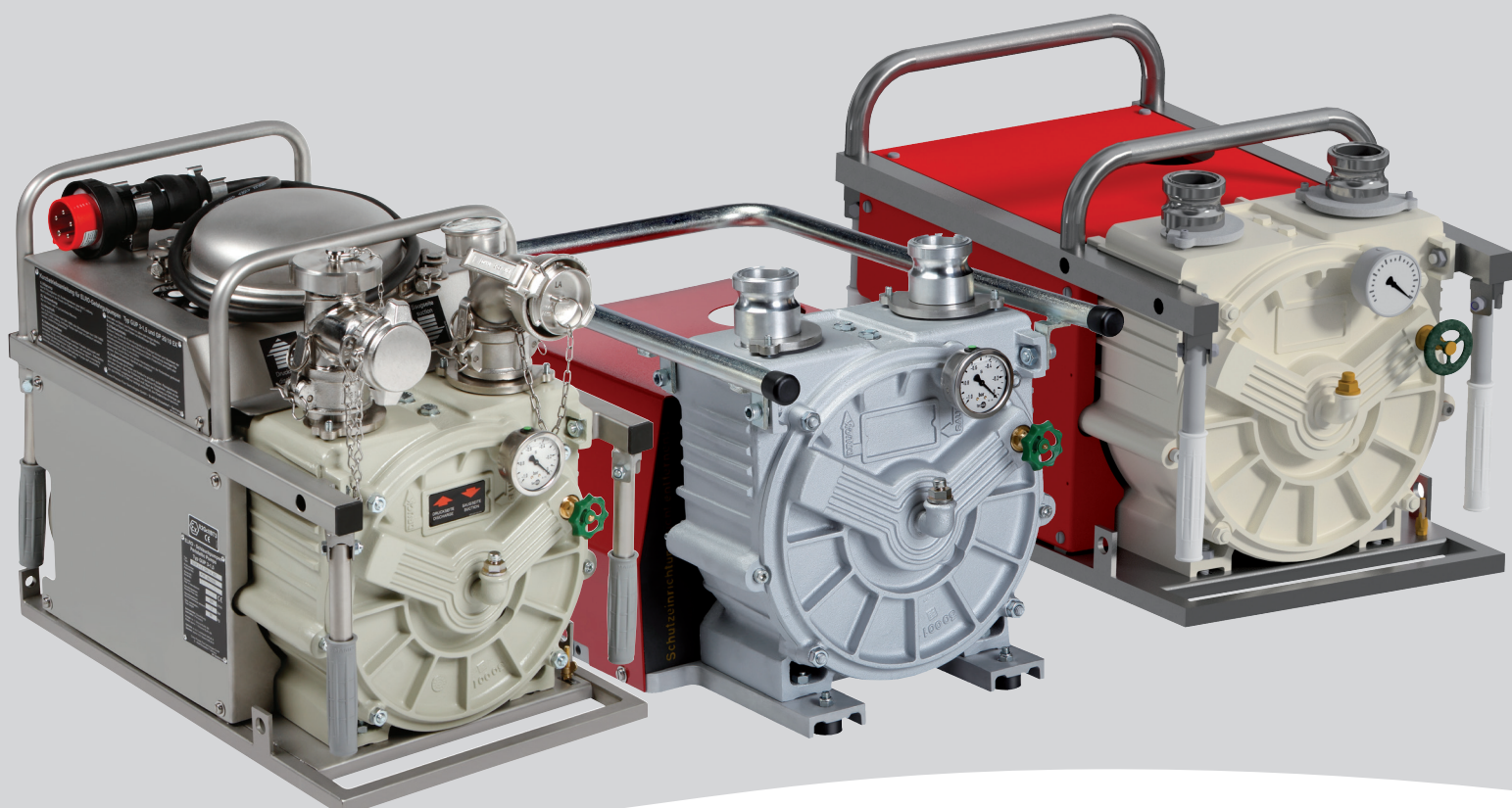


# ELRO®

brands you trust.



## Technical Datasheet ELRO® Series M

**CRANE**

Crane ChemPharma & Energy

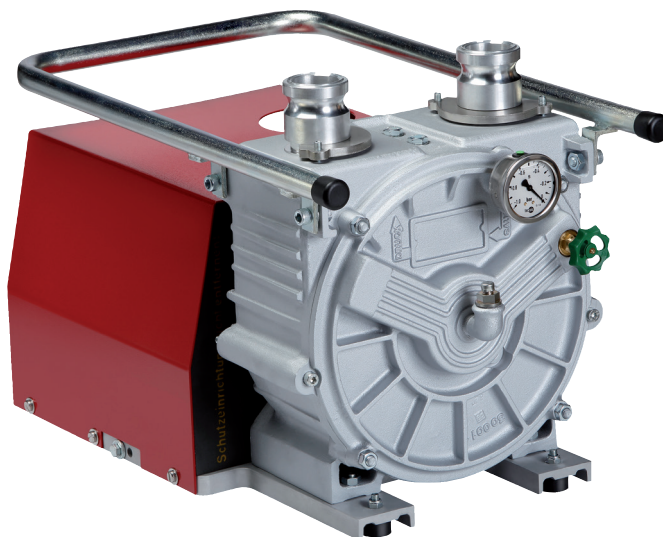
[www.elropumps.com](http://www.elropumps.com)  
[www.cranecpe.com](http://www.cranecpe.com)

## Features and Benefits

ELRO® Type M300, GUP 3-1,5 and GP 20/10 Ex peristaltic pumps are characterized by high mobility and outstanding displacement. They have an integrated vacuum system for constant flow rate and various portable base frames. A wide range of accessories enables optimal and efficient use in almost every application.

### Key Features

- ❶ Mobile unit with flow rates up to 20 m<sup>3</sup>/h effectively handles a wide range of applications, including contaminated and viscous media
- ❷ The pump is able to self prime up to 9.5 mWs without any additional accessories
- ❸ The pump has only one wetted part (the hose) and delivers reliable service with a lower total cost of ownership



### Drive

| Type        | E-Motor<br>(Electric) | B-Motor<br>(Petrol) | D-Motor<br>(Diesel) | H-Motor<br>(Hydraulik) | P-Motor<br>(Pneumatic) | W-Motor<br>(Water) |
|-------------|-----------------------|---------------------|---------------------|------------------------|------------------------|--------------------|
| M300        | ●                     | ●                   | ●                   | ●                      | ●                      | ●                  |
| GUP 3-1,5   | ●                     | -                   | -                   | -                      | -                      | -                  |
| GP 20/10 Ex | ●                     | -                   | -                   | -                      | -                      | -                  |

| Type                     | M300     | GUP 3-1,5 | GP 20/10 Ex |
|--------------------------|----------|-----------|-------------|
| Dry suction height (mWs) | max. 9.5 |           |             |
| Max. Solid Size [mm]     | ≤12      |           |             |
| Weight (kg)              | 52 - 76  | 98.4      | 90.4        |

## Applications

- Chemical industry
- Fire brigades, rescue services
- Petroleum industry
- Color and paint industry
- Power stations
- Ports and ships
- Petrol stations and tank vehicles
- Airports

## Features and Benefits

### Temperature

Temperature Range: -20°C to +80°C

| Product wetted interior | Max. Temperature (°C) |
|-------------------------|-----------------------|
| NR                      | -20 to +80            |
| NBR                     | -10 to +80            |
| CSM                     | -20 to +80            |

### Marking and Identification

The pumps are provided with a nameplate containing the pump code, serial number, date of manufacture, and maximum allowed temperature and pressure.

The ELRO pump code provides all relevant information about the pump, performance, materials and accessories. This allows for accurate link to spare parts.

### Applied Guidelines

EC directives:

- Machinery Directive 2006/42/EC
- Low voltage directive 2014/35/EU
- EMC directive 2014/30/EU
- Outdoor directive 2000/14/EC
- RoHS Directive 2011/65/EU
- ATEX Directive 2014/34/EU
- Eurasian Conformity

Harmonized standards:

- EN ISO 12100, EN ISO 13857, EN 809
- Firefighting equipment DIN14427



### Elastomers



#### Natural rubber (NR)

Composition: natural substance, high-polymer isoprenes  
 Properties: tension-resistant, elastic, cold-resistant, approved for food applications  
 Operative range: for abrasive media, diluted acids and alkalis  
 Temperature range: -20°C to +80°C / -4°F to +176°F



#### Nitrile rubber (NBR)

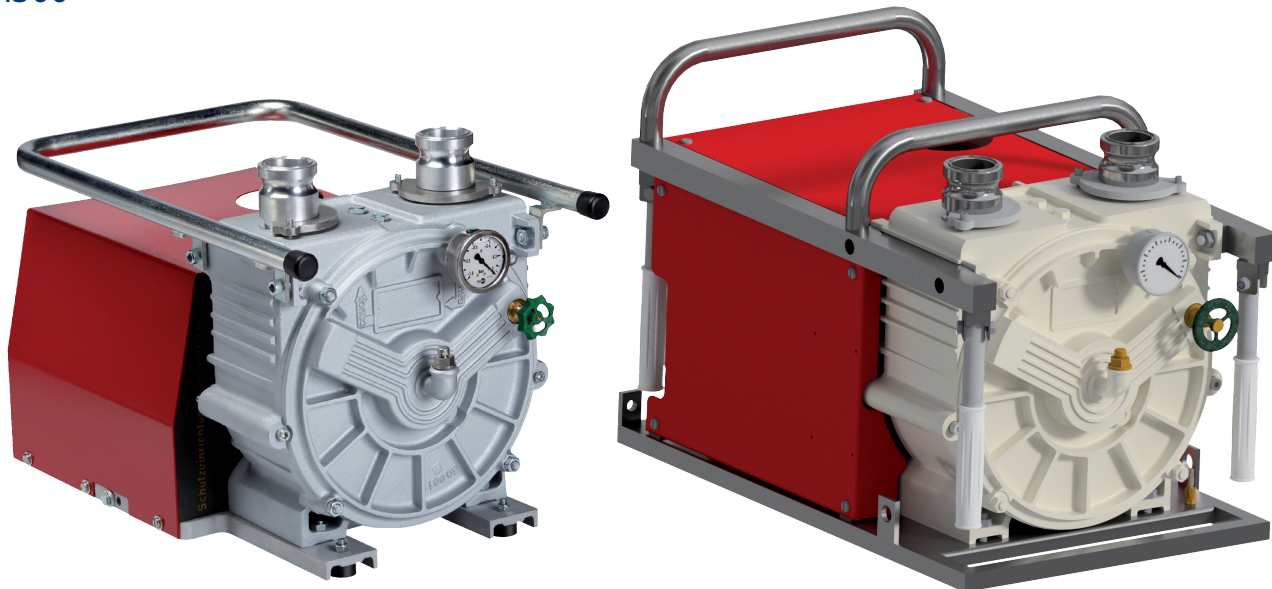
Composition: mixed polymeride from butadiene and acryl nitrile  
 Properties: wear-resistant, grease and oil resistant  
 Operative range: for oily and greasy media, alcohols  
 Temperature range: -10°C to +80°C / +14°F to +176°F



#### Hypalon (CSM)

Composition: elastomer formed through polymerisation of chlorosulfonated ethyls  
 Properties: chemical resistant, wear resistant and electric conductive (only M300)  
 Operative range: for acids and alkalis, colours  
 Temperature range: -20°C to +80°C / -4°F to +176°F

### M300



### Materials & Characteristics

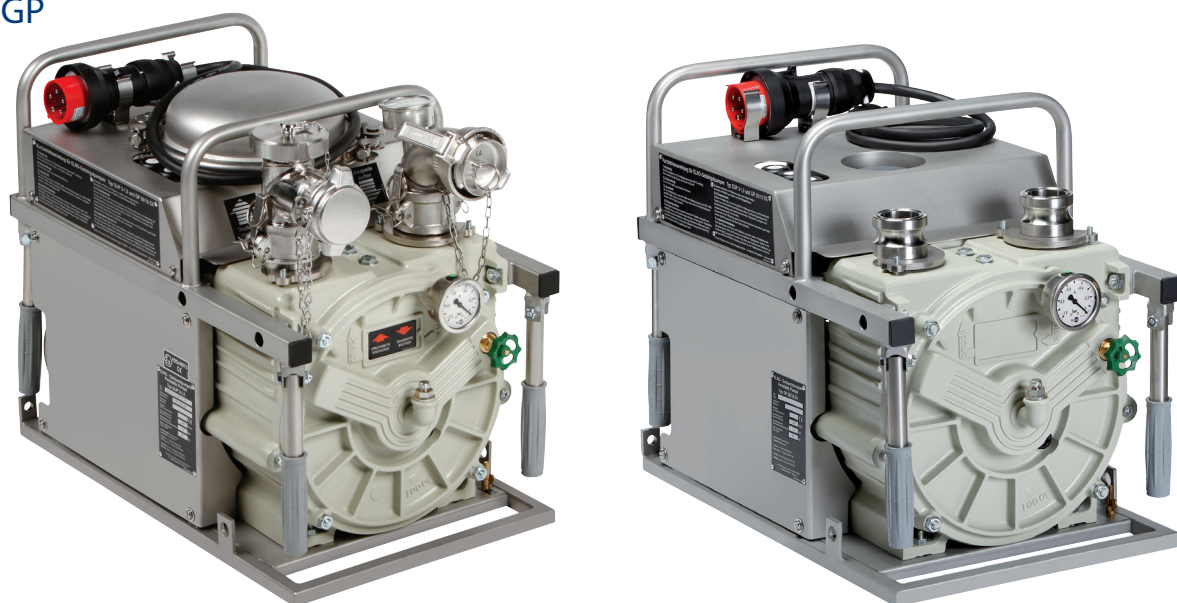
|                                     | M300                                                                               |                                              |                                    |                     |                             |                             |                  |                    |
|-------------------------------------|------------------------------------------------------------------------------------|----------------------------------------------|------------------------------------|---------------------|-----------------------------|-----------------------------|------------------|--------------------|
|                                     | M20E                                                                               | M20E Ex                                      | M21E                               | M20B                | M20 D                       | M20H                        | M20P             | M20W               |
| Drive Type                          | Electric Motor (Standard)                                                          | Electric Motor (ATEX)                        | Electric Motor (change-pole motor) | Gasoline engine     | Diesel engine               | Hydraulic engine            | Pneumatic engine | Water turbine      |
| Drive                               | 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/ 3600 rpm            | 3 kW/ 3000 rpm              | 3 kW/ 2000 rpm   | 3.5 kW/ 3600 rpm   |
| Power supply                        | three-phase current<br>400 V / 50Hz                                                |                                              |                                    | Octane no. ≥86      | Cetane no. ≥45              | 13 MPa (130 bar)            | 0.6 MPa (6 bar)  | 0.85 MPa (8.5 bar) |
| Flow rate max.                      | 18 m³/h (300 l/min)                                                                |                                              | 9 / 18 m³/h (150 / 300 l/min)      | 20 m³/h (333 l/min) |                             |                             |                  |                    |
| Pumping pressure max.               | 0.15 MPa (1.5 bar)                                                                 |                                              |                                    | 0.2 MPa (2 bar)     |                             |                             |                  |                    |
| Hose material                       | CSM, NBR, NR                                                                       |                                              |                                    |                     |                             |                             |                  |                    |
| Connection material                 | Aluminium *), Stainless Steel 1.4571, Electrically-conductive Polypropylene, Brass |                                              |                                    |                     |                             |                             |                  |                    |
| On-Off Switch with motor protection | X                                                                                  |                                              |                                    | -                   |                             |                             |                  |                    |
| Frame                               | Carrying frame                                                                     | Fire brigade frame                           | Carrying frame                     |                     | Carrying frame with handles | Fire brigade carrying frame |                  |                    |
| Protection class                    | IP54                                                                               |                                              |                                    | -                   |                             |                             |                  |                    |
| Power connection                    | 5-pole male plug                                                                   | 5-pole male plug with 1.3 m connecting cable | 5-pole male plug                   | -                   |                             |                             |                  |                    |
| ATEX classification                 | -                                                                                  | II 2G c IIB T3                               | -                                  | -                   | -                           | II 2G c IIB T3              |                  |                    |

\*) not for M20E Ex, M20H, M20P and M20W



## GUP 3-1,5 & GP20/10 Ex

### GUP/GP



### Materials & Characteristics

|                                     | GUP/GP                                             |                        |
|-------------------------------------|----------------------------------------------------|------------------------|
|                                     | GUP 3-1,5                                          | GP 20/10 Ex            |
| Drive Type                          | Electric Motor (change-pole motor)                 |                        |
| Drive                               | 2.1 / 2.75 kW<br>1407 / 2857 rpm                   |                        |
| Power supply                        | three-phase current<br>400 V                       |                        |
| Flow rate max.                      | 9 / 18 m <sup>3</sup> /h<br>(150 / 300 l/min)      |                        |
| Pumping pressure max.               | 0.15 MPa (1.5 bar)                                 |                        |
| Hose material                       | CSM                                                | CSM, NBR               |
| Connection material                 | Stainless Steel 1.4571                             |                        |
| ON-Off Switch with motor protection | x                                                  |                        |
| Frame                               | Fire brigade carrying frame                        |                        |
| Protection class                    | IP55                                               |                        |
| Power connection                    | 5-pole male<br>plug with 1.3 m<br>connecting cable |                        |
| Norm                                | Firefighting equipment<br>DIN 14427                | ATEX<br>II 2G c IIB T3 |

## Series M - Operation

### Innovative Technology with Tradition

Since 1993 the ELRO pumps for hazardous materials in form of mobile units have established themselves as indispensable products for fire brigades, relief organisations, factory security staff and military.

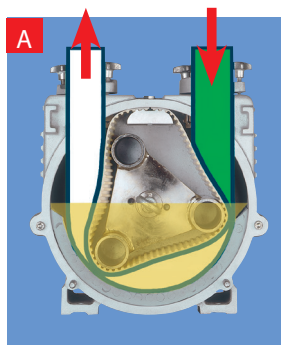
Day in and day out these pumps demonstrate their reliability and efficiency under the most demanding operational conditions.

The quality demands of customers as well as ease of operation and maintenance are uppermost in the manufacture of these new products.

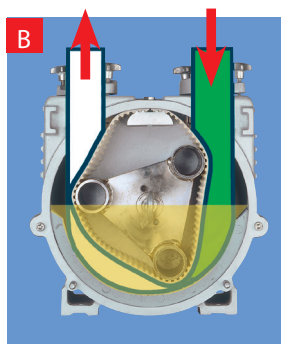
Traditional values in combination with long experience and the available pump / application know-how enables market specific solutions in agreed timescales.

### Benefits at a Glance:

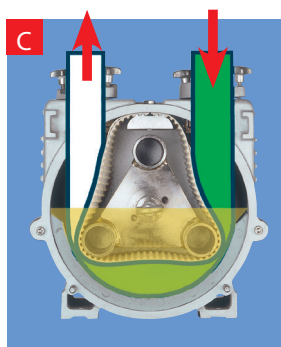
- ideal for abrasive, viscous media and media harmful to the environment.
- gentle pumping of liquid and viscous hazardous substances
- constant volume capacity due to vacuum support
- dry running resistant
- pumping of media with entrained solids
- unobstructed fluid flow & easy cleaning
- free of dynamic and pressurised seals
- mobile, easy to transport design
- two-stage adjustment of the pumping capacity possible
- no additional vacuum equipment required
- dry self-priming max. 9.5 m lift



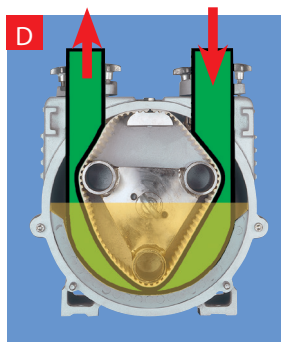
The rotor turns inside the tightly fixed separator, which is held in the pump housing filled with lubricant. The separator divides the housing into two completely enclosed areas. This means during compression of the pumping hose the suction and discharge sides are hermetically separated.



Air from the suction side is pumped over the separator by the turning of the rotor and exhausted outside the pump. This forms a vacuum inside the pump chamber relative to the suction lift, which supports the elasticity of the hose during restoration to its original full cross-section.

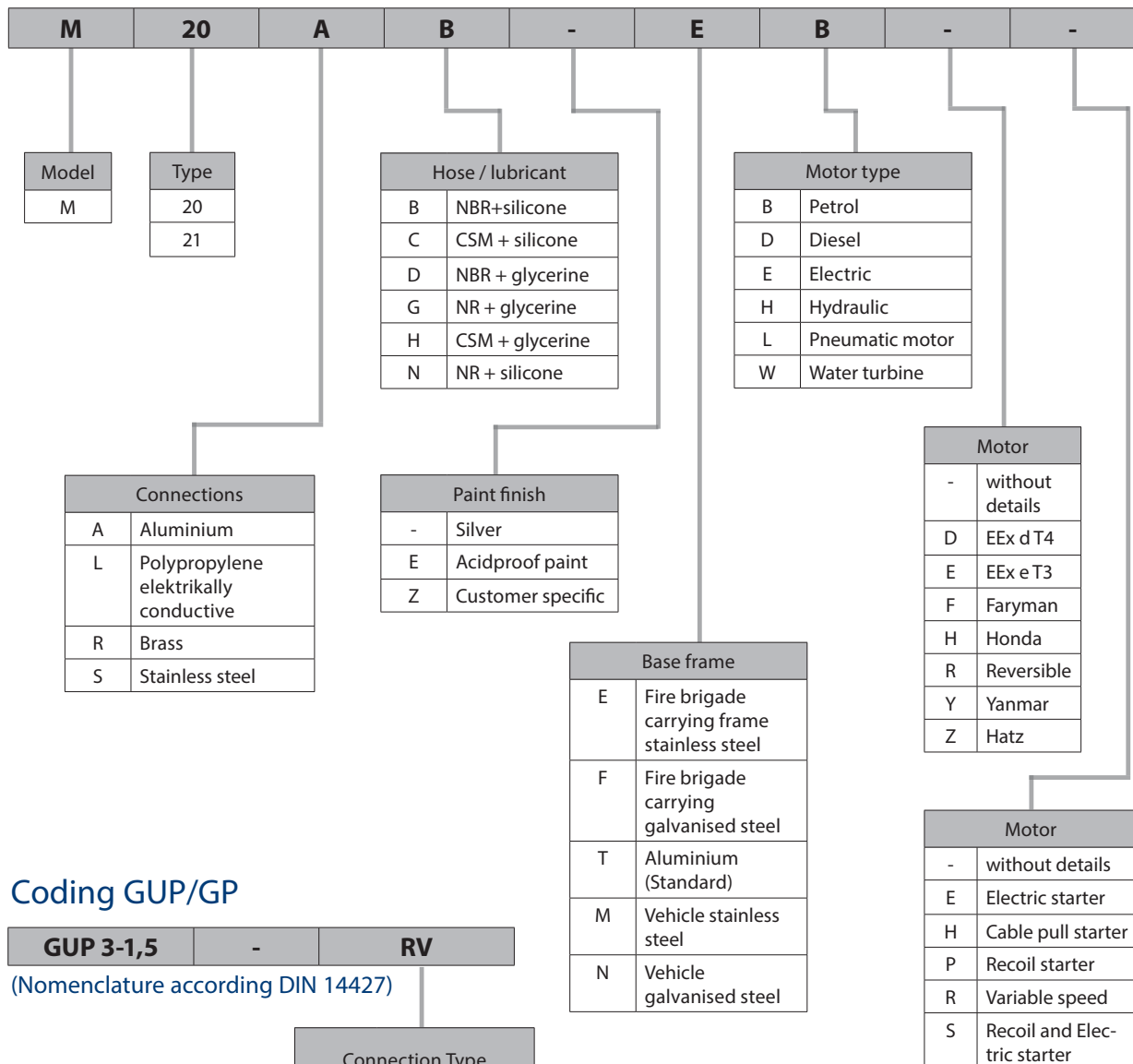


Once the second sliding shoe compresses the hose, a pumping chamber is formed. This volume corresponds exactly to one-third of the pump capacity per rotation. The rotation of the rotor presses the medium inside the hose towards the outlet on the discharge side. During each opening of the hose a vacuum is created on the suction side ensuring constant suction. It also takes place when the hose is empty giving high suction lift conditions.



With each rotation the pumping chamber is reformed and the suction capability is renewed.

### Coding M300



### Coding GUP/GP

|                  |          |           |
|------------------|----------|-----------|
| <b>GUP 3-1,5</b> | <b>-</b> | <b>RV</b> |
|------------------|----------|-----------|

(Nomenclature according DIN 14427)

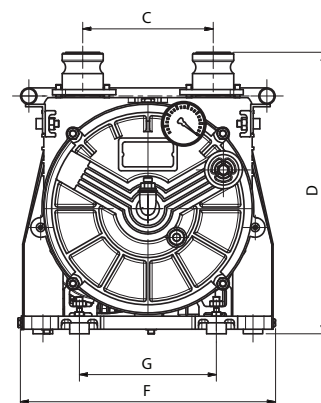
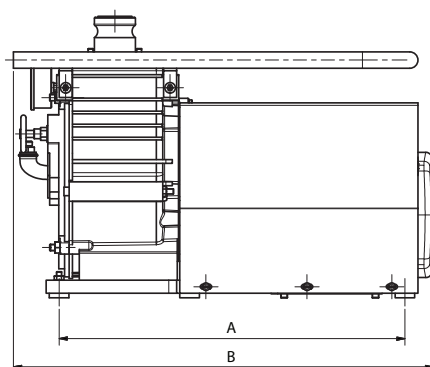
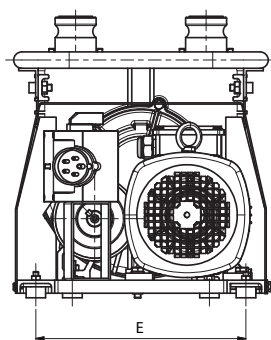
| Connection Type |                                    |
|-----------------|------------------------------------|
| RV              | Screw pipe sconnection DIN 11851   |
| TW              | Tank truck coupling DIN EN 14420-6 |

|                 |           |          |
|-----------------|-----------|----------|
| <b>GP 20/10</b> | <b>EX</b> | <b>-</b> |
|-----------------|-----------|----------|

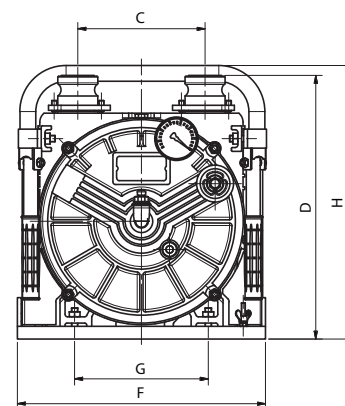
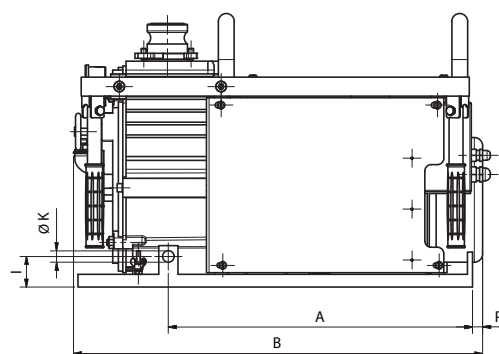
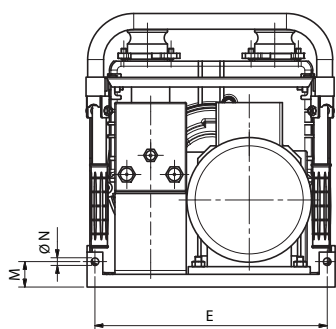
| Certification | Accessories |              |
|---------------|-------------|--------------|
| ATEX          | -           | none         |
|               | L           | light socket |

## M300 - Dimensions

### M300



| Dimensions (mm) | M20E + reversible | M20B |
|-----------------|-------------------|------|
| A               | 530               | 530  |
| B               | 644               | 628  |
| C               | 200               | 200  |
| D               | 422               | 432  |
| E               | 323               | 323  |
| F               | 391               | 390  |
| G               | 210               | 210  |

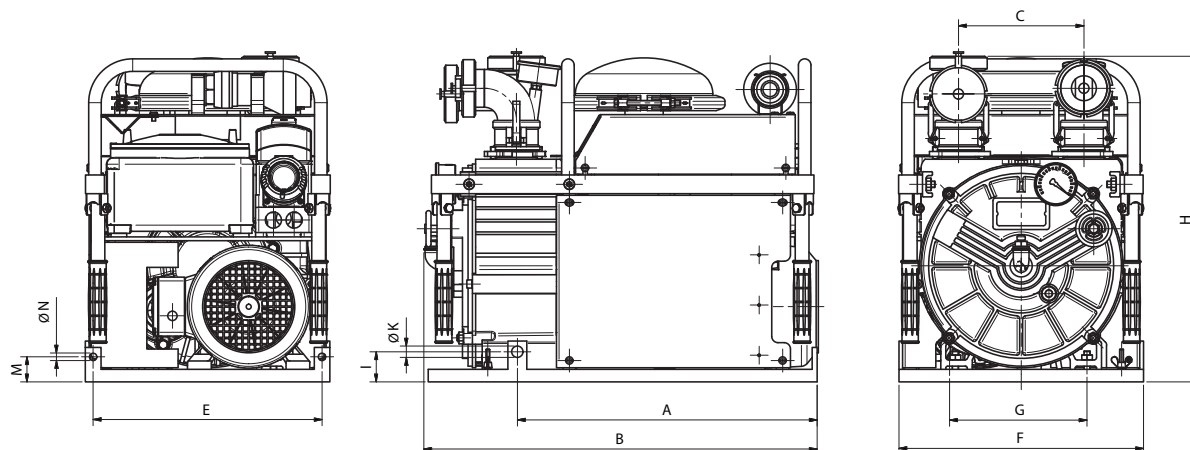


| Dimensions (mm) | M20Ex | M20D | M20 H/P/W |
|-----------------|-------|------|-----------|
| A               | 478   | -    | 478       |
| B               | 643   | 665  | 620       |
| C               | 200   | 200  | 200       |
| D               | 415   | 451  | 415       |
| E               | 365   | -    | 365       |
| F               | 390   | 510  | 390       |
| G               | 210   | 210  | 210       |
| H               | 430   | 507  | 430       |
| I               | 48    | -    | 48        |
| K               | 18    | -    | 18        |
| M               | 40    | -    | 40        |
| N               | 12    | -    | 12        |
| P               | 16    | -    | -         |



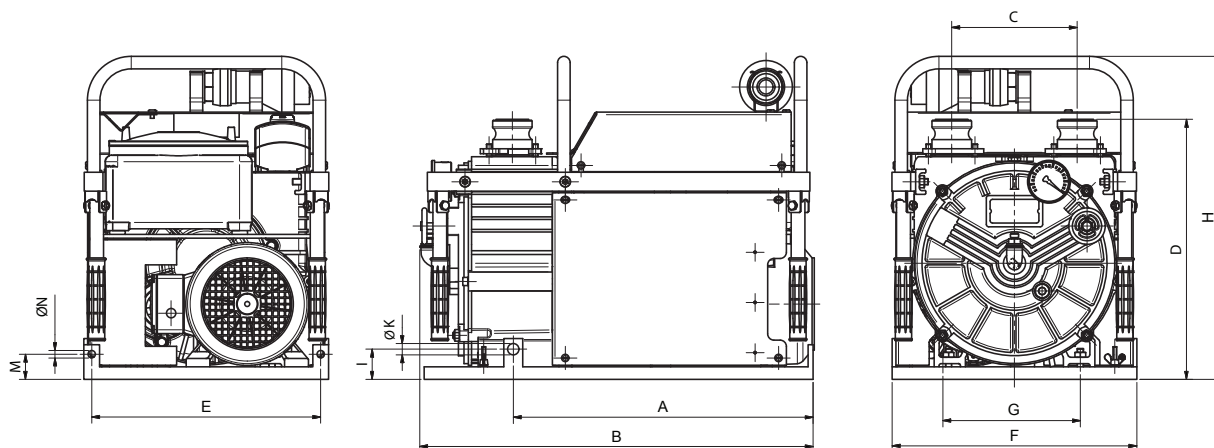
## GUP 3-1,5 & GP20/10 Ex - Dimensions

### GUP 3-1,5



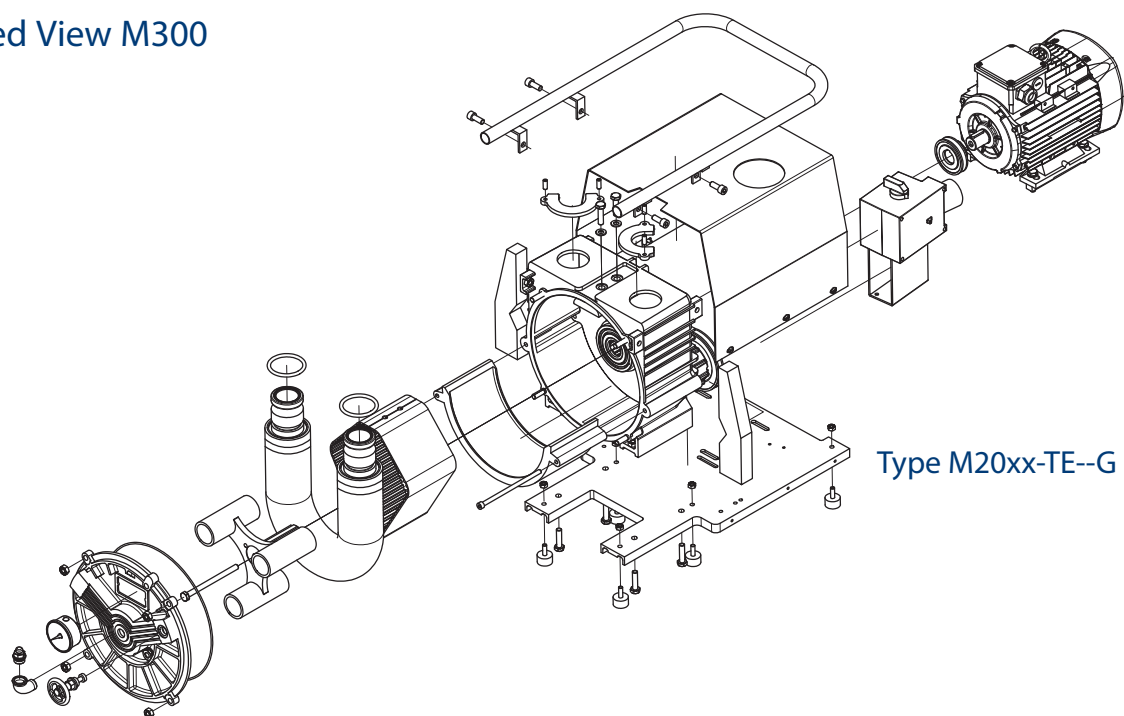
| Dimensions (mm) | GUP 3-1,5 | GP 20/10 Ex |
|-----------------|-----------|-------------|
| A               | 478       | 478         |
| B               | 620       | 620         |
| C               | 200       | 200         |
| D               | -         | 415         |
| E               | 365       | 365         |
| F               | 390       | 390         |
| G               | 210       | 210         |
| H               | 520       | 515         |
| I               | 48        | 48          |
| K               | 18        | 18          |
| M               | 40        | 40          |
| N               | 12        | 12          |

### GP20/10 Ex

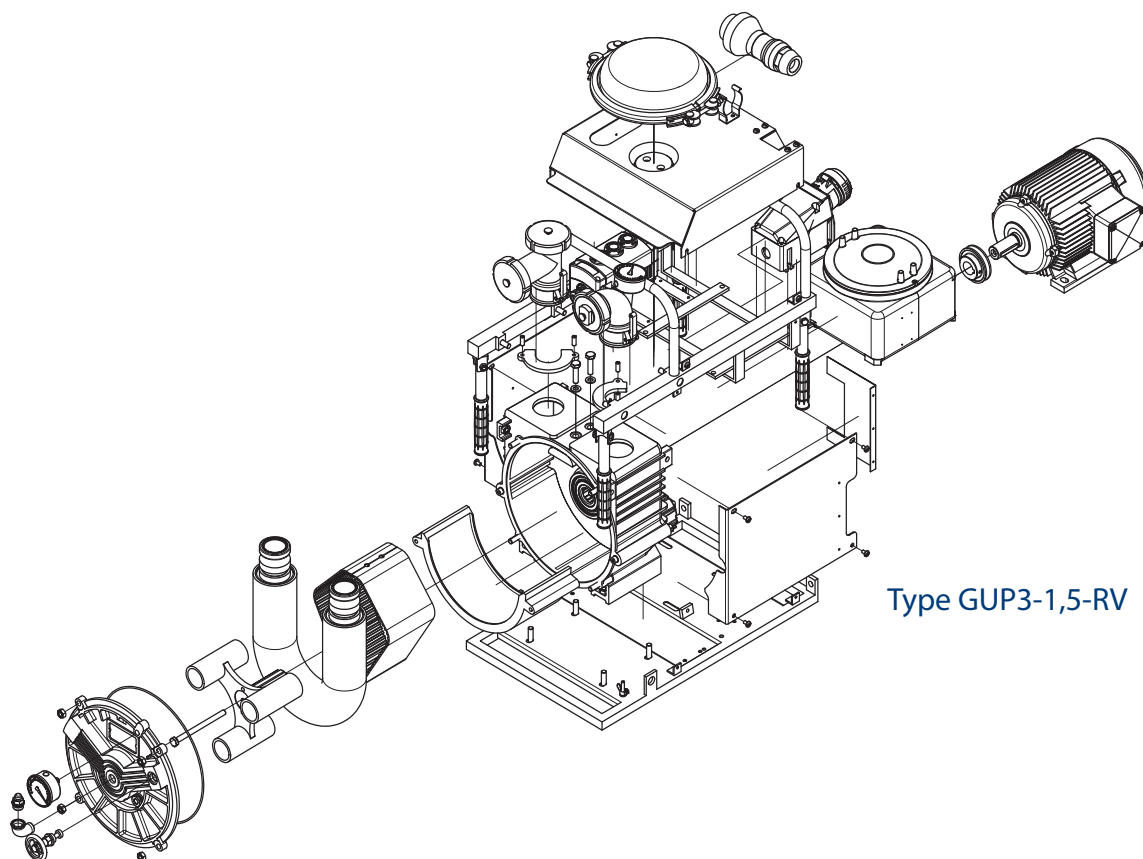


## Exploded view M300 and GUP/GP

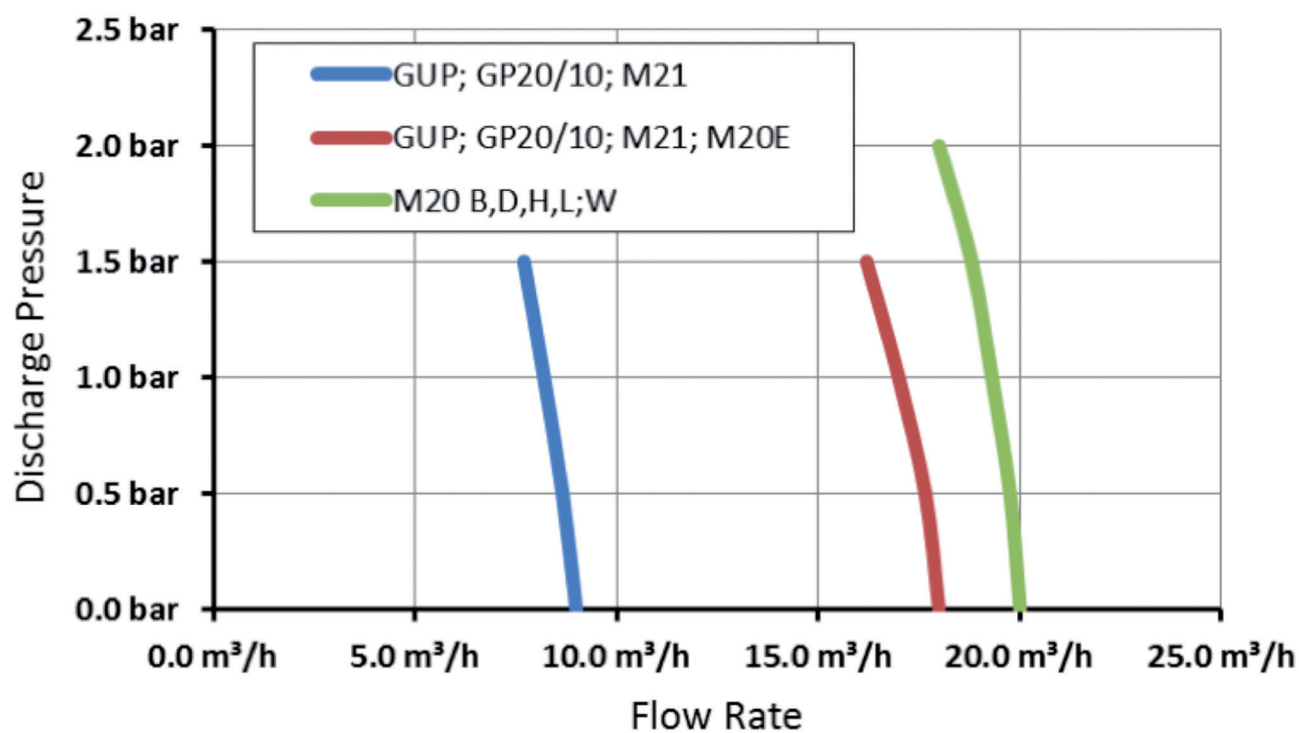
### Exploded View M300



### Exploded View GUP/GP



### Performance Curves



## Accessories

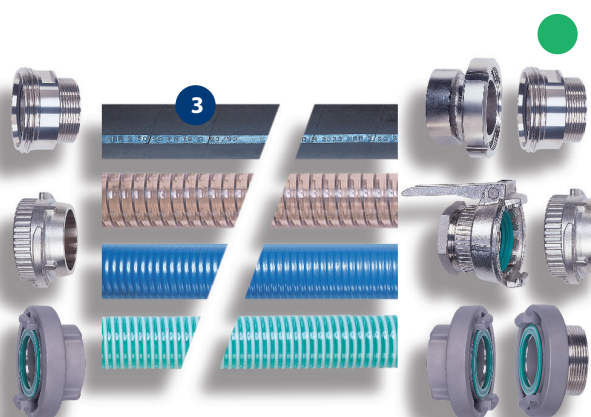
ELRO pumps for hazardous material are available with a variety of accessories suitable for any application.

- 1 CL quick release couplings, elbows, Storz couplings and tank vehicle couplings made of stainless steel (only for GP 20/10 Ex)
- 2 Pulsation damper made of stainless steel with T-piece (only for GP 20/10 Ex)
- 3 Suction/discharge hoses are available in the nominal widths of 1" to 4" and are provided with suitable coupling systems completely pressure-tested. Standard spiral hoses with plastic and steel

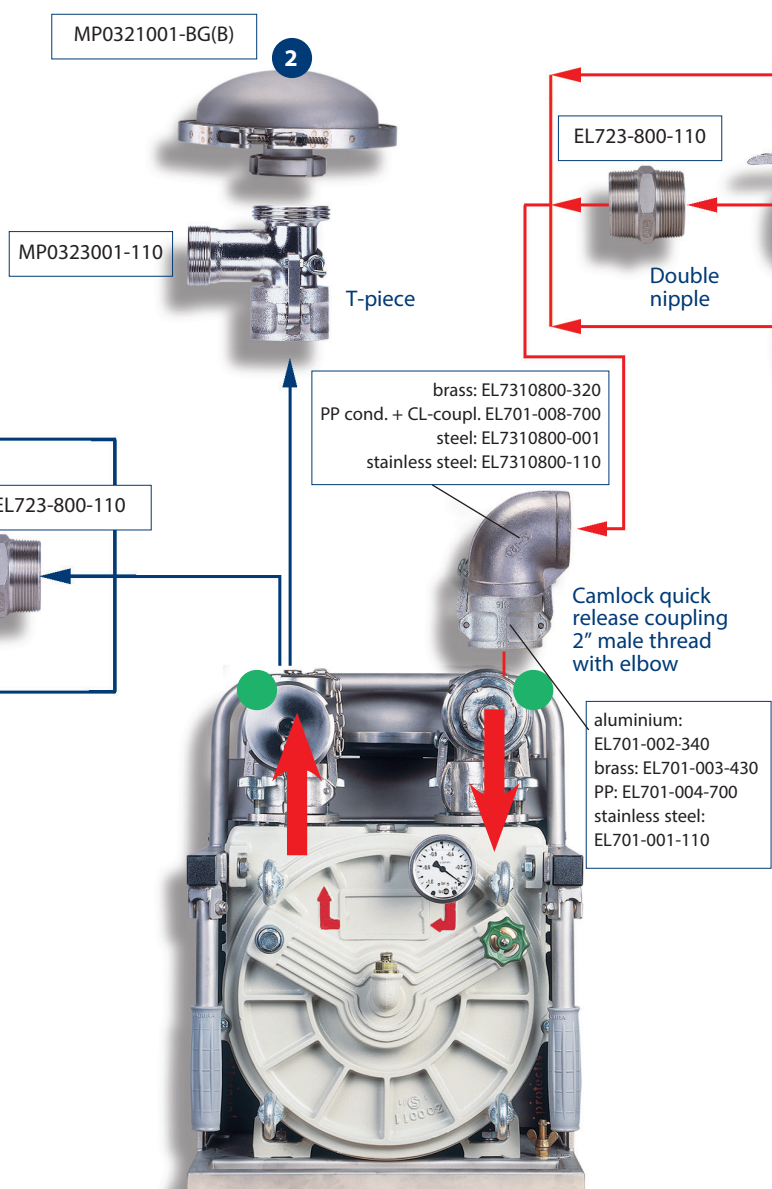
reinforcement, hoses for chemical applications or suction/discharge hoses approved for food applications.

- 4 180 litre transport drum made of stainless steel with filling equipment
- 5 Hose cleaning device and balls in different designs
- 6 Suction baskets, flat suction nozzle, special suction pipes and residue suction nozzles made of various materials
- 7 Vacuum hose for the ELRO disposal system

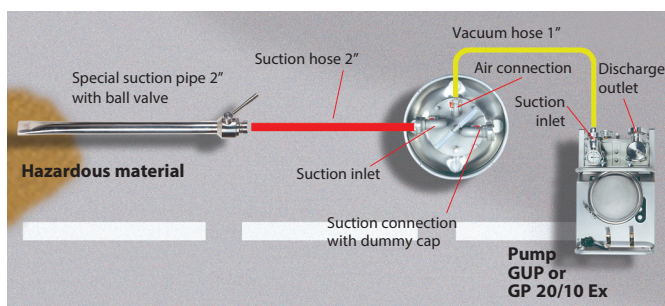
## Discharge Side Accessories



**Couplings for hazardous material pump GUP3-1.5, only dairy pipe screw joints DIN 11851**

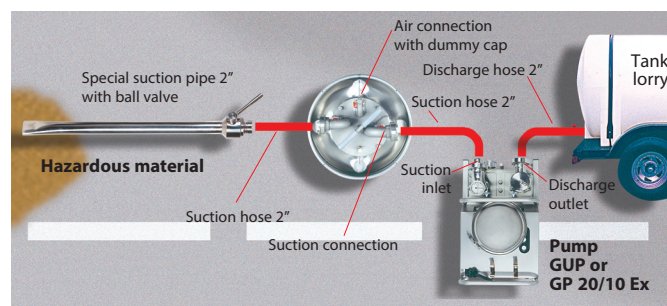






### Filling the Transport Drum

For the pumping of small fluid quantities contaminated by solids the hazardous material pump and the transport drum is used. The contaminated fluid is directly pumped into the drum. The pump does not come in contact with the fluid.



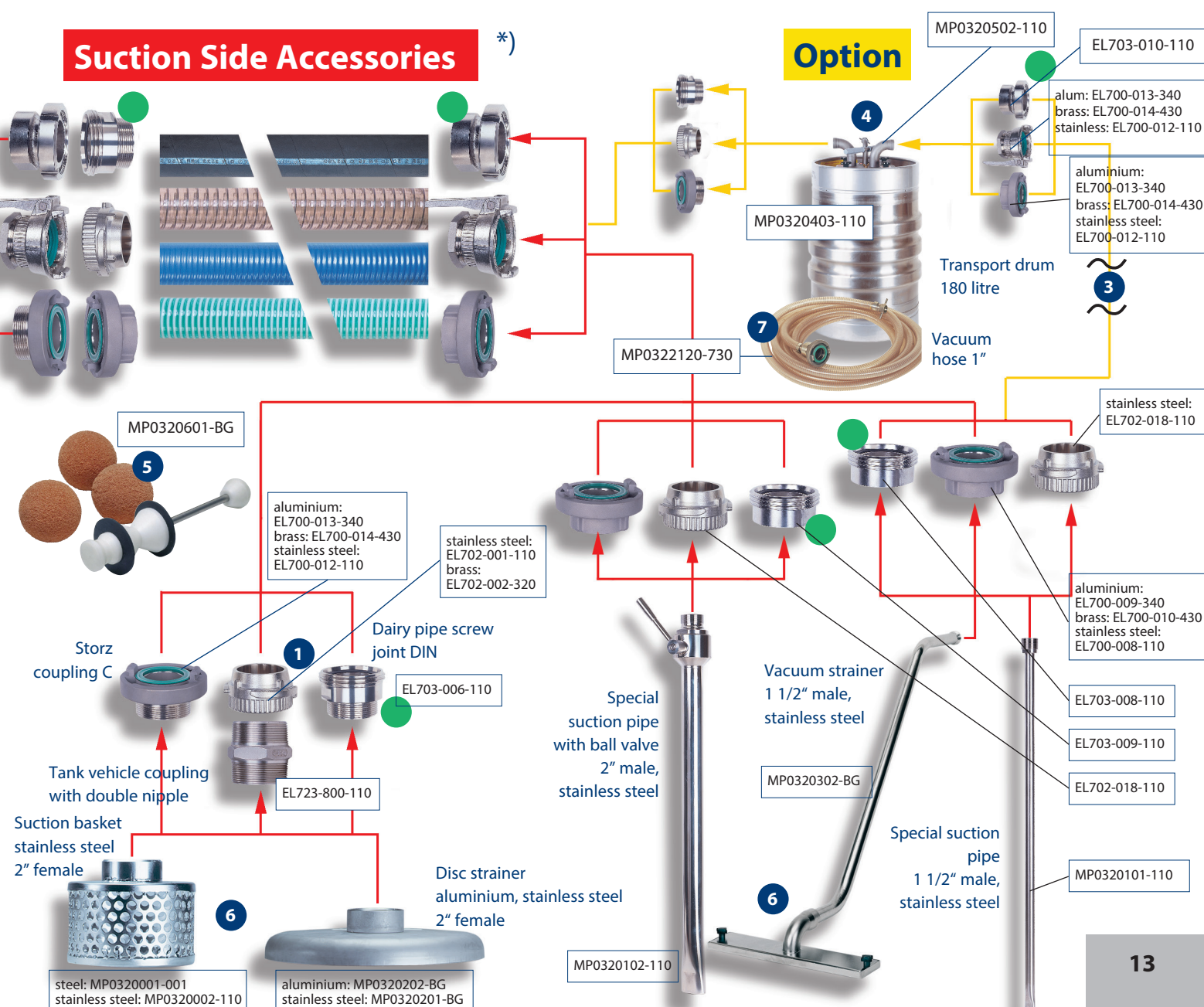
### Transport Drum as Dirt Separator

If a tank vehicle is available for the removal of the hazardous material, the transport drum is used as a dirt separator. In this way all remaining hazardous material can be removed. Solids are separated in the drum and kept away from pump and tank.

## Suction Side Accessories

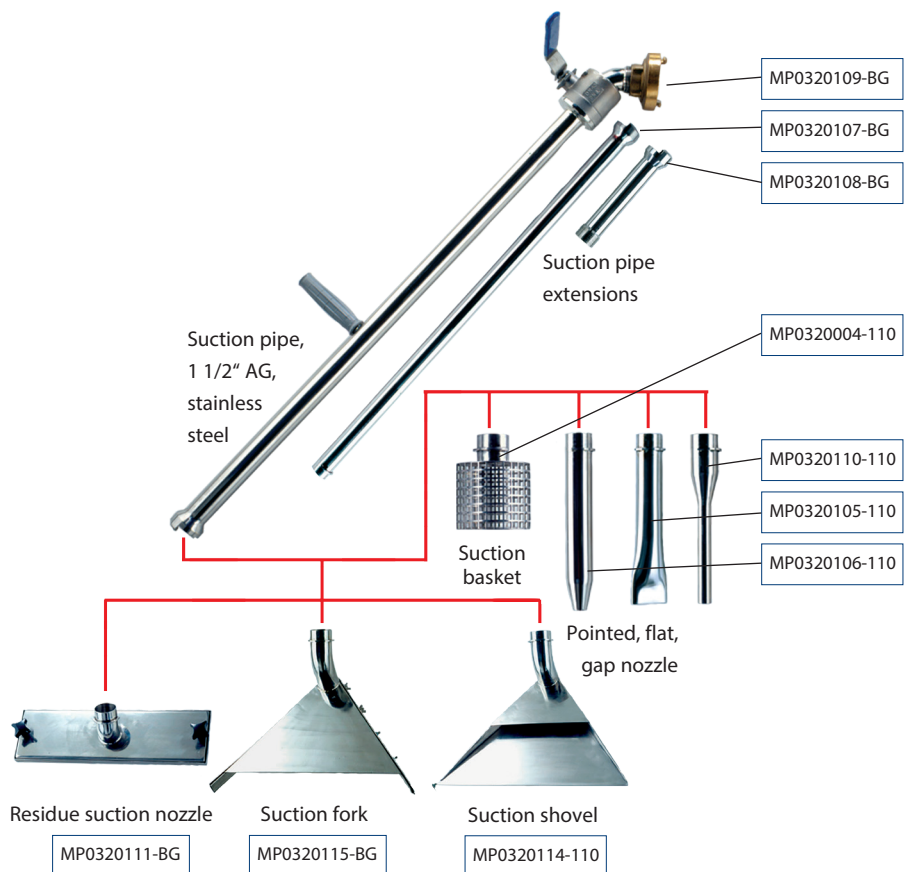
\*)

## Option





## Accessories



[illegible]

# ELRO®

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