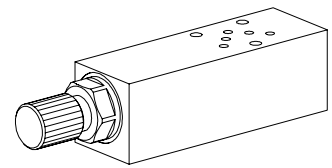


**Pressure reducing valve
 Flange- and sandwich construction**

- **Pilot operated**
- $Q_{max} = 20 \text{ l/min}$
- $p_{max} = 400 \text{ bar}$
- $p_{N \text{ red max}} = 350 \text{ bar}$

NG4-Mini[®]

DESCRIPTION

Flange or sandwich type pilot operated 3-way pressure reducing valve NG4-Mini in accordance with Wandfluh standard. Screw-in cartridge M22x1,5 in according with ISO 7789. The valve reduces the inlet pressure to a preset output pressure. The integrated pressure relief function prevents the reduced pressure from being exceeded as a result of external forces. Two types of setting and four pressure stages are available. A pressure gauge connection is provided in the reduced connection. A bypass non-return valve plate for the flange valve - for free flow from A to P - can be ordered separately. The flange valve body is painted, the other parts are phosphatised.

FUNCTION

The spool, located in the pilot operated main section of the valve, is held in the reset position by a spring. The connection to the consumer is fully open. With the pilot stage which is designed as relief valve, reduced pressure is adjustable. It opens when the set value is reached. As a result, a pilot volume flows through the nozzle in the spool. The resultant pressure difference displaces the spool towards the spring. The volume flow is throttled in the valve inlet and the reduced pressure is controlled. If forces acting on the actuator allow the reduced pressure to exceed the set value, the spool is displaced until the valve inlet closes and the reduced pressure port is being connected to tank. The pressure increase is then limited.

APPLICATION

Pressure reducing valves are used for keeping the pressure constant in a consumer, irrespective of pressure fluctuations on the supply side. If several consumers are used, the reduced pressure can be set individually with the aid of one pressure control valve for each consumer. Generally speaking, pressure control valves are used for reducing a hydraulic pressure to a lower level. The integrated pressure relief function obviates the need for any additional pressure relief valve in the reduced pipe. Directly operated pressure reducing valves also keep the reduced pressure stable, even under very difficult operating conditions. Mini-4 valves are used where both, reduced dimensions and weight are important.

CONTENT

GENERAL SPECIFICATIONS	1
HYDRAULIC SPECIFICATIONS	1
CHARACTERISTICS	2
TYPES / DIMENSIONS	2
PARTS LIST	2
ACCESSORIES	2

TYPE CODE

			M	V	<input type="checkbox"/>	<input type="checkbox"/>	A04	-	<input type="checkbox"/>	-	<input type="checkbox"/>	#	<input type="checkbox"/>
Pressure reducing valve													
Pilot operated													
Setting versions:	Screw	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Knob	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Locking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flange construction		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sandwich construction		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interface NG4-Mini													
Sandwich construction	P	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pressure control in:	A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	B	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flange construction		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pressure control in:	P → A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Standard nominal pressure range:	$p_{N \text{ red}} = 63 \text{ bar}$	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	$p_{N \text{ red}} = 160 \text{ bar}$	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	$p_{N \text{ red}} = 350 \text{ bar}$	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Design-Index (Subject to change)													

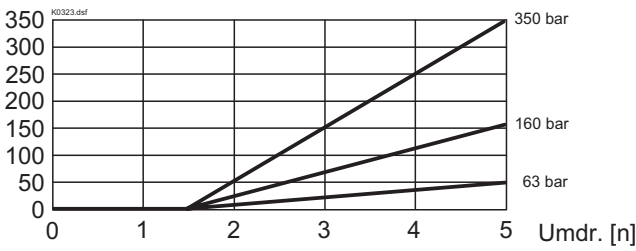
GENERAL SPECIFICATIONS

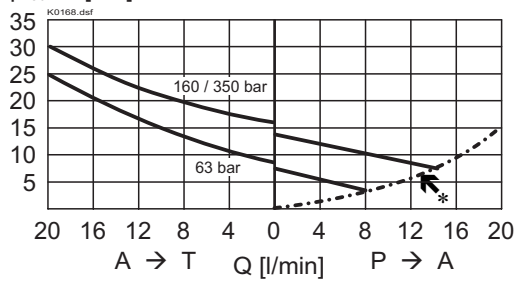
Description	Pilot operated pressure control valve
Nominal size	NG4-Mini according to Wandfluh standard
Construction	Flange- or sandwich
Mounting	3 mounting holes for zyl. screws M5 or double ended screws M5
Connection	Threaded connection plates Multi-flange subplates Longitudinal stacking system
Ambient temperature	-20...+50°C
Mounting position	any
Fastening torque	$M_0 = 5,5 \text{ Nm}$ (qual. 8.8) for fastening screws $M_0 = 50 \text{ Nm}$ for screw-in cartridge
Weight	Depending on the type 1,4...1,53 kg

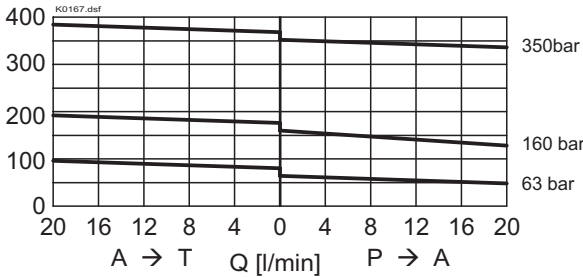
HYDRAULIC SPECIFICATIONS

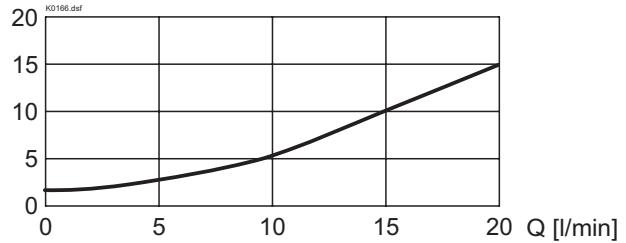
Fluid	Mineral oil, other fluid on request
Contamination efficiency	ISO 4406:1999, class 18/16/13 Required filtration grade $\beta_{6...10} \geq 75$ refer to data sheet 1.0-50/2
Viscosity range	12 mm ² /s...320 mm ² /s
Fluid temperature	-20...+70°C
Peak pressure	$p_{max} = 400 \text{ bar}$
Nominal pressure ranges	$p_{N \text{ red}} = 63 \text{ bar}$, $p_{N \text{ red}} = 160 \text{ bar}$ $p_{N \text{ red}} = 350 \text{ bar}$
Opening pressure to non-return valve	$p_0 = 2,2 \text{ bar}$
Volume flow	$Q = 0...20 \text{ l/min}$
For further hydraulic specifications see data sheet 2.2-530	

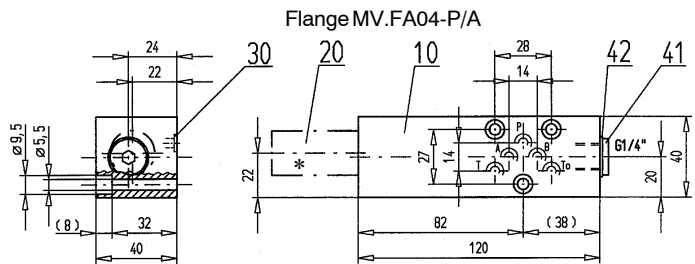
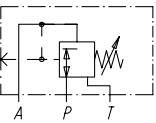
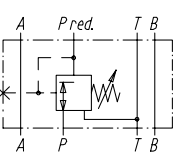
CHARACTERISTICS oil viscosity $\nu = 30 \text{ mm}^2/\text{s}$
 $p_{\text{red}} = f(\alpha)$ Pressure adjustment characteristics

 p_{red} [bar] $Q = 0 \text{ l/min}$ (static)

 $p_{\text{min}} = f(Q)$ Minimal pressure loss/flow characteristics

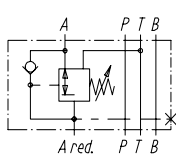
 $p_{\text{red min}}$ [bar] * Consumption resistance dependent on system

 $p_{\text{red}} = f(Q)$ Pressure volume flow characteristics

 p [bar]

 $\Delta p = f(Q)$ Pressure loss/flow characteristics over RV

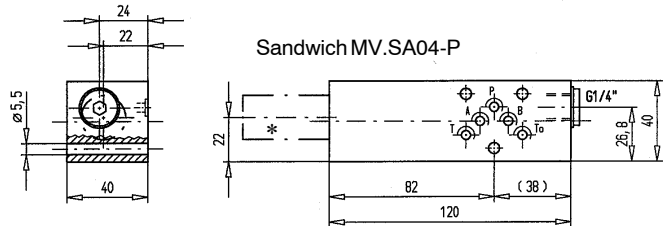
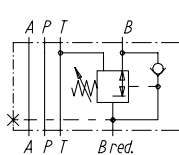
 Δp [bar]

TYPES/DIMENSIONS

 Flange
 MV.FA04-P/A

 Sandwich
 MV.SA04-P


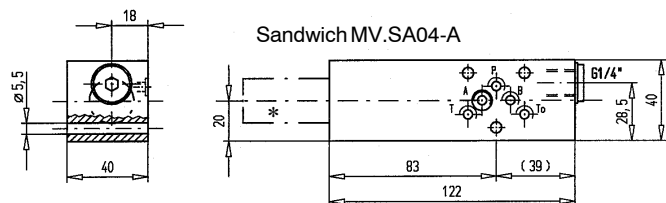
MV.SA04-A



MV.SA04-B


PARTS LIST

Position	Article	Description
10	130.4209	Flange body
	130.4605	Sandwich plate P
	130.4606	Sandwich plate A
	130.4607	Sandwich plate B
20	603.3 ...	Pressure reducing cartridge M22x1,5 data sheet 2.2-530
30	160.2052	O-ring ID 5,28x1,78
41	238.2204	Plug DIN 908 G1/4"
42	49.2132	Seal ring ID 13,7x20x1,5



For sandwich red.pressure in B cartridge is located on B-side

* The total lengths depends on the cartridge type, see data sheet 2.2-530.

ACCESSORIES

 Threaded connection plate and multi-flange subplates Reg. 2.9
 Bypass non-return valve BDRVP4

Technical explanation see data sheet 1.0-100E