Check valve
Pilot operated check

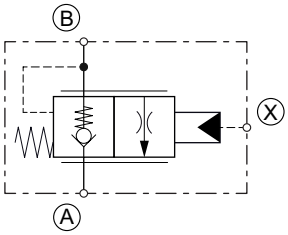
Q_{max} = 13 gpm, p_{max} = 6400 psi
hydraulical operation (proportional), pilot operated, poppet type
Type series: ERV 8-A-C-PH-...

- Screw-in cartridge valve
- All external parts with zinc-nickel coating according to DIN EN ISO 19598
- Load pressure closing cone poppet valve
- Proportional, pilot operated
- Seat tight shut-off
- Hardened, ground seat section on seat bore and spool
- Compact construction
- With rust water sealing for recessed installation

Description

The proportional, pilot-operated check valves, series ERV 8-_-C-PH-..., are pilot controlled, high performance screw-in valves with an M30x1.5 mounting thread size 8. They are designed on the poppet/seat principle and the B to A flow path is therefore virtually leak-free. The check function can be controlled proportionally by applying a suitable pilot pressure at port X (pilot pressure x pilot ratio). In the A to B direction, flow can pass freely through the screw-in valves (opening pressure = 60 psi). All external parts of the screw-in valves are zinc-nickel plated and are thus suitable for use in the harshest operating environments. These screw-in valves are predominantly used in certain mobile and industrial applications to maintain the position of loaded actuators (e.g. outrigger cylinders) after the pump pressure has been disconnected.

Symbol



Technical Data

General Characteristics	Description, value, unit
Function group	Check valve
Function	Pilot operated check
Design	Screw-in cartridge valve
Controls	hydraulical operation (proportional)
Characteristic	pilot operated, poppet type
Construction size	size 8
Thread size	M30×1,5
Mounting attitude	unrestricted
Weight	0.72 lb
Tightening torque steel	74 ft·lb
Tightening torque tolerance	± 10 %
Minimum ambient temperature	- 13 °F
Maximum ambient temperature	+ 212 °F
Surface protection	All external parts with zinc-nickel coating according to DIN EN ISO 19598
Available seal types	several seal types available, see ordering code
Seal kit order number	NBR: 30003008540 / FKM: 30003038560 / MIL: 30003018810

NOTE!
Supplement to surface corrosion protection:
cartridge housing burnished

Hydraulic Characteristics	Description, value, unit
Maximum operating pressure	6400 psi
Restriction of the operating pressure	max. static pressure: 8600 psi
Maximum flow rate	13 gpm
Flow direction	see symbol
Hydraulic fluid	HL and HLP mineral oil according to DIN 51 524; other fluids on request!
Minimum fluid temperature	- 4 °F
Maximum fluid temperature	+ 176 °F
Viscosity range	2.8 ... 1500 mm^2/s (cSt)
Recommended viscosity range	10 ... 380 mm^2/s (cSt)
Minimum fluid cleanliness (cleanlineless class according to ISO 4406:1999)	class 20/17/14
Effective hydraulic pilot ratio (p.o. check valve)	1:2.56
Opening pressure	flow direction A to B: 60 psi

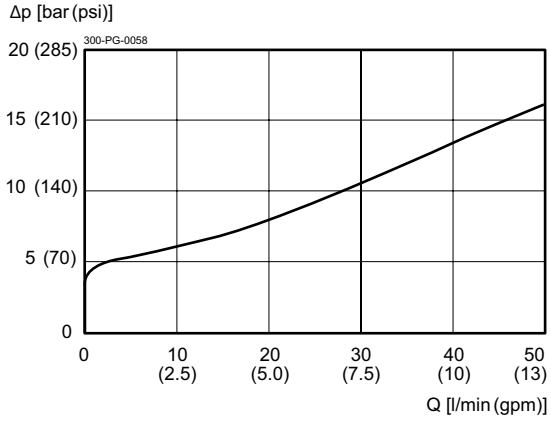
ATTENTION!
The valve is not damped. The actuation time is determined by the directional control valve. Increase in pressure over 3500 bar/s are not allowed!

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

Performance graphs

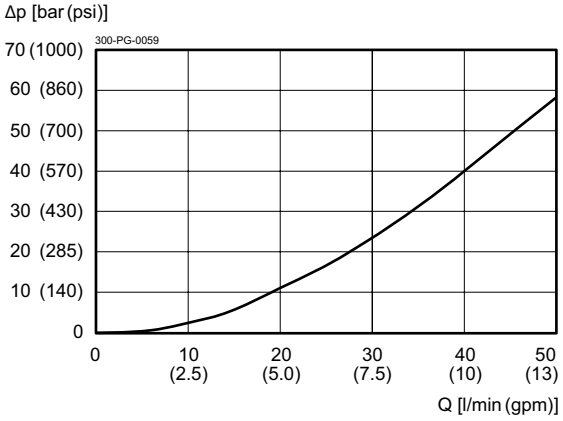
measured with oil viscosity 33.0 mm²/s (cSt)

Δp = f (Q) Pressure drop-flow rate characteristic



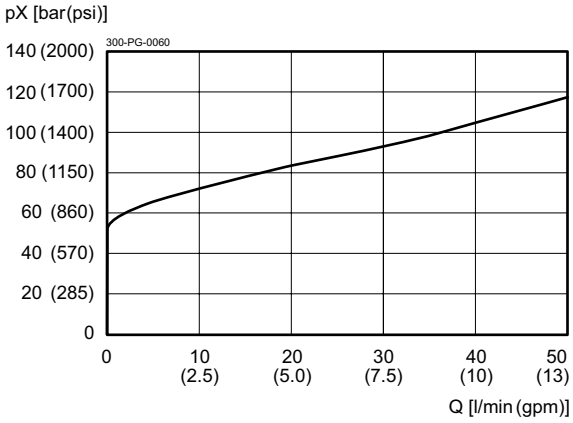
Lifting function, flow direction A to B

Δp = f (Q) Pressure drop-flow rate characteristic



Lowering function at fully operated, flow direction B to A

p = f (Q) Pressure-flow rate

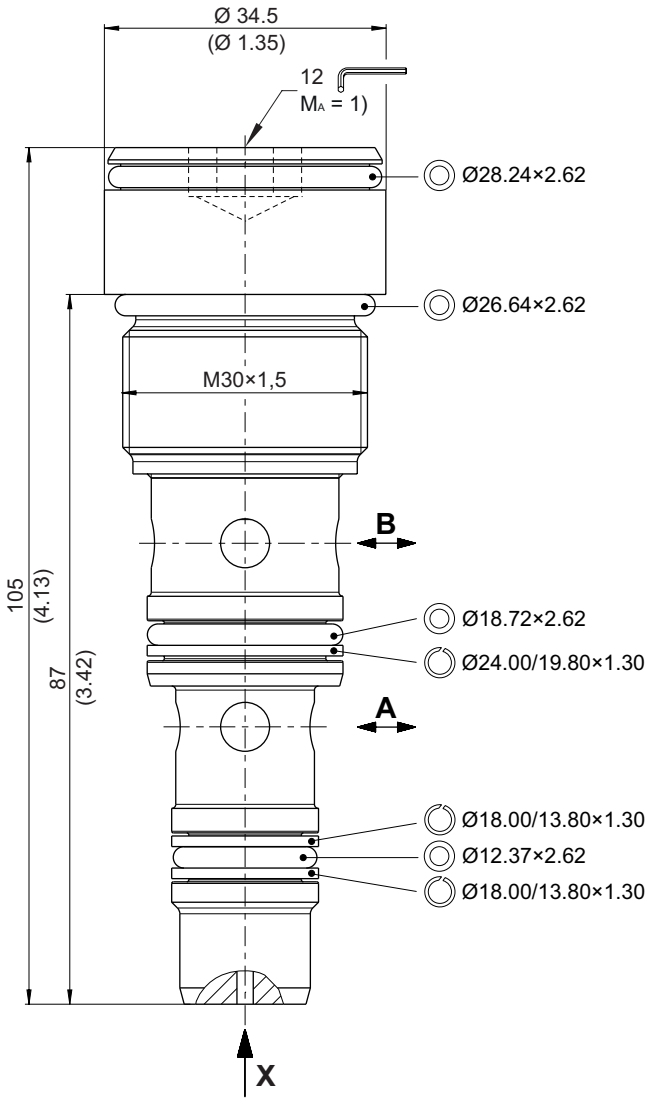


pX at constant 100 bar load pressure

Dimensions and sectional view

Beispiel für die Masseinheit:
Example for the dimensional units:

0.79 = 0.79 mm millimeter
(.031) = 0.031" inch



Installation information

ATTENTION!
This product is intended for use on the outrigger cylinder of a mobile working machine. Other applications are to be clarified with the valve manufacturer.

NOTE!
A pressure relief valve must be used to protect the secondary circuit against overpressure.

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

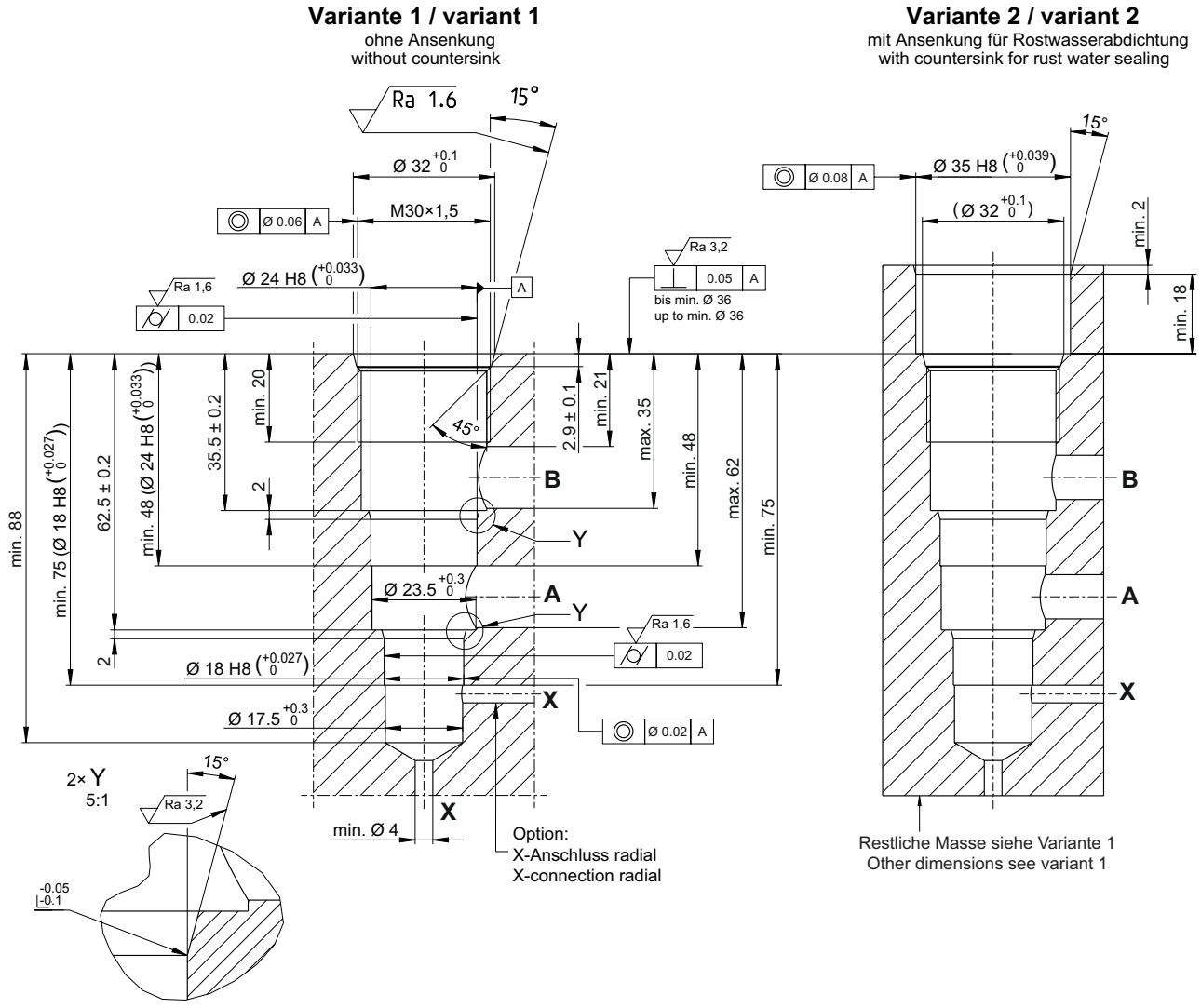
NOTE!
1) When fitting the screw-in cartridge valve, use the specified tightening torque. The value can be found in the chapter "Technical data".

NOTE!
The seals are not available individually. The seal kit order number can be found in the chapter "Technical data".

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.

Cavity

Beispiel für die Masseinheit:
Example for the dimensional units:
0.79 = 0.79 mm millimeter



HINWEIS!
NOTE!

Empfohlene Anschlussbohrungen: A, B: Ø 10
Recommended connection bores: X: Ø 4

Toleranzen nach: DIN ISO 2768-mK
Tolerances according to:

ATTENTION!
A mounting cavity not in conformity with the drawing can lead to jamming of the moving parts in the screw-in valve.

NOTE!
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.

Ordering code

Ex. ERV 8 - A - C - PH - 450 - N

ERV	=	pilot operated check valve
8	=	size 8
A	=	design / version
C	=	cartridge design
PH	=	proportional-hydraulic
450	=	max. permissible operating pressure (450 bar)
N	=	NBR (nitril-butadien-rubber / BUNA) seals *(standard)*
V	=	FKM (fluorocarbon rubber / VITON) seals
T	=	MIL (low temperature) seals *(special seals - please consult BUCHER)*

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