Length	mm/in.	250 / 9 ²⁷ / ₃₂	250 / 9 ²⁷ / ₃₂	250 / 9 ²⁷ / ₃₂	250 / 9 ²⁷ / ₃₂
Weight	kg/lbs	0.8 / 1.8	0.8 / 1.8	0.8 / 1.8	0.8 / 1.8
Noise level	dB(A)	63	63	63	66
Air hose dia.	mm/in.	6 / ¹ / ₄	6 / ¹ / ₄	6 / ¹ / ₄	6 / ¹ / ₄
Drive hex. female DIN ISO 1173		¹ / ₄ "	¹ / ₄ "	¹ / ₄ "	¹ / ₄ "
Quick change chuck, mounted		yes	yes	yes	yes
For screwfeeding: Max. head diameter	mm/in.	8 / ⁵ / ₁₆	8 / ⁵ / ₁₆	8 / ⁵ / ₁₆	8 / ⁵ / ₁₆

Performance data relate to an air pressure of 6.3 bar (90 PSI)

Included in delivery:

Set of coupler and connector plug · Set of torque adjustment tools · Set of clutch springs

Optional Equipment:

Clamping flange with pistol grip part no. 405545A
(for conversion to use as pistol grip screwdriver)

DEPRAG

DEPRAG SCHULZ GMBH u. CO.

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CERTIFIED AS PER DIN EN ISO 9001

Feeding Technology



Press-Insertion Systems

Efficient placement and setting of connection-elements



- Streamlining your Assembly
- Optimizing the assembly process
- High product output
- Ergonomic and comfortable for the Operator
- Simple Start-Up

The handheld Inserting Machine can be used where the efficient and process reliable press-insertion and placement operations are done by hand.

Our handheld and stationary press-insertion tools are combined with the suitable feeder.

Our Press-Insertion systems are an adaptive solution for many different applications.

Some of the connection-elements, such as rivets, pins, sleeves and balls can be processed with this system both process reliable and efficient.

THE PRESS-INSERTION SYSTEM

DEPRAG Press-Insertion Systems consist of:

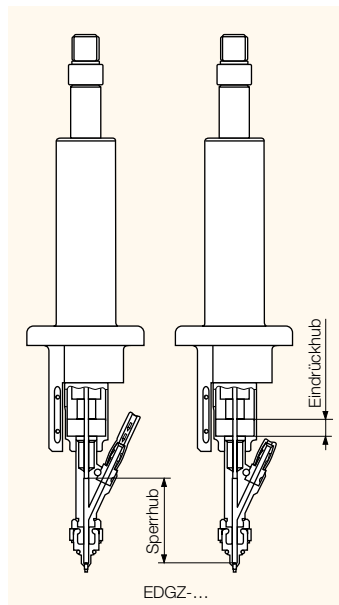
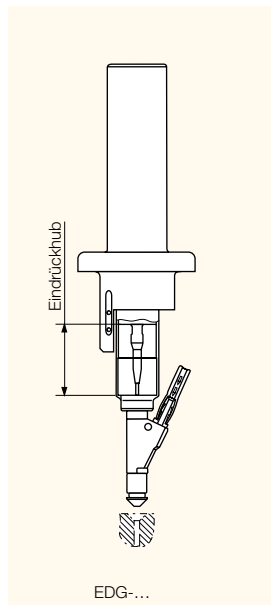
- a feeding system (vibratory- or sword feeder)
- a handheld or stationary press-insertion tool
- a maintenance unit
- an electronic control

The feeder needs a suitable nosepiece ball-type or split-type, which is adapted to fit your fastener and application.

Basically, two different types of standard screwfeeders - Vibratory Feeder or Sword (Segment) Feeder – are available.



PRESS-INSERTION DEVICES FOR HANDHELD APPLICATIONS



DEPRAG press-insertion devices for handheld applications excel through the ergonomic form of the handle and the high efficiency when connected to a suitable feeder.

Two different machine designs are available:

- **Model EDG with one insertion stroke**

An operator fully guides the down-stroke of the insertion tool. The down-pressure asserted by the Operator supports the pin-insertion.

- **Model EDGZ with one insertion stroke and an additional locking stroke**

A cylinder integrated into the insertion-tool activates the locking-stroke. The insertion-lock assures a firm overhang of the fastener from the nosepiece. An involuntary push-back of the component is eliminated. The Operator only performs a short stroke, which is necessary for the actual press-insertion.

Application Examples for actual solutions with a handheld tool:

- Press-insertion of grooved pins to hold seat-covers to a car seat for kids
- Assembly of rubber-feet to the bottom of a telephone housing
- Install contact pins into cell-phone shells
- Insertion of steel rivets to allow riveting at a later time
- Pre-assembly of safety rivets into miniature model trains
- Insertion of expansion-rivets to attach a PC-board to a housing frame

TECHNICAL DATA FOR HANDHELD PRESS-INSERTION DEVICES

For rivets and pins from 1 – 8 mm shaft-diameter and a max. length up to 35 mm
For balls up to 12 mm diameter

Design	Type	EDG-...	EDGZ-...
Insertion stroke		yes	yes
Locking stroke		no	yes
Maximum dimension of fastener to be processed		Please refer to the dimensional information shown in our feeder brochure D 3820 E	
Reloaded signal using an inductive BERO		yes	yes
Pneumatic connections for locking stroke	up to 60 mm stroke over 60 mm stroke	– –	1 (forward stroke / return by spring) 2 (forward and return stroke)
Operating pressure		6.3 bar / 90 PSI	6.3 bar / 90 PSI

The technical design depends on customer requirements. The sequence control of the feeder runs the entire operation.

Optional Equipment

Balancer	Part no.	827678A	827678A
Special accessories		Split type nosepiece with support body Nosepiece ball type - double Mouthpiece tiltable	

PRESS-INSERTION DEVICES FOR STATIONARY APPLICATIONS

Customer Specific Solutions

For stationary applications, the supply- and insertion-movement is done by a cylinder.

The use of sensors allows a multitude of application possibilities for many different types of connection elements.

So, besides rivets, pins, sleeves and balls, etc., the stationary insertion system can also process asymmetrical parts.

Please contact us to discuss your special applications!

Application Example:

A threaded bushing is fed via vibratory feeder to a tiltable mouthpiece. It is then pressed into a component, accurately and repeatedly, to a pre-determined height.

Besides press-insertion systems, DEPRAG also offers total solutions with integrated depth-controls, presence- and positioning controls, and customized equipment up to and including complex assembly installations.

All essential key technologies are made in house.



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Feeding Technology



Feeding systems for stationary use

**Efficient and intelligent feeding with easy feed,
the new generation vibratory bowl feeder.**

- **Approx. 80 % energy savings**
- **Smart factory/Industry 4.0-capable**
- **Efficiency and worldwide application - one design for all markets**

Feed systems are essential for productivity and efficiency in automatic assembly machines. Originally developed for shaft-heavy screws, today's DEPRAG feeding systems are capable of processing screws of all types with or without washers, threaded bolts, pins, rivets, nuts, washers, o-rings and diverse other small components.

Over 40 years of experience in the development and manufacture of feeding technologies and the high standards of our production site guarantee products of consistent outstanding quality.



FEEDING SYSTEMS FOR STATIONARY USE

100% reliability → productivity and system uptime!

Our feeding systems have been designed for the reliable supply of fasteners to enable outstanding accuracy and productivity of your assembly system. Integration into your control system is particularly convenient and straightforward. Our feeder line includes vibratory bowl feeders, sword (segment) feeders, linear conveyors, storage systems, tape-on-reel feeders and screw presenters.

Outstanding reliability and efficiency

- High feed rate
- Even complex components are correctly oriented
- Option for two screwdrivers or multi-spindles on one device
- Storage systems, such as hoppers, increase refill intervals

Production and choice of materials

The high level of vertical integration, the use of

specially hardened, wear-resistant materials such as specific coating methods, ensure the outstanding quality and reliability of our products.

Ready for immediate use

Before delivery, your feeder undergoes a continuous test in a simulation of series production, replicating your production cycle. Each device endures comprehensive testing – 100%.

VIBRATORY BOWL FEEDER - EACY FEED

The vibratory feeder is our most utilized feeding device. The eacy feed system combines the ideal fundamentals for sustainable production of the future: energy, efficiency and intelligent communication. eacy feed is available in four fill sizes: 0.15 l, 0.75 l, 1.2 l and 2.5 l in single and double spiral design.



e for efficiency

eacy feed – new generation vibratory bowl feeder with approx. 80 % reduction in power consumption due to efficient “low energy technology”!



c for communication

eacy feed – new generation vibratory bowl feeder with intelligent communication capabilities for application in a smart factory/ Industry 4.0 environment.

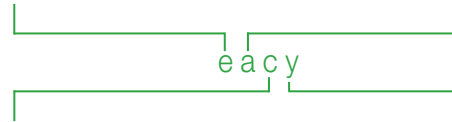
a for assembly

eacy feed – new generation vibratory bowl feeder with ergonomic handling by means of an optimised module.



y for yield

eacy feed – new generation vibratory bowl feeder with optimised, technical efficiency due to robust design and tried and tested modular components.



Approx. 80 % Energy savings

The revolutionary controller and the new drive allow for the extraordinary energy efficiency of eacy feed

- a significant reduction in power consumption is attained due to the 24 V oscillating magnets, thereby realising energy savings of around 80 %

Smart Technology

- the revolutionary controller enables remote control and communication
- the eacy feed can be accessed from anywhere in the world via TCP/IP
- all settings can be displayed and adjusted at any time
- eacy feed is particularly suitable for smart factory/ Industry 4.0-systems

Low Consumption and top Flexibility

- revolutionary controller enables around 80 % less power consumption
- new controller and vibratory drive based on 24 V/DC voltage
- universal power unit (115 V – 230 V)
- independent from the local alternating current frequency
- one design for all markets

Perfect Vibration Intensity

For monitoring and regulation of the vibration intensity an acceleration sensor is mounted on the vibratory drive.

- ensures stable output, independent from fill-level
- no need for readjustments
- supports ideal vibration behaviour and minimises material wear
- simplified reloading procedure
- accommodates all bowl sizes

Flexible Use

Used in assembly systems within complex automated production lines – eacy feed precisely and reliably supplies connection elements. If eacy feed is used in conjunction with the control and operating unit DPU (DEPRAG Processing Unit) an additional industrial demand is fulfilled: Communication capabilities for Industry 4.0 and Smart Factory.

The use of TCP/IP network protocols allows access to the EACY Feed controller's network from anywhere in the world. All settings can be displayed or adjusted once a connection is established with the smart eacy feed using a smartphone, tablet or computer.

The operator can for example, alter the frequency and amplitude settings via their smartphone so that function of the feeder can be guaranteed from any location.

Simpler for the Fitter and Operator

The corresponding software PFCi100 has been developed alongside the control unit DPU for maximum user friendliness. The parameters required for the device can be simply and easily adjusted using the slide bars on the touch screen – there is no need to access the feeder's sequence controller.

If several operators are using the same feeder at the same time, the efficiency of the process can often be compromised by the varying working speeds of each individual. DEPRAG feeders cleverly adapt to the individual working speeds of each operator. Once entered via the simple display, the specific operating parameters of each person are saved (storage of up to ten data sets) and can be recalled when there is a shift change. No one feels held back and no one feels overstretched.

VIBRATORY BOWL FEEDER - EACY FEED

Precision and Timing

The fill volume influences the feed rate in standard vibratory spiral feeders. If the feed bowl is full, the system works at a slower rate and if it is emptier the rate speeds up. As with the previous generation, the eacy feed is also fitted with a measurement transducer which records the oscillation amplitude in the feed bowl. This thereby adaptively regulates the feeder depending on the fill volume – ensuring reliability as the screws are continuously in readiness for processing.

The feed rate is adjustable using twelve different waveforms. The amplitude or frequency can be set in an instant. Individual settings can be used for example, to optimise the feed volume or reduce the noise level of the feeder. The adjustments can be carried out quickly and without mechanical intervention. When using eacy feed the required settings can simply be selected on the DPU.

Smart factory/Industry 4.0 can be found in all branches of industrial production. Intelligent, integrated smart components are in demand throughout the entire value chain. With the development of the innovative controller PFCi100 we are realising smart factory/Industry 4.0, the fourth industrial revolution. PFCi100 enables remote control, documentation and interaction with eacy feed, enabling the device to be monitored and controlled from anywhere in the world.

Integrated functions of the PFCi100

- » external master IPC (e.g. DPU100) operational platform
- » enables remote control and communication
- » bus interface
- » adjustable via IPC (DPU100)

- » communication via TCP/IP
- » programmable via integrated web browser

Operator platform DPU

The DPU (DEPRAG Processing Unit) provides exceptional user-friendliness. Settings can be simply adjusted via the slide bars on the touch screen.

DPU setting options

- » frequency
- » amplitude
- » acceleration ramp
- » soft start
- » waveform



SWORD FEEDER

Sword feeders or segment feeders are particularly suitable for use in cleanroom environments. One advantage of the sword feeder is the very gentle, low abrasion part feeding.

Sword feeders are available in two fill sizes: 0.15 l or 1.5 l

Correctly oriented sorting

The feed parts in the supply bin are scooped up into a segmented rail by a tilting motion. The parts slide along this rail through mechanical and directional components and arrive correctly sorted in the storage rail.



Self-regulated feed intensity

A sensor in the storage rail regulates the number of stroke movements required. The required fasteners are perfectly timed and positioned ready for assembly.

Low noise level

The production operators favor the low noise-level of the sword feeder. Due to the specially designed separator and the adapted controller sequence, the sword feeders are especially quiet.

Efficient production

The high level of vertical integration, the use of specially hardened, wear-resistant materials, as well as specific coating methods, ensure the outstanding quality, reliability, and efficiency of the sword feeder.

Customized design

If you need to integrate a feeding system into an application with challenging dimensional conditions, we can adapt our standard devices to fit your operating environment.



OUR RANGE ON FEEDING SYSTEMS

One Single Source



Your end-to-end solution: application consultancy, operator training, fully developed system components, screwdrivers, feeders, controllers and process monitoring. All components are designed to be compatible with each other and have been tried and tested over many years. In-house developed and manufactured!

The perfect solution for your application:

- Vibratory bowl feeder
- Sword feeders
- Linear conveyors
- Pick-and-Place devices
- Tape-on-Reel feeders
- Screw presenters
- Storage devices



Vibratory Feeder



Stationary feed systems for the processing of small components of all kinds, such as screws, pins, bolts, rivets, nuts, washers and o-rings. Vibratory feeders feature a high output rate in comparison to other feed systems. We offer stationary screwfeeders with vibratory drive for screws < M1 to M20. Screws with a shaft length from 5 mm up to 130 mm can be processed. Even countersunk screws can be fed easily by our vibratory feeders.

Design Sizes:

0.05 l Feed volume	Page 11
6.0 l Feed volume	Page 15
12.0 l Feed volume	Page 15

Design Sizes eacy feed:

0.15 l Feed volume	Page 12
0.75 l Feed volume	Page 12/17
1.2 l Feed volume	Page 13
2.50 l Feed volume	Page 14/17

Sword (Segment) Feeder



Sword feeders or segment feeders are used when the requirement calls for gentle, almost noiseless feeding of sensitive fasteners. Our sword feeder systems can process screw sizes from M2 to M6. They are ideal for screws up to 25 mm in length. Sword (segment) feeders are also well-suited for the processing of balls and pins.

Design Sizes:

0.15 l Feed volume	Page 16
1.50 l Feed volume	Page 16

Step Feeder



DEPRAG step feeders are suitable for almost every type of feed part. Specifically designed for longer screws (e.g. countersunk screws from 25 mm long), the step feeder is a great alternative to the vibratory spiral feeder and sword feeder.

→ Catalogue D3835E

Linear Conveyors



Our linear conveyors are part of a sophisticated feeding system, which can, for example, in combination with vibratory feeder or Pick-and-Place systems, be coordinated to your application.

Linear conveyors can be used to transport parts over larger distances within your assembly system, to allow for a parts buffer or to allow for the constant and consistent flow of parts.

Our robust linear conveyors enable correct sorting in the feedbowl, thereby preventing jams or parts becoming wedged or backed up to the feedbowl.



OUR RANGE ON FEEDING SYSTEMS

Pick-and-Place method - the alternative to feeding through a hose - independent from the part's geometry!

If the screw dimensions do not allow feeding through a feedhose, for example where there is an unfavorable relation between screw head diameter and overall length, we can offer special solutions, such as the pick-and-place procedure with vacuum suction or removal by gripper.

This process can also be used for screw locations which are difficult to access.

For stationary applications, either vacuum technology or grippers are predominately used on Pick & Place devices. The release-and reload procedure, is controlled by a PLC using sensor monitoring.

Pick-and-Place Method



DEPRAG tape-on-reel feeders are used to process components that are loaded on single- and/or double- sided adhesive tape reels.

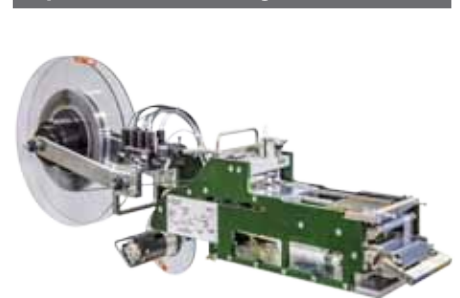
Tape-on-reel feeding technology uses a tape reel inserted in a rolling receptacle. The unwinder pulls the tape until the next component is in the detached position. Once the sensor detects that the piece has reached the detached position, a downholder secures and holds the tape. Once the pick-up tooling (e.g., a vacuum gripper) is ready to proceed (i.e., vacu-

um suction ON), the slide carriage moves back, and the tape is pulled past the carriage blade.

The components are loosened from the tape and are now ready for processing. Once the pick-up tooling has moved away from the pick-up position, the holder retracts, the slide carriage runs forward again, and the winder moves the next component on the tape reel into the pick-up position.

→ Catalogue D3870E

Tape-on-Reel Feeding



Screw presenters are particularly suitable for the automated supply of screws, both in preparation for manual pick-up and for stationary integrated screwdrivers. Are you looking to automate your assembly? Screw presenters are a fast, cost-effective solution for assembly of small production batches.

- Screw feeding via two lift segments in the screw bin, enabling gentle, quiet feeding. Screws fall onto a vibrating guide rail and are then brushed into the correct position and transported onwards.
- The integrated controller in the device enables stand-alone operation.

- Screw supply is accurate and reliable due to the regulated sequence controller using light barrier and microswitch.
- If required, several DEPRAG screw presenter can be arranged even into confined work spaces due to its compact design.
- Special solutions on request.
- User-friendly
 - Secure, fast pick-up of supplied screws using magnetic bit or vacuum.

→ Catalogue D3840E

Screw Presenters



Significantly decrease the number of refills by adding a storage system to your feeder.

Flexible - no need for costly modifications when using a variety of feeders.

The hopper outlet is adjustable to the size of the component. Additional regulating possibilities allow the hopper to be adjustable into two different directions.

Low noise and wear-resistant - the outflow-chute is enclosed, resulting into a substantial reduction in noise. Noise-barriers are available as a special accessory for all vibratory

feeders; they are specifically designed for use together with a hopper.

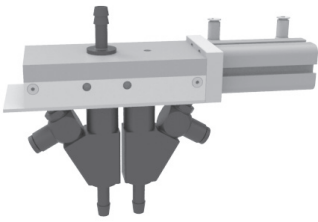
Simple operation and easy set-up - the DEPRAG hoppers come with a 24-volt gear motor. They can be operated merely via an output on the higher-level PLC.

Gentle component handling minimizes the waiting time of feed parts in the vibratory system.

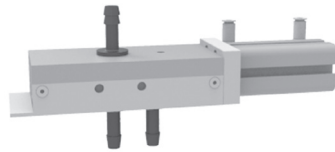
→ Catalogue D3850E

Storage Systems

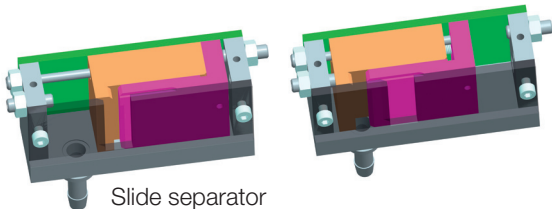




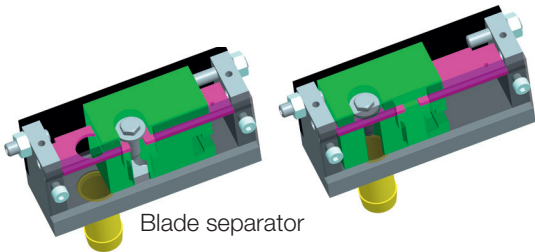
Distributor with hose nozzles that connect to an additional air-blast



Distributor with standard hose nozzles



Slide separator



Blade separator

Control

The **standard version (version „0“)** of the feeding systems, neither pneumatic valves nor a sequence controller are included. Only the control unit is installed as standard in the vibratory bowl feeder. The necessary pneumatics, as well as sequence controller are the essential components of a complete assembly unit. If components are ordered, the corresponding pneumatic and function diagrams are made available.

To keep design costs to a minimum and to simplify installation, all devices can be supplied with pneumatic valves. There is wiring up to the terminal block (version "P"). Again, if components are delivered we will provide an terminal plan.

The version "P" includes all necessary valves for the operation of the screwfeeding machine.

The third available version with the designation "EP" offers screwfeeding machines with 1 to 4 outlets, and includes pneumatic and electronic sequence control. To feed the next screw, only a 24 V signal is necessary. This means the customer can use a smaller PLC and no programming is necessary for the screw feeding. Therefore, the series "EP" is an especially economical and reliable solution and should be given preference.

Control Units

We offer different control units to control our vibratory drives.

- **Piezo controller** is used for bowl sizes of 0.05 l (0.01 gal.)
- **Feeder controller PFCi100 / PFC100 for easy feed feeding systems** is used for bowl sizes of 0.15 l (0.04 gal.), 0.75 l (0.2 gal.), 1.2 l (0.32 gal.) and over 2.5 l (0.66 gal.) capacity

These units conform to the protection type no. IP54. A soft start feature is integrated into the control unit of the vibratory drive.

NEW: PFC18L Controller

(IP30 protection class) to control our 1.5 liter sword feeders.

- operational voltage 24 V/DC
- little power consumption
- 10 different menu languages
- illuminated display
- power unit with extended voltage range (115 V – 230 V)
- independent from the respective local A/C voltage
- one design for all markets

Distributor

If more than two positions (i.e. screwdriver spindles) have to be supplied out of one feeder, then so called pre-separation hose nozzles can be used. These distributors can supply 2, 3, 4, 5 or even 6 channels.

To increase the feed rate the distributors can be operated by pre-separators (version "V"). With such a system, the feed parts separator can be operated parallel to the processing time. The feeding of the hardware will be done simultaneously for all channels. This type of feed system is also used when feeding has to be done against gravity (i.e. underfloor assembly).

Screw Separator

The screws exit the feed bowl in a well ordered line ready to be separated at the end of a retaining rail. Different types of separators can be provided depending on the geometry of the material (e.g. screws).



PFCi100 Controller



PFC100 Controller



PFC18L Controller

Additional Accessories

To complete the automatic assembly station, we provide additional components, such as:

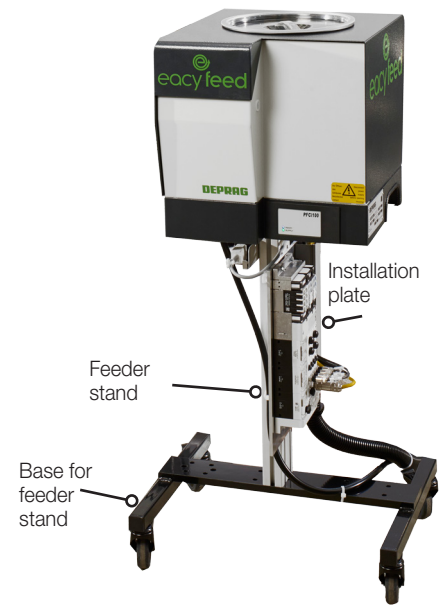
- Standard mouthpiece
- Tiltable mouthpiece
- Nosepiece ball type, single
- Nosepiece ball type, double
- Nosepiece ball type with extension
- Nosepiece split type
- Nosepiece with attachment piece
- Ring proximity switch for screw presence sensors
- Fill level indicator
- Feeder stand
- Base for feeder stand
- Storage devices (Catalogue D3850E)



Nosepiece



Special nosepiece with mouthpiece



SOFTWARE SOLUTIONS

PFC100 Manager – the parameterisation software for PFC100 controllers

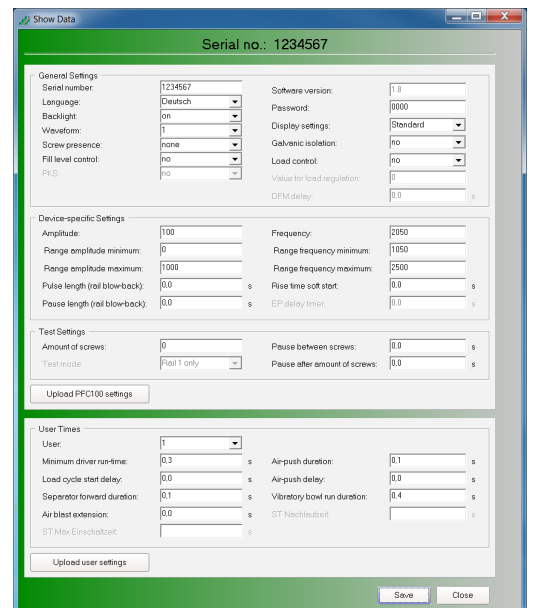
The PFC100 Manager facilitates the reading and saving of parameters as text files **for every PFC100 controller**. Saved parameters can be transferred to any PFC100 controller **quickly and simply using the PFC100 Manager**.

The connection cable 385520B required to connect the PC and PFC100 must be ordered separately.

The software download is available from the myDEPRAG customer portal (my.deprag.com). Registered users can activate the activation code and manage licences in MY ACCOUNT > DEPRAG Apps.

Part number:
Software PFC100 Manager, activation key – part no. 122000

Further information can be found in our catalog D3900E or on our website www.deprag.com.



MATERIAL TO BE CONVEYED

Screws or o-rings, nuts or threaded pins, rivets or balls: Different components and fasteners require different feeding methods. Special provisions come into play for applications requiring technical cleanliness and for sensitive parts requiring particularly gentle handling.

Screws



A vibratory feeder or a sword feeder can be used for the processing of screws, depending on screw size. Our screw presenter is ideal for the first step in screw supply automation.

Pins



For the processing of pins, we recommend a vibratory feeder. For standard applications we can offer handheld feeding systems. An adapted separator is often used for stationary applications.

Nuts



A vibratory feeder is well-suited for the processing of nuts. There are handheld and stationary solutions for the presentation of nuts.

O-Rings



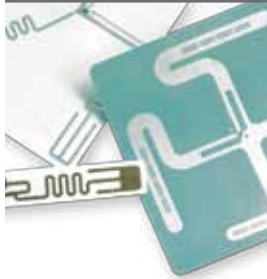
A vibratory feeder is the best-suited device for the processing of O-rings into an assembly solution. In a stationary application: The O-ring is supplied to a pick-up position, stretched and assembled.

Different Components



Wide-ranging component designs can be processed using a vibratory feeder in combination with a linear-conveyor system. We can utilize sensors so that the most varied of component geometries can be processed, particularly in stationary feeding systems.

Small parts on backing film



Small parts attached to a backing film on a tape-reel needing to be picked-up by vacuum or gripper, can be processed by a DEPRAG tape-on-reel feeder. It is even possible to process components on both single- and double-sided adhesive tapes.

Labels, etc.



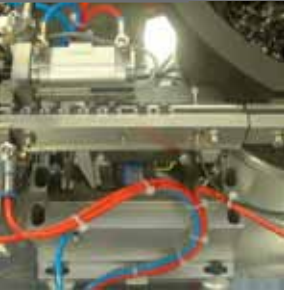
The DEPRAG tape-on-reel feeder predominately retrieves labels, stickers, and a protective film arriving on a tape-reel, by utilizing vacuum assistance.

Press-insertion components



We supply standardized press-insertion systems, consisting of a press-in device that is combined with a vibratory or sword feeder, to process rivets, pins, sleeves, and balls.

Components requiring gentle handling



Sword (segment) feeders are especially suited for gentle feeding procedures. Vibratory Feeders can also be coated with a fibre coating or soft PUR-coating which protects the surface quality of your components. A storage device can be set to keep the fill-level of the feeding-system to an absolute minimum which again serves to protect the surface quality of your components.

If your components need even gentler handling then we can palletise them and process them by a gripper or vacuum handling system. Please contact us for additional information.

Part assembly in cleanrooms



A vibratory feeder in connection with a suction device can be used to process components in cleanrooms class D. If your cleanroom requirement is even higher, then a palletised solution with gripper or vacuum handling can be used.

STRUCTURE OF STATIONARY SCREW FEEDING SYSTEMS

DEPRAG screw feeders consist of the supply system itself, an air connection, a power switch and an electronic controller including feedhose, in standard length 4m.

With either vibratory bowl feeder or sword feeder

screw separator

with single or double spiral bowl

can be combined with any screwdriver model

If feeding with a hose system is not possible, we offer special solutions, such as the pick-and-place procedure

defined pick position with integrated screw pick control option

with hopper and sort segment

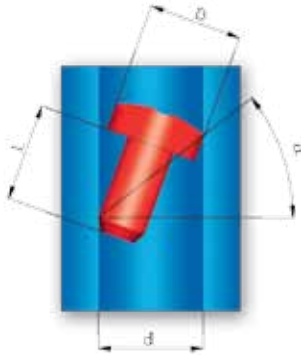
sword feeder with a separator system

Distributor system see page 6

GUIDELINE FOR THE SELECTION OF A SUITABLE SCREWFEEDER

STEP 1: Feeding criteria

Basically all "shaft heavy" screws with heads which fulfil the following criteria are suitable for processing with our feed systems:



- Feedability criteria:**
 $a > 30^\circ$
- $d \sim D + 0.5 \text{ mm}$
- Approximation formula:**
 $L > D + 2 \text{ mm}$

d = Feed hose ID
D = Screw head-Ø
L = Shaft length

STEP 2: Screw Quality

DIN quality standard fasteners (allowable 3% bad parts) is not always sufficient for reliable feeding machines.

Higher levels of screw/fastener quality improve the feeder's reliability.

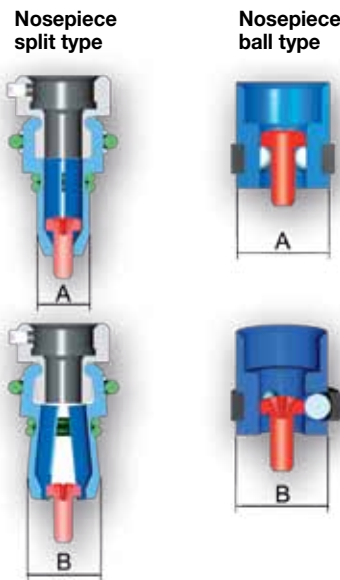
The goal should be a quality grade of 10 ppm ("parts per million"). This means every 100,000 screws there can be 1 bad part.

STEP 3: Which feeding principle is best suited to your application?

A vibratory spiral bowl is particularly suited to screws with awkward dimensions or those with special feed rate requirements. The sword feeder is used when extremely gentle handling of the parts is required or when very low noise level is a must. If feeding with a hose system is not possible we also offer pick-and-place procedure.

STEP 4: Determine the screw receiver

At the end of the mouthpiece there is a nosepiece ball type (1 or 2 rows) or a nosepiece split type, mounted to receive and position the screw.



D = Head-Ø
d = Shaft-Ø
n = Space required to open

$A = D + 2.5 \text{ mm}$ $B = A + D - d/2$	$B = 3D - 2d + 5 \text{ mm}$
$n = A \times B$	$n = \emptyset B$

STEP 5: Space available on the component

The available space around the screw head on the assembled components is very important for effective use of the handheld screw feeders. Both the nosepiece split type and ball type have space requirements.

STEP 6: Single or multiple feeding/screwdrivers

Single and double spiral bowls are available for vibratory bowl feeders. You can also get more out of each feeder with only one outlet using a distributor to further divide the feed parts into several hose outlets. In this way up to twelve outlets can be created from just one feeder by using a double spiral bowl and 2 six-fold distributors. The selection of the correct feeder depends in particular on the cycle time required. Please ask your local representative for further information.

STEP 7: Specifications

In order to design your feeder we need the following information from you:

- Number of screwdriving spindles to be used
- Cycle time (described in detail if possible)
- Feeding design (vibratory bowl feeder or sword feeder) if you have a preference
- Controller design (without valves as version „O“, with valves as version „P“ or with valves and sequence controller as version „EP“)
- Details of feed part geometry (e.g. dimension sheet of the screw with tolerances)
- Details of required length of feedhose(s) Details of the geometry of the screw-in position (3D model in format STEP or IGES)
- Voltage/mains frequency

To process your order we will also require approx. 1 sample load of parts to fill the capacity of your feeding system.

Filling capacity 0.05 liter – for screws with max. shaft length 8 mm

Filling capacity	Type	0611-P/0.05-x 0611-O/0.05-x
0.05 liter / 0.01 gal.		
Amount of connectable drivers		1
Feed rate	parts/min	50
Filling capacity	liter/gal.	0.05/0.01
Max. head diameter	mm / in.	3 / 7/64
Max. shaft length	mm / in.	8 / 5/16
Range of shaft diameter	mm / in.	0.6 - 2.0 / 0.024-0.079
Voltage	V/Hz	230 / 50
Power consumption	W	50
Air pressure requirement	bar / PSI	6 / 85
Air hose dia.	mm / in.	4 / 5/32
Dimensions (W x D x H)	mm / in.	220 x 200 x 180 / 8 5/8 x 7 7/8 x 7 1/16
Weight	kg / lbs	10 / 22
Feedhose length standard - max.	m / ft.	4 / 13.1 - 10 / 32.8
Number of in-/outputs needed for PLC Version "O" and "P"		2 / 4
Control Unit	Type	Piezo Controller , part no. 806652
Dimensions (L x W x H)	mm / in.	106 x 100 x 150 / 4 1/8 x 3 7/8 x 5 7/8

* The controller can be positioned either next to the feeder in the work area or in the control cabinet.
We recommend integration into the control cabinet. Additionally the height of the cable connections (approx 50mm) must be taken into account.



Filling capacity 0.15 liter – for screws with max. shaft length 8 mm

Filling capacity 0.15 l / 0.04 gal. with PLC	Type	01011 -EP/0.15	01022 -EP/0.15	01011-2 -EP/0.15	01011-3 -EP/0.15	01011-4 -EP/0.15	-	-
Control unit		PFC100 controller (insulation IP54)						
Filling capacity 0.15 l / 0.04 gal. without PLC	Type	01011 -0/0.15 -P/0.15 -0/0.15V -P/0.15V	01022 -0/0.15 -P/0.15 -0/0.15V -P/0.15V	01011 -2-0/0.15 -2-P/0.15 -2-0/0.15V -2-P/0.15V	01011 -3-0/0.15 -3-P/0.15 -3-0/0.15V -3-P/0.15V	01011 -4-0/0.15 -4-P/0.15 -4-0/0.15V -4-P/0.15V	01011 -5-0/0.15 -5-P/0.15 -5-0/0.15V -5-P/0.15V	01011 -6-0/0.15 -6-P/0.15 -6-0/0.15V -6-P/0.15V
Control unit		PFC100 controller (insulation IP54)						
Filling capacity 0.15 l / 0.04 gal. without PLC (integrated version with regulation of the feeder controller directly via DEPRAG - PLC)	Type	01011i -0/0.15 -P/0.15 -0/0.15V -P/0.15V	01022i -0/0.15 -P/0.15 -0/0.15V -P/0.15V	01011i -2-0/0.15 -2-P/0.15 -2-0/0.15V -2-P/0.15V	01011i -3-0/0.15 -3-P/0.15 -3-0/0.15V -3-P/0.15V	01011i -4-0/0.15 -4-P/0.15 -4-0/0.15V -4-P/0.15V	01011i -5-0/0.15 -5-P/0.15 -5-0/0.15V -5-P/0.15V	01011i -6-0/0.15 -6-P/0.15 -6-0/0.15V -6-P/0.15V
Control unit		PFCi100 controller (insulation IP54)						
Amount of connectable drivers		1	2	2	3	4	5	6
Feed rate	parts/min	60	2x60	2x25	3x17	4x13	5x10	6x8
Filling capacity	liter / gal.	0.15 / 0.04	0.15 / 0.04	0.15 / 0.04	0.15 / 0.04	0.15 / 0.04	0.15 / 0.04	0.15 / 0.04
Max. head diameter	mm / in.	5 / 13/64	4 / 5/32	5 / 13/64	5 / 13/64	5 / 13/64	5 / 13/64	5 / 13/64
Max. shaft length	mm / in.	8 / 5/16	8 / 5/16	8 / 5/16	8 / 5/16	8 / 5/16	8 / 5/16	8 / 5/16
Range of shaft diameter	mm / in.	1.2 - 2.5 / 0.046 - 0.1						
Voltage	V	24 Volt DC						
Max. power consumption	VA	50						
Air pressure requirement	bar / PSI	6 / 85.2						
Air hose dia.	mm / in.	10 / 3/8						
Weight approx.	kg / lbs.	26 / 57.2	28 / 61.6	28 / 61.6	29 / 63.8	30 / 66	31 / 68.2	32 / 70.4
Dimensions (WxDxH) approx.	mm / in.	296 x 352 x 258 / 11.54 x 13.73 x 10.06						
Feedhose length standard	m / ft.	4 / 13.1						
max.	m / ft.	8 / 26.2						
Number of in-/outputs needed for PLC	version „O“ and „P“	3/5	6/8	6/7	8/9	10/9	12/11	13/11
	version „EP“	2/1	3/2	3/1	4/1	5/1	-	-
	additional version „V“	4/6	8/10	8/9	11/12	14/13	17/16	19/17
Included in delivery		Power unit 105535A						
Required accessories		Power cable 812587 (EU) / 812295 (US)						
Optional accessories		see page 18						

TECHNICAL DATA FEEDING MACHINES VIBRATORY BOWL FEEDERS

Filling capacity 0.75 liter – for screws with max. shaft length 35 mm
– for small components



eacyfeed®

Filling capacity 0.75 l / 0.2 gal. with PLC	Type	01011	01022	–	–	01011-2	01011-3	01011-4	–	–
		-EP/0.75	-EP/0.75			-EP/0.75	-EP/0.75	-EP/0.75		
Control unit		PFC100 controller (insulation IP54)								
Filling capacity 0.75 l / 0.2 gal. without PLC	Type	01011	01022	01012	01024	01011	01011	01011	01011	01011
		-0/0.75	-0/0.75	-0/0.75	-0/0.75	-2-0/0.75	-3-0/0.75	-4-0/0.75	-5-0/0.75	-6-0/0.75
		-P/0.75	-P/0.75	-P/0.75	-P/0.75	-2-P/0.75	-3-P/0.75	-4-P/0.75	-5-P/0.75	-6-P/0.75
		-0/0.75V	-0/0.75V	-0/0.75V	-0/0.75V	-2-0/0.75V	-3-0/0.75V	-4-0/0.75V	-5-0/0.75V	-6-0/0.75V
		-P/0.75V	-P/0.75V	-P/0.75V	-P/0.75V	-2-P/0.75V	-3-P/0.75V	-4-P/0.75V	-5-P/0.75V	-6-P/0.75V
Control unit		PFC100 controller (insulation IP54)								
Filling capacity 0.75 l / 0.2 gal. without PLC (integrated version with regulation of the feeder controller directly via DEPRAG - PLC)	Type	01011i	01022i	01012i	01024i	01011i	01011i	01011i	01011i	01011i
		-0/0.75	-0/0.75	-0/0.75	-0/0.75	-2-0/0.75	-3-0/0.75	-4-0/0.75	-5-0/0.75	-6-0/0.75
		-P/0.75	-P/0.75	-P/0.75	-P/0.75	-2-P/0.75	-3-P/0.75	-4-P/0.75	-5-P/0.75	-6-P/0.75
		-0/0.75V	-0/0.75V	-0/0.75V	-0/0.75V	-2-0/0.75V	-3-0/0.75V	-4-0/0.75V	-5-0/0.75V	-6-0/0.75V
		-P/0.75V	-P/0.75V	-P/0.75V	-P/0.75V	-2-P/0.75V	-3-P/0.75V	-4-P/0.75V	-5-P/0.75V	-6-P/0.75V
Control unit		PFCi100 controller (insulation IP54)								
Amount of connectable drivers		1	2	2	4	2	3	4	5	6
Feed rate	parts/min	40	2x40	2x20	4x20	2x20	3x13	4x10	5x8	6x6
Filling capacity	liter / gal.	0.75 / 0.2	0.75 / 0.2	0.75 / 0.2	0.75 / 0.2	0.75 / 0.2	0.75 / 0.2	0.75 / 0.2	0.75 / 0.2	0.75 / 0.2
Max. head diameter	mm / in.	12 / ¹⁵ / ₃₂	8 / ⁵ / ₁₆	12 / ¹⁵ / ₃₂	8 / ¹⁵ / ₃₂	12 / ¹⁵ / ₃₂	12 / ¹⁵ / ₃₂	12 / ¹⁵ / ₃₂	12 / ¹⁵ / ₃₂	12 / ⁵ / ₃₂
Max. shaft length	mm / in.	35 / 1 ³ / ₈	25 / ³¹ / ₃₂	35 / 1 ³ / ₈	25 / ³¹ / ₃₂	35 / 1 ³ / ₈	35 / 1 ³ / ₈	35 / 1 ³ / ₈	35 / 1 ³ / ₈	35 / 1 ³ / ₈
Range of shaft diameter	mm / in.	1.5 - 7 / 0.06 - 0.27								
Voltage	V	24 Volt DC								
Max. power consumption	VA	50								
Air pressure requirement	bar / PSI	6 / 85.2								
Air hose dia.	mm / in.	10 / ³ / ₈								
Weight approx.	kg / lbs.	36 / 79.2	38 / 83.6	36 / 79.2	38 / 83.6	42 / 92.4	42 / 92.4	42 / 92.4	44 / 96.8	44 / 96.8
Dimensions (WxDxH) approx.	mm / in.	360 x 414 x 368 / 14.04 x 16.15 x 14.35								
Feedhose length standard	m / ft.	4 / 13.1								
max.	m / ft.	8 / 26.2								
Number of in-/outputs needed for PLC										
Version „O“ and „P“		3/5	6/8	8/10	16/18	6/7	8/9	10/9	12/11	13/11
Version „EP“		2/1	3/2	–	–	3/1	4/1	5/1	–	–
Additional version „V“		4/6	8/10	10/12	20/22	8/9	11/12	14/13	17/16	19/17

Also suitable for the feeding of: – rotation symmetric parts, such as rivets, bolts, pins, washers, sleeves, etc.

- small components
- balls and much more

The choice of feeding machine for small components will be determined after testing. Therefore, we require a sufficient quantity (approximately 1 liter/0.26 gal.) of the components to be fed.

Included in delivery	Power unit 105535A
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Required accessories

Power cable	Part no.	812587 (EU) / 812295 (US)
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Optional accessories

see page 18

Filling capacity 1.2 liter – for screws with max. shaft length 50 mm



Filling capacity 1.2 l / 0.32 gal. with PLC	Type	01011 -EP/1.2	01011-2 -EP/1.2	01011-3 -EP/1.2	01011-4 -EP/1.2	-	-
Control unit		PFC100 controller (insulation IP54)					
Filling capacity 1.2 l / 0.32 gal. without PLC	Type	01011 -0/1.2 -P/1.2 -0/1.2V -P/1.2V	01011 -2-0/1.2 -2-P/1.2 -2-0/1.2V -2-P/1.2V	01011 -3-0/1.2 -3-P/1.2 -3-0/1.2V -3-P/1.2V	01011 -4-0/1.2 -4-P/1.2 -4-0/1.2V -4-P/1.2V	01011 -5-0/1.2 -5-P/1.2 -5-0/1.2V -5-P/1.2V	01011 -6-0/1.2 -6-P/1.2 -6-0/1.2V -6-P/1.2V
Control unit		PFC100 controller (insulation IP54)					
Filling capacity 1.2 l / 0.32 gal. without PLC integrated version with regulation of the feeder controller directly via DEPRAG - PLC)	Type	01011i -0/1.2 -P/1.2 -0/1.2V -P/1.2V	01011i -2-0/1.2 -2-P/1.2 -2-0/1.2V -2-P/1.2V	01011i -3-0/1.2 -3-P/1.2 -3-0/1.2V -3-P/1.2V	01011i -4-0/1.2 -4-P/1.2 -4-0/1.2V -4-P/1.2V	01011i -5-0/1.2 -5-P/1.2 -5-0/1.2V -5-P/1.2V	01011i -6-0/1.2 -6-P/1.2 -6-0/1.2V -6-P/1.2V
Control unit		PFCi100 controller (insulation IP54)					
Amount of connectable drivers		1	2	3	4	5	6
Feed rate	parts/min	25	2x12	3x8	4x6	5x5	6x4
Filling capacity	liter / gal.	1.2 / 0.32	1.2 / 0.32	1.2 / 0.32	1.2 / 0.32	1.2 / 0.32	1.2 / 0.32
Max. head diameter	mm / in.	16 / 5/8					
Max. shaft length	mm / in.	50 / 1 ⁵ / ₁₆					
Range of shaft diameter	mm / in.	3 - 7 / 0.118 - 0.276					
Voltage	V	24 Volt DC					
Max. power consumption	VA	150					
Air pressure requirement	bar / PSI	6 / 85.2					
Air hose dia.	mm / in.	10 / 3/8					
Weight approx.	kg / lbs.	40 / 88	46 / 101.2	46 / 101.2	46 / 101.2	48 / 105.6	48 / 105.6
Dimensions (WxDxH) approx.	mm / in.	360 x 414 x 368 / 14.04 x 16.15 x 14.35					
Feedhose length standard	m / ft.	4 / 13.1					
max.	m / ft.	8 / 26.2					
Number of in-/outputs needed for PLC							
Version „0“ and „P“		3/5	6/7	8/9	10/9	12/11	13/11
Version „EP“		2/1	3/1	4/1	5/1	-	-
Additional version „V“		4/6	8/9	11/12	14/13	17/16	19/17
Included in delivery		Power unit 2041061					

Required accessories

Power cable	Part no.	812587 (EU) / 812295 (US)
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Optional accessories

	see page 18
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TECHNICAL DATA FEEDING MACHINES VIBRATORY BOWL FEEDERS

Filling capacity 2.5 liter – for screws with max. shaft length 60 mm
– for small components



Filling capacity 2.5 l / 0.66 gal. with PLC	Type	01011	01022	-	-	01011-2	01011-3	01011-4	-	-
		-EP/2.5	-EP/2.5			-EP/2.5	-EP/2.5	-EP/2.5		
Control unit		PFC100 controller (insulation IP54)								
Filling capacity 2.5 l / 0.66 gal. without PLC	Type	01011	01022	01012	01024	01011	01011	01011	01011	01011
		-0/2.5	-0/2.5	-0/2.5	-0/2.5	-2-0/2.5	-3-0/2.5	-4-0/2.5	-5-0/2.5	-6-0/2.5
		-P/2.5	-P/2.5	-P/2.5	-P/2.5	-2-P/2.5	-3-P/2.5	-4-P/2.5	-5-P/2.5	-6-P/2.5
		-0/2.5V	-0/2.5V	-0/2.5V	-0/2.5V	-2-0/2.5V	-3-0/2.5V	-4-0/2.5V	-5-0/2.5V	-6-0/2.5V
		-P/2.5V	-P/2.5V	-P/2.5V	-P/2.5V	-2-P/2.5V	-3-P/2.5V	-4-P/2.5V	-5-P/2.5V	-6-P/2.5V
Control unit		PFC100 controller (insulation IP54)								
Filling capacity 2.5 l / 0.66 gal. without PLC (integrated version with regulation of the feeder controller directly via DEPRAG - PLC)	Type	01011i	01022i	01012i	01024i	01011i	01011i	01011i	01011i	01011i
		-0/2.5	-0/2.5	-0/2.5	-0/2.5	-2-0/2.5	-3-0/2.5	-4-0/2.5	-5-0/2.5	-6-0/2.5
		-P/2.5	-P/2.5	-P/2.5	-P/2.5	-2-P/2.5	-3-P/2.5	-4-P/2.5	-5-P/2.5	-6-P/2.5
		-0/2.5V	-0/2.5V	-0/2.5V	-0/2.5V	-2-0/2.5V	-3-0/2.5V	-4-0/2.5V	-5-0/2.5V	-6-0/2.5V
		-P/2.5V	-P/2.5V	-P/2.5V	-P/2.5V	-2-P/2.5V	-3-P/2.5V	-4-P/2.5V	-5-P/2.5V	-6-P/2.5V
Control unit		PFCi100 controller (insulation IP54)								
Amount of connectable drivers		1	2	2	4	2	3	4	5	6
Feed rate	parts/min	40	2x40	2x20	4x20	2x20	3x13	4x10	5x8	6x6
Filling capacity	liter / gal.	2.5 / 0.66	2.5 / 0.66	2.5 / 0.66	2.5 / 0.66	2.5 / 0.66	2.5 / 0.66	2.5 / 0.66	2.5 / 0.66	2.5 / 0.66
Max. head diameter	mm / in.	16 / ⁵ / ₈	14 / ³⁵ / ₆₄	16 / ⁵ / ₈	14 / ³⁵ / ₆₄	16 / ⁵ / ₈	16 / ⁵ / ₈	16 / ⁵ / ₈	15 / ¹⁹ / ₃₂	16 / ⁵ / ₈
Max. shaft length	mm / in.	60 / 2 ²³ / ₆₄	45 / 1 ⁴⁹ / ₆₄	60 / 2 ²³ / ₆₄	45 / 1 ⁴⁹ / ₆₄	60 / 2 ²³ / ₆₄	60 / 2 ²³ / ₆₄	60 / 2 ²³ / ₆₄	60 / 2 ²³ / ₆₄	60 / 2 ²³ / ₆₄
Range of shaft diameter	mm / in.	4 - 8 / ⁵ / ₃₂ - ⁵ / ₁₆								
Voltage	V	24 Volt DC								
Max. power consumption	VA	150								
Air pressure requirement	bar / PSI	6 / 85.2								
Air hose dia.	mm / in.	10 / ³ / ₈								
Weight approx.	kg / lbs.	60 / 132								
Dimensions (WxDxH) approx.	mm / in.	547 x 600 x 294 / 21.33 x 23.4 x 11.5								
Feedhose length standard	m / ft.	4 / 13.1								
max.	m / ft.	8 / 26.2								
Number of in-/outputs needed for PLC										
Version „0“ and „P“		3/5	6/8	8/10	16/18	6/7	8/9	10/9	12/11	13/11
Version „EP“		2/1	3/2	-	-	3/1	4/1	5/1	-	-
Additional version „V“		4/6	8/10	10/12	20/22	8/9	11/12	14/13	17/16	19/17

Also suitable for the feeding of: – rotation symmetric parts, such as rivets, bolts, pins, washers, sleeves, etc.
– small components
– balls and much more

The choice of feeding machine for small components will be determined after testing. Therefore, we require a sufficient quantity (approximately 1 liter/0.26 gal.) of the components to be fed.

Included in delivery		Power unit 2041061
Required accessories		
Power cable	Part no.	812587 (EU) / 812295 (US)
Optional accessories		see page 18

Our software solutions undergo continuous improvements. We recommend that you regularly update your software. In this way you will always receive the most up-to-date security updates, upgraded features and drivers. With the most current version of the software you can be sure that your device is optimally prepared for Industry 4.0.

Filling capacity 6.0 liter – for screws with max. shaft length 100 mm

Filling capacity	Type	0511-O/6.0	0511-2-O/6.0	0511-3-O/6.0	0511-4-O/6.0	0511-5-O/6.0	0511-6-O/6.0
6 liter / 1.6 gal.		0511-P/6.0	0511-2-P/6.0 0511-2-O/6.0V 0511-2-P/6.0V	0511-3-P/6.0 0511-3-O/6.0V 0511-3-P/6.0V	0511-4-P/6.0 0511-4-O/6.0V 0511-4-P/6.0V	0511-5-P/6.0 0511-5-O/6.0V 0511-5-P/6.0V	0511-6-P/6.0 0511-6-O/6.0V 0511-6-P/6.0V
Amount of connectable drivers		1	2	3	4	5	6
Feed rate	parts/min	25	2 x 12	3 x 8	4 x 6	5 x 5	6 x 4
Filling capacity	liter / gal.				6 / 1.6		
Max. head diameter	mm / in.				30 / 1 ³ / ₁₆		
Max. shaft length	mm / in.				100 / 4		
Range of shaft diameter	mm / in.				8 - 16 / 0.315 - 0.63		
Air pressure requirement	bar / PSI				6.3 / 90		
Air hose dia.	mm / in.				10 / ³ / ₈		
Weight (design "O")	kg / lbs.				250 / 550		
Feedhose length standard	m / ft.				4 / 13.1		
max	m / ft.				8 / 26.2		
Number of in-/outputs needed for PLC							
Version "O" and "P"	min.	2/6	5/8	7/10	9/10	11/12	12/12
Version "V"	min.	–	7/10	10/13	13/14	16/17	18/18
Control unit		SZG controller 5-SL (insulation IP54)					

Filling capacity 12.0 liter – for screws with max. shaft length 130 mm

Filling capacity	Type	0511	0511	0512	0522	0511	0511
12 liter / 3.2 gal		-O/12 -P/12	-2-O/12 -2-P/12 -2-O/12 V -2-P/12 V	-O/12 -P/12 -O/12 V -P/12 V	-O/12 -P/12	-3-O/12 -3-P/12 -3-O/12 V -3-P/12 V	-4-O/12 -4-P/12 -4-O/12 V -4-P/12 V
Amount of connectable drivers		1	2	2	2	3	4
Preferred type for identical amount of spindles			●				
Feed rate	parts/min	20	2 x 10	2 x 11	2 x 20	3 x 7	4 x 5
Filling capacity	liter / gal.	12 / 3.2	12 / 3.2	12 / 3.2	12 / 3.2	12 / 3.2	12 / 3.2
Max. head diameter	mm / in.	40 / 1 ³⁷ / ₆₄	40 / 1 ³⁷ / ₆₄	40 / 1 ³⁷ / ₆₄	30 / 1 ³ / ₁₆	40 / 1 ³⁷ / ₆₄	40 / 1 ³⁷ / ₆₄
Max. shaft length	mm / in.	130 / 5 ¹ / ₈	130 / 5 ¹ / ₈	130 / 5 ¹ / ₈	120 / 4 ²³ / ₃₂	130 / 5 ¹ / ₈	130 / 5 ¹ / ₈
Range of shaft diameter	mm / in.	14-20 / ³⁵ / ₆₄ - ²⁵ / ₃₂	14-20 / ³⁵ / ₆₄ - ²⁵ / ₃₂	14-20 / ³⁵ / ₆₄ - ²⁵ / ₃₂	12-18 / ¹⁵ / ₃₂ - ⁴⁵ / ₆₄	14-20 / ³⁵ / ₆₄ - ²⁵ / ₃₂	14-20 / ³⁵ / ₆₄ - ²⁵ / ₃₂
Air pressure requirement	bar / PSI	6.3 / 90	6.3 / 90	6.3 / 90	6.3 / 90	6.3 / 90	6.3 / 90
Air hose dia.	mm / in.	10 / ³ / ₈	10 / ³ / ₈	10 / ³ / ₈	10 / ³ / ₈	10 / ³ / ₈	10 / ³ / ₈
Weight	kg / lbs	as per customer's specification approx. 500					
Feedhose length standard	m / ft.	4 / 13.1	4 / 13.1	4 / 13.1	4 / 13.1	4 / 13.1	4 / 13.1
max	m / ft.	8 / 26.2	8 / 26.2	8 / 26.2	8 / 26.2	8 / 26.2	8 / 26.2
Number of in-/outputs needed for PLC							
Version "O" and "P"	min.	5/6	8/8	6/7	9/9	11/10	12/10
Version "V"	min.	–	10/10	8/9	–	14/13	16/14
Control unit for vibratory conveyor		Special controller					
Control unit for linear conveyor		Special controller					

TECHNICAL DATA FEEDING MACHINES SWORD FEEDERS

Filling capacity 0.15 liter – for screws with max. shaft length 8 mm

Filling capacity 0.15 liter / 0.04 gal	Type	0811-O/0.15 0811-P/0.15
Amount of connectable drivers		1
Feed rate	parts/min	30
Filling capacity	liter / gal.	0.15 / 0.04
Max. head diameter	mm / in.	5 / ¹³ / ₆₄
Max. shaft length	mm / in.	8 / ⁵ / ₁₆
Range of shaft diameter	mm / in.	1.0 - 2.5 / ³ / ₆₄ - ³ / ₃₂
Air pressure requirement	bar / PSI	6.3 / 90
Air hose dia.	mm / in.	10 / ²⁵ / ₆₄
Weight	kg / lbs	6 / 13.2
Feedhose length	standard max	m / ft. m / ft.
		4 / 13.1 5 / 16.4
Number of in-/outputs needed for PLC Version "O" and "P"	min.	4/5

Filling capacity 1.5 liter – for screws with max. shaft length 25 mm

Filling capacity	1.5 liter / 0.4 gal						
with PLC, control unit PFC18L Con- troller (insulation IP30)	Type	01811-EP/1.5	-	-	-	-	-
without PLC, without control unit (control via external PLC)	Type	01811-O/1.5 01811-P/1.5	01811-2-O/1.5 01811-2-P/1.5 01811-2-O/1.5V 01811-2-P/1.5V	01811-3-O/1.5 01811-3-P/1.5 01811-3-O/1.5V 01811-3-P/1.5V	01811-4-O/1.5 01811-4-P/1.5 01811-4-O/1.5V 01811-4-P/1.5V	01811-5-O/1.5 01811-5-P/1.5 01811-5-O/1.5V 01811-5-P/1.5V	01811-6-O/1.5 01811-6-P/1.5 01811-6-O/1.5V 01811-6-P/1.5V
Amount of connectable drivers		1	2	3	4	5	6
Feed rate	parts/min	30	2 x 15	3 x 10	4 x 8	5 x 6	6 x 5
Filling capacity	liter / gal.	1.5 / 0.4					
Max. head diameter	mm / in.	12 / ¹⁵ / ₃₂					
Max. shaft length	mm / in.	25 / ⁶³ / ₆₄					
Range of shaft diameter	mm / in.	2 - 6.3 / 0.08 - 0.25					
Voltage	V	24 Volt DC					
Max. power consumption	VA	50					
Air pressure requirement	bar / PSI	6 / 85.2					
Air hose dia.	mm / in	10 / ³ / ₈					
Dimensions (WxDxH) approx.	mm / in.	408 x 666 x 1223 / 15.9 x 25.97 x 47.7					
Weight (design "O")	kg / lbs	35/77	38/84	40/88	40/88	42/92	42/92
Feedhose length	standard max	m / ft. m / ft.	4/13.1 8/26.2	4/13.1 8/26.2	4/13.1 8/26.2	4/13.1 8/26.2	4/13.1 8/26.2
Number of in-/outputs needed for PLC Version "O" and "P"	min.	8/6	11/9	13/12	15/13	17/16	18/17
Version "V"	min.	-	11/9	13/12	15/13	17/16	18/17
Version "EP"	min.	3/1	-	-	-	-	-
Included in delivery (only for type 01811-EP/1.5)	Power unit	105535A	-				
Required accessories (only for type 01811-EP/1.5)							
Power cable	Part no.	812587 (EU) 812295 (US)	-				

Optional accessories

see page 18

TECHNICAL DATA NUT FEEDERS (VIBRATORY BOWL FEEDERS)

Filling capacity 0.75 / 2.5 liter – maximum permissible nut height 5 mm / 8 mm



Filling capacity	0.75 liter / 0.2 gal.			2.5 liter / 0.66 gal.			
with PLC	Type	01011M -EP/0.75	-	-	01011M -EP/2.5	-	
Control unit	PFC100 controller (insulation IP54)						
without PLC	Type	01011M -0/0.75 -P/0.75 -0/0.75V -P/0.75V	01012M -0/0.75 -P/0.75 -0/0.75V -P/0.75V	01024M -0/0.75 -P/0.75 -0/0.75V -P/0.75V	01011M -0/2.5 -P/2.5 -0/2.5V -P/2.5V	01012M -0/2.5 -P/2.5 -0/2.5V -P/2.5V	
Control unit	PFC100 controller (insulation IP54)						
without PLC	Type	01011iM -0/0.75 -P/0.75 -0/0.75V -P/0.75V	01012iM -0/0.75 -P/0.75 -0/0.75V -P/0.75V	01024iM -0/0.75 -P/0.75 -0/0.75V -P/0.75V	01011iM -0/2.5 -P/2.5 -0/2.5V -P/2.5V	01012iM -0/2.5 -P/2.5 -0/2.5V -P/2.5V	
(integrated version with regulation of the feeder controller directly via external PLC)							
Control unit	PFCi100 controller (insulation IP54)						
Amount of connectable drivers		1	2	4	1	2	
Feed rate parts/min		40	2x25	4x25	40	2x25	
Filling capacity liter / gal.		0.75 / 0.2	0.75 / 0.2	0.75 / 0.2	2.5 / 0.66	2.5 / 0.66	
Across flats mm / in.		4-8 / ⁵ / ₃₂ - ⁵ / ₁₆	4-8 / ⁵ / ₃₂ - ⁵ / ₁₆	4-8 / ⁵ / ₃₂ - ⁵ / ₁₆	5.5-17 / ⁵ / ₃₂ - ⁴³ / ₆₄	5.5-13 / ⁵ / ₃₂ - ¹ / ₂	
Female thread mm / in.		3-5 / ¹ / ₈ - ³ / ₁₆	3-5 / ¹ / ₈ - ³ / ₁₆	3-5 / ¹ / ₈ - ³ / ₁₆	3-8 / ¹ / ₈ - ⁵ / ₁₆	3-8 / ¹ / ₈ - ⁵ / ₁₆	
Max. possible nut height mm / in.		5 / ³ / ₁₆	5 / ³ / ₁₆	5 / ³ / ₁₆	8 / ⁵ / ₁₆	8 / ⁵ / ₁₆	
Voltage V		24 Volt DC			24 Volt DC		
Max. power consumption VA		50			150		
Air pressure requirement bar / PSI		6 / 85.2			6 / 85.2		
Air hose dia. mm / in.		10 / ³ / ₈			10 / ³ / ₈		
Dimensions (WxDxH) approx. mm / in.		360 x 414 x 368 / 14.04 x 16.15 x 14.35			547 x 600 x 294 / 21.33 x 23.4 x 11.5		
Number of in-/outputs needed for PLC							
Version „0“ and „P“		3/5	4/6	8/10	3/5	4/6	
Version „EP“		2/1	-	-	2/1	-	
Additional version „V“		4/6	6/8	10/12	4/6	6/8	
Included in delivery		Power unit 105535A			Power unit 2041061		
Required accessories							
Power cable Part no.		812587 (EU) / 812295 (US)			812587 (EU) / 812295 (US)		

Optional accessories	see page 18
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Our software solutions undergo continuous improvements. We recommend that you regularly update your software. In this way you will always receive the most up-to-date security updates, upgraded features and drivers. With the most current version of the software you can be sure that your device is optimally prepared for Industry 4.0.

POWER USAGE

The design of the feeding systems can be made for either 230 volts or for 115 volts of power-connection. For the corresponding maximum usage (in W) please refer to the listing below.

Unit	Type	010xx-x/0.15	010xx-x/0.75	010xx-x/1.2	010xx-x/2.5	05xx-x/6.0	018xx-x/1.5
Voltage	V	24 Volt DC	24 Volt DC	24 Volt DC		115 or 230	24 Volt DC
Power consumption	W	50	50	150		550	50

Unit	Type	0811-O/0.15	0811-P/0.15
Power supply	V	not applicable	24
Power consumption	W	0	10

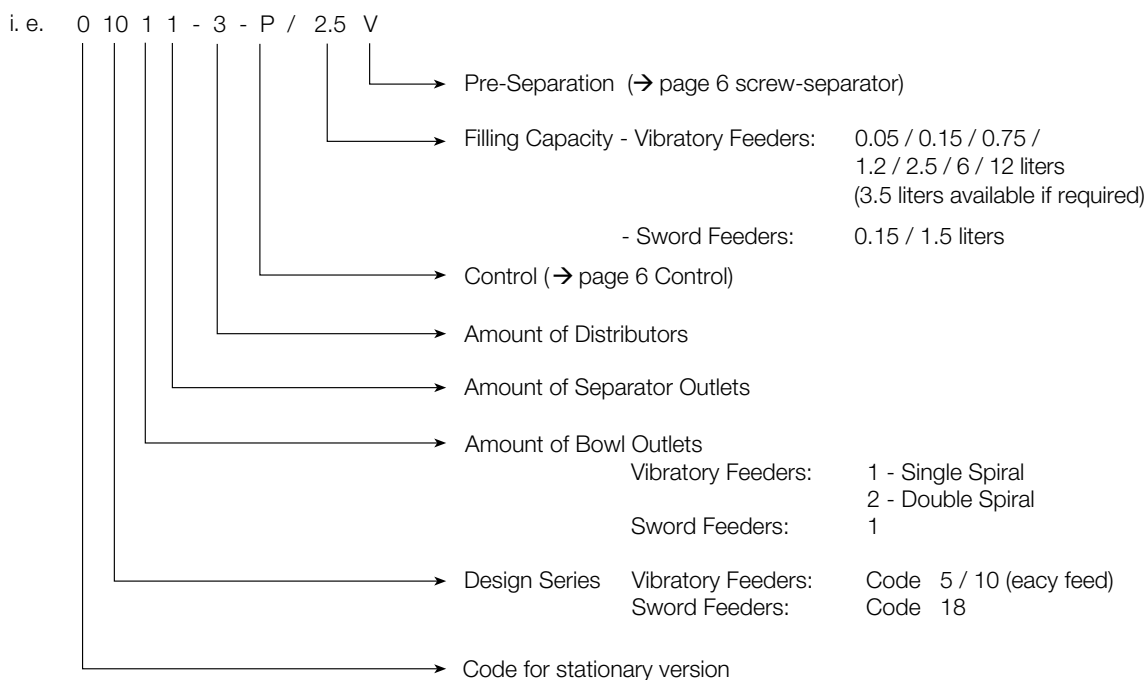
OPTIONAL EQUIPMENT

for feeding systems

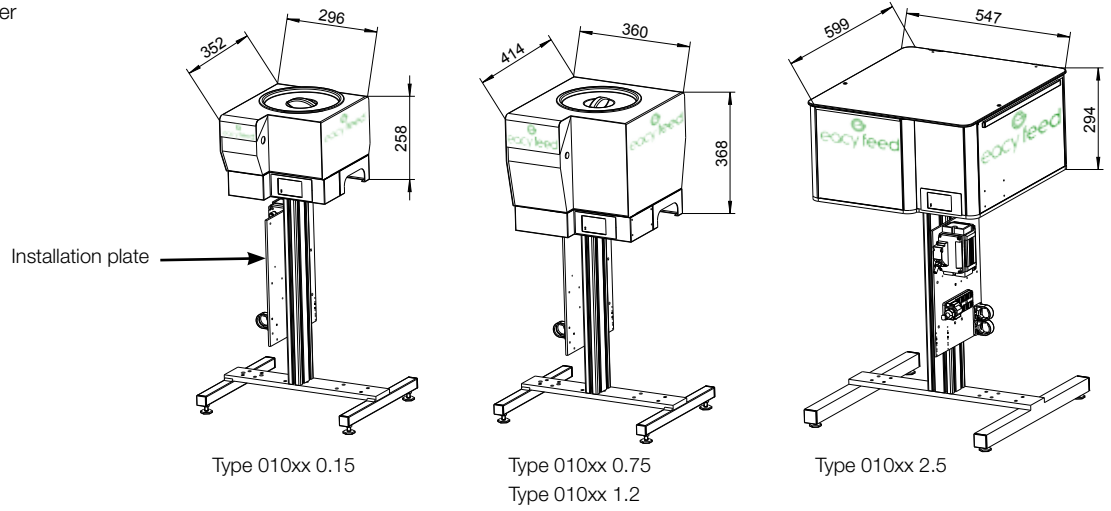
- Ring proximity switch with impulse extension 100 ms, with connector, cable and connector plug for screw presence control installed and wired
- Feeder bowl, coated with polyurethane
- Hopper (Catalog D3850E)
- Downholder (for screws with washers)
- "Semi-pick and place-system"
- Set of wheels for stand
- Set of wheels for stand in ESD-capable version

for feeding systems with feed bowl volume		0.15 liter	0.75 liter	1.2 liter	1.5 liter	2.5 liter
Fill level indicator	Part no.	414965J	414965A	414965A	420494B	414965D
Stand	Part no.	994449	994449	994449	994449	999309
Retaining plate (holder for power supply)	Part no.	9198574	9198574	9198573	9198574	-

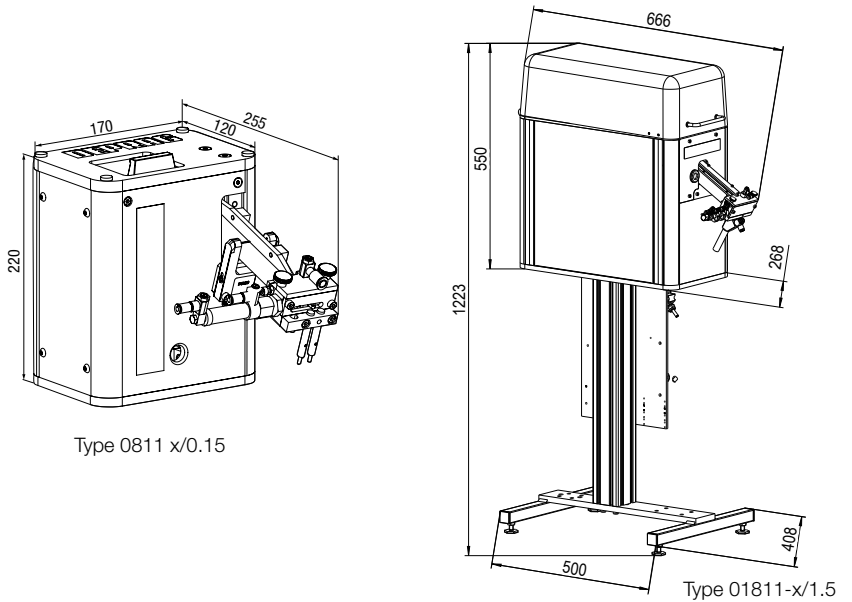
NOMENCLATURE OF FEEDERS



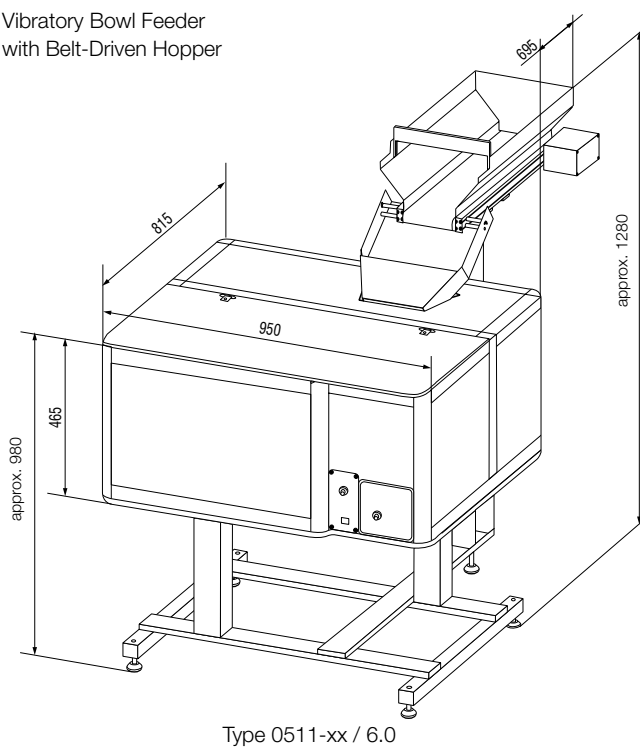
Vibratory Bowl Feeder



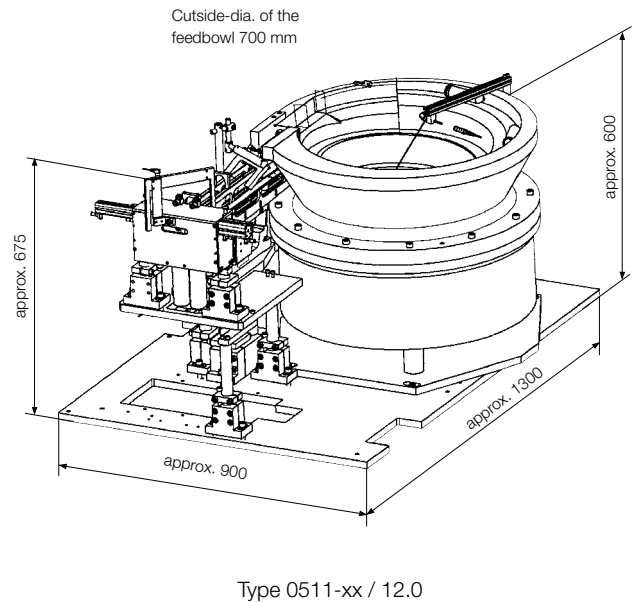
Sword Feeder



Vibratory Bowl Feeder with Belt-Driven Hopper



Vibratory Bowl Feeder



DEPRAG

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www.deprag.com
info@deprag.de

CERTIFIED AS PER DIN EN ISO 9001

INTELLIGENT
EFFICIENT
FEEDING

NEW

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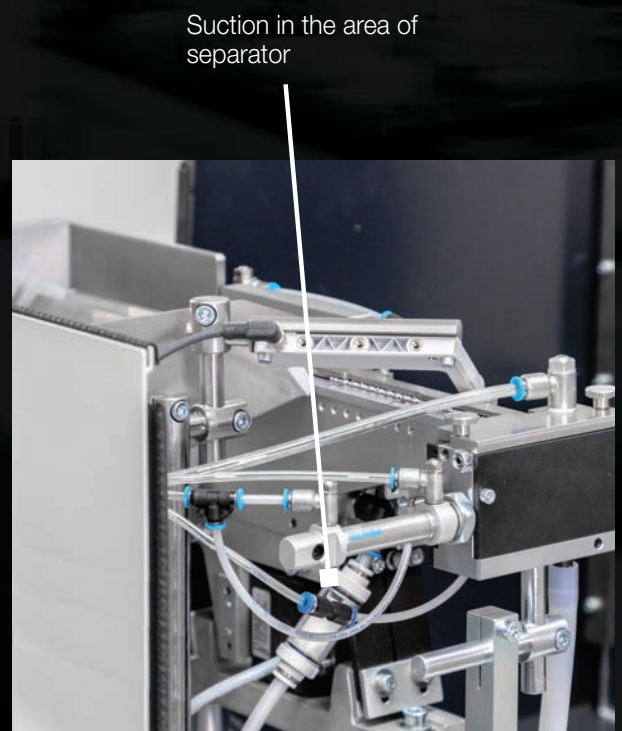
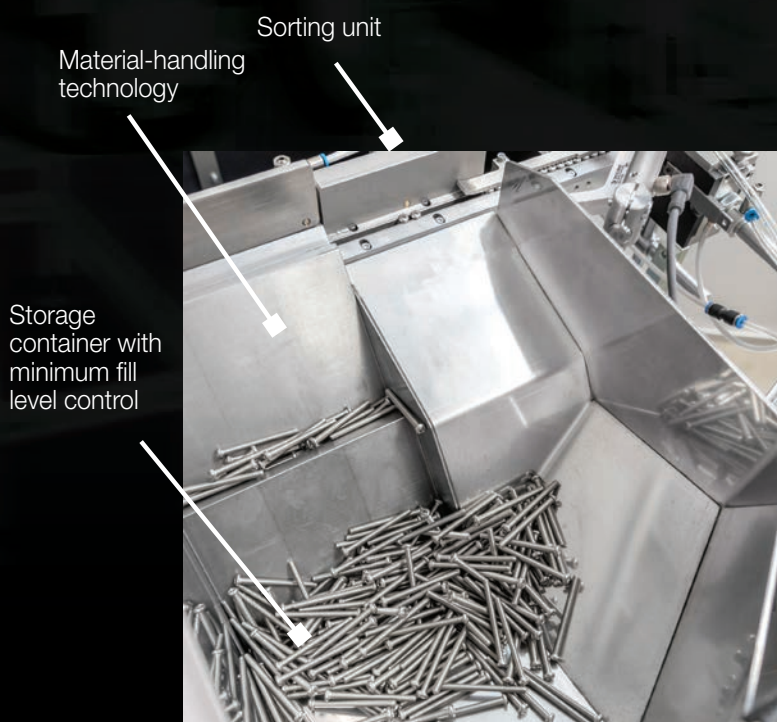
STEP FEEDER SYSTEM

For the best in efficiency, intelligence and technical cleanliness – the new DEPRAG step feeder system: eacy step feed

Specially designed for longer screws!

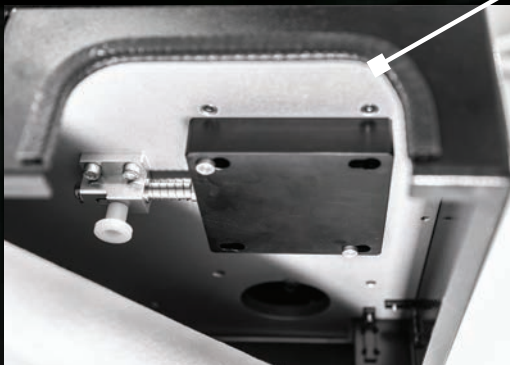
The complete system, comprising a storage container, material-handling technology, linear conveyor, separator, housing and controller – specially designed for longer screws – offers hassle-free, reliable operation with 24V technology, independent from mains voltage and mains frequency.

The DEPRAG step feeder system combines all the advantages of a step feeder with the outstanding energy-efficiency of DEPRAG's vibration and regulating technology.





Any particles generated in the feeding area are caught and expelled



Advantages

The feeding system eacy step feed exhibits particularly gentle handling of feed material. Vibration is only used in the vicinity of the linear feed rails.

A brushless electric motor, controlled by the smart energy-efficient PFC100 controller, is used to drive the feed plates. The controller also regulates conveyor speed, supporting the gentle feeding of parts.

This gentle part handling and low-friction feeding guarantees that particle build-up is kept to an absolute minimum. However, there is also the option of adding vacuum suction equipment to boost technical cleanliness at certain interface points. The DEPRAG CleanFeed concept is also available for each processing step of the eacy step feed system – from component handling and feeding to fastening – prevent, reduce and remove abrasion.

The step feeder can also be optionally combined with DEPRAG storage systems. They are the ideal complement for optimal processing, ensuring a constant fill volume and extended re-load intervals. Eacy step feed is, of course, also compatible with DEPRAG's other automation components, such as the DEPRAG Feed Module DFM, the DEPRAG Screwdriver Function Modules and DCOS, the DEPRAG Controller System.

The high feed rate, long life-span and compact size – specifically for longer feed parts – provides an alternative to vibratory spiral feeders and sword feeders.

Outstanding reliability and efficiency

- **Automatic feeding and alignment**
 - even complex components are correctly oriented
- **Drive via brushless electric motor**
 - gentle feeding of parts
 - direct conveyor speed control
- **Quiet, gentle, low friction feeding**
- **Technical cleanliness**
- **High feed rate**
- **Compact size**
- **Long life-span**
- **Low maintenance and wear**
- **Reliable and hassle-free**
- **Modular design**
 - compatible with DEPRAG's other automation components
- **On-site service**
 - fast response at service or maintenance

Main features of the step feeder



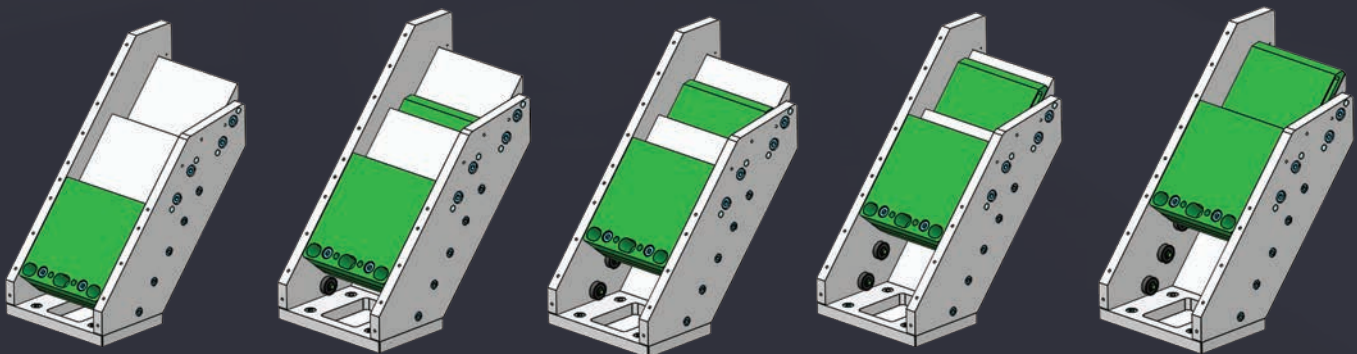
The feed material is quietly fed in stages over linear feed plates from the storage container towards the feed rails.

A brushless electric motor, controlled by the smart energy-efficient PFC100 controller, is used to drive the feed plates.

The controller also regulates conveyor speed, supporting the gentle feeding of parts.

The integrated sequence controller PFC100 regulates the complete feeding process for -EP and 11911-x designs used in combination with handheld screwdrivers. Each new cycle is triggered via a start impulse.

This significantly reduces integration in higher-level system controllers. As an alternative, the system can also be controlled via an external PLC/IPC controller. Direct integration in IPC environments is also an option with the PFC100.



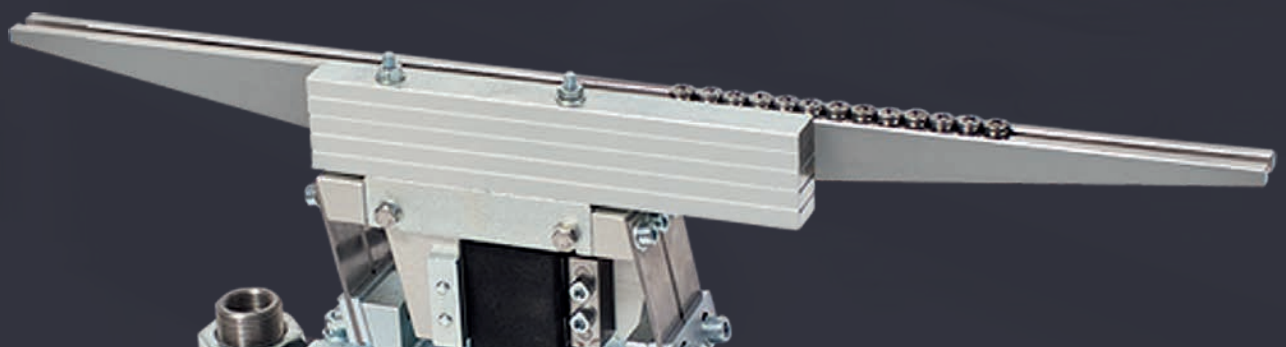
The feed material is geometrically aligned in the feed rails.

A linear conveyor then transports the feed parts towards the separator.

Fill level sensors in the storage container and the feed rails measure and regulate the feed rate.

In the separator the feed material is separated and pre-positioned to be shot through the feed hose or for pick-up using vacuum tool or gripper.

However, there is also the option of adding vacuum suction equipment to boost technical cleanliness at certain interface points.



In combination with DEPRAG storage systems – optimize processing by maintaining a constant fill level – no need to adjust the feed rate

DEPRAG storage systems are an ideal complement to your feed system for a significant increase in refill intervals.

Flexible

No need for costly modifications when using a variety of feeders. The hopper outlet is adjustable to the size of the component. Additional regulating options allow the hopper to be adjusted into two different directions.

Low noise and wear-resistant

The outflow-chute is enclosed, resulting into a substantial reduction in noise.

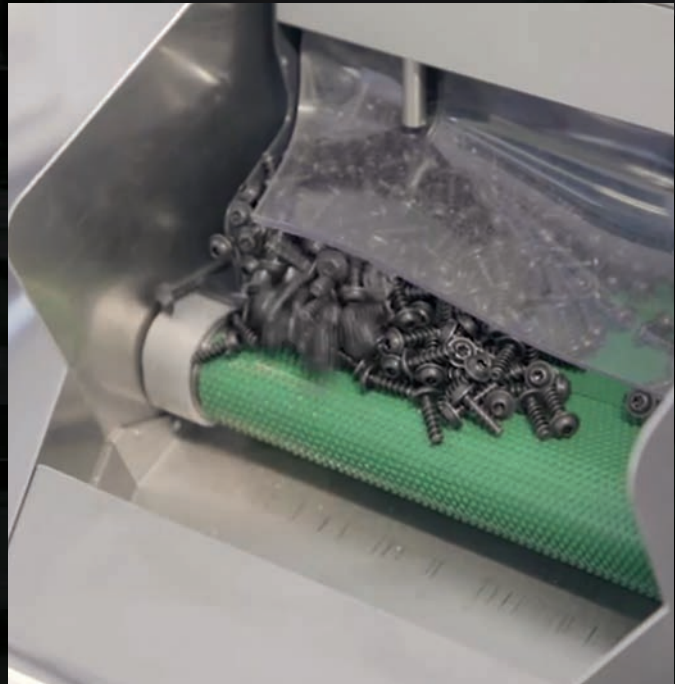
Noise-barriers are available as a special accessory for all vibratory feeders; they are specifically designed for use together with a hopper.

Simple operation and easy set-up

The DEPRAG hoppers come with a 24-volt gear motor. They can be operated simply via an output on the higher-level PLC.

Gentle component handling

Gentle component handling minimizes the waiting time of feed parts in the vibratory system.



Upgrade features for TECHNICAL CLEANLINESS for clean room applications

The DEPRAG CleanFeed concept for each processing step – from component handling and feeding to fastening – prevent, reduce and remove abrasion.

The CleanFeed concept – a universal solution!

Avoid abrasion

The aim is to avoid the creation of particle deposits when feeding the fastener and during the actual screwdriving process.

Reduce abrasion

If the screw is fed directly to the assembly, particle contamination cannot be ruled out. We developed the DEPRAG Particle Killer for issues such as these. This system cleans the blast-air used for feeding the screw and additionally removes left-over particles at the end-tooling where the screw is retained before actual screwdriving. Furthermore, we also offer screwdriver function modules [SFM] for underfloor [inverted] screw assembly, where gravity alone keeps dirt particles from getting to the screw location.

Remove abrasion

Dirt particles are targeted and removed via vacuum suction. The cleaned fastener is then fed into the screwdriving module or is ready for pick-up from a pick & place device.



Compatible with DEPRAG automation components



DFM – DEPRAG FEED MODULE

Advantages:

- Ergonomic
- Process reliable
- Efficient
- Flexible
- Maintenance friendly
- Various designs
- Suitable for lightweight robots
- Complete solution from a single source

The DEPRAG Feed Module enables fatigue-free processing due to the integrated bit stroke.



Ergonomic

Uncomplicated handling and fatigue-free processing due to the integrated bit stroke

Process reliable

- constant pressure force as a result of the integrated bit stroke
- automatic documentation of processing data

Efficient

- Optimised cycle time
- automatic feeding of fasteners
 - fast positioning of the screw due to the integrated lock stroke
- No PLC required
- integrated sequence controller via the feeding system



Flexible

- can be combined with electronic or pneumatic drives
- all screwdriving parameters are freely adjustable
- suitable for both stationary and manual applications

Maintenance friendly

Tool-free quick-change system for bit and positioning sleeves

Various designs

Straight design with handgrip, pistol grip design, version without handgrip for robotic applications, vacuum design for difficult-to-reach screw positions

Suitable for lightweight robots

The low weight of the DEPRAG Feed Module makes it ideal for applications which use lightweight robots.

Complete solution from a single source

The DEPRAG Feed Module can be used in combination with all DEPRAG feeding systems and handling devices.

Further information and technical details can be found in our catalog D3837E.



Compatible with DEPRAG automation components

SFM – DEPRAG Screwdriver Function Module

Advantages:

- wide product variety for all applications
- maximum ease of integration
- service optimized
- suitable for a complete process documentation
- standard modules allow for short delivery times

Screwdriver Function Modules are the basis of any automated, process-reliable screw-assembly.

You benefit from our long-standing experience in the fields of screwdriving technology and assembly automation.

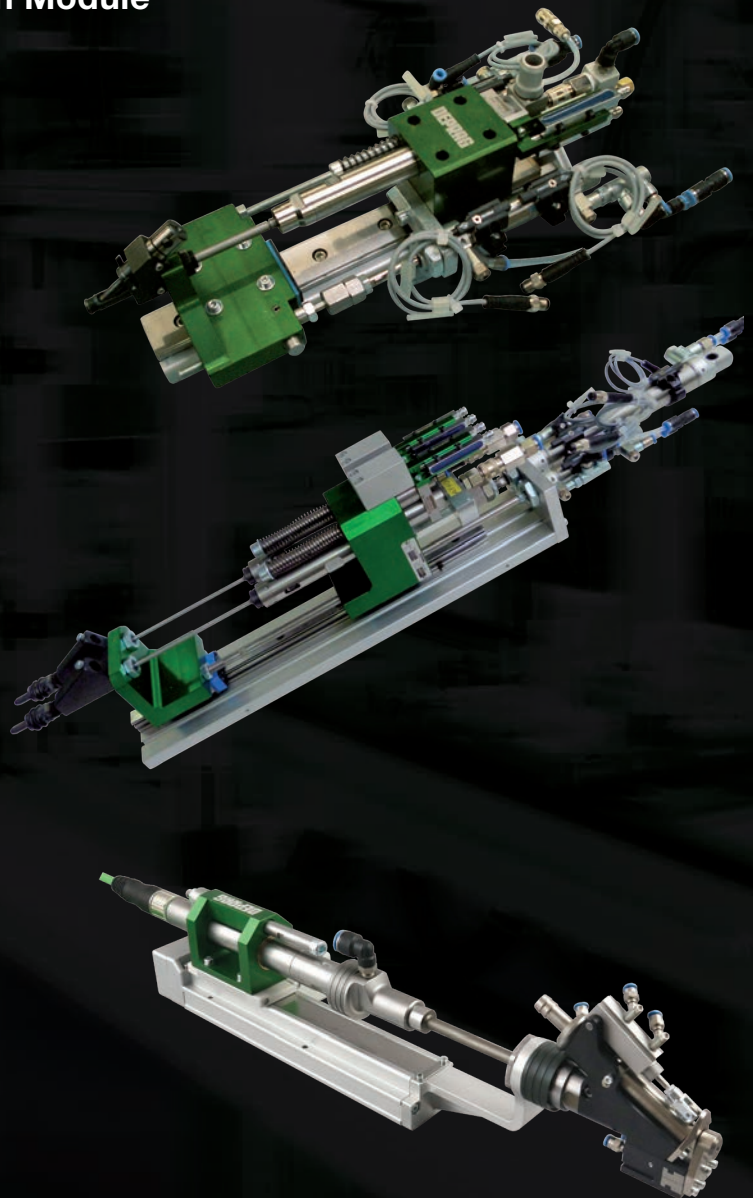
We offer both single-spindle and multi-spindle units with electric or pneumatic drive.

Further information and technical details can be found in our catalogs:

D3310E Screwdriver Function Module for an automated production

D0062E Screwdriver Function Module with electronic stroke

D0064E Screwdriver Function Module with magazine



Compatible with DEPRAG automation components

DCOS – DEPRAG CONTROLLER SYSTEM

Advantages:

- integrated standard software guarantees the highest functionality
- simple and reliable operation
- service friendly remote maintenance
- great value for money – optimal adaptation to DEPRAG screwdriving technology
- open connectivity and integrated network capabilities
- conforms to current safety standards
- realtime data integration

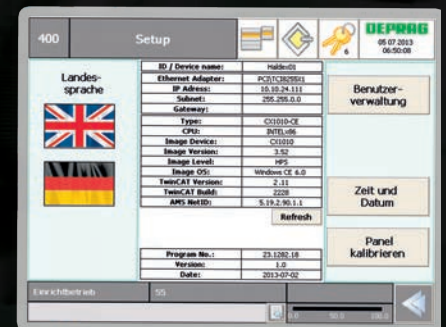
The DCOS (DEPRAG CONTROLLER SYSTEM) is designed to fulfil the highest requirements. It is particularly user friendly and has high functionality. The DCOS controls, records, documents and analyses.

The integrated networkability enables unproblematic connection to SCADA and MES systems, optimal data administration and storage and above all, the access to common PC applications such as browsers, data back-up and remote access opens up almost infinite user possibilities.

A DCOS consists of:


- the control and operating unit DPU
- the control cabinet DSEC
- and standardized software packages


Further information and technical details can be found in our catalog D3350E.




Technical data

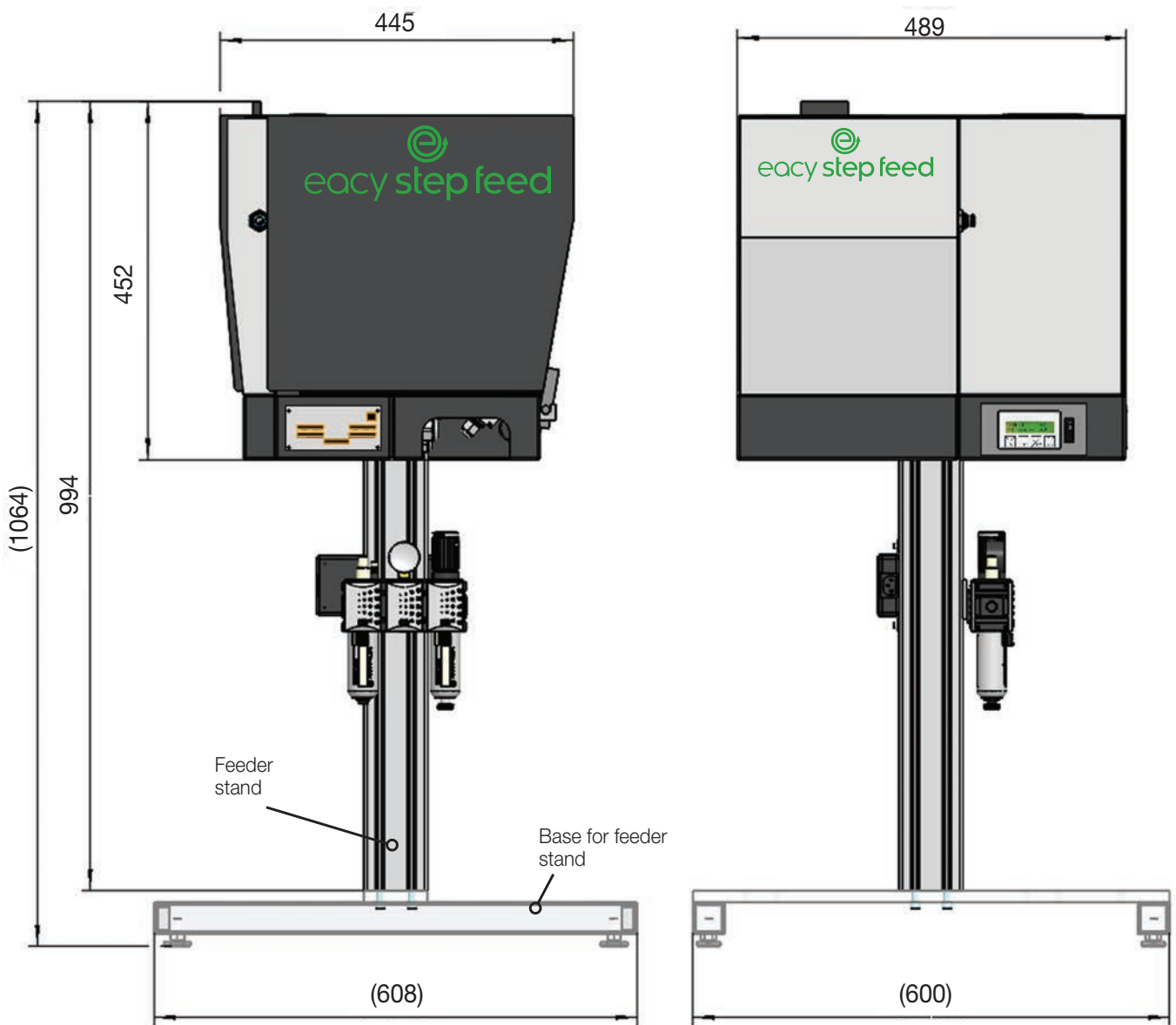
hand guided application

Material conveyed	screws, threaded pins,
	
Standard version type	11911-2.0
Integrated controller	PFC100 Controller (with modified software)
Transport principle	step feeder
Amount of connectable drivers	1
Feed rate approx. Parts/min	30
Filling capacity liter/gal.	2.0/0.53
Voltage V/Hz	24 Volt DC
Power consumption VA	max. 150
Air pressure requirement bar/PSI	6/85.2
Air connection size mm/in.	10 ² / ₈
Dimensions (WxDxH) mm/in.	489 x 445 x 994 / 19.07 x 17.35 x 38.77
Weight kg/lbs	approx. 72/158.4
Feedhose length standard m/ft.	2/6.56
Feedhose length max. m/ft.	8/26.4
Technical details on material conveyed:	
Max. head diameter mm/in.	16/0.62
Max. shaft length mm/in.	60/2.34
Range of shaft diameter mm/in.	3 - 8 / 0.12 - 0.31
Included in delivery:	Power unit 2041061, retaining plate (holder for power unit) 1126962, feeder stand 118936A
Required accessories:	Power cable 812587 (EU), 812295 (US), 833792 (UK), 832927 (CN), 207388 (BR), mouthpiece guide, mouthpiece, nosepiece split type or nosepiece ball type
Optional accessories:	Base for feeder stand 999309 Fill level indicator 414470A (in the container, inductive from below) Fill level indicator 420494E (in the container, red light from above) Hopper (see brochure D3850E) Set of wheels for stand (also in ESD-capable version) Special mouthpiece for critical screw head diameter to length relation Part template for positioning

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 A connecting cable is required to connect external controller with feeder. Part number will be assigned in case of an order. Every feeding system contains all required attachments for the screwdriver such as mouthpiece guide, mouthpiece, locking sleeve and bits. Various specialized versions are available depending on application and the screwdriver in use.

Dimensions



11911-2.0

Technical data

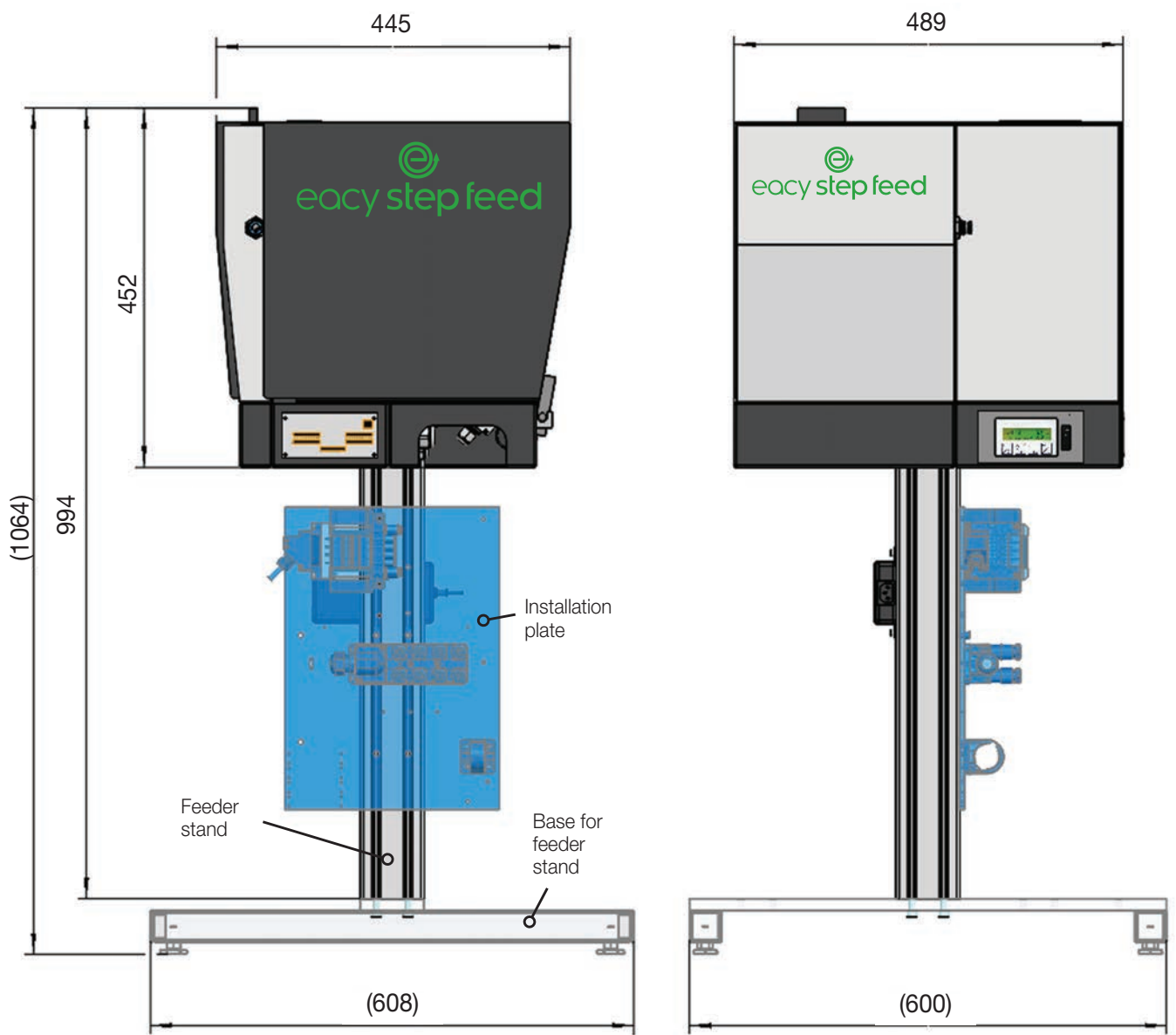
stationary application

Material conveyed	Screws, threaded pins,								
									
Filling capacity 2.0 l/0.53 gal. with PLC	Type	01911-EP/2.0	-	-	-	-	-	-	
Filling capacity 2.0 l/0.53 gal. without PLC	Type		01911 -0/2.0 -P/2.0 -0/2.0V -P/2.0V	01911 -2-0/2.0 -2-P/2.0 -2-0/2.0V -2-P/2.0V	01911 -3-0/2.0 -3-P/2.0 -3-0/2.0V -3-P/2.0V	01911 -4-0/2.0 -4-P/2.0 -4-0/2.0V -4-P/2.0V	01911 -5-0/2.0 -5-P/2.0 -5-0/2.0V -5-P/2.0V	01911 -6-0/2.0 -6-P/2.0 -6-0/2.0V -6-P/2.0V	
Control unit		PFC100 controller (insulation IP54)							
Amount of connectable drivers		1	1	2	3	4	5	6	
Feed rate max.	Parts/min	30	30	2x15	3x10	4x8	5x6	6x5	
Filling capacity	l/gal.	2.0/0.53	2.0/0.53	2.0/0.53	2.0/0.53	2.0/0.53	2.0/0.53	2.0/0.53	
Max. head diameter	mm/in.	16/0.62	16/0.62	16/0.62	16/0.62	16/0.62	16/0.62	16/0.62	
Max. shaft length	mm/in.	60/2.34	60/2.34	60/2.34	60/2.34	60/2.34	60/2.34	60/2.34	
Range of shaft diameter	mm/in.	3/0.12-8/0.31	3/0.12-8/0.31	3/0.12-8/0.31	3/0.12-8/0.31	3/0.12-8/0.31	3/0.12-8/0.31	3/0.12-8/0.31	
Voltage	V	24 Volt DC							
Max. power consumption	VA	150							
Air pressure requirement	bar/PSI	6/85.2							
Air hose diameter	mm/in.	10 ³ / ₈							
Weight approx.	kg/lbs.	70/154	73/160.6	76/167.2	78/171.6	78/171.6	80/176	80/176	
Dimensions (WxDxH) approx.	mm/in.	489 x 445 x 994 / 19.07 x 17.35 x 38.77							
Feed hose length - standard	m/ft.	4/ ⁵ / ₃₂	4/ ⁵ / ₃₂	4/ ⁵ / ₃₂	4/ ⁵ / ₃₂	4/ ⁵ / ₃₂	4/ ⁵ / ₃₂	4/ ⁵ / ₃₂	
max.	m/ft.	8/ ⁵ / ₁₆	8/ ⁵ / ₁₆	8/ ⁵ / ₁₆	8/ ⁵ / ₁₆	8/ ⁵ / ₁₆	8/ ⁵ / ₁₆	8/ ⁵ / ₁₆	
Number of in-/outputs needed for PLC version „0“ and „P“		3/1	6/6	9/8	11/10	13/10	15/12	16/12	
Additional version „V“		-	7/7	11/10	14/13	17/14	20/17	22/18	
Included in delivery:	Power unit 2041061, retaining plate (holder for power unit) 1126962, feeder stand 118936A								
Required accessories:	Power cable 812587 (EU), 812295 (US), 833792 (UK), 832927 (CN), 207388 (BR)								
Optional accessories:	Ring proximity switch with impulse extension 100 ms, with connector, cable and connector plug for screw presence control installed an								
	Base for feeder stand 999309								
	Fill level indicator 414470A (in the container, inductive from below)								
	Fill level indicator 420494E (in the container, red light from above)								
	Hopper (see brochure D3850E)								
	Set of wheels for stand (also in ESD-capable version)								



Our software solutions undergo continuous improvements. We recommend that you regularly update your software. In this way you will always receive the most up-to-date security updates, upgraded features and drivers. With the most current version of the software you can be sure that your device is optimally prepared for Industry 4.0.

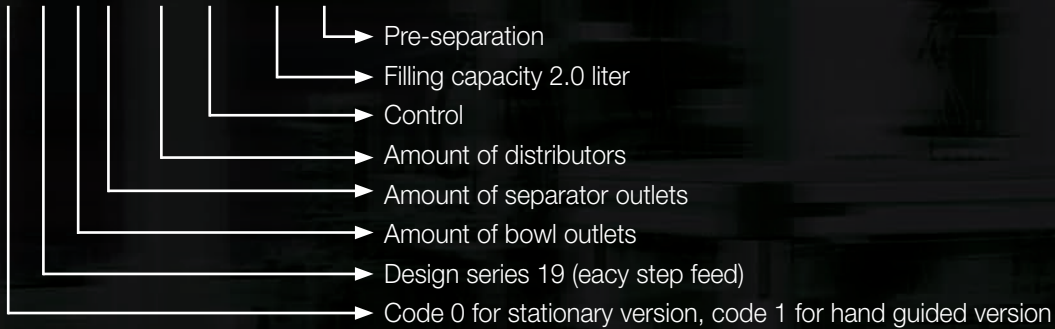
Dimensions



01911-x-x/2.0(V)

Nomenclature of feeders

i. e. 0 19 1 1 - 3 - P / 2.0 V



Software solutions

PFC100 Manager – the parameterization software for PFC100 controllers

The PFC100 Manager facilitates the reading and saving of parameters as text files for every PFC100 controller. Saved parameters can be transferred to any PFC100 controller quickly and simply using the PFC100 Manager.

The PFC100 Manager software is supplied on CD. The connection cable (385520B) required to connect PC and PFC100 controller is also supplied.

Available languages: German and English

Part number:
Software PFC100 Manager, including
connection cable – part no. 121759
Activation key for the software – part no. 122000

Further information can be found in our catalog D3900E or on our website www.deprag.com.



DEPRAG
machines unlimited

**Your global partner for
screwdriving technology, feeding
technology and automation**



More information:
www.deprag.com

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Phone (972) 221-8731 · Fax (972) 221-8163 · Toll Free (800) 4 DEPRAG · www.depragusa.com · deprag@depragusa.com

Feeding Technology



Screw Presenter

An economical way to automate your production

- flexible through interchangeable guide-rails
- suitable for virtually all screw-types
- feeding principle is gentle on screws
- self-sufficient because of its integrated control
- compact design



You are looking for a quick solution to automate your assembly, but an automatic screwfeeder is not feasible because of the low number of screws to be processed.

For such a case, the DEPRAG Screw Presenter is the ideal solution.

Screw Presenters are well-suited for the automatic presentation of screws to allow pickup with handheld- or stationary screwdriver.

ADVANTAGES OF THE DEPRAG SCREW-PRESENTERS

■ Flexible

Easily exchangeable parts, such as adjustable cover-rails and bit-guides, allow the processing of screws with different measurements in the same screw-presenter.

With just a few steps, you can convert your screw presenter.

Even screws with unfavourable measurements, which cannot be transported through a feedhose, can be presented with the screw-presenters.

■ Operator friendly

For the use in a handheld application, a special feed-rail allows a precise and swift pick-up of the presented screw by either a magnetic bit or by vacuum.

■ Gentle transporting of screws

The transport of the screws occurs by two lift-segments in the screw-reservoir. The screws fall on top of a vibrating guide-rail, are accurately positioned by a brush and subsequently transported out of the reservoir. The procedure is especially gentle and quiet.

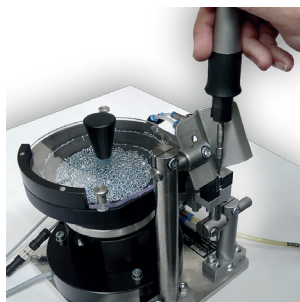
■ Stand-alone operation

The device is fully self-sufficient because of the integrated control. The sequence controller regulates the process reliably, due to a light-barrier and micro-switch.

■ Compact design

Due to their compact design, multiple DEPRAG screw presenters can be arranged efficiently in limited work spaces.

SPECIAL SOLUTIONS

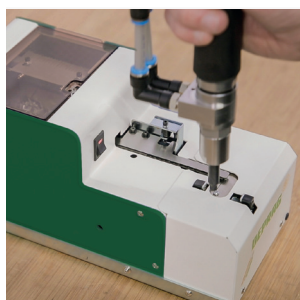


If required we also develop screw-presenters that are tailored to the requirements of a customer-specific application.

An Example: Particularly when the demands of industrial series production are very high, DEPRAG can offer an extremely robust and durable custom-design. Such a system consists of a unit where the screw-supply is actually done by a vibratory-bowl.

A robust guide plate made from stainless steel allows the reliable and comfortable picking of the screw at a high mass-production rate.

SCREW PRESENTERS USED WITH HANDHELD TOOLS



For the supply of screws with a shaft-diameter of 1 mm to 5 mm and a shaft-length up to max. 25 mm.

The screw pick-up is done by magnetic bit or vacuum suction.

An operator can comfortably pick-up the screw with a forward motion.

SCREW-PRESENTERS USED WITH STATIONARY TOOLS



For the supply of screws with a shaft-diameter of 1.4 mm to 5 mm and a shaft-length up to max. 18 mm.

This screw-presenter is especially well-suited for countersunk screws.

A screw-separator presents each individual screw to a pick-up position. The screw is removed using an upwards motion. A signal-output allows the control of the pick-up position by a host controller.

TECHNICAL DATA FOR SCREW-PRESENTERS USED WITH HANDHELD TOOLS

For shaft lengths up to 10 mm / 0.39 in.

Screw-presenter	Type	1211-ES/14	1211-ES/17
	Part no.	3788881D	3788882D
Max. feed rate	parts/min	120	
Filling capacity	liter / gal.	0.08 / 0.02	
Operating voltage (DC)	V	12	
Power consumption	mA	500	
Dimensions (W x D x H)	mm / in.	123 x 181 x 145 / 4 27/32 x 7 1/8 x 5 45/64	
Weight	kg / lbs	2.9 / 6.38	
for shaft diameter	mm / in.	to 1.4 / to .055	to 1.7 / to .067
for shaft length	mm / in.	2 - 10 / .080 - .394	2 - 10 / .080 - .394
Required Accessories	Power unit, part no. 125512 / 125590 - technical data please see next page		

For shaft lengths up to 16 mm / 0.6 in.

Screw-presenter	Type	1211-ES-K/12
	Part no.	407254A
Max. feed rate	parts/min	40
Filling capacity	liter / gal.	0.05 / 0.013
Operating voltage (DC)	V	15
Power consumption	mA	1000
Dimensions (W x D x H)	mm / in.	55 x 205 x 142.5 / 2 11/64 x 8 5/64 x 5 39/64
Weight	kg / lbs	2.4 / 5.3

Required Accessories

Guide rail	Type	1211-K-10	1211-K-12
	Part no.	832470	832471
Distance between the guide rails	mm / in.	1 / .039	1.2 / .047
for shaft diameter	mm / in.	0.9 - 1 / .035 - .039	1.1 - 1.2 / .043 - .047
for shaft length	mm / in.	2 - 16 / .080 - .625	2 - 16 / .080 - .625
Power unit	Type	1211-ES-K 230 V/50 Hz	1211-ES-K 115 V/60 Hz
	Part no.	407636A	407637A
Source (AC)	V/Hz	230/50	115/60
Output (DC)	V	15	15

For shaft lengths up to 18 mm / 0.7 in.

Screw-presenter	Type	1211-ES/23	1211-ES/45
	Part no.	378889C	378890C
Max. feed rate	parts/min	40	40
Filling capacity	liter / gal.	0.1 / 0.03	0.1 / 0.03
Operating voltage (DC)	V	12	12
Power consumption	mA	500	500
Dimensions (W x D x H)	mm	130 x 215 x 136	130 x 215 x 136
	in.	5 1/8 x 8 15/32 x 5 3/8	5 1/8 x 8 15/32 x 5 3/8
Weight	kg / lbs	3 / 6.6	3 / 6.6

Required Accessories

Guide rail	Type	1211-20	1211-23	1211-26	1211-30	1211-35	1211-40	1211-50
	Part no.	825573	825574	825575	825576	825577	825578	825579
Distance between the guide rails	mm / in.	2 / .080	2.3 / .091	2.6 / .103	3 / .120	3.5 / .140	4 / .158	5 / .198
for shaft diameter	mm	1.8 - 2	2.1 - 2.3	2.4 - 2.6	2.7 - 3	3.1 - 3.5	3.6 - 4	4.5 - 5
	in.	.071 - .080	.083 - .091	.095 - .103	.107 - .120	.123 - .140	.142 - .158	.178 - .198
for shaft length	mm	2.6 - 18	2.9 - 18	3.2 - 18	3.6 - 18	4.1 - 18	4.6 - 18	5.6 - 18
	in.	.103 - .710	.115 - .710	.126 - .710	.142 - .710	.162 - .710	.182 - .710	.221 - .710
Power unit	Part no. 125512 / 125590 - technical data please see next page							

TECHNICAL DATA FOR SCREW-PRESENTERS USED WITH HANDHELD TOOLS

For shaft lengths up to 25 mm / 0.985 in.

Screw-presenter	Type	1211-ES-G/23	1211-ES-G/45
	Part no.		387672C
Max. feed rate	parts/min	30	30
Filling capacity	liter / gal.	0.1 / 0.03	0.1 / 0.03
Operating voltage (DC)	V	12	12
Power consumption	mA	500	500
Dimensions (W x D x H)	mm / in.	130 x 215 x 136 / 5 1/8 x 8 15/32 x 5 3/8	130 x 215 x 136 / 5 1/8 x 8 15/32 x 5 3/8
Weight	kg / lbs	3 / 6.6	3 / 6.6

Required Accessories

Guide rail	Type	1211-G-20	1211-G-23	1211-G-26	1211-G-30	1211-G-35	1211-G-40	1211-G-50
	Part no.		827560	827561	827562	827563	827679	827680
Distance between the guide rails for shaft diameter	mm / in.	2 / .080	2.3 / .091	2.6 / .103	3 / .120	3.5 / .140	4 / .158	5 / .198
	mm	1.8 - 2	2.1 - 2.3	2.4 - 2.6	2.7 - 3	3.1 - 3.5	3.6 - 4	4.5 - 5
for shaft length	in.	.071 - .080	.083 - .091	.095 - .103	.107 - .120	.123 - .140	.142 - .158	.178 - .198
	mm	10 - 25	10 - 25	10 - 25	10 - 25	10 - 25	10 - 25	10 - 25
	in.	.394 - .985	.394 - .985	.394 - .985	.394 - .985	.394 - .985	.394 - .985	.394 - .985
Power unit		Part no. 125512 / 125590 – technical data please see below						

Technical data power unit - required accessories for the screw presenters with shaft lengths up to 10 mm, 18 mm and 25 mm / 0.39 in., 0.7 in. and 0.985 in.

Power unit	Type	SGx211-115-230-EU	SGx211-115-230-US
	Part no.		125512
Source (AC)	V/Hz	115-230/50-60	115-230/50-60
Output (DC)	V	12	12
		Connection cable EU included	Connection cable US included

Additionally available:

Connection cable UK (length 1.8 m), part no. 145550

Connection cable China (length 1.8 m), part no. 145719

Counter-sunk-head screws cannot be handled by screw presenter type 1211-ES, but for these we would like to recommend type 0211-EP instead, where screws will be picked up by a vacuum system.

TECHNICAL DATA FOR SCREW-PRESENTERS USED WITH STATIONARY TOOLS

Technical data for screw-presenters used with stationary screwdrivers

Screw-presenter	Type	0211-	0211-	0211-	0211-	0211-	0211-	0211-	0211-	0211-
		EP/12-14	EP/12-17	EP/23-20	EP/23-23	EP/23-26	EP/23-30	EP/45-35	EP/45-40	EP/45-50
	Part. no.	378891B	378892B	378893C	378894C	378895C	378896C	378897C	378898C	378899C
Max. feed rate	parts/min	40			40					
Filling capacity	liter / gal.	0.1 / 0.03			0.1 / 0.03					
Operating voltage (DC)	V	12			12					
Power consumption	mA	500			500					
Dimensions (W x D x H)	mm	122x180x140			130x274x136					
	in.	4 ⁵¹ / ₆₄ x 7 ³ / ₃₂ x 5 ³³ / ₆₄			5 ¹ / ₈ x 10 ³ / ₄ x 5 ³ / ₈					
Weight	kg / lbs	4.2 / 9.2			4.2 / 9.2					
Distance between the guide rails for shaft diameter	mm / in.	1.4 / .055	1.7 / .067	2 / .080	2.3 / .091	2.6 / .103	3 / .120	3.5 / .140	4 / .158	5 / .198
	mm	to 1.4	1.5 - 1.7	1.8 - 2	2.1 - 2.3	2.4 - 2.6	2.7 - 3	3.1 - 3.5	3.6 - 4	4.5 - 5
	in.	to .055	.060 - .067	.071 - .080	.083 - .091	.095 - .103	.107 - .120	.123 - .140	.142 - .158	.178 - .198
for shaft length	mm	2 - 10	2.3 - 10	2.6 - 18	2.9 - 18	3.2 - 18	3.6 - 18	4.1 - 18	4.6 - 18	5.6 - 18
	in.	.080 - .394	.091 - .394	.103 - .710	.115 - .710	.126 - .710	.142 - .710	.162 - .710	.182 - .710	.221 - .710

Required Accessories

Power unit	Type	SGx211-115-230-EU	SGx211-115-230-US
	Part no.	125512	125590
Source (AC)	V/Hz	115-230/50-60	115-230/50-60
Output (DC)	V	12	12
		Connection cable EU included	Connection cable US included

Additionally available:

Connection cable UK (length 1.8 m), part no. 145550

Connection cable China (length 1.8 m), part no. 145719

Optional Equipment

For screw presenters in conjunction with MICROMAT-F / MINIMAT-F screwdriver (→ leaflet D3440E) and controller fc11

Sensor (for signal break screw presenter)	Part no.	399525A (for 1211-ES)
Adapter (for the connection of sensor and pc11)	Part no.	399526A
Sensor (for signal break screw presenter)	Part no.	399525B (for 0211-EP)
Adapter (for the connection of sensor and pc11)	Part no.	399526A

For screw presenters in conjunction with EC screwdriver and controller AST1x

Sensor	Part no.	399525D (for 0211-EP)
Sensor	Part no.	399525E (for 1211-ES)

DEPRAG

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CERTIFIED AS PER DIN EN ISO 9001

Feeding Technology



Storage Devices

Belt-Driven Hopper for the automatic refilling of feeding systems

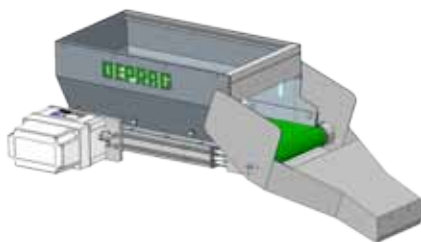
- extends refill intervals
- provides a consistent fill-volume
- gentle part handling
- flexible
- low noise level and wear-resistant
- easy to control



Does your operating staff have to refill your feeding equipment to avoid a production stoppage? Or, does your feeder operate irregularly and would you like to optimize its process?

For those situations, we recommend the use of our storage devices, such as the DEPRAG Belt-Driven Hopper.

ADVANTAGES OF THE DEPRAG STORAGE DEVICES



• Extends Refill Intervals

Belt-driven hoppers are the ideal supplement to feeding systems to dramatically increase the required refill intervals. A fill-level sensor that is installed in the feeding system sends a signal to a controller when the minimum fill-level is reached. The controller activates the hopper and the feeder will be refilled through the outflow-chute until the fill-level sensor signals that the desired fill-level has been reached. According to the required fill-volume, the refill intervals may be reduced to once or twice per shift which frees-up your personnel for other duties.

• Consistent Fill-Volume

A hopper assures the consistent fill-volume in your feeding system. Especially when using a vibratory feeding system without fill-level independent self-regulation, a hopper is advantageous. A vibratory feeder actually requires a certain fill-mass, which means if the vibratory bowl is too full and therefore heavy, the feeding system slows down. If the vibratory bowl is getting empty, then the vibration intensity increases. Both conditions reduce the feed-volume and increase wear and tear. Only a consistent fill-volume optimizes your vibratory feed-system.

• Gentle Part Handling

Using a hopper can reduce the vibration-duration of a feeding system to a minimum. A gentler handling of the feed-component is possible if the vibratory bowl is not too full and the feeding-process is fast. A hopper supports those conditions by evenly refilling a vibratory bowl with just the right volume.

• Flexible

A DEPRAG hopper is a flexible device that can be used for different parts – a costly refitting is not necessary. The outflow-chute of the hopper can be adjusted to perfectly fit the size of the feeding component. Additional regulating possibilities allow the hopper to be adjustable into two different directions.

• Low noise level and wear-resistant

The hopper incorporates a fully sealed outflow-chute, which results into a considerable noise reduction. An optional noise-barrier can be supplied with all our vibratory-drives, which is especially designed to work with our hoppers. This way, a low noise level of the completely closed vibratory-drive is guaranteed even when combining it with a hopper. The use of wear-resistant materials assures the high quality, rapid availability and outstanding efficiency of our storage devices.

• Easy to control and simple to operate

DEPRAG hoppers are equipped with a 24 V gear motor, which allows a PLC to easily control the unit using the appropriate output. The gear motor can also be activated manually by using an integrated button. This is an advantage during the refilling of the hopper, because the content can be moved effortlessly towards the outflow-chute. Each hopper includes a comprehensive operating booklet, which clearly describes the installation and operation of the hopper.

TECHNICAL DATA

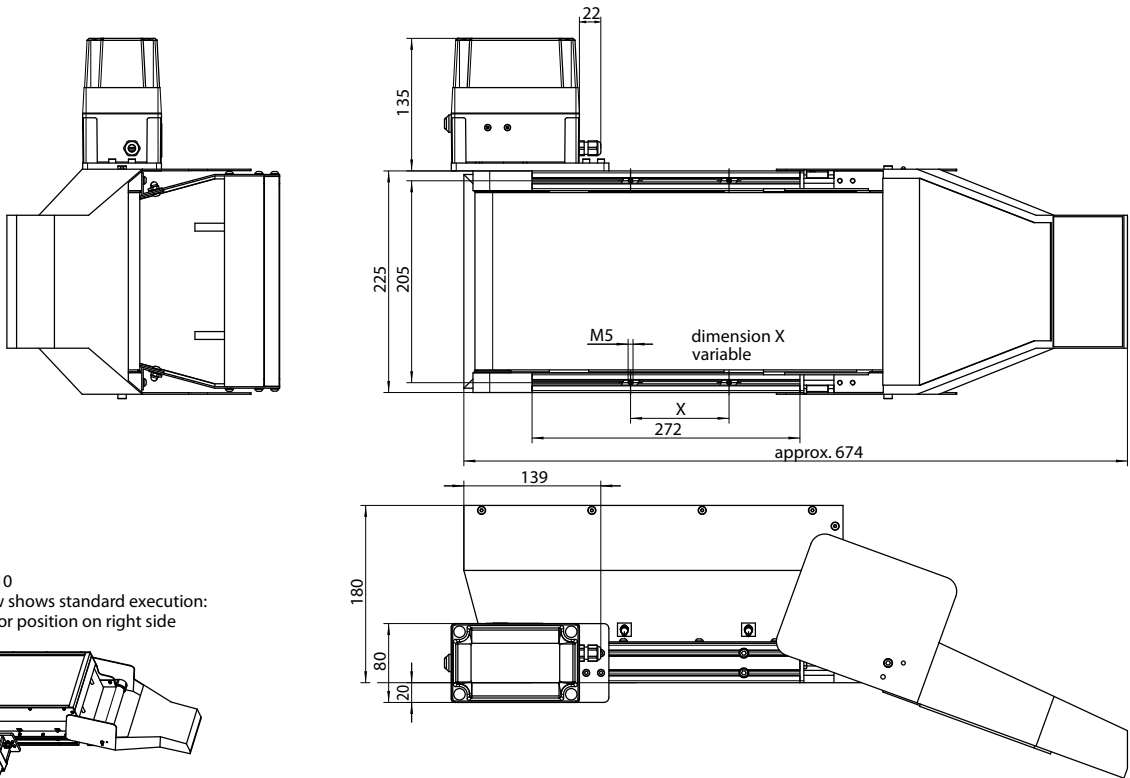
Belt-Driven Hopper	Type	B10	B20
Standard	Part no.	415050A	418247A
In connection with feeder x811	Part no.	415050B	-
In connection with feeder 110xx	Part no.	415050D	-
Filling capacity	liter / gal	10 / 2.6	20 / 5.2
Voltage (DC)	V	24	24
Power consumption	A	0.2	0.2
Power output	W / HP	5 / 0.007	5 / 0.007
Belt speed	m/min – ft./min	0.1 - 0.33	0.1 - 0.33
Weight	kg / lbs	11 / 24	18.5 / 40.7
Included in delivery:			
Transport belt color		green	green
Surface		dimpled (optional smooth)	dimpled
Allowable operating temperature	°C / °F	-10 to +70 / -50 to +148.4	-10 to +70 / -50 to +148.4
Antistatic		yes	yes
Oil- and grease resistant		yes	yes

Of course, it is possible to supply transportation belts with particular attributes (i.e. for the food industry). Please contact us with your requirements!

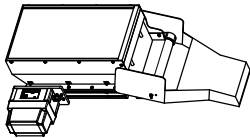
Optional Equipment suitable for	Type	B10	B20
Housing stand (height adjustable)	Part no.	371990A	371990X
Foot bracket for stand	Part no.	994449	999309
Adjustment for outflow-chute (for incline adjustment)	Part no.	371435E	371435F
Cover (for feeder in connection with B10)	Part no.	374474A	-
Collection pan for screws	Part no.	202505B	202505C
Sensor (position chute)	Part no.	396540B	-
Power supply (in connection with feeder 110xx) 230 V / 115 V	Part no.	375394H / 375394G	-
Connector cable (in connection with feeder 110xx)	Part no.	385522A	-

DIMENSIONS

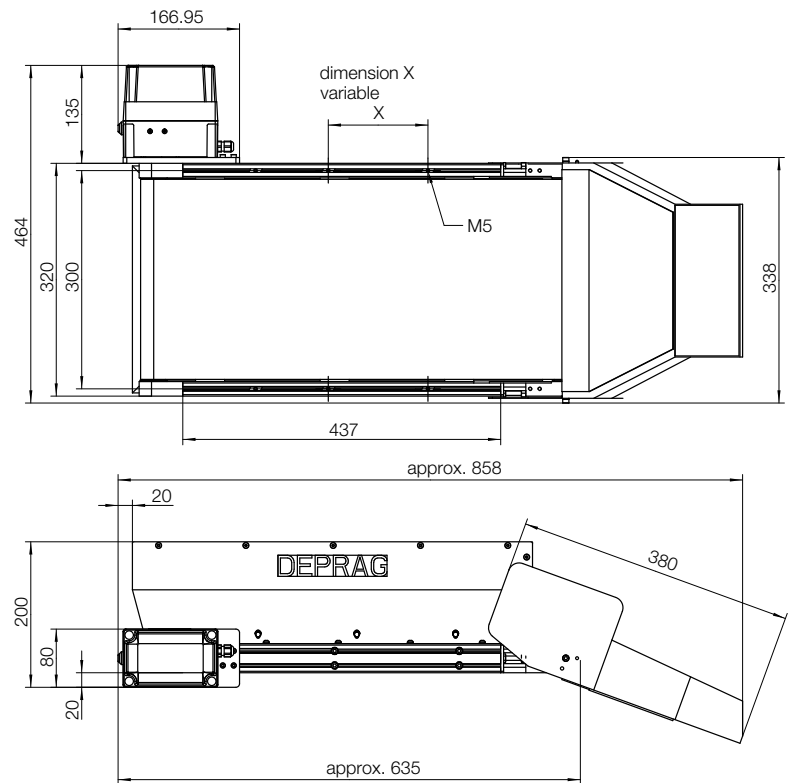
Type B10:



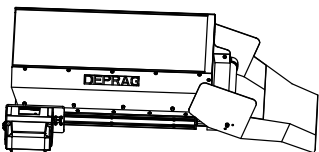
M1:10
View shows standard execution:
motor position on right side



Type B20:



1:10
View shows standard execution:
motor position on right side



Dimensions in mm

DEPRAG

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