



### Selection advice

If the valve is to be screwed directly into a hydraulic cylinder, please order model VSM-11.

If the valve is to be combined with the directional valve of a power pack, please order model VSM-21. (see picture on page 368).

## Safety-check valves model VSM

### 700 bar

These safety-check valves are used for those applications where pressure drops must be avoided (e.g. holding of a lifted load). Depending on the location in a hydraulic circuit, these valves can have different functions.

The model VSM-11 can be directly screwed into the oil port of a hydraulic cylinder and works at this location as a "hose break fuse". The design of the VSM-21 is suitable for a combination with VHP directional valves.

At this location the VSM-21 ensures that the pressure is held precisely and that pressure drops caused by operating the directional valve are avoided.

### Operation

After closing the relief valve (hand wheel) the cylinder can be advanced via the by-pass. In direction to the cylinder the valves always have free flow. The built-in check valve ensures that a pressurized cylinder (e.g. a lifted load) is held precisely in stop position.

A smooth lowering speed can be adjusted by opening the throttle valve (hand wheel) in order to relieve the pressure.

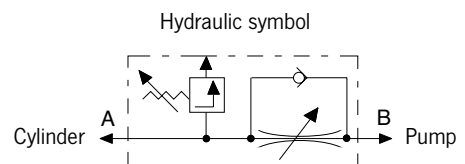
A safety pressure valve protects the cylinder from being overloaded by external loading.

### Technical data model VSM

Model	EAN-No. 4025092*	Operating pressure max. bar	Control	Oil-port cylinder side A	Oil-port pump side B	Width mm	Weight kg
VSM-11	*157797	700	Check valve	3/8-18 NPT outer	3/8-18 NPT inner	6	0.9
VSM-21	*158442	700	Check valve	3/8-18 NPT inner	3/8-18 NPT outer	6	1.0

### Dimensions model VSM

Model	VSM-11	VSM-21
Length, mm	75	75
Width, mm	25	25
Height, mm	100	100



## Throttle-/Shut-off valves model VHM

700 bar

These valves are used to shut-off hydraulic lines especially in multiple cylinder systems. The needle valve VHM-1 also allows to throttle an oil flow especially in connection with lifting applications.



VHM-2



VHM-1

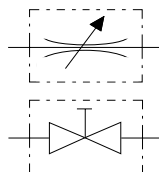
### Technical data model VHM

Model	EAN-No. 4025092*	Operating pressure max. bar	Control	Oil ports both ends	Width mm	Weight kg
VHM-1	*154819	700	Needle	3/8-NPT inner	6	0.4
VHM-2	*154963	700	Ball	3/8-NPT inner	6	0.9

### Dimensions model VHM

Model	VHM-1	VHM-2
Length, mm	75	75
Width, mm	28	45
Height, mm	100	75

Hydraulic symbol



## Pressure switch model VPS

Adjustable between 100 - 800 bar

As soon as the pressure has reached the set value, a micro-switch (altering contact) is activated.

This signal can be used:

- For automatic pressure limiting.
- To report a certain pressure value.
- As an automatic motor on/off switch with pressure guard power packs.



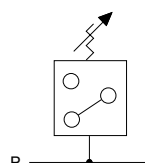
### Technical data model VPS

Model	EAN-No. 4025092*	Control range bar	Electric data	Oil ports	Difference of switch point bar	Repeat accuracy bar	Weight kg
VPS-1	*155090	100 - 800	5 A/250 V	3/8 NPT	25 - 70	10	0.5

### Dimensions model VPS

Model	VPS-1
Height x width, mm	130x85

Hydraulic symbol



As soon as the pressure has reached the set value, a micro-switch (alternating contact) is activated. Should the pressure drop, the micro-switch starts the pump again in order to rebuild the pressure.



## Pressure relief valves model VPR

0 - 700 bar

Pressure relief valves are used if the system pressure (force of the connected hydraulic cylinder) should not exceed a certain value. These precision valves can be easily adjusted and are characterized by precise repetition. The question of a pressure relief valve only depends on the displacement of the high pressure stage of the power pack.

After achieving the set pressure value, the excessive oil is guided back to the reservoir (pressureless).

### Technical data model VPR

Model	EAN-No. 4025092*	Control range bar	Oil ports P	Oil ports T	Oil flow max. l/min	Weight kg
VPR-1	*155212	0-700	G3/8	G 1/4	10	0.8

### Dimensions model VPR

Model	VPR-1
Length, mm	120
Ø, mm	40

Hydraulic symbol

