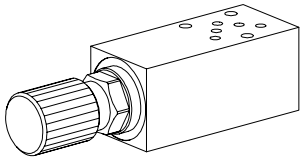
2-way flow control valve
Fixed orifice, adjustable pressure compensator
Sandwich construction

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

NG3-Mini®



DESCRIPTION

Sandwich type 2-way flow control valve. Fitted with 2-way flow control cartridge M18x1,5 in accordance with ISO 7789. Type of adjustment available: „S“ = screw adjustment, „D“ = knob adjustment, „K“ = locking knob adjustment (see data sheet no. 2.5-510). In order to save weight and to protect against corrosion, both sandwich body and knob of cartridge are in anodized aluminium.

FUNCTION

The 2-way flow control valve is designed to keep the speed of a consumer constant irrespective of the load. The fixed measuring orifice which is integrated into the pressure compensating piston determines the volume flow. If there is a pressure change, the pressure compensating spool is displaced and changes the outlet diameter in order to keep the pressure difference across the measuring orifice constant. By varying the spring bias acting on the compensator spool, the flow rate can be changed. Minimum adjustable flow within 40…70 % of Q_N. Flow regulation is effective above Δp 10 bar approx.

APPLICATION

Sandwich type flow control valves are used where the supply volume flow has to be kept constant even when the load fluctuates. 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 types of handling operations. The Mini-3 flow control valves are used where hydraulic systems have to be both light and compact.

CONTENT

TYPE CODE

QA [ ] S A03 - [ ] - [ ] # [ ]

Flow control valve 2-way				
Setting versions:	Screw	S		
	Knob	D		
	Key	K		
Sandwich				
Interface NG3-Mini				
Flow control:	P	P	T	T
Meter-out flow control:	A and B	AB		
	A	A	B	B
Meter-in flow control:	A and B	ABV		
	A	AV	B	BV
Nominal volume	Q_N = 0,4...0,6 l/min	0,63		
	Q_N = 0,8...1,25 l/min	1,25		
	Q_N = 1,3...2,1 l/min	2		
	Q_N = 2,5...5 l/min	5		
	Q_N = 5 ... 8 l/min	8		
Design-Index (Subject to change)				

GENERAL SPECIFICATIONS

Description	2-way flow control valve
Nominal size	NG3-Mini acc. to Wandfluh standard
Construction	Sandwich
Mounting	3 mounting holes for socket head screws M4 or double ended 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 (quality 8.8) for fastening screws M_D = 30 Nm for screw-in cartridge
Weight	depending on the type 0,32…0,42 kg

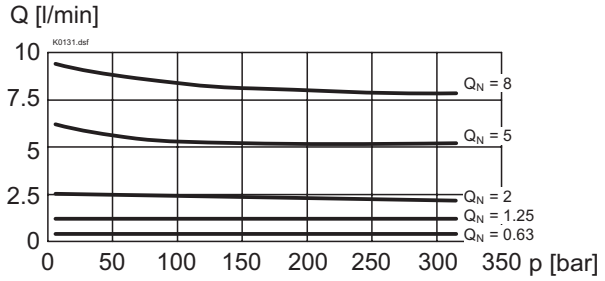
HYDRAULIC SPECIFICATIONS

Fluid	Mineral oil, other fluid on request
Contamination efficiency	ISO 4406:1999, class 18/16/13 (Required filtration grade ß 6...10 ≥ 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
Opening pressure to non-return valve	$p_ö$ = 0,2 bar
Minimum pressure for controlled flow	Δp = 10 bar
Nominal volume flow	Q_N= 0,63 l/min, Q_N= 1,25 l/min, Q_N= 2 l/min, Q_N= 5 l/min, Q_N= 8 l/min
Min. volume flow	Q_{min} = 0,4 l/min
Max. volume flow	Q_{max} = 10 l/min
Hysteresis	depending on nominal volumeflow 3...8 %

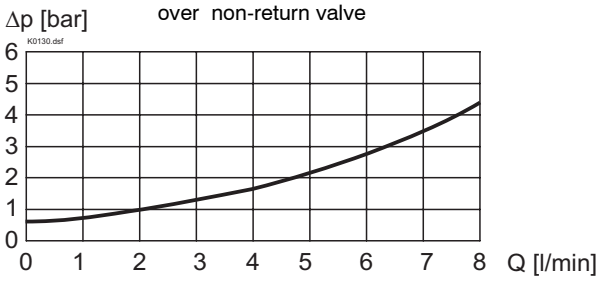
For further hydraulic specifications refer to data sheet 2.5-510.

CHARACTERISTICS Oil viscosity υ = 30 mm²/s

Q = f (p) Pressure drop/flow characteristics

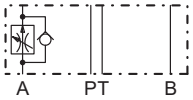


Δp = f (Q) Pressure loss/flow characteristics over non-return valve

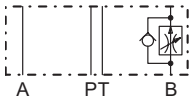


SYMBOLS / DIMENSIONS

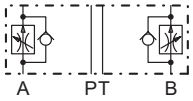
Meter-out flow control



QA.SA03-A

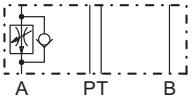


QA.SA03-B

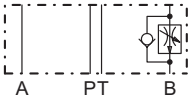


QA.SA03-AB

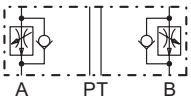
Meter-in flow control



QA.SA03-AV



QA.SA03-BV

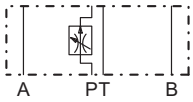


QA.SA03-ABV

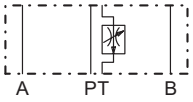
By turning around valves with meter-out function, meter-in function can be adchieved

A	turns into	BV
B	turns into	AV
AB	turns into	ABV

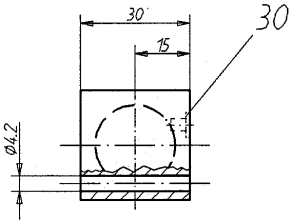
Valves for meter-in functions are supplied with a sealing plate and a intermediate plate



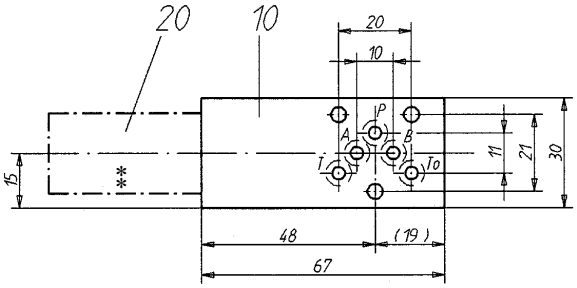
QA.SA03-P



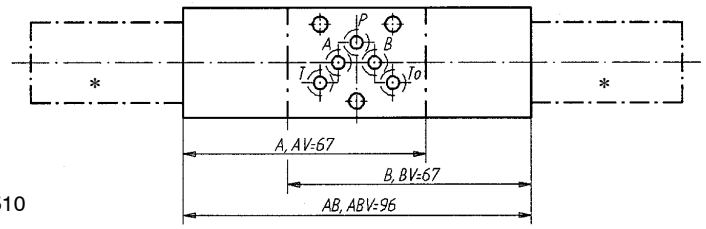
QA.SA03-T



Sandwich types QA . SA03-P, T



Sandwich types QA . SA03-A, AV, B, BV AB, ABV



* The total lenghts depends on the cartridge type, see data sheet 2.5-510

Technical explanation see data sheet 1.0-100E

PARTS LIST

Position	Article	Description
10	128.5601	Sandwich plate P
	128.5603	Sandwich plate T
	128.6601	Sandwich plate A, BV
	128.6602	Sandwich plate B, AV
	128.6600	Sandwich plate AB, ABV

Position	Article	Description
20	633.1 . . .	Flow control cartridge M18x1,5 Data sheet 2.5-510
30	160.2045	O-ring ID 4,5x1,5
50	173.0700	Intermediate plate PZSA03
60	173.0650	Sealing plate PDSA03