

up to 60 l/min
up to 420 bar

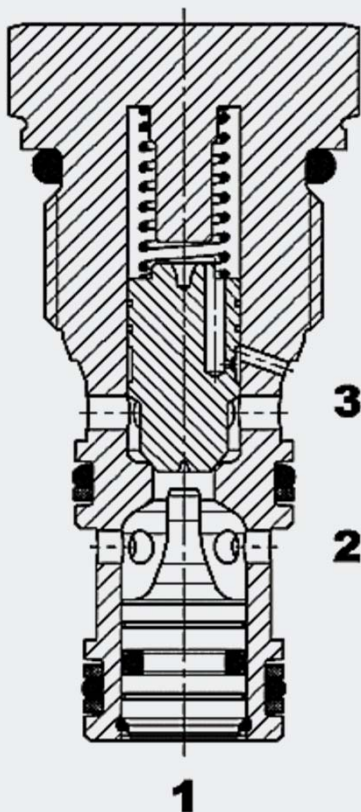
Check valve RP10B-01

pilot-to-open
poppet type, direct-acting
UNF Cartridge – 420 bar

FUNCTION

PRODUCT ADVANTAGES

- Pilot port at port 1
- Damping of check valve piston
- Option without seal on pilot piston possible
- Exposed surfaces zinc-nickel plated for increased corrosion protection (1000 h Salt spray test)



FUNCTION DESCRIPTION

The check valve is a pilot-to-open, direct-acting and spring-loaded poppet type valve.

There is free flow through the valve from port 2 to port 3 and the valve opens if the pressure at port 2 is higher than the pressure at port 3 - including the spring force.

The cone stays in closed position due to the pressure spring if there is no flow through the valve. Thus blocks port 3 to 2. This check function can be cancelled by applying a control pressure at port 1. Then, the control piston lifts the cone and allows flow from port 3 to 2.

The required pilot pressure at port 1 depends on the pressures at port 2 and 3.

Hint

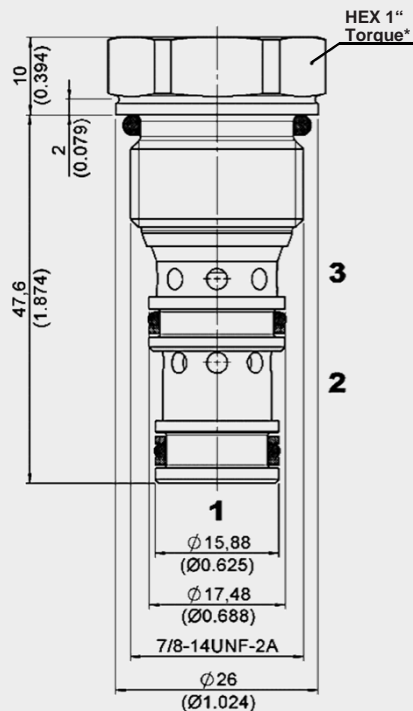
Consider that types without seal on the pilot piston result in increased leakage from port 1 to 2.

SPECIFICATIONS*

Operating pressure	Port 1: max. 350 bar Port 2 und 3: max. 420 bar
Cracking pressure	2 bar 4,5 bar
Pilot ratio	3 : 1 4 : 1
Nominal flow	max. 60 l/min
Internal leakage	0,25 cm ³ /min. at 420 bar
Media operating temperature range	NBR: min. -30 °C up to max. +100 °C FKM: min. -20 °C up to max. +120 °C
Ambient temperature range	NBR: min. -30 °C up to max. + 80 °C FKM: min. -20 °C up to max. +100 °C
Operating fluid	Hydraulic oil according to DIN 51524 part 1, 2 and 3
Viscosity range	min. 7,4 mm ² /s up to max. 420 mm ² /s
Filtration (according to ISO 4406)	< 210 bar: min. class 21/19/16 > 210 bar: min. class 20/18/15
MTTFd	150 - 1200 years, according to DIN EN ISO 13849-1
Installation	No orientation restrictions
Materials	Valve body: steel Cone: hardened and ground steel Seals: NBR (standard) FKM Back-up rings: PTFE
Cavity	FC10-3
Weight	0,12 kg

* see „Conditions and Instructions for Valves“ in brochure 53.000

DIMENSIONS



*Torque:

Steel manifold (ultimate tensile strength < 360 N/mm²): 80 Nm

Aluminium manifold (ultimate tensile strength < 330 N/mm²): 60 Nm

(tool acc. to DIN EN ISO 6789, tool type II class A or B)

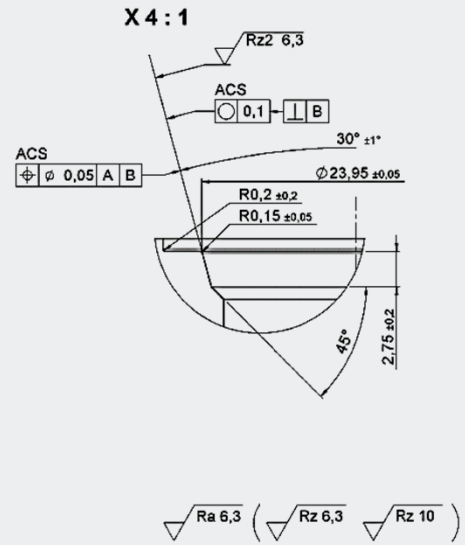
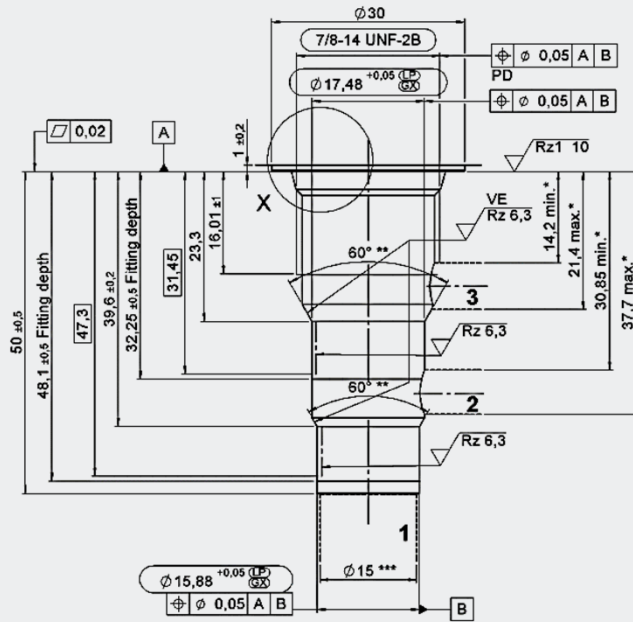
For further information see brochure No. 53.000

"Conditions and instructions for valves"

Millimeter (Inch)
Subject to technical modifications.

CAVITY

FC10-3 UNF



VE = visual examination
 * Allowed drilling zone (for manifold design)
 ** Sharp edges should be avoided by rounding to a radius of 0,1 mm to 0,2 mm
 *** Largest pre-drilling diameter (nominal tool diameter)

Millimeter (Inch)
 Subject to technical modifications.

MODEL CODE

RP10B - 01 - C - N S - 3 - 30

Basic model

Check valve pilot-to-open, UNF

Type

01 = standard

Body and ports

C = Cartridge only

Seals

N = NBR (standard)

V = FKM

Seals for pilot piston

S = with piston seal

No specification = without piston seal

Pilot ratio

3 = 3 : 1

4 = 4 : 1

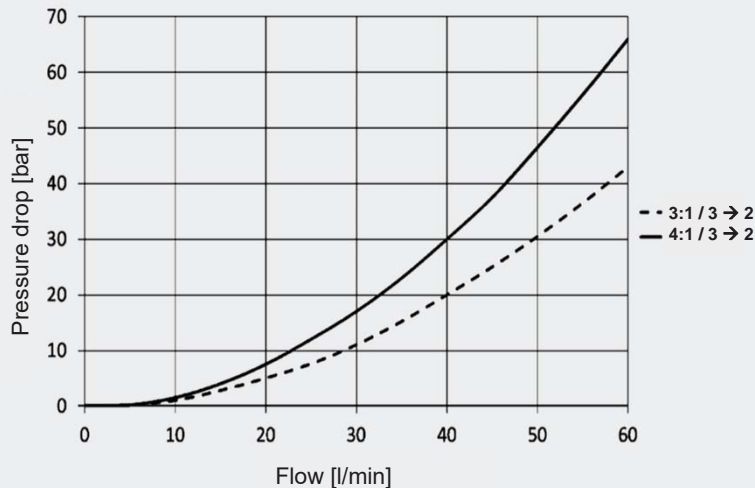
Cracking pressure

30 = 30 PSI (2 bar)

65 = 65 PSI (4,5 bar)

TYPICAL PERFORMANCE

Pilot opened, measured at 33 mm²/s and T_{oil} = 46°C



Use the following formula to calculate the pilot pressure:

$$P_{\text{pilot}} = \frac{P_{\text{port 3}} - P_{\text{port 2}}}{\phi} + P_{\text{port 2}}$$

MATERIAL OVERVIEW

Standard models

Model code	Part no.
RP10B-01-C-NS-3-30	3735260
RP10B-01-C-NS-4-65	3731226

Other models on request

Spare parts seal kits

Code	Material	Part no.
FS UNF 10/N	NBR	3651557
FS UNF 10/V	FKM	3651559

Accessories standard in-line bodies

Code	Material	Ports	Pressure	Part no.
FH103-SB4	Steel, zinc-plated	G1/2"	420 bar	3037697
FH103-AB4	Aluminium, anodised	G1/2"	210 bar	3038092

Other in-line bodies on request

Accessories form tools for cavity

Tool	Part no.
Countersink	176282
Reamer	176283

NOTE

The information in this brochure relates to the operating conditions and applications described.
For applications or operating conditions not described, please contact the relevant technical department.
Subject to technical modifications.