

Check valve

Pilot operated check

$Q_{\max} = 79 \text{ gpm}$, $p_{\max} = 5000 \text{ psi}$

hydraulic operation, pilot operated, poppet type

Type series: REPNB-16-...



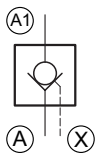
- Screw-in cartridge valve
- For cavity EC
- All external parts with zinc-nickel coating according to DIN EN ISO 19598
- Installation in threaded port body type GEAA
- High flow rates
- Seated pilot stage
- Seat tight shut-off

Description

The pilot-operated check valves, series REPN..., are size 16, two stage, screw-in valves with an M42x2 mounting thread. The poppet seat design ensures that the valves are leak-tight from A1 to A. The check function can be overridden by applying a suitable pilot pressure at port X. In the flow direction A to A1, flow can pass freely through the screw-in valve (opening pressure >2 bar). The pressure in port A must not exceed 20 % of the pilot pressure in port X, as the A-line pressure acts on the rear side of the pilot piston. If this condi-

on cannot be met, series REPY... cartridge check valves with external leakage-oil drain must be used. All external parts of the screw-in valve are zinc-nickel plated, and are thus suitable for use in the harshest operating environments. These valves are mainly used in mobile and industrial applications as pilot valves for controlling the travel direction of actuators such as hydraulic motors and cylinders. For self-assembly, please refer to the section related data sheets.

Symbol



Technical Data

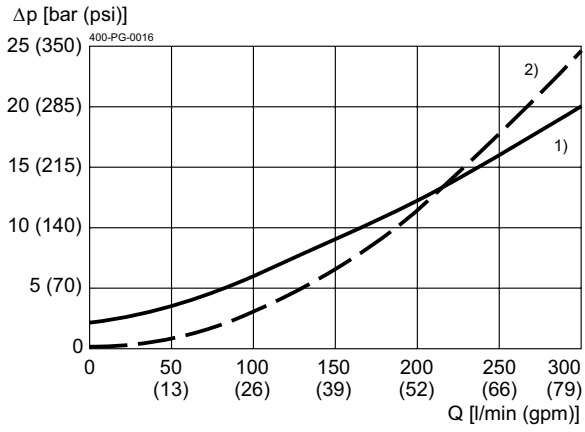
General Characteristics	Description, value, unit
Function group	Check valve
Function	Pilot operated check
Design	Screw-in cartridge valve
Controls	hydraulical operation
Characteristic	pilot operated, poppet type
Construction size	nominal size 16
Thread size	M42×2
Mounting attitude	unrestricted
Weight	1.70 lbs
Cavity acc. factory standard	For cavity EC
Tightening torque steel	295 ft-lbs
Tightening torque aluminium	295 ft-lbs
Tightening torque tolerance	± 10 %
Minimum ambient temperature	- 13 °F
Maximum ambient temperature	+ 176 °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: DS-361-N / FKM: DS-361-V

Hydraulic Characteristics	Description, value, unit
Maximum operating pressure	5000 psi
Maximum flow rate	79 gpm
Flow direction	see symbol
Hydraulic fluid	HL and HLP mineral oil according to DIN 51 524; other fluids on request!
Minimum fluid temperature	- 13 °F
Maximum fluid temperature	+ 176 °F
Viscosity range	10 ... 650 mm ² /s (cSt)
Recommended viscosity range	15 ... 250 mm ² /s (cSt)
Minimum fluid cleanliness (cleanliness class according to ISO 4406:1999)	class 20/18/15
Geometric Differential Area Ratio	1:16
Opening pressure	A to A1: > 30 psi
Pilot pressure	see table at chapter "dimensions and sectional view"

Performance graphs

measured with oil viscosity 33.0 mm²/s (cSt)

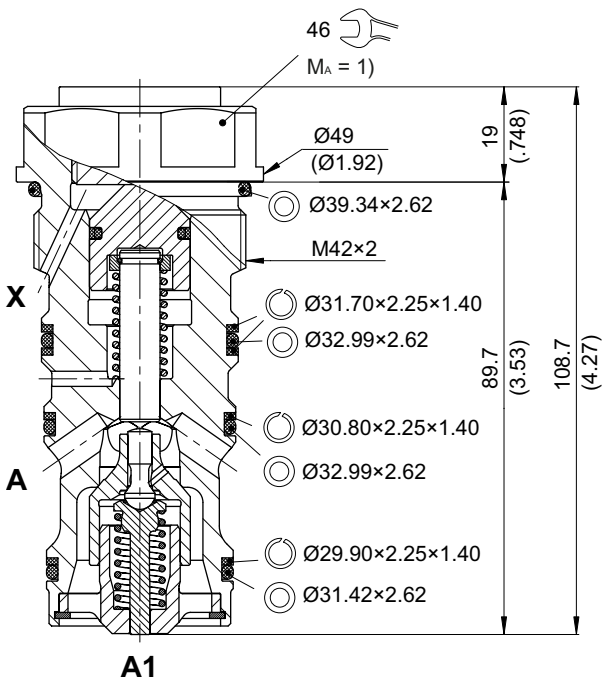
$\Delta p = f(Q)$ Pressure drop-flow rate characteristic



Dimensions and sectional view

Beispiel für die Masseinheit:
Example for the dimensional units:

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

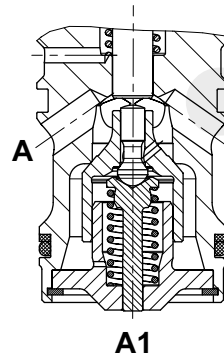


Pilot pressure at X port ¹⁾

[reference values]

p A1 [bar (psi)]	Q [l/min (gpm)]	p X [bar (psi)]
300 (4300)	100 / 150 / 200 (26 / 39 / 52)	50 / 60 / 72 (700 / 860 / 1030)
200 (2900)	100 / 150 / 200 (26 / 39 / 52)	35 / 45 / 52 (500 / 640 / 740)
100 (1400)	100 / 150 / 200 (26 / 39 / 52)	18 / 24 / 36 (260 / 340 / 515)
50 (700)	100 / 150 / 200 (26 / 39 / 52)	14 / 22 / 28 (200 / 315 / 400)

1) The pilot pressure needed at the X port depends on the flow and pressure from A1 → A



i NOTE!

At the position marked in gray, the O-ring and backup ring must be removed.

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".

Ordering code

Ex. **R E P N B** - **16** - **-** - **1**

- R = check valve
- E = pilot operated
- P = cartridge design
- N = without external drain
- A ... Q = standard model according to valid data sheet (*standard*)
- Z ... R = special model after consultation
- 16 = nominal size 16
- (blank) = NBR (nitril-butadien-rubber / BUNA) seals (*standard*)
- V = FKM (fluorocarbon rubber / VITON) seals
(*special seals - please consult BUCHER*)
- 1 ... 9 = technical design no. (omit when ordering)

Related data sheets

Reference	Description
400-P-040011	Form tools
400-P-080121	Cavity EC
400-P-750201	Threaded port body GEAA