

Proportional Pilot Operated Cartridge Check Valve, Size 08

$Q_{\max} = 50 \text{ l/min (13 gpm)}$, $p_{\max} = 450 \text{ bar (6400 psi)}$
pilot operated, proportional, cartridge-type poppet valve
Series ERV 08-C-PH...



- Compact design for cavity type according to Bucher standard – M30x1.5
- Load pressure closing cone poppet valve
- Proportional, pilot operated
- Virtually leak-free in no-flow direction
- Hardened and ground seat section on seat bore and piston
- With rust water sealing for recessed installation
- All exposed parts with zinc-nickel coating

1 Description

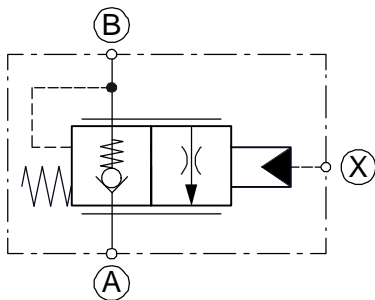
The proportional, pilot operated check valves are pilot controlled, high performance screw-in cartridges with an M30x1.5 mounting thread size 08. For the lifting function (A → B) only the pretension force of the check valve has to be overcome. The conical seat design ensures that the cartridges are leak-free from B → A.

The check function can be overridden by applying a suitable pilot pressure at port X. In the B → A direction, flow can pass freely through the valve (opening pressure corresponds to

the pilot pressure X pilot ratio). The lowering function can thus be controlled proportionally.

These screw-in cartridges are predominantly used in certain mobile and stationary applications. This product is intended for use on outrigger cylinders. All exposed parts of the cartridge are zinc-nickel coated according to DIN 50 979, allowing them to be used even under extreme external conditions.

2 Symbol



3 Technical data

General characteristics	Description, value, unit
Designation	Proportional pilot operated cartridge check valve
Design	Pilot operated, proportional, cartridge-type poppet valve
Mounting method	Screw-in cartridge – M30x1.5
Tightening torque	100 Nm ± 10 % (75 ft-lbs ± 10 %)
Size	Size 08
Weight	0.33 kg (0.72 lbs)
Mounting attitude	unrestricted

General characteristics	Description, value, unit
Ambient temperature range	-25 °C ... +80 °C (-13 °F ... +176 °F)
Surface corrosion protection	Exposed parts zinc-nickel coated Cartridge housing browned
Hydraulic characteristics	Description, value, unit
Maximum operating pressure	450 bar (6400 psi)
Maximum static pressure	600 bar (8600 psi)
Maximum flow rate	50 l/min (13 gpm)
Flow direction	A → B check valve function B → A locking direction, leak-free
Opening pressure	4.0 bar (A → B) (60 psi (A → B))
	1 : 2.56
Hydraulic fluid	HL and HLP mineral oil to DIN 51 524; for other fluids, please contact BUCHER
Hydraulic fluid temperature range	-40 °C ... +80 °C (-40 °F ... +176 °F)
Viscosity range	2.8 ... 1500 mm ² /s (cSt), recommended 10 ... 380 mm ² /s (cSt)
Minimum fluid cleanliness Cleanliness class to ISO 4406 : 1999	Class 20/17/14

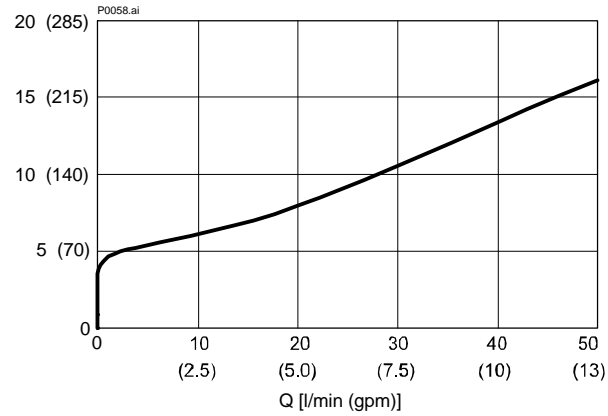
4 Performance graphs

Measured with oil viscosity 40 mm²/s (cSt)

$\Delta p = f(Q)$ Pressure drop - Flow rate characteristic

Lifting function, flow direction A → B

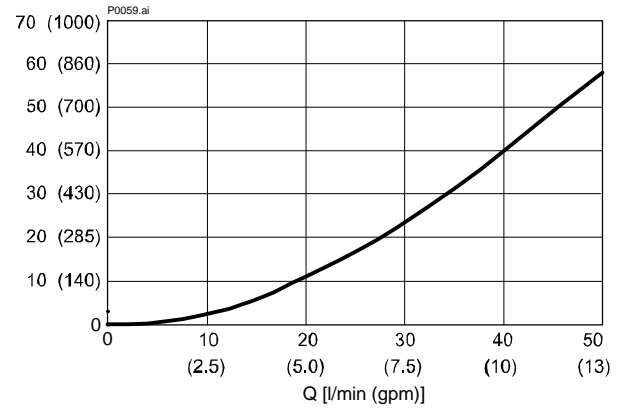
Δp [bar (psi)]



$\Delta p = f(Q)$ Pressure drop - Flow rate characteristic

Lowering function at fully operated, flow direction B → A

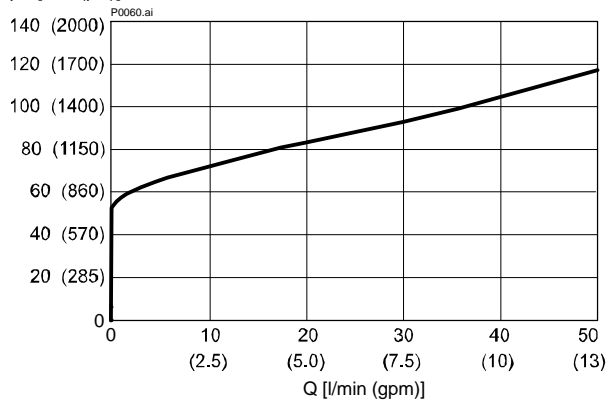
Δp [bar (psi)]



$p = f(Q)$ Pressure - Flow rate characteristic

pX at constant 100 bar load pressure

pX [bar (psi)]



5 Safety instructions



ATTENTION!
This product is intended for use on outrigger cylinders. Additional applications are to be clarified with the manufacturer.



ATTENTION!
A mounting cavity which does not comply with the drawing can lead to jamming of the moving parts in the cartridge.



IMPORTANT!
It is recommended to carry out a leak test during the acceptance test of the device.



ATTENTION!
The valve is not damped. The actuation time is determined by the directional control valve. Increase in pressure over 3500 bar/s are not allowed!



IMPORTANT!
The leak-free nature of the valve depends largely on the degree of cleanliness of the hydraulic fluid.



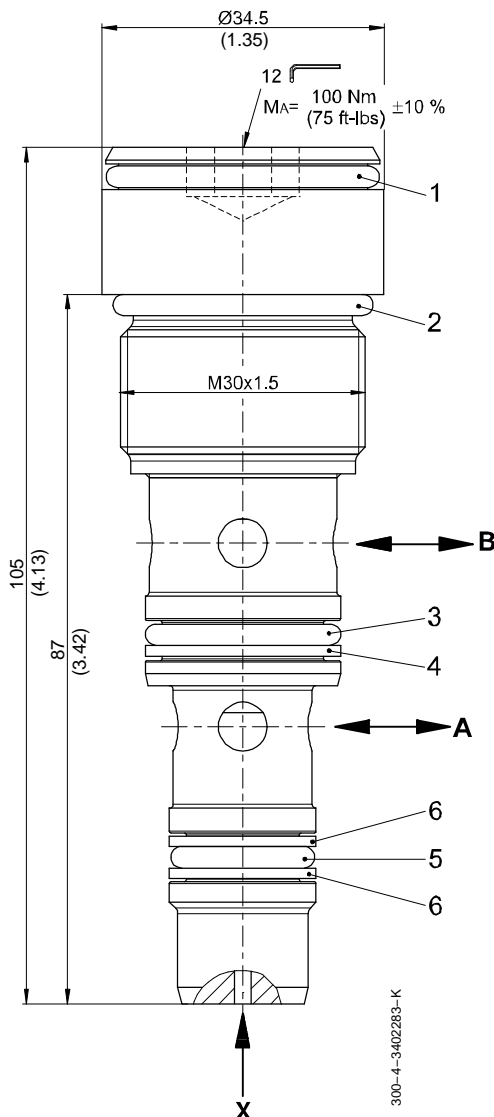
IMPORTANT!
An optional pressure relief valve must be used to protect the secondary circuit against overpressure.

6 Dimensions & sectional view

Example for the dimensional units:

0.79 = 0.79 mm [millimeter]

(.031) = 0.031" [inch]



7 Installation information



IMPORTANT!
When fitting the cartridges, use the specified tightening torque. No adjustments are necessary, since the cartridges are set in the factory.



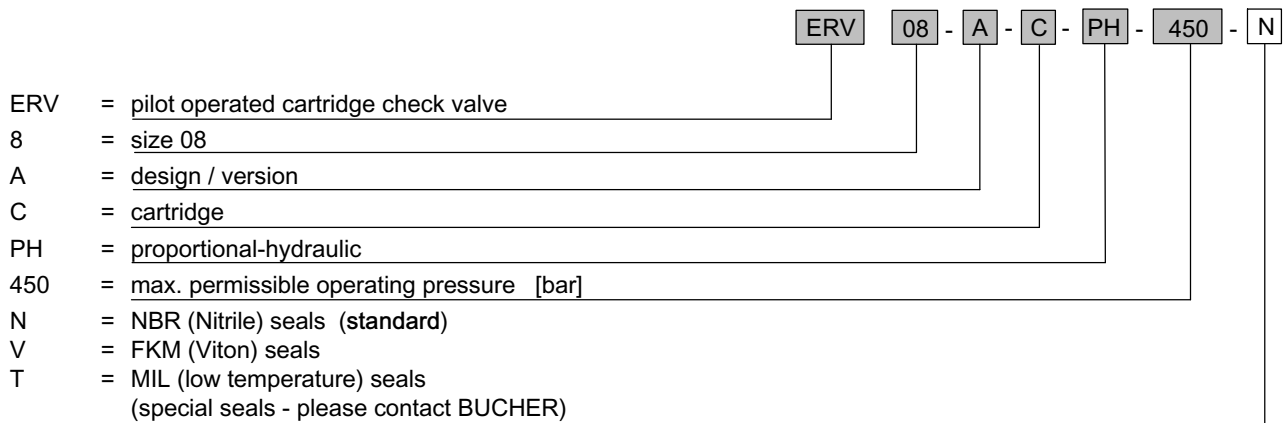
ATTENTION!
Only qualified personnel with mechanical skills may carry out any maintenance work. Generally, the only work that should ever be undertaken is to check, and possibly replace, the seals. When changing seals, oil or grease the new seals thoroughly before fitting them.

Item	Qty.	Description
1	1	O-Ring Ø 28.24 x 2.62
2	1	O-Ring Ø 26.64 x 2.62
3	1	O-Ring Ø 18.72 x 2.62
4	1	Backup ring Ø 24.00 / 19.80 x 1.30
5	1	O-Ring Ø 12.37 x 2.62
6	2	Backup ring Ø 18.00 / 13.80 x 1.30



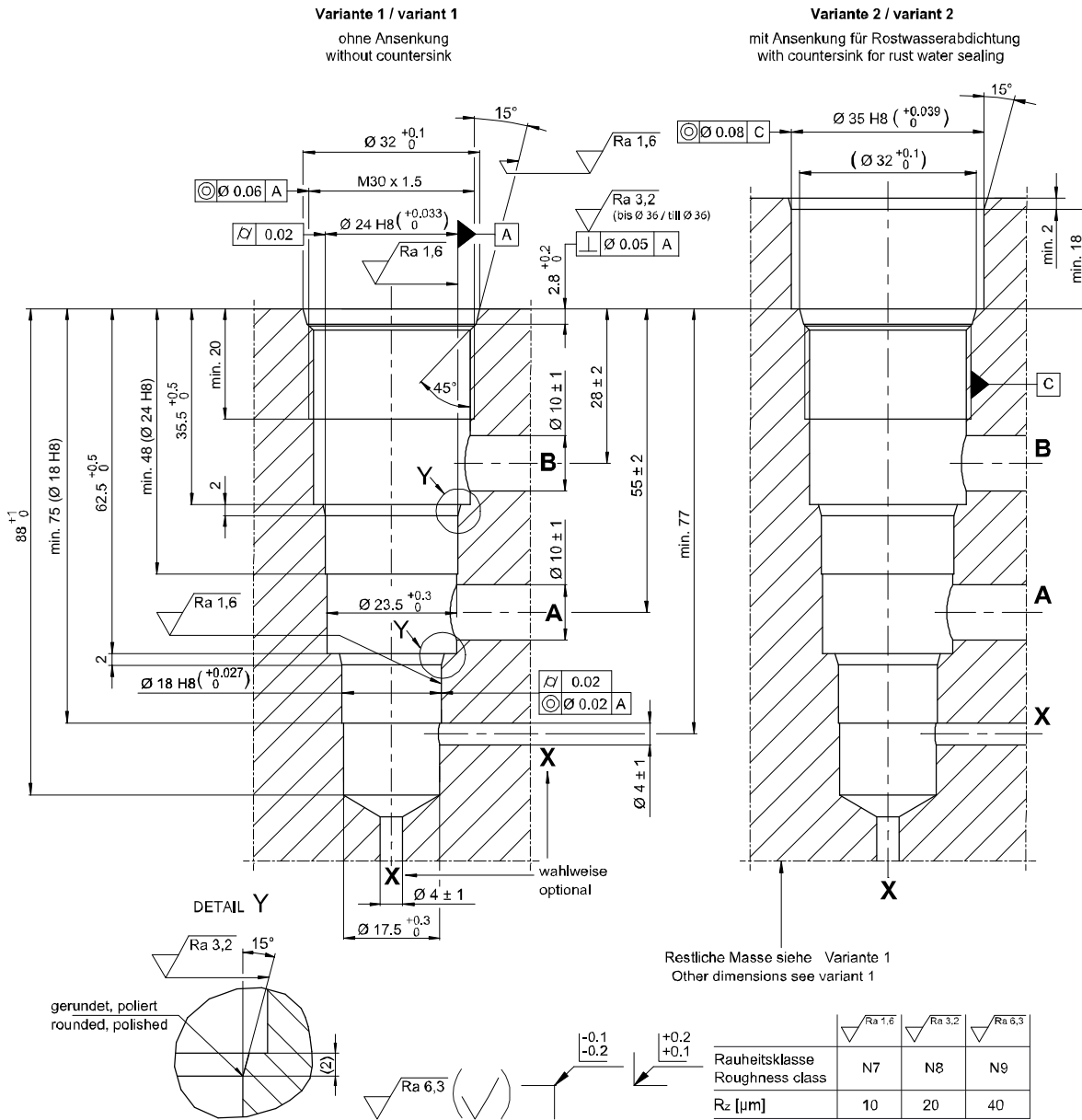
IMPORTANT!
Item No. 30003008540 = seal kit NBR (Nitril)
Item No. 3000303856 = seal kit FKM (Viton)
Item No. 30003018810 = seal kit MIL (low temp.)

8 Ordering code



9 Notes

10 Cartridge cavity



ATTENTION!

You must maintain the specified positional and diametral tolerances. To ensure trouble-free operation of the screw-in cartridges, we strongly recommend that pilot drilling, boring, reaming and cavity thread-cutting are always performed in one setup.

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Classification: 430.315.345.305.320