Check valve
Pilot operated check

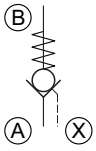
Q_{max} = 80 l/min, p_{max} = 450 bar
hydraulical operation, pilot operated, poppet type
Type series: ERV 8-C-...

- Screw-in cartridge valve
- All external parts with zinc-nickel coating according to DIN EN ISO 19598
- Two-stage principle (decompression / main opening)
- Load pressure closing cone poppet valve
- Seat tight shut-off
- Compact construction
- Hardened, polished seat section and cone
- With rust water sealing for recessed installation

Description

Series ERV 8-C-... check valves are size 8, pilot-operated, two stage, high performance screw-in valves with an M30x1,5 mounting thread. The valves are designed on the proven poppet/seat principle and are therefore leak-tight in the flow direction B to A. The check function can be overridden by applying a suitable pilot pressure at port X. In the flow direction A to B, flow can pass freely through the screw-in valves (opening pressure = 2.5 bar). All external parts of the screw-in valves are zinc-nickel plated, and are thus suitable for use in the harshest operating environments. These 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
Characteristic	pilot operated, poppet type
Construction size	size 8
Thread size	M30×1,5
Mounting attitude	unrestricted
Weight	0.34 kg
Tightening torque steel	100 Nm
Tightening torque tolerance	± 10 %
Minimum ambient temperature	- 25 °C
Maximum ambient temperature	+ 100 °C
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	450 bar
Maximum flow rate	80 l/min
Flow direction	see symbol
Hydraulic fluid	HL and HLP mineral oil according to DIN 51 524; other fluids on request!
Minimum fluid temperature	- 20 °C
Maximum fluid temperature	+ 80 °C
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 20/18/15
Geometric Differential Area Ratio	2.1:1
Effective hydraulic pilot ratio (p.o. check valve)	1:2.5
Opening pressure	flow direction A to B: 2.5 bar

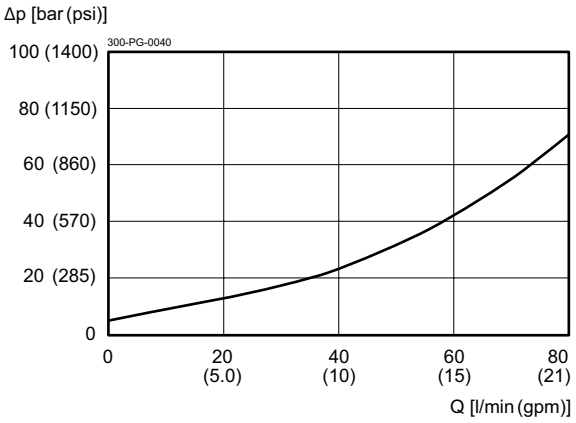
NOTE!
In the field "Effective hydraulic pilot ratio (p. o. check valve)" you can find the pre-opening (decompression) ratio. In the field "Geometric opening pressure ratio" you can find the main opening ratio.

NOTE!
E.g. with load pressure of 300 bar the decompression poppet opens when the control pressure X = 300 : 2.5 = 120 bar andthe cylinder retracts “slowly”. (The control pressure theoretically required for main opening = 300 x 2.1 = 630 bar)

Performance graphs

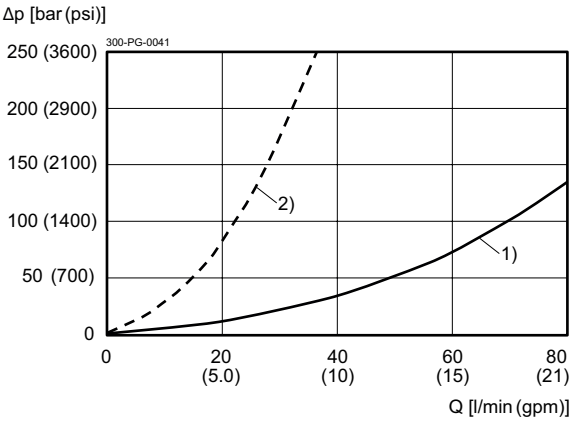
measured with oil viscosity 33.0 mm²/s (cSt)

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



Flow direction A to B

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



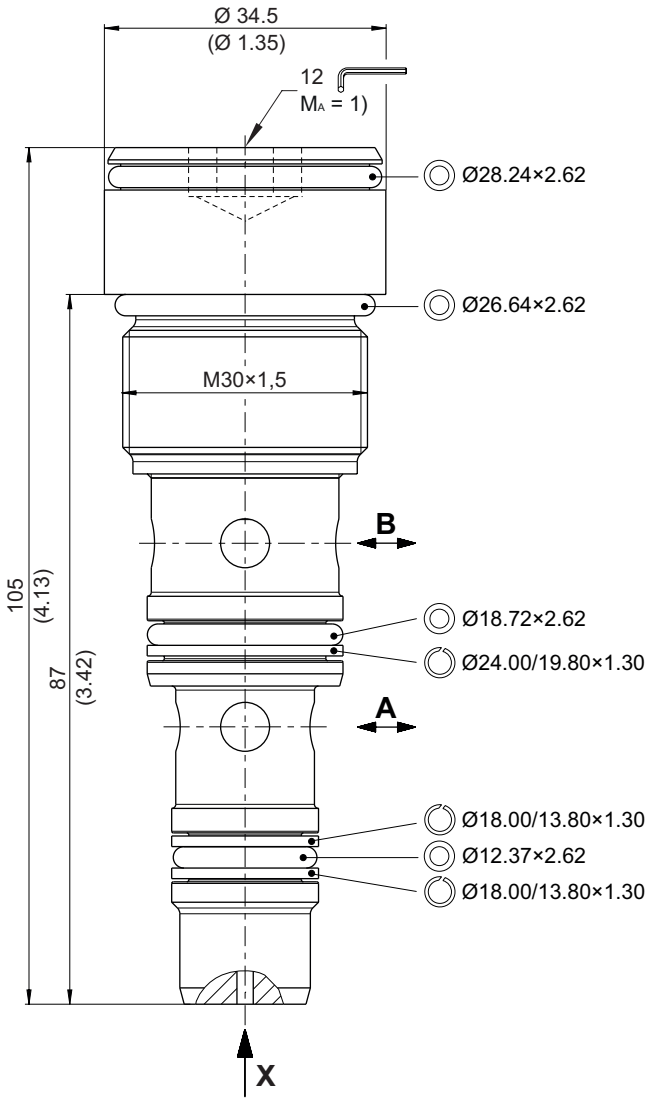
1) Main opening
2) Decompression

Flow direction B to A

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

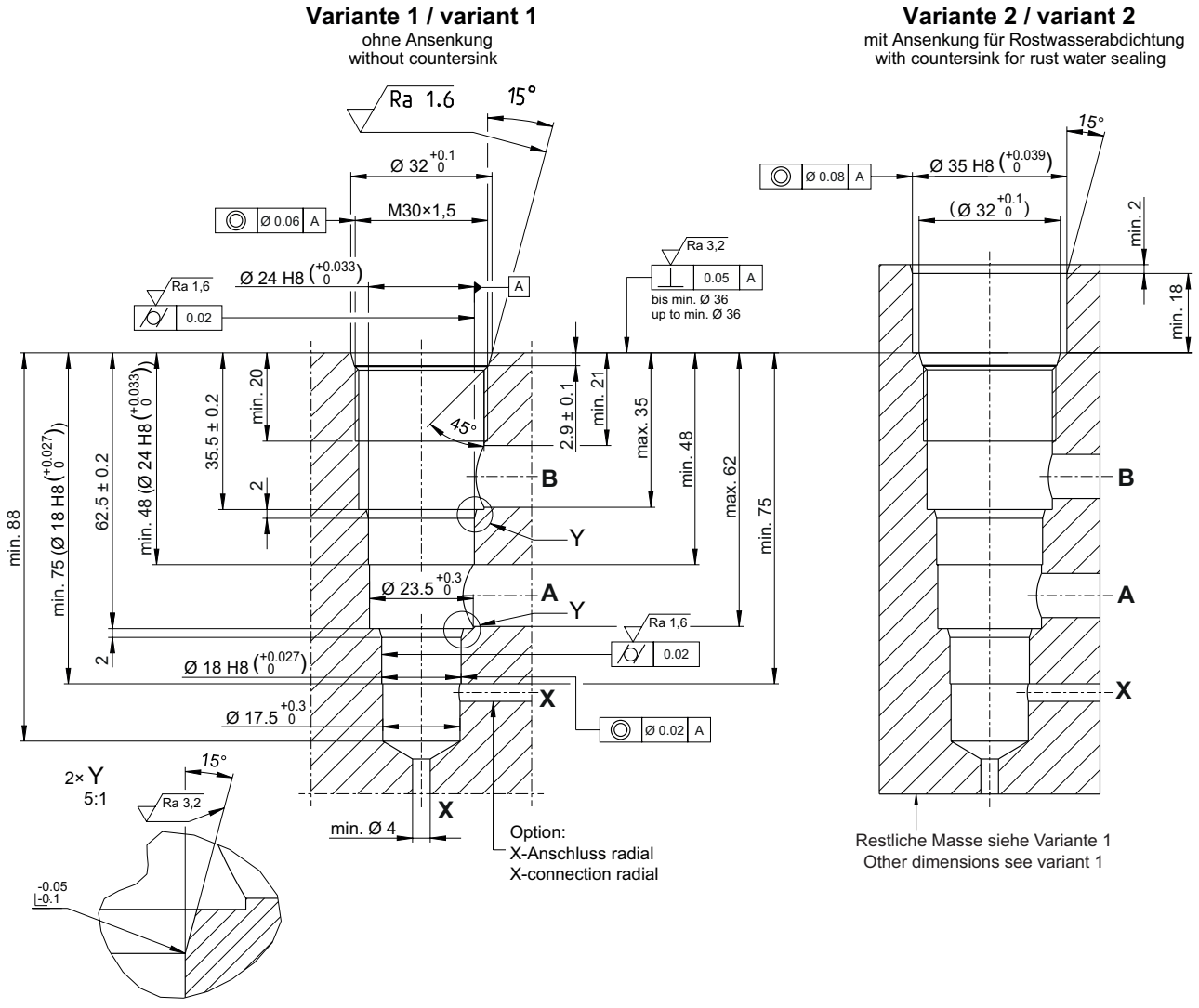
NOTE!
1) When fitting the screw-in cartridge valve, use the specified tightening torque. The value can be found in the chapter "Technical data".

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.

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

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:

Ra 6,3 (√) -0.1 -0.2 +0.2 +0.1

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 - C - N

ERV = pilot operated cartridge check valve
8 = size 8
C = version / technical design status
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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