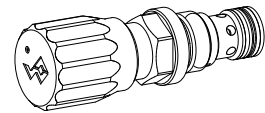


Restrictor valve with reverse free flow check
Screw-in cartridge

- Q_{max} = 25 l/min
- Q_N = 25 l/min
- p_{max} = 350 bar

M18x1,5
 ISO 7789

DESCRIPTION

Manually adjustable restrictor valve in cartridge format with an M18x1,5 thread, in accordance with ISO 7789. Standard adjustment types: «S» = Screw adjustment «D» = Knob adjustment. The cartridge body made of steel is galvanized and therefore rust-protected.

FUNCTION

The one part throttle / check piston gives unrestricted flow from port 2 to 1 (see hydraulic symbol). The pressure required to open the check valve = 1 bar. The throttled flow is from port 1 to 2 (see hydraulic symbol). The oil flow closes the check valve and is then controlled via a notched cone, to give good linear control. When the throttle is closed the valve is leak free.

APPLICATION

Restrictor valves with reverse free flow check are used wherever non pressure compensated flow is required in one direction and unrestricted in the other direction.

Installation of the screw-in cartridge in control blocks as well as in the Wandfluh sandwich plates (vertical stacked systems) of the NG3-Mini types. (Please note the separate data sheets in register 2.4). Cavity tools are available for machining the cavities in steel and aluminium (hire or purchase). Please refer to the data sheets in register 2.13.

TYPE CODE

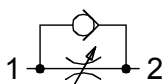
		DR	<input type="checkbox"/>	PM18	-	<input type="checkbox"/>	#	<input type="checkbox"/>
Restrictor valve with reverse free flow check								
Type of adjustment	Key	<input type="checkbox"/>	S					
	Control knob	<input type="checkbox"/>	D					
Screw-in cartridge M18x1,5								
Nominal volume flow rate Q_N	3,2 l/min	<input type="checkbox"/>	3,2					
	25 l/min	<input type="checkbox"/>	25					
Design-Index (Subject to change)								

GENERAL SPECIFICATIONS

Denomination	Restrictor valve with reverse free flow check
Construction	Screw-in cartridge for cavity acc. to ISO 7789
Mounting	Screw-in thread M18x1,5
Ambient temperature	-25...+50 °C
Mounting position	any
Fastening torque	$M_D = 30 \text{ Nm}$
Weight:	$m = 0,1 \text{ kg}$ (screw) $m = 0,11 \text{ kg}$ (knob)
Volume flow direction:	1 → 2 adjustable flow 2 → 1 free flow

HYDRAULIC SPECIFICATIONS

Fluid	Mineral oil, other fluid on request
Contamination efficiency	ISO 4406:1999, class 20/18/14...21/19/15 (Required filtration grad $\beta_{10} \dots 25 \geq 75$) refer to data sheet 1.0-50/2
Viscosity range	12 mm ² /s...320 mm ² /s
Temperature of fluid	-25...+70 °C
Peak pressure	$p_{max} = 315 \text{ bar}$
Opening pressure	$p_o = 1 \text{ bar}$
Nominal volume flow rates	$Q_N = 25 \text{ l/min}$, $Q_N = 3,2 \text{ l/min}$ Q_N at 10 bar valve pressure loss
Max. volume flow	$Q_{max} = 25 \text{ l/min}$
Leakage volume flow	almost leak free with closed restrictor

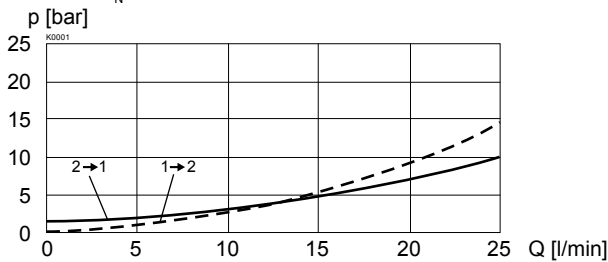
SYMBOL

ACTUATION MECHANICAL

Mechanical types of operation in 2 different versions:

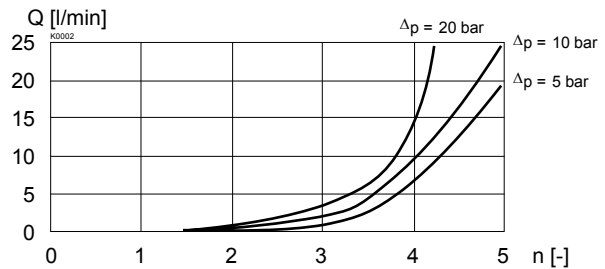
S	= Screw adjustment with fork wrench and Allen key
D	= Control knob adjustment, fixed
Control stroke S_b	= 5 mm
Control angle α_b	= 180° / 5 turns

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

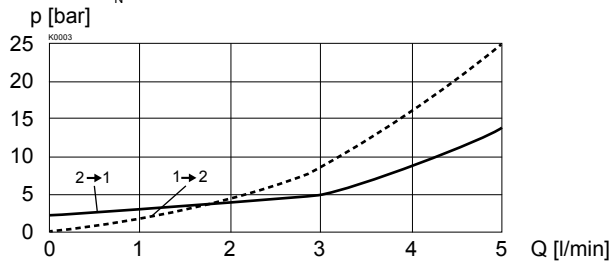
$\Delta p = f(Q)$ Flow-pressure loss characteristics
 — 2 → 1 through check valve throttle closed
 - - - 1 → 2 through throttle fully open
 $Q_N = 25 \text{ l/min}$



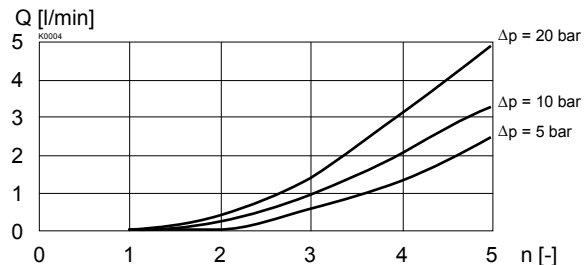
$Q = f(n)$ Volume flow adjustment characteristics
 $Q_N = 25 \text{ l/min}$



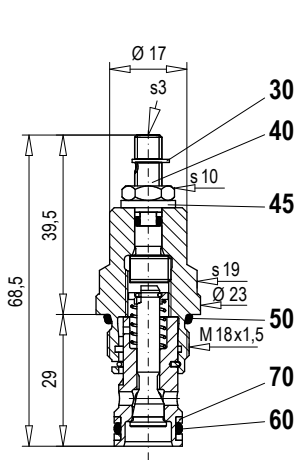
$\Delta p = f(Q)$ Flow-pressure loss characteristics
 — 2 → 1 through check valve throttle closed
 - - - 1 → 2 through throttle fully open
 $Q_N = 3,2 \text{ l/min}$



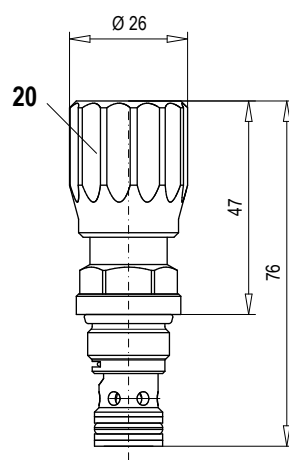
$Q = f(n)$ Volume flow adjustment characteristics
 $Q_N = 3,2 \text{ l/min}$


DIMENSIONS / SECTIONAL DRAWING

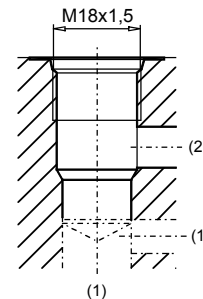
Screw adjustment «S»



Knob adjustment «D»



Cavity drawing according to ISO 7789-18-01-0-98



For detailed cavity drawing and cavity tools see data sheet 2.13-1002.

PARTS LIST

Position	Article	Description
20	114.2299	Knob
30	193.1040	Safety plate RD4 DIN 6799
40	153.1302	Hexagonal nut 0,5D M6x3,2
45	234.1060	Disc
50	160.2156	O-ring ID 15,60x1,78
60	160.2111	O-ring ID 11,11x1,78
70	049.3156	Back-up ring RD 12,1x15x1,4

ACCESSORIES

Flange-/sandwich plate NG3-Mini Data sheet 2.4-800
 Line mount body Data sheet 2.9-205

Technical explanation see data sheet 1.0-100