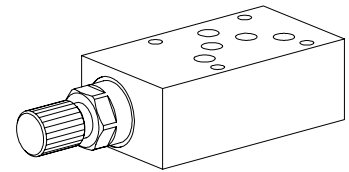


**Back pressure valve  
Sandwich construction**

• **Pilot operated:**  $Q_{max} = 100 \text{ l/min}$   
 $p_{N \text{ max}} = 350 \text{ bar}$   $p_{max} = 400 \text{ bar}$

• **Direct operated:**  $Q_{max} = 100 / 25 \text{ l/min}$   
 $p_{N \text{ max}} = 32 / 315 \text{ bar}$   $p_{max} = 100 / 400 \text{ bar}$

**NG10**  
 ISO 4401-05

**DESCRIPTION**

Back pressure valves in direct or pilot operated versions for sandwich mounting. Mounting interface according to ISO 4401-05. The valves are available in three types of adjustment, one of them being lockable, the others being fixed. A cover is also available for key adjustment, see data sheet 2.0-50. Three pressure ranges are available for the pilot operated valves, four are available for the directly operated ones. The steel bodies are phosphate coated.

**FUNCTION**

When pressure reaches the setting of the back pressure valve main spool will open up the oil passage.

**APPLICATION**

Back pressure valves are applied where a back pressure in the outlet part of a cylinder or motor is necessary to prevent uncontrolled movement. The fields of applications are in machine building, handling system and hydraulic power packs.

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**TYPE CODE**

Back pressure valve		G	<input type="checkbox"/>	S	A10	-	<input type="checkbox"/>	-	<input type="checkbox"/>	#	<input type="checkbox"/>
Direct operation, conical spool		A									
Direct operation, control spool		K									
Pilot operated		V									
Setting versions:	Key	S									
	Control knob	D									
	Lock	K									
	Cover	A									
Sandwich construction											
Mounting interface NG10											
Pressure relief in:	T	<input type="checkbox"/>									
	A and B	AB		A	A		B	B			
Nominal pressure	$p_N = 63 \text{ bar}$	63					Nominal pressure	$p_N = 63 \text{ bar}$	63		
pilot operated:	$p_N = 160 \text{ bar}$	160					direct operated:	$p_N = 210 \text{ bar}$	210		
	$p_N = 350 \text{ bar}$	350					conical spool	$p_N = 315 \text{ bar}$	315		
							control spool	$p_N = 32 \text{ bar}$	32		

Design-Index (Subject to change)

**GENERAL SPECIFICATIONS**

Nominal size	NG10 nach ISO 4401-05
Denomination	Pilot- and direct operated pressure valve
Bauart	Sandwich construction
Mounting	4 holes for socket cap screws M6 or studs screws M6
Fastening torque	$M_D = 9,5 \text{ Nm}$ (qual. 8.8) for fixing screws $M_D = 50 \text{ Nm}$ for screw in cartridge
Connections	Threaded connection plates Multi-flange subplates Longitudinal stacking system
Mounting position	any
Ambient temperature	$-20 \dots +50^\circ\text{C}$
Weight	Depending on the type of valves 1,9...2,9 kg

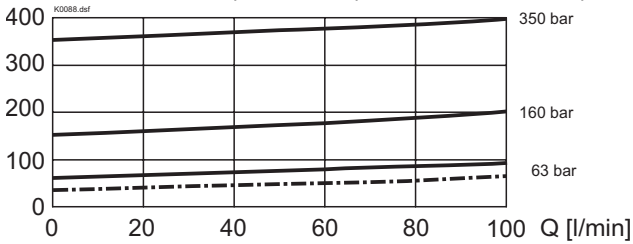
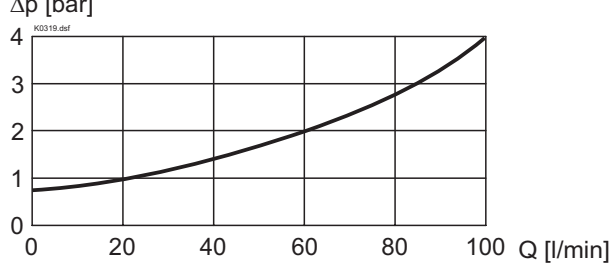
**HYDRAULIC SPECIFICATIONS**

Fluid	Mineral oil, other fluid on request
Contamination efficiency	ISO 4406:1999, class 18/16/13 (Required filtration grade $\beta_{6 \dots 10} \geq 75$ ) refer to data sheet 1.0-50/2
Viscosity range	$12 \text{ mm}^2/\text{s} \dots 320 \text{ mm}^2/\text{s}$
Fluid temperature	$-20 \dots +70^\circ\text{C}$
Peak pressure	$p_{max} = 400 \text{ bar}$ $p_{max} = 100 \text{ bar}$ (Dir. op., control spool)
Nominal pressure	$p_N = 63 \text{ bar}, 160 \text{ bar}, 350 \text{ bar}$
pilot operated:	
direct operated:	
conical spool	$p_N = 63 \text{ bar}, 210 \text{ bar}, 315 \text{ bar}$
control spool	$p_N = 32 \text{ bar}$ see characteristics
Minimal Pressure	
Opening pressure over non-return valve	$p_o = 0,8 \text{ bar}$
Max. Volume flow	
pilot- direct op. control spool	$Q_{max} = 100 \text{ l/min}$
direct operated conical spool	$Q_{max} = 25 \text{ l/min}$

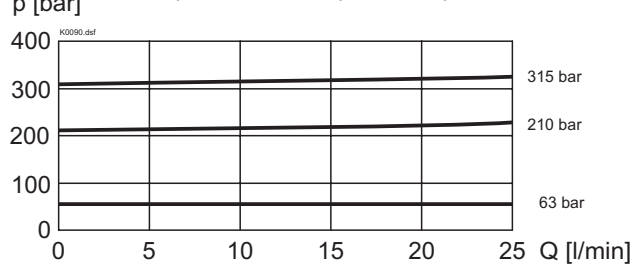
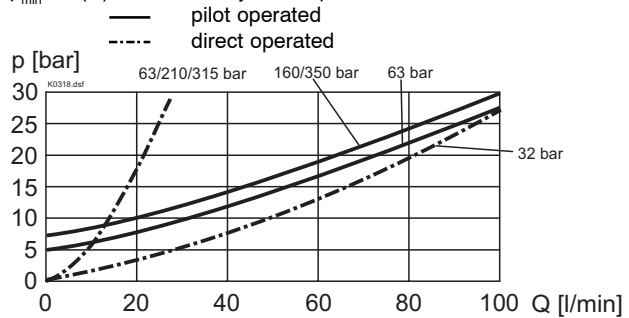
For further hydraulic specifications refer to data sheets:  
 2.1-530 for cartridge M22x1,5 pilot operated  
 2.1-540 for cartridge M22x1,5 direct operated conical spool  
 2.1-542 for cartridge M22x1,5 direct operated control spool

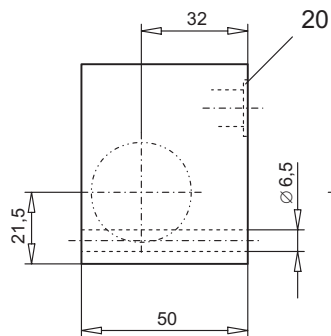
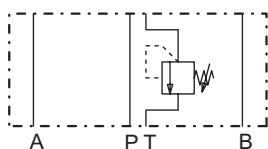
**CHARACTERISTICS** oil viscosity  $\nu = 30 \text{ mm}^2/\text{s}$ 

Pressure volume flow curve

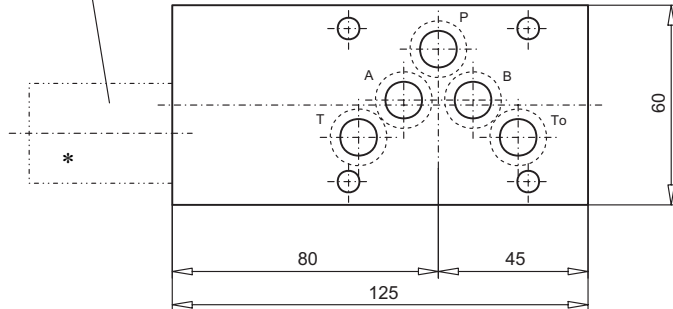
 p [bar] — pilot operated back pressure valves  
 - - - direct operated back pressure valves, control spool

 $\Delta p = f(Q)$  Pressure drop-volume flow curve over non-return valve

 $p = f(Q)$  Pressure volume flow curve

Direct operated conical spool, back pressure valve

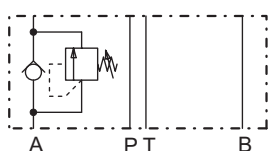

 $p_{\min} = f(Q)$  Minimum adjustable pressure

**TYPE LIST / DIMENSIONS**

 Sandwich construction  
 G..SA10-T


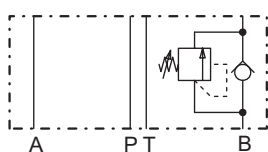
G..SA10-T



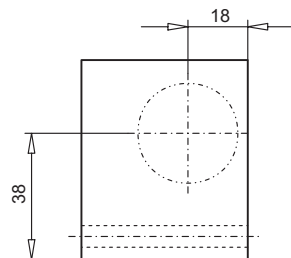
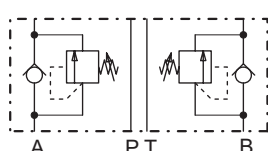
G..SA10-A



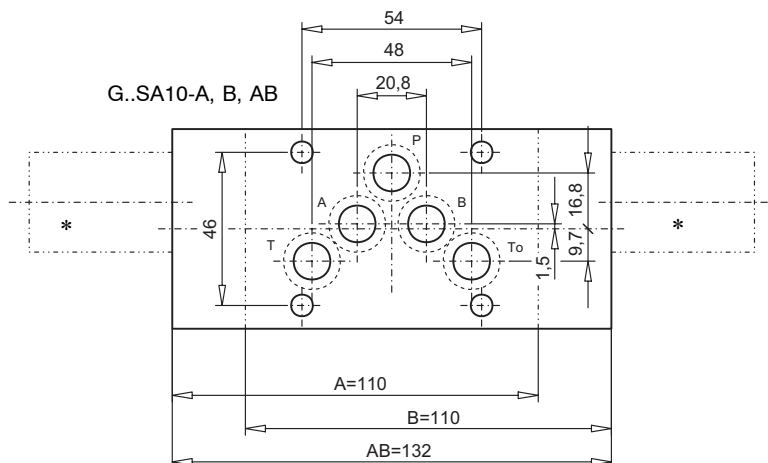
G..SA10-B



G..SA10-AB



G..SA10-A, B, AB


**PARTS LIST**

Position	Article	Description
10	593. ...	Pressure relief cartridge M22x1,5 to data sheets 2.1-530, 2.1-540 and 2.1-542
20	160.2140	O-Ring ID 14,00x1,78

\* The exterior dimensions of the cartridges can be obtained from the corresponding data sheets 2.1-530, 2.1-540 and 2.1-542.

Technical explanation see data sheet 1.0-100E