



Get the most out of what's inside.

**Because
pumping is
about more
than moving
liquids.**

Pumps · Systems · Solutions



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One scan – and we stay in touch:

Scan the QR code and
save our contact details
directly to your address
book.



One scan – and you are on the right route:

Start the route and find
your way to Grün-Pum-
pen with ease - we look
forward to your visit!



Get the most out of what's inside.

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„Get the most out of what’s inside.“

This guiding principle reflects our commitment to providing the right and most economical pumping solution for every application - reliable in day-to-day industrial use.

Grün-Pumpen stands for:

- ✓ robust, low-maintenance pump technology
- ✓ application-oriented product development
- ✓ flexible solutions for industry and production
- ✓ personal consulting and fast response times
- ✓ high in-house manufacturing depth and technical expertise



Get the most out of what’s inside.

Since 1993, Grün-Pumpen has been developing and manufacturing high-quality drum pumps, container pumps and progressive cavity pumps for industrial applications. The move to our present company premises and the expansion of our production and storage areas laid the foundation for further growth and modern manufacturing.

This catalog provides a structured overview of our pump systems, motors, accessory solutions and technical versions. Our focus is on practical, durable and economical solutions for a wide range of pumped media and applications.

As a medium-sized company, we combine technical expertise with a high degree of flexibility. Many products and custom solutions are developed directly from our customers’ requirements - quickly, application-oriented and with short decision-making processes.



From selecting the right pump tube to the complete system solution, we support our customers reliably in their day-to-day operations.

We look forward to your challenges.

Yours sincerely

Julius Văth, Managing Director

Customer service sets the standard - at Grün-Pumpen too



Manufacturing, Production and Quality Precision and experience for reliable pump technology

Our pump systems are assembled and tested with great care and designed for continuous industrial operation. Short internal processes and a flexible manufacturing structure enable us to efficiently produce both standard products and customized solutions.

Production at Grün-Pumpen combines modern component manufacturing with many years of experience in drum pump and eccentric screw pump technology.



Technical Consulting and System Design The right solutions for your application and pumped medium

Selecting the right pump depends on many factors – the pumped medium, viscosity, temperature, flow rate and operating environment. Our technical consulting team supports you in selecting and sizing suitable pump systems and drive solutions for industrial applications.

Together with our customers, we develop practical solutions for safe and economical pumping processes.



Sales and Order Processing Personal, flexible and reliable

From the initial inquiry through to delivery, we support our customers with direct communication and short response times. Our sales team assists with quotations, technical coordination and the selection of suitable components and accessories.

We remain a reliable point of contact even after delivery.

GRÜN-PUMPEN

MOTORS

PP

PVDF

STAINLESS STEEL

ALUMINUM

SETS

ECCENTRIC

ACCESSORIES

The Advantages of Grün Drum Pumps

Well-engineered pump technology for safe and economical pumping processes

Whether for standard applications or individual pumping tasks, Grün drum pumps stand for robust

construction, easy handling and reliable continuous operation in industrial use.



Operational reliability

High-quality materials and robust design for continuous industrial operation.



Workplace safety

Safe fluid handling through reduced contact with critical media.



Ease of operation

Pumping directly from the container - without tilting or transferring.

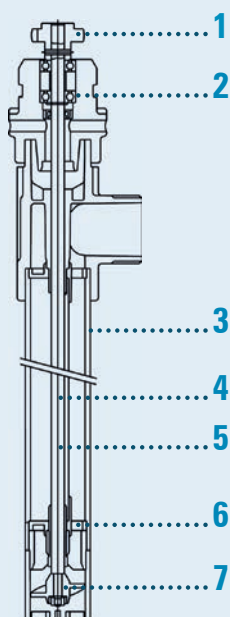


Cost-effectiveness

Quick-change coupling: use multiple pump tubes flexibly with just one motor.

Design advantages in comparison

Robust and strong - second to none:



Pos.	Grün design	Advantage Comparison
1	robust, industrially proven curved-tooth coupling	uniform load distribution across the gearing - resulting in low-wear power transmission compared with simple cross-type couplings
2	solid stainless steel pump head	high temperature and corrosion resistance compared with plastic and die-cast designs, which may melt or corrode during prolonged operation
3	reinforced immersion tube with integrated rib structure for plastic pump tubes	high dimensional stability prevents bending; standard lengths of 700, 1,000 and 1,200 mm as well as special lengths can be implemented quickly and easily
4	Ø 8 mm drive shaft with generously sized bearing support (cross-section 50 mm ²)	high torsional rigidity and low deflection, resulting in reduced load on bearings and seals compared with Ø 5.5–6 mm shafts (cross-section 24–28 mm ²)
5	integrated shaft channel without intermediate bearing	additional reinforcement for plastic pump tubes; tube-in-tube designs used in other constructions provide less dimensional stability
6	proven plain bearing system for reliable shaft guidance	reliable guidance of the drive shaft; customer-specific special materials are available
7	axial design, multistage radial design and conveying screw	broad range of applications thanks to three pumping principles: maximum flow rates (axial), higher discharge pressures (multistage, expandable radial design) and viscosities up to 1,000 mPas (conveying screw)

Technical Advantages at a Glance

Well-designed details for safe, flexible and durable pumping processes

Mechanical Seal / Sealless Design

The right sealing solution for every application



Mechanical seal



sealless

Mechanical seal [GLRD]

- ideal for pressurized containers
- robust sealing for standard applications
- cost-effective design
- suitable for low to medium sealing requirements
- easy replacement of wear parts
- proven technology with extensive application experience

Sealless design [DL]

- no external leakage possible
- ideal for aggressive or critical media
- exposed drive shaft for easy cleaning
- no dead zones in the pump tube
- high stability thanks to a reinforced immersion tube with integrated shaft guide

Pump Tube Designs

Different pumping principles for different media



single-stage



multi-stage



screw impeller

Single-stage design

- high flow rate at low viscosity
- suitable for larger flow rates

Multi-stage design

- more pumping stages for higher pressure build-up (individually expandable)
- suitable for viscous media and longer delivery distances

Screw impeller

- for medium-viscosity and viscous media
- particularly gentle and uniform pumping
- optimum results at low speeds

Coupling Systems

Flexible connection technology for industrial applications



Quick-release coupling



Magnetic coupling

Quick-release coupling

- simple, fast and tool-free - "Click"
- only 1/4 turn
- robust coupling system for industrial applications
- easy handling in mobile applications

Magnetic coupling

- hermetically sealed system
- leak-free pumping of critical media
- suitable for aggressive or outgassing liquids
- low-maintenance design

Motor-Pump Tube Connections | Eccentric Screw Pumps

The right connection technology for mobile and stationary applications



Quick-change coupling



Fixed connection

Quick-change coupling [SWK]

- removable motor for flexible use
- quick change of motor and pump tube
- no lifting device required
- ideal for mobile applications and frequent pump changes

Fixed connection [starr]

- motor and pump tube as a fixed unit
- compact and stable design
- ideal for stationary applications
- suitable for continuous industrial operation

The System Behind Grün Drum Pumps

Design, Pumping Principles and Sealing Options at a Glance

Pump tubes for a wide range of media

The pump tube is the central element of every drum pump. It converts the motor's mechanical power into pumping performance. Depending on the pumped medium, viscosity and operating conditions, different materials and pumping principles are available. Thanks

to the modular design of Grün drum pumps, the pump tube and motor can be combined flexibly and optimally adapted to the respective application.

Pump Tube Materials

Pump tubes are available in different materials depending on the pumped medium and application.

PP (Polypropylen)

for many neutral and mildly aggressive media

PVDF (polyvinylidene fluoride)

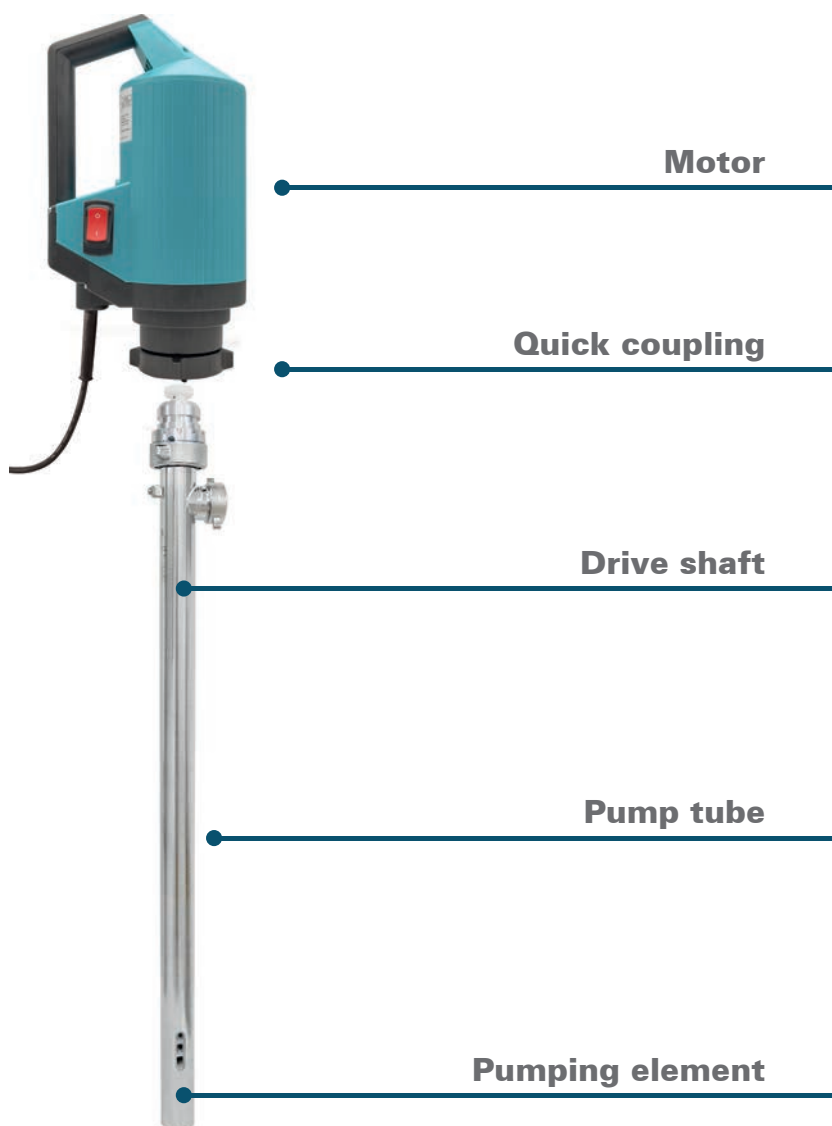
for particularly aggressive chemical media

Stainless steel

for demanding industrial applications as well as food and chemical applications

Aluminum

for mineral oils, light fuels and comparable media



The pump drive.

Depending on the application, universal motors, ATEX motors, three-phase motors, compressed-air motors or battery motors are available.

Enables fast changes between the motor and pump tube – one motor can be used with several pump tubes.

Transfers the motor power to the pumping element in the pump tube.

The actual pumping module. Different materials are available depending on the medium: PP, PVDF, aluminum, stainless steel.

Determines pumping performance and application range. Depending on the application, axial impellers, radial impellers or screw impellers are used.

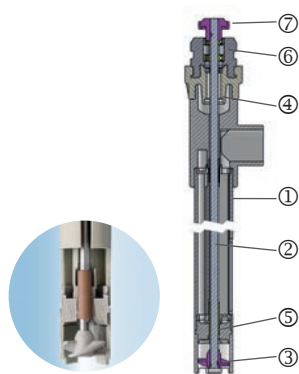
Pump Tube Design

All pump tubes are equipped with a sturdy **immersion tube** ①. It forms the main body of the pump tube, houses the **drive shaft** ② and guides the pumped medium through the pump tube. The drive shaft transfers motor power to the pumping element and is reliably sealed in the upper section by a robust **mechanical seal** ④. The **coupling piece** ⑥ provides the connection to the drive motor. The **curved-tooth coupling** ⑦ transfers torque safely and reliably from the motor to the pump tube.

The **pumping element** ③ is located at the lower end of the shaft. It is selected according to the pumped medium and operating conditions. Different pumping principles are available for different requirements. A **plain bearing** ⑤ additionally ensures stable shaft guidance during operation.

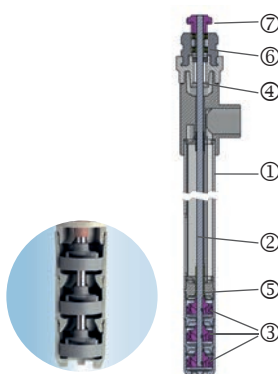
This design allows the pump tubes to be flexibly adapted to different applications, media and pumping tasks.

Pumping Elements for Different Pumping Tasks



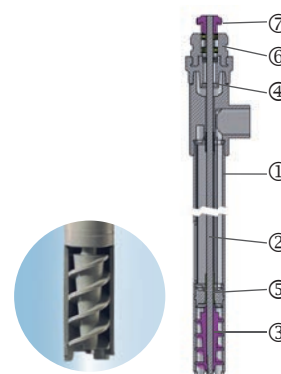
Version A
Axial impeller
for high flow rates

The axial impeller (A) is designed for **high flow rates at low delivery heads**. It is particularly suitable for low-viscosity media and wherever containers need to be **emptied or transferred quickly**.



Version R
Radial impeller
for higher discharge pressures

Multi-stage radial impellers (R) generate **higher discharge pressures** and are suitable for greater delivery heads. Additional stages can be used to increase the pressure further.



Version S
Screw impeller
for viscous media

The screw impeller (S) is primarily used for **slightly viscous media** and enables **smooth and gentle pumping**, even at higher viscosities.

Practical tip

Understanding the drum pump system:

A Grün drum pump always consists of two components: **pump tube + drive motor**

Depending on the medium and application, both components can be combined individually.

1 Select the pump tube

Choose the appropriate pump tube according to the pumped medium, viscosity and operating conditions.

2 Select the sealing principle

Depending on the application, pump tubes with mechanical seals, sealless versions or magnetic-drive pump tubes are available.

3 Select the motor

The motor overview and performance overview show which motor/pump-tube combinations are possible.

4 Add accessories

Complete the pump solution with the appropriate accessories for your application.

Sealing Principles of Grün Pump Tubes

The right seal for the medium, application and safety requirements

Pump Tubes with Mechanical Seal

Proven sealing for versatile applications

Pump tubes with a **mechanical seal (GLRD)** are the classic, proven solution for many pumping tasks. The mechanical seal **reliably seals the drive shaft in the upper section of the pump tube** and protects the bearing area from ingress of the pumped medium.

This sealing principle is suitable for a wide variety of applications and media and offers a **robust design with high operational reliability**. In combination with the different materials and pumping elements, the pump tube can be optimally adapted to the respective pumping task.

Advantages

- proven sealing principle
- robust sealing of the drive shaft
- versatile in use
- can be combined with different materials and pumping elements



Curved-tooth coupling

Mechanical seal

Drive shaft



Sealless Pump Tubes

Less maintenance in day-to-day operation - the modern standard

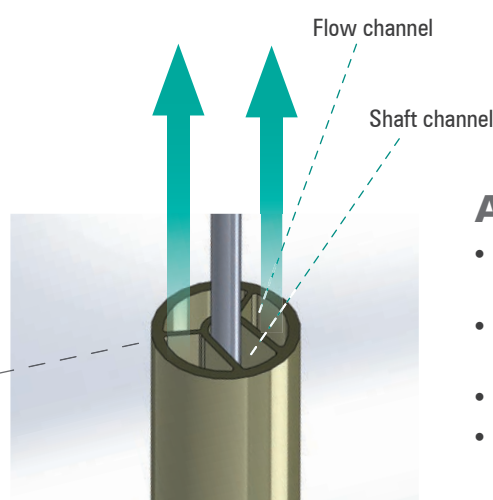
Grün-Pumpen **sealless** pump tubes operate without a mechanical seal and are suitable for aggressive, low-viscosity media..



The immersion tube is divided into flow channels and a shaft channel. The pumped medium flows exclusively through the flow channels, while the shaft channel containing the drive shaft is connected to the surrounding liquid space via an equalizing opening. This creates pressure equalization. In plastic versions, the unique rib structure provides exceptional stability.

A shaft seal prevents adhering medium from entering the bearing area, for example when the pump is removed or laid down.

The freely running drive shaft avoids narrow gaps and makes cleaning the pump tube considerably easier.



Advantages

- no mechanical seal in the pumping section
- reduced maintenance requirements
- easy cleaning
- reduced carryover of media

Magnetic-drive Pump Tubes

Hermetically sealed for special applications



In magnetic-drive pump tubes, power is transmitted contactlessly via a magnetic coupling. This completely eliminates the need for a dynamic mechanical seal.

The magnetic forces are transmitted through a containment can made of highly resistant plastic. This makes the pump tube hermetically sealed with no opening to the atmosphere.

This design is particularly suitable for outgassing media and wherever the highest requirements for leak tightness and safety apply.

Advantages

- hermetically sealed
- no external leakage
- no dynamic mechanical seal
- ideal for outgassing media

All pump tube versions are fully compatible with Grün motors.

Mixing Pump Tubes

Mixing and pumping in one system

Mixing pump tubes are used wherever liquids need to be mixed homogeneously before pumping. Media such as coatings, paints, emulsions or suspensions tend to separate after standing for extended periods: heavier components settle while lighter components rise to the top.

Mixing with conventional agitators is often difficult, particularly in drums with a bung opening of only around 50 mm. The mixing pump tube provides an efficient solution here.

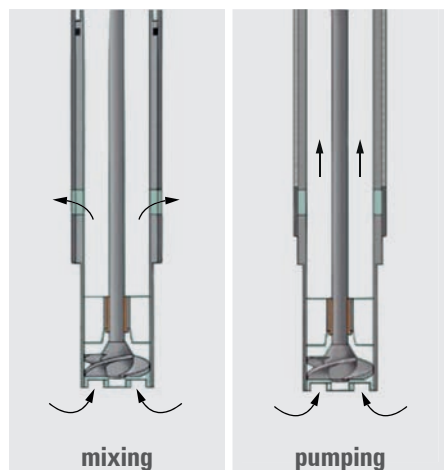
A sliding sleeve with an operating lever opens ports in the pump tube. This causes the liquid to circulate in the drum and mix evenly. After mixing, the ports are closed again and the medium can be pumped out using the same pump tube.

Also suitable for flammable liquids.

You will find our mixing pump tubes on page 38.

Advantages

- mixing and pumping with one system
- homogeneous mixing of the medium in the drum
- no separate agitator required
- ideal for coatings, paints, emulsions and suspensions

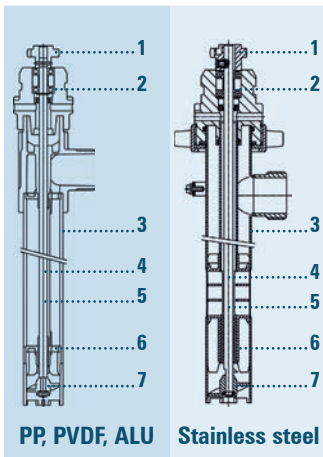


Pump Tubes Explained

Materials, versions and designations at a glance

Material table – wetted parts:

	Designation	pump tube PP	pump tube PVDF	pump tube ALU	pump tube Stainless-Steel
1 Curved-tooth coupling		PA	PA	PA	PA
2 Coupling piece		PP / SS	PVDF / SS	Alu	SS
3 Immersion tube with flow and shaft channels		PP	PVDF	Alu	SS
4 Drive shaft optional		SS / HC	HC	SS	SS
5 Shaftkanal		PP	PVDF	Alu	SS
6 Plain bearing		PTFE	PTFE	Carbon	Carbon
7 Impeller		PP	ETFE	ETFE	ETFE
		from page 24 25	from page 30 31	from page 42 43	from page 34 35



GRÜN-PUMPEN

MOTORS

PP

PVDF

STAINLESS STEEL

ALUMINUM

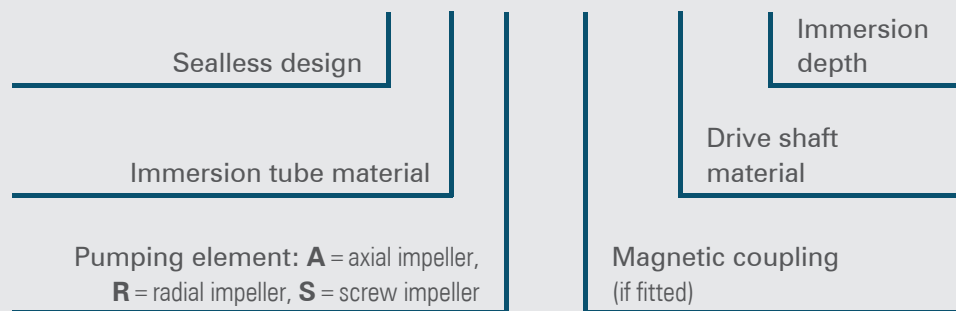
SETS

ECCENTRIC

ACCESSORIES

Pump tube designation

(DL)-PP-A-(Mag)-Niro-1000



Product note

For highly viscous media



Eccentric screw pumps

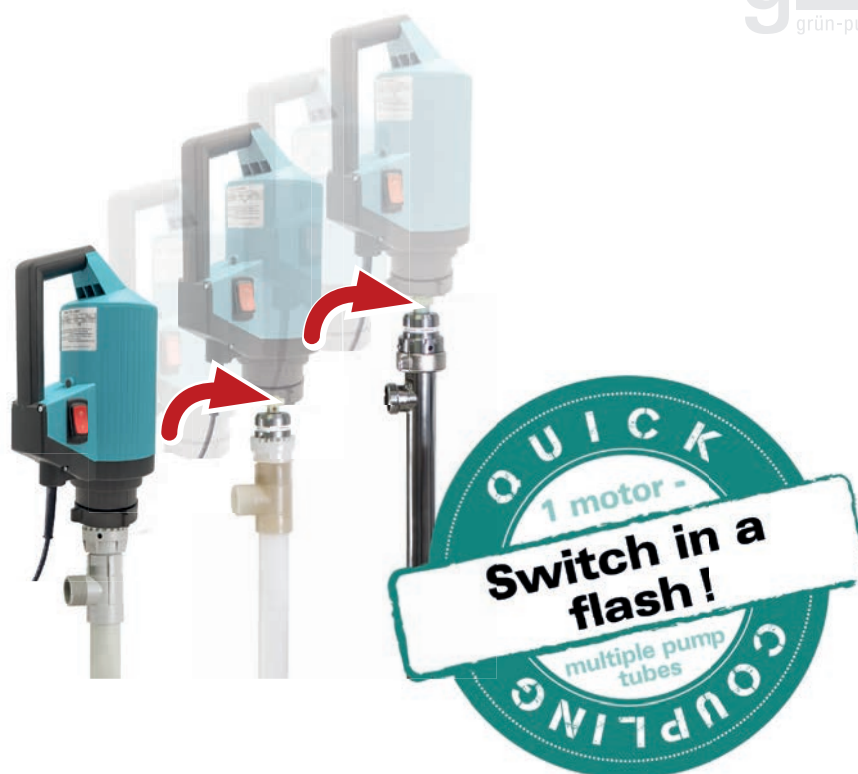
For particularly viscous or difficult-to-pump media, Grün-Pumpen also offers eccentric screw pumps.

These pumps enable smooth and gentle pumping even at high viscosities, significantly extending the range of applications.

→ For more information, see our **Eccentric Screw Pumps chapter** from pages 48 | 49.



[drive motors]



Drive Motors

Powerful drives for every pumping task

- ✓ Grün-Pumpen drive motors are optimally matched to the different pump tube versions and enable reliable and safe pumping of a wide range of media. Depending on the application, electric, battery-powered and compressed-air drives are available – from mobile solutions to powerful motors for continuous operation.

Thanks to the modular system, all motors can be flexibly combined with Grün pump tubes.

✓ Your advantages

- compatible with all Grün pump tubes
- different drive types for every application
- robust and durable design
- easy and fast connection via bayonet coupling
- flexible combination of motor and pump tube

✓ Typical applications

- chemical industry
- laboratories and plant operations
- workshops and maintenance
- mobile applications
- hazardous areas (depending on version)

✓ Our range

- electric motors
- battery motors
- compressed-air motors
- explosion-proof motors



Universal Drive Motors

The **p310** and **p400** universal motors are robust commutator motors for versatile use with Grün drum pumps. With a rated speed of 8,500 rpm, they combine reliable pumping performance with a durable, chemical-resistant design.

The polypropylene housing is particularly resistant to chemically aggressive environments. Thanks to the quick coupling, the motors can be connected to different pump tubes within seconds – ideal when one drive is to be used flexibly with several pump tubes.

- Drive technology: commutator motor
- Rated speed: 8,000 rpm
- Protection rating: IP 24
- Quick-change function: quick coupling
- with on/off switch and thermal overload protection
- optionally with undervoltage release **UV/USP***
- optionally with infinitely variable speed control **SR**
- optionally with magnetic coupling **MAG**
- p400 optionally available as enclosed version **MA** (IP 54)



p310

The cost-effective motor for standard applications

- Flow rate: max. 110 l/min
- Delivery head: max. 14 m
- Viscosity: max. 300 mPas
- Sound pressure level: 85 dB(A)

230 V

- Operating voltage: 230 V, 50 Hz
- Power: 520 W
- Rated current: 2.5 A
- Weight: approx. 3.0 kg



Version	Speed rpm	UV/USP*	Item no.
without speed controller			
p310-A-230	8,500	no	500-0017
p310-230	8,500	yes	500-0016
p310-230 (SEV) - approved for Switzerland	8,500	yes	500-0047
with speed controller [SR]			
p310-A-SR-230 continuously variable up to	8,500	no	500-0054
p310-SR-230 continuously variable up to	8,500	yes	500-0074
with magnetic coupling [MAG]			
p310-A-MAG-230	8,500	no	500-0031
p310-MAG-230	8,500	yes	500-0030
with magnetic coupling [MAG] and speed controller [SR]			
p310-A-MAG-SR-230 continuously variable up to	8,500	no	500-0058
p310-MAG-SR-230 continuously variable up to	8,500	yes	500-0061

115 V

- Operating voltage: 115 V, 50–60 Hz
- Power: 520 W
- Rated current: 5.0 A
- Weight: approx. 3.0 kg

Version	Speed rpm	UV/USP*	Item no.
without speed controller			
p310-A-115	8,500	no	500-0029
p310-115	8,500	yes	500-0028
with speed controller [SR]			
p310-A-SR-115 continuously variable up to	8,500	no	500-0057
p310-SR-115 continuously variable up to	8,500	yes	500-0060
with magnetic coupling [MAG]			
p310-A-MAG-115	8,500	no	500-0033
p310-MAG-115	8,500	yes	500-0032
with magnetic coupling [MAG] and speed controller [SR]			
p310-A-MAG-SR-115 continuously variable up to	8,500	no	500-0059
p310-MAG-SR-115 continuously variable up to	8,500	yes	500-0062



p400

The powerful motor for higher pumping performance

- Flow rate: max. 115 l/min
- Delivery head: max. 22 m
- Viscosity: max. 800 mPas
- Sound pressure level: 80 dB(A)

230 V

- Operating voltage: 230 V, 50 Hz
- Power: 850 W
- Rated current: 4.5 A
- Weight: approx. 4.5 kg



Version		Speed rpm	UV/USP*	Item no.
without speed controller				
p400-A-230		8,500	no	500-0024
p400-230		8,500	ja	500-0023
p400-230 (SEV) - approved for Switzerland		8,500	yes	500-0049
with speed controller [SR]				
p400-A-SR-230	continuously variable up to	8,500	no	500-0056
p400-SR-230	continuously variable up to	8,500	yes	500-0069
with magnetic coupling [MAG]				
p400-A-MAG-230		8,500	no	500-0035
p400-MAG-230		8,500	yes	500-0034
with magnetic coupling [MAG] and speed controller [SR]				
p400-A-MAG-SR-230	continuously variable up to	8,500	no	500-0064
p400-MAG-SR-230	continuously variable up to	8,500	yes	500-0067

115 V

- Operating voltage: 115 V, 50–60 Hz
- Power: 520 W
- Rated current: 5.0 A
- Weight: approx. 4.5 kg



Version		Speed rpm	UV/USP*	Item no.
without speed controller				
p400-A-115		8,500	no	500-0026
p400-115		8,500	yes	500-0025
with speed controller [SR]				
p400-A-SR-115	continuously variable up to	8,500	no	500-0063
p400-SR-115	continuously variable up to	8,500	yes	500-0066
with magnetic coupling [MAG]				
p400-A-MAG-115		8,500	no	500-0037
p400-MAG-115			yes	500-0036
with magnetic coupling [MAG] and speed controller [SR]				
p400-A-MAG-SR-115	continuously variable up to	8,500	no	500-0065
p400-MAG-SR-115	continuously variable up to	8,500	yes	500-0068

p400 IP54

The fully enclosed motor for demanding industrial environments

230 V

- Operating voltage: 230 V, 50 Hz
- Power: 700 W
- Rated current: 4.5 A
- Weight: approx. 6.0 kg



Version		Speed rpm	UV/USP*	Item no.
without speed controller				
p400-A-MA-230		8,500	no	500-0052
p400-MA-230		8,500	yes	500-0072

Explosion-Proof Drive Motor

The **Ex700** is a robust commutator motor for drum-pump applications in hazardous areas. Its flameproof aluminum inner housing and impact-resistant, antistatic outer housing are designed for demanding industrial operating conditions.

The quick coupling enables the motor to be connected quickly and safely to suitable Grün pump tubes and changed flexibly between different pump tubes.

- Flow rate: max. 110 l/min
- Delivery head: max. 20 m
- Viscosity: max. 600 mPas
- Drive technology: commutator motor
- Rated speed: 8,000 rpm
- Speed control: no
- Sound pressure level: 80 dB(A)
- Protection rating: IP 54
- Quick-change function: quick coupling
- with on/off switch and thermal overload protection
- with 5 m connection cable
- optionally with undervoltage release (UV/USP)*



Ex700

The explosion-proof drive for maximum safety



230 V

- Operating voltage: 230 V, 50 Hz
- Power: 700 W
- Rated current: 3.5 A
- Weight: approx. 6.0 kg

Version	Speed rpm	UV/USP*	Item no.
Ex700-230	8,000	no	510-0012
Ex700-230	8,000	yes*	510-0010

***USP: undervoltage release = mandatory for explosion protection**

- operation without undervoltage release is only possible in exceptional cases - please contact us!

Attention

Accessories

- 3-pole
- ATEX classification: EEx de IIC T6
- Protection rating: IP 65



Version	Item no.
Ex plug	
System „STAHL“	815-0001
System „CEAG“	815-0009
Ex socket	
System „STAHL“	815-0003
System „CEAG“	815-0010

Three-Phase Motor

The **pd500** three-phase motor is a particularly robust and powerful drive for drum pumps with multi-stage pump tubes or screw impellers. Thanks to its low speed of approx. 2,800 rpm, the motor is ideal for applications with higher viscosities and for continuous industrial operation.

The low speed ensures low-wear operation, a long service life and reduced noise generation.

The quick coupling allows the motor to be connected quickly and safely to Grün pump tubes. Pump tubes can therefore be changed within seconds – particularly advantageous when several pump tubes are operated with a single drive motor.



- Flow rate: max. 15 l/min
- Delivery head: max. 6 m
- Viscosity: max. 1,500 mPas
- Drive technology: three-phase motor
- Rated speed: approx. 2,800 rpm
- Speed control: no
- Sound pressure level: 58 dB(A)
- Protection rating: IP 54
- Quick-change function: quick coupling
- non-explosion-proof motors with on/off switch
- for continuous-duty applications
- explosion-proof version available on request

Typical Applications

- multi-stage pump tubes
- pump tubes with screw impeller
- continuous-duty applications



pd500

The robust three-phase drive for continuous operation

230/400 V

- Operating voltage: 230/400 V, 50 Hz
- Speed: approx. 2,800 rpm

Version	Power	Rated current	Protection switch	Ex protection	Weight	Item no.
pd500-1 230 V	0.55 kW	4.0 A	yes	no	approx. 8.0 kg	500-0044
pd500-3 400 V	0.37 kW	0.95 A	no	no	approx. 8.0 kg	500-0039
Accessories		1.0 - 1.6				810-0023PD
Explosion-proof drive motor – on request:						
pd500-3 EEx e II T3, 400 V	0.37 kW	1.3 A	no	yes	approx. 10 kg	510-0009
Zubehör						
Motorschutzschalter EX, 0,63-1,0 A mit USP, EEx de II C T6, mit Gehäuse						815-0017

Compressed Air Motor

The **m601** compressed air motor is a powerful and reliable drive for drum pumps in demanding industrial environments. In combination with a suitable pump tube, the motor can also be used in hazardous areas.

The motor is powered by compressed air and enables easy speed control via the operating pressure or air volume. This allows the flow rate to be flexibly adapted to the respective application.

The quick coupling allows the motor to be connected quickly and safely to the proven Grün pump tubes. This enables fast changes between different pump tubes and increases flexibility in day-to-day use.

- Flow rate: max. 100 l/min
- Delivery head: max. 16 m
- Viscosity: max. 800 mPas
- Drive technology: compressed air, rated pressure 6 bar
- Air connection: 3/8"
- Rated speed: 12,000 rpm
- Air consumption (under load): 1,300 l/min
- Speed control: via operating pressure or air volume
- Sound pressure level: 75 dB(A)
- Quick-change function: quick coupling
- compressed-air motors are fully overload-resistant
- exhaust air can be discharged via a hose
- with silencer for reduced noise generation
- robust, low-maintenance drive
- ATEX approval
- Weight: 1.7 kg



m601

The safe compressed-air drive for hazardous areas



6 bar

- Operating pressure: 6 bar
- Power: 1,100 W
- Air consumption: 1,300 l/min
- Air connection: 3/8"

Version	Speed rpm	Speed control	Item no.
m601	12,000	via operating pressure	520-0061

Compressed-air accessories

Air service unit, compressed-air connector, PVC hose, filter-regulator set with needle valve and hose



Version	Size	Item no.
Air service unit	G 3/8"	850-0001
Compressed-air connector	AG 1/4"	850-0002
PVC Hose	DN 9	850-0003
Filter regulator, needle valve, adapter and 2 m air hose, IG 1/4"		910-0001.14

Battery Motor

The **scorpio** battery motor enables flexible, mobile use of drum pumps wherever mains power is unavailable. The powerful brushless DC motor provides high pumping performance in a compact, lightweight design.

Compatibility with the Makita battery system allows existing batteries to be used. The quick coupling connects the motor quickly and safely to proven Grün pump tubes made of PP, PVDF, aluminum or stainless steel.

This makes the scorpio particularly suitable for applications in warehouses, workshops or mobile outdoor use.



- Flow rate: max. 60 l/min
- Delivery head: max. 10 m
- Viscosity: max. 50 mPas
- Drive technology: brushless DC motor
- Rated voltage: 20 V batteries, Makita-compatible
- Rated speed: 9,500 rpm
- Speed control: infinitely variable
- Quick-change function: quick coupling
- Sound pressure level LpA according to EN 60745: 75 dB(A)
- Capacity: up to 2,000 l per charge (depending on battery and medium)
- Weight: 1.6 kg (without battery)



scorpio

The mobile battery motor for maximum flexibility

20 V

- Rated voltage: 20 V battery system
- Makita-compatible

Version	Speed rpm	Speed control	Item no.
scorpio with battery and charger	9,500	infinitely variable	580-0001
scorpio basic motor	9,500	infinitely variable	580-0010



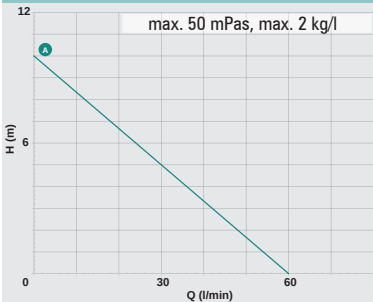
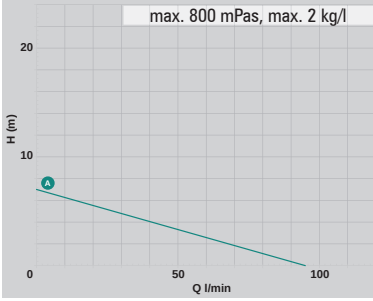
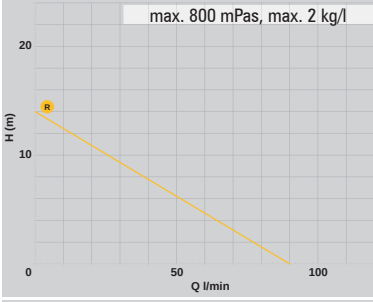
Accessories

Battery and charger for scorpio battery motor

Version	Item no.
Battery: Li-ion Rechargeable Lithium-ion Battery, 20 V, 4.0 Ah	580-0012
Battery charger: Rapid Charger, Li-ion 14.4-18V, 6.5 A	580-0013

Drum Pump Performance Overview

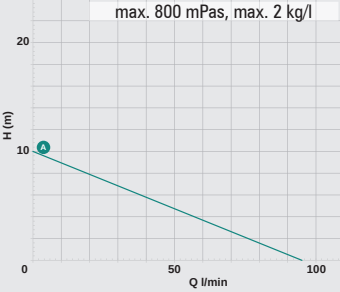
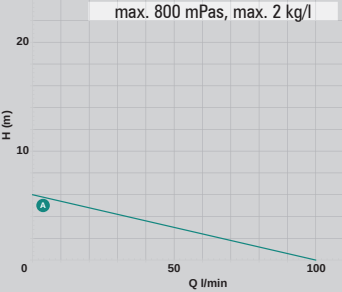
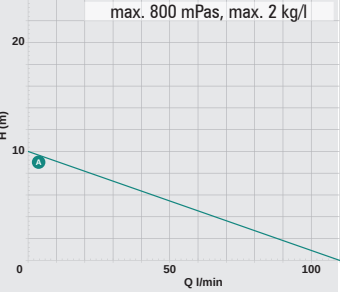
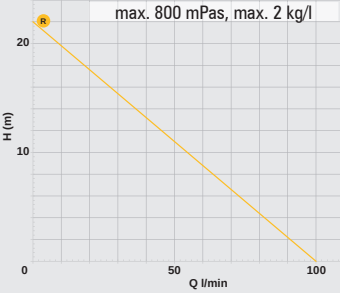
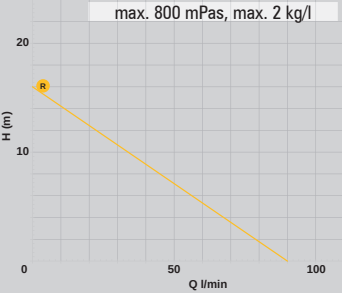
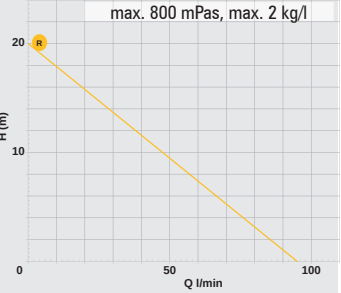
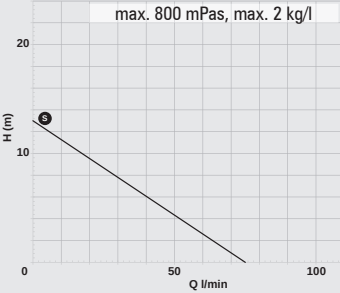
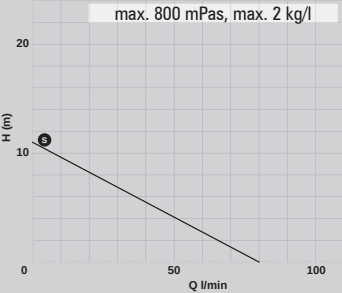
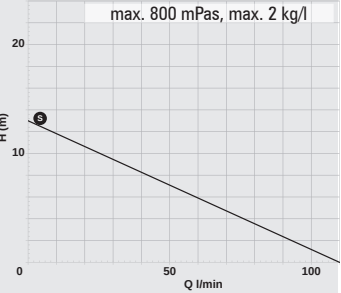
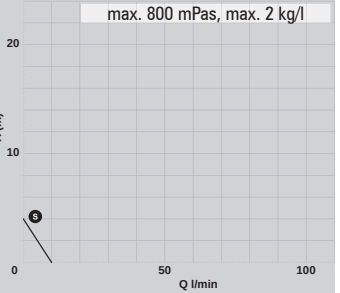


Drive motor:		scorpio	p310
Pump tube with pumping element:			
A.GSB			This combination is not recommended!
A		This combination is not recommended!	
R		This combination is not recommended!	
S		This combination is not recommended!	This combination is not recommended!

All measured values are maximum values (max.), measured with water (1 mPas).

Drum Pump Performance Overview

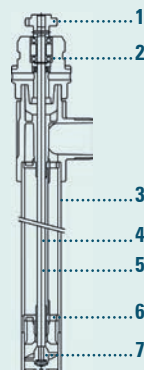


p400		m601 		Ex700 		pd500	
This combination is not recommended!		This combination is not recommended!		This combination is not recommended!		This combination is not recommended!	
						This combination is not recommended!	
						This combination is not recommended!	
							

All measured values are maximum values (max.), measured with water (1 mPas).

PP

[polypropylene]



See page 13 for the
material table of
wetted parts!

Pump tubes PP

For aggressive media and chemical applications

- ✓ Pump tubes made of polypropylene (PP) are particularly suitable for pumping aggressive media such as acids, alkalis and chemical cleaners. The material offers high chemical resistance while being lightweight and corrosion-free.

Different pumping elements and seal variants allow the pump tubes to be flexibly adapted to different applications.

✓ Benefits of PP drum pumps

- high chemical resistance
- low weight
- corrosion-free
- versatile in use

✓ Typical applications

- dilute acids
- dilute alkalis
- chemicals
- cleaning agents
- paints
- emulsions
- dispersions
- suspensions
- medium-viscosity liquids
- cosmetics

*"The proven standard for
aggressive media."*

PP pump tubes [Polypropylene]

the right pump for aggressive liquids

Sealless DL [DL-PP]

Maximum reliability: pumps without seal wear for demanding media.

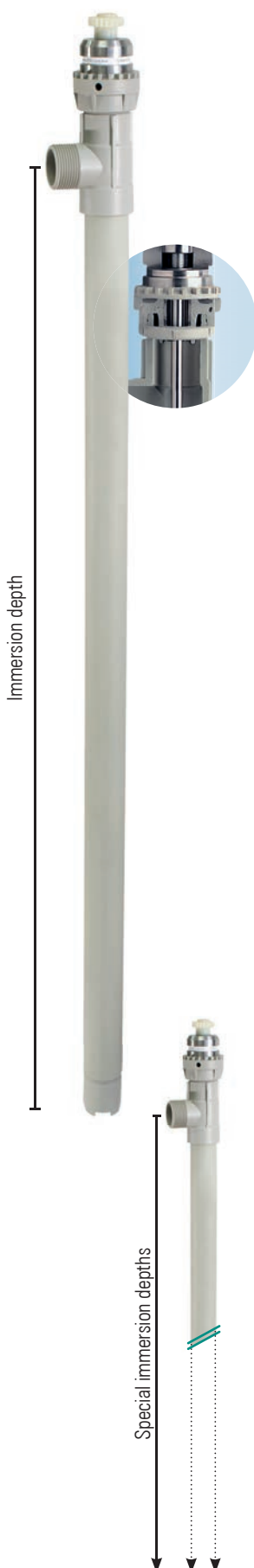
Version	Immersion depth mm	Shaft	Item no.
with axial impeller [A.GSB]			
DL-PP-A-Niro-700-GSB	700	Stainless steel	670-0001.GSB
DL-PP-A-Niro-1000-GSB	1000	Stainless steel	670-0002.GSB
DL-PP-A-Niro-1200-GSB	1200	Stainless steel	670-0003.GSB
DL-PP-A-HC-700-GSB	700	Hastelloy C	670-0004.GSB
DL-PP-A-HC-1000-GSB	1000	Hastelloy C	670-0005.GSB
DL-PP-A-HC-1200-GSB	1200	Hastelloy C	670-0006.GSB
with axial impeller [A]			
DL-PP-A-Niro-700	700	Stainless steel	670-0001
DL-PP-A-Niro-1000	1000	Stainless steel	670-0002
DL-PP-A-Niro-1200	1200	Stainless steel	670-0003
DL-PP-A-HC-700	700	Hastelloy C	670-0004
DL-PP-A-HC-1000	1000	Hastelloy C	670-0005
DL-PP-A-HC-1200	1200	Hastelloy C	670-0006
with radial impeller [R]			
DL-PP-R-Niro-700	700	Stainless steel	675-0001
DL-PP-R-Niro-1000	1000	Stainless steel	675-0002
DL-PP-R-Niro-1200	1200	Stainless steel	675-0003
DL-PP-R-HC-700	700	Hastelloy C	675-0004
DL-PP-R-HC-1000	1000	Hastelloy C	675-0005
DL-PP-R-HC-1200	1200	Hastelloy C	675-0006
with screw impeller [S]			
DL-PP-S-Niro-700	700	Stainless steel	670-0009
DL-PP-S-Niro-1000	1000	Stainless steel	670-0010
DL-PP-S-Niro-1200	1200	Stainless steel	670-0011
DL-PP-S-HC-700	700	Hastelloy C	670-0013
DL-PP-S-HC-1000	1000	Hastelloy C	670-0014
DL-PP-S-HC-1200	1200	Hastelloy C	670-0015

Special immersion depths [PP]

Surcharge for special lengths for PP pump tubes.

Version	Length mm	Shaft	Item no.
Base surcharge			890-0001
Surcharge DL-PP, GLRD-PP -A/-R/-S	max. 2000	Stainless steel	670-0007
Surcharge DL-PP, GLRD-PP -A/-R/-S	max. 2000	Hastelloy C	670-0008

The special immersion depths apply to our sealless pump tubes [DL-PP-...], our pump tubes with mechanical seal [PP-...] and our magnetic-drive pumps [Mag-PP-...]!



PP pump tubes [Polypropylene]

the right pump for aggressive liquids

Magnetic drive [Mag-PP] - hermetically sealed

Sealless safety: maximum reliability thanks to a hermetically sealed drive.

Version	Immersion depth mm	Shaft	Ex	Item no.
with axial impeller [A]				
Mag-PP-A-Niro-700	700	Stainless steel	no	610-0004
Mag-PP-A-Niro-1000	1000	Stainless steel	no	610-0005
Mag-PP-A-Niro-1200	1200	Stainless steel	no	610-0006
Mag-PP-A-HC-700	700	Hastelloy C	no	610-0027
Mag-PP-A-HC-1000	1000	Hastelloy C	no	610-0028
Mag-PP-A-HC-1200	1200	Hastelloy C	no	610-0029
with radial impeller [R]				
Mag-PP-R-Niro-700	700	Stainless steel	no	615-0004
Mag-PP-R-Niro-1000	1000	Stainless steel	no	615-0005
Mag-PP-R-Niro-1200	1200	Stainless steel	no	615-0006
Mag-PP-R-HC-700	700	Hastelloy C	no	615-0013
Mag-PP-R-HC-1000	1000	Hastelloy C	no	615-0014
Mag-PP-R-HC-1200	1200	Hastelloy C	no	615-0015



Our drum pumps with magnetic drive [Mag-...] are only available with PP, PVDF and Stainless Steel pump tubes!



Sets
All-round Set AS1

Our preconfigured standard drum pump sets can be found on page 47!



Product Note

Tailored to your container
Our pump tubes are also available on request in special lengths and with individual immersion depths – for a solution that is optimally matched to your application.

**Our standard special lengths can be found on page 26.
Do you have special requests or requirements? Contact us!**

Accessories for PP pump tubes

Further versions and our complete range of accessories can be found from pages 72 | 73!

Additional equipment

Seal kits, additional stages, foot valves, strainer



Version	Material	Item no.
Special O-ring materials for pump tube with mechanical seal [GLRD-PP]		
Seal kit	EPDM	840-0057
Seal kit	FEP	840-0213
Additional pumping stages for pump tube DL-PP-R...		
Base surcharge	Shaft: Stainless steel	890-0021
Additional pumping stage	Shaft: Stainless steel	890-0016
Base surcharge	Shaft: Hastelloy C	890-0022
Additional pumping stage	Shaft: Hastelloy C	890-0017
Foot valve [R] radial		
PP-R-Niro	Shaft: Edelstahl	840-0157
PP-R-HC	Shaft: Hastelloy C	840-0158
Strainer - keeps larger objects out		
Ø 40 mm	PP	840-0002

Hose systems

Hoses, hose connectors, hose clamps



Version	Material	Item no.
PVC hose reinforced, p_{max} 6 bar, T_{max} 60 °C		
PVC hose DN 19	PVC	820-0001
PVC hose DN 25	PVC	820-0002
PVC hose DN 32	PVC	820-0003
PVC hose DN 38	PVC	820-0035
Hose connector with union nut, Thread IG 1 1/4"		
Hose connector DN 19	PP	825-0005
Hose connector DN 25	PP	825-0006
Hose connector DN 32	PP	825-0007
Stainless-steel hose clamps V2A		
Hose clamp DN 19-25	Stainless steel	825-0003
Hose clamp DN 25-32	Stainless steel	825-0004
Hose clamp DN 30-45	Stainless steel	825-0038
Hose clamp DN 40-60	Stainless steel	825-0043

Nozzles

- swivel versions for convenient handling
- Seal: FKM



Version	Seal	Item no.
Nozzle PP, Stainless steel , DN 19	FKM	830-0052
Nozzle PP, Stainless steel , DN 25	FKM	830-0038
Nozzle PP, Hastelloy C , DN 19	FKM	830-0054
Nozzle PP, Hastelloy C , DN 25	FKM	830-0055

Adapters

Drum and container adapters (IBC)



Version	Material	Item no.
Drum adapter Ø 40 mm, AG 2"	PP	840-0006
IBC adapter Ø 150/40 mm	PP	840-0142

EPDM [ethylene propylene diene rubber], FEP [fluorinated ethylene propylene], PVC [polyvinyl chloride], FKM [fluoroelastomer]

PP pump tubes in practice

Economical, versatile and ideal for many standard applications

PP pump tubes are used wherever neutral or mildly aggressive media need to be pumped safely, economically and reliably. By combining them with a stainless steel or Hastelloy drive shaft, the design can be specifically adapted to the medium and operating conditions.

Typical applications

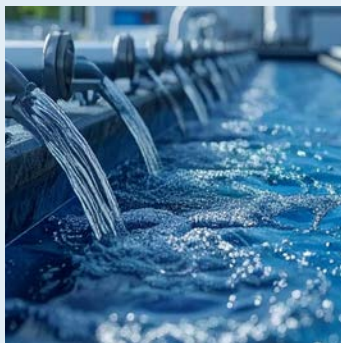
Chemicals + Engineering

PP pump tubes are ideal for pumping many chemical media as well as for typical transfer and emptying processes in industry and engineering. They offer good chemical resistance, low weight and economical operation.



Cleaning + Process Media

PP pump tubes are also a practical choice for cleaning media, technical fluids and selected acids and alkalis. Depending on the chemical load, the appropriate shaft material provides additional operational safety.



Typical media

- cleaning and process media
- acids and alkalis within the suitable application range
- technical chemicals
- neutral and mildly aggressive liquids
- industrial transfer and emptying applications

Benefits in use

- economical and versatile
- good balance of resistance and weight
- corrosion-resistant pump tube material
- flexibly configurable depending on the application
- matched versions for different media

Shaft selection at a glance

PP with stainless steel shaft

Suitable for many standard applications with neutral or mildly aggressive media where an economical and practical solution is the priority.

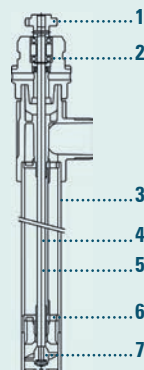
PP with Hastelloy shaft

Recommended where higher shaft corrosion resistance is required, as well as for more chemically demanding media and more critical operating conditions.

The selection of pump tube and shaft material always depends on the **medium, concentration, temperature and operating conditions.**

PVDF

[polyvinylidene fluoride]



See page 13 for the
material table of
wetted parts!

Pump tubes **PVDF**

For highly aggressive media and demanding applications

- ✓ Pump tubes made of polyvinylidene fluoride (PVDF) are used wherever maximum chemical resistance is required. They are particularly suitable for highly aggressive and critical media where standard materials reach their limits.

Combined with different pumping elements and drive motors, PVDF pump tubes can be optimally adapted to demanding pumping tasks.

✓ **Advantages of PVDF drum pumps**

- maximum chemical resistance
- ideal for aggressive and critical media
- durable and safe design
- versatile for demanding applications

✓ **Typical applications**

- highly concentrated acids
- highly concentrated alkalis
- aggressive chemicals
- solvents
- electroplating and surface treatment
- industrial cleaning processes
- mineral oils
- paints
- emulsions, dispersions, suspensions
- medium-viscosity liquids
- cosmetics

"Where standard materials such as PP are no longer sufficient."

PVDF pump tubes [Polyvinylidene Fluoride]

for highly aggressive liquids and demanding applications

Sealless DL [DL-PVDF]

Maximum reliability: pumps without seal wear for demanding media.

Version	Immersion depth mm	Shaft	Item no.
with axial impeller [A.GSB]			
DL-PVDF-A-700-GSB	700	Hastelloy C	680-0001.GSB
DL-PVDF-A-1000-GSB	1000	Hastelloy C	680-0002.GSB
DL-PVDF-A-1200-GSB	1200	Hastelloy C	680-0003.GSB
with axial impeller [A]			
DL-PVDF-A-700	700	Hastelloy C	680-0001
DL-PVDF-A-1000	1000	Hastelloy C	680-0002
DL-PVDF-A-1200	1200	Hastelloy C	680-0003
with radial impeller [R]			
DL-PVDF-R-700	700	Hastelloy C	685-0001
DL-PVDF-R-1000	1000	Hastelloy C	685-0002
DL-PVDF-R-1200	1200	Hastelloy C	685-0003
with screw impeller [S]			
DL-PVDF-S-700	700	Hastelloy C	680-0006
DL-PVDF-S-1000	1000	Hastelloy C	680-0007
DL-PVDF-S-1200	1200	Hastelloy C	680-0008

Special immersion depths [PVDF]

Surcharge for special lengths for PVDF pump tubes.

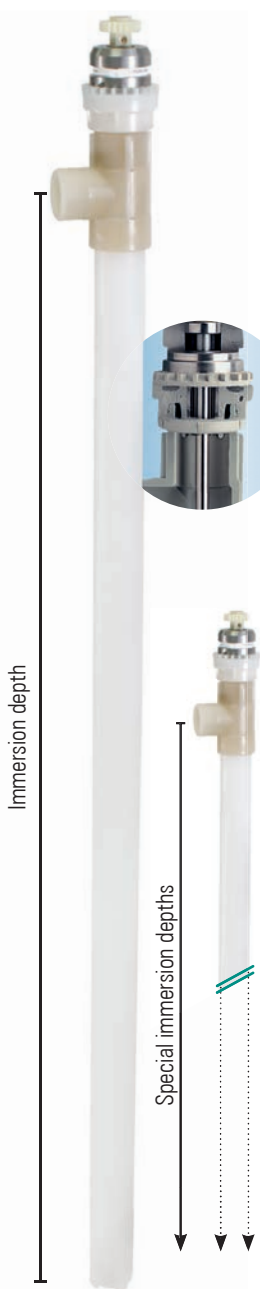
Version	Length mm	Shaft	Item no.
Base surcharge			890-0002
Surcharge DL-PVDF-A /-R /-S	400	Hastelloy C	680-0004
Surcharge DL-PVDF-A /-R /-S	max. 2000	Hastelloy C	680-0005

Magnetic drive [Mag-PVDF] - hermetically sealed

Sealless safety: maximum reliability thanks to a hermetically sealed drive.

Version	Immersion depth mm	Shaft	Ex	Item no.
mit Axiallaufrad [A]				
Mag-PVDF-A-700	700	Hastelloy C	nein	620-0004
Mag-PVDF-A-1000	1000	Hastelloy C	nein	620-0005
Mag-PVDF-A-1200	1200	Hastelloy C	nein	620-0006
mit Radiallaufrad [R]				
Mag-PVDF-R-700	700	Hastelloy C	nein	625-0004
Mag-PVDF-R-1000	1000	Hastelloy C	nein	625-0005
Mag-PVDF-R-1200	1200	Hastelloy C	nein	625-0006

Our drum pumps with magnetic drive [Mag-...] are only available with PP, PVDF and Stainless Steel pump tubes!



Accessories for PVDF pump tubes

Further versions and our complete range of accessories can be found from pages 72 | 73!

Additional equipment

Additional stage, foot valve, strainer



Version	Material	Item no.
Additional pumping stages for pump tube DL-PVDF-R...		
Base surcharge		890-0022
Additional pumping stage	Shaft: Hastelloy C	890-0018
Foot valve [R] radial		
PVDF-R-HC	Shaft: Hastelloy C	840-0161
Strainer - keeps larger objects out		
Ø 40 mm	PVDF	840-0002PVDF

Hose systems

Hoses, hose connectors, hose clamps



Version	Material	Item no.
Chemical hose "Universal", electrically conductive, p_{max} 16 bar, T_{max} 100 °C		
Chemical hose DN 19	UPE	820-0007
Chemical hose DN 25	UPE	820-0008
Chemical hose DN 32	UPE	820-0009
Chemical hose "Highly resistant", electrically conductive, p_{max} 16 bar, T_{max} 100 °C (depending on medium)		
Chemical hose DN 19	FEP	820-0015
Chemical hose DN 25	FEP	820-0016
Chemical hose DN 32	FEP	820-0017
Hose connector with union nut, Thread IG 1 1/4"		
Hose connector DN 19	PVDF	825-0008
Hose connector DN 25	PVDF	825-0009
Hose connector DN 32	PVDF	825-0010
Stainless-steel hose clamps V2A		
Hose clamp DN 19-25	Stainless steel	825-0003
Hose clamp DN 25-32	Stainless steel	825-0004
Hose clamp DN 30-45	Stainless steel	825-0038
Hose clamp DN 40-60	Stainless steel	825-0043

Nozzlessystems

Nozzles, nozzle connections



Version	Seal	Item no.
Nozzle PVDF, AG 1 1/4"		
Nozzle PVDF	FKM	830-0029
Nozzle PVDF	FFKM	830-0046
Nozzle PVDF	FEP	830-0047
Nozzle connections PVDF with union nut female thread 1 1/4", short		
Nozzle connection DN 19		825-0128
Nozzle connection DN 25		825-0129
Nozzle connection DN 32		825-0130



Adapters

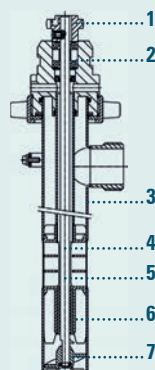
Drum and container adapters (IBC)

Version	Material	Item no.
Drum adapter Ø 40 mm, AG 2"	PP	840-0006
IBC adapter Ø 150/40 mm	PP	840-0142

UPE [ultra-high-molecular-weight polyethylene], FEP [fluorinated ethylene propylene], FKM [fluoroelastomer], FFKM [perfluoroelastomer], PP [polypropylene]



[stainless steel]



See page 13 for the
material table of
wetted parts!

Pump tubes **Stainless steel**

Universal solutions for industry, food and chemicals

- ✓ Stainless-steel pump tubes are the versatile solution for a wide range of pumping tasks in industry, chemicals and hygienically sensitive areas. They are suitable for many different media, from neutral to aggressive liquids.

Thanks to their robust construction, high temperature resistance and easy cleaning, stainless-steel pump tubes are particularly durable and versatile.

✓ Typical applications

- chemicals and industrial liquids
- food and beverages
- pharmaceutical and cosmetic products
- oils and low-viscosity media
- cleaning agents and disinfectants
- hazardous areas

✓ Advantages of stainless steel drum pumps

- universally suitable for many media
- high mechanical strength
- temperature-resistant and durable
- suitable for applications with demanding hygiene requirements
- easy to clean

"When plastic solutions reach their limits or hygiene requirements must be met."

Stainless steel pump tubes

High resistance for demanding and hazardous areas

Sealless DL [DL-Niro]

Maximum reliability: pumps without seal wear for demanding media.

Version	Immersion depth mm	Shaft	Ex	Item no.
with axial impeller [A.GSB]				
DL-Niro-A-700-GSB	700	Stainless steel	no	691-0001.GSB
DL-Niro-A-1000-GSB	1000	Stainless steel	no	691-0002.GSB
DL-Niro-A-1200-GSB	1200	Stainless steel	no	691-0003.GSB
with axial impeller [A]				
DL-Niro-A-700	700	Stainless steel	yes	691-0001
DL-Niro-A-1000	1000	Stainless steel	yes	691-0002
DL-Niro-A-1200	1200	Stainless steel	yes	691-0003
with radial impeller [R]				
DL-Niro-R-700	700	Stainless steel	yes	696-0001
DL-Niro-R-1000	1000	Stainless steel	yes	696-0002
DL-Niro-R-1200	1200	Stainless steel	yes	696-0003
with screw impeller [S]				
DL-Niro-S-700	700	Stainless steel	yes	691-0006
DL-Niro-S-1000	1000	Stainless steel	yes	691-0007
DL-Niro-S-1200	1200	Stainless steel	yes	691-0008



Product note



Perfectly matched to your container

Our pump tubes are also available on request in special lengths and individual immersion depths - for a solution optimally matched to your application.

Special immersion depths [SS]

Surcharge for special lengths for stainless-steel pump tubes.

Version	Length mm	Shaft	Item no.
Base surcharge			890-0003
Surcharge DL-Niro-R, GLRD-Niro-A/R/S	max. 2300	Stainless steel	690-0009
Surcharge DL-Niro-A/S	max. 2000	Stainless steel	690-0010
Surcharge DL-Niro-A	max. 3400	Stainless steel	690-0011
Surcharge DL-Niro-R, GLRD-Niro-A/R/S	max. 3400	Stainless steel	690-0013

The special immersion depths apply to the sealless pump tubes [DL-Niro-...], our pump tubes with mechanical seal [SD/GLRD-...] and our magnetic-drive pumps [Mag-Niro-...]

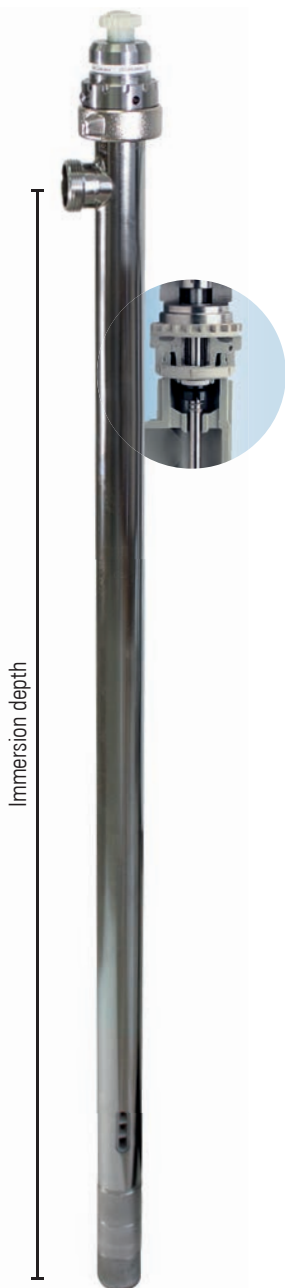
Stainless steel pump tubes

High resistance for demanding and hazardous areas

with mechanical seal [SD-/GLRD-Niro]

Quickly detachable version [SD] - available for axial and screw pump tubes.

Version	Immersion depth mm	Shaft	Ex	SD	Item no.
with axial impeller [A]					
SD-Niro-A-700	700	Stainless steel	yes	yes	631-0001
SD-Niro-A-1000	1000	Stainless steel	yes	yes	631-0002
SD-Niro-A-1200	1200	Stainless steel	yes	yes	631-0003
with radial impeller [R]					
GLRD-Niro-R-700	700	Stainless steel	yes	no	636-0001
GLRD-Niro-R-1000	1000	Stainless steel	yes	no	636-0002
GLRD-Niro-R-1200	1200	Stainless steel	yes	no	636-0003
with screw impeller [S]					
SD-Niro-S-700	700	Stainless steel	yes	yes	631-0006
SD-Niro-S-1000	1000	Stainless steel	yes	yes	631-0007
SD-Niro-S-1200	1200	Stainless steel	yes	yes	631-0008



Product note



For easy cleaning

Our quick-dismantling version [SD] is available for pump tubes with axial impeller and screw impeller.

You will find our common special lengths on page 36.
Do you have special requests or requirements? Please contact us!

Stainless steel pump tubes

High resistance for demanding and hazardous areas

Magnetic drive [Mag-Niro] - hermetically sealed

Sealless safety: maximum reliability thanks to a hermetically sealed drive.



Version	Immersion depth mm	Shaft	Ex	Item no.
with axial impeller [A]				
Mag-Niro-A-700	700	Stainless steel	no	631-0021
Mag-Niro-A-1000	1000	Stainless steel	no	631-0022
Mag-Niro-A-1200	1200	Stainless steel	no	631-0023
with radial impeller [R]				
Mag-Niro-R-700	700	Stainless steel	no	636-0021
Mag-Niro-R-1000	1000	Stainless steel	no	636-0022
Mag-Niro-R-1200	1200	Stainless steel	no	636-0023

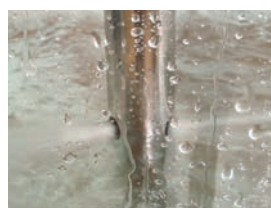
Our drum pumps with magnetic drive [Mag-...] are only available with PP, PVDF and Stainless Steel pump tubes!

Sealless mixing pump tube [MP-DL-Niro]

Flexibility and precision: efficient mixing and pumping in one system.



Version	Immersion depth mm	Shaft	Ex	Item no.
with axial impeller [A]				
MP-DL-Niro-A-700	700	Stainless steel	yes	691-0011
MP-DL-Niro-A-1000	1000	Stainless steel	yes	691-0012
MP-DL-Niro-A-1200	1200	Stainless steel	yes	691-0013
with radial impeller [R]				
MP-DL-Niro-R-700	700	Stainless steel	yes	696-0011
MP-DL-Niro-R-1000	1000	Stainless steel	yes	696-0012
MP-DL-Niro-R-1200	1200	Stainless steel	yes	696-0013
with screw impeller [S]				
MP-DL-S-Niro-700	700	Stainless steel	yes	691-0016
MP-DL-S-Niro-1000	1000	Stainless steel	yes	691-0017
MP-DL-S-Niro-1200	1200	Stainless steel	yes	691-0018



Our mixing pump tube is available only in stainless steel.

Accessories

for stainless steel pump tubes

Further versions and our complete range of accessories can be found from pages 72 | 73!

Additional equipment

Seal kits, additional stage, impeller, foot valve, strainer



Version	Material	Item no.
Special O-ring materials for pump tubes with mechanical seal [SD-/GLRD-Niro]		
FDA seal kit (Niro/SD)	FEP	840-0214.10
FDA seal kit (Niro/GLRD-R, SB40)	FEP	840-0214.20
FDA seal kit (Niro/SD)	EPDM	840-0214.15
FDA seal kit (Niro/GLRD-R, SB40)	EPDM	840-0214.18
Additional pumping stage for stainless-steel pump tube DL-Niro-R...		
Base surcharge	Shaft: Stainless steel	890-0021
Additional pumping stage	Shaft: Stainless steel	890-0019
Impeller Stainless steel [A] axial		
Ø = 8 mm	Stainless steel	840-0109
Foot valve [R] radial		
PVDF-R-Niro	PVDF	840-0160
Strainer - keeps larger objects out		
Ø 40 mm	Stainless steel	840-0003
ds 8.1/4.2	Stainless steel	840-0252

Hose systems

Hoses, hose connectors, hose fittings, hose clamps



Version	Material	Thread	Item no.
Solvent hose, electrically conductive, p_{max} 16 bar, T_{max} 100 °C			
Solvent hose DN 19	EPDM		820-0004
Solvent hose DN 25	EPDM		820-0005
Solvent hose DN 32	EPDM		820-0006
Chemical hose "Highly resistant", electrically conductive, p_{max} 16 bar, T_{max} 100 °C (depending on medium)			
Chemical hose DN 19	FEP		820-0015
Chemical hose DN 25	FEP		820-0016
Chemical hose DN 32	FEP		820-0017
Hose connector with union nut			
Hose connector DN 19	Stainless steel	IG 1 ¼"	825-0011
Hose connector DN 25	Stainless steel	IG 1 ¼"	825-0012
Hose connector DN 32	Stainless steel	IG 1 ¼"	825-0013
Hose fittings			
for DN 25 (1")	Brass	IG 1 ¼"	825-0002
for DN 25 (1")	Stainless steel	IG 1 "	825-0021
for DN 25 (1")	Stainless steel	IG 1 ¼"	825-0001
for DN 25 (1")	Stainless steel	IG 1 ½"	825-0136
for DN 25 (1")	Stainless steel	AG 1 "	825-0020
for DN 32	Stainless steel	IG 1 ¼"	825-0030
for DN 32	Stainless steel	IG 1 ½"	825-0137
for DN 38	Stainless steel	IG 1 ½"	825-0138
Stainless-steel hose clamps V2A			
Hose clamp DN 19-25	Stainless steel		825-0003
Hose clamp DN 25-32	Stainless steel		825-0004
Hose clamp DN 30-45	Stainless steel		825-0038
Hose clamp DN 40-60	Stainless steel		825-0043

EPDM [ethylene propylene diene rubber], FEP [fluorinated ethylene propylene], PVDF [polyvinylidene fluoride]

Accessories for stainless steel pump tubes

Further versions and our complete range of accessories can be found from pages 72 | 73!

Nozzles

- swivel versions for convenient handling
- Seal: PTFE



Version	Seal	Item no.
Nozzle STAINLESS STEEL		
Male thread AG 1 1/4"	PTFE	830-0065



Nozzle BRASS, nickel-plated		
Male thread AG 1"	PTFE	830-0036
Male thread AG 1 1/4"	PTFE	830-0037



Nozzle BRASS, nickel-plated, with hose nozzle		
DN19 (1 1/8")	PTFE	830-0014
DN25 (1")	PTFE	830-0003
DN32 (1 1/4")	PTFE	830-0004



Adapters

Drum and container adapters (IBC)

Version	Material	Item no.
Drum adapter Ø 40 mm, AG 2"	Stainless steel	840-0005
IBC adapter Ø 150/40 mm	PP	840-0142

PTFE [polytetrafluoroethylene], PP [polypropylene]

When is stainless steel the right choice?

The optimal solution for demanding applications

Stainless steel is the right choice when:

- ✓ high hygiene requirements apply
- ✓ the pump tube must be cleaned regularly
- ✓ different media are pumped
- ✓ higher temperatures occur
- ✓ high mechanical strength is required
- ✓ a durable, robust solution is required
- ✓ use in hazardous areas is planned

Stainless steel vs. plastic

Stainless steel offers advantages for:

- hygienic applications
- higher temperatures
- mechanical loads
- versatile media use

Plastic is suitable for:

- highly aggressive chemicals
- special chemical-resistance requirements

Reliable solutions for versatile applications

Stainless steel pump tubes in practice

Stainless-steel pump tubes stand out for their versatility and are used in a wide range of fields - from industrial applications to hygienically sensitive processes. They provide a safe, durable and flexible solution for many different media and operating conditions.

Typical applications

Industry + Chemicals

Stainless-steel pump tubes are ideal for industrial processes and for pumping chemicals and technical liquids. Their robust construction ensures high operational reliability even under demanding conditions.



Food + Hygiene

In hygienically sensitive areas such as the food, pharmaceutical or cosmetics industries, stainless-steel pump tubes offer decisive advantages. Their smooth surfaces make cleaning easy and support safe production processes.



Versatility in use

By combining different pumping elements and drive motors, stainless-steel pump tubes can be flexibly adapted to different requirements – from low-viscosity media to slightly viscous substances.



Typical media

- Food products and beverages
- Oils and fats
- Chemicals and industry
- Pharmaceuticals & cosmetics
- Cleaning agents and disinfectants

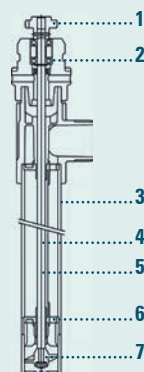
Advantages in use

- easy cleaning
- hygienically safe
- temperature-resistant and durable
- versatile combinations
- high mechanical strength



ALU

[aluminium]



See page 13 for the
material table of
wetted parts!

Pump tubes **ALU**

Lightweight, robust and versatile!

- ✓ ALU pump tubes provide a robust yet lightweight solution for a wide range of pumping tasks. They are particularly suitable for neutral and mildly aggressive media as well as media containing mineral oil.

Their low weight and sturdy construction make them easy to handle while ensuring reliable day-to-day operation.

✓ **Advantages of ALU drum pumps**

- low weight for easy handling
- robust and durable construction
- economical alternative to stainless steel
- versatile in use
- reliable in day-to-day operation

✓ **Typical applications**

- mineral oils and lubricants
- diesel and heating oil
- biofuels
- paints
- neutral and mildly aggressive media
- industrial applications
- workshop and service areas
- emulsions, dispersions, suspensions
- medium-viscosity liquids
- cosmetics
- food products

"The economical solution for a wide range of applications."

ALU pump tubes [Aluminium]

the right solution for oils and industrial liquids

Sealless DL [DL-ALU]

Maximum reliability: pumps without seal wear for demanding media.

Version	Immersion depth mm	Shaft	Item no.
with axial impeller [A.GSB]			
DL-ALU-A-700-GSB	700	Stainless steel	600-0014.GSB
DL-ALU-A-1000-GSB	1000	Stainless steel	600-0015.GSB
DL-ALU-A-1200-GSB	1200	Stainless steel	600-0016.GSB
with axial impeller [A]			
DL-ALU-A-700	700	Stainless steel	600-0014
DL-ALU-A-1000	1000	Stainless steel	600-0015
DL-ALU-A-1200	1200	Stainless steel	600-0016
with radial impeller [R]			
DL-ALU-R-700	700	Stainless steel	605-0013
DL-ALU-R-1000	1000	Stainless steel	605-0014
DL-ALU-R-1200	1200	Stainless steel	605-0015
with screw impeller [S]			
DL-ALU-S-700	700	Stainless steel	600-0018
DL-ALU-S-1000	1000	Stainless steel	600-0019
DL-ALU-S-1200	1200	Stainless steel	600-0020



Product note



Perfectly matched to your container

Our pump tubes are also available on request in special lengths and individual immersion depths - for a solution optimally matched to your application.

Sets

Workshop-Set WS1

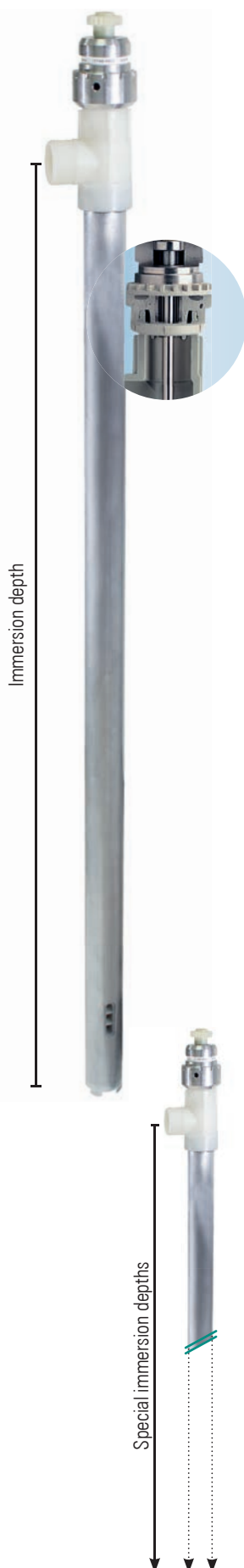


Our preconfigured standard drum pump sets can be found on page 47!

Special immersion depths [ALU]

Surcharge for special lengths for ALU pump tubes.

Version	Length mm	Shaft	Item no.
Base surcharge			600-0004
Surcharge DL-ALU-A /-R /-S	100	Stainless steel	600-0005



Accessories for ALU pump tubes

Further versions and our complete range of accessories can be found from pages 72 | 73!

Additional equipment

Additional stage, foot valve, strainer



Version	Material	Item no.
Additional pumping stages for pump tube DL-ALU-R...		
Base surcharge		890-0021
Additional pumping stage	Shaft: Stainless steel	890-0020
Foot valve [R] radial		
PVDF-R-Niro	Shaft: Stainless steel	840-0160
Strainer - keeps larger objects out		
Ø 40 mm	PVDF	840-0002PVDF

Hose systems

Hoses, hose connectors, hose clamps



Version	Material	Item no.
Mineral-oil hose, electrically conductive, p_{max} 16 bar, T_{max} 80 °C		
Mineral-oil hose DN 19	NBR	820-0010
Mineral-oil hose DN 25	NBR	820-0011
Mineral-oil hose DN 32	NBR	820-0012
Hose connector with union nut, Thread IG 1 1/4"		
Hose connector DN 19	Alu	825-0095
Hose connector DN 25	Alu	825-0096
Hose connector DN 32	Alu	825-0097
Stainless-steel hose clamps V2A		
Hose clamp DN 19-25	Stainless steel	825-0003
Hose clamp DN 25-32	Stainless steel	825-0004
Hose clamp DN 30-45	Stainless steel	825-0038
Hose clamp DN 40-60	Stainless steel	825-0043

Nozzlessystems

- aluminum dispensing nozzles
- with hose nozzle

- Seal: NBR



Version	Seal	Item no.
DN19	NBR	830-0042
DN25	NBR	830-0043

Adapters

Drum and container adapters (IBC)



Version	Material	Item no.
Drum adapter Ø 40 mm, AG 2"	PP	840-0006
IBC adapter Ø 150/40 mm	PP	840-0142

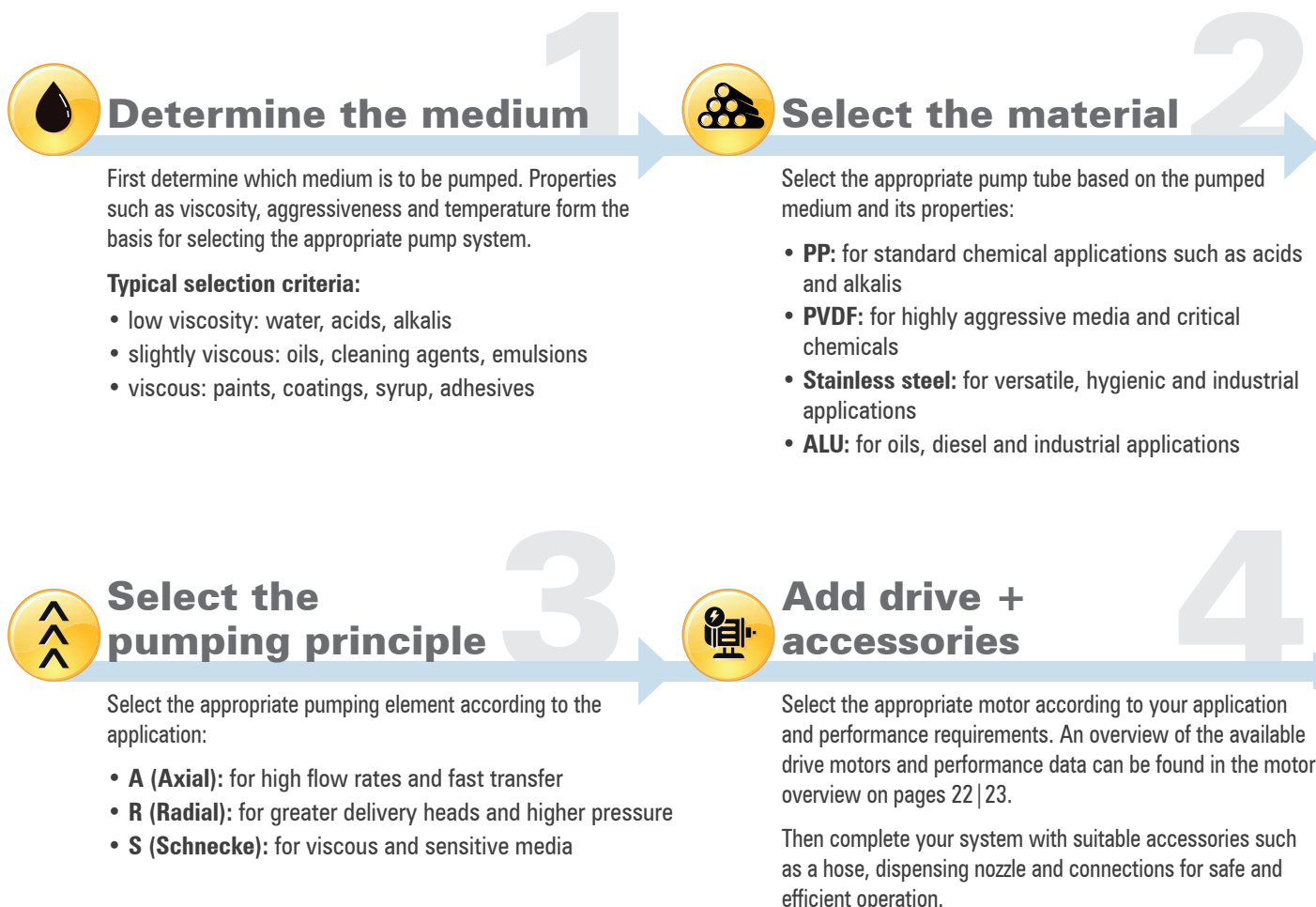
PVDF [polyvinylidene fluoride], NBR [nitrile butadiene rubber], PP [polypropylene]

Find the right pumping solution -

the right drum pump in 4 steps

With the modular drum pump system from Grün-Pumpen, you can quickly and easily find the right solution for your application.

Follow the steps and configure your optimal pump combination.



Product notes

Drum pump sets

It is even easier with our drum pump sets

Preconfigured complete solutions make selection quick and are ready for immediate use.

Note:

See our drum pump sets on the next page!



Eccentric screw pumps

For special requirements

- ideal for highly viscous media
- gentle and uniform pumping
- for demanding applications

Note:

For these applications, we recommend our eccentric screw pumps - see pages 48 | 49 onward.



Drum pump sets

Complete solutions for immediate use

Our drum pump sets provide a complete, ready-to-use solution made up of perfectly matched components.

You save time during selection and avoid incorrect configurations.

Your benefits at a glance:

- ready for immediate use
- optimally matched components
- easy selection without configuration effort
- saves time when ordering and using
- customized solutions available on request

BS1 - the starter set for dilute acids and alkalis

Set consisting of: 1 x motor p310-A-230, 2 m reinforced PVC hose DN 19, 1 x PP hose connector DN 19, 2 x stainless steel hose clamps, 1 x PP/FPM/stainless steel dispensing nozzle, 1 x PP drum adapter, 1 x wall bracket and:

	Length mm	Item no.
1 x pump tube DL-PP-A-Niro-700	700	410-0001
1 x pump tube DL-PP-A-Niro-1000	1000	410-0002
1 x pump tube DL-PP-A-Niro-1200	1200	410-0003

AS1 - the all-round set for concentrated acids and alkalis

Set consisting of: 1 x motor p400-A-230, 2 m reinforced PVC hose DN 25, 1 x PP hose connector DN 25, 2 x stainless steel hose clamps, 1 x PP/FPM/HC dispensing nozzle DN 25, 1 x PP drum adapter, 1 x wall bracket and:

	Length mm	Item no.
1 x pump tube DL-PP-R-HC-700	700	415-0001
1 x pump tube DL-PP-R-HC-1000	1000	415-0011
1 x pump tube DL-PP-R-HC-1200	1200	415-0003

CS1 - the chemical set for almost all chemicals

Set consisting of: 1 x motor p400-A-230, 2 m universal chemical hose DN 25, 2 x PVDF hose connectors DN 25, 2 x stainless steel hose clamps, 1 x PVDF/FEP dispensing nozzle 1 1/4", 1 x PP drum adapter, 1 x wall bracket and:

	Length mm	Item no.
1 x pump tube DL-PVDF-A-HC-700	700	420-0001
1 x pump tube DL-PVDF-A-HC-1000	1000	420-0002
1 x pump tube DL-PVDF-A-HC-1200	1200	420-0003

WS1 - the workshop set for oil and neutral liquids

Set consisting of: 1 x motor p400-A-230, 2 m fabric-reinforced PVC hose DN 25, 1 x aluminum hose connector DN 25, 2 x stainless steel hose clamps, 1 x aluminum dispensing nozzle DN 25, 1 x PP drum adapter, 1 x wall bracket and:

	Length mm	Item no.
1 x pump tube DL-Alu-A-700	700	460-0001
1 x pump tube DL-Alu-A-1000	1000	460-0002
1 x pump tube DL-Alu-A-1200	1200	460-0003

ES1 - the ATEX set for flammable liquids



Set consisting of: 1 x motor EX700 Ex II 2 G EEx de IIC T5 (ATEX) IP54, 2 m solvent hose DN 25, 2 x brass hose fittings 1 1/4", 1 x brass/PTFE dispensing nozzle, 1 x equipotential bonding cable, 1 x PP drum adapter, 1 x wall bracket and:

		Length mm	Item no.
1 x pump tube DL-Niro-A-700	ATEX II 1/2G IIB T4	700	430-0001
1 x pump tube DL-Niro-A-1000	ATEX II 1/2G IIB T4	1000	430-0002
1 x pump tube DL-Niro-A-1200	ATEX II 1/2G IIB T4	1200	430-0003



ds

eccentric screw pump
[viscous media pump]



Eccentric screw pump

For highly viscous and thick liquids

- ✓ When conventional drum pumps reach their limits, eccentric screw pumps take over.

They enable reliable pumping of highly viscous, sensitive or difficult-to-handle media - uniformly, gently and under control.

✓ Advantages of Eccentric screw pumps

- suitable for highly viscous media
- uniform, low-pulsation pumping
- gentle transfer of sensitive products
- high pumping capacity with precise dosing
- reliable operation even under demanding conditions

✓ Typical applications

- paints and coatings
- adhesives
- pasty and highly viscous media
- food products (e.g. syrup, honey, etc.)
- specialty chemical products



"When media become too viscous or gentle, uniform pumping is required."

Eccentric screw pumps

High-viscosity pumps [ds] or highly viscous and thick liquids

Operating principle

5 versions for a wide range of applications

The pumping principle is based on a rotating screw that conveys the medium uniformly through the pump tube. The continuous movement creates sealed pumping chambers that transfer the medium gently and without pulsation.

Common features

- suitable for highly viscous and pasty media
- uniform, low-pulsation pumping
- gentle transfer of sensitive products
- reliable operation even in demanding applications
- precise and controlled pumping
- robust and durable in operation

Advantages

- constant pumping capacity
- low shear forces
- preserves the structure of shear-sensitive media - no "tearing" of the product
- ideal for coatings, paints and sensitive products



Our versions at a glance

5 versions - tailored to different applications and requirements

Our eccentric screw pumps are available in several versions that differ in design, handling and field of application. Select the appropriate series for your requirements according to the application, medium and working environment.

5 Versions

SB: Locking bracket connection

For applications requiring frequent changes and easy handling.
The motor and pump are flexibly connected by a locking bracket.



SWK: Quick-change coupling

For mobile use and frequent pump changes.
The motor and pump tube can be separated quickly without tools.



SD: Quickly detachable

For applications with increased cleaning and maintenance requirements.
The pump tube can be dismantled quickly and easily.



Ex: Explosion-protected version

For use in potentially explosive atmospheres.
Complies with the applicable ATEX requirements.



Starr: Fixed connection

For stationary applications.
The motor and pump are permanently connected and form a compact unit.



All versions are based on the proven progressive cavity principle and provide uniform, gentle pumping even for highly viscous media.

Eccentric screw pump **SB**

Locking bracket connection, robust and lightweight solution

The SB version connects the motor and pump tube by means of a practical locking bracket. The motor and pump can be separated quickly and easily, enabling flexible and mobile use.

Thanks to its low weight and compact design, the SB version is particularly suitable for lower flow rates and applications with medium viscosities. The integrated start/stop switch also ensures convenient and safe handling in day-to-day operation.

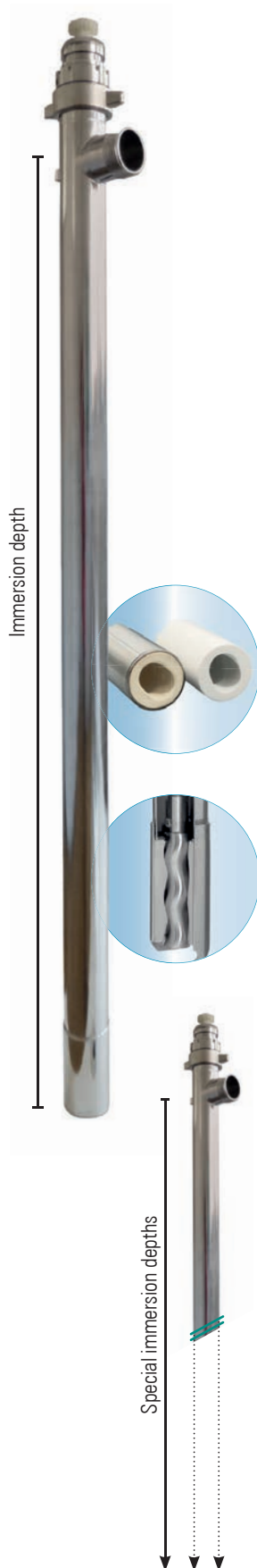
- lightweight and compact design
- ideal for mobile drum and container applications
- suitable for low flow rates and medium viscosities

- easy and safe handling
- robust and durable construction for industrial use

Pump tube Ø 54 mm [SB-ds]

- with mechanical seal [GLRD]
- PTFE stator
- hose connection: AG 1 1/2"
- shaft: stainless steel

- standard immersion depths: 1000, 1100 or 1200 mm
- max. discharge pressure: 5 bar



Version	Immersion depth mm	Stator	Item no.
Rotor 20.1			
SB54-ds 20.1-PTFE-GLRD-1000	1000	PTFE	652-0311
SB54-ds 20.1-PTFE-GLRD-1100	1100	PTFE	652-0411
SB54-ds 20.1-PTFE-GLRD-1200	1200	PTFE	652-0415
Rotor 40.1			
SB54-ds 40.1-PTFE-GLRD-1000	1000	PTFE	652-0312
SB54-ds 40.1-PTFE-GLRD-1100	1100	PTFE	652-0412
SB54-ds 40.1-PTFE-GLRD-1200	1200	PTFE	652-0416
Rotor 40.2			
SB54-ds 40.2-PTFE-GLRD-1100	1100	PTFE	652-0314
SB54-ds 40.2-PTFE-GLRD-1200	1200	PTFE	652-0414
Rotor 80.1			
SB54-ds 80.1-PTFE-GLRD-1100	1100	PTFE	652-0313
SB54-ds 80.1-PTFE-GLRD-1200	1200	PTFE	652-0413

Special immersion depths [SB-ds]

Surcharge for special lengths of eccentric screw pump tubes ds 20.1... 80.1 | Ø 54 mm

Version	Length mm	Item no.
Base surcharge		890-0011
Surcharge SB-ds 20-80	per 100 mm	630-0072

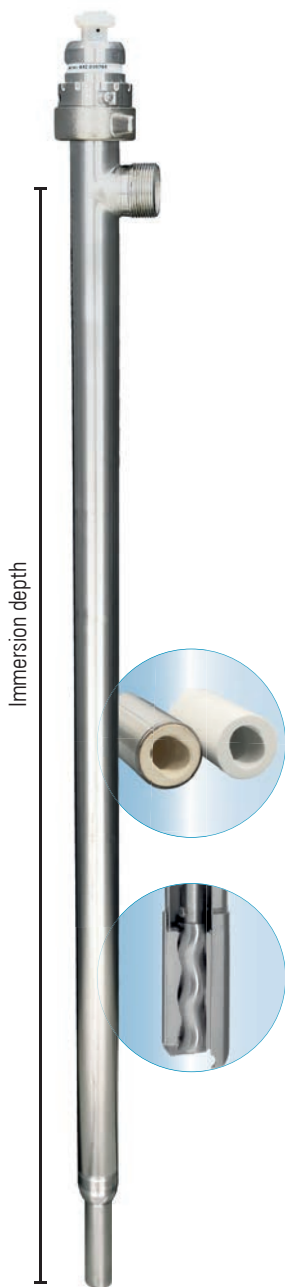
PTFE [polytetrafluoroethylene]

Eccentric screw pump **SB**

Locking bracket connection, robust and lightweight solution

Pump tube Ø 40 mm [SB40-ds]

- with mechanical seal [GLRD]
- stator optionally in PTFE or NBR
- shaft: stainless steel
- standard immersion depths: 500, 700, 1000 or 1200 mm
- max. discharge pressure: 5 bar (PTFE), 8 bar (NBR)



Version	Immersion depth mm	Stator	Item no.
Rotor 4.2			
SB40-ds 4.2-PTFE-GLRD-500	500	PTFE	652-0206
SB40-ds 4.2-PTFE-GLRD-700	700	PTFE	652-0209
SB40-ds 4.2-PTFE-GLRD-1000	1000	PTFE	652-0207
SB40-ds 4.2-PTFE-GLRD-1200	1200	PTFE	652-0210
SB40-ds 4.2-NBR-GLRD-500	500	NBR	652-0205
SB40-ds 4.2-NBR-GLRD-700	700	NBR	652-0201
SB40-ds 4.2-NBR-GLRD-1000	1000	NBR	652-0202
SB40-ds 4.2-NBR-GLRD-1200	1200	NBR	652-0203
Rotor 8.1			
SB40-ds 8.1-PTFE-GLRD-700	700	PTFE	652-0001
SB40-ds 8.1-PTFE-GLRD-1000	1000	PTFE	652-0002
SB40-ds 8.1-PTFE-GLRD-1200	1200	PTFE	652-0003
SB40-ds 8.1-NBR-GLRD-700	700	NBR	625-0004
SB40-ds 8.1-NBR-GLRD-1000	1000	NBR	652-0005
SB40-ds 8.1-NBR-GLRD-1200	1200	NBR	652-0006
Rotor 20.1 [also available with mixing function and flow-rate control]			
SB40-ds 20.1-PTFE-GLRD-700	700	PTFE	652-0031
SB40-ds 20.1-PTFE-GLRD-1000	1000	PTFE	652-0032
SB40-ds 20.1-PTFE-GLRD-1200	1200	PTFE	652-0033
Mixing Pump Tube			
MP-SB40-ds 20.1-PTFE-GLRD-1000	1000	PTFE	652-0032MP
MP-SB40-ds 20.1-PTFE-GLRD-1200	1200	PTFE	652-0033MP

Accessories

Strainer and Seal Kit



Version	Material	Item no.
Strainer ds 8.1/4.2	Stainless steel	840-0252
FDA seal kit (Niro/GLRD-R, SB40)	EPDM	840-0214.18

PTFE [polytetrafluoroethylene], NBR [nitrile butadiene rubber], EPDM [ethylene propylene diene rubber]

Motors for SB pump tubes

Robust drive solutions for reliable continuous operation

The motors of the SB series are specifically matched to use with progressive cavity pump tubes. They ensure reliable, long-lasting operation even with demanding media and high loads.

Depending on the application, single-phase, three-phase and explosion-protected versions are available.

- robust design for continuous industrial operation
- suitable for highly viscous and thick media
- reliable power transmission via locking bracket connection
- durable, low-maintenance construction
- various power and speed versions available
- optionally available in an explosion-protected version

Single-phase AC motor pd500 | SB

For mobile and flexible applications.

- 230 V, 50 Hz
- with run and start capacitor
- with protective switch
- protection rating: IP 55



Version	Power kW	Rated current A	Speed rpm	Item no.
pd500-1-0,37	0.37	3.3	1400	500-0073
pd500-1-0,55	0.55	4.0	2800	500-0044
pd500-1-0,75	0.75	5.0	1400	500-0075

Three-phase AC motor pd500 | SB

For high-performance industrial applications.

- 230/400 V, 50/50-60 Hz
- with terminal box
- without supply cable and protective switch
- protection rating: IP 55



Version	Power kW	Rated current A	Speed rpm	Item no.
pd500-3-0,37	0.37	1.7/1.0	2800	500-0039
pd500-3-0,37	0.37	1.8/1.05	1350	500-0051
pd500-3-0,55	0.55	2.8/1.6	900	500-0078

Explosion-protected motor pd500 | SB

For potentially explosive atmospheres in accordance with ATEX.

- 400 V, 50 Hz
- with terminal box
- ATEX Ex II 2G EEx e T3
- protection rating: IP 54



Version	Power kW	Rated current A	Speed rpm	Item no.
pd500-EEx	0.37	1.08	1400	500-0016

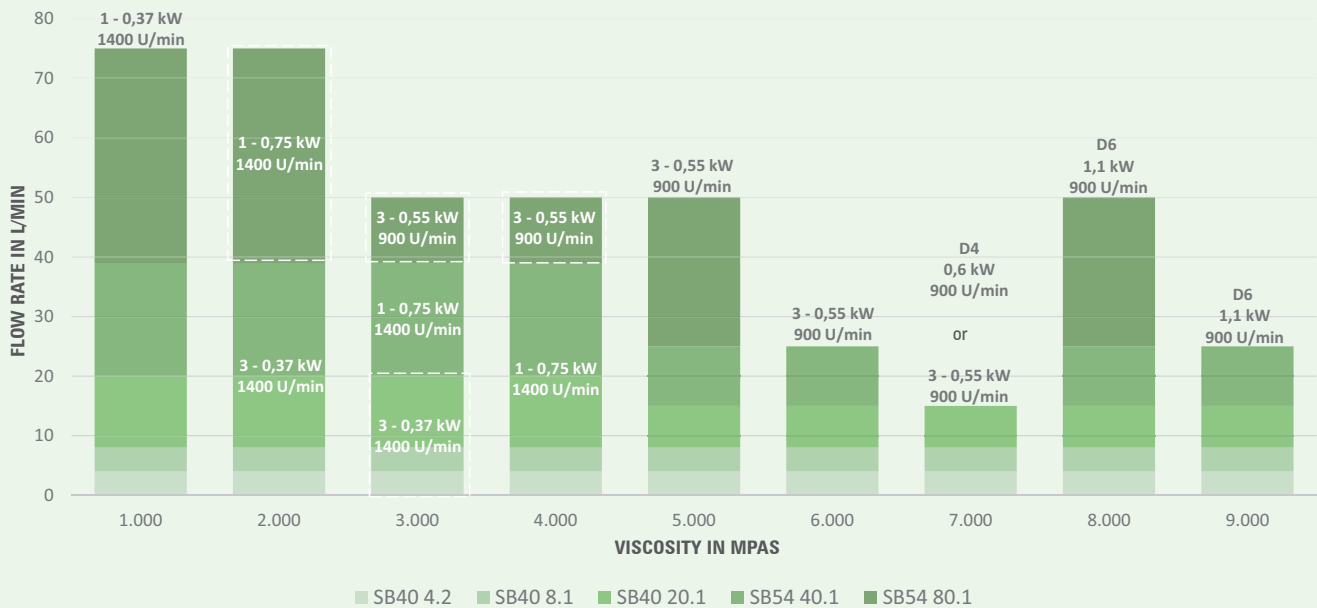
Accessories

Version	Rated current A	Item no.
Motor protection switch with 5 m cable and 5-pole CEE plug, 16 A	1.0-1.6	810-0023PD
Motor protection switch Ex	1.0-1.6	815-0015



Selection guide for medium-viscosity media

Pump selection by viscosity and flow rate



Maximum permissible pressure = 6 bar
Values apply with free discharge at the pressure outlet
Flow rate depends on the flow characteristics of the respective medium



Product Note

Systematic custom solutions

Pump systems for special requirements

Special pumping tasks require special solutions. We develop pump systems tailored precisely to your application. Looking for a custom solution? Contact us!



Continuous lubrication pump for wind turbines

- fast and clean filling of automatic lubrication systems
- designed for the confined working conditions in the nacelle
- helps reduce maintenance times and downtime costs



Pallet truck for IBC containers

- facilitates mobile handling of IBC containers
- enables fast positioning and relocation at the point of use
- supports flexible use of pump and transfer systems

Eccentric screw pump **SWK**

Quick-change coupling, flexible solution for mobile applications

The SWK version allows the motor and pump tube to be separated particularly quickly and without tools using a quick-change coupling. It is ideal for mobile applications, frequent relocation of the pump and switching between different containers or pump tubes.

Thanks to the low weight and easy handling, the motor and pump tube can be separated quickly and safely. This simplifies day-to-day use and supports ergonomic working without additional lifting equipment.

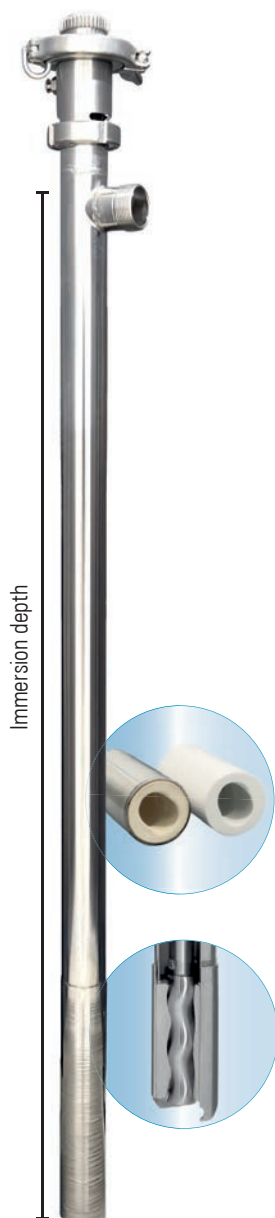
- tool-free separation of motor and pump tube
- quick-change coupling for flexible operation
- ideal for mobile applications and frequent container changes
- easy and safe handling

- no additional lifting equipment required
- suitable as a changeover or standby pump
- robust and durable construction for industrial use

with mechanical seal [GLRD]

- pump tube Ø: 54 mm
- stator optionally in PTFE or NBR

- standard immersion depths:
1000, 1100 or 1200 mm
- shaft: stainless steel



Version	Immersion depth mm	Stator	Item no.
Rotor 20.1			
ds 20.1-SWK-PTFE-GLRD-1000	1000	PTFE	651-0009
ds 20.1-SWK-PTFE-GLRD-1100	1100	PTFE	651-0109
ds 20.1-SWK-PTFE-GLRD-1200	1200	PTFE	651-0109.12
ds 20.1-SWK-NBR-hell-GLRD-1000	1000	light NBR	651-0001
ds 20.1-SWK-NBR-hell-GLRD-1100	1100	light NBR	651-0101
ds 20.1-SWK-NBR-hell-GLRD-1200	1200	light NBR	651-0101.12
Rotor 40.1			
ds 40.1-SWK-PTFE-GLRD-1000	1000	PTFE	651-0010
ds 40.1-SWK-PTFE-GLRD-1100	1100	PTFE	651-0110
ds 40.1-SWK-PTFE-GLRD-1200	1200	PTFE	651-0110.12
ds 40.1-SWK-NBR-hell-GLRD-1000	1000	light NBR	651-0002
ds 40.1-SWK-NBR-hell-GLRD-1100	1100	light NBR	651-0102
ds 40.1-SWK-NBR-hell-GLRD-1200	1200	light NBR	651-0102.12
Rotor 40.2			
ds 40.2-SWK-PTFE-GLRD-1100	1100	PTFE	651-0011
ds 40.2-SWK-PTFE-GLRD-1200	1200	PTFE	651-0111
ds 40.2-SWK-NBR-hell-GLRD-1100	1100	light NBR	651-0003
ds 40.2-SWK-NBR-hell-GLRD-1200	1200	light NBR	651-0103
Rotor 80.1			
ds 80.1-SWK-PTFE-GLRD-1100	1100	PTFE	651-0012
ds 80.1-SWK-PTFE-GLRD-1200	1200	PTFE	651-0112
ds 80.1-SWK-NBR-hell-GLRD-1100	1100	light NBR	651-0004
ds 80.1-SWK-NBR-hell-GLRD-1200	1200	light NBR	651-0104

PTFE [polytetrafluoroethylene], NBR [nitrile butadiene rubber]

Eccentric screw pump SWK

Quick-change coupling, flexible solution for mobile applications

with gland packing [SB]

- pump tube Ø: 54 mm
- stator in PTFE or NBR
- standard immersion depths: 1000, 1100 or 1200 mm
- shaft: stainless steel

Version	Immersion depth mm	Stator	Item no.
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Rotor 20.1

ds 20.1-SWK-PTFE-SB-1000	1000	PTFE	651-0013
ds 20.1-SWK-PTFE-SB-1100	1100	PTFE	651-0113
ds 20.1-SWK-PTFE-SB-1200	1200	PTFE	651-0113.12
ds 20.1-SWK-NBR-hell-SB-1000	1000	light NBR	651-0005
ds 20.1-SWK-NBR-hell-SB-1100	1100	light NBR	651-0105
ds 20.1-SWK-NBR-hell-SB-1200	1200	light NBR	651-0105.12

Rotor 40.1

ds 40.1-SWK-PTFE-SB-1000	1000	PTFE	651-0014
ds 40.1-SWK-PTFE-SB-1100	1100	PTFE	651-0114
ds 40.1-SWK-PTFE-SB-1200	1200	PTFE	651-0114.12
ds 40.1-SWK-NBR-hell-SB-1000	1000	light NBR	651-0006
ds 40.1-SWK-NBR-hell-SB-1100	1100	light NBR	651-0106
ds 40.1-SWK-NBR-hell-SB-1200	1200	light NBR	651-0106.12

Rotor 40.2

ds 40.2-SWK-PTFE-SB-1100	1100	PTFE	651-0015
ds 40.2-SWK-PTFE-SB-1200	1200	PTFE	651-0115
ds 40.2-SWK-NBR-hell-SB-1100	1100	light NBR	651-0007
ds 40.2-SWK-NBR-hell-SB-1200	1200	light NBR	651-0107

Rotor 80.1

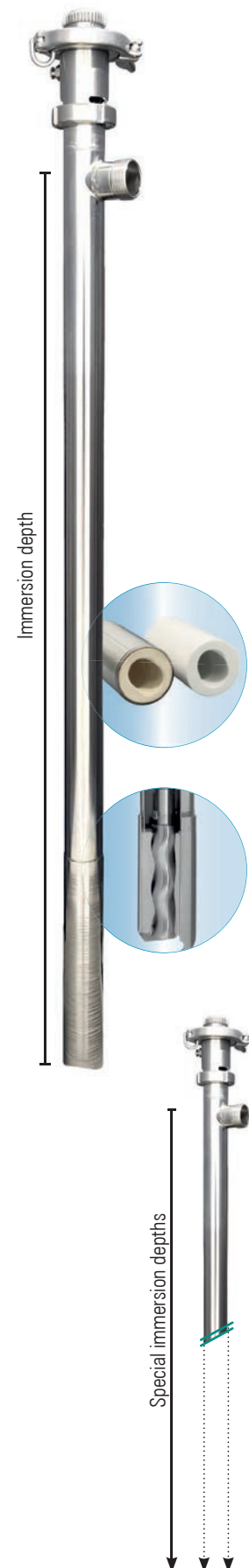
ds 80.1-SWK-PTFE-SB-1100	1100	PTFE	651-0016
ds 80.1-SWK-PTFE-SB-1200	1200	PTFE	651-0116
ds 80.1-SWK-NBR-hell-SB-1100	1100	light NBR	651-0008
ds 80.1-SWK-NBR-hell-SB-1200	1200	light NBR	651-0108

Special immersion depths [ds]

Surcharge for special lengths of eccentric screw pump tubes ds 20.1... 80.1 | Ø 54 mm

Version	Length mm	Item no.
Base surcharge		890-0011
Surcharge ds 20-80	per 100 mm	650-0047

PTFE [polytetrafluoroethylene], NBR [nitrile butadiene rubber]



Eccentric screw pump SWK SD

Quickly detachable solution for cleaning and maintenance

The SD version is based on the proven SWK system and additionally features a split drive shaft for particularly fast disassembly of the pump tube. Motor and pump can be separated without tools, enabling easy cleaning and maintenance as well as flexible handling in day-to-day use.

The SD version is particularly suitable for applications requiring frequent pump dismantling and for processes with increased cleaning and serviceability requirements.

- quick, tool-free dismantling of the pump tube
- split drive shaft for particularly easy handling
- ideal for frequent cleaning and maintenance
- suitable for applications with increased hygiene requirements
- wetted components suitable for machine washing

- reduced time required for service and cleaning
- no additional tools or specialist personnel required
- high flexibility for mobile and stationary applications

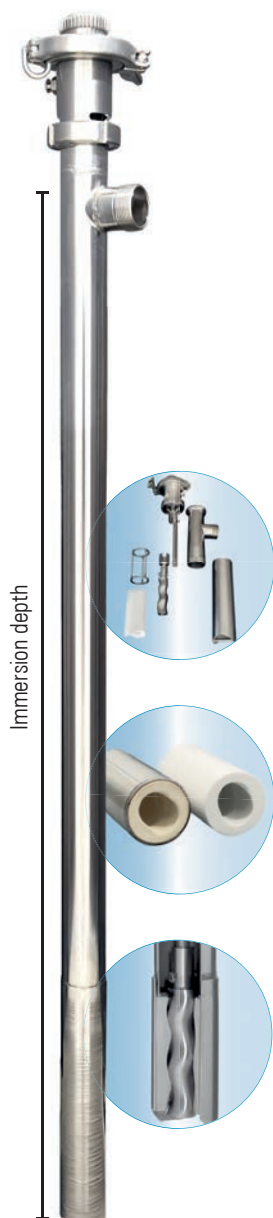
with mechanical seal [GLRD]

- pump tube Ø: 54 mm
- stator optionally in PTFE or NBR

- standard immersion depths: 1000, 1100 or 1200 mm
- shaft: stainless steel

Version	Immersion depth mm	Stator	Item no.
Rotor 20.1			
SD-ds 20.1-SWK-PTFE-GLRD-1000	1000	PTFE	654-0009
SD-ds 20.1-SWK-PTFE-GLRD-1100	1100	PTFE	654-0109
SD-ds 20.1-SWK-PTFE-GLRD-1200	1200	PTFE	654-0109.12
SD-ds 20.1-SWK-NBR-hell-GLRD-1000	1000	light NBR	654-0001
SD-ds 20.1-SWK-NBR-hell-GLRD-1100	1100	light NBR	654-0101
SD-ds 20.1-SWK-NBR-hell-GLRD-1200	1200	light NBR	654-0101.12
Rotor 40.1			
SD-ds 40.1-SWK-PTFE-GLRD-1000	1000	PTFE	654-0010
SD-ds 40.1-SWK-PTFE-GLRD-1100	1100	PTFE	654-0110
SD-ds 40.1-SWK-PTFE-GLRD-1200	1200	PTFE	654-0110.12
SD-ds 40.1-SWK-NBR-hell-GLRD-1000	1000	light NBR	654-0002
SD-ds 40.1-SWK-NBR-hell-GLRD-1100	1100	light NBR	654-0102
SD-ds 40.1-SWK-NBR-hell-GLRD-1200	1200	light NBR	654-0102.12
Rotor 40.2			
SD-ds 40.2-SWK-PTFE-GLRD-1100	1100	PTFE	654-0011
SD-ds 40.2-SWK-PTFE-GLRD-1200	1200	PTFE	654-0111
SD-ds 40.2-SWK-NBR-hell-GLRD-1100	1100	light NBR	654-0003
SD-ds 40.2-SWK-NBR-hell-GLRD-1200	1200	light NBR	654-0103
Rotor 80.1			
SD-ds 80.1-SWK-PTFE-GLRD-1100	1100	PTFE	654-0012
SD-ds 80.1-SWK-PTFE-GLRD-1200	1200	PTFE	654-0112
SD-ds 80.1-SWK-NBR-hell-GLRD-1100	1100	light NBR	654-0004
SD-ds 80.1-SWK-NBR-hell-GLRD-1200	1200	light NBR	654-0104

PTFE [polytetrafluoroethylene], NBR [nitrile butadiene rubber]



Eccentric screw pump SWK SD

Quickly detachable solution for cleaning and maintenance

with gland packing [SB]

- pump tube Ø: 54 mm
- stator optionally in PTFE or light NBR
- standard immersion depths: 1000, 1100 or 1200 mm
- shaft: stainless steel

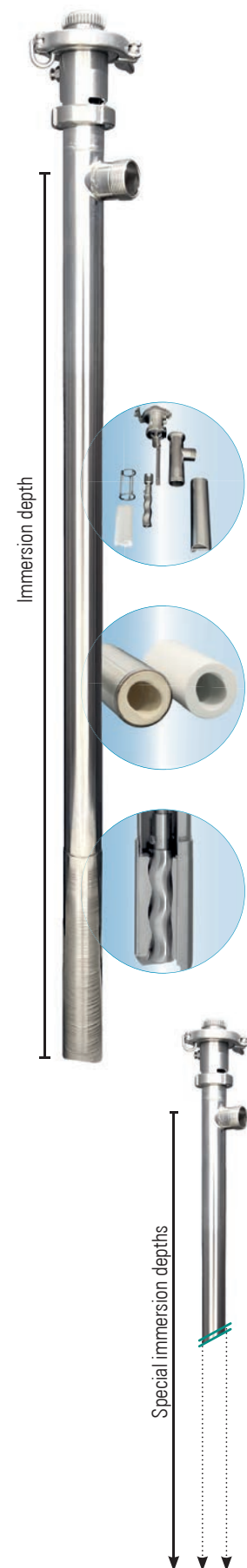
Version	Immersion depth mm	Stator	Item no.
Rotor 20.1			
SD-ds 20.1-SWK-PTFE-SB-1000	1000	PTFE	654-0013
SD-ds 20.1-SWK-PTFE-SB-1100	1100	PTFE	654-0113
SD-ds 20.1-SWK-PTFE-SB-1200	1200	PTFE	654-0113.12
SD-ds 20.1-SWK-NBR-hell-SB-1000	1000	light NBR	654-0005
SD-ds 20.1-SWK-NBR-hell-SB-1100	1100	light NBR	654-0105
SD-ds 20.1-SWK-NBR-hell-SB-1200	1200	light NBR	654-0105.12
Rotor 40.1			
SD-ds 40.1-SWK-PTFE-SB-1000	1000	PTFE	654-0014
SD-ds 40.1-SWK-PTFE-SB-1100	1100	PTFE	654-0114
SD-ds 40.1-SWK-PTFE-SB-1200	1200	PTFE	654-0114.12
SD-ds 40.1-SWK-NBR-hell-SB-1000	1000	light NBR	654-0006
SD-ds 40.1-SWK-NBR-hell-SB-1100	1100	light NBR	654-0106
SD-ds 40.1-SWK-NBR-hell-SB-1200	1200	light NBR	654-0106.12
Rotor 40.2			
SD-ds 40.2-SWK-PTFE-SB-1100	1100	PTFE	654-0015
SD-ds 40.2-SWK-PTFE-SB-1200	1200	PTFE	654-0115
SD-ds 40.2-SWK-NBR-hell-SB-1100	1100	light NBR	654-0007
SD-ds 40.2-SWK-NBR-hell-SB-1200	1200	light NBR	654-0107
Rotor 80.1			
SD-ds 80.1-SWK-PTFE-SB-1100	1100	PTFE	654-0016
SD-ds 80.1-SWK-PTFE-SB-1200	1200	PTFE	654-0116
SD-ds 80.1-SWK-NBR-hell-SB-1100	1100	light NBR	654-0008
SD-ds 80.1-SWK-NBR-hell-SB-1200	1200	light NBR	654-0108

Special immersion depths [SD-ds]

Surcharge for special lengths of eccentric screw pump tubes ds 20.1... 80.1 | Ø 54 mm

Version	Length mm	Item no.
Base surcharge		890-0011
Surcharge ds 20-80	per 100 mm	650-0047

PTFE [Polytetrafluorethylen], NBR [Nitril-Butadien-Kautschuk]



Motors for pump tubes SWK / SD

Flexible drive solutions for mobile and industrial applications

The motors of the SWK and SD series are specifically designed for progressive cavity pump tubes and provide reliable pumping of highly viscous media.

Depending on the application, electric motors and compressed air motors are available for different operating environments.

- robust versions for continuous industrial operation
- quick-change coupling [SWK] for tool-free pump changes
- reliable power transmission even with highly viscous media

- low-maintenance and durable construction
- flexible options for mobile and stationary applications
- optionally available in an explosion-protected version

Electric motors

The electric motors of the SWK and SD series provide reliable and uniform drive power for mobile

and stationary applications involving highly viscous media.

- various speed and power versions available
- suitable for continuous operation and industrial applications
- high operational reliability and long service life

- optionally available as geared or special motor
- easy handling and fast pump changes

Universal drive motor | SWK

- 230/400 V, 50 Hz
- speed: either 900 or 700 rpm
- with terminal box

- without switch and connection cable
- protection rating: IP 55

Version	Power kW	Rated current A	Speed rpm	Item no.
SWK Drive motor 900	0.55	2.8/1.6	900	530-0047
SWK Drive motor 900	0.75	3.7/2.1	900	530-0040
SWK Drive motor 900	1.10	5.0/2.95	900	530-0041
SWK Drive motor 900	1.50	6.8/3.9	900	530-0042
SWK Drive motor 700	0.37	1.96/1.13	700	530-0036
SWK Drive motor 700	0.55	2.75/1.59	700	530-0037
SWK Drive motor 700	0.75	3.75/2.15	700	530-0038
SWK Drive motor 700	1.10	5.0/3.0	700	530-0039
SWK Drive motor 700	1.50	6.7/3.85	700	530-0088

Helical geared motor | SWK

- 230/400 V, 50 Hz
- speed: either 500 or 300 rpm
- with terminal box

- without switch and connection cable
- protection rating: IP 55

Version	Power kW	Rated current A	Speed rpm	Item no.
SWK Geared motor 500	0.37	1.8/1.0	500	550-0020
SWK Geared motor 500	0.55	2.8/1.6	500	550-0021
SWK Geared motor 500	0.75	3.7/2.1	500	550-0022
SWK Geared motor 300	0.37	1.8/1.0	300	550-0017
SWK Geared motor 300	0.55	2.7/1.5	300	550-0018
SWK Geared motor 300	0.75	3.6/2.0	300	550-0019





Motor with hydrostatic variable-speed gearbox | SWK

- 230/400 V, 50 Hz
- variable output speed n₂: 50-900 rpm, infinitely adjustable
- handwheel adjustment with dial indicator
- flange 200 mm
- protection rating: IP 55

Version	Power kW	Rated current A	Speed rpm	Item no.
with hydrostatic variable-speed gearbox	0.55	1.6	50-900	550-0161

Single-phase AC motor | SWK

- 230 V, 50 Hz
- speed: 900 rpm
- with start/stop protective switch
- with 5 m connection cable and plug
- protection rating: IP 55

Version	Power kW	Rated current A	Speed rpm	Item no.
SWK single-phase 900	0.75	5.2	900	530-0203
SWK single-phase 900	1.1	6.7	900	530-0205
SWK single-phase 900	1.5	8.0	900	530-0207

Accessories

Motor protection switch:

- 5 m connection cable, 5-pole CEE plug, 16 A
- protection rating: IP 55

Version	Rated current A	Item no.
Motor protection switch	1.0-1.6	810-0023
Motor protection switch	1.6-2.5	810-0021
Motor protection switch	2.5-4.0	810-0022
Stainless-steel retaining bracket		745-0198



Compressed air motors

The compressed air motors of the SWK and SD series are particularly suitable for applications in potentially explosive atmospheres and for applications

where electric drives cannot be used, enabling safe operation under demanding conditions.

- ideal for potentially explosive atmospheres
- infinitely variable control via the compressed-air supply
- low-maintenance and durable in continuous operation
- suitable for highly viscous and thick media

Compressed air motor | SWK

- speed: 900 rpm
- with silencer
- without actuating valve

Version	Power kW	Rated current A	Item no.
SWK Compressed air motor D4	0.6	900	520-0009
SWK Compressed air motor D6	1.1	900	520-0010
SWK Compressed air motor D8	1.7	900	520-0012



Eccentric screw pump **Ex**



ATEX **Ex** Explosion-protected for potentially explosive atmospheres

The EX version is based on the proven SWK system and was developed specifically for use in potentially explosive atmospheres. The pump tube and components are adapted to ATEX requirements and enable the safe pumping of flammable liquids..

The EX version is particularly suitable for applications in hazardous areas and wherever the highest safety requirements must be met.

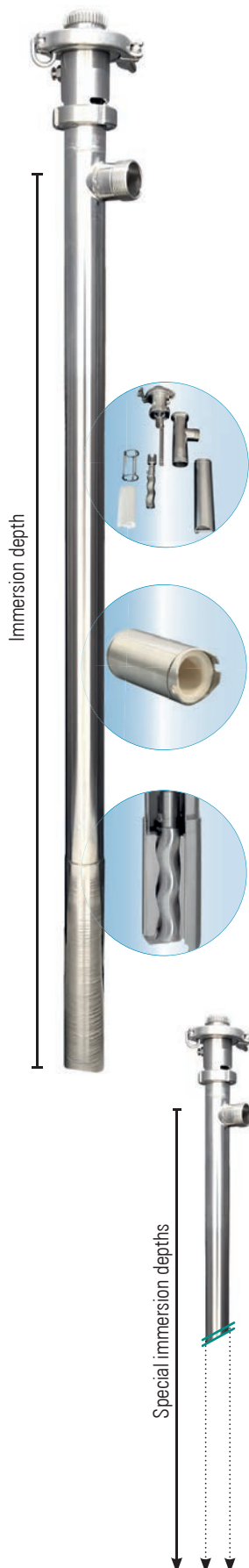
- suitable for potentially explosive atmospheres in accordance with ATEX
- safe pumping of flammable liquids
- based on the proven SWK system

- components adapted for Ex applications
- robust and durable construction for industrial applications
- ideal for mobile and stationary Ex applications

Pump tube [Ex]

- pump tube Ø: 54 mm
- with mechanical seal [GLRD]
- PTFE stator

- standard immersion depths: 1000, 1100 or 1200 mm
- shaft: stainless steel



Version	Immersion depth mm	Stator	Item no.
Rotor 20.1			
Ex-ds 20.1-SWK-PTFE-GLRD-1000	1000	PTFE	653-0001
Ex-ds 20.1-SWK-PTFE-GLRD-1100	1100	PTFE	653-0101
Ex-ds 20.1-SWK-PTFE-GLRD-1200	1200	PTFE	653-0101.12
Rotor 40.1			
Ex-ds 40.1-SWK-PTFE-GLRD-1000	1000	PTFE	653-0002
Ex-ds 40.1-SWK-PTFE-GLRD-1100	1100	PTFE	653-0102
Ex-ds 40.1-SWK-PTFE-GLRD-1200	1200	PTFE	653-0102.12
Rotor 40.2			
Ex-ds 40.2-SWK-PTFE-GLRD-1100	1100	PTFE	653-0003
Ex-ds 40.2-SWK-PTFE-GLRD-1200	1200	PTFE	653-0103
Rotor 80.1			
Ex-ds 80.1-SWK-PTFE-GLRD-1100	1100	PTFE	653-0004
Ex-ds 80.1-SWK-PTFE-GLRD-1200	1200	PTFE	653-0104

Special immersion depths [Ex-ds]

Surcharge for special lengths of eccentric screw pump tubes ds 20.1... 80.1 | Ø 54 mm

Version	Length mm	Item no.
Base surcharge		890-0011
Surcharge ds 20-80	per 100 mm	650-0047

PTFE [polytetrafluoroethylene]

Motors for Ex pump tubes



Safe drive solutions for potentially explosive atmospheres

The motors of the Ex series are specifically designed for use with progressive cavity pump tubes in potentially explosive atmospheres. They enable safe and reliable pumping of flammable and highly viscous

media. Depending on the application, electric motors and compressed air motors are available.

- designed for potentially explosive atmospheres in accordance with ATEX
- safe pumping of flammable liquids
- robust design for industrial applications
- low-maintenance and durable construction
- reliable power transmission even with highly viscous media
- quick-change coupling [SWK] for flexible handling
- various power and speed versions available

Electric Ex motors

- various speed and power versions available
- suitable for hazardous areas in accordance with ATEX
- safe transfer of flammable liquids
- robust design for industrial applications
- quick-change coupling [SWK] for flexible handling

Three-phase motor, 700 rpm | SWK

- 230/400 V, 50 Hz
- with terminal box
- without switch and connection cable
- protection rating: IP 55



Version	Power kW	Rated current A	Speed rpm	Item no.
Ex-SWK 700	0.65	3.9/2.25	700	530-0043
Ex-SWK 700	0.95	4.7/2.70	700	530-0044
Ex-SWK 700	1.35	6.6/3.75	700	530-0095

Three-phase motor, 900 rpm | SWK

- 230/400 V, 50 Hz
- with terminal box
- without switch and connection cable
- protection rating: IP 55



Version	Power kW	Rated current A	Speed rpm	Item no.
Ex-SWK 900	0.65	3.4/1.95	900	530-0051
Ex-SWK 900	0.95	4.5/2.60	900	530-0045
Ex-SWK 900	1.35	6.6/3.75	900	530-0046

Motor with hydrostatic variable-speed gearbox, variable speed | SWK

- 230/400 V, 50 Hz
- variable output speed n2: 50-900 rpm, infinitely adjustable
- handwheel adjustment with dial indicator
- ATEX II 2G e IIc T4/ II GD X T4
- flange 200 mm
- protection rating: IP 55



Version	Power kW	Rated current A	Speed rpm	Item no.
mit hydrostatischem Verstellgetriebe Ex	0.55	1.6	50-900	550-0160

Motors for Ex pump tubes

Safe drive solutions for potentially explosive atmospheres



Compressed air motors

The compressed-air motors of the SWK / EX series are particularly suitable for applications where electric drives cannot be used. They enable safe and

reliable operation even under demanding operating conditions.

- ideal for potentially explosive atmospheres
- safe operation without electrical components
- infinitely variable control via the compressed-air supply
- low-maintenance and durable in continuous operation
- suitable for highly viscous and flammable media

Compressed air motor, 900 rpm | SWK

- speed: 900 rpm
- with silencer
- without actuating valve



Version	Power kW	Rated current A	Item no.
SWK Compressed air motor D4	0.6	900	520-0009
SWK Compressed air motor D6	1.1	900	520-0010
SWK Compressed air motor D8	1.7	900	520-0012

Accessories for Ex motors

You will find our complete range of accessories from pages 72 | 73 onward!

Ex plug connections

- 5-pole version
- 16 A



Version	Type	Item no.
CEE plug, 5-pole	CEAG	815-0011
CEE plug, 5-pole	STAHL	815-0002
CEE socket	CEAG	815-0012
CEE socket	STAHL	815-0004

Additional equipment

Retaining bracket, equipotential bonding cable



Version	Item no.
Stainless steel retaining bracket	745-0198
Equipotential bonding cable with clamp (mandatory in potentially explosive environments)	815-0005

Product note

Ex motor protection switch

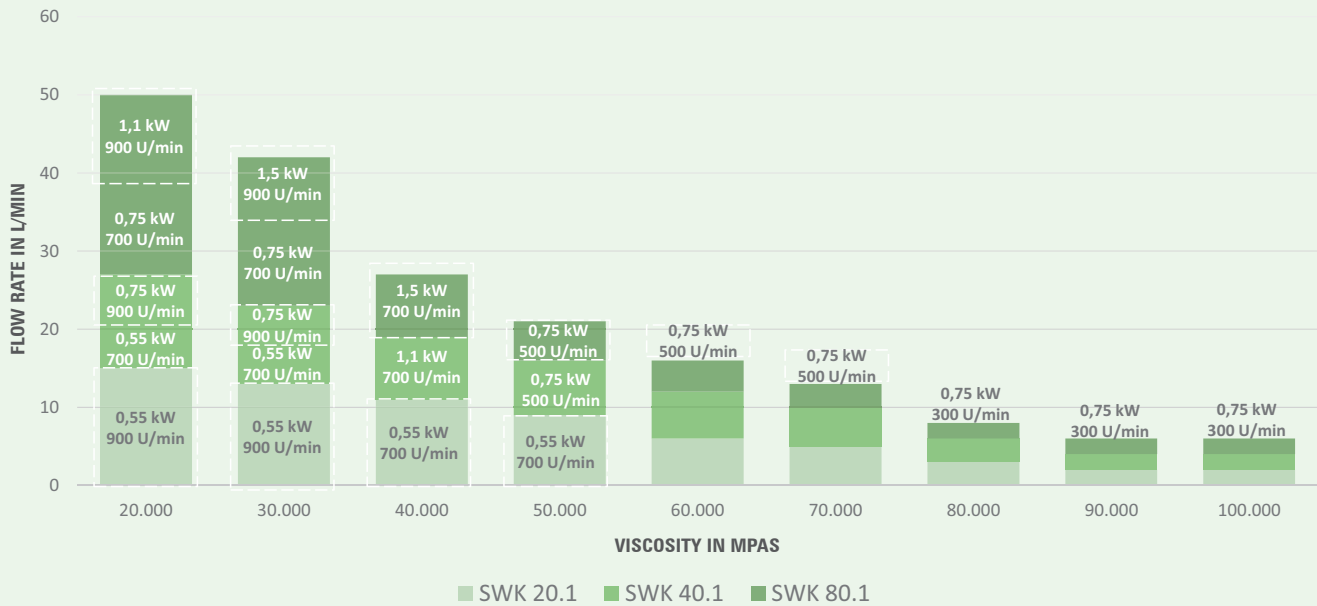
Ex motor protection switches for explosion-protected motors are available on request.

→ **Please contact us -**
we will be happy to advise you on the appropriate version.



Selection guide for highly viscous media

Pump selection by viscosity and flow rate



Product note

Systematic custom solutions

Pump systems for special requirements

Special pumping tasks require special solutions. We develop pump systems tailored precisely to your application. Looking for a custom solution? Contact us!



Horizontal eccentric screw pump

- suitable for highly viscous and thick media
- enables uniform and product-friendly transfer
- ideal for stationary or mobile applications with limited installation height



Ram press with follower plate

- enables virtually complete emptying of pails and drums
- ideal for highly viscous, pasty and poorly flowing media
- supports controlled and clean transfer using the follower plate

Eccentric screw pump **Starr**

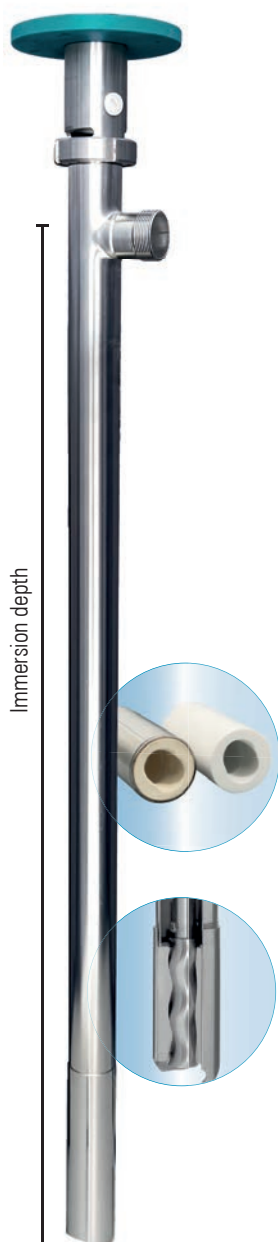
Rigid version - compact solution for stationary applications

In the rigidly connected version, the motor and pump tube form a permanently connected unit. The compact design provides high stability and is particularly suitable for stationary applications where pump changes are infrequent.

This version is preferably used in tanks and installations where lifting equipment is available and the pump is moved only occasionally.

- compact and stable design
- ideal for stationary applications and plant engineering

- low installation height above the pressure outlet
- low-maintenance design with few components
- robust version for continuous industrial operation



with mechanical seal [GLRD]

- pump tube Ø: 54 mm
- stator optionally in PTFE or NBR
- standard immersion depths: 1000, 1100 or 1200 mm
- shaft: stainless steel

Version	Immersion depth mm	Stator	Item no.
Rotor 20.1			
ds 20.1-starr-PTFE-GLRD-1000	1000	PTFE	650-0316
ds 20.1-starr-PTFE-GLRD-1100	1100	PTFE	650-0416
ds 20.1-starr-PTFE-GLRD-1200	1200	PTFE	650-0416.12
ds 20.1-starr-NBR-hell-GLRD-1000	1000	light NBR	650-0300
ds 20.1-starr-NBR-hell-GLRD-1100	1100	light NBR	650-0400
ds 20.1-starr-NBR-hell-GLRD-1200	1200	light NBR	650-0400.12
Rotor 40.1			
ds 40.1-starr-PTFE-GLRD-1000	1000	PTFE	650-0317
ds 40.1-starr-PTFE-GLRD-1100	1100	PTFE	650-0417
ds 40.1-starr-PTFE-GLRD-1200	1200	PTFE	650-0417.12
ds 40.1-starr-NBR-hell-GLRD-1000	1000	light NBR	650-0301
ds 40.1-starr-NBR-hell-GLRD-1100	1100	light NBR	650-0401
ds 40.1-starr-NBR-hell-GLRD-1200	1200	light NBR	650-0401.12
Rotor 40.2			
ds 40.2-starr-PTFE-GLRD-1100	1100	PTFE	650-0318
ds 40.2-starr-PTFE-GLRD-1200	1200	PTFE	650-0418
ds 40.2-starr-NBR-hell-GLRD-1100	1100	light NBR	650-0302
ds 40.2-starr-NBR-hell-GLRD-1200	1200	light NBR	650-0402
Rotor 80.1			
ds 80.1-starr-PTFE-GLRD-1100	1100	PTFE	650-0319
ds 80.1-starr-PTFE-GLRD-1200	1200	PTFE	650-0419
ds 80.1-starr-NBR-hell-GLRD-1100	1100	light NBR	650-0303
ds 80.1-starr-NBR-hell-GLRD-1200	1200	light NBR	650-0403

PTFE [polytetrafluoroethylene], NBR [nitrile butadiene rubber]

Eccentric screw pump **Starr**

Rigid version - compact solution for stationary applications

with gland packing [SB]

- pump tube Ø: 54 mm
- stator in PTFE or NBR
- standard immersion depths: 1000, 1100 or 1200 mm
- shaft: stainless steel

Version	Immersion depth mm	Stator	Item no.
ds 20.1			
ds 20.1-starr-PTFE-SB-1000	1000	PTFE	650-0320
ds 20.1-starr-PTFE-SB-1100	1100	PTFE	650-0420
ds 20.1-starr-NBR-hell-SB-1000	1000	light NBR	650-0304
ds 20.1-starr-NBR-hell-SB-1100	1100	light NBR	650-0404
ds 40.1			
ds 40.1-starr-PTFE-SB-1000	1000	PTFE	650-0321
ds 40.1-starr-PTFE-SB-1100	1100	PTFE	650-0421
ds 40.1-starr-NBR-hell-SB-1000	1000	light NBR	650-0305
ds 40.1-starr-NBR-hell-SB-1100	1100	light NBR	650-0405
ds 40.2			
ds 40.2-starr-PTFE-SB-1100	1100	PTFE	650-0322
ds 40.2-starr-PTFE-SB-1200	1200	PTFE	650-0422
ds 40.2-starr-NBR-hell-SB-1100	1100	light NBR	650-0306
ds 40.2-starr-NBR-hell-SB-1200	1200	light NBR	650-0406
ds 80.1			
ds 80.1-starr-PTFE-SB-1100	1100	PTFE	650-0323
ds 80.1-starr-PTFE-SB-1200	1200	PTFE	650-0423
ds 80.1-starr-NBR-hell-SB-1100	1100	light NBR	650-0307
ds 80.1-starr-NBR-hell-SB-1200	1200	light NBR	650-0407

Special immersion depths

Surcharge for special lengths of eccentric screw pump tubes ds 20.1... 80.1 | Ø 54 mm

Version	Length mm	Item no.
Base surcharge		890-0011
Surcharge ds 20-80	per 100 mm	650-0047

PTFE [polytetrafluoroethylene], NBR [nitrile butadiene rubber]

Motors for rigid pump tubes

Compact drive solutions for stationary applications

The motors of the rigidly connected series are specifically designed for stationary use with progressive cavity pump tubes. Motor and pump tube form a compact, robust unit for reliable pumping of highly viscous media.

Depending on the application, drive motors with 700 or 900 rpm are available.

- motor and pump tube as a permanently connected unit
- robust design for industrial applications
- compact design with low installation height
- suitable for stationary applications and plant engineering
- reliable power transmission even with highly viscous media
- various power versions available
- optionally available in an explosion-protected version

Universal drive motor | Starr (rigid)

- 230/400 V, 50 Hz
- speed: either 900 or 700 rpm
- with terminal box
- without switch and connection cable
- protection rating: IP 55



Version	Power kW	Rated current A	Speed rpm	Item no.
starr 900	0.55	2.8/1.6	900	530-0106
starr 900	0.75	3.7/2.1	900	530-0107
starr 900	1.1	5.0/2.9	900	530-0108
starr 900	1.5	6.8/3.9	900	530-0109
starr 700	0.37	1.96/1.13	700	530-0101
starr 700	0.55	2.75/1.58	700	530-0102
starr 700	0.75	3.75/2.60	700	530-0103
starr 700	1.1	5.0/3.0	700	530-0104
starr 700	1.5	6.7/3.85	700	530-0105

Accessories

Motor protection switch:

- with 5 m connection cable, 5-pole CEE plug, 16 A
- protection rating: IP 55



Version	Rated current A	Item no.
Motor protection switch	1.0-1.6	810-0023
Motor protection switch	1.6-2.5	810-0021
Motor protection switch	2.5-4.0	810-0022
Stainless-steel retaining bracket		745-0198

Accessories

for eccentric screw pumps

You will find our complete range of accessories from pages 72 | 73 onward!

Our coordinated range of accessories allows eccentric screw pumps to be optimally adapted to different applications and pumped media. From hose connections and adapters to seals and frequency inverters

through to flow meters and solenoid valves, practical components are available for industrial use.

Additional equipment

Seal Kits, strainers, adapters, clamping devices and more



Version	Material	Item no.
Special O-ring materials for pump tubes with mechanical seal [ds-GLRD]		
FDA seal kit (Niro/GLRD-R, SB40)	EPDM	840-0214.18
FDA seal kit (Ø=52 mm)	EPDM	840-0201
FDA seal kit (Ø=52 mm)	FKM/FEP	840-0224
Seal kit (Ø=52 mm)	FFKM	840-0178
Surcharge for hardened rotor ds		
Base surcharge		650-0125
Strainer - keeps larger objects out		
Ø 54 mm	Stainless steel	840-0094
ds 8.1/4.2	Stainless steel	840-0252
Additional accessories		
Bypass system 1"	Brass	840-0273
Ball valve IG 1" - IG 1", ES (limit switch)	Stainless steel	825-0147.ES
Inliner protective plate, Ø 54 mm		745-0201

Hose systems

Hose connectors, hose fittings, hose clamps



Version	Material	Thread	Item no.
Hose connector with union nut			
Hose connector DN 32	Stainless steel	IG 1 ½"	825-0081
Hose connector DN 38	Stainless steel	IG 1 ½"	825-0082
Hose fittings			
for DN 32	Stainless steel	IG 1 ½"	825-0137
for DN 38	Stainless steel	IG 1 ½"	825-0138
Stainless steel hose clamps V2A			
Hose clamp DN 40-60	Stainless steel		825-0043

Adapters

Drum and container adapters (IBC)



Version	Material	Item no.
Drum adapter Ø 52 mm, AG 2"	Edelstahl	840-0112
IBC adapter Ø 150/52 mm	PP	840-0181

FEP [fluorinated ethylene propylene], EPDM [ethylene propylene diene rubber], PVDF [polyvinylidene fluoride]

Accessories

for eccentric screw pumps

You will find our complete range of accessories from pages 72 | 73 onward!

GRÜN-PUMPEN

MOTORS

PP

PVDF

STAINLESS STEEL

ALUMINIUM

SETS

ECCENTRIC

ACCESSORIES

Plastic flow meters

- electronic flow meter
- flow rate: 10–100 l/min
- for media up to 2,000 mPas
- max. operating pressure 4 bar
- max. temperature 40 °C
- connection: inlet AG 2" / outlet AG 1 1/4"
- protection rating: IP 54



Version	Ex	Item no.
Flow meter Type ST10	no	860-001310
Flow meter Type SL10	no	860-001410
Flow meter Type LM-Ex10	yes 	860-001610
Flow meter Type UN-Ex10	yes 	860-001710

Stainless steel flow meters

- electronic flow meter
- flow rate: 10–90 l/min
- for media up to 10,000 mPas
- max. operating pressure 10 bar
- max. temperature 60 °C
- connection: inlet AG 1 1/4" / outlet AG 1 1/4"
- protection rating: IP 54



Version	Ex	Item no.
Flow meter Type VA10	no	860-001510
Flow meter Type VA-Ex10	yes 	860-001810

Relay modules

- meter extension for quantity preset
- 230/240 V, 50/60 Hz
- protection rating: IP 44



Version	Ex	Item no.
RM10	no	860-006410
RM-Ex 1: 1 x 4 A	yes 	860-0047
RM-Ex 2: 1 x 4 A, 1 x 0,4 A	yes 	860-0048

Connection cables for relay modules

- for relay modules RM1 / RM10 and RM-Ex
- for mains, motor and solenoid-valve connections
- various connection options available
- Ex versions for hazardous areas



Version	Length	Item no.
for standard relay modules RM1/RM10		
Connection cable for power supply	5 m	860-0025
Connection cable for motor / valve, single	0,5 m	860-0026
Connection cable with PG 9 plug	5 m	860-0028
for Ex relay modules RM-Ex1/RM-Ex2		
Ex connection cable with CEAG plug	5 m	860-0049
Ex connection cable with STAHL plug	5 m	860-0050
Ex connection cable for motor / solenoid valve	3 m	860-0051

Accessories

for eccentric screw pumps

Solenoid valves for high accuracy

- for precise pumping and dosing tasks
- various material versions available
- direct-acting or servo-controlled versions
- versions for hazardous areas available



Version	Pressure range	Connection	Ex	Item no.
Standard versions				
servo-controlled (s), PP/FKM	0.3 - 6.0 bar	IG ¾"	no	860-0043
direct-acting (d), PP/FKM	0.0 - 0.5 bar	IG ¾"	no	860-0044
servo-controlled (s), Brass/NBR	min. 0.3 bar	IG 1"	no	860-0035
Ex version				
Stainless steel version with EPDM seal		IG 1"	yes 	860-0032

Connection pieces and fittings

- for flow-meter systems
- matched to drum pumps and accessory components
- plastic and stainless-steel versions available
- various connection sizes available
- easy and secure installation



Version	Connection	Item no.
Plastic meter inlet for PP pump systems		
Drum pump connection with union nut		825-0141
Drum pump connection suitable for LM/UN systems		825-0122
Stainless steel meter inlet for industrial applications		
Drum pump connection	G 1¼"	825-0123
Drum pump connection	G 1½"	825-0124



Product note

Eccentric screw pumps

Specialists for demanding pumping tasks

Ideal for highly viscous, shear-sensitive media and media containing solids.

Continuous, low-pulsation pumping ensures gentle product transfer.



Advantages at a glance:

- ✓ low-pulsation pumping
- ✓ high suction capability
- ✓ suitable for highly viscous media
- ✓ gentle product transfer
- ✓ constant pumping capacity
- ✓ precise dosing

Typical applications:

- ✓ paints and coatings
- ✓ adhesives
- ✓ emulsions and dispersions
- ✓ oils and lubricants
- ✓ cosmetics
- ✓ food additives



[accessories]

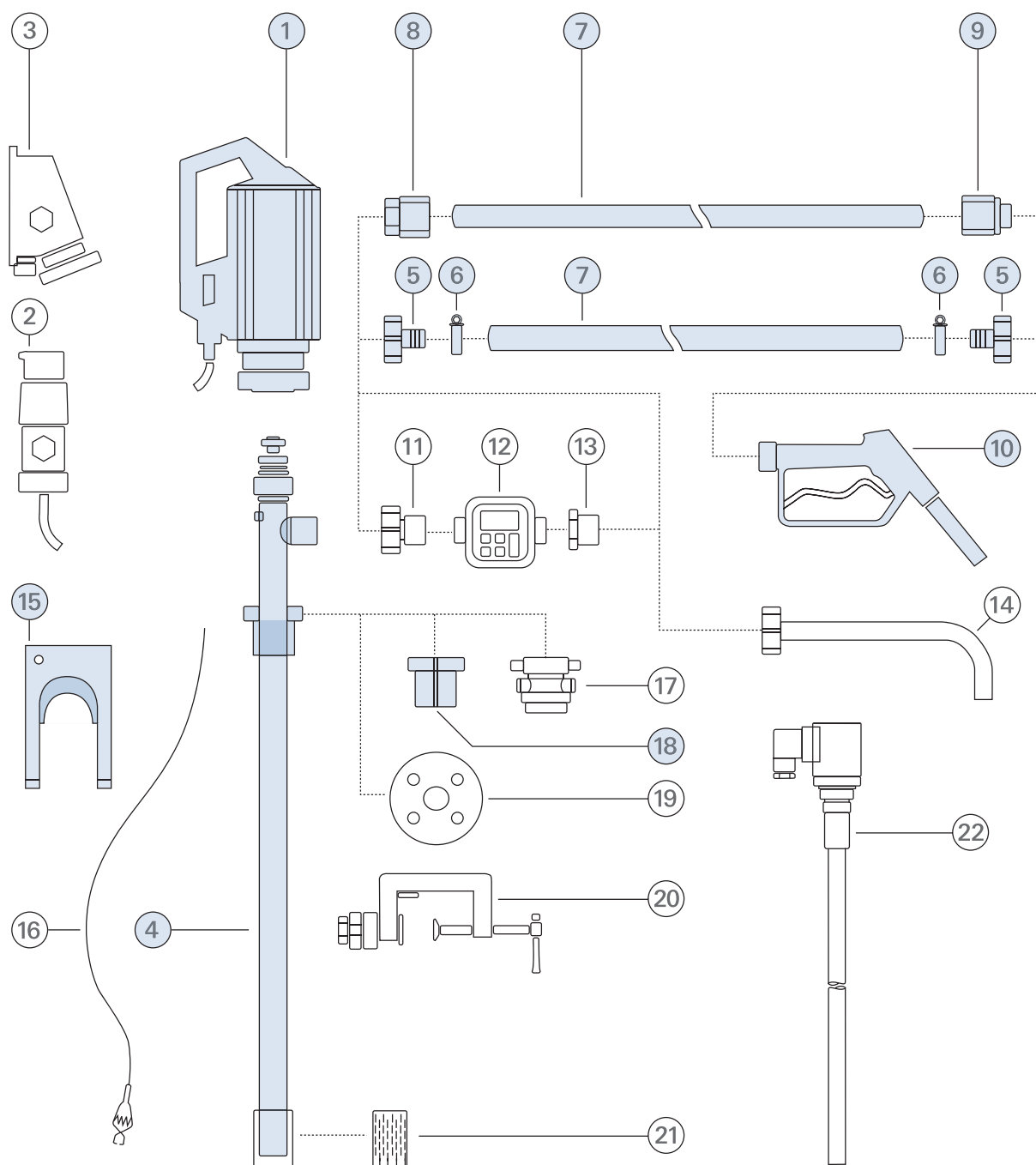
Drum pumps **Accessories**

Complementary components for safe and flexible pumping processes

- ✓ The right accessories expand the range of applications for our pump systems and allow them to be adapted to a wide variety of pumping tasks. From connection components and hose systems to flow meters, motor controls and special versions, we offer practical solutions for industry, chemicals, production and workshop applications.

All components are matched for reliable use with Grün-Pumpen systems and support safe, economical and long-lasting operation.

Accessories for drum pumps



The components highlighted in color are included in our drum pump sets – see page 47.

- 1** Drive motor
- 2** Explosion-proof plug
- 3** Explosion-proof socket
- 4** Pump tube
- 5** Hose connector
- 6** Hose clamp
- 7** Hose
- 8** Hose fitting

- 9** Hose fitting
- 10** Nozzle
- 11** Meter connection
- 12** Flow meter
- 13** Reducer
- 14** Discharge spout
- 15** Wall bracket
- 16** Equipotential bonding cable

- 17** Emission-control drum adapter
- 18** Drum adapter
- 19** Mounting flange
- 20** Clamping device
- 21** Food strainer
- 22** Level switch

Connection technology & hose systems

Hoses, hose connectors, hose fittings and clamps

Hoses

Suitable hose systems in various materials and versions are available for different pumped media and operating environments. The hoses are matched to

the respective media, temperatures and operating pressures and are suitable for continuous industrial operation.

- various materials for chemical, oil and food applications
- temperature and pressure resistance depending on the medium
- available in various nominal sizes and diameters
- electrically conductive versions available
- suitable for aggressive, viscous and sensitive media
- robust and flexible design for industrial applications

PVC hose

- reinforced
- max. temperature 60 °C



Version	Nominal size	Material	Operating pressure	Item no.
PVC hose	DN 19	PVC	max. 13 bar	820-0001
PVC hose	DN 25	PVC	max. 11 bar	820-0002
PVC hose	DN 32	PVC	max. 9 bar	820-0003
PVC hose	DN 38	PVC	max. 8 bar	820-0035

Mineral oil hose

- electrically conductive
- max. operating pressure 16 bar
- max. temperature 80 °C



Version	Nominal size	Material	Item no.
Mineral-oil hose	DN 19	NBR	820-0010
Mineral-oil hose	DN 25	NBR	820-0011
Mineral-oil hose	DN 32	NBR	820-0012

Solvent hose

- electrically conductive
- max. operating pressure 16 bar
- max. temperature 100 °C



Version	Nominal size	Material	Item no.
Solvent hose	DN 19	EPDM	820-0004
Solvent hose	DN 25	EPDM	820-0005
Solvent hose	DN 32	EPDM	820-0006

Chemical hose

- electrically conductive
- max. operating pressure 16 bar
- max. temperature 100 °C (*depending on medium)



Version	Nominal size	Material	Item no.
Chemical hose "Universal"	DN 19	UPE	820-0007
Chemical hose "Universal"	DN 25	UPE	820-0008
Chemical hose "Universal"	DN 32	UPE	820-0009
Chemical hose "Highly resistant" *	DN 19	FEP	820-0015
Chemical hose "Highly resistant" *	DN 25	FEP	820-0016
Chemical hose "Highly resistant" *	DN 32	FEP	820-0017

NBR [nitrile butadiene rubber], EPDM [ethylene propylene diene rubber], UPE [ultra-high-molecular-weight polyethylene], FEP [fluorinated ethylene propylene]

Hoses

Food-grade hose

- sterilizable, steam-resistant up to 90 °C
- max. operating pressure 16 bar



Version	Nominal size	Material	Item no.
Food-grade hose	DN 25	Rubber	820-0028
Food-grade hose	DN 32	Rubber	820-0029

Hose connectors

Hose connectors provide a reliable connection between pump tubes and different hose systems. Depending on the pumped medium and the field of ap-

plication, various materials and connection sizes are available for industrial use.

- various materials for chemical, food and industrial applications
- with union nut for a secure connection
- female connection thread 1 1/4" or 1 1/2"
- available in various nominal diameters
- robust, media-resistant versions
- DN 25 hose connectors are already included as standard with the drum pumps

Hose connector IG 1 1/4"

Version	Nominal size	Item no.
Hose connector PP		
Hose connector PP	DN 19	825-0005
Hose connector PP	DN 25	825-0006
Hose connector PP	DN 32	825-0007
Hose connector PVDF		
Hose connector PVDF	DN 19	825-0008
Hose connector PVDF	DN 25	825-0009
Hose connector PVDF	DN 32	825-0010
Hose connector Stainless steel		
Hose connector Niro	DN 19	825-0011
Hose connector Niro	DN 25	825-0012
Hose connector Niro	DN 32	825-0013
Hose connector Aluminium		
Hose connector Alu	DN 19	825-0095
Hose connector Alu	DN 25	825-0096
Hose connector Alu	DN 32	825-0097

Hose connector IG 1 1/2"

- for eccentric screw pumps

Version	Nominal size	Material	Item no.
Hose connector Niro	DN 32	Stainless steel	825-0081
Hose connector Niro	DN 38	Stainless steel	825-0082



Hose fittings

Hose fittings provide a secure connection between hoses, pump tubes, fittings and delivery lines.

Various materials and versions are available for different hose diameters and connection threads.

- various female threads and nominal diameters available
- versions in brass and stainless steel available
- suitable for industrial pumping and hose systems
- robust and durable connection technology
- suitable for chemical, industrial and food applications
- easy installation and secure hose connection

DN 25

- suitable for DN 25 (1") hose
- various thread versions
- available in brass and stainless steel



Version	Material	Thread	Item no.
Hose fitting Brass	Brass	IG 1 1/4"	825-0002
Hose fitting Niro	Stainless steel	IG 1"	825-0021
Hose fitting Niro	Stainless steel	IG 1 1/4"	825-0001
Hose fitting Niro	Stainless steel	IG 1 1/2"	825-0136
Hose fitting Niro	Stainless steel	AG 1"	825-0020

DN 32

- suitable for DN 32 (1 1/4") hose
- various thread versions
- available in stainless steel
- *for eccentric screw pumps



Version	Material	Thread	Item no.
Hose fitting Niro	Stainless steel	IG 1 1/4"	825-0030
Hose fitting Niro *	Stainless steel	IG 1 1/2"	825-0137

DN 38

- suitable for DN 38 (1 1/2") hose
- available in stainless steel
- *for eccentric screw pumps



Version	Material	Thread	Item no.
Hose fitting Niro *	Stainless steel	IG 1 1/2"	825-0138

Stainless steel hose clamps (V2A)

Hose clamps ensure a secure and reliable connection between the hose and connection system.

The stainless-steel versions are suitable for industrial applications and various hose diameters.

- suitable for different hose diameters
- secure and stable hose fastening
- corrosion-resistant design
- easy installation and retightening
- suitable for industrial, chemical and food applications
- *for eccentric screw pumps



Version	Nominal size	Item no.
Hose clamp Niro	DN 19-25	825-0003
Hose clamp Niro	DN 25-32	825-0004
Hose clamp Niro	DN 30-45	825-0038
Hose clamp Niro *	DN 40-60	825-0043

Dispensing and Filling Technology

Outlet elbows, nozzles and nozzle connections

Outlet elbows

Outlet elbows provide clean, controlled media guidance during filling and transfer. Available in PP or

stainless steel for different applications.

- clean and controlled discharge
- for chemical and industrial applications
- female connection thread 1 1/4"
- robust versions

- easy installation
- various installation lengths available
- available in PP or stainless steel



Version	Material	Length	Item no.
Outlet elbow	PP	250 mm	840-0202
Outlet elbow	Stainless steel	300 mm	840-0022

Nozzles

Nozzles enable clean and controlled filling of a wide variety of pumped media.

Available in different materials and seal versions.

- various materials available
- swivel versions for convenient handling
- different seal materials

- with threaded connection or hose nozzle
- for controlled filling
- robust industrial design

PP Nozzles

- housing made of PP
- wetted metal parts available in stainless steel [SS] or Hastelloy C [HC]
- for chemical and industrial applications
- various seal materials available

- versions with male thread 1 1/4" or hose nozzle
- swivel versions available
- suitable for aggressive media and industrial applications



Version	Connection	Seal	Item no.
Swivel nozzle, stainless steel	DN 19	FKM	830-0052
Swivel nozzle, stainless steel	DN 25	FKM	830-0038
Swivel nozzle, Hastelloy C	DN 19	FKM	830-0054
Swivel nozzle, Hastelloy C	DN 25	FKM	830-0055
Nozzle	AG 1 1/4"	FKM	830-0028
Nozzle	AG 1 1/4"	EPDM	830-0044
Nozzle	AG 1 1/4"	FEP	830-0045

PVDF Nozzles

- housing made of PVDF
- high chemical resistance
- various seal materials available

- male connection 1 1/4"
- suitable for critical, highly aggressive media



Version	Connection	Seal	Item no.
Nozzle	AG 1 1/4"	FKM	830-0029
Nozzle	AG 1 1/4"	FFKM	830-0046
Nozzle	AG 1 1/4"	FEP	830-0047

PP [polypropylene], FKM [Fluorkautschuk], EPDM [ethylene propylene diene rubber], FEP fluorinated ethylene propylene], FFKM [perfluoroelastomer]



Stainless steel nozzles

- Stainless steel-Version
- PTFE-Seal
- Connection AG 1 1/4"
- swivel version
- durable, robust construction for industrial applications

Version	Connection	Seal	Item no.
Swivel nozzle	AG 1 1/4"	PTFE	830-0065

Brass nozzles

- nickel-plated brass
- PTFE seal
- versions with male thread or hose nozzle
- swivel version
- robust industrial design, suitable for oil and standard applications

Version	Connection	Seal	Item no.
Swivel nozzle	AG 1 "	PTFE	830-0036
Swivel nozzle	AG 1 1/4"	PTFE	830-0037
Swivel nozzle hose nozzle	DN 19	PTFE	830-0014
Swivel nozzle hose nozzle	DN 25	PTFE	830-0003
Swivel nozzle hose nozzle	DN 32	PTFE	830-0004

Aluminium nozzles

- Aluminium-Version [Alu]
- NBR-Seal
- hose nozzlen-Version
- swivel version
- low weight, suitable for mineral-oil and industrial applications

Version	Connection	Seal	Item no.
Swivel nozzle hose nozzle	DN 19	NBR	830-0042
Swivel nozzle hose nozzle	DN 25	NBR	830-0043

Hose connections for nozzles

Hose connections provide a reliable connection between dispensing nozzles and delivery hoses of different nominal sizes. Depending on the applica-

tion, rigid or swivel versions in PP or PVDF are available.

- material: PP or PVDF
- connection thread: female 1 1/4" with union nut
- for hose sizes DN 19, DN 25 and DN 32
- available in rigid or swivel version
- swivel versions to prevent hose twisting
- safe connection technology compatible with the medium

Version	Hose size	Material	Item no.
Nozzle connection rigid	DN 19	PP	825-0125
Nozzle connection rigid	DN 25	PP	825-0126
Nozzle connection rigid	DN 32	PP	825-0127
Nozzle connection rigid	DN 19	PVDF	825-0128
Nozzle connection rigid	DN 25	PVDF	825-0129
Nozzle connection rigid	DN 32	PVDF	825-0130
Nozzle connection swivel	DN 19	PP	825-0084
Nozzle connection swivel	DN 25	PP	825-0085
Nozzle connection swivel	DN 19	PVDF	825-0086
Nozzle connection swivel	DN 25	PVDF	825-0087



PTFE [polytetrafluoroethylene], NBR [nitrile butadiene rubber], PP [polypropylene], PVDF [polyvinylidene fluoride]

Drum and container equipment

Connecting pump systems to drums, tanks and IBC containers

With suitable adapters, brackets and accessory components, pump systems can be connected safely and efficiently to different containers. Whether a standard drum, container or an emission-critical

application - Grün-Pumpen offers coordinated solutions for reliable pumping and easy handling in day-to-day operation.

Drum adapters

- male connection thread 2"
- versions for D40, D50 and D52 mm
- materials: PP or stainless steel
- secure centering of the pump tube in the drum
- suitable for different drum openings
- *suitable for eccentric screw pumps



Version	Diameter Ø	Material	Item no.
Drum adapter	40 mm	PP	840-0006
Drum adapter	40 mm	Stainless steel	840-0005
Drum adapter	50 mm	PP	840-0132
Drum adapter	50 mm	Stainless steel	840-0115
Drum adapter *	52 mm	Stainless steel	840-0112

Container adapters

- for IBC containers and large containers
- versions for various connection sizes
- materials: PP or stainless steel
- easy installation and removal
- secure connection between container and pump tube
- *suitable for eccentric screw pumps



Version	Diameter Ø	Material	Item no.
Container adapter IBC/PP	150/40 mm	PP	840-0142
Container adapter IBC/PP *	150/52 mm	Stainless steel	840-0181

Emission control adapter (ESA)

- integrated vent valves
- reduces emissions during pumping
- materials: PP, brass or stainless steel
- suitable for closed drum systems
- supports safe working conditions
- *suitable for eccentric screw pumps



Version	Diameter Ø	Material	Item no.
ESA drum adapter	40 mm	PP	840-0095
ESA drum adapter	40 mm	Brass	840-0096
ESA drum adapter	40 mm	Stainless steel	840-0097
ESA drum adapter *	52 mm	Brass	840-0096/52
ESA drum adapter *	52 mm	Stainless steel	840-0091

Vapor return adapter (GPA)

- integrated vapor-return connection
- for closed pumping and filling systems
- materials: PP, brass or stainless steel
- minimizes emissions and odors
- suitable for sensitive media and applications



Version	Diameter Ø	Material	Item no.
GPA drum adapter	40 mm	PP	840-0098
GPA drum adapter	40 mm	Brass	840-0099
GPA drum adapter	40 mm	Stainless steel	840-0100



Wall bracket

- safe storage of the pump tube
- reduces damage when not in use
- sturdy painted-steel construction
- easy wall mounting
- keeps the workplace organized

Version	Item no.
Wall bracket	840-0004



Drum centering device

- centers the pump tube in the drum opening
- supports stable and safe pump guidance (less tilting and jamming)
- ideal for permanent use on standard drums
- suitable for drum adapters with 2" connection (optionally Ø 40 mm or 52 mm)

Version	Diameter Ø	Item no.
Drum centering device	40 or 52 mm	840-0303

Pump accessories

For safe pumping and extended application options

From strainers and foot valves to special components, coordinated accessories ensure safe media handling and optimum pumping results.

Strainers

- protects the pump tube against coarse contamination
- prevents larger solids from being drawn in
- versions in PP, PVDF or stainless steel
- *for eccentric screw pumps



Version	Diameter Ø	Material	Item no.
Strainer	40 mm	PP	840-0002
Strainer	40 mm	PVDF	840-0002PVDF
Strainer	40 mm	Stainless steel	840-0003
Strainer SB40-ds 4.2/8.1 *	40 mm	Stainless steel	840-0252
Strainer	54 mm	Stainless steel	840-0094

Foot valves

- assists priming when pumping starts
- reduces backflow of the pumped medium
- available for different pump-tube versions



Version	Shaft	Material	Item no.
Foot valve PP-R-Niro	Stainless steel	PP	840-0157
Foot valve PP-R-HC	Hastelloy C	PP	840-0158
Foot valve PVDF-R-Niro	Stainless steel	PVDF	840-0160
Foot valve PVDF-R-HC	Hastelloy C	PVDF	840-0161

Pump accessories

For safe pumping and extended application options

Impellers

- replacement and special impellers for axial pump tubes
- robust stainless-steel design
- impellers suitable for special pumping tasks



Version	Diameter Ø	Item no.
Impeller	8 mm	840-0109

Additional pumping stages

- increases delivery head and pumping performance
- adaptation to longer transfer distances
- matched to different pump-tube materials



Version	Shaft	Item no.
for pump tube PP		
additional pumping stage	Stainless steel	890-0016
additional pumping stage	Hastelloy C	890-0017
for pump tube PVDF		
additional pumping stage	Hastelloy C	890-0018
for pump tube Stainless steel		
additional pumping stage	Stainless steel	890-0019
for pump tube Aluminium		
additional pumping stage	Stainless steel	890-0020

Product note

For additional pumping stages, the corresponding base surcharge is applied depending on the version:

Version	Shaft	Item no.
Base surcharge for	Stainless steel	890-0021
Base surcharge for	Hastelloy C	890-0022

Rotors & wear protection

- longer service life with abrasive media
- improved wear resistance
- ideal for demanding pumping tasks



Version	Item no.
Surcharge for hardened rotor	650-0125

Shut-off and bypass valves

- controlled shut-off and release of flow
- suitable for manual and automated processes
- easy integration into existing pumping systems



Version	Connection	Material	Item no.
Ball valve with limit switch	IG 1" - IG 1"	Edelstahl	825-0147.ES
Bypass system	1"	Brass	840-0273

Inliner / protection systems

- protects containers and drums against damage
- reduces wear on the pump tube
- easy to retrofit



Version	Item no.
Inliner protective plate	745-0201

Seal kits for pump tubes with mechanical seal

- for increased chemical resistance
- adaptation to chemical, hygienic or process-related requirements
- suitable for aggressive media
- available for various pump-tube versions
- easy replacement of existing seal kits

Version	Material	Item no.
for pump tube GLRD-PP		
Seal kit	EPDM	840-0057
Seal kit	FEP	840-0213
for pump tube stainless steel [Niro...] and eccentric screw pumps [SB40...]		
Seal kit FDA (Niro/SD)	FEP	840-0214.10
Seal kit FDA (Niro/GLRD-R, SB40)	FEP	840-0214.20
Seal kit FDA (Niro/SD)	EPDM	840-0214.15
Seal kit FDA (Niro/GLRD-R, SB40)	EPDM	840-0214.18
für eccentric screw pumps [ds 20...80-GLRD]		
Seal kit FDA, Ø 52 mm	EPDM	840-0201
Seal kit FDA, Ø 52 mm	FKM/FEP	840-0224
Seal kit FDA, Ø 52 mm	FFKM	840-0178

EPDM [ethylene propylene diene rubber], FEP [fluorinated ethylene propylene], FKM [Fluorkautschuk], FFKM [perfluoroelastomer]

Electrical accessories

Protect, control and monitor your pump systems

From a simple connection cable to intelligent speed control: electrical accessories add protection, control and monitoring functions to your drum and con-

tainer pumps for safe and reliable operation

Motor protection switches

- with 5 m connection cable and 5-pole CEE plug, 16 A
- protects the motor against overload and failure
- protection rating: IP 55
- matched to different motor power ratings
- ready-to-connect version with cable and plug available

Version	Rated current A	Item no.
Motor protection switch	1.0 - 1.6	810-0023
Motor protection switch	1.0 - 1.6	810-0023PD
Motor protection switch	1.6 - 2.5	810-0021
Motor protection switch	1.6 - 2.5	810-0021PD
Motor protection switch	2.5 - 4.0	810-0022

Connection cable

- robust rubber cables for industrial use
- various versions for AC and three-phase motors
- ready-to-connect connection cable

Version	Cable type	Length	Item no.
Connection cable	2 x 1.0 mm ² , H05RN-F	pro 1 m	810-0001
Connection cable	3 x 1.0 mm ² , H07RN-F	pro 1 m	810-0002
Connection cable	5 x 1.5 mm ² , H07RN-F	pro 1 m	810-0003



Electrical accessories

Protect, control and monitor your pump systems

Frequency inverters

The frequency inverter allows the speed of the drive motor to be flexibly adapted to the respective application. This enables the flow rate and pumping

speed to be controlled precisely, while sensitive media can be pumped particularly gently.

- infinitely variable adjustment of flow rate to process requirements
- gentle transfer of sensitive or viscous media
- reduces starting loads and mechanical wear
- easy retrofit for selected drive motors



Version	Power kW	Rated current A	Item no.
Frequency inverter	0.55	2.7	760-0198
Frequency inverter	0.75	3.3	760-0198.75
Frequency inverter	1.10	3.1	760-0199
Accessories			
Adapter plate for frequency inverter mounting unit			760-0200

Level switch - dry running protection

- monitors the liquid level and switches off automatically when the level is too low
- suitable for PP and stainless-steel versions
- reliable protection against dry running and pump damage
- easy integration into existing pump systems



Version	Material	Item no.
Level switch	PP	840-0194
Level switch	Stainless steel	840-0192

Junction box for potential-free contact

- simple signal transmission for monitoring and control
- for integration into control and monitoring systems
- connection option for potential-free contacts
- easy and safe installation
- ideal in combination with level switches and dry-running protection systems



Version	Item no.
Junction box for potential-free contact	770-0087

Compressed air accessories

Protection, control and monitoring for compressed air pump systems

With coordinated compressed-air accessories, drum and container pumps can be operated safely, monitored and adapted to different operating conditions. From compressed-air preparation and connection

components through to speed control, Grün-Pumpen offers practical solutions for industrial applications.

- matched to compressed-air motors and pump systems
- for safe and reliable system operation
- easy integration into existing systems
- components for control, regulation and monitoring



Version	Size	Item no.
Air service unit	G 3/8"	850-0001
Compressed-air connector	AG 1/4"	850-0002
PVC Hose	DN 9	850-0003
Filter regulator, needle valve, adapter and 2 m air hose, IG 1/4"		910-0001.14

Explosion protection & connection components

Safe electrical connections for potentially explosive atmospheres

Specially approved components are required for use in potentially explosive atmospheres. The range includes Ex motor protection switches, Ex plug connections, connection cables and equipotential bonding components for the safe operation of pumps, motors and control systems in ATEX areas.

ding components for the safe operation of pumps, motors and control systems in ATEX areas.

- for use in hazardous areas (ATEX)
- for safe electrical connection and power supply
- robust design for industrial use
- compatible with Ex motors and Ex control components

- supplementary components for standards-compliant system installation

Ex plug connections

- approved for hazardous areas

- versions with 3- and 5-pole connection

Version	Type	Item no.
3-pole, 16 A		
CEE plug	CEAG	815-0009
CEE plug	STAHL	815-0001
CEE socket	CEAG	815-0010
CEE socket	STAHL	815-0003
5-pole, 16 A		
CEE plug	CEAG	815-0011
CEE plug	STAHL	815-0002
CEE socket	CEAG	815-0012
CEE socket	STAHL	815-0004

Ex connection cables

- for Ex relay modules and controls
- preassembled connection cables

- fast and safe installation
- suitable for CEAG and STAHL connector systems

Version	Length	Item no.
Power connection cable Ex CEAG-Stecker	5 m	860-0049
Power connection cable Ex STAHL-Stecker	5 m	860-0050
Motor/solenoid valve Ex	3 m	860-0051

Equipotential bonding cable

- for safe equipotential bonding of conductive components
- required in hazardous areas

- with preassembled connection clamp
- meets the requirements for potentially explosive environments

Version	Length	Item no.
Equipotential bonding cable with clamp	2.5 mm ² 1.5 m	815-0005

Ex motor protection switch

Ex motor protection switches for explosion-protected motors are available on request.

→ **Please contact us -**
we will be happy to advise you on the appropriate version.

Product note



Measurement and control technology

Measure flow, preset quantities and automate processes

Measurement and control technology adds functions for quantity measurement, dosing and process control to drum and container pumps. The range includes

- precise measurement and control of flow quantities
- for manual and automated filling processes
- mechanical and electronic measuring systems

flow meters, relay modules, solenoid valves and suitable connection components for precise pumping and filling processes.

- expandable with relay modules and solenoid valves
- suitable connection and adapter components available

Flow meters

Flow meters enable reliable measurement and documentation of pumped quantities for drum and container pumps. Depending on the medium, viscosity and

field of application, different measuring principles and materials are available.

- electronic quantity measurement
- various measuring principles available
- for different media and viscosities

- plastic and stainless-steel versions available
- some versions available in Ex design



Turbine flow meter FM

- connection thread: female 1 1/4" / male 1 1/4"
- flow rate up to 10–100 l/min
- media viscosity up to 30 mPas

- operating pressure up to 4 bar
- media temperature up to 40 °C
- protection rating: IP 54

Version	Material	Ex	Item no.
Flow meter FM	POM	no	860-0007
Flow meter FMT3	PP	no	860-0008
Flow meter FMT3	PVDF	no	860-0009

Plastic flow meters

- connection thread: male 2" / male 1 1/4"
- flow rate up to 10–100 l/min
- media viscosity up to 2,000 mPas

- operating pressure up to 4 bar
- media temperature up to 40 °C
- protection rating: IP 5



Version	Ex	Item no.
Flow meter ST10	no	860-001310
Flow meter SL10	no	860-001410
Flow meter LM-Ex10	yes	860-001610
Flow meter UN-Ex10	yes	860-001710

Oval gear flow meter OM-AL

- connection thread: female 1/2" / female 1/2"
- flow rate up to 35 l/min
- media viscosity up to 5,000 mPas

- operating pressure up to 50 bar
- media temperature up to 50 °C
- protection rating: IP 65



Version	Material	Ex	Item no.
Flow meter OM-AL	Aluminium	no	860-0046



Turbine flow meter EDM

- connection thread: female 1" / female 1"
- flow rate up to 150 l/min
- media viscosity up to 500 mPas
- operating pressure up to 10 bar
- media temperature up to 60 °C
- ATEX certification

Version	Material	Ex	Item no.
Flow meter EDM	Stainless steel	yes	860-0006

Stainless steel flow meters

- connection thread: male 1 1/4" / male 1 1/4"
- flow rate up to 10–90 l/min
- media viscosity up to 10,000 mPas
- operating pressure up to 10 bar
- media temperature up to 60 °C
- protection rating: IP 54

Version	Ex	Item no.
Flow meter VA10	no	860-001510
Flow meter VA-Ex10	yes 	860-001810

Relay modules for quantity presetting

Relay modules add quantity control and automatic shut-off functions to flow meters. This enables re-curring filling processes to be automated precisely.

Relay modules

- 230/240 V, 50/60 Hz
- automatic quantity cut-off
- for reproducible filling processes
- suitable for selected flow meters
- standard and Ex versions available
- protection rating: IP 44

Version	Ex	Item no.
Relay module RM10	no	860-006410
Relay module RM-Ex1: 1 x 4 A	yes 	860-0047
Relay module RM-Ex2: 1 x 4 A, 1 x 0.4 A	yes 	860-0048

Connection cables for relay modules

- 230/240 V, 50/60 Hz
- automatic quantity cut-off
- for reproducible filling processes
- suitable for selected flow meters
- standard and Ex versions available
- protection rating: IP 44

Version	Length	Item no.
for standard relay modules RM1/RM10		
Connection cable for power supply	5 m	860-0025
Connection cable for motor / valve, single	0.5 m	860-0026
Connection cable with PG 9 plug	5 m	860-0028
for Ex relay modules RM-Ex1/RM-Ex2 		
Ex connection cable with CEAG plug	5 m	860-0049
Ex connection cable with STAHL plug	5 m	860-0050
Ex connection cable for motor / solenoid valve	3 m	860-0051

Solenoid valves for high accuracy

Solenoid valves enable automatic control of the flow and are used particularly in combination with

quantity preset systems.

- for automated pumping and filling processes
- high switching accuracy for precise pumping and dosing tasks
- various materials and seals
- direct-acting or servo-controlled versions
- versions for hazardous areas available



Version	Pressure range	Connection	Ex	Item no.
Standard versions				
servo-controlled (s), PP/FKM	0.3 - 6.0 bar	IG ¾"	no	860-0043
direct-acting (d), PP/FKM	0.0 - 0.5 bar	IG ¾"	no	860-0044
servo-controlled (s), Brass/NBR	min. 0.3 bar	IG 1"	no	860-0035
Ex version				
Stainless steel version with EPDM diaphragm seal		IG 1"	yes 	860-0032

Flow meter connections & adapters

Connection pieces and adapters allow flow meters to be safely integrated into existing pumping sys-

tems and ensure optimum adaptation to the pump tube and piping.

- for flow-meter systems
- plastic and stainless-steel versions
- easy integration into existing systems
- available for inlet and outlet connections
- matched to drum pumps and accessory components



Version		Connection	Item no.
Type FM			
Flow meter connection FM-PP	Inlet	IG 1¼" - IG 1"	825-0048
Flow meter connection FM-PVDF	Inlet	IG 1¼" - IG 1"	825-0066
Reducer PP	Outlet	AG 1¼" - IG 1"	825-0068
Reducer PVDF	Outlet	AG 1¼" - IG 1"	825-0069

Type OM-AL			
Reduzierung mit Überwurfmutter	Inlet	IG 1¼" - AG ½"	825-0270
Reduzierung	Outlet	AG 1¼" - AG ½"	825-0288

Type EDM			
Reducer with union nut	Inlet	IG 1¼" - AG 1"	825-0091
Reducer	Outlet	AG 1¼" - AG 1"	825-0049

Plastic meter inlet for PP pump systems			
Drum pump connection with union nut			825-0141
Drum pump connection suitable for LM/UN systems			825-0122

Stainless steel meter inlet for industrial applications			
Drum pump connection VA1		G 1¼"	825-0123
Drum pump connection VA1		G 1½"	825-0124



Questionnaire for quotation preparation

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1. Pumped medium (please attach data sheet if possible):

Description: _____ Chemical formula: _____
Concentration: _____ % Density: _____ g/cm³
Viscosity: _____ mPas/cP at: _____ °C Operating temperature: _____ °C
Solids content: _____ g/l ☐ hard ☐ soft Particle size: _____ mm ATEX: ☐
Does the medium tend to crystallize? ☐ yes ☐ no at: _____ °C

Which materials have proven resistant to the pumped medium based on previous experience (pipelines, containers, fittings)?

2. Operating Conditions

Flow rate: _____ m³/h or _____ l/min Delivery head: _____ m FS/WS
(incl. piping losses)
How is the pump used? ☐ proportional ☐ stationary ☐ vertical ☐ horizontal
Immersion depth of the pump tube: _____ mm Mounting flange ☐ yes ☐ no
Container bung opening Ø: _____ mm Foot strainer ☐ yes ☐ no
Operating hours per day: _____ Frequency of starts: _____

3. Motor

☐ AC ☐ DC ☐ three-phase AC ☐ compressed air
Operating voltage: _____ Volt (V) Frequency: _____ Hz
Operating pressure: _____ bar Is explosion protection (Ex) required? ☐ yes ☐ no
Hazard class: _____ Protection rating: _____
Special requirements: _____

4. Recipient – we request: ☐ Call ☐ Quotation

First name: _____ Last name: _____ Title: _____
Company: _____ Position/Department: _____
Address: _____ Email: _____
Phone: _____ Fax: _____ Mobile: _____

Date: _____ Signature: _____

1. Scope, Contracting Parties and Order of Precedence

1.1 These General Terms and Conditions of Sale and Delivery apply to all offers, deliveries and services of grün-pumpen GmbH to business customers within the meaning of Section 14 of the German Civil Code (BGB), legal entities under public law and special funds under public law. They do not apply to consumers.

1.2 Our terms and conditions apply exclusively. Any deviating, conflicting or supplementary terms and conditions of the Buyer shall become part of the contract only if we expressly agree to their application in text form. This shall also apply if, with knowledge of such terms and conditions, we make deliveries or perform services without reservation, accept payments or refer to correspondence from the Buyer.

1.3 These terms and conditions shall also apply to all future transactions with the Buyer in the version valid at the time the contract is concluded, without any need for us to refer to them again.

1.4 Individual agreements shall take precedence. Subject to proof to the contrary, our written confirmation or confirmation in text form shall be decisive for their content. In the event of contradictions, the following order shall apply: individual agreement, our order confirmation, our offer, expressly incorporated technical specifications, these terms and conditions, and other documents.

1.5 Legally relevant declarations and notices by the Buyer, in particular the setting of deadlines, notices of defects and notices of withdrawal, reduction or set-off, must at least be made in text form unless a stricter form is required by law. Statutory form requirements and additional evidence, in particular in cases of doubt as to the authority of the person making the declaration, shall remain unaffected.

1.6 References to the applicability of statutory provisions are for clarification purposes only. Statutory provisions shall therefore apply even without such clarification unless they are directly modified or expressly excluded by these GTCSO.

1.7 These General Terms and Conditions of Sale and Delivery are an abridged version. The complete and authoritative wording can be accessed and downloaded from www.gruen-pumpen.de.

2. Offers, Conclusion of Contract and Documents

2.1 Our offers are subject to change and non-binding unless they are expressly designated as binding or contain a specific acceptance period. An order placed by the Buyer shall constitute a binding offer to enter into a contract, which we may accept within 14 calendar days by order confirmation, delivery or other performance.

2.2 Technical information, illustrations, drawings, dimensions, weights, performance, consumption and material data, as well as information in catalogues, on the Internet and in brochures, shall be binding only if expressly made part of the contract. Customary commercial, manufacturing-related or standards-based tolerances and reasonable changes due to technical improvement, product maintenance, changes in standards or changes in the supply chain are reserved.

2.3 The Buyer is responsible for the correctness, completeness and suitability of its requirements, drawings, samples, specifications, material requirements, operating conditions, media, operating data, approvals and permits. We shall assume a duty to inspect, plan, advise or warn only insofar as expressly agreed or mandatorily required by law.

2.4 We retain ownership rights, copyrights, rights of use and industrial property rights in offers, drawings, samples, calculations, data, models, tools, moulds and other documents. The Buyer may use them only for the contractual purpose and may not make them accessible to third parties.

3. Prices, Payment and Security

3.1 Unless otherwise agreed, our prices are ex works Alzenau (EXW in accordance with the Incoterms version valid at the time the contract is concluded), plus statutory VAT, packaging, shipping, loading, transport insurance, customs duties, import duties, public charges and other ancillary costs.

3.2 If more than four months elapse between conclusion of the contract and the delivery date and our costs subsequently increase, in particular for materials, energy, personnel, preliminary products, transport, customs duties, charges or exchange rates, we may adjust the price appropriately at our reasonable discretion. Statutory rights shall remain unaffected.

3.3 Invoices are due immediately without deduction unless expressly agreed otherwise. Receipt of payment in our account shall be decisive. A cash discount shall be granted only if expressly agreed and provided that the Buyer is not in payment default towards us. Bills of exchange, cheques and other payment instruments shall be accepted only on account of payment, by prior agreement and at the Buyer's cost and risk.

3.4 In the event of payment default, the Buyer shall owe default interest at the statutory rate; we reserve the right to claim further damages. The Buyer may set off claims only against counterclaims that are undisputed, finally adjudicated or ready for decision. Rights of retention may be exercised only on the basis of counterclaims arising from the same contractual relationship and only insofar as such counterclaims are undisputed, finally adjudicated or ready for decision. In the event of defects in the delivery, the Buyer's corresponding rights, in particular a right of retention in reasonable proportion to the defect, shall remain unaffected.

3.5 If circumstances become apparent that jeopardise our claims, in particular payment default, deterioration in creditworthiness, cessation of payments, an application for insolvency, exceeding credit limits or failure to provide agreed security, we may make outstanding deliveries only against advance payment or adequate security and may suspend further performance of the contract until then. Further rights, in particular withdrawal and damages, are reserved.

4. Delivery, Shipping and Transfer of Risk

4.1 Unless otherwise agreed, delivery shall be ex works Alzenau. Shipping, packaging, loading, export, import, insurance and special transport requirements shall be at the Buyer's cost and risk. In the absence of a special agreement, we are free to choose the method and route of shipment and the packaging.

4.2 The risk of accidental loss and accidental deterioration shall pass to the Buyer no later than upon handover of the goods to the forwarding agent, carrier or other person designated to carry out the shipment. This shall also apply in the case of carriage-paid delivery, organisation

of shipping by us, export processing or delivery to a place of receipt designated by the Buyer.

4.3 If shipment, handover or acceptance is delayed for reasons for which the Buyer is responsible, the risk shall pass to the Buyer upon notification that the goods are ready for shipment or acceptance. We may store the goods at the Buyer's cost and risk, dispose of them otherwise after a reasonable period and claim compensation for the resulting damage.

4.4 Partial deliveries and partial services are permitted insofar as they are reasonable for the Buyer; they may be invoiced separately. In the case of call-off orders, the Buyer must take the total quantity within twelve months from conclusion of the contract unless otherwise agreed. If the Buyer fails to call off the goods in due time, we may, after setting a deadline, deliver and invoice the remaining quantity or claim damages.

4.5 Transport and packaging materials shall be taken back only insofar as there is a statutory obligation to do so or we have expressly agreed otherwise. Transport damage, shortages and externally visible damage must be documented by the Buyer with the carrier without delay and notified to us in text form.

5. Delivery Periods, Delay, Self-Supply and Force Majeure

5.1 Delivery periods and delivery dates shall be binding only if we have expressly confirmed them as binding. They shall not begin until all commercial and technical issues have been clarified, the Buyer has provided in full all documents, permits, approvals, specifications, samples and advance payments to be supplied by it, and all duties of cooperation have been fulfilled.

5.2 Changes or additions to the Buyer's requirements, as well as technical, legal or factual circumstances requiring an adjustment to the goods, procurement, production or shipping, shall extend delivery periods appropriately.

5.3 Delay in delivery shall require, unless dispensable by law, a notice by the Buyer and the unsuccessful expiry of a reasonable grace period. We shall be liable for damage caused by delay only in accordance with the liability provisions of these terms and conditions. The Buyer must notify us without delay of any threatened extraordinary damage resulting from delay.

5.4 We shall not be liable for impediments for which we are not responsible. These include, in particular, force majeure, natural events, war, terrorism, civil unrest, pandemics, epidemics, official measures, embargoes, sanctions, export or import restrictions, shortages of energy, raw materials or supplies, operational or IT disruptions, cyberattacks, transport disruptions, strikes, lockouts, and late or improper self-supply despite proper procurement.

5.5 In such cases, periods shall be extended by the duration of the impediment plus a reasonable restart period. If the impediment lasts longer than 90 calendar days, we may withdraw from the affected part of the contract; statutory rights of withdrawal of both parties shall remain unaffected. Our delivery obligation is subject to correct and timely self-supply, provided that we have entered into a congruent covering transaction, are not responsible for the failure to receive supplies, and inform the Buyer without delay.

6. Export Control, Sanctions and International Transactions

6.1 The Buyer shall comply with all applicable provisions of German, European, US and other relevant export control, customs, sanctions and foreign trade law. The Buyer warrants that neither it nor its owners, corporate bodies, end customers, intermediaries or other parties involved are listed on sanctions lists and that the goods will not be used, delivered, supplied onward or re-exported for prohibited purposes or purposes requiring authorisation where the required authorisation is lacking.

6.2 The Buyer shall provide us in due time with all information, end-use declarations, permits and evidence required for review and performance. We may suspend or refuse performance of the contract and delivery, or withdraw from the contract, if performance would violate export control, customs, sanctions or foreign trade law or if there is reasonable suspicion of such a violation.

6.3 The Buyer shall indemnify us against all claims, losses, fines, costs and expenses arising from a breach of these obligations for which the Buyer is responsible. To the extent that retention of title or security rights abroad require special declarations, registrations or acts of cooperation, the Buyer shall carry them out upon first request.

7. Retention of Title

7.1 We retain title to the goods delivered until all present and future claims arising from the business relationship with the Buyer have been satisfied in full. This shall also apply if individual claims are included in a current account and the balance has been struck and acknowledged. The Buyer shall hold the goods subject to retention of title in custody for us free of charge, treat them with care and adequately insure them against theft, breakage, fire, water and other risks.

7.2 Before full payment, the Buyer may neither pledge the goods subject to retention of title nor transfer them by way of security. The Buyer must notify us without delay in text form of third-party interference, attachments, seizures or other impairments of our rights and provide all documents necessary to defend our rights.

7.3 The Buyer may resell goods subject to retention of title in the ordinary course of business as long as it is not in payment default and no security event has occurred. This shall apply only if the claim arising from the resale remains assignable and is not removed from our security by assignment, pledge, prohibition of assignment or other encumbrance.

7.4 The Buyer hereby assigns to us in advance all claims against its customers arising from the resale of the goods subject to retention of title, up to the amount of our secured claims including VAT and ancillary claims; we accept the assignment. If goods subject to retention of title are sold together with other goods or co-ownership shares exist, the assignment shall be made in accordance with the invoice value or our co-ownership share.

7.5 Until revoked, the Buyer may collect assigned claims in the ordinary course of business. We may revoke the collection authorisation if the Buyer falls into payment default, our claims are jeopardised or an application for insolvency is filed. At our request, the Buyer shall provide details of the assigned claims, debtors, documents and collection information and shall disclose the assignment.

7.6 Any processing or transformation of the goods subject to retention of title shall be carried out for us as manufacturer without giving rise to any obligations on our part. In the event of processing, combination, mixing or blending, we shall acquire co-ownership of the new item in the ratio of the invoice value of the goods subject to retention of title to the value of the new item or the other items at the time of the relevant process. If our ownership ceases, the Buyer hereby transfers to us in advance the ownership or expectant rights to which it is entitled to the

corresponding extent; we accept the transfer.

7.7 In the event of conduct in breach of contract, in particular payment default, we may withdraw from the contract and demand surrender of the goods subject to retention of title in accordance with the statutory requirements. Assertion of the retention of title alone shall not constitute withdrawal unless we expressly declare such withdrawal. If the Buyer fails to pay the purchase price when due, we may assert these rights only if we have first unsuccessfully set the Buyer a reasonable period for payment or if setting such a period is dispensable by law. In a security event, the Buyer shall grant us access to the goods, surrender them and cooperate in securing and realising our security. Proceeds of realisation, after deduction of reasonable costs, shall be credited against our secured claims.

7.8 If the realisable value of the security exceeds our secured claims by more than 10%, we shall, at the Buyer's request, release security of our choice.

8. Quality, Responsibility for Use and Advice

8.1 The primary basis of our liability for defects is the agreement made regarding the quality and intended use of the goods (including accessories and instructions). All product descriptions and manufacturer's information that form part of the individual contract or were publicly announced by us (in particular in catalogues or on our website) at the time the contract was concluded shall be deemed quality agreements in this respect. If the quality has not been agreed, whether or not a defect exists shall be determined in accordance with the statutory provisions (Section 434(3) BGB). Public statements by the manufacturer, particularly in advertising or on the label of the goods, shall take precedence over statements by other third parties.

8.2 Guarantees, durability commitments, guarantees of quality or assumption of a procurement risk shall exist only if we expressly confirm them as such in text form.

8.3 The Buyer is responsible for selection, sizing, installation environment, media compatibility, operating data, operating conditions, product integration, product safety and the legal permissibility of the intended use unless we have expressly undertaken a corresponding planning or advisory service. Technical advice is provided on the basis of the information supplied by the Buyer and does not release the Buyer from its own obligation to inspect and test.

8.4 If the Buyer specifies materials, design, drawings, execution, standards or operating conditions, we shall not be liable for their suitability, permissibility or freedom from third-party intellectual property rights unless we have expressly confirmed them.

9. Inspection, Notice of Defects and Rights in the Event of Defects

9.1 The Buyer shall inspect the goods carefully without delay after delivery, in particular as to quantity, identity, external condition, transport damage, apparent deviations, product safety and conformity with agreed specifications. Section 377 of the German Commercial Code (HGB) shall apply to merchants; otherwise, the following duties to inspect and give notice of defects shall apply as contractual obligations to the extent permitted by law.

9.2 Apparent defects must be notified in text form without delay, at the latest within five working days after delivery; hidden defects must be notified without delay after discovery. The notice must describe the defect in sufficient detail to enable its cause and extent to be examined; at our request, photographs, test reports, operating data, the installation situation, serial or batch details and other information must be provided. If the inspection or notice is not carried out in due time or properly, the goods shall be deemed approved with respect to the defect concerned to the extent permitted by law.

9.3 As a rule, we shall not be liable for defects that the Buyer knows of at the time the contract is concluded or fails to know of due to gross negligence (Section 442 BGB).

9.4 In the event of a justified and timely notice of defects, we shall, at our option, provide remedial performance by rectifying the defect or delivering defect-free goods. The Buyer shall allow us the necessary time and opportunity and shall make the goods available at our request. Returns may be made only after prior coordination; we may reject freight-collect or uncoordinated returns insofar as this is reasonable.

9.5 If remedial performance fails, is unreasonable or is justifiably refused, the Buyer may reduce the purchase price or withdraw from the contract in accordance with the statutory requirements. Claims for damages shall exist only in accordance with these terms and conditions.

9.6 Rights in respect of defects shall not apply in cases of normal wear and tear, improper storage, installation by third parties, incorrect commissioning by the Buyer or third parties, operation or maintenance by the Buyer or third parties, improper use, unsuitable operating conditions or media, chemical, electrochemical, electrical or other influences, modification of the goods, use of unapproved spare parts or failure to observe our operating, safety or maintenance instructions. If the Buyer installs goods with an apparent defect or continues to use them, the Buyer shall bear the resulting additional costs insofar as we are not responsible for them.

9.7 Claims for reimbursement of expenses, in particular removal and installation, transport, travel, labour and material costs, shall exist only to the extent mandatorily required by law and only insofar as the Buyer did not know of the defect or failed to recognise it due to gross negligence. Before the Buyer carries out self-remedy, procures a replacement or removes the goods, we must generally be given an opportunity to inspect and provide remedial performance insofar as this is reasonable.

10. Liability

10.1 We shall be liable without limitation in cases of intent and gross negligence, injury to life, limb or health, under the German Product Liability Act, in the event of fraudulent concealment of a defect, and where a guarantee has been assumed, in accordance with the relevant guarantee declaration.

10.2 In cases of ordinary negligence, we shall be liable only for breach of a material contractual obligation. Material contractual obligations are obligations whose fulfilment is essential to the proper performance of the contract and on compliance with which the Buyer may regularly rely. In such cases, liability shall be limited to the damage foreseeable at the time the contract was concluded and typical for this type of contract.

10.3 Any further liability for damages, irrespective of the legal basis, is excluded. This applies in particular to production downtime, business interruption, loss of profit, indirect damage and consequential damage, unless liability is mandatory under Clause 10.1.

10.4 In the event of a breach of duty that does not consist of a defect, the Buyer may withdraw from or terminate the contract only if we are responsible for the breach of duty.

10.5 The limitations of liability shall also apply for the benefit of our corporate bodies, legal representatives, employees, staff, vicarious agents and other persons engaged by us. The Buyer must notify us before conclusion of the contract and without delay thereafter of any special risks, extraordinary potential for damage or atypical consequential damage; if such notice is not given, we shall be liable for such damage only insofar as we should have foreseen it even without the notice.

11. Limitation Period

11.1 The Buyer's claims for defects shall become time-barred one year after delivery of the goods unless a longer period is mandatorily prescribed by law.

11.2 The shortened period shall not apply to claims based on intent, gross negligence, injury to life, limb or health, fraudulent concealment, guarantee, claims under the German Product Liability Act, or mandatory statutory recourse and limitation provisions.

11.3 The limitation period shall not recommence for replaced or repaired parts unless we expressly acknowledge a legal obligation to provide remedial performance.

12. Intellectual Property Rights, Tools and Customer-Specific Manufacture

12.1 If goods are manufactured or supplied in accordance with drawings, samples, specifications, material requirements, designs, trademarks, signs or other requirements of the Buyer, the Buyer alone shall be responsible for ensuring that no third-party rights are infringed as a result. The Buyer shall indemnify us against all claims, losses and reasonable legal defence costs arising from an infringement of industrial property rights, copyrights, trademark rights, trade secrets or other rights for which the Buyer is responsible.

12.2 Our designs, developments, software, drawings, data, know-how, models, moulds, tools, samples, programs, testing equipment and other production equipment shall remain our property or intellectual property even if the Buyer bears all or part of the costs. A claim to surrender, transfer of title or use shall exist only if expressly agreed.

12.3 In the case of customer-specific manufacture, changes after approval are possible only with our consent. The Buyer shall bear additional costs, delays and expenses already incurred. Cancellation or return of special designs, customer-specific products or goods procured specifically for an order is excluded unless we expressly agree; in that case the Buyer shall bear all costs incurred up to that point.

13. Confidentiality, Compliance, Product Safety and Data Protection

13.1 The Buyer shall keep confidential all non-public commercial, technical and other information arising from the business relationship, in particular drawings, designs, samples, prices, terms, sources of supply, manufacturing processes, technical data and know-how. The Buyer may use such information only for performance of the contract and may make it accessible to third parties only insofar as strictly necessary and provided that such third parties are bound by equivalent confidentiality obligations. Trade secrets shall be protected without time limit; other confidential information shall be protected for five years after the end of the business relationship.

13.2 The Buyer shall comply with all laws, regulations, official requirements and recognised rules of technology applicable to it, in particular those relating to occupational safety, product safety, environmental protection, export control, prevention of corruption and data protection. The Buyer may use the goods only for their intended purpose, in a professionally appropriate manner and in compliance with our technical information, operating instructions and safety instructions.

13.3 If the Buyer becomes aware of risks, safety problems, product monitoring findings, clusters of complaints or official measures in connection with our goods, it shall inform us without delay and assist in investigation, risk mitigation and defence against claims. Markings, serial numbers, warnings, nameplates, manufacturer information and documentation may not be removed, altered or rendered illegible unless strictly necessary and legally permissible.

13.4 We process personal data of the Buyer and its contact persons for the initiation, performance and administration of the business relationship and on the basis of applicable law. The Buyer shall ensure that its contact persons are informed accordingly. Communications by email satisfy the text-form requirement unless a stricter form is required by law or contract.

14. Assignment, Documents and References

14.1 The Buyer may assign or transfer rights and obligations under the contract to third parties only with our prior consent in text form; Section 354a HGB shall remain unaffected. We may assign claims against the Buyer for financing, factoring or security purposes.

14.2 We may withhold documents, certificates, declarations and other records for as long as the Buyer is in default with due payments or duties of cooperation arising from the same contractual relationship and such withholding is not disproportionate.

14.3 Any use of our name, trademarks or logos for advertising, reference or publication purposes requires our prior consent in text form.

15. Place of Performance, Jurisdiction, Law and Language

15.1 Unless otherwise agreed, the place of performance for all deliveries, services and payments shall be our plant or registered office in Alzenau. This shall also apply to remedial performance.

15.2 To the extent permitted by law, the exclusive place of jurisdiction for all disputes arising out of or in connection with the business relationship shall be the court having jurisdiction for our registered office. We may also bring proceedings against the Buyer at the Buyer's general place of jurisdiction or at any other place of jurisdiction permitted by law.

15.3 German law shall apply, excluding the United Nations Convention on Contracts for the International Sale of Goods (CISG) and the conflict-of-laws rules insofar as they would lead to the application of another law. The language of the contract is German. In the event of translations, the German version shall prevail in case of doubt.

16. Final Provisions

16.1 Amendments and supplements to the contract must at least be made in text form unless a stricter form is prescribed by law or expressly agreed otherwise.

16.2 Should any provision of these terms and conditions be or become wholly or partly invalid, unenforceable or incomplete, the validity of the remaining provisions shall remain unaffected. The statutory provisions shall apply in place of the invalid or unenforceable provision. Where necessary, the parties shall agree on an effective provision that comes as close as possible to the economic purpose.

The complete and authoritative version is available for download at www.gruen-pumpen.de.

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