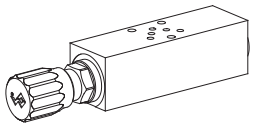
Restrictor valve with reverse free flow check
Sandwich construction

- Q_{max} = 10 l/min
- $Q_{N\,max}$ = 8 l/min
- p_{max} = 315 bar

NG3-Mini®



DESCRIPTION

Sandwich type one-way restrictor. Fitted with one way restrictor cartridge with incorporated free flow check. Screw-in cartridge M18x1,5 in accordance with ISO 7789 (see data sheet no. 2.4-610). The sandwich plate made of steel is zinc-nickel coated.

FUNCTION

Free flow in one direction via the spring-loaded check valve integrated in the screw-in cartridge. The opening pressure of the check valve $p_ö$ = 1 bar. In the other direction, with the check valve shut, the volume flow can be infinitely adjusted via the restrictor section as a function of the pressure.

APPLICATION

Sandwich type, one-way restrictors are used where volume flows have to be controlled in one flow direction according to the load. Depending on the application, a distinction is made between restricting the forward flow or the return flow. These sandwich valves are particularly suitable for machine tools and also all kinds of handling operations. Mini-3 oneway restrictors are used where hydraulic systems have to be both light and compact.

TYPE CODE

DR ☐ S A03 - ☐ - ☐ # ☐

Throttle check valve				
Type of adjustment	Screw	S		
	Knob	D		
Sandwich construction				
Mounting interface acc. to Wandfluh standard, NG3-Mini				
Type list / function				
Meter-out	in A	A	in B	B
	in A and B	AB		
Meter-in	in A	AV	in B	BV
	in A and B	ABV		
Nominal volume flow rates Q_N	3,2 l/min	3,2		
	8 l/min	8		
Design-Index (Subject to change)				

GENERAL SPECIFICATIONS

Denomination	Restrictor valve with reverse free flow check
Nominal size	NG3-Mini acc. to Wandfluh standard
Construction	Sandwich
Mounting	3 mounting holes for socket head cap screws M4 or stud screws M4
Connections	Threaded connection plates, Multi-flange subplates, Longitudinal stacking system
Ambient temperature	-20…+50 °C
Mounting position	any
Fastening torque	M_D = 2,8 Nm (Qual. 8.8) for fastening screws M_D = 30 Nm for screw-in cartridge
Weight	Depending on the type 0,4…0,5 kg

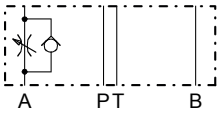
HYDRAULIC SPECIFICATIONS

Fluid	Mineraoil, other fluid on request
Contamination efficiency	ISO 4406:1999, class 20/18/14…21/19/15 (Required filtration grade ß 10…25 ≥ 75) refer to data sheet 1.0-50/2
Viscosity range	12 mm²/s…320 mm²/s
Fluid temperature	-20...+70 °C
Peak pressure	p_{max} = 315 bar
Pressure required to open the check valve	$p_ö$ = 1 bar
Nominal volume flow rates	Q_N = 8 l/min, Q_N = 3,2 l/min Q_N at 10 bar valve pressure loss
Max. volume flow	Q_{max} = 10 l/min
Leakage volume flow	Almost leak free with closed restrictor

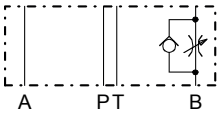
For further hydraulic specifications refer to data sheet 2.4-610.

TYPE LIST / FUNCTION

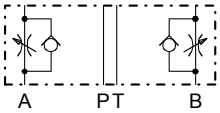
Meter-out:



DR.SA03-A

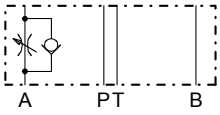


DR.SA03-B

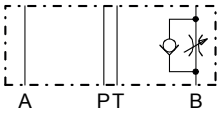


DR.SA03-AB

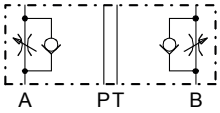
Meter-in:



DR.SA03-AV



DR.SA03-BV

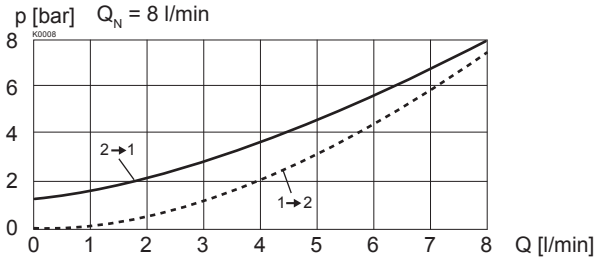


DR.SA03-ABV

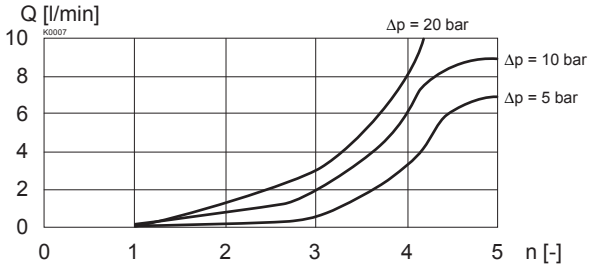
Valves for restricting the meter-in flow are achieved by turning the one-way restrictors (horizontal axis):
A get BV
B get AV
AB get ABV
Valves for restricting the meter-in flow are supplied with a sealing plate and an intermediate plate.

CHARACTERISTICS Oil viscosity υ = 30 mm²/s

$\Delta p = f(Q)$ Pressure loss / volume flow diagram
—— 2 → 1 over check valve by closed restrictor
- - - 1 → 2 restrictor complitly open



$Q = f(n)$ Volume flow - adjustment characteristics
Q_N = 8 l/min



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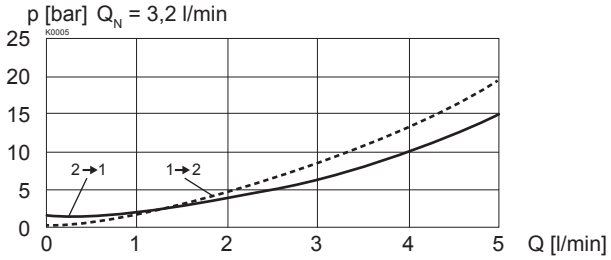
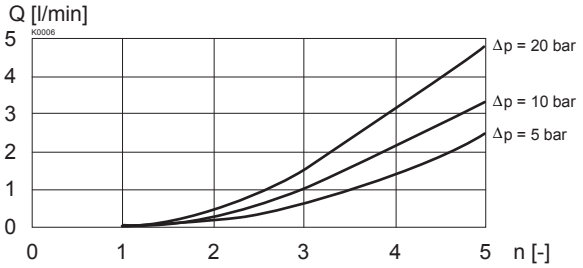
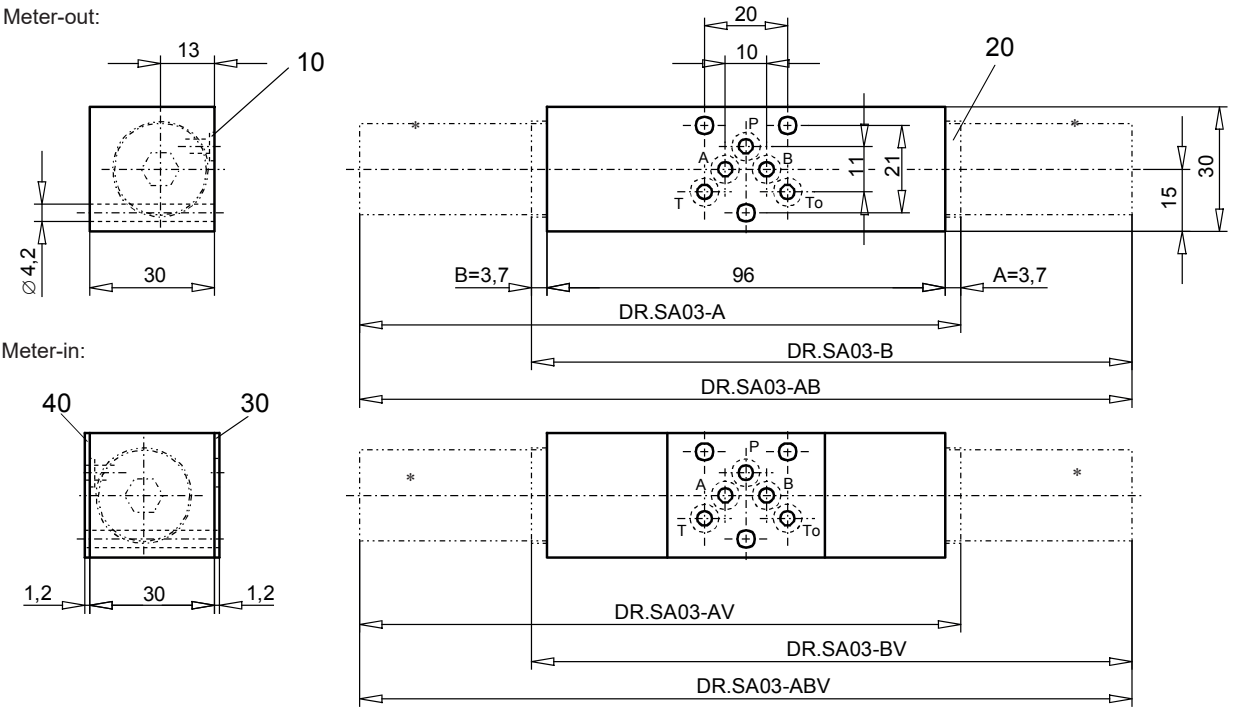


$Q = f(n)$ Volume flow - adjustment characteristics
Q_N = 3,2 l/min



DIMENSIONS

Meter-out:



Meter-in:

∗ The total lenghts depends on the cartridge type, see data sheet no. 2.4-610.

PARTS LISTS

Position	Article	Description
10	160.2045	O-ring ID 4,5x1,5
20	238.4401	Plug VSTI M18x1,5-OR
30	173.0650	Sealing plate PDSA03
40	173.0700	Intermediate plate PZSA03

SCREW-IN CARTRIDGES INSTALLED

The following screw-in cartridges are used in the sandwich body:

Type	*Designation*	*Data sheet no.*
DR.PM18	Restrictor valve with reverse free flow check	2.4-610

Technical explanation see data sheet 1.0-100