



Feeding systems for stationary use

Efficient and intelligent feeding with eacy 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.

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 %

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

C Co

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

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

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.

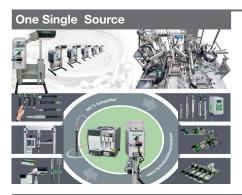
Efficient production

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





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	I Feed volume	Page	11
6.0	I Feed volume	Page	15
12.0	I Feed volume	Page	15

Design Sizes eacy feed:

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



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 I Feed volume Page 16 1.50 I Feed volume Page 16



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



The DEPRAG Mini Screw Feeder is perfectly suited for feeding very small rotationally symmetrical parts such as micro and mini screws. By means of a rotating disk, one fastener at a time is brought into a defined position and made available for picking. Picking can be performed via magnet or vacuum.

→ Catalog D3836E



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.



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.



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.

→ Catalog 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.

→ Catalog 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 outflowchute 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.

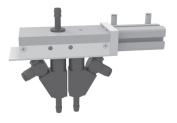
Gentle component handling minimizes the waiting time of feed parts in the vibratory system

→ Catalog D3850E

Storage Systems



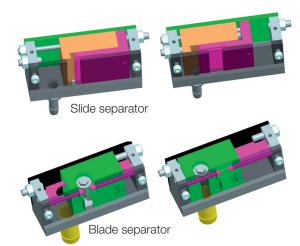






Distributor with hose nozzles that connect to an additional air-blast

Distributor with standard hose nozzles



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).

Control

The standard version (version "0") of the We offer different control units to control feeding systems, neither pneumatic valves our vibratory drives. 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, no. IP54. A soft start feature is integrated 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

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

These units conform to the protection type 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



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



Nosepiece

- Ring proximity switch for screw presence sensors
- Fill level indicator
- Feeder stand
- Base for feeder stand
- Storage devices (Catalog D3850E)



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**.

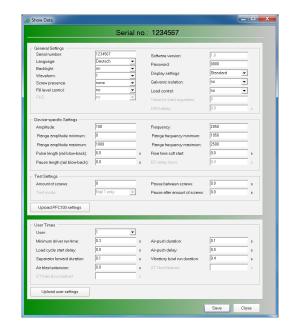
The connection cable 385520B required to connect the PC and PFC100 must be ordered separately.

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.



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 bestsuited 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



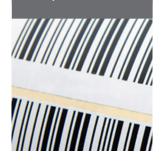
Wide-ranging component designs can be processed using a vibratory feeder in combination with a linear-conveyor system. We can utilize sensors so that the most varied of component geometries can be processed, particularly in stationary feeding systems.

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.



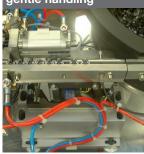
The DEPRAG tape-on-reel feeder predominately retrieves labels, stickers, and a protective film arriving on a tape-reel, by utilizing vacuum assistance.

Press-insertion components



We supply standardized pressinsertion 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 qual-

ity 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.



A vibratory feeder in connection with a suction device can be used to process components in clean-rooms 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

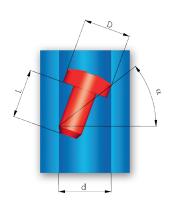
DEPRAG screw feeders consist of the supply system itself, an air connection, a power switch and an electronic controller including feedhose, in standard length 4m.



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°

d ~ D + 0.5 mm

Approximation formula: L > D + 2 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.

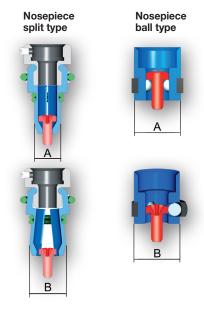
STEP 3:

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 mmB = A + D - d/2 B = 3D - 2d + 5 mm

 $n = A \times B$

n = ø 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 "0", 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	Туре	0611-P/0.05-x
0.05 liter / 0.01 gal.		0611-O/0.05-x
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	ion "O" and "P"	2/4
Control Unit	Туре	Piezo Controller, part no. 806652
Dimensions (L x W x H)	mm / in.	106 x 100 x150 / 4 ¹¹ /64 x 3 ⁷ /8 x 5 ⁷ /8

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





Filling capacity 0.15 I / 0.04 gal.	Type	01011	01022	01011-2	01011-3	01011-4	-	-
with PLC		-EP/0.15	-EP/0.15	-EP/0.15	-EP/0.15	-EP/0.15		
Control unit				PFC100 c	ontroller (insu	ulation IP54)		
Filling capacity 0.15 I / 0.04 gal. without PLC	Туре	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 -3-0/0.15 -3-P/0.15 -3-0/0.15V -3-P/0.15V			
Control unit				PFC100 c	ontroller (insu	ulation IP54)		
Filling capacity 0.15 I / 0.04 gal. without PLC (integrated version with regulation of the feeder controller directly via DEPRAG - PLC)	Туре	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 -3-0/0.15 -3-P/0.15 -3-0/0.15V -3-P/0.15V			
Control unit	_			PFCi100 c	ontroller (insu	ulation 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.	l		1.2	- 2.5 / 0.046	- 0.1		
Voltage	V	l			24 Volt DC			
Max. power consumption	VA				50			
Air pressure requirement	bar / PSI	l			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 2	258 / 11.54 x	: 13.73 x 10.0	06	
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	6/7	8/9	10/9	12/11	13/11
version	"EP"	2/1	3/2	3/1	4/1	5/1	_	_
addition	nal 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)						
<u> </u>						,		

Optional accessories	see page 18

^{*)} 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 0.75 liter - for screws with max. shaft length 35 mm - for small components





Filling capacity 0.75 I / 0.2 gal	. Туре	01011	01022	_	_	01011-2	01011-3	01011-4	-	-
with PLC		-EP/0.75	-EP/0.75			-EP/0.75	-EP/0.75	-EP/0.75		
Control unit					PFC100 c	ontroller (insu	lation IP54)			
Filling capacity 0.75 I / 0.2 gal without PLC	Type	01011 -0/0.75 -P/0.75 -0/0.75V -P/0.75V	01022 -0/0.75 -P/0.75 -0/0.75V -P/0.75V	01012 -0/0.75 -P/0.75 -0/0.75V -P/0.75V	01024 -0/0.75 -P/0.75 -0/0.75V -P/0.75V	01011 -2-0/0.75 -2-P/0.75 -2-0/0.75V -2-P/0.75V	01011 -3-0/0.75 -3-P/0.75 -3-0/0.75V -3-P/0.75V	01011 -4-0/0.75 -4-P/0.75 -4-0/0.75V -4-P/0.75V	01011 -5-0/0.75 -5-P/0.75 -5-0/0.75V -5-P/0.75V	01011 -6-0/0.75 -6-P/0.75 -6-0/0.75V -6-P/0.75V
Control unit					PFC100 c	ontroller (insu	lation IP54)			
Filling capacity 0.75 I / 0.2 gal. Type without PLC (integrated version with regulation of the feeder controller directly via DEPRAG - PLC)		01011i -0/0.75 -P/0.75 -0/0.75V -P/0.75V	01022i -0/0.75 -P/0.75 -0/0.75V -P/0.75V	01012i -0/0.75 -P/0.75 -0/0.75V -P/0.75V	01024i -0/0.75 -P/0.75 -0/0.75V -P/0.75V	01011i -2-0/0.75 -2-P/0.75 -2-0/0.75V -2-P/0.75V	01011i -3-0/0.75 -3-P/0.75 -3-0/0.75V -3-P/0.75V	01011i -4-0/0.75 -4-P/0.75 -4-0/0.75V	01011i -5-0/0.75 -5-P/0.75 -5-0/0.75V -5-P/0.75V	01011i -6-0/0.75 -6-P/0.75 -6-0/0.75V -6-P/0.75V
Control unit	PFCi100 controller (insulation IP54)									
Amount of connectable driver	S	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 / 1³/ ₈	25 / ³¹ / ₃₂	35 / 1 ³ / ₈	25 / ³¹ / ₃₂	35 / 1 ³ /8	35 / 1 ³ / ₈	35 / 1³/ ₈	35 /13/8	35 / 1 ³ /8
Range of shaft diameter	mm / in.				1.5	5 - 7 / 0.06 - 0	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	d 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 105535A				
Required accessor	ies					
Power cable	Part no.	812587 (EU) / 812295 (US)				
Optional accessori	es	see page 18				

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





illing capacity 1.2 I / 0.32 gal.	Туре	01011	01011-2	01011-3	01011-4	-	-			
vith PLC		-EP/1.2	-EP/1.2	-EP/1.2	-EP/1.2					
Control unit			'	PFC100 contro	oller (insulation IP	54)	'			
illing capacity 1.2 l / 0.32 gal. vithout PLC	Туре	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 contro	oller (insulation IP	54)				
filling capacity 1.2 I / 0.32 gal. without PLC integrated version with regulation of the feeder controller directly via DEPRAG - PLC)	Туре	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			
eed rate	parts/min	25	2x12	3x8	4x6	5x5	6x4			
illing 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 ¹⁵ /16					
Range of shaft diameter	mm / in.			3 - 7 / 0	0.118 - 0.276					
/oltage	V			24	Volt DC					
Max. power consumption	VA				150					
Air pressure requirement	bar / PSI			6	6 / 85.2					
Air hose dia.	mm / in.				10 / ³/8					
Veight 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				
eedhose length standard	m / ft.			4	/ 13.1					
max.	m / ft.			8	3 / 26.2					
Number of in-/outputs needed for P	LC									
ersion "0" and "P"		3/5	6/7	8/9	10/9	12/11	13/11			
		2/1	3/1	4/1	5/1	_				
/ersion "EP"		2/ 1	J/ I	-T/ I	Ο, .					
		4/6	8/9	11/12	14/13	17/16	19/17			

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

see page 18

Optional accessories

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





Filling capacity 2.5 I / 0.66 gal	. Туре	01011	01022	-	-	01011-2	01011-3	01011-4	-	-
with PLC		-EP/2.5	-EP/2.5			-EP/2.5	-EP/2.5	-EP/2.5		
Control unit					PFC100 co	ontroller (insu	lation IP54)		•	
Filling capacity 2.5 I / 0.66 gal without PLC	Type	01011 -0/2.5 -P/2.5 -0/2.5V -P/2.5V	01022 -0/2.5 -P/2.5 -0/2.5V -P/2.5V	01012 -0/2.5 -P/2.5 -0/2.5V -P/2.5V	01024 -0/2.5 -P/2.5 -0/2.5V -P/2.5V	01011 -2-0/2.5 -2-P/2.5 -2-0/2.5V -2-P/2.5V	01011 -3-0/2.5 -3-P/2.5 -3-0/2.5V -3-P/2.5V	01011 -4-0/2.5 -4-P/2.5 -4-0/2.5V -4-P/2.5V	01011 -5-0/2.5 -5-P/2.5 -5-0/2.5V -5-P/2.5V	01011 -6-0/2.5 -6-P/2.5 -6-0/2.5V -6-P/2.5V
Control unit					PFC100 co	ontroller (insu	ılation IP54)			
Filling capacity 2.5 I / 0.66 gal without PLC (integrated version with regular of the feeder controller directly DEPRAG - PLC)	ation	01011i -0/2.5 -P/2.5 -0/2.5V -P/2.5V	01022i -0/2.5 -P/2.5 -0/2.5V -P/2.5V	01012i -0/2.5 -P/2.5 -0/2.5V -P/2.5V	01024i -0/2.5 -P/2.5 -0/2.5V -P/2.5V	01011i -2-0/2.5 -2-P/2.5 -2-0/2.5V -2-P/2.5V	01011i -3-0/2.5 -3-P/2.5 -3-0/2.5V -3-P/2.5V	01011i -4-0/2.5 -4-P/2.5 -4-0/2.5V -4-P/2.5V	01011i -5-0/2.5 -5-P/2.5 -5-0/2.5V -5-P/2.5V	01011i -6-0/2.5 -6-P/2.5 -6-0/2.5V -6-P/2.5V
Control unit	PFCi100 controller (insulation IP54)									
Amount of connectable driver	S	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	1	1	1	60 / 2 ²³ /64	60 / 2 ²³ /64	60 / 2 ²³ /64
Range of shaft diameter	mm / in.					1 - 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.		547 x 600 x 294 / 21.33 x 23.4 x 11.5								
Feedhose length standard	m / ft.									
max.	m / ft.				,	8 / 26.2			,	
Number of in-/outputs needed	d 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	-	<u>-</u>
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	У	Power unit 2041061				
Required accessor	ies					
Power cable	Part no.	812587 (EU) / 812295 (US)				
Optional accessori	es	see page 18				

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

Filling capacity 6 liter / 1.6 gal.	Туре	0511-O/6.0 0511-P/6.0	0511-2-O/6.0 0511-2-P/6.0 0511-2-O/6.0V 0511-2-P/6.0V	0511-3-0/6.0 0511-3-P/6.0 0511-3-O/6.0V 0511-3-P/6.0V	0511-4-O/6.0 0511-4-P/6.0 0511-4-O/6.0V 0511-4-P/6.0V	0511-5-O/6.0 0511-5-P/6.0 0511-5-O/6.0V 0511-5-P/6.0V	0511-6-O/6.0 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 / 13/16						
Max. shaft length	mm / in.		100 / 4						
Range of shaft diameter	mm / in.			8 - 16 / 0	0.315 - 0.63				
Air pressure requirement	bar / PSI			6.	3 / 90				
Air hose dia.	mm / in.			1() / ³ /8				
Weight (design "O")	kg / lbs.			250	0 / 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	1)			

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

Filling capacity 12 liter /	Туре	0511 -O/12	0511 -2-0/12	0512 -O/12	0522 -O/12	0511 -3-0/12	0511 -4-0/12		
3.2 gal		-P/12	-2-P/12	-P/12	-P/12	-3-P/12	-4-P/12		
			-2-0/12 V	-O/12 V		-3-0/12 V	-4-0/12 V		
			-2-P/12 V	-P/12 V		-3-P/12 V	-4-P/12 V		
Amount of connectable driver	S	1	2	2	2	3	4		
Preferred type for identical amou	unt 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 / 137/64	40 / 1 ³⁷ / ₆₄		
Max. shaft length	mm / in.	130 / 5¹/8	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 spe	ecification 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	d 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 conv	•		•	'	controller	*	•		
Control unit for linear conveyo	r		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	Туре	0811-O/0.15 0811-P/0.15
Amount of connectable driver	c	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	m / ft.	4 / 13.1
max	m / ft.	5 / 16.4
Number of in-/outputs needed	d 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)	Туре	01811-EP/1.5	-	-	-	-	-		
without PLC, without control unit (control via external PLC)	Туре	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	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.	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	<u> </u>	_	-	_	-		
Included in delivery (only for type 01811-EP/1.5)		Power unit 105535A			_				
Required accessories (only 01811-EP/1.5) Power cable	for type 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	Туре	01011M -EP/0.75	-	-	01011M -EP/2.5	-	-		
Control unit	1	PFC100 controller (insulation IP54)							
without PLC	Туре	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	01024M -0/2.5 -P/2.5 -0/2.5V -P/2.5V		
Control unit				PFC100 contro	oller (insulation IP54)				
without PLC (integrated version with regular of the feeder controller directle external PLC)		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	01024iM -0/2.5 -P/2.5 -0/2.5V -P/2.5V		
Control unit	PFCi100 controller (insulation IP54)								
Amount of connectable drivers		1	2	4	1	2	4		
Feed rate	parts/min	40	2x25	4x25	40	2x25	4x25		
Filling capacity	liter / gal.	0.75 / 0.2	0.75 / 0.2	0.75 / 0.2	2.5 / 0.66	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	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	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	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 41	4 x 368 / 14.04 x	16.15 x 14.35	547 x 60	600 x 294 / 21.33 x 23.4 x 11.5			
Number of in-/outputs neede	d for PLC								
Version "0" and "P"		3/5	4/6	8/10	3/5	4/6	7/14		
Version "EP"		2/1	-	-	2/1	-	-		
Additional version "V"		4/6	6/8	10/12	4/6	6/8	11/18		
Included in delivery			Power unit 105535A			Power unit 2041061			
Required accessories									
Power cable	Part no.	8-	12587 (EU) / 81229	812587 (EU) / 812295 (US)			812587 (EU) / 812295 (US)		

Optional accessories	see page 18

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 V	olt DC	115 or 230	24 Volt DC
Power consumption	W	50	50	150 550 50			50
Unit	Type	0811-0/0.15	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)

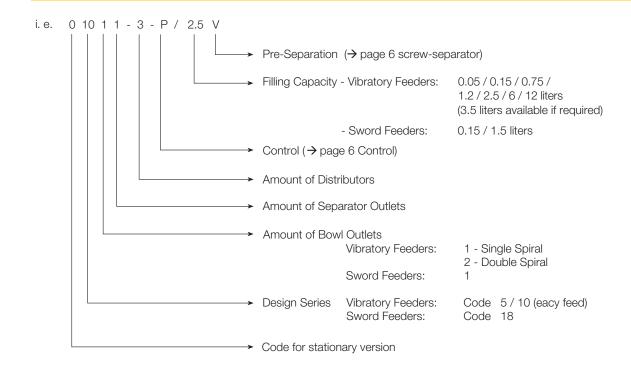
"Semi-pick and place-system"

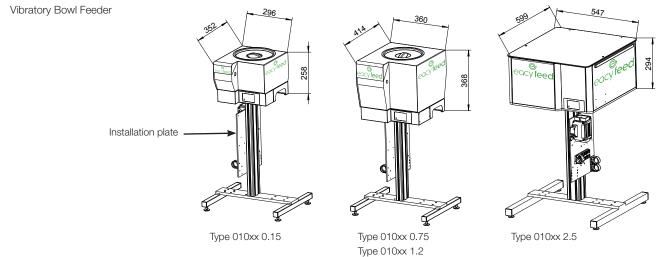
Set of wheels for stand

Set of wheels for stand in ESD-capable version

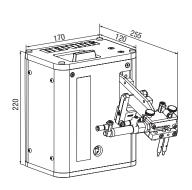
for feeding systems with feed bowl volume		0.15 liter	0.75 liter	1.2 liter	1.5 liter	2.5 liter
Fill level indicator	Part no.	414965J	414965A	414965A	420494B	414965D
Stand	Part no.	994449	994449	994449	994449	999309
Retaining plate (holder for power supply)	Part no.	9198574	9198574	9198573	9198574	-

NOMENCLATURE OF FEEDERS

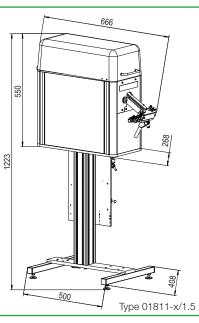


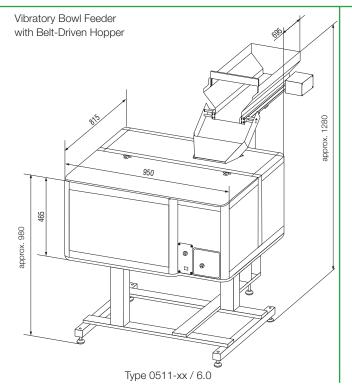


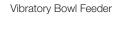
Sword Feeder

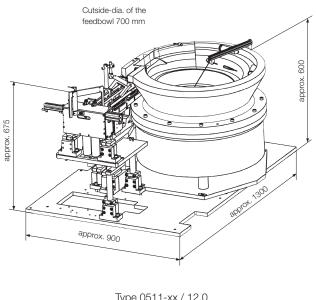


Type 0811 x/0.15









Type 0511-xx / 12.0

