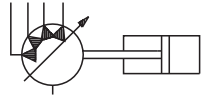




- Subject to modifications -



Piston pump  
PMW



- Air-actuated multiplunger pump
- Capable of delivering both oil and grease up to consistency class 3

**Use:**

- As feed pump with pneumatic drive
- As cycle-lubrication system in conjunction with spraying nozzles

**Models:**

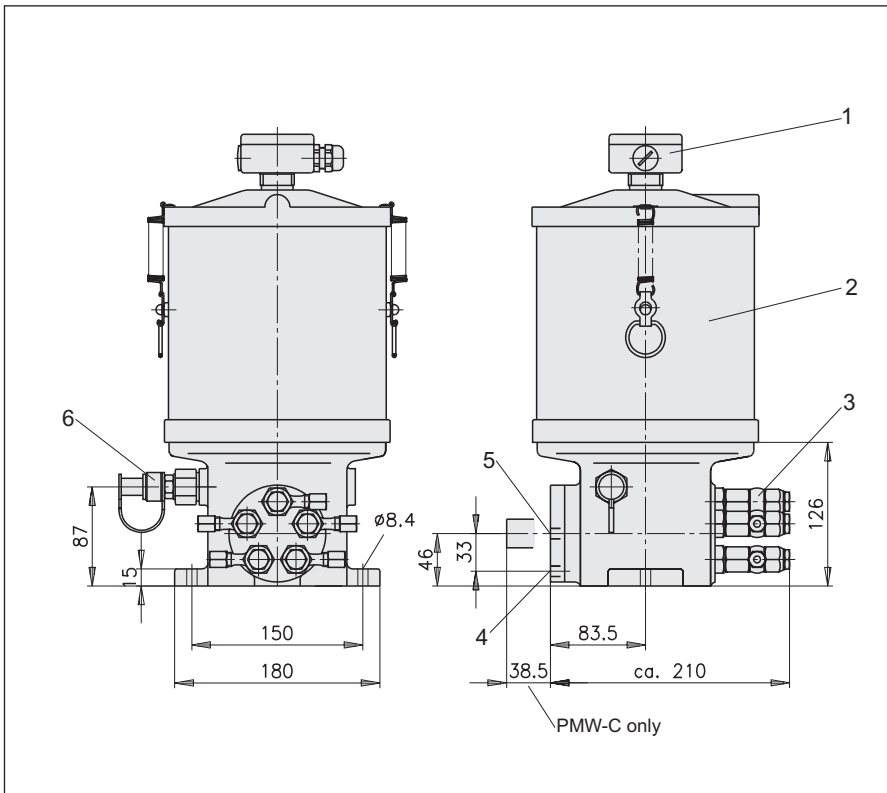
- PMW-A** Driven and reset by means of compressed air.
- PMW-B** Driven by compressed air, reset by means of spring force.
- PMW-C** Driven by spring force, reset by means of compressed air.

**General description:**

As much as five pump elements can be fitted into the piston pump. Each element is capable of delivering 0,08 or 0,15 cm<sup>3</sup>/stroke at maximum. The delivery volume can be adjusted continuously. The reservoirs are made of steel sheet or transparent polyester and provide a capacity ranging between 2 and 30 litres. Reservoir capacity can be monitored electrically.

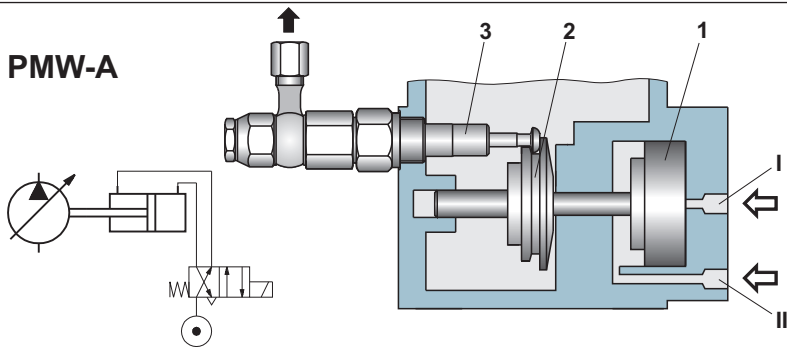
**Note to the dimensional drawing:**

- 1 Level checking
- 2 Reservoir
- 3 Pumpelement
- 4 Compressed air supply II G1/8
- 5 Compressed air supply I G1/8
- 6 Filling connector





**PMW-A**



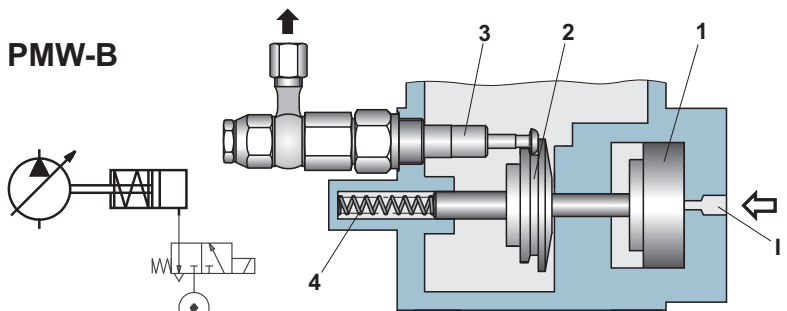
**Pressure stroke:**

By pressurisation of compressed air line I and pressure relief of compressed air line II, pneumatic piston 1 and driver 2 are pushed to the left. Concurrently, the pump element 3 hooked into drive 2 makes a pressure stroke and delivers the lubricant from the proportioning section to the outlet.

**Intake stroke:**

After pressurisation of compressed air line I, the pneumatic piston is shifted back into its home position. Concurrently, the pump element 3 hooked into drive 2 makes an intake stroke and draws lubricant into the proportioning section.

**PMW-B**



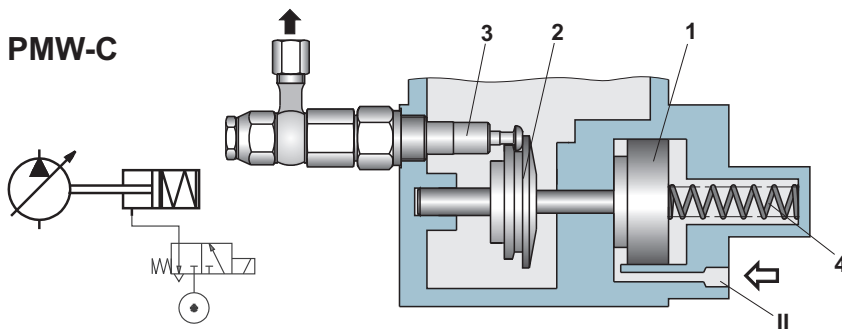
**Pressure stroke:**

By pressurisation of compressed air line I, pneumatic piston 1 and driver 2 are pushed to the left. Concurrently, the pump element 3 hooked into drive 2 makes a pressure stroke and delivers the lubricant from the proportioning section to the outlet.

**Intake stroke:**

After pressure relief in compressed air line I, pressure spring 4 shifts the pneumatic piston back into its home position again. Concurrently, the pump element 3 hooked into drive 2 makes an intake stroke and draws lubricant into the proportioning section.

**PMW-C**



**Intake stroke:**

By pressurisation of compressed air line II, pneumatic piston 1 and driver 2 are pushed to the right. Concurrently, the pump element 3 hooked into drive 2 makes an intake stroke and draws lubricant into the proportioning section.

**Pressure stroke:**

After pressure relief of compressed air line II, pressure spring 4 shifts the pneumatic piston back into its home position again. Concurrently, the pump element 3 hooked into drive 2 makes a pressure stroke and delivers lubricant from the proportioning section to the outlet.

**Common technical data:**

Delivery medium: Oil and grease  
up to consistency class 3;  
from consistency class 1 on,  
a reservoir with follow-up  
piston is required

Lubricant: The intended lubricant must be suitable for use with centralized lubrication equipment.

Weight (without reservoir): 2,7 kg  
(for further weights, see "reservoir" description)

Material:  
Reservoir: Polyester, fibreglass reinforced, transparent or steel sheet, galvanised  
Pump body: Aluminium  
Pump element: Steel

Temperatur range: -20 ... +80 °C  
In case of low temperatures, the grease's penetration shall be observed. When NLGI-class 3 grease is used, functional safety may already be restricted below room temperature.

**PMW-A and PMW-B technical data :**

Delivery volume:  
Pump element 6: 0,08 cm<sup>3</sup>/stroke  
Pump element 8: 0,15 cm<sup>3</sup>/stroke

Number of strokes at max.: 75 min<sup>-1</sup>

Number of pump elements: 1 ... 5

Delivery pressure:  
with 5 pump elements 6  
and maximum driving pressure: 125 bar  
with 5 pump elements 8  
and maximum driving pressure: 70 bar

Driving pressure (air): 4 ... 10 bar

**PMW-C technical data:**

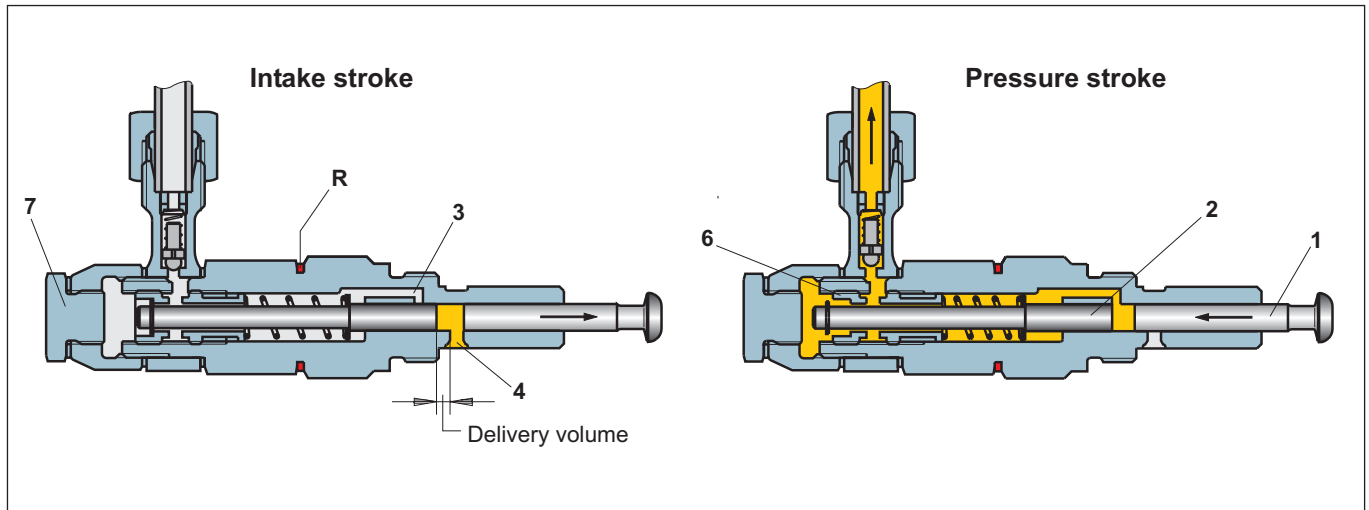
Delivery volume:  
Pump element 6: 0,08 cm<sup>3</sup>/stroke  
Pump element 8: 0,15 cm<sup>3</sup>/stroke

Number of pump elements: 1  
(more details available on request)

Delivery pressure:  
with pump elements 6 60 bar  
with pump elements 8 35 bar

Air pressure: 3 ... 10 bar

- Subject to modifications -



### Pump elements mode of operation:

Delivery piston **1** and control piston **2** perform the **intake stroke**. Concurrently, the driver actuates delivery piston **1**, and the spring actuates control piston **2**. The control piston locks pressure hole **3** and stops, depending on the delivery volume preset, at a certain position. The delivery piston keeps on moving, whilst a vacuum is being built up in the proportioning section. When delivery piston has opened intake hole **4**, lubricant is drawn from the reservoir.

During **pressure stroke**, delivery piston **1** moves to the left. As a result, intake hole **4** will be locked. At the same time, the lubricant being present in between the delivery and control pistons, is displaced

until it releases pressure hole **3** and the delivery piston delivers the lubricant to the outlet.

The **delivery volume** can be adjusted continuously between 25 and 100% of the nominal delivery volume. After having removed lock screw **7**, the stroke is to be changed by means of the enclosed spanner through adjustment nipple **6**. When turning the nipple to the right, delivery volume will decrease. At the adjustment nipple, there is a hexagon against which a spring loaded piston is pressing radially. Thus, any independent change of the delivery volume will be prevented. At the same time, the latching serves as a measure for setting the

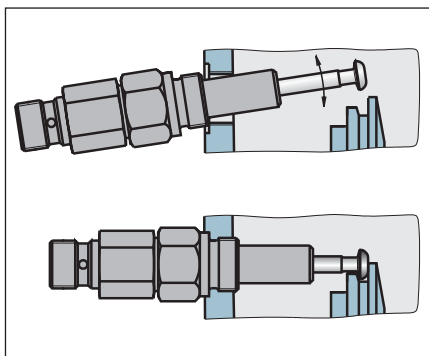
delivery volume. Six latches equal one rotation of the adjustment nipple and a reduction of the nominal delivery volume by 33%. 14 latches (minimum) equal a delivery volume reduction down to 25% of the nominal delivery volume.

When leaving the factory, the pump elements are preset to maximum delivery volume, i.e. they are set to full stroke.

The element having a piston diameter of 8 mm = 0,15 cm<sup>3</sup>/stroke is marked with a red ring "R".

- Subject to modifications -

### Mounting the pump elements:



When another pump element is to be fitted into the piston pump or an existing pump element is to be replaced, the sketch shown on the left should be followed. Insert the pump element with the delivery piston being pulled out approximately to half of its length diagonally upward into the location hole in the casing. Filling with grease the hole of the pump element that serves to receive the delivery piston facilitates insertion and commissioning. Do not place the pump element into horizontal position and screw in unless the delivery piston's head is fitting closely to the pressure ring and gearing into the latter's groove.

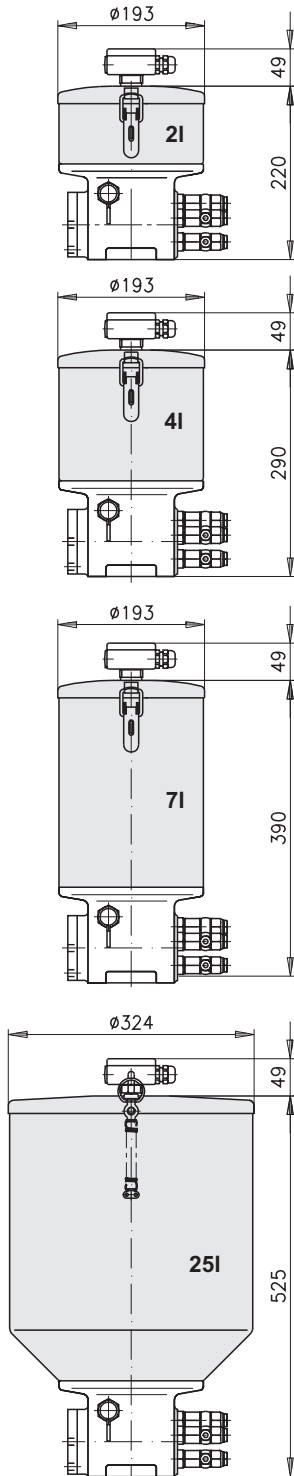
When demounting the pump element, be careful to pull it out of the casing cautiously so that the delivery piston will remain within the pump element.

### Notes to operation:

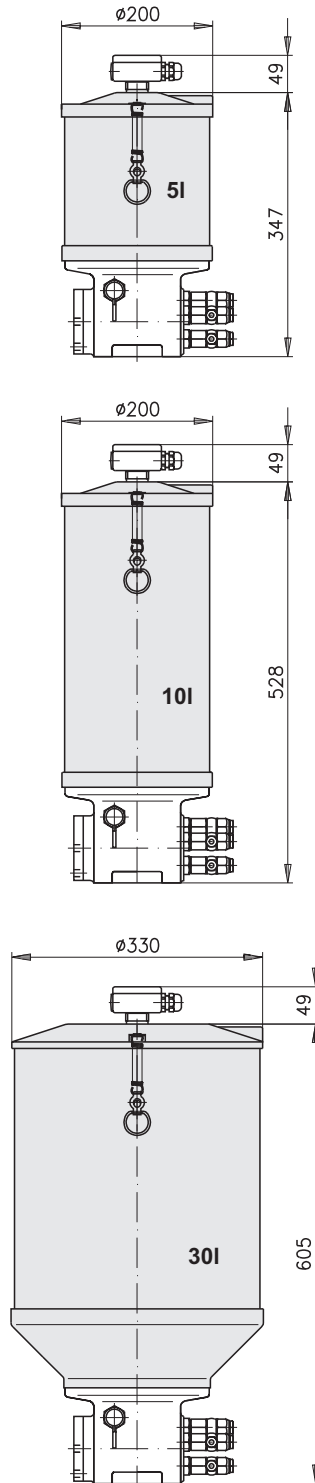
Piston pumps should be operated with clean oil or grease from original packing drums only. If, upon commissioning, filling is not done through the filling nipple, then the pump, at initial filling, should be filled with gear lubricant oil up to the reservoir's lower edge. This way, proper deaeration is ensured. The lubricant lines must be clean and have no obstructions. They shall not be connected to the lubrication points, unless the lubricant comes out free of bubbles. All connections of the delivery line shall be checked for leakages.



**Steel sheet**



**Transparent polyester**



**Reservoir:**

Deliverable are reservoirs with capacities ranging between 2l and 30l. Every pump type any of the reservoirs shown can be allocated to. When selecting the reservoir, level monitoring and lubricant need to be taken into account as well.

**Reservoir data:**

Capacity	Material	Weight
2 l	Steel, galvanised	1,0 kg
4 l		1,4 kg
7 l		2,0 kg
25 l	Polyester, fibre glass reinforced	4,6 kg
5 l		1,5 kg
10 l		1,8 kg
30 l		4,0 kg

**Reservoirs and options for level monitoring:**

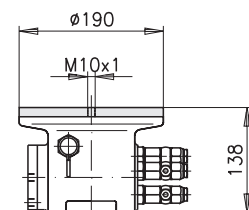
Capacity	Level monitoring
2 l	for oil: float switch minimum level
4 l	
7 l	for oil: float switch min. and max. level
25 l	
5 l	for oil: float switch min. and max. level
10 l	
30 l	for grease: follow-up piston min. and max. level

When a follow-up piston is used, the utilisable reservoir volumes are reduced as follows:

- In case of 5 and 10 litres reservoir capacities by approx. 2,5 l
- In case of 30 litres reservoir capacity by approx. 6,0 l

For more information see "level checking" description.

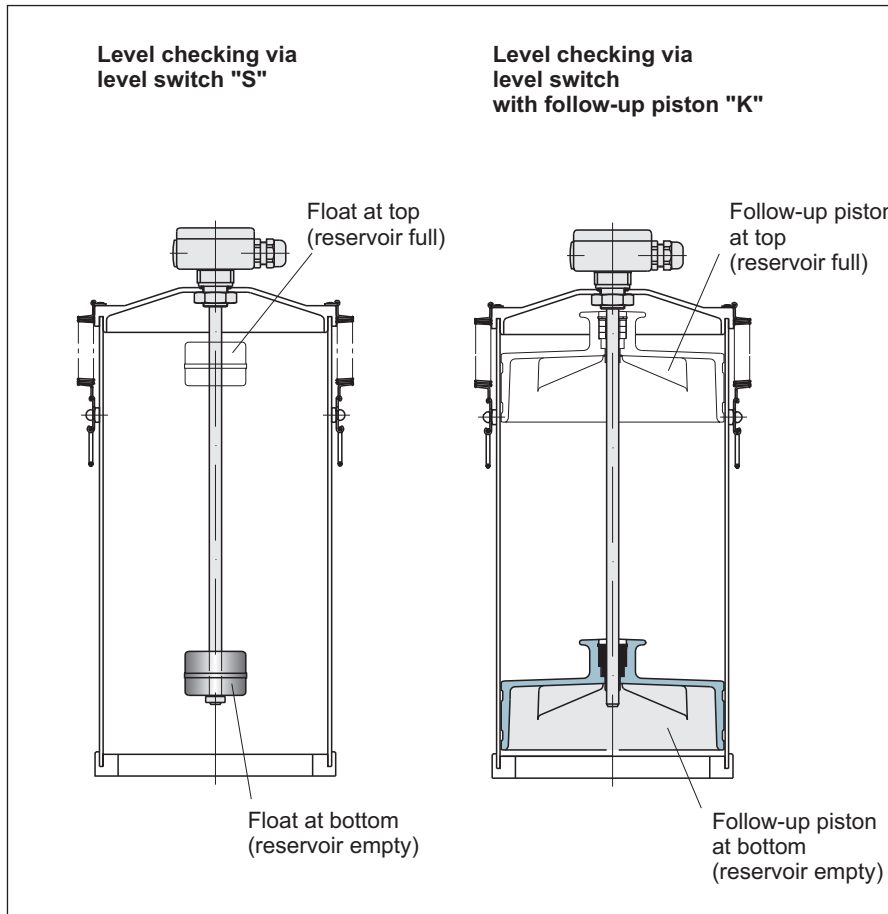
**Model without reservoir: (with cover plate)**



- Subject to modifications -



- Subject to modifications -



**Level checking:**

**Electrical data:**

Switching power at max.: 40 W / 60 VA

Switching voltage at max.: 230 VUC

Switching current at max.: 0,5A

For inductive and capacitive loads protective switchings (diode, RC module, varistor) have to be provided for.

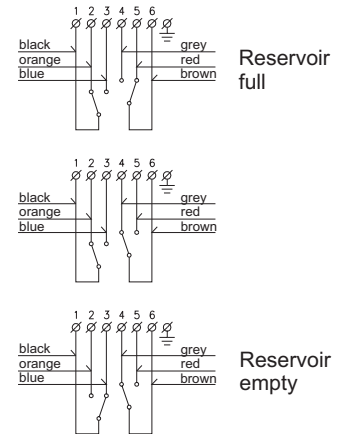
System of protection: IP 65

Connection type: Terminal screws

Cable gland: PG11

Cable cross section: 0,5 ... 1,5 mm<sup>2</sup>

**Connecting diagram:**



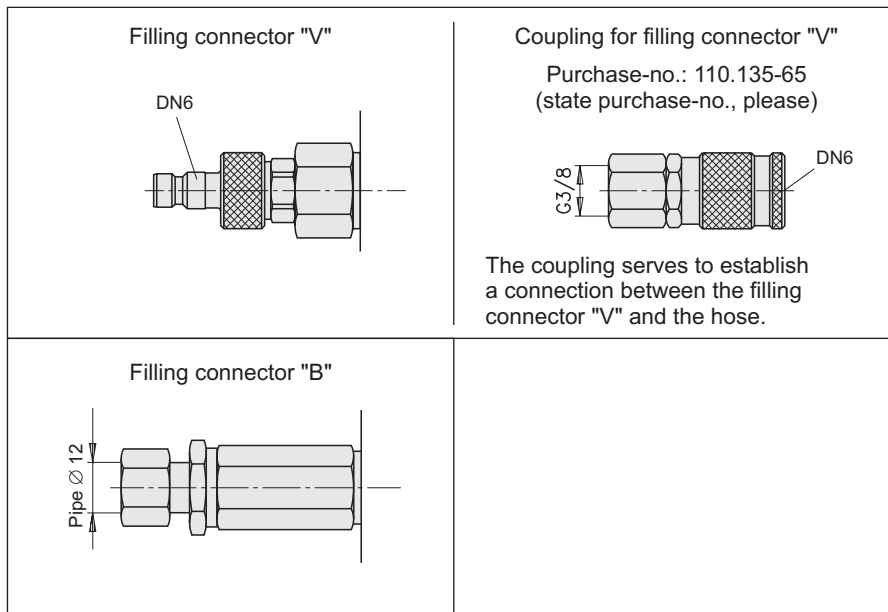
Level switch weight  
0,15 ... 0,18 kg

Follow-up piston weight  
for reservoirs: 5 and 10 l = 0,8 kg  
for reservoirs: 30 l = 2,7 kg

Level switches with follow-up pistons can only be fitted into reservoirs made of polyester.

**Filling connector:**

**Auxiliaries:**



**Spare parts:**

Filling connector "V": 110.125-65

Filling connector "B": 110.550-65

Adjusting key for pump element: 110.004-65

Sealing set: 114.140-64  
(without pneum. driving piston)

Pneumatic driving piston: 114.004-65



**Purchase-designation:**  
Piston pump



**PMW-A Piston pump**

Drive and reset by means of compressed air.

**Purchase-designation:**  
Piston pump



**PMW-B Piston pump**

Drive by compressed air, reset by means of spring force.

Reservoir capacity [l]		Element 6 with pipe connection			Element 8 with pipe connection			Filling connector	Lock screw <sup>1)</sup> number	Level checking <sup>2)</sup>	
Polyester	Steel	ø6	ø8	ø10	ø6	ø8	ø10			Oil	Grease
5	2							without 0		Oil 0 without level switch	
10	4	0...5	0...5	0...5	0...5	0...5	0...5	with B	0...4	Grease F with follow-up piston, without level switch	
30	7	altogether, 5 elements are possible!								with V	Grease K with level switch and follow-up piston
without reservoir	25										Oil S with level switch, without follow-up piston

**Purchase-example:**

PMW-A pump; with 10 l polyester reservoir; 3 elements 6 with pipe connection ø6 and 1 element 6 with pipe connection ø8; filling

conector V, 1 lock screw, level checking by means of level switch and follow-up piston.

**Purchase-designation:**

**PMW-A/10/3/1/0/0/0/0/V/1/K**

**Purchase-designation:**  
Piston pump



**PMW-C Piston pump**

Drive by means of spring force, reset by means of compressed air

Reservoir capacity [l]		Delivery pressure	Element		Pipe connection	Filling connector	Lock screw <sup>1)</sup> number	Level checking <sup>2)</sup>	
Polyester	Steel		ø6	ø8				Oil	Grease
5	2	A	on request		6	without 0	4	Oil 0 without level switch	
10	4		0...1	0...1	8	with B		Grease F with follow-up piston, without level switch	
30	7		altogether 1 element possible at maximum!		10	with V		Grease K with level switch and follow-up piston	
without reservoir	25							Oil S with level switch, without follow-up piston	

**Purchase-example:**

PMW-C pump; with 10 l polyester-made reservoir; delivery pressure A 1 element 8 with pipe connection ø8; filling connector V,

4 lock screws, level checking by means of level switch and follow-up piston.

**Purchase-designation:**

**PMW-C/10/A/0/1/8/V/4/K**

<sup>1)</sup> All element-free connectors have to be locked with lock screw!

<sup>2)</sup> Level checking devices "K" and "F" are possible in case of polyester-made reservoirs only!

- Subject to modifications -