ELRO®

brands you trust.



Peristaltic Pumps Series IP, XP and M300





Über ELRO



Founded in Düsseldorf in 1961, Crane Process Flow Technologies GmbH has been a competent and experienced supplier of ELRO® peristaltic pumps, DEPA air-operated double diaphragm pumps and REVO pneumatic actuators for many years. Our products are characterized by a wide variety of materials and models for safe operation. In addition, we offer individual solutions for specific and demanding industrial applications. ELRO® peristaltic pumps of the IP, XP and M300 series have been developed and manufactured in Düsseldorf since 1968. These pumps enjoy high recognition among experts due to their first-class quality and innovative design.

Our Products & Solutions

- Peristaltic pumps IP, XP and M300
- Original spare parts
- Spare parts kits
- Global pump service







Product Overview

Series IP



Designed for pumping abrasive, long fibrous or aggressive fluids as well as high viscosity fluids with low shear strength. Dry-running safe without seals and valves, for stationary applications in the harshest conditions.

Technische Data:

Fluid Connections: DN25-DN80 (1"-3")
Flow rate: 0,1 to 46 m³/h
Temperature Limits: -20°C to +80°C
Max Pressure: max. 13 bar
Pump Housing: Aluminium
Connections: Edelstahl, PP elektr.

leitfähig (Standard BSP oder Flansch)

> NR, NBR, Hypalon, FPDM

Special Features : Dry self-priming up to

9.5m

Dry-running safe Integrated vacuum system (patented) and early warning system

Approvals & Standards

Hose materials approved according to FDA requirements (NR. NBR), BS EN ISO 9001

Applications

Hose Material:

- Chemical industry
- Breweries
- Power plants
- Waste and disposal industry
- Paint and varnish industry
- Ceramic and porcelain industry
- Construction industry

Series XP



ELRO®-hose pumps of the XP series are characterized by their high flow rate at low speed. The large dimensioned hose cross-section enables pumping of media with high solids content.

Technische Data:

Fluid Connections: DN40-DN 100 (1 1/2"-4") Flow rate: 0,6 bis 30 m³/h Temperature Limits: -20'C bis + 80°C Pump Housing: max. 13 bar Fluid Connections: Aluminium Stainless Steel, PP Connections: BSP(M) as standard with option of flange Hose Material: NR, NBR, Hypalon,

Dry self-priming up to 9.5m

Dry-running safe Integrated vacuum system (patented) and early warning system

Approvals & Standards

Hose materials approved according to FDA requirements (NR. NBR), BS EN ISO 9001

Applications

Special Features:

- Chemical industry
- Breweries
- power plants
- Waste and disposal industry
- Paint and varnish industry
- Ceramic and porcelain industry
- Construction industry

Series M300



For economical pumping of slurries, chemicals and contaminated media. Mobile, compact all-purpose pumps with high pumping speed and good flow rate. Can be combined in many ways with different drive units and accessories.

Technische Data:

Fluid Connections: DN50 (2")
Flow rate: Up to 20m3/h
Temperature Limits: -20'C to +80°C
Delivery Pressure: 2 bar

Pump Housing: Aluminium

Fluid Connections: 2", Aluminium, Stainless

steel, PP, Bronze with Camlock coupling

system

NR, NBR, Hypalon, dry self-priming up to 9.5m,dry-running safe, with integrated vacuum

system

Approvals & Standards

FDA approved materials on request, BS EN ISO 9001

Drive Unit Options

Hydraulic, Electric (1 & 3 Phase), Water Turbine, Diesel & Petrol

- Chemical industry
- Fire departments, rescue services
- Petroleum industry
- Paint and varnish industry
- Power plants
- Ports and ships
- Oil stations and tankers
- Airports



Über ELRO

For more than 15 years, ELRO® peristaltic pumps whether as stationary units, for example, as mobile systems for hazardous material applications - have established themselves as indispensable products for industry in the positive displacement pump sector. Every day, these pumps prove their reliability and performance worldwide in harsh environments and under the most difficult operating conditions. Over the decades, intensive research, development and the use of new materials have completed the range of ELRO® peristaltic pumps. The range includes the widest selection of materials for peristaltic hoses of all hose pump manufacturers. During the manufacturing process, the quality demands of industrial customers as well as ease of operation and maintenance are key. The latest production methods, inspection and test systems for quality assurance and documented process sequences in accordance with DIN EN ISO 9001 guarantee the consistently outstanding quality of our ELRO® peristaltic pumps. Thanks to the wide product range, ELRO® pumps can meet almost all customer requirements and needs, even for extremely difficult pumping processes. The long tradition, combined with the resulting experience and the available pump / application know-how, make customer and market specific solutions possible. In the future, too, the ELRO® peristaltic pump program will maintain its top position among users through targeted adaptations to the latest technologies, modern manufacturing methods and reliable service.

Advantages at a Glance:

- Ideal for abrasive, viscous and shear-sensitive media
- Gentle conveying of liquid or shear sensitive products
- Constant flow rates due to vacuum support
- Dry-running safe
- Integrated early warning system (IP series)
- Conveying of media containing solids
- Straight, free flow passage and easy cleaning
- No dynamic and pressure loaded seals
- M300 Series is mobile & easy to tarnsport
- Infinitely variable flow rate is possible with motor control
- Discharge pressures up to 13 bar for IP and XP series
- Dry self-priming up to 9.5m
- Easy to operate and service, only one wearing part
- Can be used in potentially explosive atmospheres (Ex version)



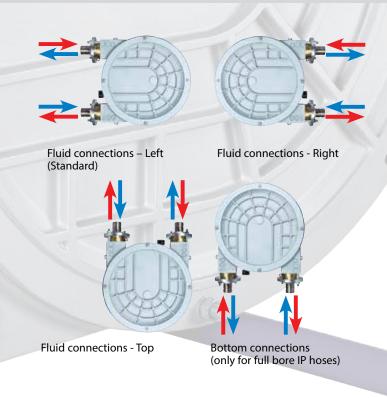


Main Features



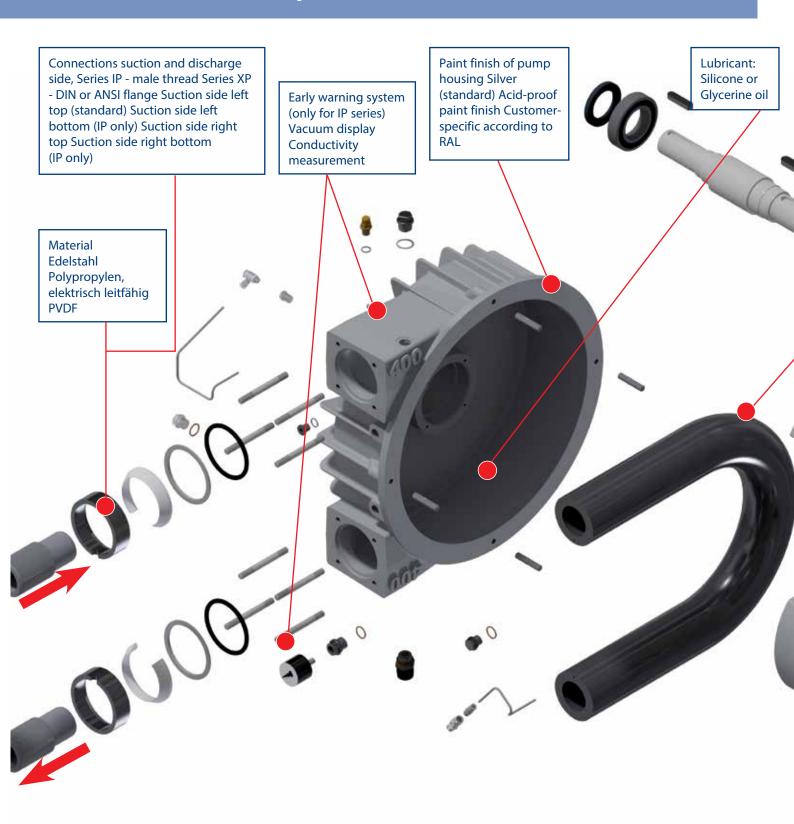
Installation Options

- ELRO peristaltic pumps and accessories are versatile and can be used independently of a specific installation site??
- 2 Stationary applications are standard, as is use as a mobile or wheeled unit that can be transported to the various application areas.
- The standard factory version of the pump design is the combination: connections on the left suction side top, discharge side bottom (Red arrows).
- 4 ELRO® pumps of the IP series can be adapted to existing pipe work or space restrictions by changing the connection orientation. Due to the prepared additional housing bores, only vent valves have to be repositioned and the suction and pressure side stainless steel connections for the vacuum system have to be changed according to the desired condition.
- **5** The XP series is designed to run in either direction as standard.





ELRO® Peristaltic Pumps. Series IP and XP





Flexible, Modular System

Hose Material

Natural Rubber (NR) - IP / XP

Nitrile Natural Rubber - IP

FDA (NR) - IP / XP

(NBR)

Electro-conductive Nitrile

(NBR/E) - IP

Hypalon (CSM) - IP /

ΧP

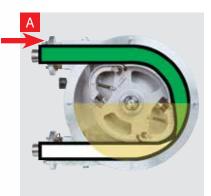
EPDM - IP

Pressure Stages

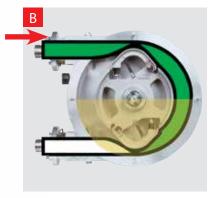
- 0 2 bar
- 2 4 bar
- 4 6 bar
- 6 8 bar 8 - 10 bar

10 - 13 bar

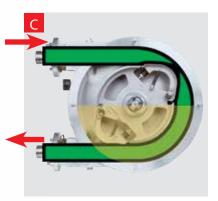
Function IP and XP



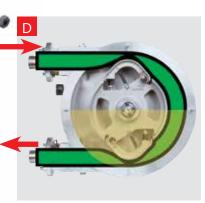
he rotor rotates inside the pump housing filled with lubricant and compresses the delivery hose with the sliding shoe (1). This process creates a hermetic separation between the suction and discharge sides.



fter the second sliding shoe (2) has compressed the hose, a completely enclosed delivery space remains. This available volume corresponds exactly to half the flow rate per revolution. The additional vacuum built up in the pump housing supports the restoring force of the hose to restore its original full cross-section.



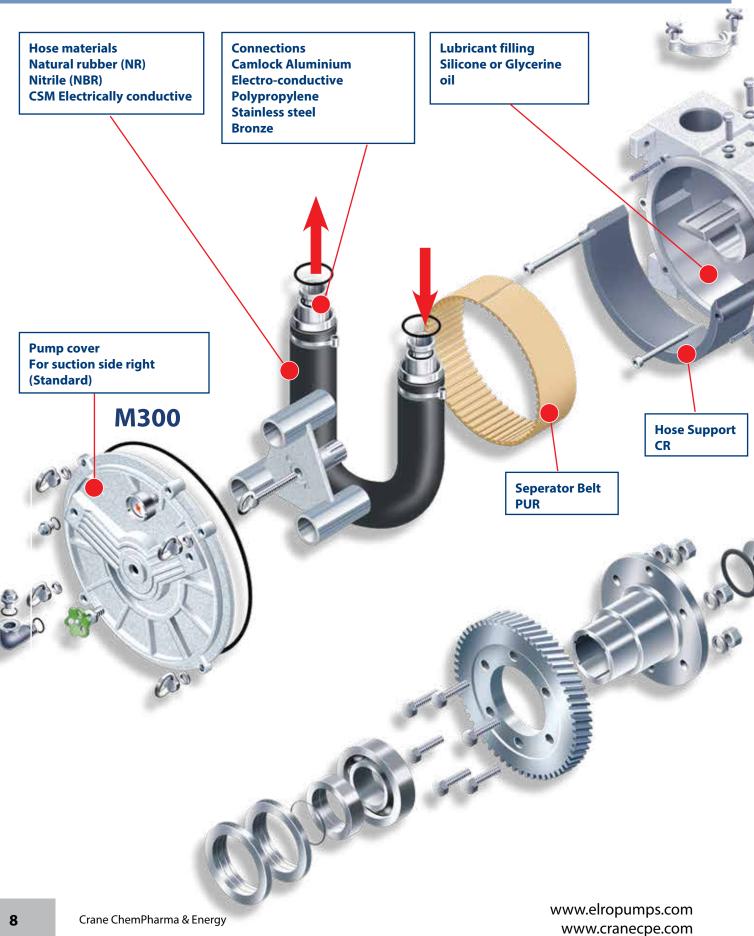
he rotation of the rotor displaces the medium in the hose towards the outlet on the pressure side. With each subsequent opening of the hose, a vacuum is created on the suction side, which ensures constant suction. This can also be done in an empty state ("dry priming").



ith each rotation of the rotor, medium is constantly supplied (displaced) to the outlet on the pressure side via the two sliding shoes, while the same flow rate is drawn into the pump on the suction side by the vacuum..

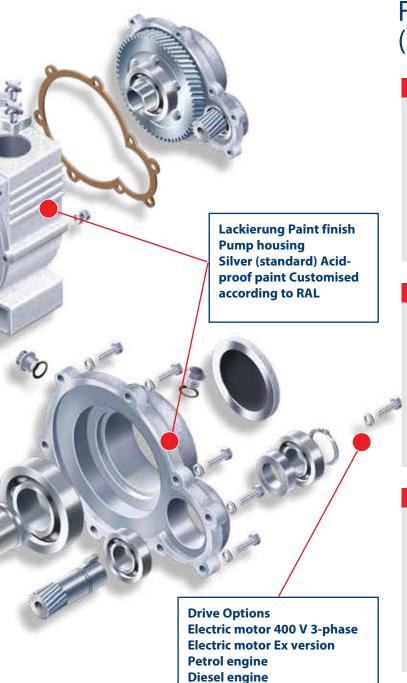


ELRO-Schlauchpumpen, Serie M (Mobile Schlauchpumpe)





Kompakt, Mobil und Anpassungsfähig

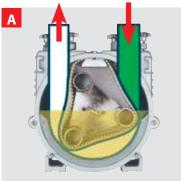


Hydraulic engine

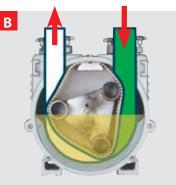
Pneumatic engine

Water turbine

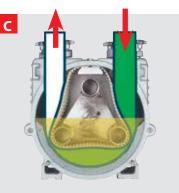
Function Serie M (Mobile Peristaltic Pump)



The rotor rotates within the firmly bolted separating part in the lubricant-filled pump housing. The precisely fitting separator divides the housing into two completely enclosed functional compartments. When the delivery hose is compressed, there is a hermetic separation between the suction and discharge sides.

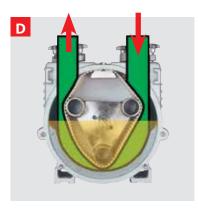


ue to the rotation of the rotor, the air from the space on the suction side is displaced to the outside via the separating part through an additional channel in the pump cover. A corresponding vacuum builds up within a short time depending on the suction height. This additionally supports the restoring force of the hose to restore its original full cross-section.



shoe has compressed the hose, a closed conveying space remains. This volume corresponds exactly to one third of the delivery rate per revolution. The rotation of the rotor displaces the medium in the hose towards the outlet on the pressure side. With each subsequent opening of the hose, a vacuum is created on the suction side, which ensures constant suction. This can also be done without the pumped medium ("dry priming").

After the second sliding



with each rotation of the rotor, medium is constantly displaced to the discharge side via the sliding shoes, while the same flow rate is supplied on the suction side by the vacuum.



Model Type & Flow Rates

Design, delivery rate

The following factors must be taken into account for the optimum design of the mobile ELRO® M300 series hose pumps:-

- Pumped medium
- Delivery rate
- Suction and pressure conditions
- Duration of use per day

Place of use for motorisation Accessories with suitable couplings. The essential points for efficient, low-wear operation and long service life of the stationary peristaltic pumps of the IP and XP series are as follows:

Flow rate <=> Speed

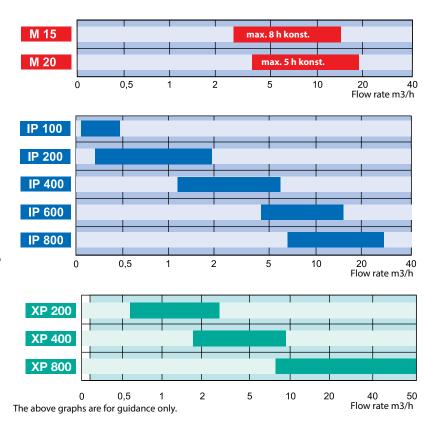
Medium temp. <=> elasticity decrease

Delivery pressure <=> hose crushing

Operating time <=> Continuous operation /

Inter- per day intermittent operation /

After selecting the duty point depending on the above parameters, a precise specification of the pump type can be made via the individual data sheets. According to the design diagrams, a type correction upwards or downwards may be necessary, taking into account the factors "operating time/day and medium temperature". At medium temperatures >40°C, a speed reduction is necessary to increase the hose service life.-Short-time operation (max. 4 h)- Intermittent operation (max. 12 h)- Continuous operation (24 h)Translated with www.DeepL. com/Translator (free version)

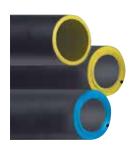


Design diagrams for IP and XP series Q m³/h 100% Medium temperatur <40° C 1-6 bar 80% 60% 40% Förderkurve 20% 0% 20% 40% 60% 80% 100% n U/min 100% 40-60° 0% 40% 60% 0% 20% 80% 100% n U/min 100% 0% 0% 20% 40% 60% 80% 100% n U/min



Elastomere

Elastomere



Natural rubber Natural rubber (FDA)



Natural material, high polymer isoprene Properties: Tensile strength, elastic, resistant to cold, approved for use with foodstuffs (FDA)

Application range: for abrasive media, strongly diluted acids and alkalis Temperature range: -20°C - +80°C

Nitrile rubber (NBR)(FDA) O Nitrile rubber (NBR)



Mixed polymer of butadiene and acrilonitrile

Properties: wear resistant, grease and oil resistant

Range of application : for oily and fatty media, alcohols

Temperature range: -10°C - +80°C

CSM







Hypalon (CSM) Elastomer, formed by polymerisation of chlorosulphonated ethylene

Properties: chemical resistant, wear resistant and electrically conductive (only M300) Application: for acids and alkalis, paints

Temperature range: -20°C - +80°C

EPDM



EPDM rubber by copolymerisation of ethylene, propylene and diene Properties: chemical resistant, good insulating properties and weather resistance Application range: for acids and alkalis,

hot water

Temperature range: -30°C - +80°C

Resistance and temperature ranges can be found in the separate resistance list.

For special applications, special solid fabric hoses are also available for the IP series.

ELRO® hose pumps can be equipped with the right delivery hose for almost any application. The large selection of different hose materials is the result of intensive research work and long-term tests.

Hose production : All ELRO® delivery hoses are machined on precision grinding machines after the production process. This elaborate process ensures that the service life of the hoses is considerably longer than that of conventional hoses due to the uniform surface and the same outer diameter. In addition, uniform, constant delivery rates are achieved for all pumps.

Housing material: The pump housings of ELRO® peristaltic pumps are made of aluminium. This more complex manufacturing process compared to cast steel or welded constructions offers the following

Advantages:

- Better heat dissipation to the outside
- Additional integration of cooling fins
- Vacuum-tight housing
- Reduction of wall thickness
- Compact design
- No corrosion
- Low weight



ELRO®-Peristaltic Pump Series XP



m³/h kW 0.07 10 15 140 0.37 – 1.1 **IP 100** 0,6 **IP 200** 1.9 0.22 13 30 140 0,55 - 1,5 52 IP 400 6,0 1,65 13 50 1.5 - 5.5157 60 **IP 600** 16,0 4,45 13 60 3,0 - 11 348 13 70 IP 800 30 7.8 5,5 - 18,5

Abmessungen (mm)

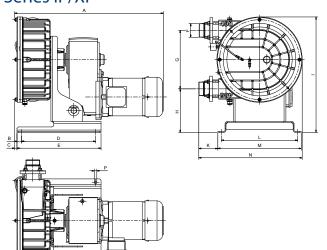
ELRO® peristaltic pumps of the IP series are characterised by gentle pumping of liquid or viscous media. Versatile for use with abrasive, shear-sensitive, long-fibre and solids-containing fluids. As a result, they have established themselves over the years as a vital component in the pump pool of many operators.

The high delivery pressures of up to 13 bar in the standard versions also make ELRO® peristaltic pumps interesting for other pump technologies. Thanks to the five sizes, numerous hose materials, also approved for the food industry, as well as connection options, they can be individually adapted to suit numerous applications.

All ELRO® peristaltic pumps are equipped with a patented vacuum system as standard. This results in numerous economic and technical advantages such as

- Very good suction properties up to 9.5 m (no additional suction device necessary)
- Constant delivery rate over the entire service life of the hose
- Protection of the hose's own restoring forces
- Low reduction in delivery rate with highly viscous media
- Use as an early warning system for timely hose replacement

Seri	ies	IP,	/XP
ser	ies	IY/	/XP



Turn	Abmessungen mm						
Тур	F A		N	ı			
IP 100	G 1"	643	316	364			
IP 200	G 1 1/4"	665	316	364			
IP 400	G 2"	820	570	636			
IP 600	G 2 1/2"	1128	809	821			
IP800	G 3″	1366	1020	1059			



Applications

Main Industries:

- Chemical industry
- · Ceramic and porcelain industry
- · Food and beverage industry
- Breweries
- · Cosmetics and pharmaceutical industry
- Power Plants
- · Paint and varnish industry
- Waste and disposal industry

The patented early warning system (see illustrations on the right 1,-) works as follows: Each hose is equipped with a small additional channel through which the existing air from the upper area of the pump housing is transported. This creates a vacuum in the sealed aluminium housing. In case of damage or normal wear of the hose, the vacuum drops.

This early warning can be seen by the installed vacuum gauge or an additional acoustic or optical signal is triggered by the use of a vacuum switch.

This enables the pump's operational capability to be checked and optimum maintenance planning to be carried out. Unforeseen downtimes due to normal wear can thus be minimised.



Waste Disposal Industry



Early Warning System



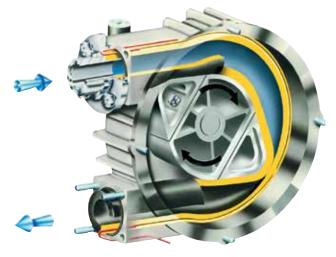
Early Warning System (Suction Side)



Chemische Industrie



Frühwarnsystem Druckseite





ELRO®-Peristaltic Pump Series XP



TA 100 100 100 100 100 100 100 100 100 10							, mat	
	m³/h	I/U	bar	mm	U/min	kW	kg	
XP 200	2,7	0,32	13	35	140	0,55 - 2,2	60	
XP 400	9,6	2,67	13	63	60	1,5 - 5,5	176	
XP 800	46,0	12,8	10	91	60	5,5 - 18,5	693	

Abmessungen (mm)

ELRO® peristaltic pumps of the XP series are characterised by a high flow rate at low speed. The large-dimensioned hose cross-section enables the pumping of media with a very high solids content.

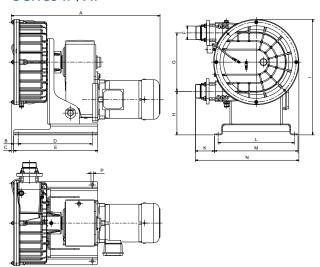
The XP series is equipped as standard with the vacuum system integrated directly in the pump housing. In combination with the specially manufactured thinwalled delivery hoses, this results in excellent suction properties and very long hose service lives.

ELRO® pumps in the XP series offer numerous economic and technical

Advantages, such as

- High flow rate at low speed
- Proven compact design
- Dry-running safe
- Integrated vacuum system
- Dry-self-priming max. 9.5 m
- Conveying of highly viscous products due to vacuum support
- Max. delivery pressure 13 bar
- Ideal for long fibres and solids up to 40 mm due to large hose diameter
- Forward and return flow possible as standard
- Constant delivery rate over the entire service life due to vacuum support
- Various hose and connection materials available

Series IP/XP



Trees		ngen mm		
Тур	F	Α	N	ı
XP 200	G 1 1/2"	665	316	364
XP 400	G 2 1/2"	820	570	636
XP 800	G 4"	1366	1020	1059



Applications

Main Industries:

- Chemical industry
- · Ceramics and porcelain industry
- Construction industry
- Power stations
- Paint and varnish industry
- Waste and disposal industry
- Electroplating
- Waste incineration
- Slaughterhouses

The integrated vacuum system, see figures 2, right, works as follows: The rotor rotates inside the pump housing filled with lubricant and compresses the delivery hose with the sliding shoes. At the same time, the diaphragm integrated in the pump cover is compressed by the sliding shoes 3 attached to the rotor. This pumping process forces the air in the housing outwards via the suction device fitted to the pump cover. The air is then drawn off by the suction device.

ELRO® peristaltic pumps of the XP series can be equipped with numerous accessories.



Chemische Industrie



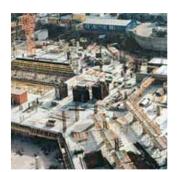
Kraftwerke



Rotor / combined vacuum system



Chemische Industrie



Construction industry



Vacuum System



Vacuum system, interior view



ELRO® Peristaltic Pump Series M (Mobile Peristaltic Pump)



ELRO® Typ M300, GUP 3-1,5 & GP 20/10 Ex Peristaltic pumps are characterised by high mobility and excellent displacement. They have an integrated vacuum system for constant flow and various portable base frames. A wide range of accessories enables optimal and efficient use in almost any application.

The mobile unit is suitable for flow rates up to 20 m3/h for a wide range of applications, including contaminated and viscous media. The pump independently provides a suction lift of up to 9.5mWs without the use of additional accessories.

With only one wetted part, the hose, the M Series guarantees reliable operation at a low total cost of ownership.

Materials and performance characteristics

	M300							
	M20E	M20E Ex	M21E	M20B	M20 D	M20H	M20P	M20W
Antriebstyp	Elektrischer Motor (Stan- dard)	Elektr. Motor (ATEX)	Elektr. Motor (polumschalt- bar)	Benzin- motor	Diesel- motor	Hydrau- lischer Motor	Pneuma- tischer Motor	Wasser- turbine
Antrieb	3,6 kW/ 2920 rpm	3,3 kW/ 2920 rpm	3,1 / 2.6 kW/ 2800 / 1400 rpm	3,4 kW/ 3600 rpm	3,5 kW/ 3600rpm	3 kW/ 3000rpm	3 kW/ 2000rpm	3,5 kW/ 3600rpm
Energieversor- gung	Drehstrom 400V / 50Hz			Oktanzahl ≥86	Cetan- zahl ≥45	13 MPa (130 bar)	0.6 MPa (6 bar)	0.85 MPa (8.5 bar)
Max. Durchfluss	18 m³/h 9 / 18 m³/h (300 l/min) (150 / 300 l/min)			20 m³/h (333 l/min)				
Pumpdruck max.	0.15 MPa (1,5 bar)			0,2 MPa (2 bar)				
Schlauchmaterial	CSM, NBR, NR							
Anschlussmaterial	Aluminium *), Edelstahl 1.4571, elektrisch leitendes Polypropylen, Messing							
An/Aus-Schalter mit Motorschutz	X			-				
Rahmen	Tragrahmen	Tragrah- men für Feuerwehr	Tragrahm	Tragrah- agrahmen men mit Tragrahmen für Feuerweh Griffen		ıerwehr		
Schutzklasse	IP54 -							
Stromanschluss	5-poliger Stecker mit 1,3 m Anschlusskabel -							
ATEX-Klassifizier- ung	-	II 2G Ex h IIB T3 Gb	-	-	-	II	2G Ex h IIB T3	Gb

^{*)} not for M20E Ex, M20H, M20P or M20W



Areas of application M300

Main areas of application:

- Chemical industry
- Fire brigades, rescue services
- Petroleum industry
- Paint and varnish industry
- Power stations
- · Ports and ships
- · Oil stations and tankers
- Airports

	GUP/GP					
	55775					
3333 7						
Antriebstyp	Electrischer Motor (pol	lumschaltbar)				
Antrieb	2,1 / 2.75k\					
7	1407 / 2857r	pm				
Energieversor-	Drehstrom	า				
gung	400V					
Max. Durchfluss	9 / 18m³/h					
Max. Dulcilluss	(150 / 300 l/min)					
Pumpdruck max.	0,15 MPa (1.5 bar)					
Schlauchmaterial	CSM CSM, NBR					
Anschlussmaterial	Edelstahl 1.4571					
An/Aus-Schalter mit Motorschutz	х					
Rahmen	Tragrahmen für Feuerwehr					
Schutzklasse	IP55					
Stromanschluss	5-poliger männlicher Stecker mit 1,3 m Abschlusskabel					
Norm	Feuerwehrwesen II 2G Ex h IIB DIN 14427 T3 Gb					







Environmental applications



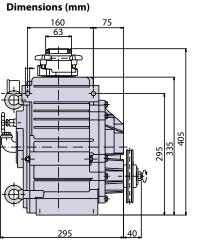
Waste disposal

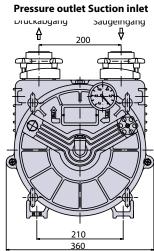


Galvanic k



Railway Waste Disposal



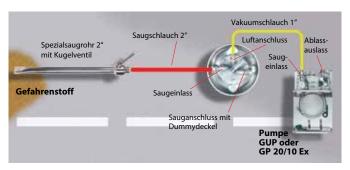


ELRO

Accessories

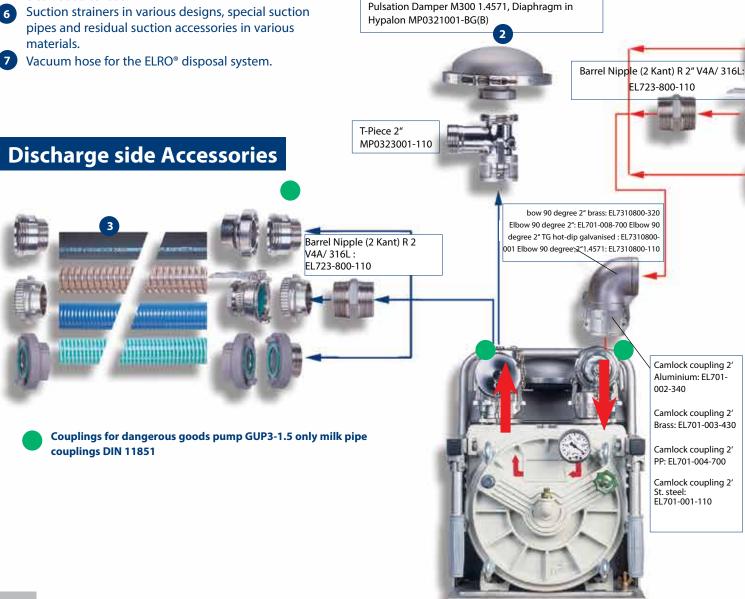
ELRO® hazardous goods pumps are available with a variety of accessories, specially adapted for each application.

- KL quick release couplings, pipe bends, Storz couplings and tank truck couplings in stainless steel (only for GP 20/10 Ex).
- Pulsation damper in stainless steel with T-piece (only for GP 20/10 Ex).
- Suction/pressure hoses are available in nominal widths of 1" to 4" and are fully pressure-tested with the matching coupling systems. Standard spiral hoses with plastic and steel reinforcement, chemical hoses or foodapproved suction/pressure hoses.
- 180 litre transport drum in stainless steel with filling device tainless.
- Hose cleaning balls in various designs. Can be drawn through suction hose, pump and discharge hose to clean out after use.
- Suction strainers in various designs, special suction pipes and residual suction accessories in various



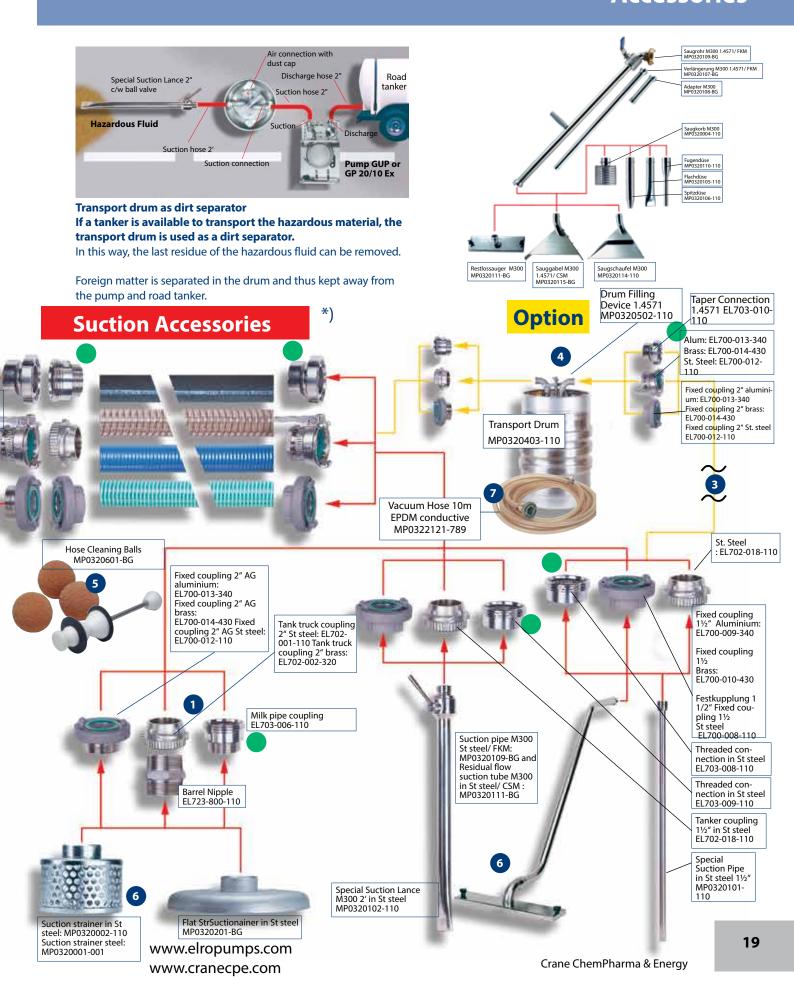
Filling the transport drum

When picking up small quantities of liquid contaminated by solids, the ELRO® pump is used with the transport drum. The contaminated liquid is drawn directly into the drum and the pump does not come into contact with the liquid.





Accessories





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