RE 50131

Ausgabe: 2021-10 Ersetzt: 2020-10



Accumulator shut-off block

Type ABZSS



- ► Nominal diameter DN08; DN10; DN20; DN30
- ► Component series 3X
- ► Maximum operating pressure 350 bar [5075 psi]

HAD8066

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Type-examination tested safety valves type DBD...E according to Pressure Equipment Directive 2014/68/EU

(in the following shortly PED)

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Ordering code

	01	02	03	04		05		06	07		08	09	10	11	12		13	14	
Α	BZSS				_	ЗХ	/		Е	/						_		*	
		•	,										•						
01	Accumu	lator sl	nut-off	block	(ABZSS
vne	of conne	ction																	
02	Piping c		ion																no code
	Subplate																		- P 1)
om i 03	nal diam DN08	eter																	08
,,	DN10																		10
	DN20																		20
	DN30																		30
	ading																		
04	Manual	and -1		nn=-	+ic /:	i+b = · · '	nc	اما دا	۱ - امنوس	. p.c.:	mall:	2025							M = 2)
	Manual								erriae)	, norr	nally (pen							E 2)
	Manual	anu ele	-C110-F	nagne	LIC, II	Jimatt	y ClOS	eu											
om	onent se	eries																	
)5	Compon	ent se	ries 30	39 39	9 (30	39:	uncha	anged	install	ation	and c	onnec	tion d	imens	ions)				3X
ress	ure adju	stment	: (othe	ers upo	on red	uest)													
)6	50 bar [1													50
	100 bar																		100
	140 bar																		140
	210 bar																		210
	350 bar	[5075 p	si]																350 ³⁾
200	ure relie	f valve																	
07	Pressure			type-	exami	inatior	teste	ed (wit	th CE	mark)	4)								E
ccii	mulator a	dante	•																
08	Without			r adaı	oter														no code
, 0	- With I																		
	DN08																		\$104
	DN10; D	N20																	\$30
	– With I	3SP th	read G	33/4															-
	DN08																		S108
	DN10; D	N20																	\$31
	DN08																		S105
	DN10; D	N20																	S10
	- With I	3SP th	read G	31 1/4	ļ.														
	DN08																		S107
	DN10; D	N20																	S12
	DN30																		\$307
	- With I	BSP th	read C	32															
	DN08																		S109
	DN10; D	N20																	S13
	DN30																		S309

Notice: Preferred types and standard units are contained in the EPS (standard price list).

Ordering code

ABZSS				_	ЗХ	7		Е	/						_		*
01	02	03	04		05		06	07		80	09	10	11	12		13	14

Accumulator adapter

- With SAE thread 3/4 - 16 UNF							
DN10; DN20	S64						
- With SAE thread 1 1/16 - 12 UN							
DN10; DN20	S60						
- With SAE thread 1 5/8 - 12 UN							
DN10; DN20	S62						
DN30	\$620						
- With SAE thread 1 7/8 - 12 UN							
DN10; DN20	S63						
DN30	\$630						
	- With SAE thread 3/4 - 16 UNF DN10; DN20 - With SAE thread 1 1/16 - 12 UN DN10; DN20 - With SAE thread 1 5/8 - 12 UN DN10; DN20 DN30 - With SAE thread 1 7/8 - 12 UN DN10; DN20						

Voltage type 5)

09	Direct voltage 24 V	G24
	Alternating voltage 110 V	G96 8)
	Alternating voltage 230 V	G205 8)

Electrical connection 5)

10	Without mating connector with protective cap	K4 6)
----	--	--------------

Seal material

11	FKM seals	V
	NBR seals	W 7)

Connection thread

12	BSP thread (ISO 228 Part 1)	no code
	SAE thread (ANSI B1.1)	12 ²⁾

Special versions

13	- DN30 with DBDS valve NG30	SO30
	- Shut-off device (2 positions) DN10 DN30	103
	- Shut-off device (1 position) DN10 DN30	104
	- Prepared for use in mining and explosion protection applications	869 9)

Connection thread

14	Further details in the plain text	
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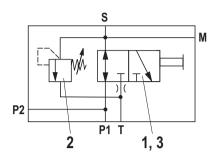
- 1) "DN30" only
- 2) Not with "DN08"
- 3) Type SO30 is supplied with a pressure rating of 315 bar [4570 psi]
- 4) According to the Pressure Equipment Directive 2014/68/EU
- 5) Only with electro-magnetic unloading design "E" or electromagnetic pressure holding design "C"
- 6) Mating connectors, separate order, see page 16 and data sheet 08006.
- 7) Special version
- 8) For the connection to the AC voltage mains, a DC solenoid which is controlled by a rectifier is to be used (see table on the right). For individual connection, a large mating connector with integrated rectifier can be used (separate order, see page 16).
- 9) Manual accumulator discharge only, seal material "V" only. Assembly free from aluminum, without electrically operated components, housing electroplated FE//Zn8//Cn//T0 according to ISO 19598

AC voltage mains (admissible voltage tolerance ±10%)	Nominal voltage of the DC solenoid in case of operation with alternating voltage	Ordering code
110 V - 50/60 Hz 120 V - 60 Hz	96 V	G96
230V - 50/60Hz	205 V	G205

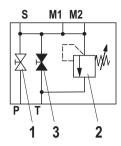
Motice: Unlike the ABZSS30 standard accumulator safety block, the ABZSS30 ...SO30 is equipped with a direct operated pressure relief valve NG30. Version ABZSS-P30 for subplate mounting.

Symbols

DN08 Version "M" (manual unloading)

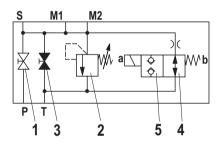


DN10, 20 and 30 Version "M" (manual unloading)



Version "E"

(manual and electro-magnetic unloading), normally open



Connection	Connection designation			
M; M1; M2	Measuring port			
P; P1; P2	Pump port			
S	Accumulator port			
Т	Tank port			
1	System shut-off cock			
2	Pressure relief valve			
3	Manual unloading			
4	Electro-magnetic unloading, normally open, optional			
5	Electro-magnetic unloading, normally closed, optional			

Function

The accumulator shut-off block serves for the protection, isolation and unloading of hydraulic accumulators. It is classified based on its use according to the Pressure Equipment Directive 2014/68/EU article 4, section 3. The connection between the accumulator shut-off block and the accumulator is realized by means of an accumula-

tor adapter.

The accumulator is protected from inadmissible overpressure by means of the pressure relief valve. The **pressure relief valve** must **not be used for any control tasks**. Sufficient difference between the maximum operating pressure and the working pressure must be ensured. Response of the pressure relief valve should be prevented, if possible.

Preferred types

Accumula- tor type	Data sheet	Accumulator NG in l [gal]	Pressure set at the pressure relief valve in bar [psi]	Accumulator shut-off block DN	Denomination	Material no.
		0.5.50.407		08	ABZSS 08 M-3X/160E/S104V	R901263004
		0.5 [0.13]	160 [2320]	10	ABZSS 10 M-3X/160E/S30V	R900711145
			100 [2010]	08	ABZSS 08 M-3X/180E/S104V	R901263013
		0.7.[0.10]	180 [2610]	10	ABZSS 10 M-3X/180E/S30V	R904100876
		0.7 [0.18]	250 [2025]	08	ABZSS 08 M-3X/260E/S104V	R901263011
			250 [3625]	10	ABZSS 10 M-3X/260E/S30V	R901147802
JC		1.0.[0.26]	200 [2000]	08	ABZSS 08 M-3X/200E/S104V	R901263012
Diaphragm type accumulator		1.0 [0.26]	200 [2900]	10	ABZSS 10 M-3X/200E/S30V	R904100849
n E			140 [2020]	08	ABZSS 08 M-3X/140E/S104V	R901263020
noo		1.4 [0.37]	140 [2030]	10	ABZSS 10 M-3X/140E/S30V	R900711138
e a	50150	1.4 [0.37]	250 [3625]	08	ABZSS 08 M-3X/260E/S104V	R901263011
typ	501		250 [3025]	10	ABZSS 10 M-3X/260E/S30V	R901147802
ВШ			100 [1450]	08	ABZSS 08 M-3X/100E/S108V	R901263014
hra		2.0 [0.53]	100 [1450]	10	ABZSS 10 M-3X/100E/S31V	R900711131
iap		2.0 [0.33]	250 [3625]	08	ABZSS 08 M-3X/260E/S108V	R901263015
				10	ABZSS 10 M-3X/260E/S31V	R901147799
			70 [1015]	08	ABZSS 08 M-3X/070E/S108V	R901263016
		2 9 [0 74]		10	ABZSS 10 M-3X/070E/S31V	R901259516
		2.8 [0.74]	250 [3625]	08	ABZSS 08 M-3X/260E/S108V	R901263015
				10	ABZSS 10 M-3X/260E/S31V	R901147799
		3.5 [0.91]	250 [3625]	08	ABZSS 08 M-3X/260E/S108V	R901263015
		3.5 [0.91]	250 [5025]	10	ABZSS 10 M-3X/260E/S31V	R901147799
		1.0 [0.26]		08	ABZSS 08 M-3X/350E/S105V	R901263022
		1.0 [0.20]		10	ABZSS 10 M-3X/350E/S10V	R901259519
		2.5 [0.66]		80	ABZSS 08 M-3X/350E/S107V	R901272573
_		2.3 [0.00]	250 [5075]	10	ABZSS 10 M-3X/350E/S12V	R901272576
atoı		4.0 [1.06]	350 [5075]	08	ABZSS 08 M-3X/350E/S107V	R901272573
nuľ		4.0 [1.00]		10	ABZSS 10 M-3X/350E/S12V	R901272576
cur		6.0 [1.56]		08	ABZSS 08 M-3X/350E/S107V	R901272573
ac	50170	6.0 [1.36]		10	ABZSS 10 M-3X/350E/S12V	R901272576
Bladder-type accumulator	20	10 <i>[2.64]</i> 20 <i>[5.28]</i>		20	ABZSS 20 M-3X/330E/S13V	R900711415
dde					ABZSS 30 M-3X/330E/S 309V	R900713383
Bla		32 [8.45]	330 [4785]		ABZSS-P 30 M-3X/330E/ S309V	R901146459
				30	ABZSS 30 M-3X/330E/S 309V	R900713383
		50 [13.2]			ABZSS-P 30 M-3X/330E/ S309V	R901146459

Notice: Preferred types and standard units are contained in the EPS (standard price list).

Preferred types

Accumula- tor type	Data sheet	Accumula- tor NG in l	Pressure set at the pressure relief valve in bar [psi]	Accumula- tor shut-off block DN	Denomination	Material no.
		0.5 [0.13]	160 [2320]	10	ABZSS 10 E-3X/160E/S30G 24K4V	R901263026
		0.7 [0.18]	180 <i>[2610]</i>	10	ABZSS 10 E-3X/180E/S30G 24K4V	R901263028
		0.1 [0.16]	250 <i>[3625]</i>	10	ABZSS 10 E-3X/260E/S30G 24K4V	R901147797
ulator		1.0 [0.26]	200 <i>[2900]</i>	10	ABZSS 10 E-3X/200E/S30G 24K4V	R900709591
Diaphragm type accumulator		1.4 [0.37]	140 <i>[2020]</i>	10	ABZSS 10 E-3X/140E/S30G 24K4V	R900709589
type a	50150	1.4 [0.37]	250 <i>[3625]</i>	10	ABZSS 10 E-3X/260E/S30G 24K4V	R901147797
ıragm		2.0 [0.53]	100 <i>[1450]</i>	10	ABZSS 10 E-3X/100E/S31G 24K4V	R900709586
Diapk		2.0 [0.53]	250 <i>[3625]</i>	10	ABZSS 10 E-3X/260E/S31G 24K4V	R900709604
		2.8 [0.74]	70 [1015]	10	ABZSS 10 E-3X/070E/S31G 24K4V	R901263029
			250 (2025)	10	ABZSS 10 E-3X/260E/S31G 24K4V	R900709604
		3.5 [0.91]	250 <i>[3625]</i>	10	ABZSS 10 E-3X/260E/S31G 24K4V	R900709604
		1.0 [0.26]		10	ABZSS 10 E-3X/350E/S10G 24K4V	R901263027
		2.5 [0.66]		10	ABZSS 10 E-3X/350E/S12G 24K4V	R901272591
ator		4.0 [1.06]	350 <i>[5075]</i>	10	ABZSS 10 E-3X/350E/S12G 24K4V	R901272591
sumula		6.0 [1.56]		10	ABZSS 10 E-3X/350E/S12G 24K4V	R901272591
ре асс	50170	10 <i>[2.64]</i> 20 <i>[5.28]</i>		20	ABZSS 20 E-3X/330E/S13G 24K4V	R900709636
Bladder-type accumulator					ABZSS 30 E-3X/330E/S 309G 24K4V	R900709657
Blad		32 [8.45]	330 <i>[4785]</i>		ABZSS-P 30 E-3X/330E/S 309G 24K4V	R901147879
				30	ABZSS 30 E-3X/330E/S 309G 24K4V	R900709657
		50 [13.2]			ABZSS-P 30 E-3X/330E/S 309G 24K4V	R901147879

Notice: Preferred types and standard units are contained in the EPS (standard price list).

Technical data

(For application outside these values, please consult us!)

general								
Nominal diamete	r	DN	08	10	20	30	30S030	P30
Weight	► Version "M"	kg [lbs]	4.0 [8.8]	5.2 [11.5]	8.5 [18.7]	20.5 [45.2]	26.5 [58.4]	33.1 [72.8]
	▶ Version "C" and "E"	kg [lbs]	- -	5.5 [12.1]	8.8 [19.4]	20.8 [45.8]	26.8 [59.1]	33.4 [73.5]
Ambient tempera	ture range	°C [°F]	-15 +80	0 [+5 +176	 6]			

hydraulic		
Maximum operating pressure	bar [psi]	350 [5076]
Seal material		FKM seals or NBR seals 1)
Block material		Steel
Hydraulic fluid		See table below
Maximum admissible degree of contamination of the hydr Cleanliness class according to ISO 4406 (c)	aulic fluid	Class 20/18/15 ²⁾
Hydraulic fluid temperature range	°C [°F]	-10 +60 [+14 +140]
Viscosity range	mm²/s [SUS]	12 230 <i>[55 1066]</i>

Hydraulic fluid	Classification	Suitable sealing materials	Standards	Data sheet
Mineral oils	HL, HLP	NBR, FKM	DIN 51524	90220

Important notices on hydraulic fluids:

- ► For more information and data on the use of other hydraulic fluids, please refer to the data sheets above or contact us.
- ▶ There may be limitations regarding the technical valve data

(temperature, pressure range, life cycle, maintenance intervals, etc.).

► The ignition temperature of the hydraulic fluid used must be 40 K higher than the maximum solenoid surface temperature.

electrical		
Protection class according to DIN EN 60529	► With connector "K4"	IP 65 (with mating connector mounted and locked)

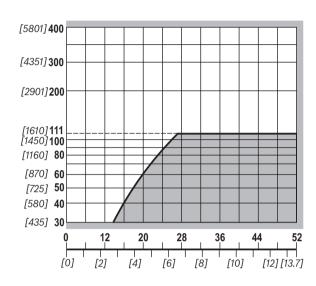
- 1) Special version
- The cleanliness classes specified for the components must be adhered to in hydraulic systems. Effective filtration prevents faults and simultaneously increases the life cycle of the components.

For the selection of the filters, see www.boschrexroth.com/ $\mbox{\it filter}.$

Operating pressure in bar [psi]

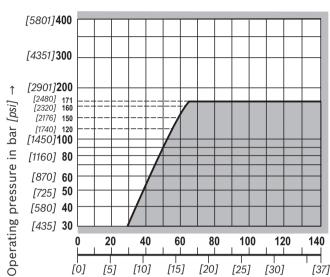
Characteristic curves: Type-examination tested safety valves type DBD 1)





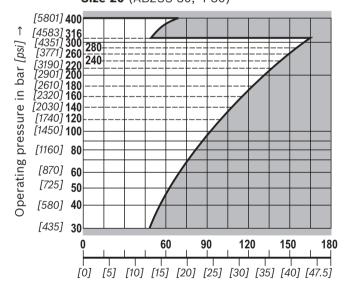
Flow in l/min [US gpm] →

Size 10 (ABZSS 20)



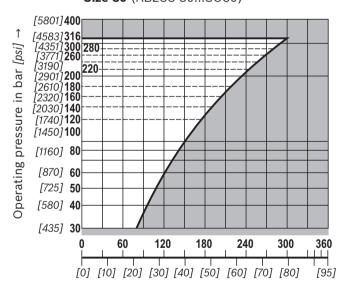
Flow in l/min [US gpm] →

Size 20 (ABZSS 30, -P30)



Flow in l/min [USgpm] →

Size 30 (ABZSS 30...SO30)



Flow in l/min [USgpm] →

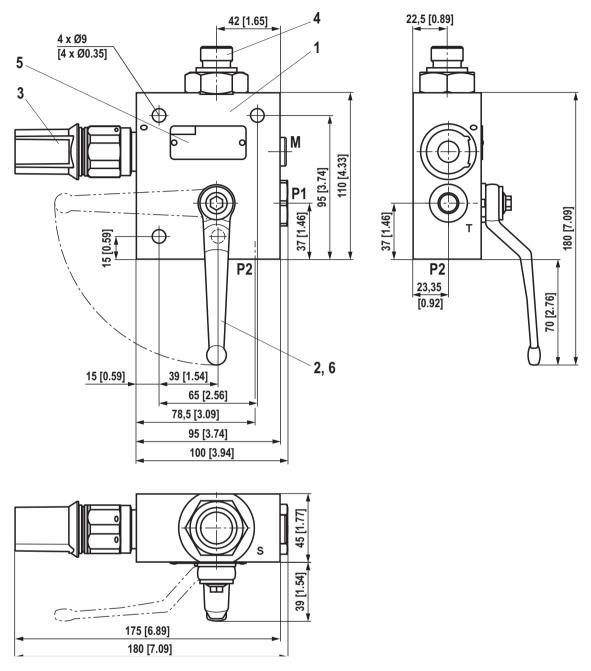
Motice:

Value pairs located in the areas of the characteristic curves with gray background can not be realized with the safety valve. The characteristic curves shown here are only valid for a counter pressure of 0 bar in the discharge line.

Component series 1X according to the Pressure Equipment Directive 2014/68/EU

Dimensions: Version "08..." (DN08)

(dimensions in mm [inch])



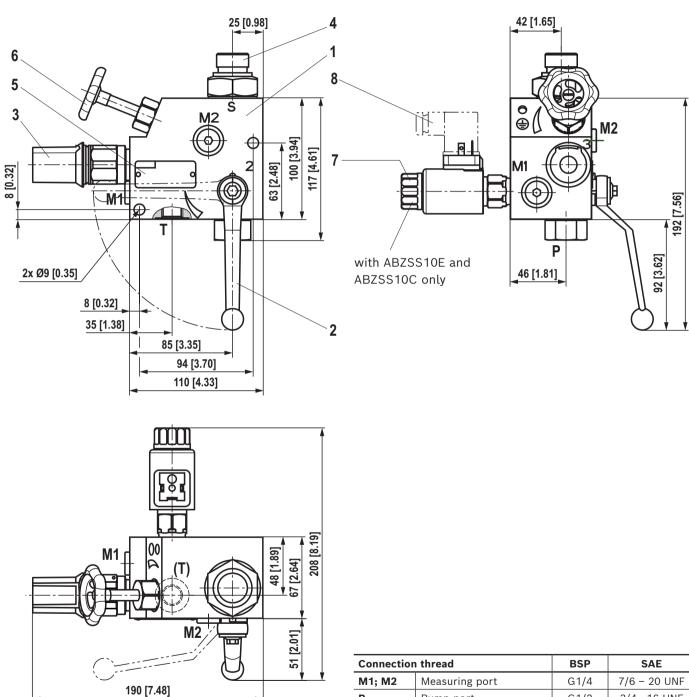
Connection thread		BSP
M1; M2	Measuring port	G1/4
P1	Pump port	G3/8
P2	Pump port	G1/2
Т	Tank port	G1/4
S	Accumulator port	M20 x 1.5 ¹⁾

¹⁾ Mounting cavity according to DIN EN 9974-1

Item explanations see page 16

Dimensions: Version "10..." (DN10)

(dimensions in mm [inch])

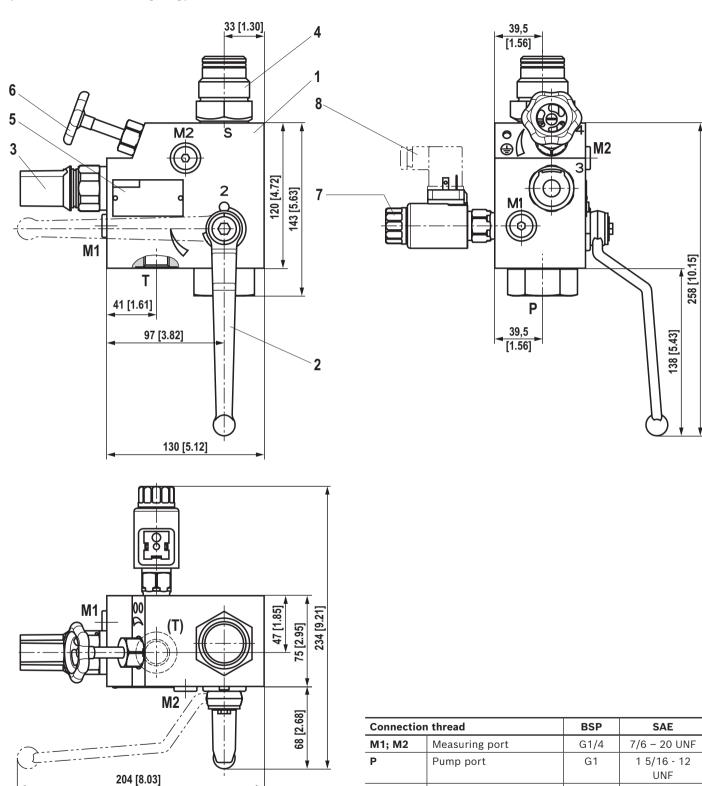


Connectio	Connection thread		SAE
M1; M2	Measuring port	G1/4	7/6 – 20 UNF
P	Pump port	G1/2	3/4 - 16 UNF
Т	Tank port	G3/8	9/16 - 18 UNF
S	Accumulator port	M33 x 2	M33 x 2

Item explanations see page 16

Dimensions: Version "20..." (DN20)

(dimensions in mm [inch])



Item explanations see page 16

Tank port

Accumulator port

Т

S

Characteristic curves for type-examination tested safety valves type DBDS can be found on page 8

G1/2

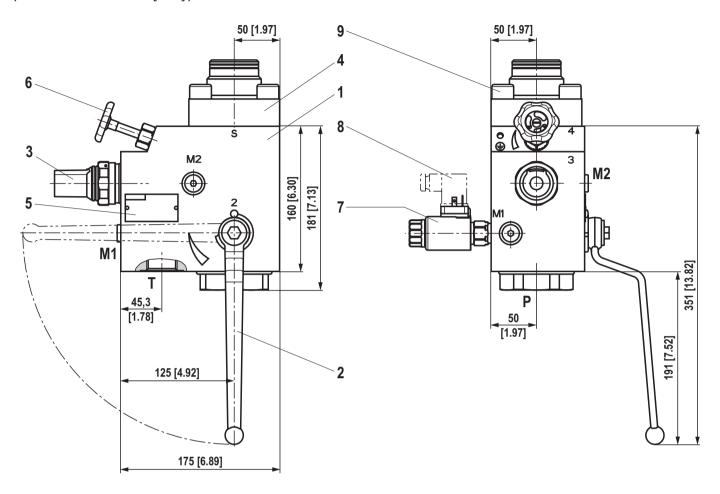
M33 x 2

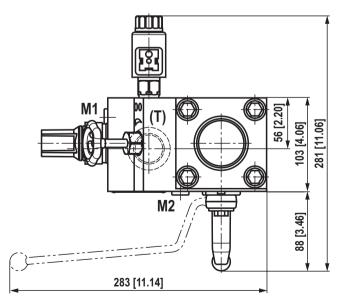
3/4 - 16 UNF

M33 x 2

Dimensions: Version "30..." (DN30)

(dimensions in mm [inch])



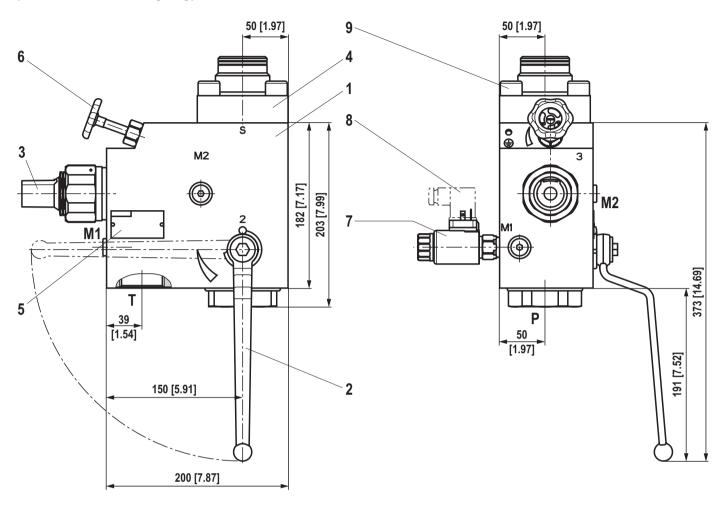


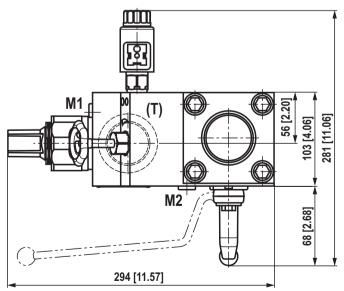
Connection thread		BSP	SAE
M1; M2	Measuring port	G1/4	7/6 – 20 UNF
Р	Pump port	G1 1/2	1 7/8 - 12 UNF
Т	Tank port	G1	1 5/16 - 12 UNF
S	Accumulator port (flange)	Page 16	Page 19

Item explanations see page 16

Dimensions: Version "30...SO30" (DN30)

(dimensions in mm [inch])

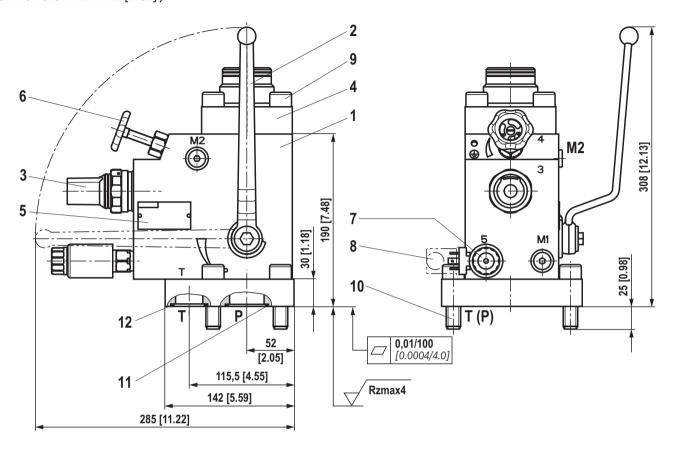


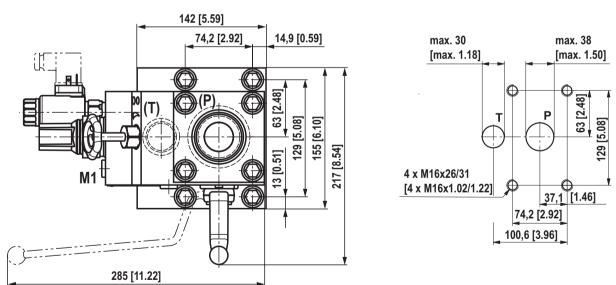


Connection thread		BSP	SAE
M1; M2	Measuring port	G1/4	7/6 – 20 UNF
P	Pump port	G1 1/2	1 7/8 - 12 UNF
Т	Tank port	G1 1/2	1 7/8 - 12 UNF
S	Accumulator port (flange)	Page 16	Page 19

Item explanations see page 16

Dimensions: Version "P30..." subplate mounting (DN30) (dimension in mm [inch])



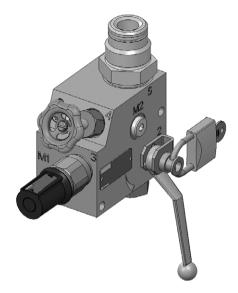


Connection thread		BSP	SAE
M1; M2	Measuring port	G1/4	7/6 – 20 UNF
S	Accumulator port (flange)	Page 16	Page 19

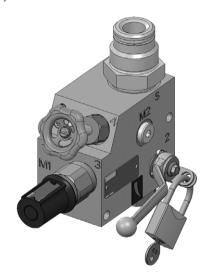
Item explanations see page 16

Dimensions: Special versions "SO103" and "SO104" (for NG10 to NG30 only)

"SO103" shut-off device with two shut-off positions (open or closed)



"SO104" shut-off device with one shut-off position (closed)



(padlock not included in the scope of delivery)

Dimensions

- 1 Block
- 2 System shut-off cock
- 3 Pressure relief valve, tightening torque see page 16
- 4 Accumulator adapter, see Accessories on page 17 ... 20
- 5 Name plate
- 6 Manual unloading
- 7 Electro-magnetic unloading, optional (only with design "E")
- 8 Mating connector, separate order, see page 16
- 9 Hexagon socket head cap screws
 - 4 pieces ISO 4762 M16 x 50 10.9

Tightening torque $M_A = 250^{+10} \text{ Nm } [184.0^{7.4} \text{ ft-lbs}]$

- 10 Hexagon socket head cap screws
 - 4 pieces ISO 4762 M16 x 55 10.9

Tightening torque $M_A = 250^{+10} \text{ Nm} [184.0^{7.4} \text{ ft-lbs}]$

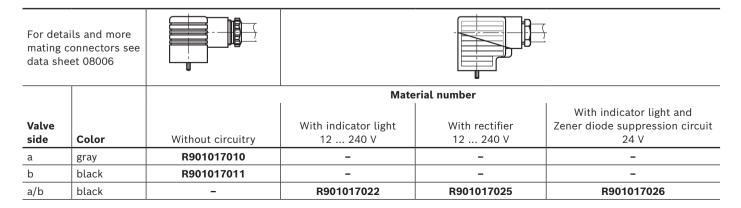
- **11** R-ring 42.5 x 3.00 x 3.00 Shore 90
- **12** R-ring 34.52 x 3.53 x 3.53 Shore 90

Tightening torque: Pressure relief valve DBD

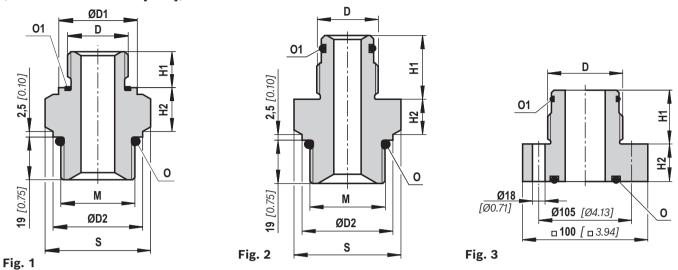
	Tightening torques M _A in Nm [ft-lbs] for screw-in cartridge valves 1) Pressure rating in bar [psi]				
NG	up to 200 [2900]	up to 400 [5800]			
6	50±5 [37±3.7]	80±5 [59±4]			
10	100±5 [74±3.5]	150±10 [110±3.5]			
20	150±10 [111±7.5]	300±15 [221±11]			
30	350±20 [258±19.5]	500±30 [369±22]			

The tightening torques are guidelines with a friction coefficient \$\mu_{\text{total}} = 0.12\$ and when using a manual torque wrench.

Mating connectors according to DIN EN 175301-803



Accessories: Accumulator adapter BSP thread, maximum operating pressure 350 bar [5075 psi] (dimensions in mm [inch])



Nominal Ø version	Accumula- tor type	Accumula- tor DN	Accumula- tor adapter	Fig.	D	ØD1	ØD2	Н1	H2	М	o	01	S			
	Diaphragm type accumulator data sheet 50150	0.075 0.16 0.32 0.5 0.7 1.0	S30 ¹⁾ S104 ²⁾	1	G1/2A	26.9 [1.06]		14 [0.55]	19.5 <i>[0.76]</i> ¹ 17.5 <i>[0.68]</i> ²⁾			Profile seal ring G1/2A according to DIN 3869	S30 ¹⁾ , S31 ¹⁾ , S108 ²⁾ , Wrench size 41 [1.61A/F], S104 ²⁾ Wrench size 36 [1.41A/F]			
	Diaphragr data	2.0 2.8 3.5	S31 ¹⁾ S108 ²⁾		G3/4A	32 [1.26]		16 [0.63]	19.5 [0.76] 1 18 [0.70] 2)	2)	.0 2)	Profile seal ring G3/4A according to DIN 3869	S30 ¹⁾ , Wrench Wrench			
ABZSS 08 10 20	08 10 20	1.0	S10 ¹⁾ S105 ²⁾	2	G3/4A	I	39.9 [1.57] ¹⁾ 35.0 [1.37] ²⁾	28 [1.10]	15.5 [0.61]	33x2 ¹⁾ ; 20x1.5 ²⁾	29.7x2.8 ¹⁾ ; 24x2.0 ²⁾	18x2.5 [0.71x0.10]	wrench size 41 [1.61A/F] ¹⁾ Wrench size 36 [1.41A/F] ²⁾			
		2.5 4.0 6.0	S12 ¹⁾ S107 ²⁾		G1 1/4A	ı			37 [1.46]	16.5 [0.65] 17.5 [0.68]			30×3 [1.18×0.12]	Wrench size 46 [1.81A/F]		
	Bladder-type accumulator data sheet 50171	10.0 20.0 35.0 50.0	S13 ¹⁾ S109 ²⁾						G2A	ı		43 [1.69]	20.5 [0.81] ¹ 18.5 [0.73]			48×3 [1.89×0.12]
ABZSS 30 P30	Blac	2.5 4.0 6.0	S307		G1 1/4A	- 1/48	I	37 [1.46]	18]	5.33	[1.18x0.12]					
		10.0 20.0 35.0 50.0	S309	3	G2A	I	I	43 [1.69]	30 [1.18]	ı	56.52 x 5.33	48×3 [1.89×0.12]	I			

^{▶ 1)} applies to ABZSS10 and ABZSS20 only

²⁾ applies to ABZSS08 only

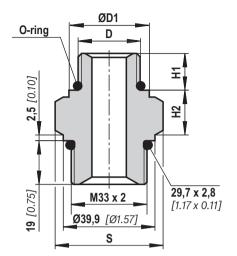
Accessories: ordering code accumulator adapter BSP thread

Version	ACCUMULATOR ADAPTER	Material no. FKM	ACCUMULATOR ADAPTER	Material no. NBR ²⁾
S10	S10V/G3/4-M33X2 *BG	R900545254	S10M/G3/4-M33X2 *BG	R900862699
S12	S12V/G1 1/4-M33X2 *BG	R900545255	S12M/G1 1/4-M33X2 *BG	R900862700
S13	S13V/G2-M33X2 *BG	R900545256	S13M/G2-M33X2 *BG	R900862701
S30	S30V/G1/2-M33X2 *BG	R900545252	S30M/G1/2-M33X2 *BG	R900862695
S31	S31V/G3/4-M33X2 *BG	R900545253	S31M/G3/4-M33X2 *BG	R900862697
S104	S104V/G1/2-M20X1.5* &	R901265402	S104M/G1/2-M20X1.5* &	R901265401
S105	S105V/G3/4-M20X1.5* &	R901265411	S105M/G3/4-M20X1.5* &	R901265407
S107	S107V/G11/4-M20X1.5*&	R901265412	S107M/G11/4-M20X1.5*&	R901265422
S108	S108V/G3/4-M20X1.5* &	R901265434	S108M/G3/4-M20X1.5* &	R901265425
S109	S109V/G2-M20X1,5* &	R901265408	S109M/G2-M20X1,5* &	R901265404
S307 1)	S307V/G 11/4-DN32 *BG	R900085303	S307M/G 11/4-DN32 *BG	R900067050
S309 1)	S309V/G2-DN32 *BG	R900545858	S309M/G2-DN32 *BG	R900862702

¹⁾ Scope of delivery includes 4 hexagon socket head cap screws ISO 4762-M16 x 50 - 10.9

²⁾ Special version

Accessories: Accumulator adapter SAE thread, maximum operating pressure 350 bar [5075 psi] (dimensions in mm [inch])



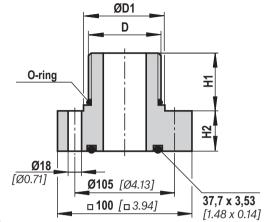


Fig. 1

Fig. 2

Nominal Ø version	Accumula- tor type	Accumula- tor DN	Accumula- tor adapter	Fig.	S	H1	H2	D	ØD1	O-ring	
	Diaphragm type accumula- tor data sheet 50150	0.075 0.16 0.32 0.5 0.7 1.0 1.4	\$64	1	Wrench size 41 <i>[1.61A/F]</i>	11.4 [0.45]	18.1 [0.71]	3/4-16UNF-2A	23 [0.91]	16.36 x 2.21 [0.64 x 0.87]	
ABZSS	Diaphra tor d	2.0 2.8 3.5	S60		Wrench	15.2 [0.60]	18.3 [0.72]	1 1/16-12UN- 2A	32 [1.26]	23.0 x 3.0 [0.91 x 0.12]	
10 20		1.0	S60	1	Wrench size 41 [1.61A/F]	15.2 [0.60]	18.3 [0.72]	1 1/16-12UN- 2A	32 [1.26]	23.0 x 3.0 [0.91 x 0.12]	
	OS SSZBY Bladder-type accumulator data sheet 50171	2.5 4.0 6.0	S62		Wrench size 65 [2.55A/F]	15.2 [0.60]	20.3 [0.80]	1 5/8-12UN-2A	48 [1.89]	38.0 x 3.0 [1.50 x 0.12]	
		10.0 20.0 35.0 50.0	S63		Wrench size 65 [2.55A/F]	15.2 [0.60]	20.3 [0.80]	1 7/8-12UN-2A	54 [2.13]	44.0 x 3.0 [1.73 x 0.12]	
48700		1.0 4.0 6.0	S620	2			15.2 [0.60]	32 [1.33]	1 5/8-12UN-2A	48 [1.89]	38.0 x 3.0 [1.50 x 0.12]
		10.0 20.0 35.0 50.0	S630		_	15.2 [0.60]	32 [1.33]	1 7/8-12UN-2A	54 [2.13]	44.0 x 3.0 [1.73 x 0.12]	

Accessories: ordering code accumulator adapter SAE thread

Version	ACCUMULATOR ADAPTER	Material no. FKM	ACCUMULATOR ADAPTER	Material no. NBR ²⁾
S60	S60V/ 1 1/16-12UN-M33x2	R900618788	S60M/ 1 1/16-12UN-M33x2	R900618799
S62	S62V/ 1 5/8-12UN-M33x2	R900618800	S62M/ 1 5/8-12UN-M33x2	R900618801
S63	S63V/ 1 7/8-12UN-M33x2	R900618803	S63M/ 1 7/8-12UN-M33x2	R900618804
S64	S64V/ 3/4-16UNF-M33x2	R900618805	S64M/ 3/4-16UNF-M33x2	R900618806
S620 1)	S620V/ 1 5/8-12UN-DN32	R900618813	S620M/ 1 5/8-12UN-DN32	R900618814
S630 1)	S630V/ 1 7/8-12UN-DN32	R900618817	S630M/ 1 7/8-12UN-DN32	R900618815

¹⁾ Scope of delivery includes 4 hexagon socket head cap screws ISO 4762-M16 x 50 - 10.9

Safety instructions: Type-examination tested safety valves type DBDS 1)

- ▶ Before ordering a type-examination tested safety valve, ensure that for the desired **response pressure** *p*, the maximum admissible **flow** *q*_{Vmax} of the safety valve is larger than the maximum possible flow of the system/ accumulator to be secured.
 - According to the Pressure Equipment Directive **2014/68/EU**, the increase in the system pressure due to the flow must not exceed 10% of the set response pressure (see component marking).
- ► The maximum admissible flow q_{Vmax} stated in the component marking must not be exceeded.
- Discharge lines of safety valves must end in a risk-free manner. An accumulation of fluids in the discharge system must **not** be possible (see data sheet AD2000 A2).

It is imperative to observe the application notes!

- ► In the plant, the response pressure specified in the component marking is set at a flow of 2 l/min [0.53 US gpm].
- ► The maximum flow stated in the component marking applies for applications without counter pressure in the discharge line (port T).

- ▶ By removing the lead seal at the safety valve, the approval according to the Pressure Equipment Directive becomes void!
- ► Basically, the requirements of the Pressure Equipment Directive and of data sheet AD 2000 A2 have to be observed!
- ▶ It is recommended to secure type-examination tested safety valves against inadmissible disassembly by wiring and sealing them with the housing/block (bore available in the adjustment type).

■ Notice:

The system pressure increases by the counter pressure in the discharge line (port T) due to the increasing flow. (Observe the data sheet AD 2000 A 2, point 6.3!)

To ensure that this increase in system pressure caused by the flow does not exceed 10% of the set response pressure, the admissible flow has to be reduced dependent on the counter pressure in the discharge line (port T) (see diagrams on page 22 ... 25).

 Component series 1X according to the Pressure Equipment Directive 2014/68/EU

²⁾ Special version

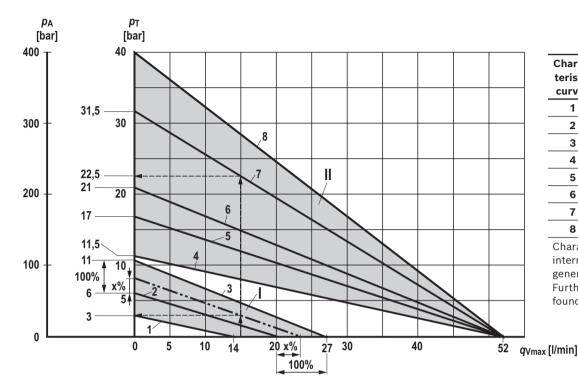
In principle, the valve should be operated without counter pressure in the discharge line, if possible. In case of counter pressure in the discharge line, the maximum possible flow is reduced. There is a relationship between maximum counter pressure p_T in the discharge line and flow q_V , which can be seen from the following characteristic curve. Characteristic curves for intermediate values of the response pressure which are not listed must be determined by means of interpolation.

When the flow approaches zero, the maximum counter pressure \mathbf{p}_{T} is in each case 10% of the response pressure. With increasing flow, the maximum counter pressure \mathbf{p}_{T} decreases.

Interpolation of intermediate values from the diagram

- 1. At the axis p_T , mark 1/10 of the value of p_A .
- 2. Determine the next lower and the next higher characteristic curve for this point. The point marked at p_T divides the section between lower and higher characteristic curve on the p_T axis with a certain percentage.
- 3. At the q_{Vmax} axis, divide the section between next lower and next higher characteristic curve in the same percentage as the section at the p_T axis. From the zero position flow on the q_{Vmax} axis determined in that way, draw a straight line to the value on the p_T axis marked before.
- 4. Mark the system flow to be secured at the q_{Vmax} axis.
- 5. Read off the maximum counter pressure for this value using the line at the p_T axis drawn before.

Diagram for determining the maximum counter pressure p_T in the discharge line at port T of the valve dependent on the flow q_{Vmax} for valves DBDS 6...1X/...E with different response pressures p_A .



Charac- teristic curves	Response pressure p_A in bar $[psi]$
1	30 [435]
2	60 [870]
3	110 [1595]
4	115 [1668]
5	170 [2465]
6	210 [3046]
7	315 <i>[4568]</i>
8	400 [5800]

Characteristic curves for intermediate values can be generated by interpolation. Further explanations can be found on page 21.

 p_A Response pressure in bar

 p_T Maximum counter pressure in the discharge line (port T) in bar

q_{Vmax} Maximum flow in l/min

Interpolation area I, for valves with $p_A = 30 \dots 110$ bar and $q_{Vmax} = 14 \dots 27$ l/min

Interpolation area II, for valves with p_A = 115 ... 400 bar and q_{Vmax} = 52 l/min

Determination of the maximum counter pressure

Example 1 (with already existing characteristic curve):

Flow of the system / accumulator to be secured: q_{Vmax} = 15 l/min Safety valve set to: p_A = 315 bar.

Read off the maximum counter pressure p_T of approx. 22.5 bar from the diagram (see arrows, characteristic curve 7).

Example 2 (with interpolated characteristic curve):

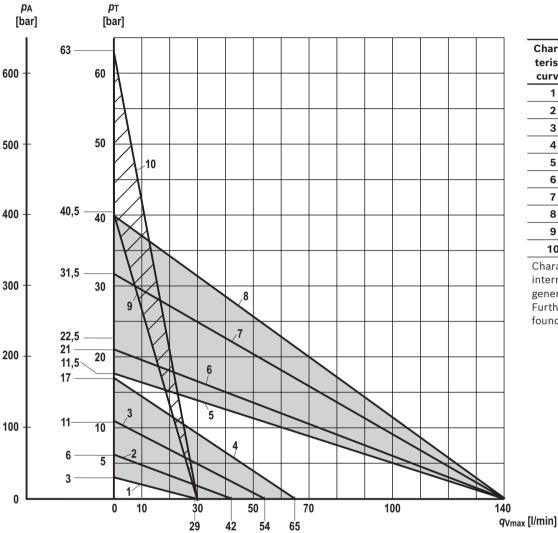
Flow of the system / accumulator to be secured: q_{Vmax} = 15 l/min Safety valve set to: p_A = 80 bar.

Value to be marked at the axis referred to as p_T :

 $1/10 \times 80 \text{ bar} = 8 \text{ bar}.$

Read off the maximum counter pressure p_T of approx. 3 bar from the diagram (see arrows, dashed characteristic curve).

Diagram for determining the maximum counter pressure p_T in the discharge line at port T of the valve dependent on the flow q_{Vmax} for valves DBDS 10...1X/...E with different response pressures p_A .



Charac- teristic curves	Response pressure p _A in bar [psi]
1	30 [435]
2	60 [870]
3	110 [1595]
4	170 [2465]
5	175 [2538]
6	210 [3046]
7	315 [4568]
8	400 [5800]
9	405 [5874]
10	630 [9150]

Characteristic curves for intermediate values can be generated by interpolation. Further explanations can be found on page 21.

pA Response pressure in bar

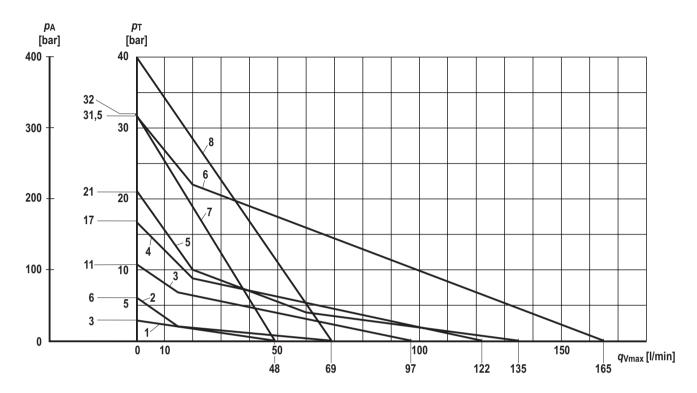
 p_T Maximum counter pressure in the discharge line (port T)

in bar

 \mathbf{q}_{Vmax} Maximum flow in l/min

Interpolation areas

Diagram for determining the maximum admissible counter pressure p_T in the discharge line at port T of the valve dependent on the flow q_{Vmax} for valves DBDS 20...1X/...E with different response pressures p_A .



 p_A Response pressure in bar

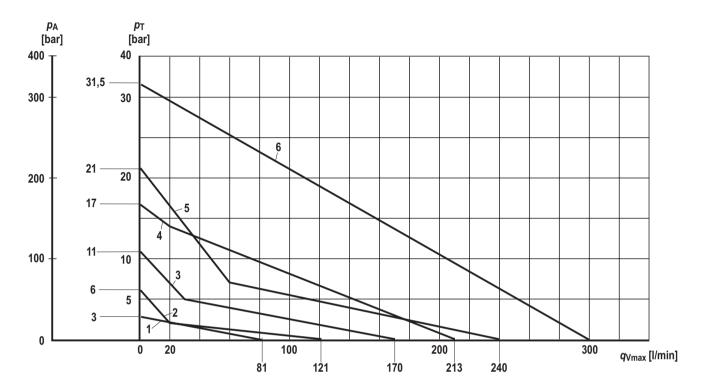
p_T Maximum counter pressure in the discharge line (port T) in bar

y_{Vmax} Maximum flow in l/min

Characteristic curves	Response pressure p_A in bar [psi]
1	30 [435]
2	60 [870]
3	110 [1595]
4	170 [2465]
5	210 [3046]
6	315 <i>[4568]</i>
7	320 [4641]
8	400 [5800]

Characteristic curves for intermediate values can be generated by interpolation. Further explanations can be found on page 21.

Diagram for determining the maximum counter pressure p_T in the discharge line at port T of the valve dependent on the flow q_{Vmax} for valves DBDS 30...1X/...E with different response pressures p_A .



 p_A Response pressure in bar

 ${m p}_{\rm T}$ Maximum counter pressure in the discharge line (port T) in bar

q_{Vmax} Maximum flow in l/min

Characteristic curves	Response pressure p_A in bar $[psi]$
1	30 [435]
2	60 [870]
3	110 [1595]
4	170 [2465]
5	210 [3046]
6	315 [4568]

Characteristic curves for intermediate values can be generated by interpolation. Further explanations can be found on page 21.

Further information

- ► Accumulator shut-off block
- ▶ 2/2 directional seat valve, direct operated with solenoid actuation
- ▶ Pressure relief valve, direct operated
- ► Hydraulic fluids on mineral oil basis
- ► Environmentally compatible hydraulic fluids
- ► Hexagon socket head cap screw, metric/UNC
- ► Hydraulic valves for industrial applications
- ► General product information on hydraulic products
- ► Selection of the filters
- ► Information on available spare parts

Operating instructions 50129-B

Data sheet 18136-20 Data sheet 25402 Data sheet 90220 Data sheet 90221

Data sheet 08936

Operating instructions 07600-B

Data sheet 07008