

SEALLESS



DRUM PUMPS PVDF

FOR HIGH AGGRESSIVE LIQUIDS
THE RIGHT DRUM PUMPS



- This saves maintenance costs
- This avoids malfunctions
- This saves time
- This saves money

**If you have such applications,
take only the best.**



PVDF drum pumps take no ...



... and environment.



fright at any application ...



Advantages for the reliability

This saves maintenance costs

- robust coupling
- strong shaft
- stainless steel for stressed parts
- new development without seal



Advantages for the operational safety

This avoids malfunctions

- optional magnetic clutch for hermetical sealed pump
- strong connection motor-pump



Advantages for the user

This saves time

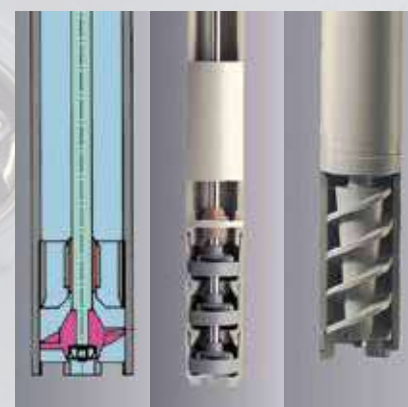
- quick release coupling
- no problems with failed threads

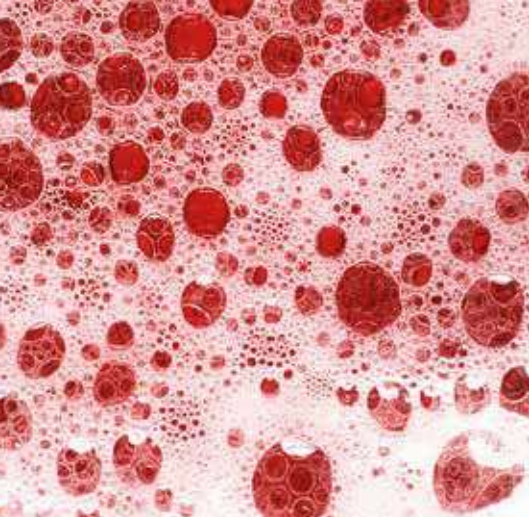


Advantages for the customer

This saves money

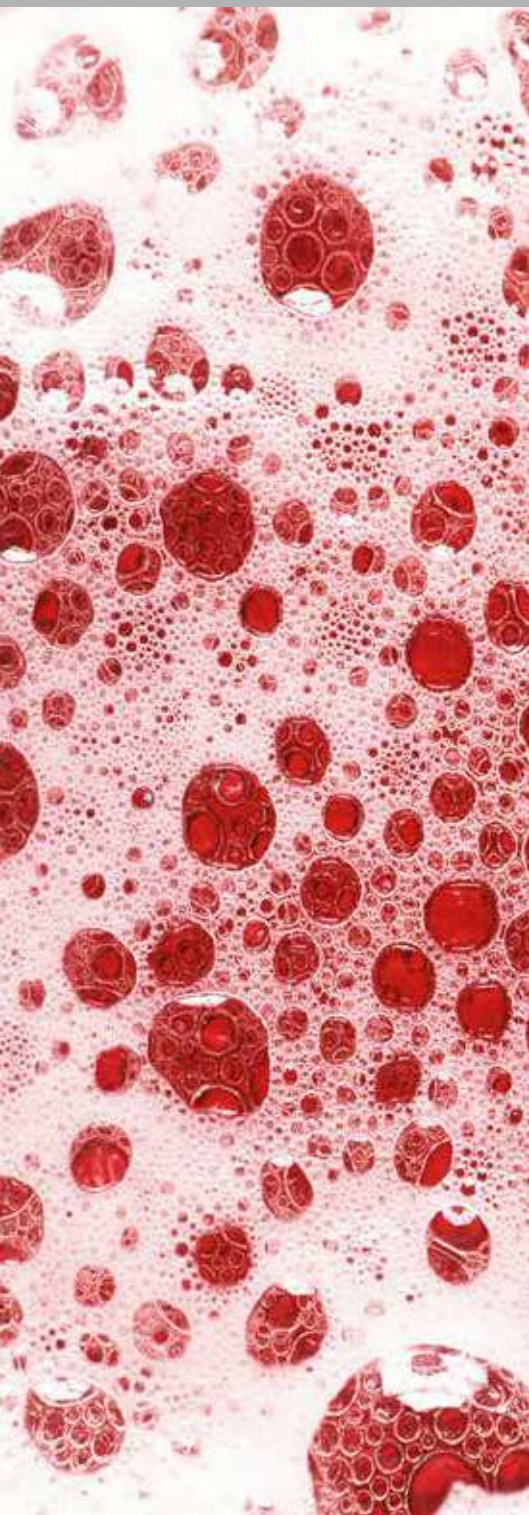
- one supplier for the most applications
- one motor for all types of impeller
- less equipment required





DRUM PUMPS PVDF

FOR HIGH AGGRESSIVE LIQUIDS
THE RIGHT DRUM PUMPS



SEALLESS



- **acid, concentrated**
- **bases, concentrated**
- mineral oil
- colours
- emulsions
- dispersions
- suspensions
- fluids of medium viscosity
- cosmetics



For high aggressive liquids...

Version A, R column 1-2, page 7



**For high aggressive and li-
quids of medium viscosity...**

Version S column 3, page 7

SL-PVDF:

For transfilling and draining of drums and containers.

The perfect drum pump for the most thin liquids. Version A for high flow rate, Version R for high pressure, with foot valve for complete drainage.

Recommendation:

For heavy liquids the strong motor p400-A.

SL-PVDF-S:

The feed screw (S) is dedicated for liquids of medium viscosity ($\eta > 200$ mPas), if the impeller types A and R reach their limitations.

With induction motor ideal combination for gentle dealing with the liquid.

Recommendation:

Induction motor with frequency inverter, for variable flow rate.

Sealless pumping units

Sealless pump tubes from grün are reliable without using a mechanical seal and are suitable for almost any aggressive, low viscosity media. Our sealless pumping units are available in PP, PVDF, stainless steel (SS) and aluminium (Alu) material versions. (Separate brochure for each material available).

Design PVDF:

The pump tube (3) is divided by the inner tube into sections to separate the fluid under pressure (3 flow channels) and the low pressure section (wave channel).

Advantages of sealless drum pumps

- Cleaning the pumping unit is greatly facilitated; the risk of fluid carry-over when moving the pump to a different container is minimized.
- The build-in webs add considerable rigidity to the pump tube, resulting in greatly improved mechanical stability of the pumping unit.
- No bearings in the wave channel.
- Motor power is transferred by proven, robust coupling (1) with curved teeth over the stainless steel coupling element (2) with a large double bearing.
- Of course, the sealless pump tubes are fully compatible with the sealed models, allowing you to use the pumping units with any motor from grün product range.
- Depending on the application you can select one of 3 different types of impellers: axial (A), radial (R) and feed screw (S).

Product profile

A drum pump always consists of a pump tube and a motor. These components are connected by means of a quick coupling. Any pump tube can be used with any motor.

Selecting the right order-no.

In the general order-no., for example 500-00XX, fill in the specific numbers for your choice. Order-No. Example: p400-A 230V: 500-0024

		1		2		3	
Motor		Pump tube		SL-PVDF-A		SL-PVDF-R	
p310		Performance curve		A100	R100		
Power (W)	520	Hydr. Values		max	max		
Voltage (V)	230 / 120	Capacity Q (l/min)		100	90		
Protection	IP 24	Delivery head H (mWS)		6	14		
LVR*	optional	Density ϕ (kg/l)		1,3	1,6		
		Viscosity η (mPas)		300	250		
Weight (kg)	3,5	Weight (kg)		1,8	1,8		
		Temperature (°C)		80	80		
Order-No.	500-00XX	L (mm)		Order-No.	Order-No.		
Voltage (V)	230 120						
p310 (LVR)	16 28	700		680-0001	685-0001		
p310-A	17 29	1000		680-0002	685-0002		
p310-A-SR	54 -	1200		680-0003	685-0003		

		1		2		3	
Motor		Pump tube		SL-PVDF-A		SL-PVDF-R	
p400		Performance curve		A200	R200	S200	
Power (W)	850	Hydr. Values		max	max	max	
Voltage (V)	230 / 120	Capacity Q (l/min)		110	100	55	
Protection	IP 24	Delivery head H (mWS)		8	20	10	
LVR*	optional	Density ϕ (kg/l)		1,6	2,0	1,5	
		Viscosity η (mPas)		800	700	700	
Weight (kg)	4	Weight (kg)		1,8	1,8	2	
		Temperature (°C)		80	80	80	
Order-No.	500-00XX	L (mm)		Order-No.	Order-No.	Order-No.	
Voltage (V)	230 120						
p400 (LVR)	23 25	700		680-0001	685-0001	680-0006	
p400-A	24 26	1000		680-0002	685-0002	680-0007	
p400-A-SR	56 -	1200		680-0003	685-0003	680-0008	

		1		2		3	
Motor		Pump tube		SL-PVDF-A		SL-PVDF-R	
d600		Performance curve		A600	R600	S600	
Power (W)	600	Hydr. Values		max	max	max	
Pressure (bar)	3-7	Capacity Q (l/min)		90	80	60	
		Delivery head H (mWS)		7	15	8	
Consumption of air (l/s)	10	Density ϕ (kg/l)		1,6	2	1,5	
Weight (kg)	1,7	Viscosity η (mPas)		800	700	700	
		Weight (kg)		1,8	1,8	2	
		Temperature (°C)		80	80	80	
	Order-No.	L (mm)		Order-No.	Order-No.	Order-No.	
d600	520-0016	700		680-0001	685-0001	680-0006	
		1000		680-0002	685-0002	680-0007	
		1200		680-0003	685-0003	680-0008	

		1		2		3	
Motor		Pump tube		SL-PVDF-A		SL-PVDF-R	
pd500		Performance curve		S500			
Power (W)	see below	Hydr. Values		max			
Voltage (V)	230 / 400	Capacity Q (l/min)		15			
Protection	IP 54	Delivery head H (mWS)		7			
Overload	1 ph: yes	Density ϕ (kg/l)		1,3			
release	3 ph opt.	Viscosity η (mPas)		1500 (min 100)			
Weight (kg)	5	Weight (kg)		2			
		Temperature (°C)		80			
	Order-No.	L (mm)		Order-No.			
d500-1 550W	500-0044	700		680-0006			
		1000		680-0007			
d500-3 370W	500-0039	1200		680-0008			

* LVR: Low voltage release (restart protection)

Other voltages on demand.



- **optimised in price**
- **short and occasional usage**
- **it likes light and thin liquids**
- **opt. LVR: low voltage release for advanced safety**
- **opt. SR: speed reducer for simple flow rate variation**



- **the ideal drive**
- **big resources in power and durability**
- **quick working and saving time**
- **opt. LVR: low voltage release for advanced safety**
- **opt. SR: speed reducer for simple flow rate variation**
- **opt. IP 54: 230V**
- **Order-No. 500-0052**



- **the power drive**
- **variable speed**
- **starting knob fixable**
- **for heavy duty**
- **easy handling**
- **economical air consumption**



New connection technology: metal replaces plastic, robust for use in harsh environments

- **the silent marathon worker**
- **ideal for viscous liquids**
- **smooth product treatment with feed screw**
- **voltage 230 V (1-ph) and 400 V (3-ph)**
- **opt.: with frequency inverter**
- **opt.: Ex-proof versions**

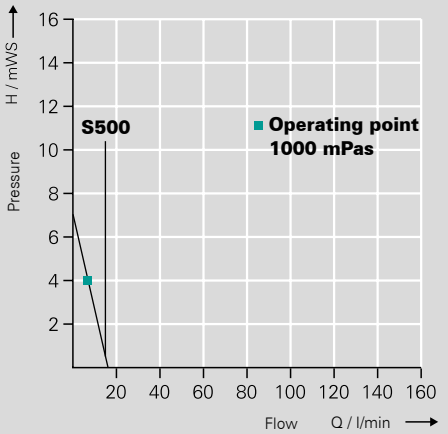
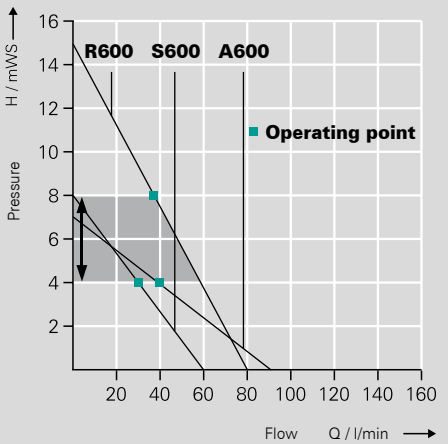
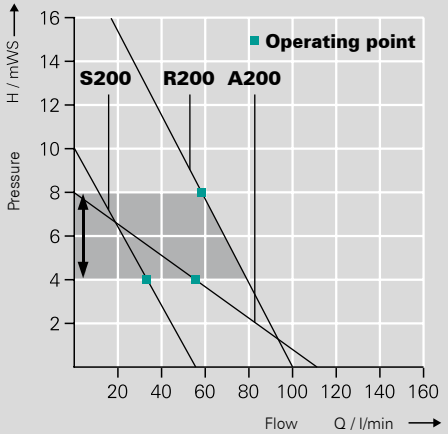
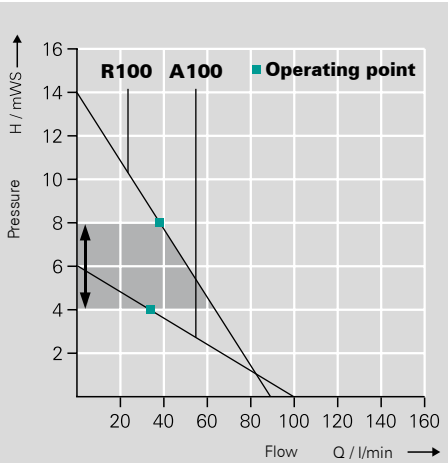


Table of materials

Description	Pump tube version
1. Curved teeth coupling	PA
2. Coupling element	PVDF/SS
3. Pump tube with	
flow and wave channel	PVDF
4. Drive shaft	HC
5. Wave channel	PVDF
6. Slide bearing	PTFE
7. Impeller	ETFE

1. Curved teeth coupling
2. Coupling element
3. Pump tube with flow and wave channel
4. Drive shaft
5. Wave channel
6. Slide bearing
7. Impeller

Cross-section of pump:

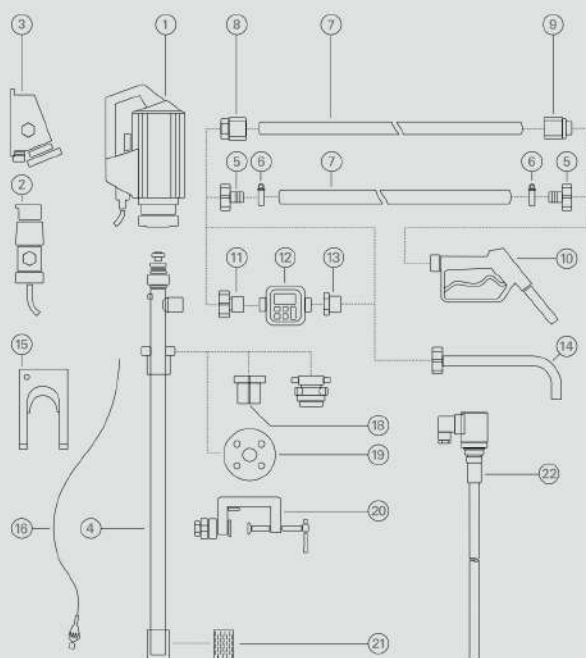
When fluid enters the wave channel, a surge hole allows it to escape into the fluid area surrounding the pumping unit. In the wave channel is no overpressure and the fluid level in both (wave channel and drum) is always the same. For this reason the pump doesn't need a seal between drive shaft and housing.

Dimensions: 100, 120, 140, 160, 180, 200, 220, 240, 260, 280, 300, 320, 340, 360, 380, 400, 420, 440, 460, 480, 500, 520, 540, 560, 580, 600, 620, 640, 660, 680, 700, 720, 740, 760, 780, 800, 820, 840, 860, 880, 900, 920, 940, 960, 980, 1000.

**Mechanical sealed (MS) pumps
in separate catalogue.**



ACCESSORIES



- 1 Drive motor
- 2 Explosion-proof plug
- 3 Explosion-proof socket
- 4 Pump tube
- 5 Hose connector
- 6 Hose clamps
- 7 Hose
- 8 Hose fittings
- 9 Hose fittings
- 10 Nozzle
- 11 Flow meter connection 12
- Flow meter 13
- Reducing piece 14
- Discharge spout
- 15 Wall bracket 16
- Equipotential bonding cable
- 17 Emission proof drum adapter
- 18 Drum adapter 19
- Installation flange 20
- Clamping device
- 21 Foot strainer
- 22 Level switch



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