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The solenoid controlled relief valve is a combination of a pilot operated relief valve and a solenoid operated directional valve. It is used for no-load pump operation by using electric signals or, together with a remote control relief valve, for two or three pressure control of the hydraulic system.

Specifications

Model Numbers		Max. Operating Pres. MPa	Pres. Adj. Range MPa	Max. Flow L/min	Approx. Mass kg
Threaded Connection	Sub-plate Mounting				
BST-03-**-**-48	BSG-03-**-**-48	25	★ - 25	100	See the chart below.
BST-06-**-**-48	BSG-06-**-**-48			200	
BST-10-**-**-48	BSG-10-**-**-48			400	

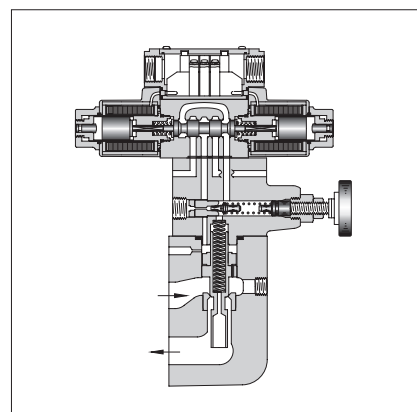
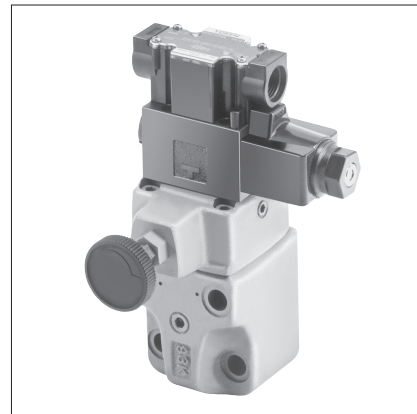
★ For relief valves, standard pilot operated relief valves are used.

For minimum adjustment pressures and other characteristics, see pages C-9 & C-10.

● For large flow valves (flange connection type), please contact us.

Approx. Mass

Model Numbers	Double Sol.	Single Sol.	With Vent Restrictor
BST-03	7.1 kg	6.6 kg	7.6 kg
BST-06	7.1 kg	6.6 kg	7.6 kg
BST-10	10.8 kg	10.3 kg	11.3 kg
BSG-03	6.8 kg	6.3 kg	7.3 kg
BSG-06	7.7 kg	7.2 kg	8.2 kg
BSG-10	11.0 kg	10.5 kg	11.5 kg



Model Number Designation

A—	BS	T	—03	—V	—2B3A	—A100	—N	—48
With Vent Restrictor	Series Number	Type of Mounting	Valve Size	High Venting Pres. Feature	Vent Type	Coil Type	Type of Electrical Con.	Design Number
A : With Vent Restrictor (Option) (Omit if not required)	BS : Solenoid Controlled Relief Valves	T : Threaded Connection	03	V : For High Venting Pressure Feature (Omit if not required)	2B3A	AC : A100, A120 A200, A240 DC : D12, D24 D48 AC→DC Rectified : R100, R200	None: Terminal Box Type N : With Plug-in Connector (DIN) (Option)	48
			06		2B3B			48
			10		2B2B			48
		G : Sub-plate Mounting	03		2B2			48
			06		3C2			48
			10		3C3			48

★1. Models with vent restrictor are applicable only for the vent type 2B3A and 2B3B. For details, see page C-19.

★2. Use high venting pressure types to reduce changeover time from unloading to onloading.

★3. For the details of the vent types, see the following page.

★4. The coil codes are the same as for solenoid operated directional valve DSG-01. See the Solenoid Ratings on page C-52.

Low Noise Type Solenoid Controlled Relief Valves

Low Noise Type Solenoid Controlled Relief Valves are also available. For details, please contact us.

Request

The coil type numbers in the shaded column are handled as optional extras.

In case these coils are required to be chosen, please confirm the time of delivery with us before ordering.

Vent Types

Vent Type	Graphic Symbols	Solenoid Operated Directional Valve Model Numbers	Operation			
			SOL "a"	SOL "b"	Vent Connecting	
2B3A		DSG-01-2B3A	—	OFF	Connected to port "A".	
				ON	Connected to tank (no-load)	
2B3B		DSG-01-2B3B	—	OFF	Connected to tank (no-load)	
				ON	Connected to port "B".	
2B2B		DSG-01-2B2B	—	OFF	Closed state (relief valve setting pressure)	
				ON	Connected to port "B".	
2B2		DSG-01-2B2	—	OFF	Connected to port "A".	
				ON	Connected to port "B".	
3C2		DSG-01-3C2	—	OFF	Closed state (relief valve setting pressure)	
				ON	OFF	Connected to port "A".
				OFF	ON	Connected to port "B".
3C3		DSG-01-3C3	—	OFF	OFF	Connected to tank (no-load)
				ON	OFF	Connected to port "A".
				OFF	ON	Connected to port "B".

Accessories

Mounting Bolts

Valve Model Numbers	Socket Head Cap Screw
BSG-03	M12×70L...2 Pcs. M12×95L...2 Pcs.
BSG-06	M16×60L...2 Pcs. M16×80L...2 Pcs.
BSG-10	M20×70L...2 Pcs. M20×90L...2 Pcs.

Type of Electrical Conduit Connection

Type of electrical conduit connection is same as solenoid operated directional valve DSG-01. For details, see page C-51.

Sub-plates

Valve Model Numbers	Sub-plate Model Numbers	Thread Size Rc	Approx. Mass kg
BSG-03	BGM-03-20	$\frac{3}{8}$	2.4
	BGM-03X-20	$\frac{1}{2}$	3.1
BSG-06	BGM-06-20	$\frac{3}{4}$	4.7
	BGM-06X-20	1	5.7
BSG-10	BGM-10-20	$1\frac{1}{4}$	8.4
	BGM-10X-20	$1\frac{1}{2}$	10.3

- Sub-plates are available. Specify the sub-plate model number from the table above. When sub-plates are not used, the mounting surface should have a good machined finish. ($\frac{1}{16}$)
- The sub-plates are those for pilot operated relief valves. For dimensions, see page C-9.

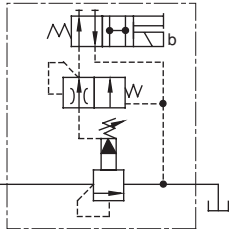
Option

Models with Vent Restrictor

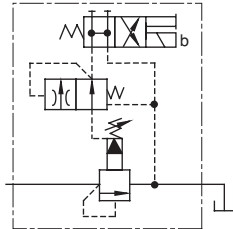
The type with a vent restrictor has a vent restrictor in vent types 2B3A and 2B3B added between a relief valve and a solenoid operated directional valve. It prevents shock to the main circuit by gradually lowering the venting pressure in the shift from the set pressure to unloading.

Unloading pressure are the same as without a vent restrictor.

A-BS*-*-2B3A



A-BS*-*-2B3B

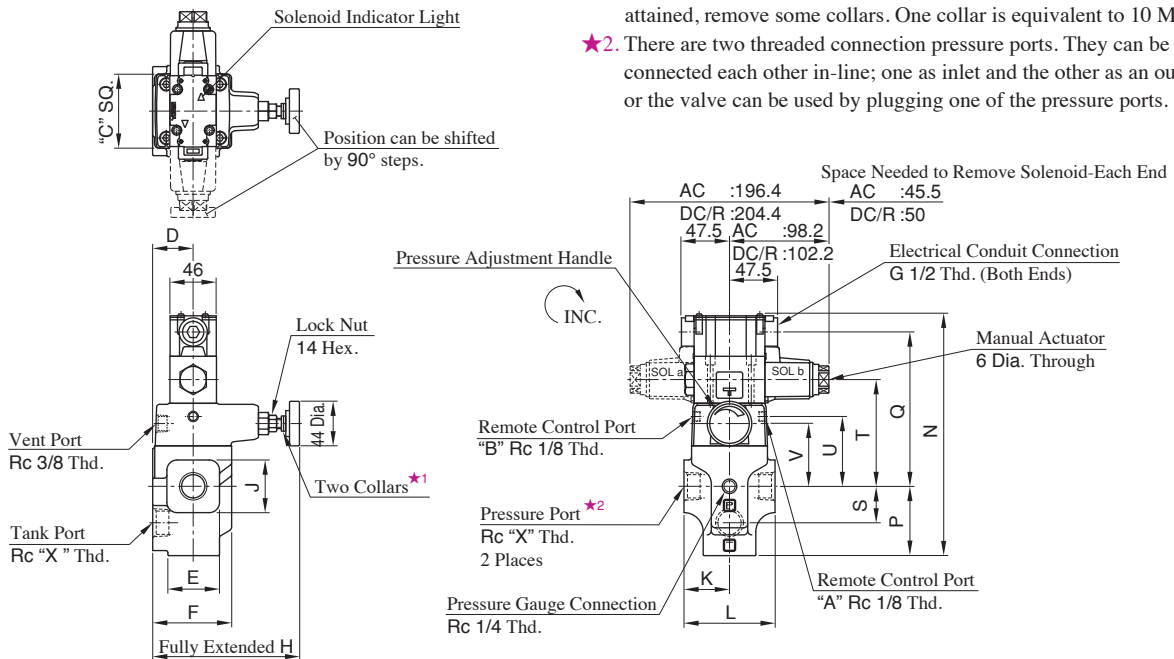


Instructions

- If a remote control relief valve is used in the vent circuit, see page C-3. In addition, if the internal volume of the vent line is too large, chattering is likely to occur. Thus, as far as possible reduce the inside diameter and the length of the pipe.
- To adjust the pressure, loosen the lock nut and turn the handle slowly clockwise for higher pressures or anti-clockwise for lower pressures. Pressure change of one handle revolution is about 5 MPa. After adjustments, do not forget to tighten the lock nut.
- Piping of the tank line should not be connected to any tank line of the other valves, but connected directly to the reservoir.
- With a small flow, the setting pressure may be unstable. Use with the minimum flow rate as the below chart.

Valve Size	Min. Flow
03	8 L/min
06	
10	15 L/min

BST-03, 06, 10



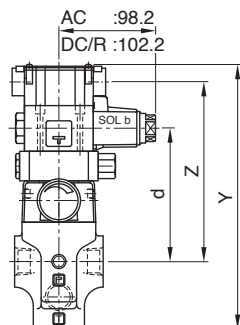
- ★1. Pressure is limited by collars fitted. If a working pressure cannot be attained, remove some collars. One collar is equivalent to 10 MPa.
- ★2. There are two threaded connection pressure ports. They can be connected each other in-line; one as inlet and the other as an outlet or the valve can be used by plugging one of the pressure ports.

Model Numbers	C	D	E	F	H	J	K	L	N	P	Q	S	T	U	V	X
BST-03	75	40	52	78	145	52	45	90	239.3	68.5	152.5	36	105.5	69	62	3/8
BST-06																3/4
BST-10	85	50	80	96	151	80	60	120	271.8	89	164.5	49	117.5	81	74	1 1/4

Models with Vent Restrictor (Option) A-BST-03, 06, 10

Model Numbers	Y	Z	d
A-BST-03	269.3	182.5	135.5
A-BST-06			
A-BST-10	301.8	194.5	147.5

For other dimensions, see the above figure.

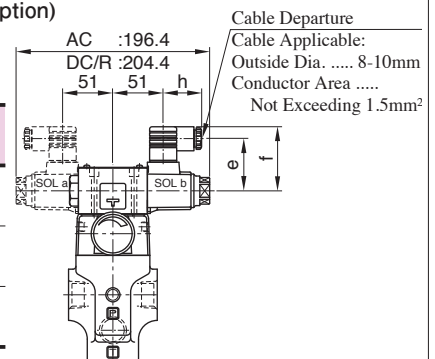


Models with Plug-in Connector (Option)

BST-06-**-***-N
03
10

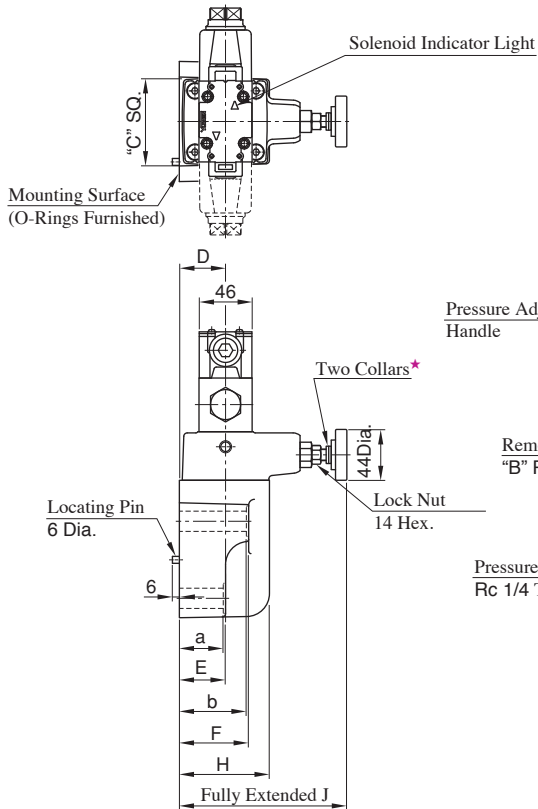
Name	Coil Type	e	f	h
AC Solenoid	A*	53	65	39
DC Solenoid	D*	64	76	39
R (AC→DC) Solenoid	R*	57.2	79	53

For other dimensions, see the above figure.

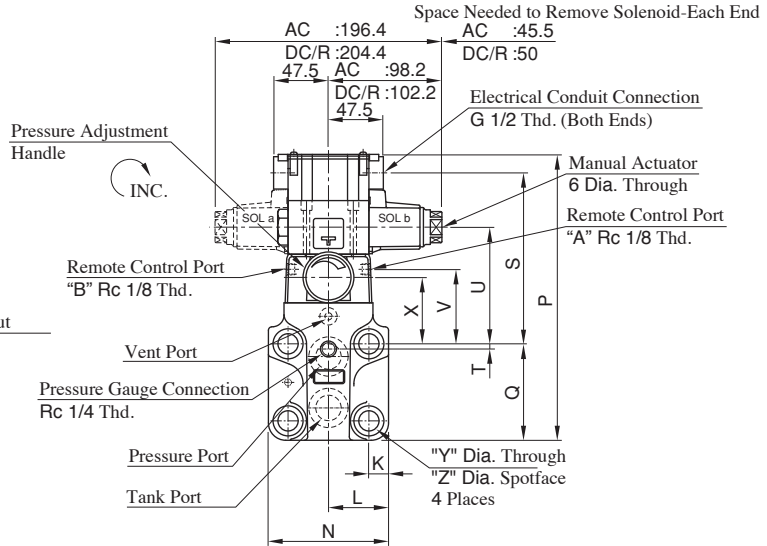


BSG-03, 06, 10

Mounting Surface
 BSG-03 : ISO 6264-06-09-1-97
 BSG-06 : ISO 6264-08-13-1-97
 BSG-10 : ISO 6264-10-17-1-97



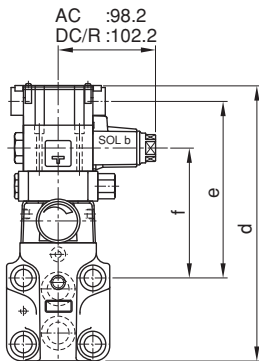
★ Pressure is limited by collars fitted. If a working pressure cannot be attained, remove some collars. One collar is equivalent to 10 MPa.



Model Numbers	C	D	E	F	H	J	K	L	N	P	Q	S	T	U	V	X	Y	Z	a	b
BSG-03	75	40	57	78	78	145	14.1	41	82	225.8	77	130.5	22	83.5	47	40	13.5	21	55	77
BSG-06	75	40	40	60	78	145	17	52	104	249.8	83.5	148	4.5	101	64.5	57.5	17.5	26	38	58
BSG-10	85	45	47	67	84	146	20.7	62	124	283.8	110	155.5	6	108.5	72	65	21.5	32	45	65

Note :For dimensions of the valve mounting surface, see the dimensional drawing (page C-9) of the sub-plate used together.

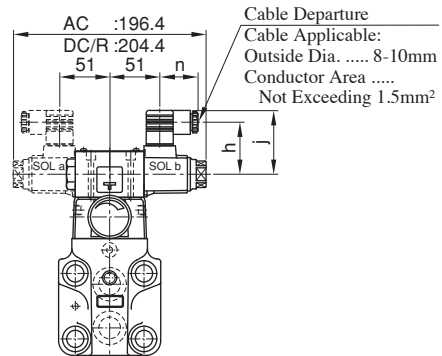
Models with Vent Restrictor (Option)
 A-BSG-03, 06, 10



Model Numbers	d	e	f
A-BSG-03	255.8	160.5	113.5
A-BSG-06	279.8	178	131
A-BSG-10	313.8	185.5	138.5

For other dimensions, see the above figure.

Models with Plug-in Connector (Option)
 03
 BSG-06-**-**-N
 10

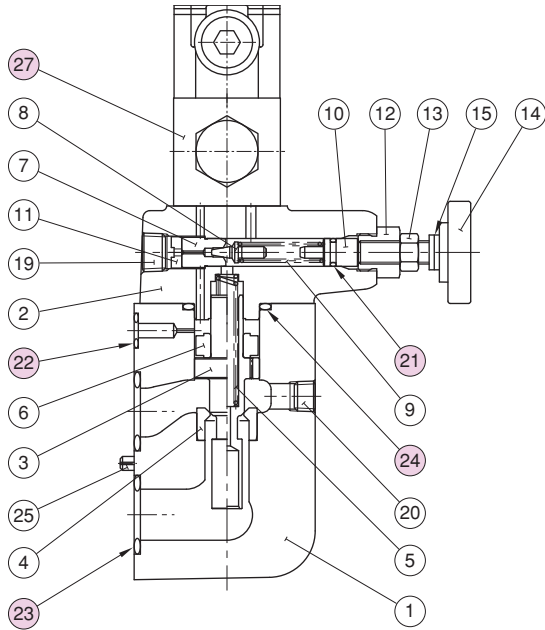


Name	Coil Type	h	j	n
AC Solenoid	A *	53	65	39
DC Solenoid	D *	64	76	39
R (AC→DC) Solenoid	R *	57.2	79	53

For other dimensions, see the above figure.

List of Seals

**BST
BSG -03, 06, 10**



BST-03, 06, 10

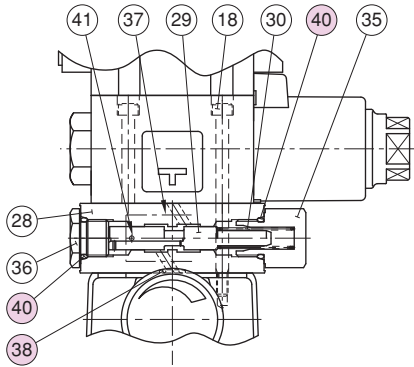
Item	Name of Parts	Part Numbers			Qty.
		BST-03	BST-06	BST-10	
21	O-Ring	OR NBR-70-1 P9-N	OR NBR-70-1 P9-N	OR NBR-70-1 P9-N	1
24	O-Ring	OR NBR-90 P32-N	OR NBR-90 P32-N	OR NBR-90 P32-N	1

BSG-03, 06, 10

Item	Name of Parts	Part Numbers			Qty.
		BSG-03	BSG-06	BSG-10	
21	O-Ring	OR NBR-70-1 P9-N	OR NBR-70-1 P9-N	OR NBR-70-1 P9-N	1
22	O-Ring	OR NBR-90 P9-N	OR NBR-90 P11-N	OR NBR-90 P9-N	1
23	O-Ring	OR NBR-90 P18-N	OR NBR-90 P28-N	OR NBR-90 P32-N	2
24	O-Ring	OR NBR-90 P32-N	OR NBR-90 P32-N	OR NBR-90 P42-N	1

Note: The Pilot Valve for item ②, see “DSG-01 Series Solenoid Operated Directional Valves” of the catalogue “E: Directional Controls”.

**A- BST
BSG -03, 06, 10
(Models with Vent Restrictor)**



**A- BST
BSG -03, 06, 10**

Item	Name of Parts	Part Numbers	Qty.
38	O-Ring	OR NBR-90 P8-N	2
40	O-Ring	OR NBR-90 P14-N	2

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