

SEALLESS

DRUM PUMPS STAINLESS STEEL

FOR INFLAMMABLE AND WEAK AGGRESSIVE LIQUIDS THE RIGHT DRUM PUMPS



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

grün-pumpen
take out, what's in.

If you handle inflammable liquids Ex-proof pumps and Ex-proof motors guarantee best safety...



So that things...



don't get...



...too hot.



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

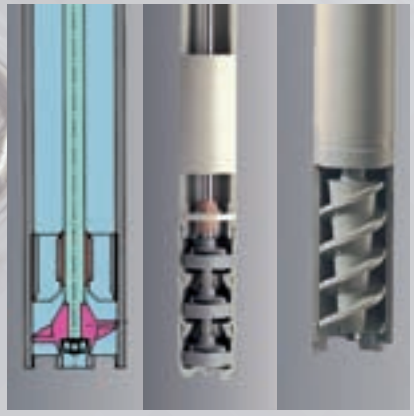
- quick release coupling
- no problems with failed threads



Advantages for the customer

This saves money

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

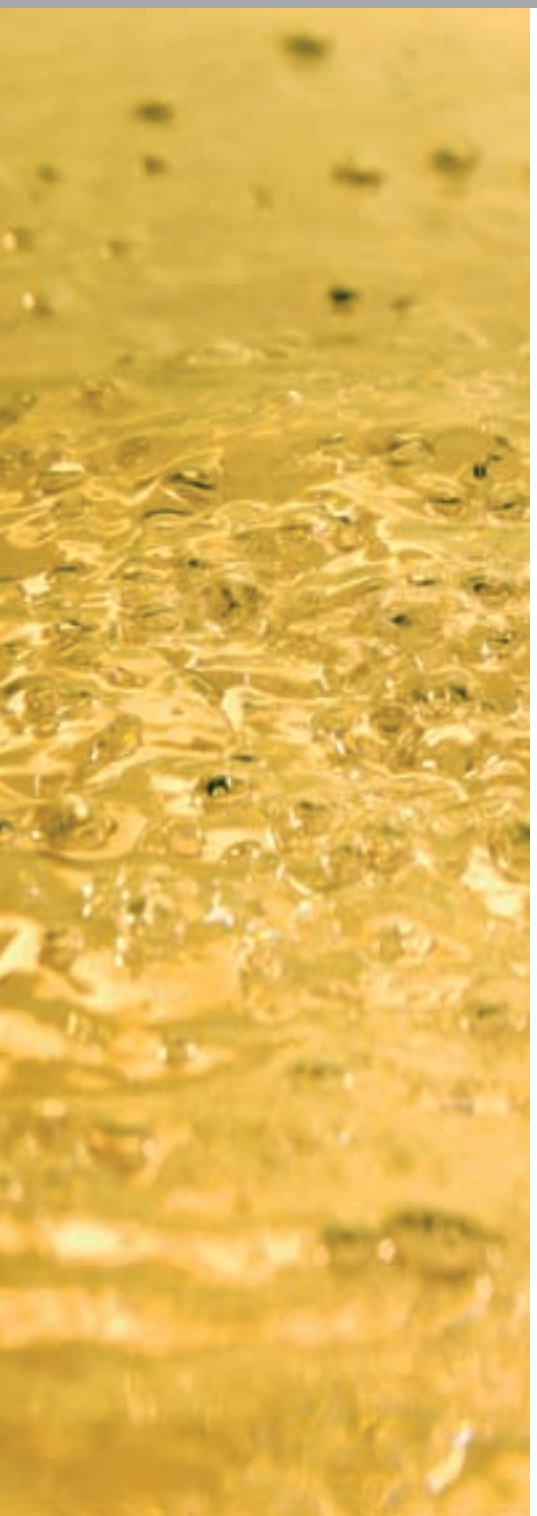






DRUM PUMPS STAINLESS STEEL

FOR INFLAMMABLE AND WEAK AGGRESSIVE LIQUIDS
THE RIGHT DRUM PUMPS



SEALLESS

- **solvents, inflammable**
- **acids, low concentrated**
- **bases, low concentrated**
- **food**
- mineral oils
- colours
- emulsions
- dispersions
- suspensions
- fluids of medium viscosity
- cosmetics







For inflammable* and weak aggressive liquids...

Version A, R column 1-2, page 7

Mixing drum pump...

Series MP

Versions A, R column 4, page 7



For fluids of medium viscosity...

Version S column 3, page 7



SL-SS:
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 inflammable liquids:
SL-SS-R with the powerful motor Ex700 for your best safety.

*obligatory handling with inflammable liquids.

SL-MP-Niro:
For stirring of emulsions, dispersions, suspensions, etc. before starting the transfilling action.
The mixing drum pump is fitted with mixing apertures. By moving a sliding sleeve with a lever, these holes can be opened or closed.
„Open" is for mixing inside the drum and „closed" is for pumping out of the drum. All this can be achieved with one unit.

Recommendation:
SL-MP-SS-R with the powerful motor p400-A for best mixing result (motor Ex700 for inflammable liquids).

SL-Niro-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.

pd500-1 0,37 KW 230 V: 500-0042
pd500-3 0,37 KW 400 V: 500-0039
Ex-proof motors on demand.

Recommendation:
Induction motor with frequency inverter for variable flow rate.

grün-pumpen
take out, what's in.

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 stainless steel (SS):

The pump tube (3) is devided by the inner tube into sections to separate the fluid under pressure (3 flow channels) and the low pressure section (wave channel).
This wave channel is connected to the surrounding fluid area by a surge hole ti relieve or compensate the pressure.

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.

► 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-SR 230V: 500-0056



- **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**

Motor		Pump tupe
p310		Performance curve
		Hydr. Values
Power (W)	520	Capacity Q (l/min)
Voltage (V)	230 / 120	Delivery head H (mWS)
Protection	IP 24	Density φ (kg/l)
LVR*	optional	Viskosity η (mPas)
Weight (kg)	3,5	Weight (kg)
		Temperature (°C)
Order-No.	500-00XX	
Voltage (V)	230 120	L (mm)
p310 (LVR)	16 28	700
p310-A	17 29	1000
p310-A-SR	54 -	1200



- **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**

Motor		Pump tube
p400		Performance curve
		Hydr. Values
Power (W)	850	Capacity Q (l/min)
Voltage (V)	230 / 120	Delivery head H (mWS)
Protection	IP 24	Density φ (kg/l)
LVR*	optional	Viskosity η (mPas)
Weight (kg)	4	Weight (kg)
		Temperature (°C)
Order-No.	500-00XX	
Voltage (V)	230 120	L (mm)
p400 (LVR)	23 25	700
p400-A	24 26	1000
p400-A-SR	56 -	1200



- **obligatory in hazardous locations**
- **big resources in power and durability**
- **state of the art (ATEX)**

Motor ATEX		Pump tube ATEX
Ex700 ATEX		Performance curve
		Hydr. Values
Power (W)	700	Capacity Q (l/min)
Voltage (V)	230	Delivery head H (mWS)
Protection	IP 54	Density φ (kg/l)
LVR*	yes	Viskosity η (mPas)
Weight (kg)	6	Weight (kg)
		Temperature (°C)
	Order-No.	
		L (mm)
EX700 ATEX Ex II 2 G	510-0010	700 1000 1200



- **the power drive**
- **variable speed**
- **starting knob fixable**
- **for heavy duty**
- **easy handling**
- **economical air consumption**
- **alternative to electrical Ex-proof motors**

Motor ATEX		Pump tube ATEX
d600 ATEX		Performance curve
		Hydr. Values
Power (W)	600	Capacity Q (l/min)
Pressure (bar)	3-7	Delivery head H (mWS)
		Density φ (kg/l)
Consumption of air (l/s)	10	Viskosity η (mPas)
Weight (kg)	1,7	Weight (kg)
		Temperature (°C)
	Order-No.	
		L (mm)
d600	520-0016	700 1000 1200

* LVR: Low voltage release (restart protection)

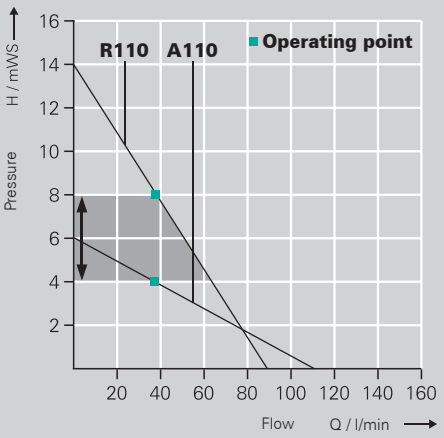
1	2	3	4	5
	SL-SS-A	SL-SS-R	SL-SS-S	SL-MP SS-A	SL-MP SS-R
	A110	R110		A110	R110
	max	max		max	max
	110	90		110	90
	6	14		6	14
	1,3	1,6		1,3	1,6
	300	250		300	250
	3	3		4,5	4,5
	100	100		100	100
	Order-No.	Order-No.		Order-No.	Order-No.
	690-0001	695-0001		690-0012	695-0010
	690-0002	695-0002		690-0013	695-0011
	690-0003	695-0003		690-0014	695-0012

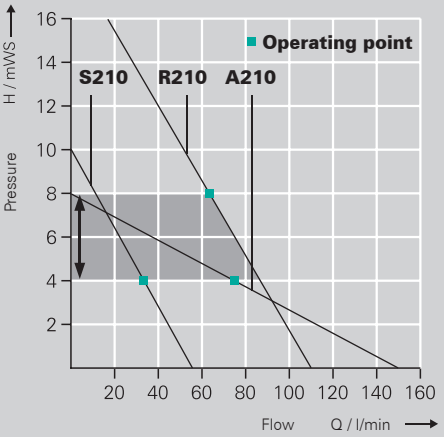
1	2	3	4	5
	SL-SS-A	SL-SS-R	SL-SS-S	SL-MP SS-A	SL-MP SS-R
	A210	R210	S210	A210	R210
	max	max	max	max	max
	150	110	60	150	110
	8	21	10	8	21
	1,6	2	1,5	1,6	2
	800	700	700	800	700
	3	3	3	4,5	4,5
	100	100	100	100	100
	Order-No.	Order-No.	Order-No.	Order-No.	Order-No.
	690-0001	695-0001	690-0005	690-0012	695-0010
	690-0002	695-0002	690-0006	690-0013	695-0011
	690-0003	695-0003	690-0007	690-0014	695-0012

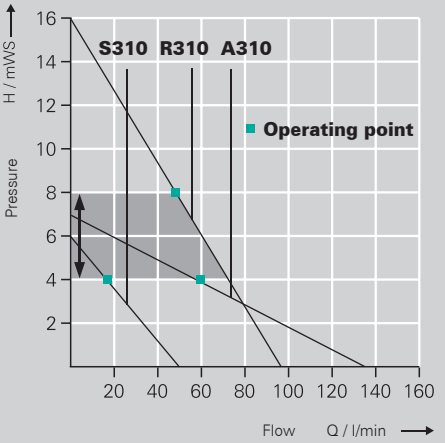
1	2	3	4	5
	SL-SS-A	SL-SS-R	SL-SS-S	SL-MP SS-A	SL-MP SS-R
	A310	R310	S310	A310	R310
	max	max	max	max	max
	135	95	50	135	95
	7	16	6	7	16
	1,6	2	1,5	1,6	2
	800	700	700	800	700
	3	3	3	4,5	4,5
	100	100	100	100	100
	Order-No.	Order-No.	Order-No.	Order-No.	Order-No.
	690-0001	695-0001	690-0005	690-0012	695-0010
	690-0002	695-0002	690-0006	690-0013	695-0011
	690-0003	695-0003	690-0007	690-0014	695-0012

1	2	3	4	5
	SL-SS-A	SL-SS-R	SL-SS-S	SL-MP SS-A	SL-MP SS-R
	A610	R610	S610	A610	R610
	max	max	max	max	max
	120	80	65	120	80
	8	17	8	8	17
	1,6	2	1,5	1,6	2
	800	700	1500 (min 100)	800	700
	1,5	1,5	1,5	1,5	1,5
	100	100	100	100	100
	Order-No.	Order-No.	Order-No.	Order-No.	Order-No.
	690-0001	695-0001	690-0005	690-0012	695-0010
	690-0002	695-0002	690-0006	690-0013	695-0011
	690-0003	695-0003	690-0007	690-0014	695-0012

Other voltages on demand.







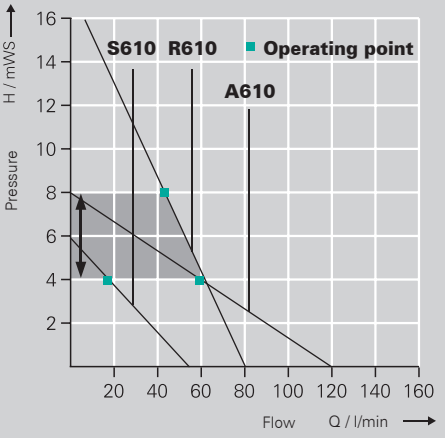
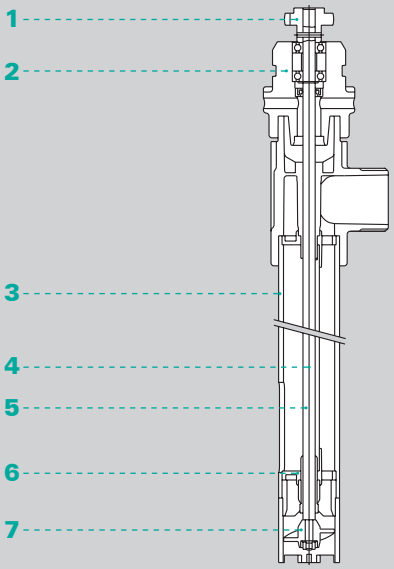


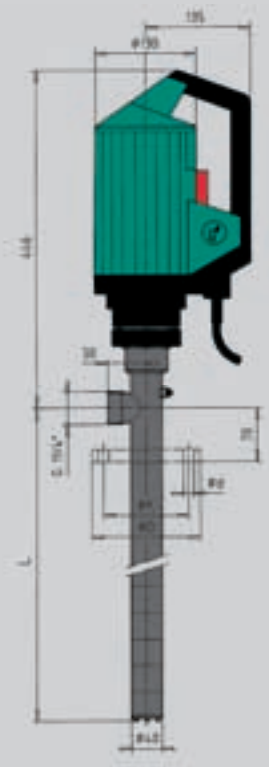
Table of materials

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



Cross-section of pump:

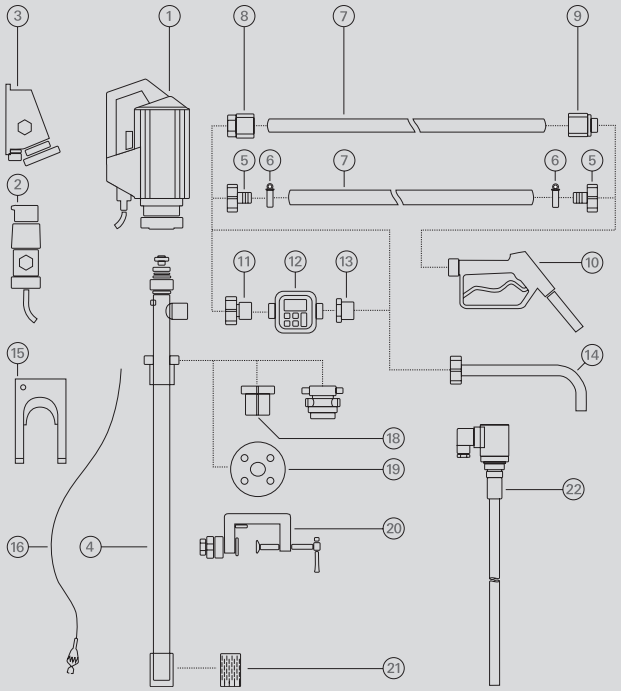
When fluid enters the wave channel, a surge hole allowes it to escape into the fluid area surrounding the pumping unit. In the wave channel is no overpressure and the fluid level in both (wave channel and drum) is always the same. For this reason the pump doesn't need a seal between drive shaft and housing.





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 bounding 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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