

Non-return valve hydraulically pilot operated

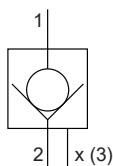
Screw-in cartridge construction

- ◆ $Q_{max} = 150 \text{ l/min}$
- ◆ $p_{max} = 350 \text{ bar}$

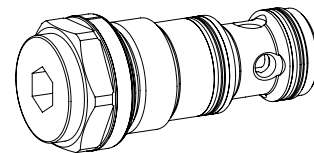
DESCRIPTION

Hydraulically pilot operated non-return valve in screw-in cartridge construction for cavity according to ISO 7789. In the free flow direction (2 → 1), the volume flow opens the spring loaded seat cone. In the opposite direction (1 → 2), the spring keeps the valve closed. If pressure is built up in connection x, the pilot control spool is shifted and the non-return valve of the closed off port is opened by this. The required pilot control pressure depends on the pilot ratio.

SYMBOL



M33 x 2
ISO 7789



APPLICATION

Pilot operated non-return valves are used for closing off pressurised hydraulic cylinders leak free, for example in lifting or clamping devices. The spool valve that directs the volume flow to port x, should have both service ports connected to the tank in the rest position for reasons of operational safety.

INSTALLATION NOTES

Mounting type	Screw-in cartridge M33 x 2
Mounting position	Any
Tightening torque	$M_D = 80 \text{ Nm}$ screw-in cartridge

TYPE CODE

Non-return valve hydraulically pilot operated		RN		X		PM33		-		-		#	
Screw-in cartridge M33 x 2													
Opening pressure p_a	2 bar	<input type="text" value="2"/>											
	5 bar	<input type="text" value="5"/>											
Sealing material	NBR	<input type="text"/>											
	FKM (Viton)	<input type="text" value="D1"/>											
	NBR 872	<input type="text" value="Z604"/>											
Design index (subject to change)													
2.7-62													

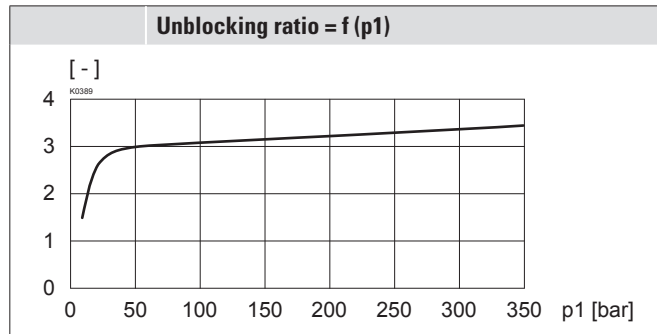
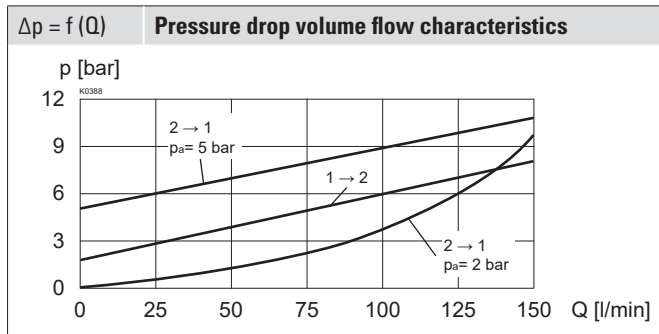
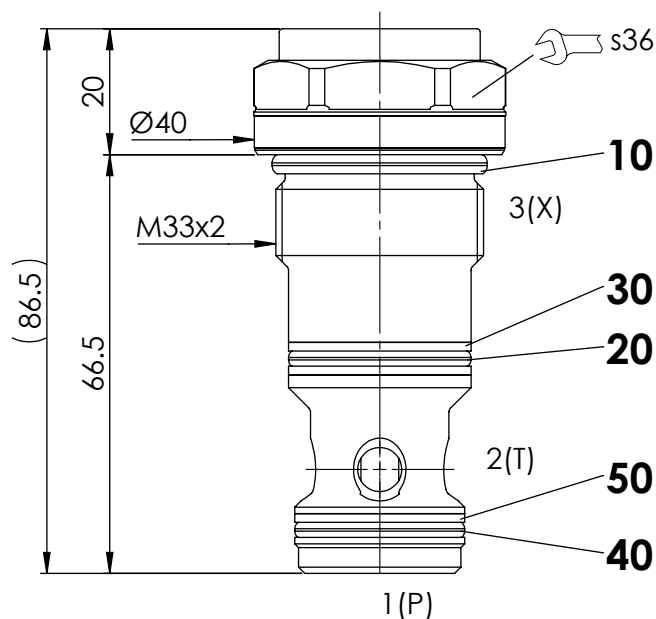
GENERAL SPECIFICATIONS

Designation	Non-return valve hydraulically pilot operated
Mounting	Screw-in cartridge construction
Nominal size	M33 x 2 according to ISO 7789
Actuation	None
Ambient temperature	-25...+90 °C
Weight	0,37 kg

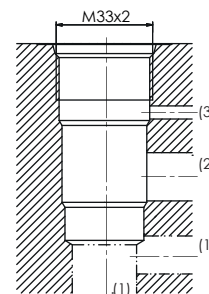
HYDRAULIC SPECIFICATIONS

Working pressure	$p_{max} = 350 \text{ bar}$
Opening pressure	$p_a = 2; 5 \text{ bar}$
Maximum volume flow	$Q_{max} = 150 \text{ l/min}$
Leakage oil	Seat tight, max. 0,15 ml / min (approx. 3 drops / min) at 30 cSt
Fluid	Mineral oil, other fluid on request
Viscosity range	12 mm ² /s...320 mm ² /s
Temperature range fluid	-25...+90 °C (NBR) -20...+90 °C (FKM)
Contamination efficiency	Class 20 / 18 / 14
Filtration	Required filtration grade $\beta_{10...16} \geq 75$, see data sheet 1.0-50
Pilot ratio	See characteristic
Area ratio	$i = 1 : 3,2$

PERFORMANCE SPECIFICATIONS

 Oil viscosity $\nu = 30 \text{ mm}^2/\text{s}$

DIMENSIONS

HYDRAULIC CONNECTION

Cavity drawing according to ISO 7789-33-06-0-98


Note!


For detailed cavity drawing and cavity tools see data sheet 2.13-1011

SEALING MATERIAL

NBR or FKM (Viton) as standard, choice in the type code

PARTS LIST

Position	Article	Description
10	160.2298	O-ring ID 29,82 x 2,62 (NBR)
	160.6296	O-ring ID 29,82 x 2,62 (FKM)
20	160.2252	O-ring ID 25,12 x 1,78 (NBR)
	160.6252	O-ring ID 25,12 x 1,78 (FKM)
30	049.3296	Back-up ring rd 26,1 x 29,4 x 1,4
40	160.2236	O-ring ID 23,52 x 1,78 (NBR)
	160.6236	O-ring ID 23,52 x 1,78 (FKM)
50	049.3276	Back-up ring rd 24,1 x 27 x 1,4

SURFACE TREATMENT

♦ The cartridge body is zinc-nickel coated

STANDARDS

Cartridge cavity	ISO 7789
Contamination efficiency	ISO 4406

ACCESSORIES

Technical explanations	Data sheet 1.0-100
Hydraulic fluids	Data sheet 1.0-50
Filtration	Data sheet 1.0-50

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