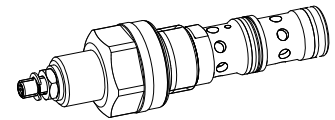


3-way flow control valve
With a fixed pressure compensator
and adjustable orifice
Screw-in cartridge construction

- $Q_{max} = 42$ l/min
- $Q_{Nmax} = 40$ l/min
- $p_{max} = 350$ bar

M22x1,5
 ISO 7789

DESCRIPTION

3-way flow control valve as screw-in cartridge with thread M22x1.5 for cavity in accordance with ISO 7789. The valve can be supplied in 2 different setting versions: Spanner setting «S» and rotary knob setting «D». Available as standard are 3 nominal flow steps. The two-part cartridge body is made of steel. External parts are zinc coated and as a result rust protected.

FUNCTION

The 3-way flow control valve is designed to keep the oil flow to any actuator constant irrespective of the load. Surplus volume flow will be diverted to the tank line thus saving energy and preventing an overheating of the hydraulic system. By turning the knob of the variable restrictor, the volume flow can be adjusted. In case of pressure fluctuations, the through flow cross-section in the pressure balance spool changes in such a manner, that the pressure difference in the measuring orifice is kept constant.

APPLICATION

For use in all hydraulic systems where the supply volume flow needs to be kept constant even when the load fluctuates. Installation of the screw-in cartridge in control blocks as well as in the Wandfluh sandwich plates (vertical stacked systems) and flange valves. (Please note the separate data sheets in register 2.5) Cavity tools are available for machining cavities (hire or purchase). Please refer to the data sheets in register 2.13.

TYPE CODE

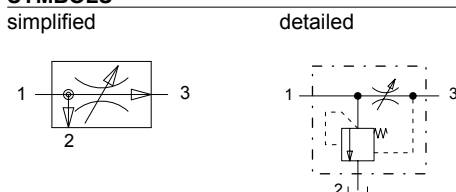
		QD <input type="checkbox"/> PM22 - <input type="checkbox"/> # <input type="checkbox"/>	
Flow control valve, 3-way			
Type of adjustment	Screw <input type="checkbox"/>	Turning knob <input type="checkbox"/>	Cover <input type="checkbox"/> (see data sheet 2.0-50)
Screw-in cartridge M22x1,5			
Nominal flow rate Q_N	12 l/min	<input type="checkbox"/>	<input type="checkbox"/>
	25 l/min	<input type="checkbox"/>	<input type="checkbox"/>
	40 l/min	<input type="checkbox"/>	<input type="checkbox"/>
Design-Index (Subject to change)			

GENERAL SPECIFICATIONS

Denomination	3-way flow control valve
Construction	Screw-in cartridge for cavity acc. to ISO 7789
Type of fastening	Screw-in thread M22x1,5
Ambient temperature	-20...50 °C
Installation position	any
Tightening torque	$M_D = 50$ Nm
Weight	m = 0,22 kg (screw) m = 0,23 kg (knob)
Volume flow direction	1 → 3 adjustable flow

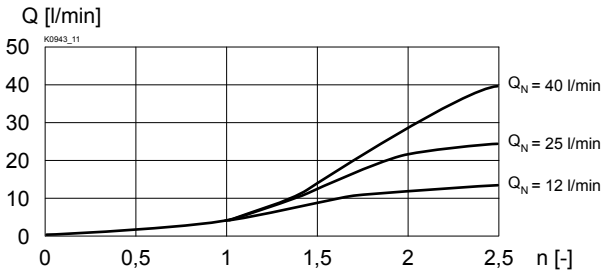
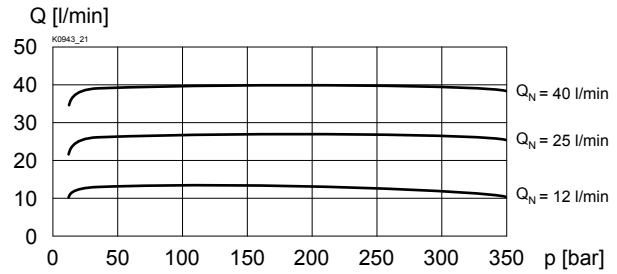
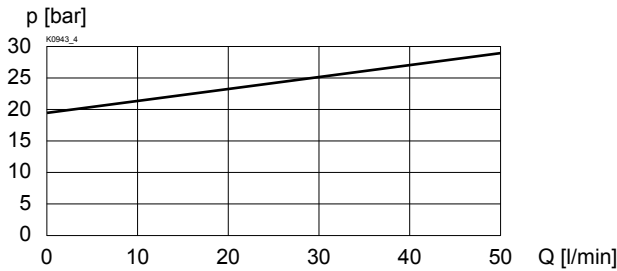
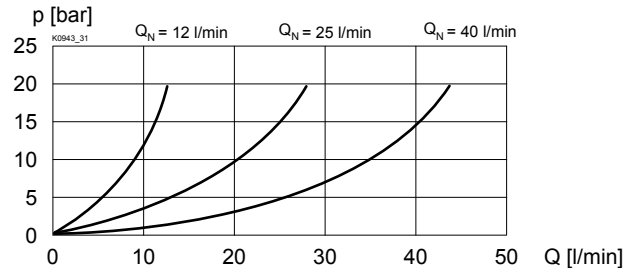
HYDRAULIC SPECIFICATIONS

Fluid	Mineral oil, other fluid on request
Contamination efficiency	ISO 4406:1999, class 18/16/13 Required filtration grade ($\beta_{6...10} \geq 75$) (refer to data sheet 1.0-50/2)
Viscosity range	12 mm ² /s...320 mm ² /s
Fluid temperature	-20...+70 °C
Peak pressure	$p_{max} = 350$ bar
Nominal volume flow rates	$Q_N = 12$ l/min, 25 l/min, 40 l/min
Min. volume flow	$Q_{min} = 0,1$ l/min (at $v = 30$ mm ² /s)
Max. volume flow	$Q_{max} = 42$ l/min
Max. feed flow	50 l/min
Control accuracy	≤ 1%

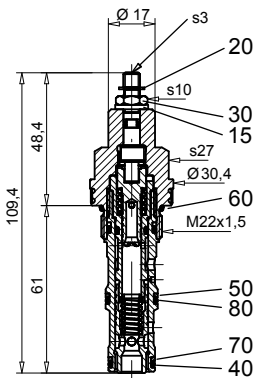
SYMBOLS

MECHANICAL ACTUATION

Mechanical types of operation in 2 different versions:

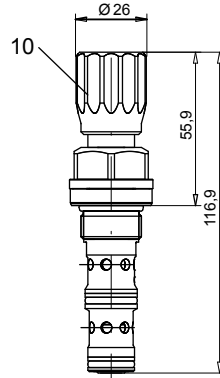
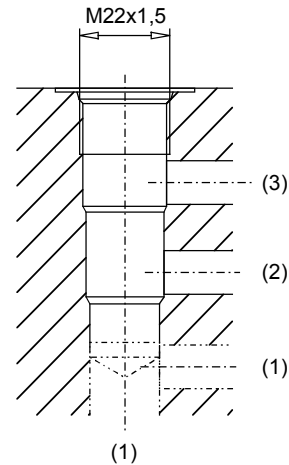
S	= Screw adjustment with fork wrench and Allen key
D	= Control knob adjustment, fixed
Control stroke S_b	= 2,5 mm
Control angle α_b	= 900° (2,5 turns)

CHARACTERISTICS Oil viscosity $\nu = 30 \text{ mm}^2/\text{s}$
 $Q = f(n)$ Volume flow adjustment characteristic (at $p = 350 \text{ bar}$)

 $Q = f(p)$ Volume flow pressure characteristic

 $\Delta p = f(Q)$ Pressure drop volume flow characteristic 1 → 2

 $\Delta p = f(Q)$ Pressure drop-volume flow characteristic 1 → 3

DIMENSIONS / SECTIONAL DRAWINGS

Screw adjustment «S»



Knob adjustment «D»


 Cavity drawing
 ISO 7789-22-04-0-98

 For cavity details and
 cavity tools,
 see data sheet 2.13-1004

PARTS LIST

Position	Article	Description
10	114.2299	Knob
15	234.1060	Plate
20	193.1040	Safety plate RD4 DIN 6799
30	153.1302	Hexagonal nut 0,5D M6x3,2
40	160.2140	O-ring ID 14,00x1,78
50	160.2156	O-ring ID 15,60x1,78
60	160.2188	O-ring ID 18,77x1,78
70	049.3176	Back-up RD 14,1x17x1,4
80	049.3196	Back-up RD 16,1x19x1,4

ACCESSORIES

Flange-/sandwich plate NG6	Data sheet 2.5-742
Line mount body	Data sheet 2.9-210

Technical explanation see data sheet 1.0-100