

Specifications

Model Numbers		Max. Operating Pressure MPa (PSI)	Pressure Adj. Range MPa (PSI)	Max. Flow L/min (U.S.GPM)	Approx. Mass kg (lbs.)		
					Double Sol.	Single Sol.	With Vent Restrictor
Sub-plate Mounting	S-BSG-03-**-**-52*	25 (3630)	★ - 25 (★ - 3630)	100 (26.4)	6.3 (13.9)	5.7 (12.6)	6.7 (14.8)
	S-BSG-06-**-**-52*			200 (52.8)	7.2 (15.9)	6.6 (14.6)	7.6 (16.8)
	S-BSG-10-**-**-52*			400 (106)	12.7 (28.0)	12.1 (26.7)	13.1 (28.9)

★ For relief valves, low-noise type pilot operated relief valves are used. For minimum adjustment pressures and other characteristics, see page 18.

Solenoid Ratings

Solenoid ratings are the same as for the conventional type. See Solenoid Ratings on page 20.

Model Number Designation

F-	A-	S-	BS	G	-03	-V	-2B3A	-A100	-N	-L	52	*
Special Seals	With Vent Restrictor	Low Noise Type	Series Number	Type of Mtg.	Valve size	High Venting Pres. Feature	Vent Type	Coil Type	Type of Electrical Connections	Direction of Handle	Design Number	Design Standards
F: Special Seals for Phosphate Ester Type Fluids (Omit if not required)	A: ★ ¹ With Vent Restrictor (option)	S: Low Noise Type	BS: Solenoid Controlled Relief Valves	G: Sub-plate Mtg.	03	V: ★ ² For High Venting Pressure Feature (Omit if not required)	2B3A 2B3B 2B2B 2B2 3C2 3C3	AC: ★ ⁴ A100 A120 A200 A240	None: Terminal Box Type	Viewed from pressure gauge Connection L: Left (Normal) R: Right	52	None: Japanese Std. "JIS" 90: N. American Design Std. 80: European Design Std.
					06			DC: D12 D24 D48				
					10			AC →DC: R100 R200				

★ 1. Models with vent restrictor are applicable only for the vent type 2B3A and 2B3B. For details, see page 32.

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

★ 3. The vent types are the same as for the conventional type solenoid controlled relief valves. For the details of the vent types, see page 21.

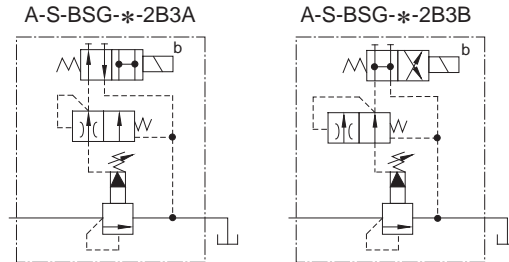
★ 4. The coil codes are the same as for the conventional type solenoid controlled valves. See the solenoid ratings on page 20.

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 setting pressure to unloading.

Unloading pressures are the same as without a vent restrictor.



Sub-plate

Valve Model Numbers	Japanese Standard "JIS"		European Design Standard		N. American Design Standard		Approx. Mass kg (lbs.)
	Sub-plate Model Numbers	Thread Size	Sub-plate Model Numbers	Thread Size	Sub-plate Model Numbers	Thread Size	
S-BSG-03	BGM-03-20	Rc 3/8	BGM-03-3080	3/8 BSP.F	BGM-03-2090	3/8 NPT	2.4(5.3)
	BGM-03X-20	Rc 1/2	BGM-03X-3080	1/2 BSP.F	BGM-03X-2090	1/2 NPT	3.1(6.8)
S-BSG-06	BGM-06-20	Rc 3/4	BGM-06-3080	3/4 BSP.F	BGM-06-2090	3/4 NPT	4.7(10.4)
	BGM-06X-20	Rc 1	BGM-06X-3080	1 BSP.F	BGM-06X-2090	1 NPT	5.7(12.6)
S-BSG-10	BGM-10-20	Rc 1-1/4	BGM-10-3080	1-1/4 BSP.F	BGM-10-2090	1-1/4 NPT	8.4(18.5)
	BGM-10X-20	Rc 1-1/2	BGM-10X-3080	1-1/2 BSP.F	BGM-10X-2090	1-1/2 NPT	10.3(22.7)

• 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.

• The sub-plates are those for pilot operated relief valves. For dimensions, see page 13.

Attachment

Mounting Bolts

Valve Model Numbers	Socket Head Cap Screw		Qty.
	Japanese Std. "JIS" and European Design Std.	N. American Design Std.	
S-BSG-03	M12 × 40 Lg.	1/2-13 UNC × 1-1/2 Lg.	4
S-BSG-06	M16 × 50 Lg.	5/8-11 UNC × 2 Lg.	4
S-BSG-10	M20 × 60 Lg.	3/4-10 UNC × 2-1/4 Lg.	4

Instructions

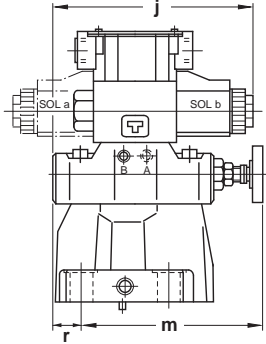
- If a remote control relief valve is used in the vent circuit, see page 3. In addition, if the internal volume of the vent line is too large, chattering is likely to occur. Thus, as far as possible reduce the inside Dia. and the length of the pipe.
- Pressure is limited by collars fitted. If a working pressure cannot be attained, remove some collars. One collar is equivalent to 10 MPa (1450 PSI).
- With a small flow, the setting pressure may be unstable. Use models numbered 03 and 06 with a flow rate above 5 L/min (1.3 U.S. GPM) and model 10 with 8 L/min (2.1 U.S. GPM).

Installation Drawings

Terminal Box Type

Opposite Handle Position

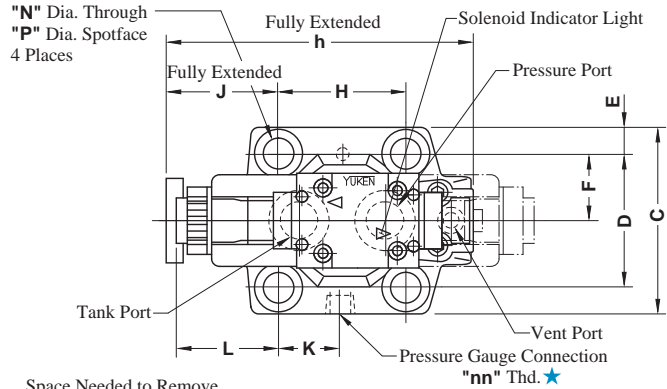
S-BSG-03
06 -*-*-*-R



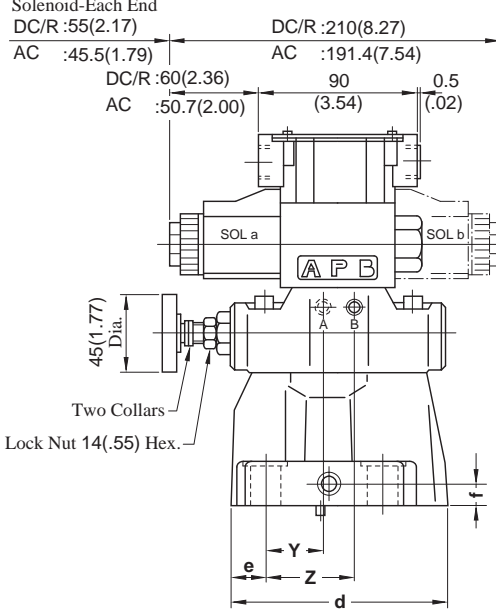
Note: For other dimensions, see the figures shown right

Mounting surface
S-BSG-03: ISO 6264-AR-06-2-A
S-BSG-06: ISO 6264-AS-08-2-A
S-BSG-10: ISO 6264-AT-10-2-A

S-BSG-03
06 -*-*-*-L-52/5290
S-BSG-10 -*-*-*-L-52/5290

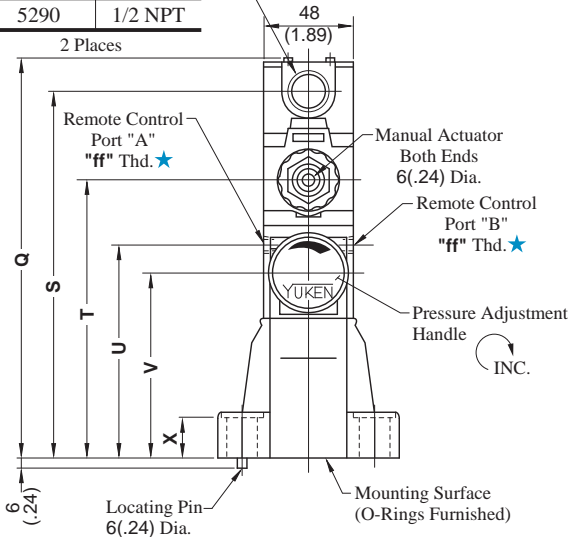


Space Needed to Remove Solenoid-Each End



Electrical Conduit Connection

Design Std.	Thd. Size
52	G 1/2
5290	1/2 NPT



Model Numbers	Dimensions mm (Inches)																						
	C	D	E	F	H	J	K	N	P	Q	S	T	U	V	X	Y	Z	d	e	f	h	m	r
S-BSG-03	76 (2.99)	53.8 (2.12)	11.1 (.44)	26.9 (1.06)	53.8 (2.12)	73.6 (2.90)	26.9 (1.06)	13.5 (.53)	21 (.83)	218.3 (8.59)	200 (7.87)	153 (6.02)	117 (4.61)	103 (4.06)	21.5 (.85)	17.1 (.67)	36.6 (1.44)	106 (4.17)	26.1 (1.03)	13 (.51)	163.5 (6.44)	127.4 (5.02)	36.1 (1.42)
S-BSG-06	98 (3.86)	70 (2.76)	14 (.55)	35 (1.38)	66.7 (2.63)	58.8 (2.31)	33.7 (1.33)	17.5 (.69)	26 (1.02)	218.3 (8.59)	200 (7.87)	153 (6.02)	117 (4.61)	103 (4.06)	26 (1.02)	31.9 (1.26)	51.4 (2.02)	122 (4.80)	19.3 (.76)	13 (.51)	163.5 (6.44)	142.2 (5.60)	21.3 (.84)
S-BSG-10	120 (4.72)	82.6 (3.25)	18.7 (.74)	41.3 (1.63)	88.9 (3.50)	46.1 (1.81)	44.9 (1.77)	21.5 (.85)	32 (1.26)	253.3 (9.97)	235 (9.25)	188 (7.40)	149 (5.87)	135 (5.31)	34 (1.34)	43.2 (1.70)	62.7 (2.47)	155 (6.10)	21.1 (.83)	18 (.71)	180 (7.09)	—	—

Model Numbers	AC Solenoid		DC/R Solenoid	
	L	j	L	j
S-BSG-03	68.8 (2.71)	158.7 (6.25)	78.1 (3.07)	168 (6.61)
S-BSG-06	54 (2.13)	158.7 (6.25)	63.3 (2.49)	168 (6.61)
S-BSG-10	41.8 (1.65)	—	51.1 (2.01)	—

DIMENSIONS IN MILLIMETRES (INCHES)

★ For the port screws, see the Plug-in Connector type on page 34.

Note: For dimensions of the valve mounting surface, see the installation drawing (P.13) of the sub-plate used together.

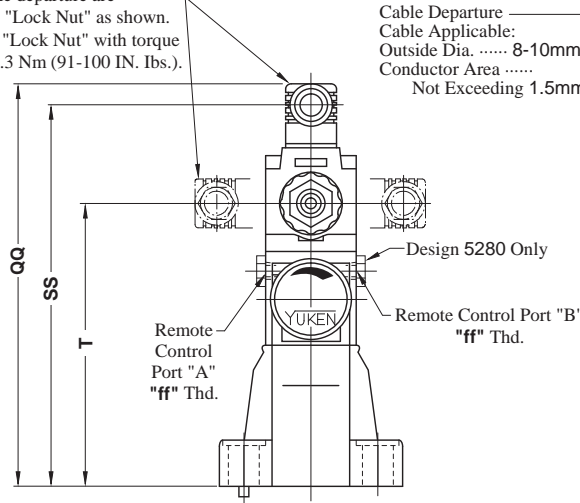


■ Plug-in Connector Type

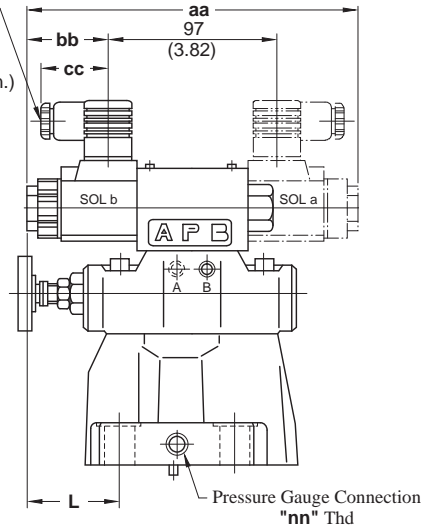
S-BSG-03-***-N-L-52/5280/5290

S-BSG-10-***-N-52/5280/5290

Three positions of cable departure are available by loosening "Lock Nut" as shown. After location, tighten "Lock Nut" with torque in the range 10.3 to 11.3 Nm (91-100 IN. lbs.).



Cable Departure
Cable Applicable:
Outside Dia. 8-10mm(.31-.39 in.)
Conductor Area
Not Exceeding 1.5mm²(.002 SQ. in.)



**DIMENSIONS IN
MILLIMETRES (INCHES)**

Model Numbers	Dimensions mm (Inches)							Remarks
	L	T	SS	QQ	aa	bb	cc	
S-BSG-03-***-A*-N	68.8 (2.71)	153 (6.02)	206 (8.11)	218 (8.58)	191.4 (7.54)	47.2 (1.86)	39 (1.54)	With AC Solenoid
S-BSG-06-***-A*-N	54 (2.13)	153 (6.02)	206 (8.11)	218 (8.58)				
S-BSG-10-***-A*-N	41.8 (1.65)	188 (7.40)	241 (9.49)	253 (9.96)				
S-BSG-03-***-D*-N	78.1 (3.07)	153 (6.02)	217 (8.54)	229 (9.02)	210 (8.27)	56.5 (2.22)	39 (1.54)	With DC Solenoid
S-BSG-06-***-D*-N	63.3 (2.49)	153 (6.02)	217 (8.54)	229 (9.02)				
S-BSG-10-***-D*-N	51.1 (2.01)	188 (7.40)	252 (9.92)	264 (10.39)				
S-BSG-03-***-R*-N	78.1 (3.07)	153 (6.02)	210.2 (8.28)	232 (9.13)	210 (8.27)	56.5 (2.22)	53 (2.09)	With AC → DC Solenoid
S-BSG-06-***-R*-N	63.3 (2.49)	153 (6.02)	210.2 (8.28)	232 (9.13)				
S-BSG-10-***-R*-N	51.1 (2.01)	188 (7.40)	245.2 (9.65)	267 (10.51)				

Model Numbers	Thread Size					
	Japanese Standard "JIS" Design 52		European Design Standard Design 5280		N. American Design Standard Design 5290	
	"ff" Thd.	"nn" Thd.	"ff" Thd.	"nn" Thd.	"ff" Thd.	"nn" Thd.
S-BSG-03-***-N	Rc 1/8	Rc 1/4	1/8 BSP.F	1/4 BSP.F	1/8 NPT	1/4 NPT
S-BSG-06-***-N						
S-BSG-10-***-N						

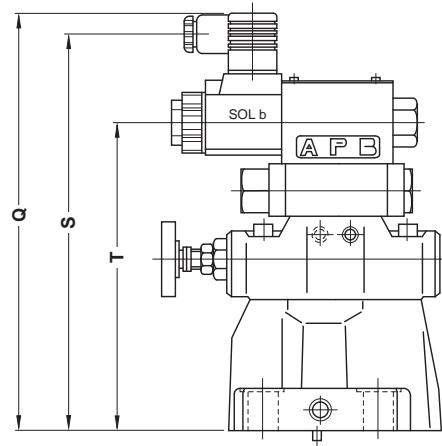
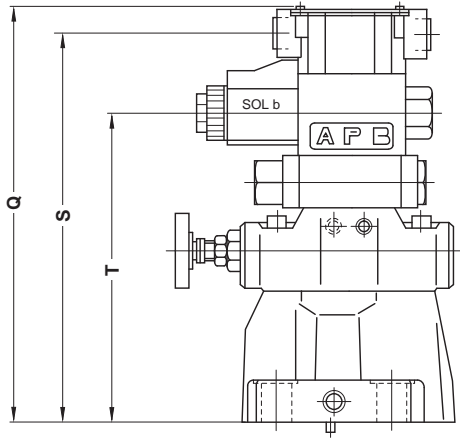
Options-Models with Vent Restrictor

Terminal Box Type

A-S-BSG-⁰³/₀₆ -*-**-L-52/5290
A-S-BSG-10-**-*-52/5290

Plug-in Connector Type

A-S-BSG-⁰³/₀₆ -*-**-N-L-52/5280/5290
A-S-BSG-10-**-*-N-52/5280/5290



Model Numbers	Dimensions mm (Inches)			Remarks
	Q	S	T	
A-S-BSG-03-**-*-A*/D*/R*-	248.3 (9.78)	230(9.06)	183(7.20)	Terminal Box Type
A-S-BSG-06-**-*-A*/D*/R*-	248.3(9.78)	230(9.06)	183(7.20)	
A-S-BSG-10-**-*-A*/D*/R*-	283.3(11.15)	235(9.25)	188(7.40)	
A-S-BSG-03-**-*-A*-N-L	248(9.76)	236(9.29)	183(7.20)	Plug-in Connector Type
A-S-BSG-03-**-*-D*-N-L	259(10.20)	247(9.72)		
A-S-BSG-03-**-*-R*-N-L	262(10.31)	240.2(9.46)		
A-S-BSG-06-**-*-A*-N-L	248(9.76)	236(9.29)	183(7.20)	
A-S-BSG-06-**-*-D*-N-L	259(10.20)	247(9.72)		
A-S-BSG-06-**-*-R*-N-L	262(10.31)	240.2(9.46)		
A-S-BSG-10-**-*-A*-N	283(11.14)	271(10.67)	188(7.40)	
A-S-BSG-10-**-*-D*-N	294(11.57)	282(11.10)		
A-S-BSG-10-**-*-R*-N	297(11.69)	275.2(10.83)		

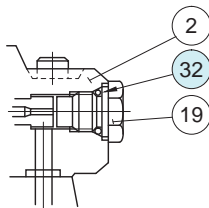
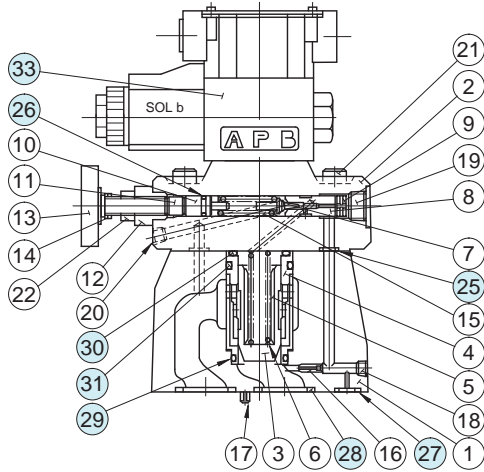
Lead Wire Connection

Lead Wire Connection is the same way as the conventional type solenoid controlled relief valves. See page 27.

Spare Parts List

● Terminal Box Type

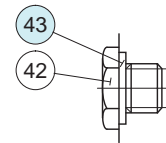
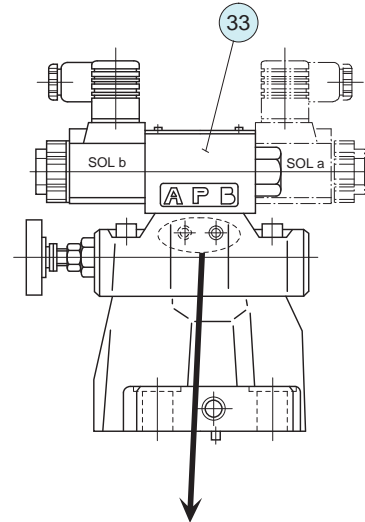
S-BSG-03,06,10-***-52/5290



*-S-BSG-10

● Plug-in Connector Type

S-BSG-03,06,10-***-N-52/5280/5290



Design 5280 Only

● List of Seals

Item	Name of Parts	Part Numbers			Qty.
		S-BSG-03	S-BSG-06	S-BSG-10	
25	O-Ring	SO-NB-P9	SO-NB-P9	SO-NB-P9	2
26	O-Ring	SO-NA-P9	SO-NA-P9	SO-NA-P9	1
27	O-Ring	SO-NB-P9	SO-NB-P11	SO-NB-P9	1
28	O-Ring	SO-NB-P18	SO-NB-P28	SO-NB-P32	2
29	O-Ring	SO-NB-A024	SO-NB-A024	SO-NB-A128	1
30	O-Ring	SO-NB-P28	SO-NB-P28	SO-NB-P36	1
31	O-Ring	SO-NB-P32	SO-NB-P32	SO-NB-P42	1
32	O-Ring	—	—	SO-NB-P14	1
38*	O-Ring	SO-NB-P8			2
40*	O-Ring	SO-NB-P14			2
43	Bonded Seal	SG-FB-1/8	SG-FB-1/8	SG-FB-1/8	2

★ The O-Rings for item 38, 40 are used only for the models with the vent restrictor.

Note: When ordering the seals, please specify the seal kit number from the table right. In addition to the above seals, seals for the pilot valves are included in the seal kit.

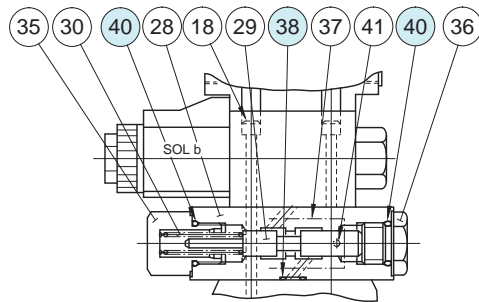
For the detail of the pilot valve seals, see the catalogue No. Pub. EC-0402.

⚠ CAUTION

When making replacement of seals or solenoid assemblies, please do it carefully after reading through the relevant instructions in the Operator's Manual.

■ Option-Models with Vent Restrictor

A-S-BSG-03,06,10-***-52/5290
N-52/5280/5290



● List of Seal Kits

Model Numbers	Seal Kit Numbers
S-BSG-03	KS-S-BSG-03-51
S-BSG-06	KS-S-BSG-06-51
S-BSG-10	KS-S-BSG-10-51
A-S-BSG-03	KS-A-S-BSG-03-51
A-S-BSG-06	KS-A-S-BSG-06-51
A-S-BSG-10	KS-A-S-BSG-10-51

Note: No bonded seals are included in the seal kits.

● Pilot Valves

See page 37 for the pilot valve model numbers to be used.



● List of Pilot Valves

Type of Electrical Conduit Connection	Valve Model Numbers	Pilot Valve Model Numbers	Remarks	
Terminal Box Type	*-S-BSG-03/06/10-*-2B3A-★-52	DSG-01-2B3A-★-60	Japanese Standard "JIS"	
	-S-BSG-03/06/10--2B3B-★-52	DSG-01-2B3B-★-60		
	-S-BSG-03/06/10--2B2B-★-52	DSG-01-2B2B-★-60		
	-S-BSG-03/06/10--2B2-★-52	DSG-01-2B2-★-60		
	-S-BSG-03/06/10--3C2-★-52	DSG-01-3C2-★-60		
	-S-BSG-03/06/10--3C3-★-52	DSG-01-3C3-★-60		
	Terminal Box Type	*-S-BSG-03/06/10-*-2B3A-★-5290	DSG-01-2B3A-★-6090	N. American Design Std.
		-S-BSG-03/06/10--2B3B-★-5290	DSG-01-2B3B-★-6090	
		-S-BSG-03/06/10--2B2B-★-5290	DSG-01-2B2B-★-6090	
		-S-BSG-03/06/10--2B2-★-5290	DSG-01-2B2-★-6090	
		-S-BSG-03/06/10--3C2-★-5290	DSG-01-3C2-★-6090	
		-S-BSG-03/06/10--3C3-★-5290	DSG-01-3C3-★-6090	
Plug-in Connector Type	*-S-BSG-03/06/10-*-2B3A-★-N-52	DSG-01-2B3A-★-N-60	Japanese Standard "JIS"	
	-S-BSG-03/06/10--2B3B-★-N-52	DSG-01-2B3B-★-N-60		
	-S-BSG-03/06/10--2B2B-★-N-52	DSG-01-2B2B-★-N-60		
	-S-BSG-03/06/10--2B2-★-N-52	DSG-01-2B2-★-N-60		
	-S-BSG-03/06/10--3C2-★-N-52	DSG-01-3C2-★-N-60		
	-S-BSG-03/06/10--3C3-★-N-52	DSG-01-3C3-★-N-60		
	Plug-in Connector Type	*-S-BSG-03/06/10-*-2B3A-★-N-5280	DSG-01-2B3A-★-N-60	European Design Std.
		-S-BSG-03/06/10--2B3B-★-N-5280	DSG-01-2B3B-★-N-60	
		-S-BSG-03/06/10--2B2B-★-N-5280	DSG-01-2B2B-★-N-60	
		-S-BSG-03/06/10--2B2-★-N-5280	DSG-01-2B2-★-N-60	
		-S-BSG-03/06/10--3C2-★-N-5280	DSG-01-3C2-★-N-60	
		-S-BSG-03/06/10--3C3-★-N-5280	DSG-01-3C3-★-N-60	
	Plug-in Connector Type	*-S-BSG-03/06/10-*-2B3A-★-N-5290	DSG-01-2B3A-★-N-6090	N. American Design Std.
		-S-BSG-03/06/10--2B3B-★-N-5290	DSG-01-2B3B-★-N-6090	
		-S-BSG-03/06/10--2B2B-★-N-5290	DSG-01-2B2B-★-N-6090	
		-S-BSG-03/06/10--2B2-★-N-5290	DSG-01-2B2-★-N-6090	
		-S-BSG-03/06/10--3C2-★-N-5290	DSG-01-3C2-★-N-6090	
		-S-BSG-03/06/10--3C3-★-N-5290	DSG-01-3C3-★-N-6090	

Note: 1. Fill a coil type (a symbol representing current/voltage) in section marked ★.
2. For the details of the pilot valves, see the Catalogue No. Pub. EC-0402.