



VR5 - 10; VR5 - 20

PRESSURE REDUCING VALVES

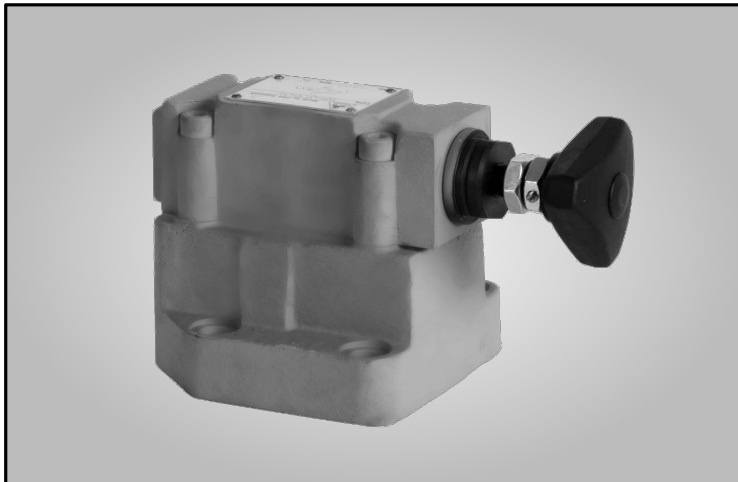
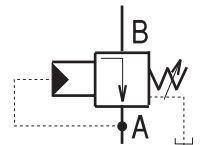
| KE 3018 | 01/15 |

D_n 10; 20 | p_{max} 32 MPa |

Q_{max} 200; 300 dm³/min

Pressure reducing valves VR5 are used for reducing system pressure in a specific branch of the hydraulic circuit.

Installation dimensions according to ISO 5781 (DIN 24 340) | 3 pressure ranges | design of the valve allows sealing of pressure adjustment

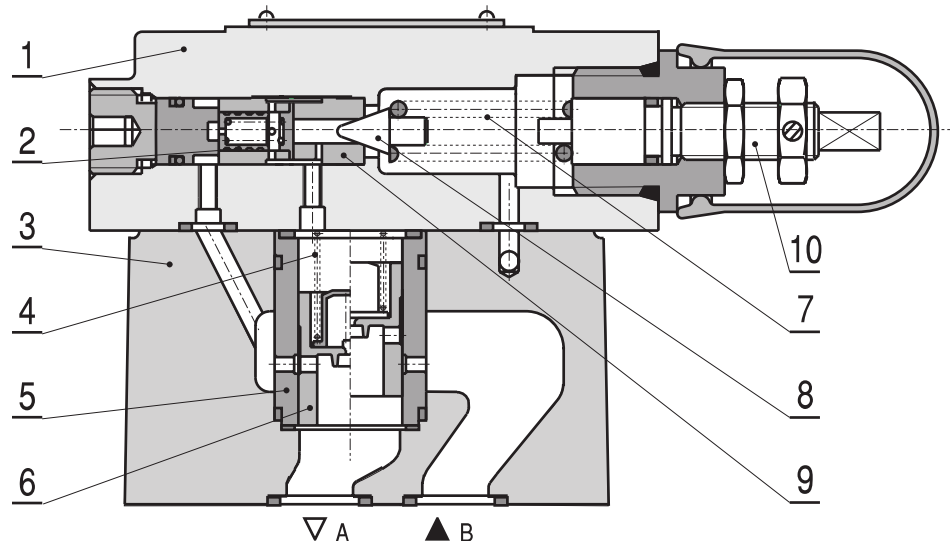


FUNCTIONAL DESCRIPTION

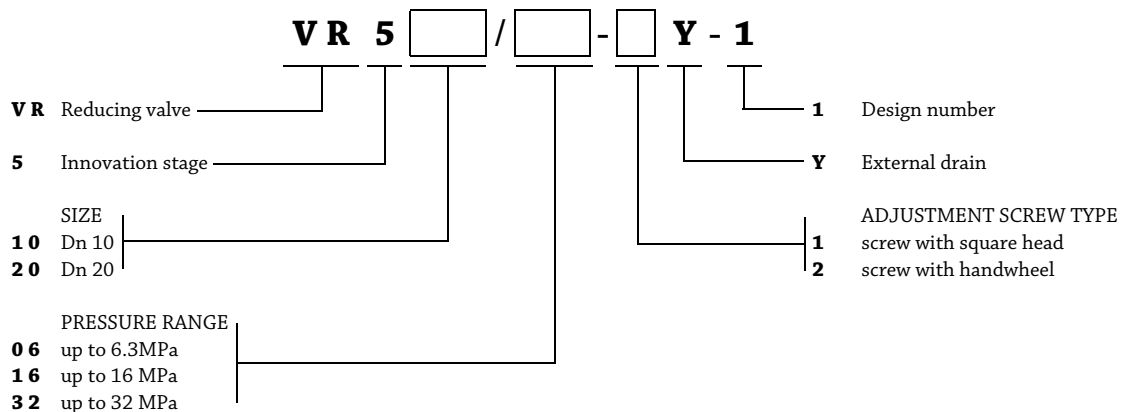
Pressure reducing valves are pilot operated valves of spool design with pilot valve. In initial position the valve is open, i.e. hydraulic fluid can flow from channel B to channel A. In channel A the pressure is adjusted by adjusting screw **10** and kept constant by a main spool **6** in the main valve housing **3**. If the pressure in channel A exceeds the pilot adjusted value, the main spool **6** moves towards closed position and throttles the flow between A and B channels. The more the pressure in channel A exceeds the adjusted pressure the more throttled is the flow between A and B channels (until complete closure). During the operation, the hydraulic fluid constantly flows through the pilot cone **8**. This flow must be drained by port Y without any counterpressure.

Valves VR5 consist of:

- 1** - housing of the pilot valve
- 2** - flow control assembly
- 3** - main spool housing
- 4** - spool spring
- 5** - bush
- 6** - main spool
- 7** - cone spring
- 8** - pilot cone
- 9** - seat
- 10** - adjusting screw



ORDERING CODE





VR5 - 10; VR5 - 20

INSTALLATION, SERVICE AND MAINTENANCE

Pressure reducing valves VR5 can be installed in any working position. Dimensions, quality and recommended class of fixing bolts is specified in the following table.

Type	Screw size and quantity	Torque [Nm]
VR5 - 10...1	M10x60 DIN912-8.8 (4 pcs)	32
VR5 - 10...2	M10x40 DIN912-8.8 (4 pcs)	32

Flatness deviation and surface roughness of the mounting surface shall not exceed 0.01/100 mm and Ra = 1.6 µm. It is required that the contact surfaces must be intact before installation. All "O"-rings must not be disshaped and damaged by any means. Adjustment of reduced outlet pressure is carried out by adjusting screw (with handwheel) and loosening jam nut. When the pressure is adjusted the adjusting screw must be locked by jam nut against loosening. Reliability of the valve is conditional upon use of prescribed working fluid, especially its temperature and purity.

DELIVERY

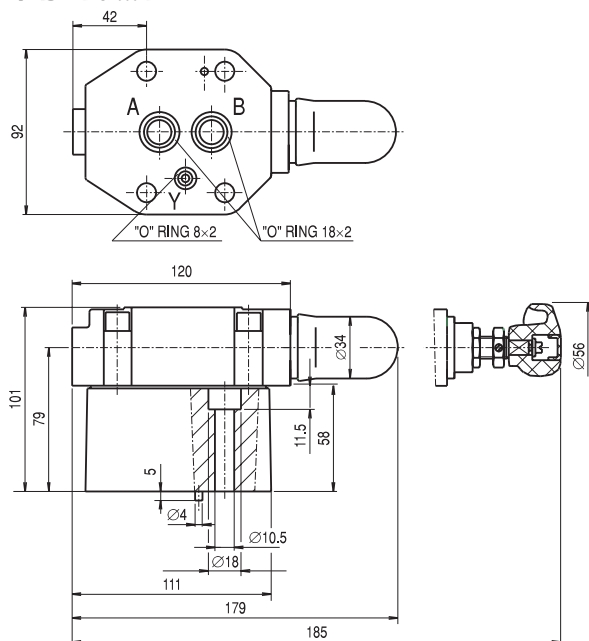
Pressure reducing valves VR5 are delivered assembled with "O"-rings on the contact surface. Spare parts and mounting screws are not included in the package. These must be ordered separately.

TECHNICAL DATA

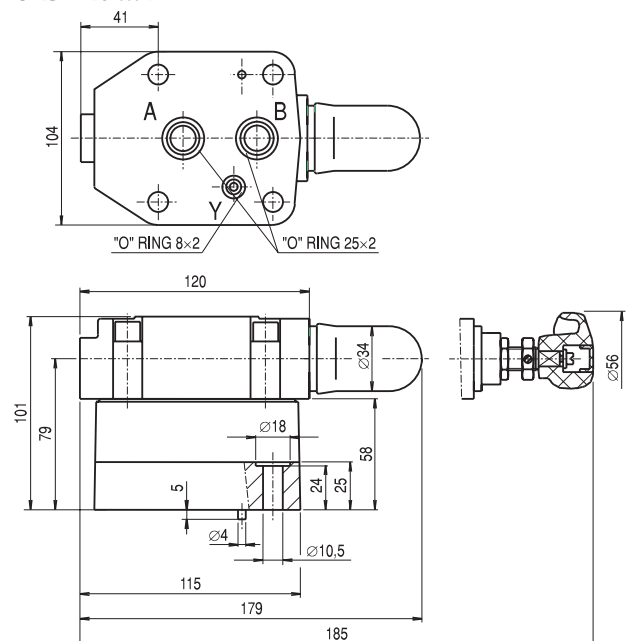
Technical data	Symbol	Unit	VR5 - 10...1	VR5 - 20...1
Nominal size	Dn	mm	10	20
Max. input pressure	p _{MAX,B}	MPa	32	32
Max. output pressure	p _{MAX,A}	MPa	32	32
Max. flow	Q _{MAX}	dm ³ /min	200	300
Max. flow through pilot valve	Q _P	dm ³ /min	1	2
Weight	m	kg	4.6	4.85
Pressure ranges		MPa	6.3; 16; 32	
Pressure in channel "A" versus flow characteristics	see p _A = f(Q)			
Recommended hydraulic fluid	Hydraulic oils of power classes (HL, HLP) according to DIN 51524			
Hydraulic fluid viscosity range	v	mm ² /s	10 ... 400	
Ambient temperature range	t _A	°C	-20 ... +70	
Hydraulic fluid temperature range	t _{PO}	°C	-20 ... +80	
Maximum degree of fluid contamination	Class 21/18/15 according to ISO 4406 (1999)			

DIMENSIONS

VR5 - 10 ... 1



VR5 - 20 ... 1



Note: all dimensions in [mm]



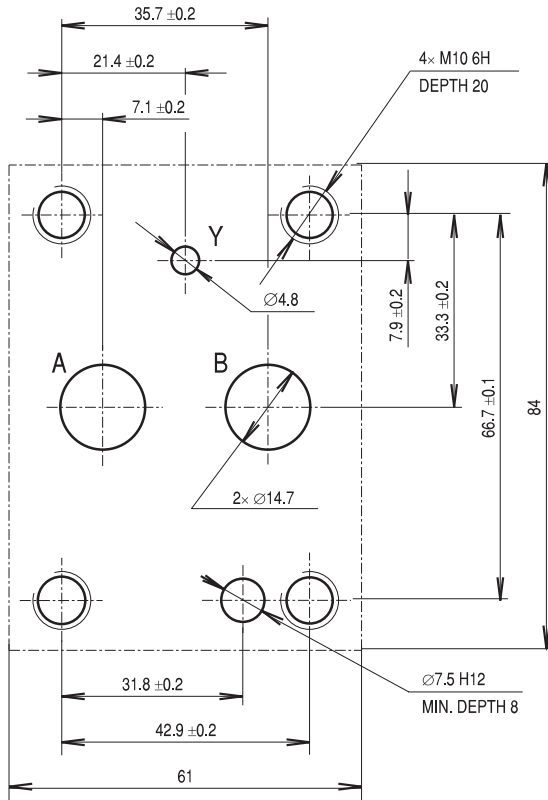
INSTALLATION DIMENSIONS

according to DIN 24 340, form D

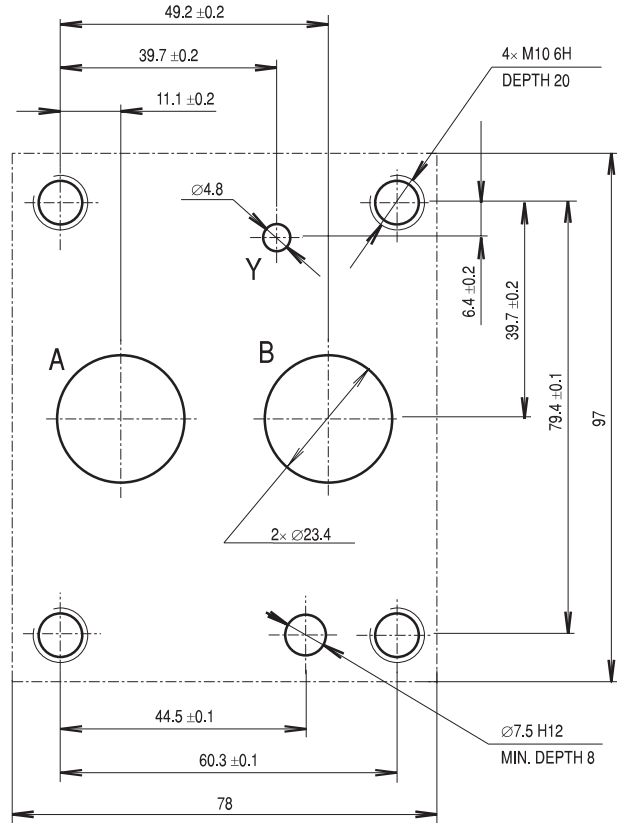
view towards panel

all dimensions in [mm]

VR5 - 10 ... 1

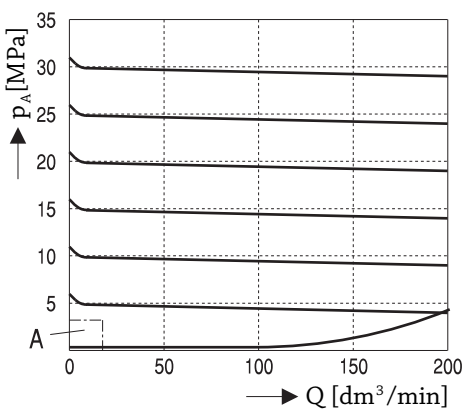


VR5 - 20 ... 1

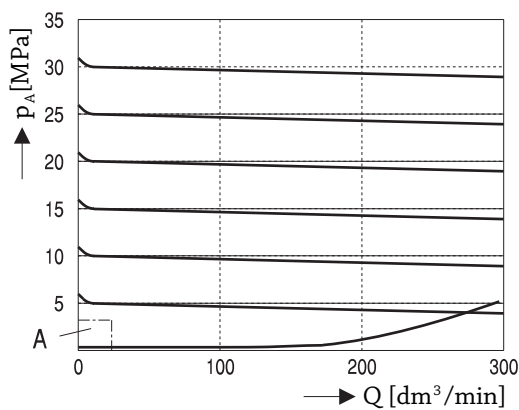


STATIC FLOW CHARACTERISTICS $p=f(Q)$

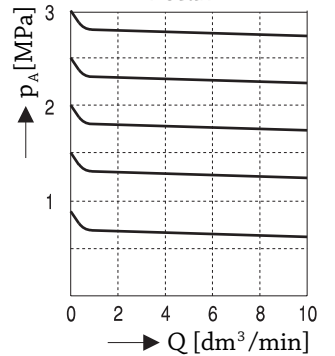
VR5 - 10 ... 1



VR5 - 20 ... 1



Detail A





VR5 - 10; VR5 - 20

NOTES

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