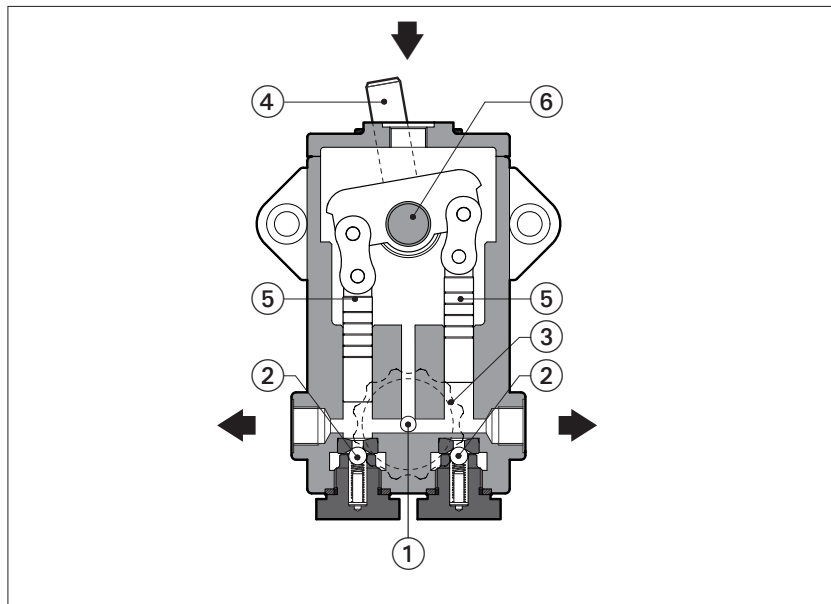


# Hand pumps type PM

2-plunger



PM are double alternate-acting hand pumps with simple and rugged construction for minimum service and long operating life.

They are provided with one by-pass valve ① which connects directly the delivery ports with the inlet port through the delivery valves ②. The by-pass valve is operated by a handwheel ③.

Pumping operation is made by alternative movement of the lever ④ and consequently movement of plungers ⑤, after having locked the by-pass valve by means of the handwheel.

The splined shaft attachment ⑥ permits to turn the lever shaft in the best position.

On the pump body are available two outlet ports (one supplied plugged).

Suitable for hydraulic oils according to DIN 51524...535 or synthetic fluids having similar lubricating characteristics.

Displacements: from 6 to 20 cm<sup>3</sup> for double stroke.

Max pressure 500 bar

## 1 MODEL CODE

**PM**

–

**106**

**\*\***

**/\***

2-plunger  
hand pump

Displacement, see section 2

**106** = 6 cm<sup>3</sup>/double stroke

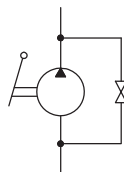
**112** = 12 cm<sup>3</sup>/double stroke

**120** = 20 cm<sup>3</sup>/double stroke

Seals material:  
omit for NBR (mineral oil  
& water glycol)  
**PE** = FPM

Series number

## 2 OPERATING CHARACTERISTICS with hydraulic fluid having a viscosity of 24 mm<sup>2</sup>/s and 40°C

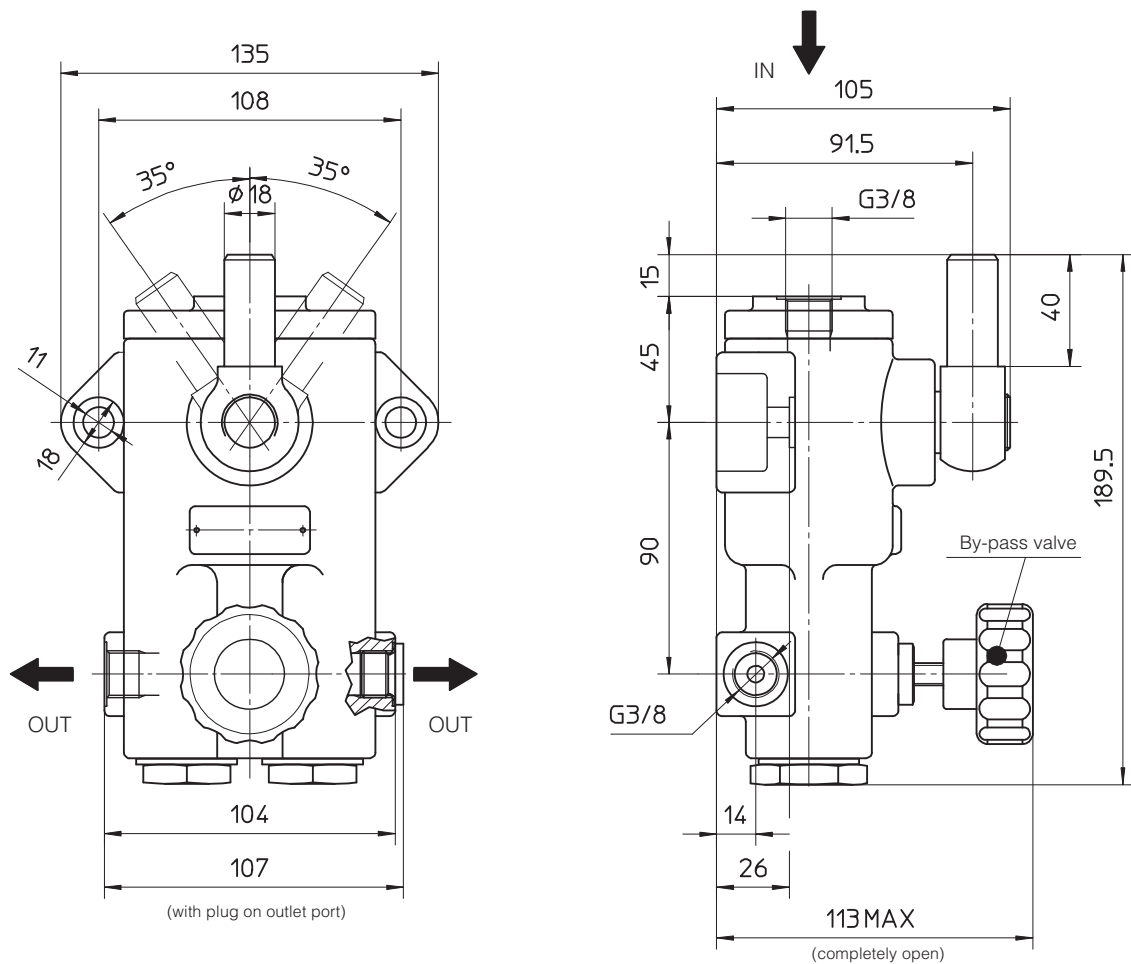


| Model         | Displacement for double stroke [cm <sup>3</sup> ] | Max pressure [bar] | Shaft rotation angle [degree] | Maximum torque required [Nm] |
|---------------|---|--------------------|-------------------------------|------------------------------|
| <b>PM-106</b> | 6   | 500                | ± 35°                         | 139                          |
| <b>PM-112</b> | 12  | 250                | ± 35°                         | 133                          |
| <b>PM-120</b> | 20  | 120                | ± 35°                         | 116                          |

### 3 MAIN CHARACTERISTICS OF HAND PUMP TYPE PM

|                           |  |
|---------------------------|--|
| Installation position     | Vertical position, with inlet port facing upward to ensure complete case filling   |
| Commissioning             | <p>Pumping operation is made by alternative movement of the lever after closing by-pass valve.</p> <p><b>Note:</b> the by-pass valve connects the delivery ports with inlet port and when locked it could allow some leakage from outlet ports.</p> <p>Two opposite outlet ports are available for pump delivery: one of these is supplied plugged.</p> <p>The pumps are supplied without lever arm that could be made by a simple tube with <math>\varnothing 18</math> mm inside diameter. Usually a length of 500 to 600 mm is appropriate.</p> <p>Lever position can be selected by proper assembling of lever on splined shaft.</p> |
| Ambient temperature       | from -20°C to +70°C  |
| Fluid                     | Hydraulic oil as per DIN 51524...535; for other fluids see section <b>I</b>  |
| Recommended viscosity     | 10 ÷ 100 mm <sup>2</sup> /sec at 40°C (ISO VG 15 - 100)  |
| Fluid contamination class | ISO 4401 class 21/19/16 NAS 1638 class 10 (filters at 25 $\mu$ m value with $\beta_{25} \geq 75$ recommended)  |
| Fluid temperature         | -20°C +60°C      -20°C +50°C (water glycol)      -20°C +80°C (/PE seals)   |

### 4 DIMENSIONS [mm]



Mass: 4,6 Kg