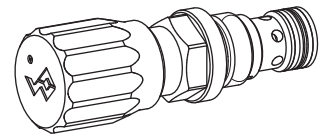


**Restrictor valve with reverse free flow check**
**Screw-in cartridge**

- $Q_{max}$  = 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.

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**TYPE CODE**

	DR	<input type="checkbox"/>	PM18	-	<input style="width: 20px;" type="text"/>	#	<input type="checkbox"/>
Restrictor valve with reverse free flow check							
Setting versions: Key	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Control knob	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Screw-in cartridge M18x1,5							
Standard nominal volume flow rates:	$Q_N = 3,2$ l/min	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(at 10 bar valve pressure loss)	$Q_N = 25$ l/min	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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	-20...+50 °C
Mounting position	any
Fastening torque	$M_D = 30$ Nm
Weight:	$m = 0,1$ kg (screw) $m = 0,11$ 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 $\beta_{10} \dots 25 \geq 10$ ) refer to data sheet 1.0-50/2
Viscosity range	12 mm <sup>2</sup> /s...320 mm <sup>2</sup> /s
Temperature of fluid	-20...+70 °C
Peak pressure	$p_{max} = 315$ bar
Opening pressure	$p_o = 1$ bar
Nominal volume flow rates	$Q_N = 25$ l/min, $Q_N = 3,2$ l/min $Q_N$ at 10 bar valve pressure loss
Max. volume flow	$Q_{max} = 25$ l/min
Leakage volume flow	almost leak free with closed restrictor

**SYMBOL**

**ACTUATION MECHANICAL**

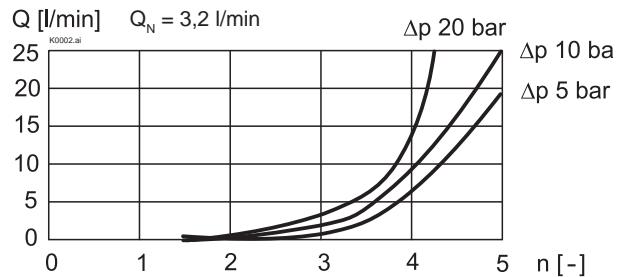
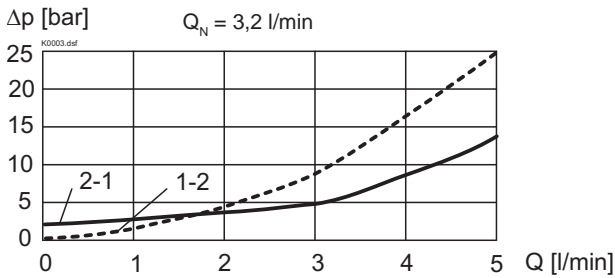
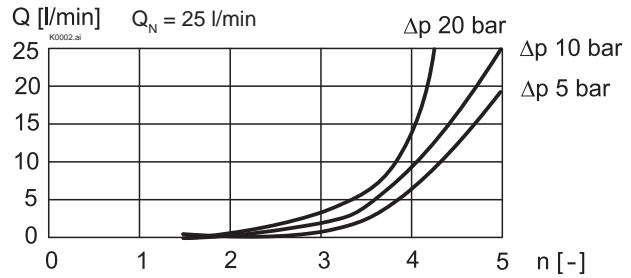
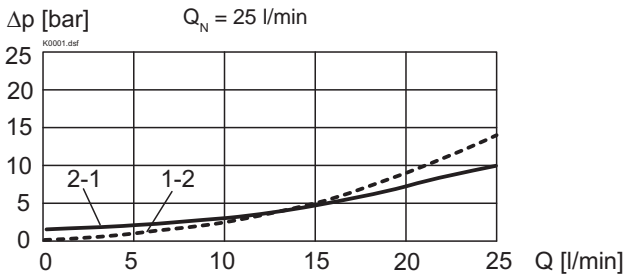
Mechanical types of operation in 2 different versions:

- |                          |  |
|--------------------------|--|
| S                        | = Screw adjustment<br>with fork wrench and Allen key |
| D                        | = knob adjustment                                    |
| Control stroke $S_b$     | = 5 mm   |
| Control angle $\alpha_b$ | = 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

$Q = f(n)$  Volume flow adjustment characteristics

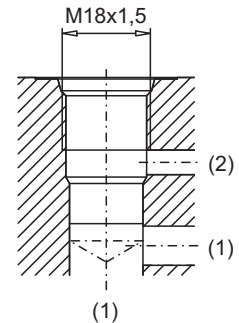
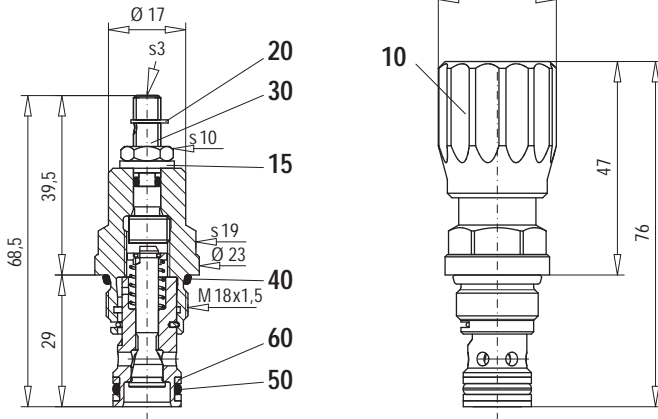


**DIMENSIONS / SECTIONAL DRAWING**

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
10	114.2299	Knob
15	234.1060	Disc
20	193.1040	Safety plate RD4 DIN 6799
30	153.1302	Hexagonal nut 0,5D M6x3,2
40	160.2156	O-ring ID 15,60x1,78
50	160.2111	O-ring ID 11,11x1,78
60	049.3156	Back-up ring RD 12,1x15x1,4

**ACCESSORIES**

Cartridge built into sandwich plate:

Sandwich valve

register 2.4

Technical explanation see data sheet 1.0-100