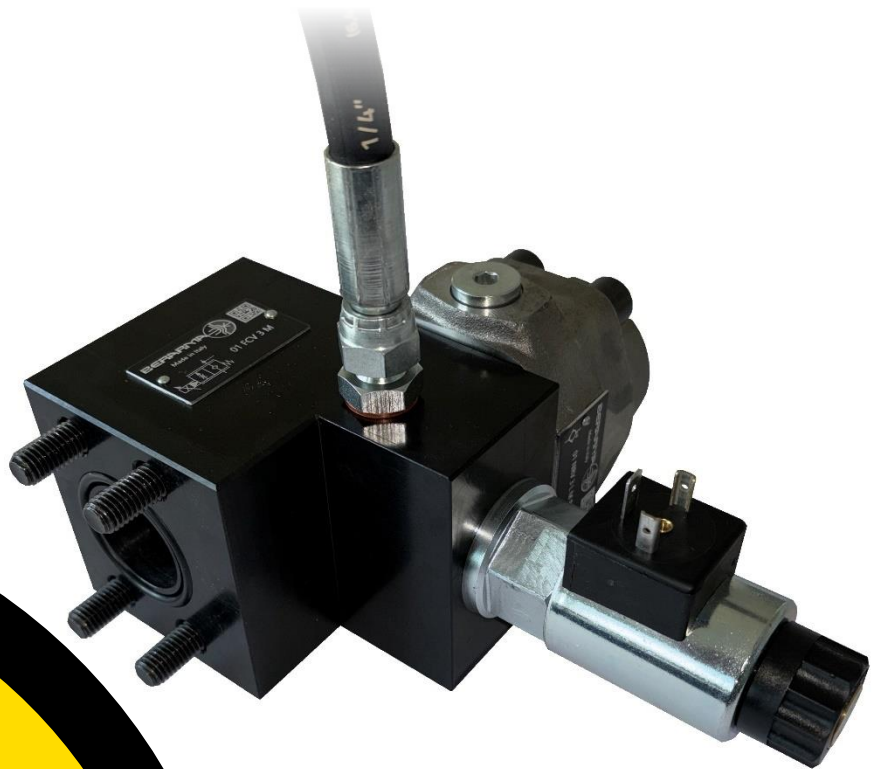


Proportional Flow Controls for PHP Pumps

# FCV



Series Name	Size	Flow rate [l/min]	Max. Pressure [bar]
01 FCV 2 M	1" SAE J518 3000 series DN25	80	250
01 FCV 3 M	1"1/4 SAE J518 3000 series DN32	160	250

## General description

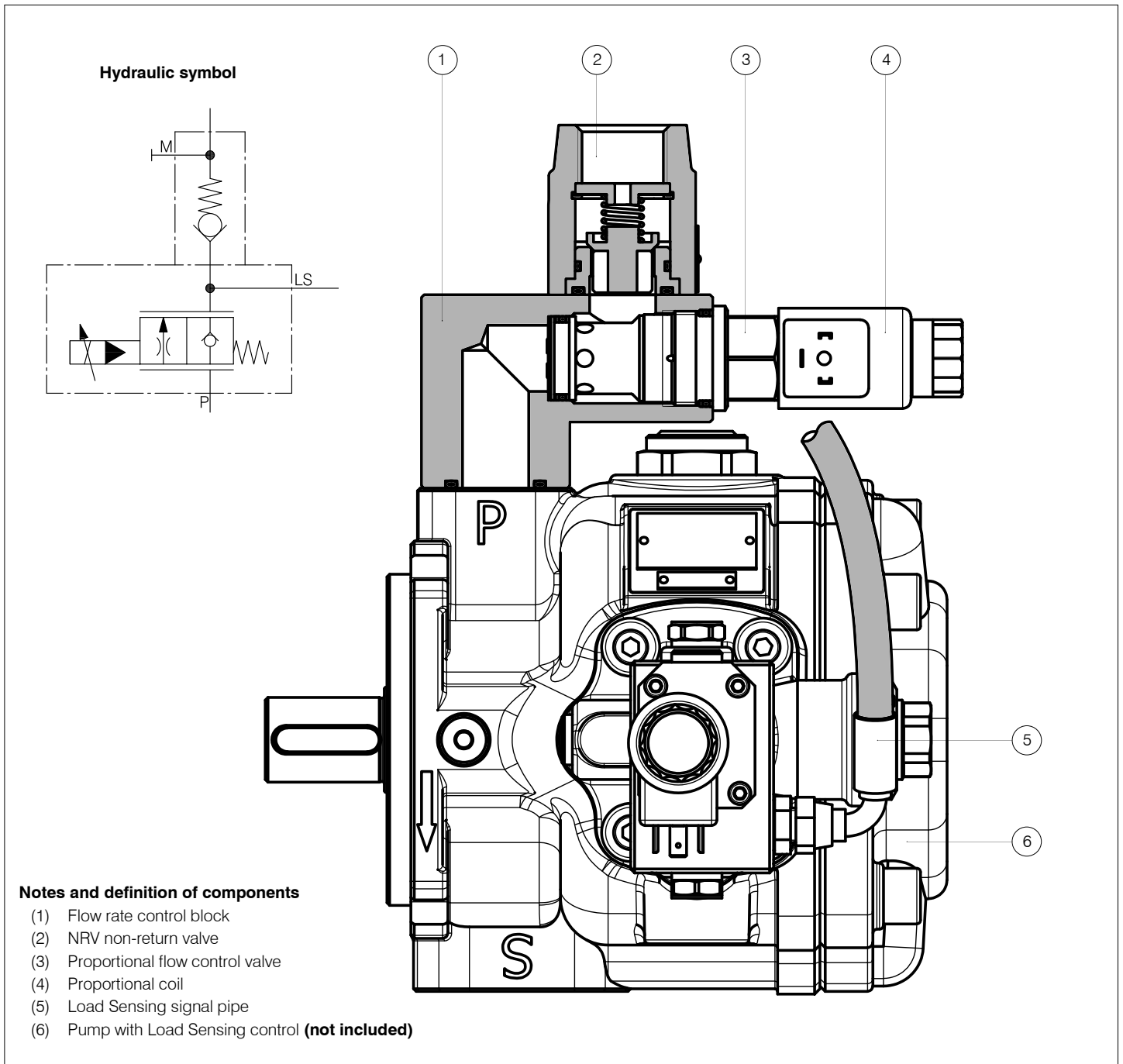
The FCV proportional flow controls have been designed to best integrate with Berarma PHP 2 and PHP 3 pumps but can also be used on others hydraulic systems thanks to their compactness and SAE normalized connections. The installation of the FCV proportional flow controls on the outlet of the PHP 2 and PHP 3 pumps allows to change the pump flow rate value independently by the working pressure. The FCV controls allow to make adjustments with high dynamics and accurate precision, controlled directly by PLC or potentiometer. In combination with the **PCLS005** proportional pressure control, available on **PHP** pumps, energy savings are maximized and complete proportional control of pressure and flow rate in open loop **P/Q** can be achieved.

FCV controls are also equipped with:

- Flexible pipe for Load Sensing pressure signal taken after the flow rate adjustment valve
- NRV non-return valve (check valve) which is also used as protection against pressure peaks from the system
- Pressure gauge port connection for measuring the pressure after the NRV non-return valve

There are 2 types of coils available to be installed on the flow control valve:

- Proportional coil that needs an external amplifier - **standard**
- Proportional coil with integrated electronics that only needs power and control signals (for example from PLC) - **optional**



## Technical data

Ordering Code	01 FCV 2 M	01 FCV 3 M	Electrical properties	
Inlet standard	SAE J518 – 3000 series		Supply voltage	24 VDC ±10%
Inlet dimension	DN 25	DN 32	Maximum current	590 mA
Outlet	1" Gas BSP	1"1/4 Gas BSP	Power consumption	22 W
Nominal flow rate (l/min) at 14bar	80	160	Nominal coil resistance at 50°C	37.2 Ω ±5%
Nominal flow rate (l/min) at 70bar	140	320	Nominal coil resistance at 20°C	26.2 Ω ±5%
Max working pressure (bar)	250		Max coil temperature at 20°C	105°C
Hydraulic fluid <small>For other fluids please contact Berarma technical sales service</small>	HM according to ISO 6743-4 HLP according to DIN 51524-2		Protection class	IP65
Viscosity range (cSt)	10 / 400		Recommended Dither frequency	160 – 200 Hz*
Fluid temperature (°C)	+ 15 / +60		Linearity, hysteresis, repeatability	< 5%*
Maximum acceptable fluid contamination level	20/18/15 according to ISO 4406 CLASS 9 according to NAS 1638		Connections	ISO 4400 (ex DIN 43650 type A)
Recommended fluid contamination level for a longer valve working life	18/16/13 according to ISO 4406 CLASS 7 according to NAS 1638		* Depends on electronic control unit type	
Weight with standard coil (kg)	3.8	4.4		

For further information and/or different operating conditions please contact Berarma technical sales service

## Ordering code

Series	Name	Size	Supplies
<b>01</b>	<b>FCV</b>	<b>3</b>	<b>M</b>

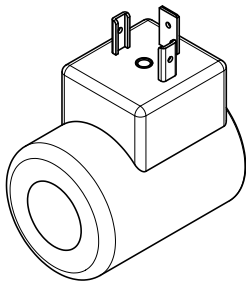
  

Code	Inlet	Outlet
<b>2</b>	1" SAE J518 – 3000 series - DN 25	1" Gas BSP
<b>3</b>	1"1/4 SAE J518 – 3000 series - DN 32	1"1/4 Gas BSP

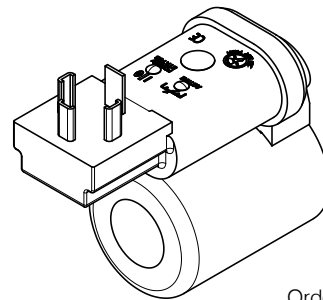
  

Code	Supplies
<b>M</b>	Supplied with screws, LS pipe and NBR seals

Proportional coil included on supply **standard:**



Proportional coil with integrated electronics **optional:**



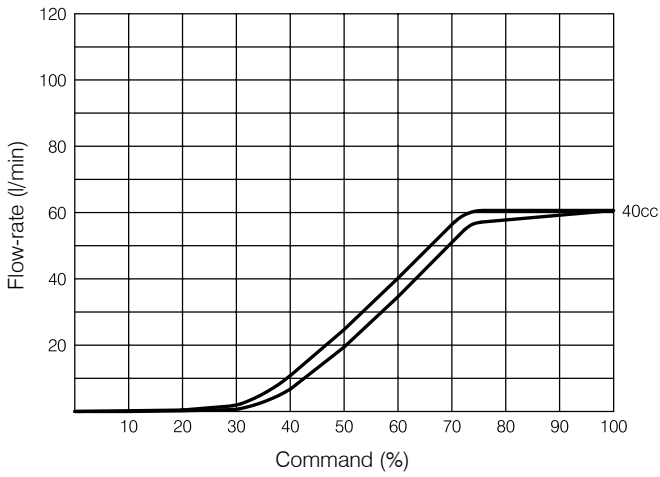
Ordering code **568000002**

### Warning

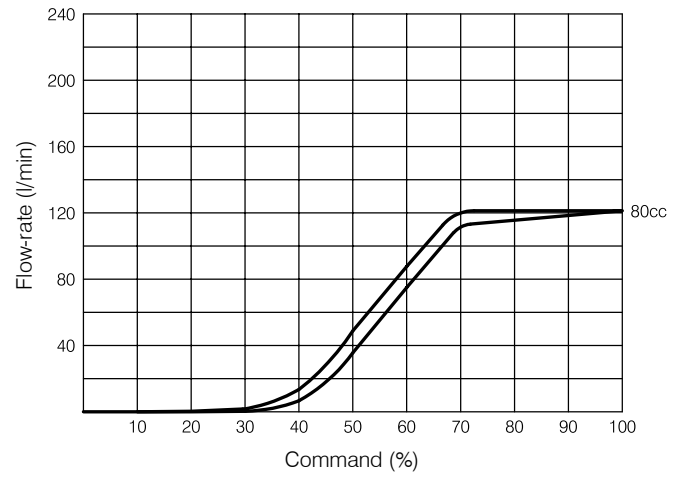
All Berarma products have been carefully checked during manufacture and subjected to testing cycles before shipment. Before selection and/or use of any Berarma product, it is important that the purchaser carefully analyses all aspects of its application and reviews the information in the current Berarma technical sales documents. Due to the many different operating conditions and applications for Berarma products, the purchaser, through their own analysis and testing, is solely responsible for making the final selection of the products and assuring that all performance and safety requirements are met. Berarma S.r.l. accepts no responsibility for any editing mistakes in this catalogue. Berarma S.r.l. reserves the right to modify the products and data contained in this catalogue at any time and without prior notice.

## Characteristics curves

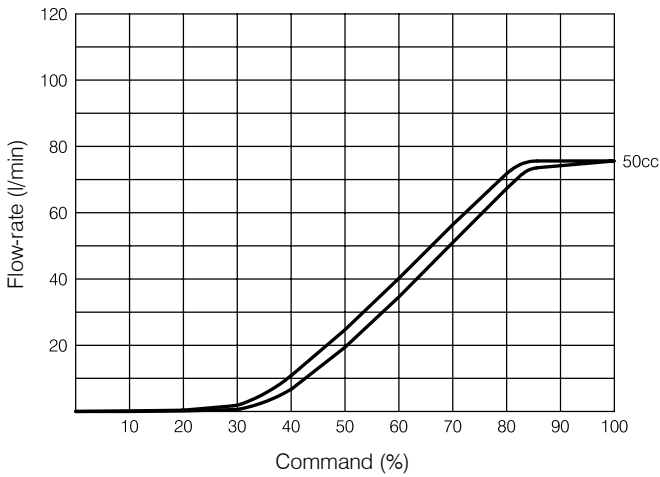
**01 FCV 2 M installed on 01 PHP 2-40 pump**



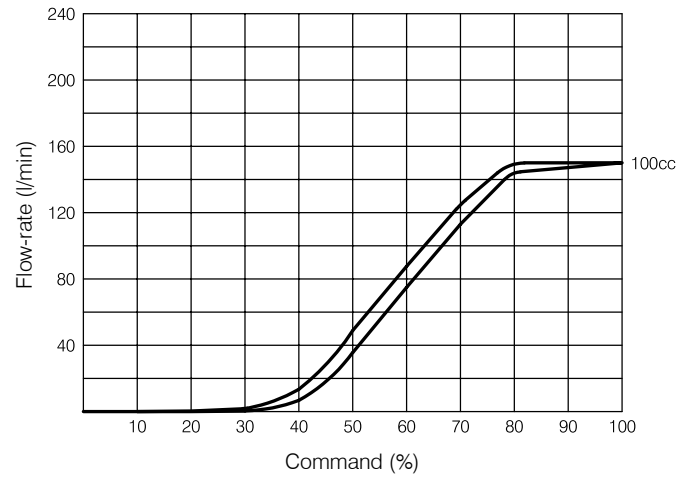
**01 FCV 3 M installed on 01 PHP 3-80 pump**



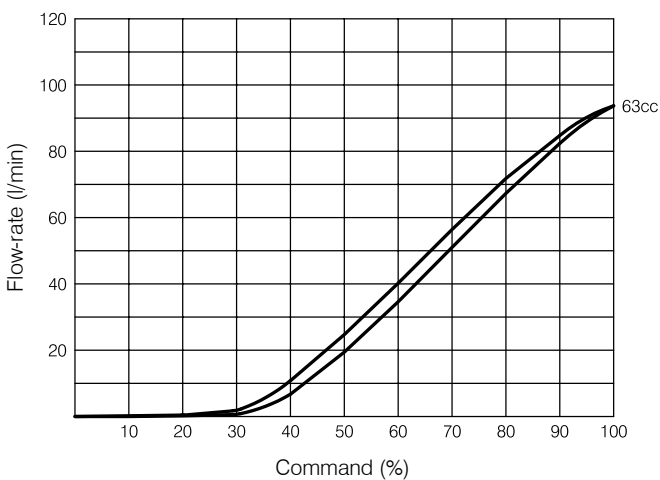
**01 FCV 2 M installed on 01 PHP 2-50 pump**



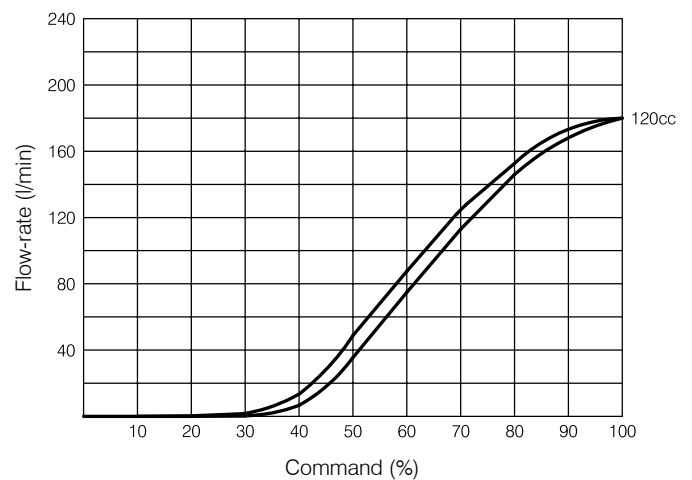
**01 FCV 3 M installed on 01 PHP 3-100 pump**



**01 FCV 2 M installed on 01 PHP 2-63 pump**



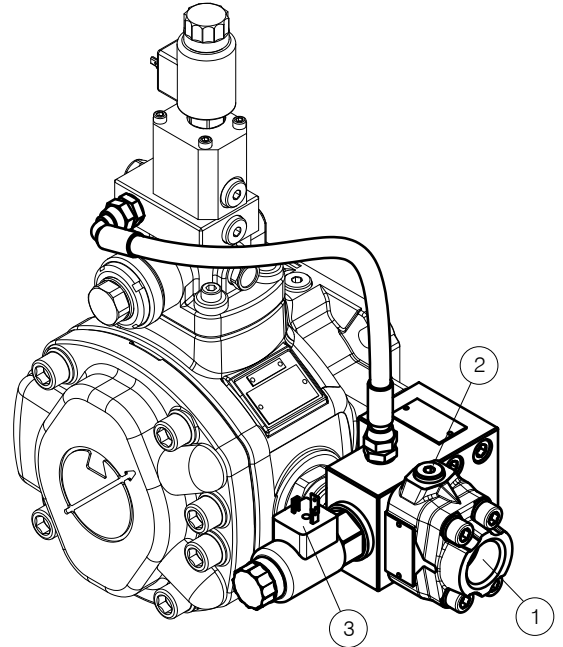
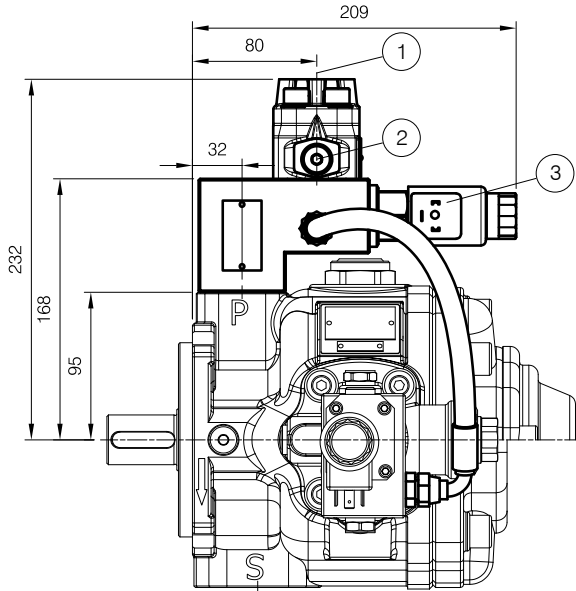
**01 FCV 3 M installed on 01 PHP 3-120 pump**



Indicative values measured on Berarma test stand, referring to 1500 rpm with HM hydraulic oil according to ISO 6743-4, ISO VG 46 according to ISO 3448, temperature 40 °C, minimum pressure, PHP pumps with Load Sensing control.

## Overall dimensions

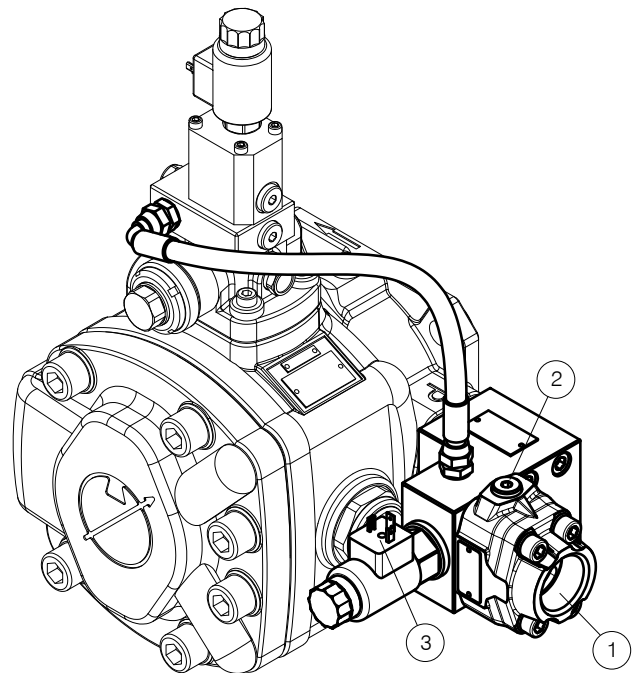
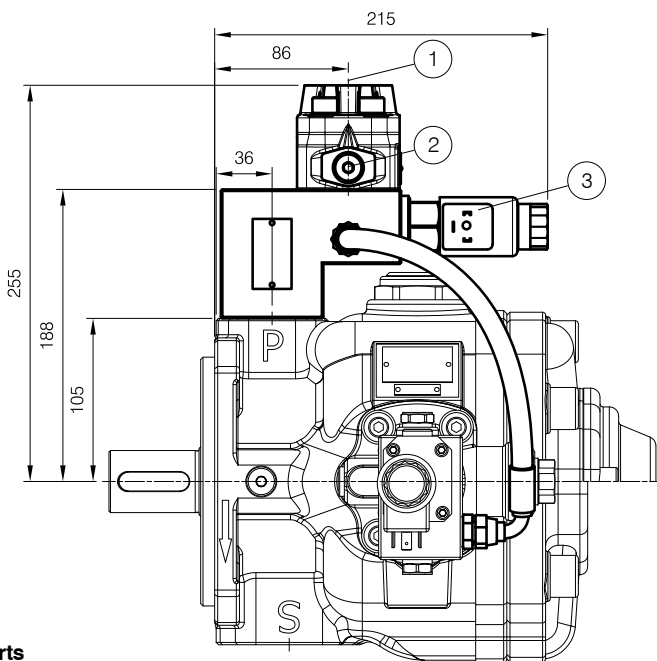
01 FCV 2 M installed on the outlet port of 01 PHP 2-(40-50-63) FHRM/A PCLS005 pump



### Ports

- ① Outlet – 1" Gas BSP
- ② Gauge for pressure measures after the check valve – 1/4" Gas BSP – Normally plugged
- ③ Flow-rate proportional valve – Connector ISO 4400 (ex DIN 43650 type A)

01 FCV 3 M installed on the outlet port of 01 PHP 3-(80-100-120) FHRM/A PCLS005 pump



### Ports

- ① Outlet – 1"1/4 Gas BSP
- ② Gauge for pressure measures after the check valve – 1/4" Gas BSP – Normally plugged
- ③ Flow-rate proportional valve – Connector ISO 4400 (ex DIN 43650 type A)