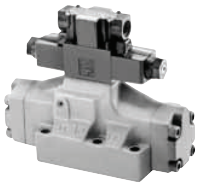
Directional Valves

These valve are used for shifting oil flow direction of hydraulic circuit and for actuator starting/stopping as well as the operating direction shifting of actuator.

Solenoid Operated Directional Valves

Solenoid Controlled Pilot Operated Directional Valves



"G" Series Shockless Type Directional Valves

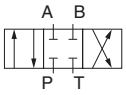
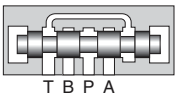
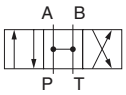
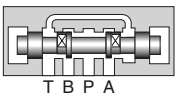
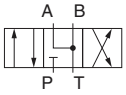
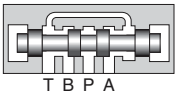
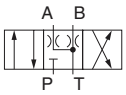
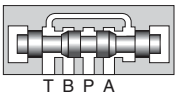
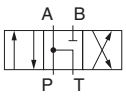
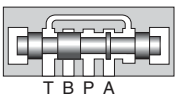
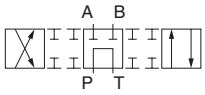
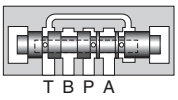
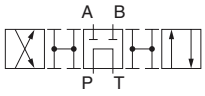
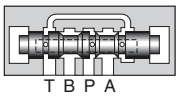
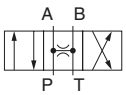
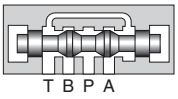
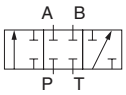
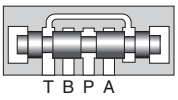
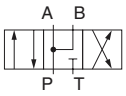
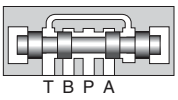
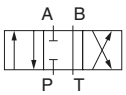
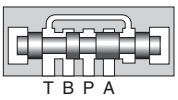
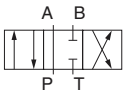
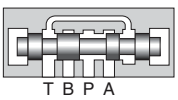
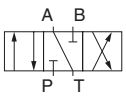
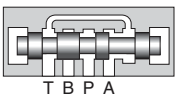
Pilot/Manually/Mechanically Operated Directional Valves

Poppet Type Directional Valves

Check/Pilot Controlled Check Valves

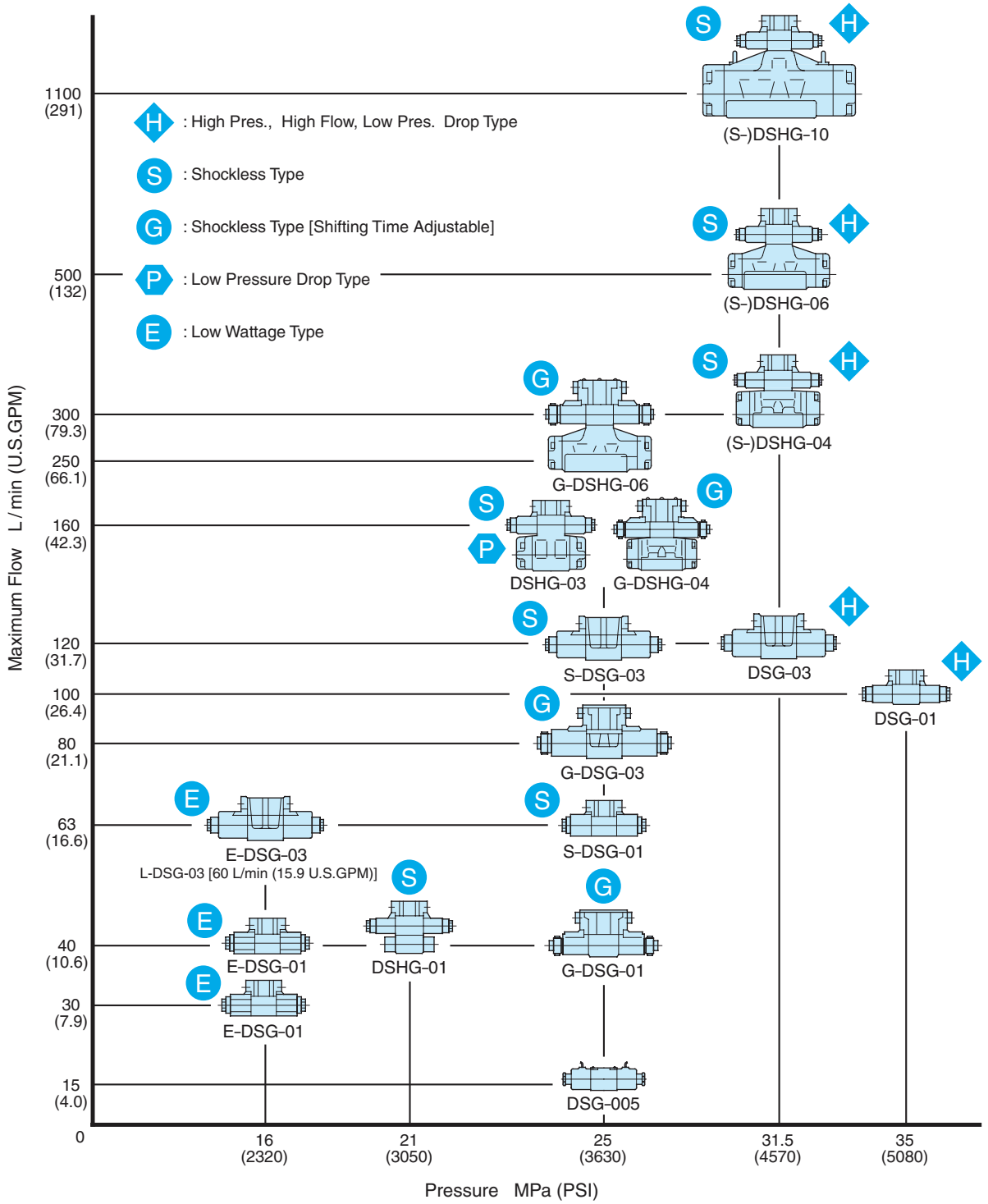
Spool Types

Spool types are classified to the condition of flow at the neutral position.

Spool Type	Graphic Symbols	Schematic Drawing (Centre Position)	Functions and Applications
2 (Closed Centre All Ports)			Holds pump pressure and cylinder position at neutral. Care should be paid if used as a 2-position type because shock occurs when each port is blocked in transit.
3 (Open Centre All Ports)			Pump can be unloaded and actuator is floating at neutral. If a 2-position type is used, shock is reduced as each ports is released to tank in transit.
4 (Open Centre A, B&T)			Pump pressure is held and actuator is floated at neutral. 2-position type is used when system pressure is required to be held in transit. Shock during transit is less compared to spool type "2".
40 (Open Centre A, B&T Restricted Flow)			In a variation of spool type "4", a restrictor is provided in A-T and B-T ports. Making it faster at stopping the actuator.
5 (Open Centre P, A&T)			It can be used when a pump is unloading at neutral and actuator is halted at one way flow.
6 (Open Centre P&T Closed Crossover)			Pump is unloading and actuator position held at neutral. Suitable for series operation.
60 (Open Centre P&T Open Crossover)			It is a variation of spool type "6". Shock is reduced as each port is released to tank on transit.
7 (Open Centre All Ports Restricted Flow)			Mainly used as a 2-position type. Shock is reduced on transit.
8 (2-Way)			Pump pressure and cylinder position is held at neutral in the same way as spool type "2". It is used as 2 way type.
9 (Open Centre P, A&B)			Regenerative circuit is provided at neutral.
10 (Open Centre B&T)			Prevent actuator from one direction drift by leakage of P port at neutral.
11 (Open Centre P&A)			Halt actuator movement positively at B, T ports blocked P, A ports connected at neutral.
12 (Open Centre A&T)			Prevent actuator from one direction drift by leakage of P port at neutral.

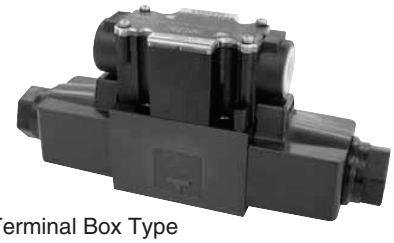
Solenoid Operated / Solenoid Controlled Operated Directional Valves

WIDE RANGE OF MODELS – Choose the optimum valve to meet your needs from a largeselection available.

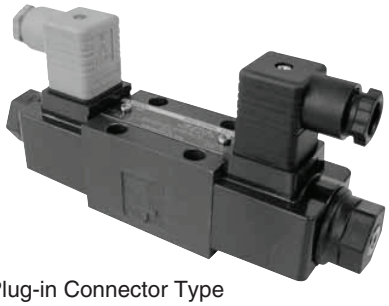


1/8 Solenoid Operated Directional Valves, DSG-01 Series

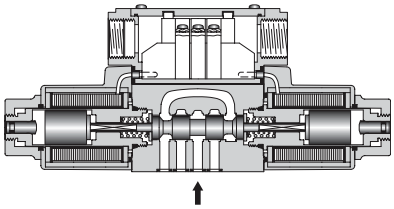
These are Solenoid Operated Directional Valves of high pressure, high flow and low pressure drop, the features of which can be materialized by employing a powerful wet type solenoid and the rational flow channel design.



Terminal Box Type



Plug-in Connector Type



- **High Pressure & High Flow Rate**
  In comparison to our existing lines, both the pressure and flow of these valves are much increased.
  - Max. Operating Pressure: approx. 10 % increased [31.5→35 MPa (4570 →5080 PSI)]
  - Max. T-Line Back Pressure: approx. 30 % increased [16→21 MPa (2320 →3050 PSI)]
  - Max. Flow Rate: approx. 60 % increased [63→100 L/min (16.64 →26.42 U.S.GPM)]
- **Low Pressure Drop**
  The pressure drop of these valves is reduced by 10 % from 1.0 to 0.9 MPa (145 to 131 PSI), in comparison to our existing lines*; the valves effectively reduce the energy consumption of the unit.
  {* At Flow Rate: 60 L/min (15.9 U.S.GPM), Spool Type: 3C2 (P→A)}
- **Compact & Small Mass**
  Despite of high pressure, high flow and low pressure drop, these valve bodies are compact and lightweight with DC double solenoids; the overall length and mass are reduced from 210 to 205 mm (8.26 to 8.07 inch) and from 2.2 to 1.85 kg (4.85 to 4.08 lbs), respectively.
- **Shockless type available**
  In addition to the standard valves for high pressure and high flow, a shockless type capable of minimizing noise and vibration in piping during spool changeover is also available.
- **Stable Operation**
  Due to the powerful magnetic and spring force of the solenoids, these valves exhibit a high tolerance to contaminants and especially stable operation.
- **IP65-equivalent high dust- and water-proof**
  These valves demonstrate excellent dust- and water-proof characteristics, in compliance with I. E. C. Pub. 529. IP65 and JIS C 0920 IP65 (dust- and jet-proof type).
- **Usable in products of various standards**
  These standard valves are CE certified for installation in equipment overseas.
  UL/CSA certified products are also available.

Specifications

Valve Type	Model Numbers	Max. Flow ★2 L/min (U.S.GPM)	Max. Operating Pressure MPa (PSI)	Max. T-Line Back Pressure MPa (PSI)	Max. Changeover Frequency Cycle/min {min⁻¹}	Mass kg (lbs.)
Standard Type	DSG-01-3C∗-∗-70/7090	100 (26.4)	35 (5080)	21 (3050)	300 (R Type Sol. Only) 120	1.85 (4.08)
	DSG-01-2D2-∗-70/7090					
	DSG-01-2B∗-∗-70/7090					1.4(3.09)
Shockless Type	S-DSG-01-3C∗-∗-70/7090	63 (16.6)	25 (3630)	21 (3050)	120	1.85(4.08)
	S-DSG-01-2B2-∗-70/7090					1.4(3.09)
Low Wattage(14W) Type ★1	L-DSG-01-3C∗-∗-70/7090	40 (10.6)	16 (2320)	16 (2320)	300 (R Type Sol. Only) 120	1.85 (4.08)
	L-DSG-01-2D2-∗-70/7090					
	L-DSG-01-2N∗-∗-70/7090					
	L-DSG-01-2B∗∗-∗-70/7090					1.4(3.09)

★ 1. For details of L-DSG-01, please contact us.
★ 2. Maximum flow indicates a ceiling flow depends on the type of spool and operating condition, refer to the List of Spool Functions on pages 347 to 351 for details.

Sub-plate

Piping Size	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	
1/8	DSGM-01-31	Rc 1/8	DSGM-01-3180	1/8 BSP.F	DSGM-01-3190	1/8 NPT	0.8 (1.8)
1/4	DSGM-01X-31	Rc 1/4	DSGM-01X-3180	1/4 BSP.F	DSGM-01X-3190	1/4 NPT	0.8 (1.8)
3/8	DSGM-01Y-31	Rc 3/8	—	—	DSGM-01Y-3190	3/8 NPT	0.8 (1.8)

● 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.

Mounting Bolt

For socket head cap screws in the table below are included.

Descriptions	Soc. Hd. Cap Screw (4 pcs.)	Tightening Torque
Japanese Standard "JIS" European Design Standard	M5 × 45 Lg.	5 - 7 Nm (43 - 60 in. 1bs.) [Applicable to working pressure more than 25 MPa (3630 PSI): 6 - 7 Nm (52 - 60 in. 1bs.)]
N. American Design Standard	No. 10-24 UNC × 1-3/4 Lg.	

Solenoid Ratings

Valve Type	Electric source	Coil Type	Frequency (Hz)	Voltage (V)		Current & Power at Rated Voltage		
				Source Rating	Serviceable Range	Inrush (A) ★2	Holding (A)	Power (W)
Standard Type	AC ★1	A100	50	100	80 - 110	2.42	0.51	—
			60	100	90 - 120	2.14	0.37	
				110		2.35	0.44	
		A120	50	120	96 - 132	2.02	0.42	
			60		108 - 144	1.78	0.31	
		A200	50	200	160 - 220	1.21	0.25	
			60	200	180 - 240	1.07	0.19	
				220		1.18	0.22	
Shockless Type		A240	50	240	192 - 264	1.01	0.21	
			60		216 - 288	0.89	0.15	
	DC (K Series)	D12	—	12	10.8 - 13.2	—	2.45	29
		D24		24	21.6 - 26.4		1.23	
		D48		48	43.2 - 52.8		0.61	
	AC → DC Rectified (R)	R100	50/60	100	90 - 110	—	0.33	29
		R200		200	180 - 220		0.16	

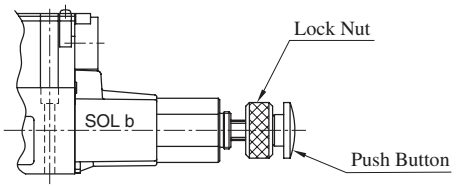
★1. AC solenoid is not available in shockless type.
R type models with built-in current rectifier is recommended for shockless operation with AC power.
★2. Inrush current in the above table show rms values at maximum stroke.
★3. There are more coil types other than the above. For details, please make inquiries.

The coil type numbers in the shaded column are handled as opotinal extras. In case these coils are required to be chosen, please confirm the time of delivery with us before ordering.

Options

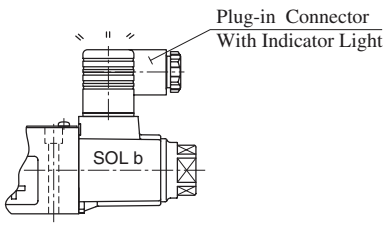
● **Push Button with Lock Nut**

Can be used for manual changeover of spool. The push button can be locked in the pressed condition.



● **Plug-in Connector with Solenoid Indicator Light**

These are the indicator light incorporated plug-in connector type solenoids. Energisation or de-energisation of the solenoid can be easily identified with the incorporated indicator light.



Model Number Designation

F-	S-	DSG	- 01	-2	B	2	A	-D24	-C	-N	-70	*	-L
Special Seals	Shockless Type	Series Number	Valve Size	Number of Valve Positions	Spool-Spring Arrangement	Spool Type	Special Two Position Valve (Omit if not required)	Coil Type	Manual Override	Electrical Conduit Connection	Design Number	Design Standard	Models with Reverse Mtg. of Solenoid (Omit if not required)
F: For Phosphate Ester Type Fluids (Omit if not required	**None**: Standard Type	**DSG**: Solenoid Operated Directional Valve	**01**	**3**: Three Positions	**C**: Spring Centred	**2, 3 4, 40 60, 9 10, 11 12**	—	AC: **A100 A120 A200 A240** DC: **D12 D24 D48** R: (AC→DC) **R100 R200**	**None**: Manual Override Pin	**None**: Terminal Box Type	**70**	**None**: Japanese Std. "JIS" **90**: N.American Design Std.	—
				2: Two Positions	**D**: No-Spring Detented	**2**	—						
					B: Spring Offset	**2 3 8**	**A** ★1 **B** ★1		**C**: Push Button and Lock Nut (Option)	**N**: Plug-in Connector Type **N1**: ★2 Plug-in Connector Type with Indicator Light (Option)		**None**: Japanese Std. "JIS" and European Design Std. **90**: N. American Design Std.	**L**
	S: Shockless Type			**3**: Three Positions	**C**: Spring Centred	**2 4**	—	DC: **D12 D24 D48** R: (AC→DC) **R100 R200**					—
				2: Two Positions	**B**: Spring Offset	**2**							**L**

★1. In case of the special two position valve, please refer to page 352 for details.
★2. N1 is not available for R type solenoids.

In the table above, the symbols or numbers highlighted with shade represent the optional extras. The valves with model number having such optional extras are handles as options, therefore, please confirm the time of delivery with us before ordering.

List of Standard Models and The Maximum Flow

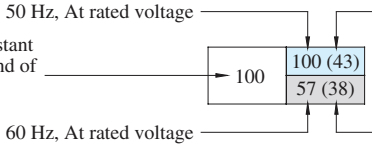
Models with AC Solenoids: DSG-01-∗∗∗-A∗

No. of Valve Positions	Spool-Spring Arrangement	Model Numbers	Graphic Symbols	Max. Flow L/min: P → A, B → T					P → A [Port "B" Blocked]					P → B [Port "A" Blocked]				
				Working Pressure MPa					Working Pressure MPa					Working Pressure MPa				
				10	16	25	31.5	35	10	16	25	31.5	35	10	16	25	31.5	35
Three Positions	Spring Centred	DSG-01-3C2		100	100	100	100	100	100(43)	100(41)	80(21)	60(17)	38(15)	100(43)	100(41)	80(21)	60(17)	38(15)
									57(38)	53(31)	29(17)	19(10)	13(9)	57(38)	53(31)	29(17)	19(10)	13(9)
		DSG-01-3C3		100(80)	100(80)	100(80)	100(77)	100(77)	70(46)	70(46)	70(46)	70(46)	70(46)	70(46)	70(46)	70(46)	70(46)	70(46)
				90(63)	90(63)	90(63)	90(63)	90(63)	45(30)	45(30)	45(30)	45(30)	45(30)	45(30)	45(30)	45(30)	45(30)	45(30)
		DSG-01-3C4		90	90	90	90(22)	35(18)	100(38)	76(28)	67(15)	57(10)	35(7)	100(38)	76(28)	67(15)	57(10)	35(7)
						90(26)	43(14)	30(11)	50(31)	38(20)	20(10)	16(7)	12(5)	50(31)	38(20)	20(10)	16(7)	12(5)
		DSG-01-3C40		85	85	85	80(40)	80(22)	85(40)	85(35)	85(24)	60(16)	55(12)	85(40)	85(35)	85(24)	60(16)	55(12)
				80	80	80(30)	63(15)	25(10)	70(26)	50(24)	32(16)	22(13)	18(10)	70(26)	50(24)	32(16)	22(13)	18(10)
		DSG-01-3C60★		43(23)	43(23)	42(23)	42(23)	42(23)	54(32)	54(32)	52(32)	52(32)	52(32)	54(32)	54(32)	52(32)	52(32)	52(32)
				40(23)	40(23)	38(23)	36(23)	35(23)	48(30)	47(30)	47(30)	47(30)	47(30)	48(30)	47(30)	47(30)	47(30)	47(30)
		DSG-01-3C9		100	100	100	100	100	20	15	10	10	8	20	15	10	10	8
		DSG-01-3C10◆		100	100	100(63)	100(33)	100(27)	100(50)	100(37)	100(20)	78(16)	62(13)	100(50)	100(37)	100(20)	78(16)	62(13)
					100(70)	80(20)	70(20)	40(19)	100(37)	55(25)	29(14)	20(11)	15(10)	100(37)	55(25)	29(14)	20(11)	15(10)
		DSG-01-3C11◆		100	100	100	100	100	23	20	13	10	5	100(65)	85(52)	72(45)	65(34)	60(27)
														70(50)	57(40)	50(25)	43(19)	35(18)
		DSG-01-3C12◆		100	100	100(63)	100(33)	100(27)	100(50)	100(37)	100(20)	78(16)	62(13)	100(50)	100(37)	100(20)	78(16)	62(13)
					100(70)	80(20)	70(20)	40(19)	100(37)	55(25)	29(14)	20(11)	15(10)	100(37)	55(25)	29(14)	20(11)	15(10)
Two Positions	No-Spring Detented	DSG-01-2D2		80	80	80	80	80	45	45	45(21)	45(16)	38(13)	50	50(45)	50(42)	45(40)	45(40)
											36(18)	28(13)	22(12)		50(45)	50(42)	45(40)	45(40)
	Spring Offset	DSG-01-2B2		85	85	85	85	85	20	16	16	15	13	85(63)	80(50)	63(40)	44(32)	44(32)
														85(30)	60(33)	50(28)	40(28)	40(28)
		DSG-01-2B3		70	70	70	70	70	50	50	50	50	50	80(70)	80(70)	80(70)	80(70)	80(70)
														70(48)	70(48)	70(48)	70(48)	70(48)
		DSG-01-2B8		—	—	—	—	—	26	17	13	11	10	80(50)	70(40)	60(20)	45(10)	30(10)
														35(20)	23(15)	15(8)	10(5)	7(5)

Notes: 1. The relation between the maximum flow in the table above and the frequency/voltage (within the serviceable voltage) is as shown below.

(Example)

The maximum flow rate is constant regardless of 50 Hz or 60 Hz and of any voltage variants within the serviceable voltage



2. For the maximum flow rate in P → T of the valves with a ★ mark, please see page 351.

The valve models with a ◆ mark are handled as Options. If you choose such valves, check the time of delivery beforehand.

List of Standard Models and The Maximum Flow

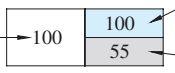
Models with DC or R Type Solenoids: DSG-01-***-D*/R*

No. of Valve Positions	Spool-Spring Arrangement	Model Numbers	Graphic Symbols	Max. Flow L/mi: P→A, B→A, B→T					P→A [Port "B" Blocked]					P→B [Port "A" Blocked]				
				Working Pressure MPa					Working Pressure MPa					Working Pressure MPa				
				10	16	25	31.5	35	10	16	25	31.5	35	10	16	25	31.5	35
Three Positions	Spring Centred	DSG-01-3C2		100	100	100	100	100	100	45	28	25	22	100	45	28	25	22
									55	35	23	19	17	55	35	23	19	17
		DSG-01-3C3		100	100	100	100	100	78	78	78	78	75	78	78	78	78	75
				80	80	80	80	80	70	70	70	70	70	70	70	70	70	70
		DSG-01-3C4		90	90	90	50	38	100	58	38	31	29	100	58	38	31	29
						42	26	20	62	48	30	25	23	62	48	30	25	23
		DSG-01-3C40		85	85	65	40	33	85	52	30	26	24	85	52	30	26	24
						45	30	26	65	36	25	21	19	65	36	25	21	19
		DSG-01-3C60 ★		50	50	50	50	50	66	66	66	66	66	66	66	66	66	66
				41	41	41	41	41	58	58	58	58	58	58	58	58	58	58
		DSG-01-3C9		100	100	100	100	100	20	15	10	10	8	20	15	10	10	8
		DSG-01-3C10 ◆		85	85	85	80	40	100	56	36	28	24	100	56	36	28	24
						35	23	20	74	43	28	20	19	74	43	28	20	19
		DSG-01-3C11 ◆		100	100	100	100	100	23	20	13	10	5	100	60	40	36	32
														85	46	32	28	24
		DSG-01-3C12 ◆		85	85	85	80	40	100	56	36	28	24	100	56	36	28	24
						35	23	20	74	43	28	20	19	74	43	28	20	19
Two Positions	No-Spring Detented	DSG-01-2D2		75	75	75	75	75	45	45	40	30	27	50	50	50	45	45
				70	70	70	70	70			30	25	22		45	42	40	40
	Spring Offset	DSG-01-2B2		80	80	80	80	80	20	16	16	15	13	46	31	24	22	22
														32	23	19	18	18
		DSG-01-2B3		70	70	70	70	70	50	50	50	50	50	75	75	75	75	75
														65	65	65	65	65
		DSG-01-2B8		—	—	—	—	—	26	17	13	11	10	53	35	23	19	17
														35	30	17	13	12

Notes: 1. The relation between the maximum flow in the table above and the voltage (within the serviceable voltage) is as shown below.

(Example)

The maximum flow rate is constant regardless of any voltage variants within the serviceable voltage



At rated voltage [after temperature rise and saturated]

At minimum serviceable voltage (90% of rated voltage) [after temperature rise and saturated]

2. For the maximum flow rate in P → T of the valves with a ★ mark, please see page 351.

The valve models with a ◆ mark are handled as Options. If you choose suce valves, check the time of delivery beforehand.

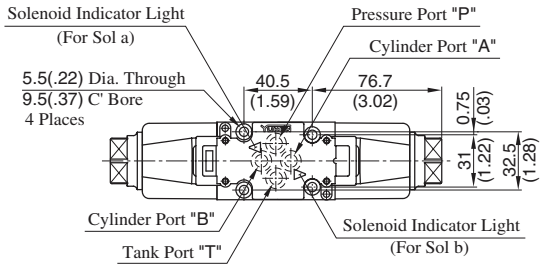
Mounting surface: ISO 4401-AB-03-4-A

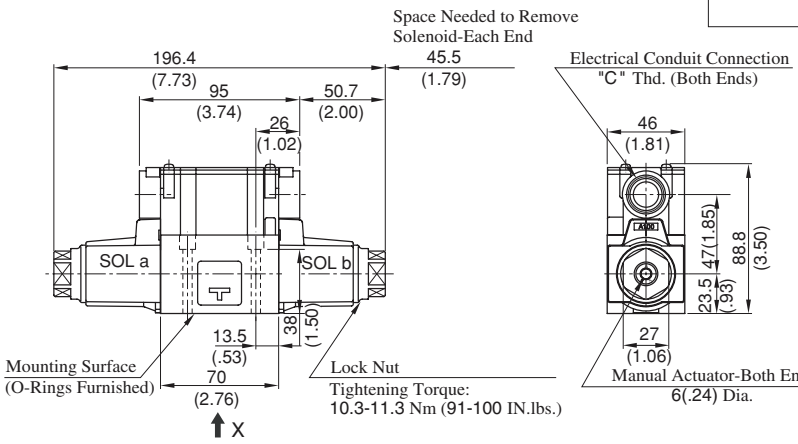
TERMINAL BOX TYPE

■ Models with AC Solenoids

● Double Solenoid: Spring Centred & No-Spring Detented

DSG-01- $\frac{3C*}{2D2}$ -A*-70/7090



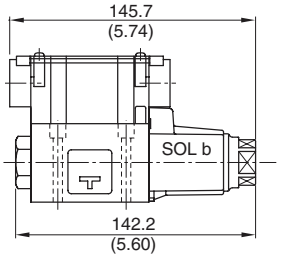


Model Numbers	"C" Thd.
DSG-01-***-A*-70	G 1/2
DSG-01-***-A*-7090	1/2 NPT

★ Locating pin can be fitted to this hole to conform with ISO4401-03-02-94. However, locating pin is not provided to standard design valve. When ordering valve with a locating pin, please consult Yuken.

● Single Solenoid: Spring Offset

DSG-01-2B*-A*-70/7090



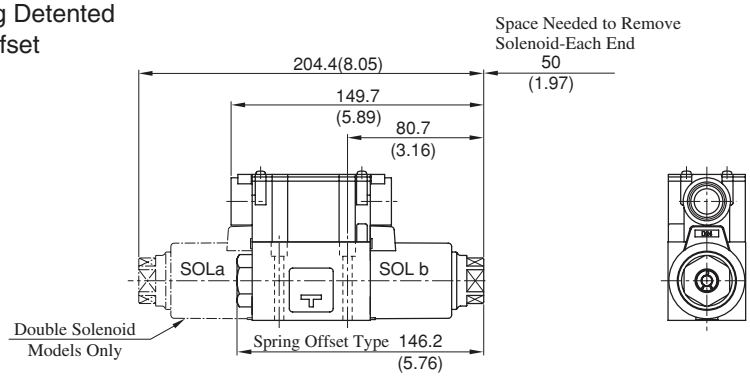
- For other dimensions, refer to "spring Centred and No-Spring Detented" models.
- Solenoid being mounted in the reverse position SOL a side is also available.

DIMENSIONS IN MILLIMETRES (INCHES)

■ Models with DC Solenoids: (S-)DSG-01- ***-D*-70/7090

■ Models with R Type Solenoids: (S-)DSG-01- *** -R* -70/7090

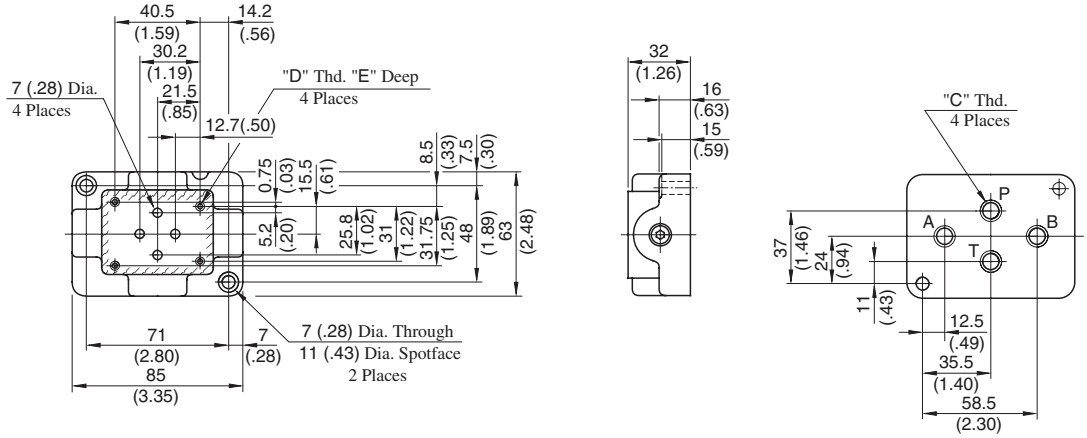
● Spring Centred
● No-Spring Detented
● Spring Offset



- For other dimensions, refer to models with AC solenoids.

Sub-plate : DSGM-01/01X/01Y-31/3180/3190

DIMENSIONS IN MILLIMETRES (INCHES)

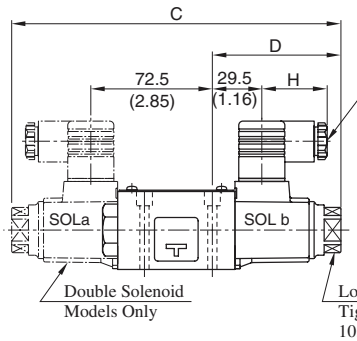


Sub-plate Model Numbers	Piping Size "C" Thd.	"D" Thd.	"E" mm(IN.)
DSGM-01-31	Rc 1/8	M5	10 (.39)
DSGM-01-3180	1/8 BSP.F		
DSGM-01-3190	1/8 NPT	No.10-24 UNC	12 (.47)
DSGM-01X-31	Rc 1/4	M5	10 (.39)
DSGM-01X-3180	1/4 BSP.F		
DSGM-01X-3190	1/4 NPT	No.10-24 UNC	12 (.47)
DSGM-01Y-31	Rc 3/8	M5	10 (.39)
DSGM-01Y-3190	3/8 NPT	No. 10-24 UNC	12 (.47)

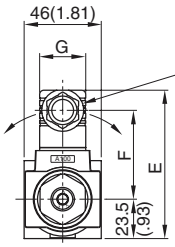
PLUG-IN CONNECTOR TYPE (N)
PLUG-IN CONNECTOR WITH INDICATOR LIGHT (N1)

DIMENSIONS IN MILLIMETRES (INCHES)

- Models with AC Solenoids: DSG-01-✱✱✱-A✱-$\frac{N}{N1}$-70/7090
- Models with DC Solenoids: (S-)DSG-01-✱✱✱-D✱-$\frac{N}{N1}$-70/7090
- Models with R Solenoids: (S-)DSG-01-✱✱✱-R✱-N-70/7090



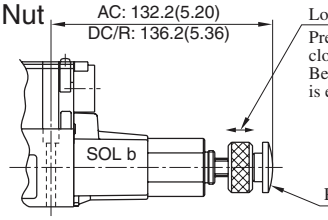
The position of the Plug-in connector can be changed as illustrated below by loosening the lock nut. After completion of the change, be sure to tighten the lock nut with the torque as specified below.



Model Numbers	C	D	E	F	G	H
DSG-01-✱✱✱-A✱-N✱	196.4 (7.73)	76.7 (3.02)	88.5 (3.48)	53 (2.09)	27.5 (1.08)	39 (1.54)
(S-)DSG-01-✱✱✱-D✱-N✱	204.4 (8.05)	80.7 (3.18)	99.5 (3.92)	64 (2.52)	27.5 (1.08)	39 (1.54)
(S-)DSG-01-✱✱✱-R✱-N	204.4 (8.05)	80.7 (3.18)	102.5 (4.04)	57.2 (2.25)	34 (1.34)	53 (2.09)

● For other dimensions, refer to "Terminal Box type" (Page 356).

Models with Push Button & Lock Nut
(S-)DSG-01-✱✱✱-✱-C



Interchangeability in Installation Current and New Design

In ouder to achieve higher pressure, higher flow, lower pressure drop DSG-01 valves has been upgraded from the 60 design series to the 70 design series.
The figures in the table below are the comparison between the current and the new design valves.

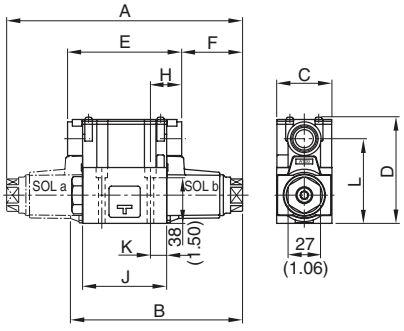
Specifications

Design Number	Max. Flow L/min (U.S.GPM)	Max. Operating Pressure MPa (PSI)	Max. T-Line Back Pres. MPa (PSI)	Max. Changeover Frequency Cycle/min (min⁻¹)	Pressure Drop★ MPa (PSI) {P→A}	Mass kg (lbs.)	
						3C✱/2D✱	2B✱
New Design: 70	100(26.4)	35(5080)	21(3050)	300 (R Type sol. Only 120)	0.9(130)	1.85(4.08)	1.4(3.09)
Current Design: 60	63(16.6)	31.5(4570)	16(2320)		1.0(145)	2.2(4.85)	1.6(3.53)

★ Flow Rate: 60 L/min (15.9 U.S.GPM), Viscosity: 30 mm²/s (141 SSU), Spool type "2" (Closed centre)

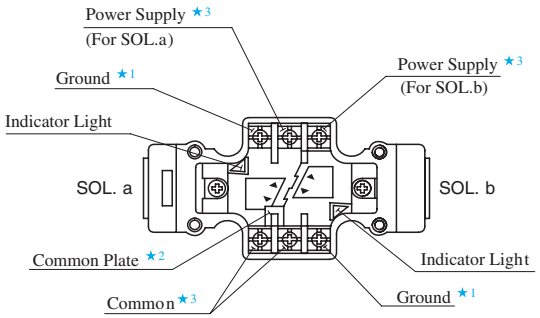
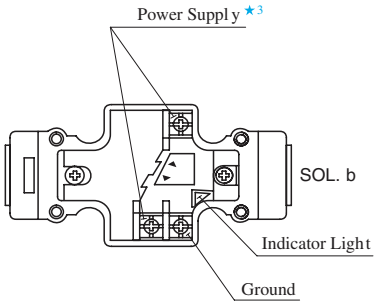
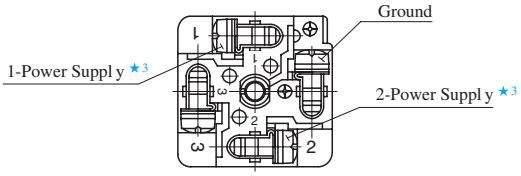
Interchangeability in Installation

Interchangeability in installation in maintained though there are minor differences in demension as in the following table.



Coil Type	Design Number	A	B	C	D	E	F	H	J	K	L
AC	New Design : 70	196.4 (7.73)	142.2 (5.60)	46 (1.81)	88.8 (3.50)	95 (3.74)	50.7 (2.00)	26 (1.02)	70 (2.76)	13.5 (.53)	70.5 (2.78)
	Current Design : 60	191.4 (7.54)	142.7 (5.62)	48 (1.89)	90.3 (3.56)	90 (3.54)	50.7 (2.00)	23.5 (.93)	65 (2.56)	11 (.43)	72 (2.83)
DC R	New Design : 70	204.4 (8.05)	146.2 (5.76)	46 (1.81)	88.8 (3.50)	95 (3.74)	54.7 (2.15)	26 (1.02)	70 (2.76)	13.5 (.53)	70.5 (2.78)
	Current Design : 60	210 (8.27)	152 (5.98)	48 (1.89)	90.3 (3.56)	90 (3.54)	60 (2.36)	23.5 (.93)	65 (2.56)	11 (.43)	72 (2.83)

Details of Receptacle

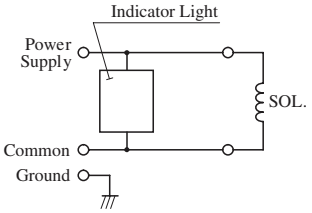
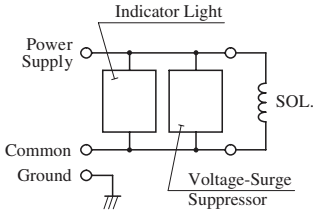
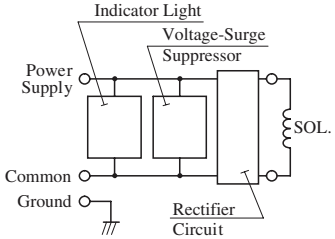
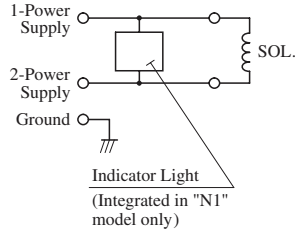
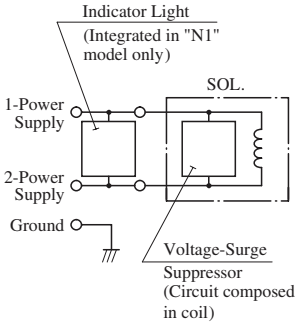
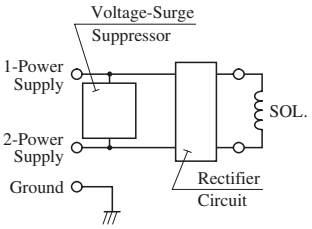
Type of Electrical Conduit Connection	Double Solenoid Type	Single Solenoid Type
Terminal Box Type		
Plug-in Connector Type		

★1. There are two grounding terminals. You can use either one.
★2. If you do not need the common plate, remove it.
★3. With DC solenoids, polarity is no question.

⚠ DANGER

- Do not perform wiring while the power is on. Doing so may result in electric shock, burns or death.
- Make the wiring properly. Improper wiring will cause an irregular movement of the machine, resulting in a grave accident.

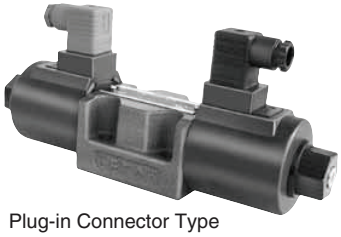
Electrical Circuit

Type of Electrical Conduit Connection	Electric Source		
	AC	DC	AC→DC Rectified
Terminal Box Type			
Plug-in Connector Type			

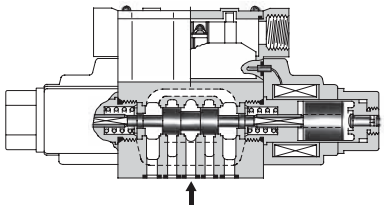
3/8 Solenoid Operated Directional Valves, DSG-03 Series

These are epoch-making solenoid operated valves of high pressure, high flow which have been developed incorporating a unique design concept into every part of the valve including the solenoid. With wet type solenoids, these valves ensure the low noise and the long life, moreover, ensure no leakage of oil outside of the valves.

Terminal Box Type



Plug-in Connector Type



● Wide Range of Models

Choose the optimum valve to meet your need from a large selection available. The DSG-03 50 design series solenoid operated directional valves are classified into the two basic models.

- Standard type …. Useable at high pressure: 31.5 MPa (4570 PSI) and high flow: 120 L/min (31.7 U.S.GPM)
- Shockless type …. A noise at spool changeover and a vibration in piping can be reduced to a minimum.

● Stable Operation

With a strong magnet and spring force, the valves are tough against contamination and thus ensure a stable operation.

● Usable in products of various standards

CE/UL/CSA certified products are available.

Specifications

Valve Type	Model Numbers	Max. Flow ★2 L/min (U.S.GPM)	Max. Operating Pressure MPa (PSI)	Max. T-Line Back Pres. MPa (PSI)	Max. Changeover Frequency min^{-1} (Cycles/Min)	Approx. Mass kg(1bs.) Type of Solenoid AC	Approx. Mass kg(1bs.) Type of Solenoid DC, R, RQ
Standard Type	DSG-03-3C∗-∗-50/5090	120 (31.7)	31.5 (4570) {Spool Type 60 Only 25 (3630)}	16 (2320)	240 (R Type Sol. Only 120)	3.6 (7.9)	5 (11)
	DSG-03-2D2-∗-50/5090						
	DSG-03-2B∗-∗-50/5090					2.9 (6.4)	3.6 (7.9)
Shockless Type	S-DSG-03-3C∗-∗-50/5090	120 (31.7)	25 (3630)	16 (2320)	120	—	5 (11)
	S-DSG-03-2B2-∗-50/5090						3.6 (7.9)
Low Wattage (14W)Type ★1	L-DSG-03-3C∗-∗-50/5090	60 (15.9)	16 (2320)	16 (2320)	240 (R Type Sol. Only 120)	3.6 (7.9)	5 (11)
	L-DSG-03-2D2-∗-50/5090						
	L-DSG-03-2B∗-∗-50/5090					2.9 (6.4)	3.6 (7.9I

★1 For details of L-DSG-03, please contact us.

★2 The maximum flow means the limited flow without inducing any abnormality to the operation (changeover) of the valve. The maximum flow differs according to the spool type and operating conditions. For details, please refer to the "List of Standard Models and Maximum Flow" on pages 364 to 368.

Sub-plate

Piping Size	Japanese Standard "JIS" Sub-plate Model Numbers	Japanese Standard "JIS" Thread Size	European Design Standard Sub-plate Model Numbers	European Design Standard Thread Size	N.American Design Standard Sub-plate Model Numbers	N.American Design Standard Thread Size	Approx. Mass kg (lbs.)
3/8	DSGM-03-40	Rc 3/8	DSGM-03-2180	3/8 BSP.F	DSGM-03-2190	3/8 NPT	3.0 (6.6)
1/2	DSGM-03X-40	Rc 1/2	DSGM-03X-2180	1/2 BSP.F	DSGM-03X-2190	1/2 NPT	3.0 (6.6)
3/4	DSGM-03Y-40	Rc 3/4	DSGM-03Y-2180	3/4 BSP.F	DSGM-03Y-2190	3/4 NPT	4.7 (10.4)

● 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.

Mounting Bolts

For socket head cap screws in the table below are included.

Descriptions	Soc. Hd. Cap Screw (4 pcs.)	Tightening Torque
Japanese Standard "JIS" European Design Standard	M6 × 35 Lg.	12 - 15 Nm (106 - 133 in. 1bs.)
N. American Design Standard	1/4-20 UNC × 1-1/2 Lg.	

Solenoid Ratings

Valve Type	Electric source	Coil Type	Frequency (Hz)	Voltage (V)		Current & Power at Rated Voltage		
				Source Rating	Serviceable Range	Inrush (A)★2	Holding (A)	Power (W)
Standard Type	AC★1	A100	50	100	80 - 110	5.37	0.90	—
			60	100	90 - 120	4.57	0.63	
				110		5.03	0.77	
		A120	50	120	96 - 132	4.48	0.75	
			60		108 - 144	3.81	0.52	
		A200	50	200	160 - 220	2.69	0.45	
			60	200	180 - 240	2.29	0.31	
				220		2.52	0.38	
		A240	50	240	192 - 264	2.24	0.37	
			60		216 - 288	1.91	0.26	
Shockless Type	DC (K Series)	D12	—	12	10.8 - 13.2	—	3.16	38
		D24		24	21.6 - 26.4		1.57	
		D100		100	90 - 110		0.38	
	AC→DC Rectified (R)	R100	50/60	100	90 - 110	—	0.43	38
		R200		200	180 - 220		0.21	
	AC→DC Rectified (RQ) (Quick Return)	RQ100	50/60	100	90 - 110	—	0.43	38

★1. AC solenoid is not available in shockless type.
R or RQ type models with built-in current rectifier is recommended for shockless operation with AC power.

★2. Inrush current in the above table show rms values at maximum stroke.

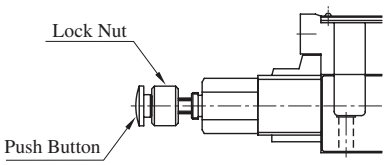
★3. There are more coil types other than the above. For details, please make inquiries .

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 .

Options

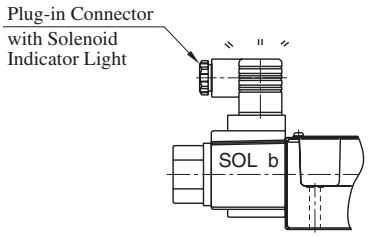
- **Push Button with Lock Nut**

  Can be used for manual changeover of spool. The push button can be locked in the pressed condition.



- **Plug-in Connector with Solenoid Indicator Light**

  These are the indicator light incorporated plug-in connector type solenoids. Energisation or de-energisation of the solenoid can be easily identified with the incorporated indicator light.



- **M8 Mounting Bolts.**

  As the mounting bolts, M6 socket head cap screws are used for the standard valves, however, M8 socket head cap screws are also available for supply as optional extras. In case the M8 screws are required, suffix "02" to the design number of both valve and sub-plate model number like below.

  (Example)

  Valve: DSG-03-3C2-A100-5002
  Sub-plate: DSGM-03-4002

  The valve is supplied with 4 pcs. hexagon socket head cap screws M8 × 38 Lg.

Model Number Designation

F-	S-	DSG	-03	-2	B	2	A	-D24	-C	-N	-50	*	-L
Special Seals	Shockles Type	Series Number	Valve Size	Number of Valve Positions	Spool-Spring Arrangement	Spool Type	Special Two Position Valve (Omit if not required)	Coil Type	Manual Override	Electrical Conduit Connection	Design Number	Design Standard	Models with Reverse Mtg. of Solenoid (Omit if not required)
F: For Phosphate Ester Type Fluids (Omit if not required)	**None**: Standard Type	**DSG**: Solenoid Operated Directional Valve	**03**	**3**: Three Positions	**C**: Spring Centred	2, 3, 4, 40, 5, 60, 9, 10, 11, 12	—	AC: **A100**, **A120**, **A200**, **A240**; DC: **D12**, **D24**, **D100**; R: (AC→DC) **R100**, **R200**; RQ: (AC→DC) **RQ100**	**None**: Manual Override Pin	**None**: Terminal Box Type	**50**	**None**: Japanese Std. "JIS"; **90**: N.American Design Std.	—
				2: Two Positions	**D**: No-Spring Detented	2	—						
					B: Spring Offset	2, 3, 8	A[★1], B[★1]			**N**: [★2] Plug-in Connector Type; **N1**: [★3] Plug-in Connector Type with Indicator Light (Option)		**None**: Japanese Std. "JIS" and European Design Std.; **90**: N.American Design Std.	**L**
	S: Shockles Type			**3**: Three Positions	**C**: Spring Centred	2, 4	—	DC: **D12**, **D24**, **D100**; R: (AC DC) **R100**, **R200**; RQ: (AC DC) **RQ100**	**C**: Push Button and Lock Nut (Option)				—
				2: Two Positions	**B**: Spring Offset	2	A[★1], B[★1]						**L**

★1. In case of the special two position valve, please refer to page 369 for details.

★2. N is not available for RQ-type solenoids .

★3. N1 is not available for R and RQ-type solenoids .

In the table above, the symbols or numbers highlighted with shade represent the optional extras. The valves with model number having such optional extras are handles as options, therefore, please confirm the time of delivery with us before ordering.

List of Standard Models and The Maximum Flow

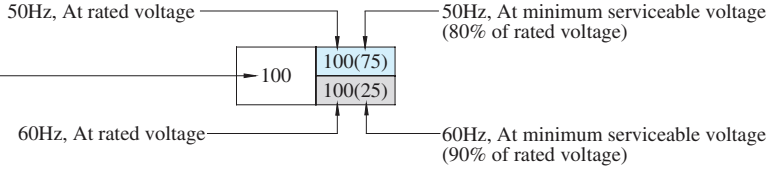
Models with AC Solenoids: DSG-03-***-A*

No. of Valve Positions	Spool-Spring Arrangement	Model Numbers	Graphic Symbols	Max. Flow L/min											
				P→A→B→T, P→B→A→T				P → A [Port "B" Blocked]				P → B [Port "A" Blocked]			
				Working Pressure MPa				Working Pressure MPa				Working Pressure MPa			
				10	16	25	31.5	10	16	25	31.5	10	16	25	31.5
Three Positions	Spring Centred	DSG-03-3C2		100	100	100	100	100(70)	100(48)	96(28)	65(24)	100(70)	100(48)	96(28)	65(24)
								90(49)	53(30)	34(19)	26(15)	90(49)	53(30)	34(19)	26(15)
		◆★ DSG-03-3C3		90	90	90	90	100(81)	100(81)	100(81)	100(81)	100(81)	100(81)	100(81)	100(81)
								100(81)	100(81)	100(81)	100(81)	100(81)	100(81)	100(81)	100(81)
		DSG-03-3C4		80	80	80(65)	80(25)	100(58)	100(33)	76(22)	46(19)	100(58)	100(33)	76(22)	46(19)
						75(20)	30(15)	90(47)	50(26)	28(18)	22(15)	90(47)	50(26)	28(18)	22(15)
		DSG-03-3C40		100	100	100	100(75)	100(62)	100(39)	84(21)	48(18)	100(62)	100(39)	84(21)	48(18)
							100(25)	62(40)	47(26)	27(16)	20(12)	62(40)	47(26)	27(16)	20(12)
		◆★ DSG-03-3C5		30	30	30	30	26	21	18	16	30	28	28	28
		★ DSG-03-3C60		70	70	70	—	100	100	100	—	100	100	100	—
		DSG-03-3C9		100	100	100	100	60	60	60	60	60	60	60	60
		◆ DSG-03-3C10		80	80	80(30)	80(20)	100(55)	100(36)	60(21)	34(16)	100(55)	100(36)	60(21)	34(16)
						30(25)	20(15)	60(38)	47(24)	23(14)	17(11)	60(38)	47(24)	23(14)	17(11)
		◆ DSG-03-3C11		100	100	100	100	100(80)	100(65)	85(35)	62(28)	100(80)	100(65)	85(35)	62(28)
								80(60)	70(46)	51(32)	45(25)	80(60)	70(46)	51(32)	45(25)
		◆ DSG-03-3C12		90	90	90(30)	90(20)	100(55)	100(36)	60(21)	34(16)	100(55)	100(36)	60(21)	34(16)
						40(20)	20(15)	60(38)	47(24)	23(14)	17(11)	60(38)	47(24)	23(14)	17(11)
Two Positions	No-Spring Detented	DSG-03-2D2		100	100	100	100	40	40	30	28	60	60	40	35
	Spring Offset	DSG-03-2B2		100	100	100	100	34	24	20	19	100(62)	100(62)	100(44)	94(37)
				100(90)	100(90)	100(90)	100(90)					80(42)	73(36)	63(34)	51(33)
		DSG-03-2B3		100	100	100	100	57	57	57	57	100(79)	100(72)	100(64)	100(59)
				100(75)	100(75)	100(75)	100(75)					92(55)	89(46)	78(28)	70(27)
		◆ DSG-03-2B8		—	—	—	—	26	19	18	16	100(35)	87(15)	61(9)	49(7)
												45(21)	34(12)	15(9)	11(6)

Notes : 1. The relation between the maximum flow in the table above and the frequency/voltage (within the serviceable voltage) is as shown below.

(Example)

The maximum flow rate is constant regardless of 50 Hz or 60 Hz and of any voltage variants within the serviceable voltage



2. For the maximum flow rate in P→T of the valves with a ★ mark, please see page 368.

The valve models with a ◆ mark are handled as Options. If you choose such valves, check the time of delivery beforehand.

List of Standard Models and The Maximum Flow

- Models with DC Solenoids: DSG-03-✻✻✻-D✻
- Models with R Type Solenoids: DSG-03-✻✻✻-R✻
- Models with RQ Type Solenoids: DSG-03-✻✻✻-RQ100✻

No. of Valve Positions	Spool-Spring Arrangement	Model Numbers	Graphic Symbols	Max. Flow L/min: P → A, B → T				P → A [Port "B" Blocked]				P → B [Port "A" Blocked]			
				Working Pressure MPa				Working Pressure MPa				Working Pressure MPa			
				10	16	25	31.5	10	16	25	31.5	10	16	25	31.5
Three Positions	Spring Centred	DSG-03-3C2		120	120	120	120	120	120 100	80 54	55 43	120	120 100	80 54	55 43
		◆★DSG-03-3C3		120	120	120	120	120	120	120	120	120	120	120	120
		DSG-03-3C4		120	120	120	120	120	120	84 65	64 53	120	120	84 65	64 53
		DSG-03-3C40		120	120	120	120	120	120 104	62 57	49 42	120	120 104	62 57	49 42
		◆★DSG-03-3C5		50	50	50	50	35	24	21	20	45	45	45	45
		★DSG-03-3C60		120	120	120	—	120	120	120	—	120	120	120	—
		DSG-03-3C9		120	120	120	120	100	100	100	100	100	100	100	100
		◆DSG-03-3C10		120	120	120 65	65 50	120	112 69	60 46	51 40	120	112 69	60 46	51 40
		◆DSG-03-3C11		120	120	120	120	100	100	80 62	65 52	100	100	80 62	65 52
		◆DSG-03-3C12		120	120	120 65	65 50	120	120 86	62 47	51 40	120	120 86	62 47	51 40
Two Positions	No-Spring Detented	DSG-03-2D2		120	120	120	120	45	37	30	28	60	60	40	35
	Spring Offset	DSG-03-2B2		110 100	110 100	110 100	110 100	68	47	38	38	120	114 83	75 58	63 48
		DSG-03-2B3		120	120	120	120	77	77	77	77	120	120	120	120 103
		◆DSG-03-2B8		—	—	—	—	53	33	24	23	120	120 62	62 40	47 37

Notes) 1. The relation between the maximum flow in the table above and the voltage (within the serviceable voltage) is as shown below.

(Example)

The maximum flow rate is constant regardless of any voltage variants within the serviceable voltage → 120 | 120 | 65

120: At rated voltage [after temperature rise and saturated]

65: At minimum serviceable voltage (90% of rated voltage) [after temperature rises and saturated]

2. For the maximum flow rate in P → T of the valves with a ★ mark, please see page 368.

The valve models with a ◆ mark are handled as Options. If you choose such valves, check the time of delivery beforehand.

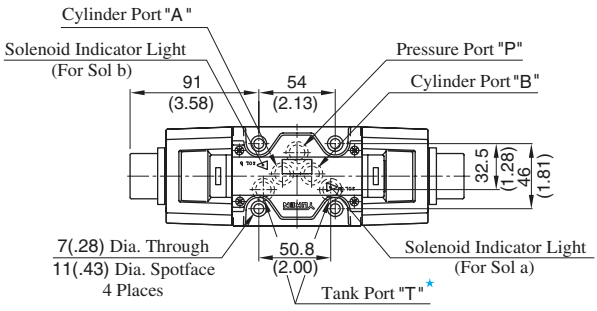
Mounting surface: ISO 4401-AC-05-4-A

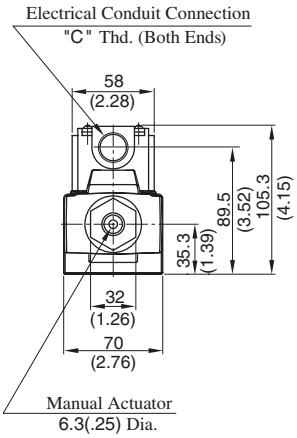
TERMINAL BOX TYPE

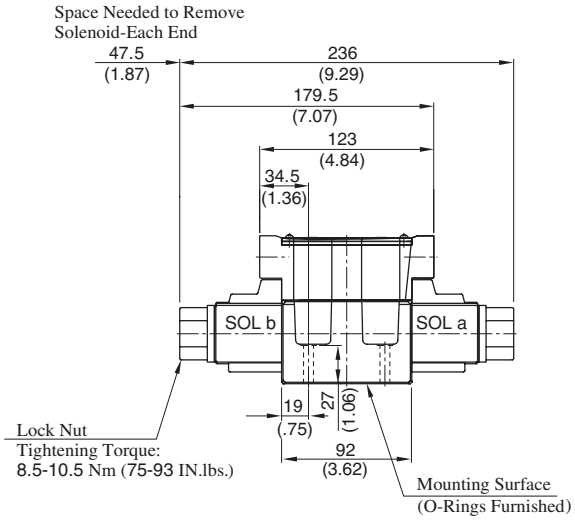
Models with AC Solenoids: DSG-03- ∗∗∗-A∗ -50/5090

Double Solenoid: Spring Centred & No-Spring Detended

Model Numbers	"C" Thd.
DSG-03-∗∗∗-A∗-50	G 1/2
DSG-03-∗∗∗-A∗-5090	1/2 NPT



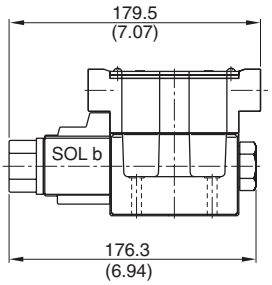




★. Of the two of tank port "T", the tank port in the left side is normally used in our standard sub-plate, though, either side of the tank port "T" can be used without problem.

DIMENSIONS IN MILLIMETRES (INCHES)

Single Solenoid: Spring Offset

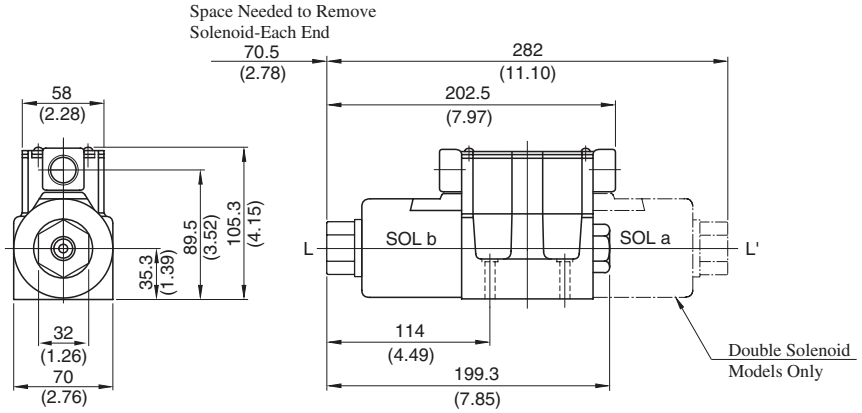


- For other dimensions, refer to "Spring Centred and No-Spring Detented" medels.
- Solenoid being mounted in the reverse position -SOL a side- is also available.

Mounting surface: ISO 4401-AC-05-4-A

TERMINAL BOX TYPE

- Models with DC Solenoids : (S-)DSG-03- ***-D*-50/5090
- Models with R Type Solenoids : (S-)DSG-03-*** -R* -50/5090
- Models with RQ Type Solenoids : (S-)DSG-03- *** -RQ100-50/5090
- Double Solenoid: Spring Centred & No-Spring Detented
- Single Solenoid: Spring Offset

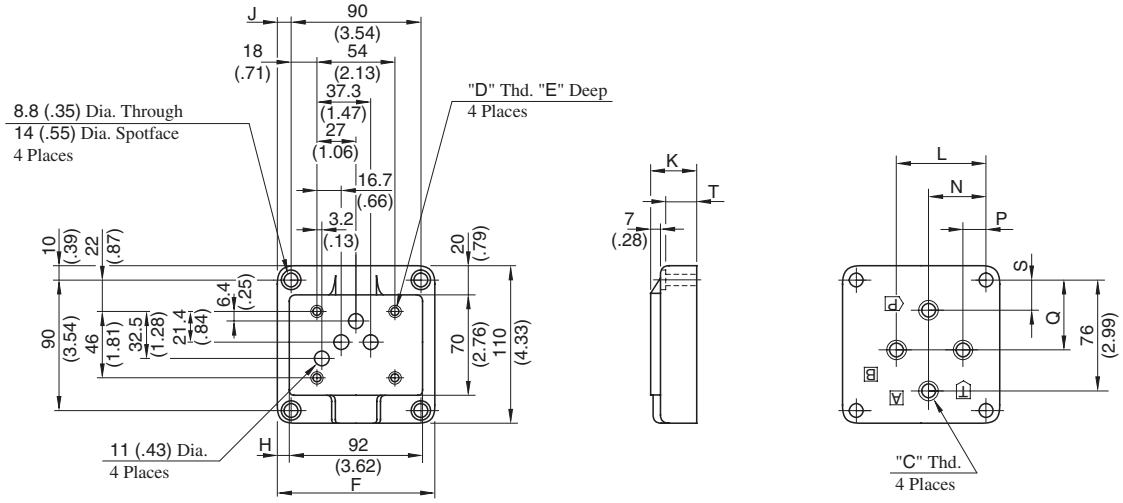


• For other dimensions, refer to Models with AC solenoids (Page 372).

DIMENSIONS IN MILLIMETRES (INCHES)

Sub- plates

DSGM-03*-40/2180/2190

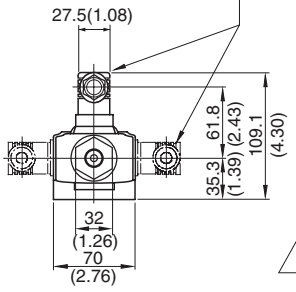


Sub-plate Model Numbers	Piping Size "C" Thd.	"D" Thd.	Dimensions mm (Inches)										
			E	F	H	J	K	L	N	P	Q	S	T
DSGM-03-40	Rc 3/8	M6	13 (.51)	110 (4.33)	9 (.35)	10 (.39)	32 (1.26)	62 (2.44)	40 (1.57)	16 (.63)	48 (1.89)	21 (.83)	24 (.94)
DSGM-03-2180	3/8 BSP.F												
DSGM-03-2190	3/8 NPT	1/4-20 UNC	15 (.59)										
DSGM-03X-40	Rc 1/2	M6	13 (.51)	110 (4.33)	9 (.35)	10 (.39)	32 (1.26)	62 (2.44)	40 (1.57)	16 (.63)	48 (1.89)	21 (.83)	24 (.94)
DSGM-03X-2180	1/2 BSP.F												
DSGM-03X-2190	1/2 NPT	1/4-20 UNC	15 (.59)										
DSGM-03Y-40	Rc 3/4	M6	13 (.51)	120 (4.72)	14 (.55)	15 (.59)	50 (1.97)	80 (3.15)	45 (1.77)	10 (.39)	47 (1.85)	16 (.63)	42 (1.65)
DSGM-03Y-2180	3/4 BSP.F												
DSGM-03Y-2190	3/4 NPT	1/4-20 UNC	15 (.59)										

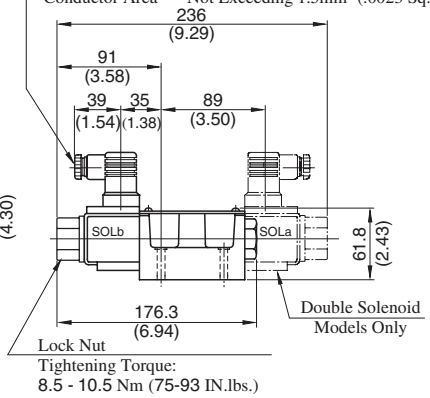
■ PLUG-IN CONNECTOR TYPE (N)
PLUG-IN CONNECTOR WITH INDICATOR LIGHT (N1)

● Models with AC Solenoids: DSG-03- ∗∗∗-A∗ -$^{N}_{N1}$-50/5090

The position of the Plug-in connector can be changed as illustrated below by loosening the lock nut. After completion of the change, be sure to tighten the lock nut with the torque as specified below.



Cable Departure
Cable Applicable:
Outside Dia. ····· 8-10mm(.31-.39 in.)
Conductor Area ····· Not Exceeding 1.5mm^2 (.0023 Sq. in.)

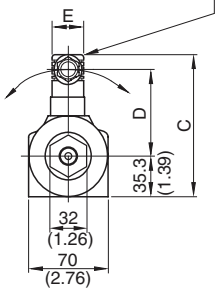


Lock Nut
Tightening Torque:
8.5 - 10.5 Nm (75-93 IN.lbs.)

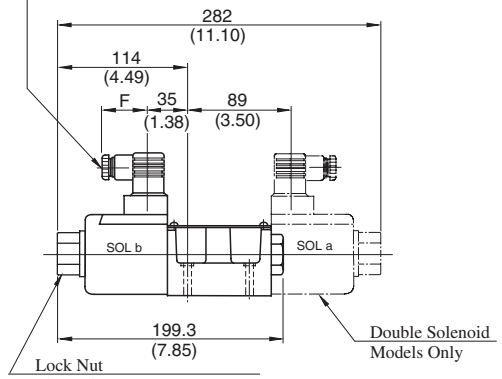
● Models with DC Solenoids: (S-)DSG-03- ∗∗∗-D∗ -$^{N}_{N1}$-50/5090

● Models with R Type Solenoids: (S-)DSG-03- ∗∗∗-R∗ -N-50/5090

The position of the Plug-in connector can be changed as illustrated below by loosening the lock nut. After completion of the change, be sure to tighten the lock nut with the torque as specified below.



Cable Departure
Cable Applicable:
Outside Dia. ····· 8-10mm(.31-.39 in.)
Conductor Area ····· Not Exceeding 1.5mm^2 (.0023 Sq. in.)



Lock Nut
Tightening Torque:
8.5 - 10.5 Nm (75-93 IN.lbs.)

Model Numbers	Dimensions mm (Inches)			
	C	D	E	F
DSG-03-∗∗∗-D∗-$^{N}_{N1}$-50/5090	121.1 (4.77)	73.8 (2.91)	27.5 (1.08)	39 (1.54)
DSG-03-∗∗∗-R∗-N-50/5090	124.9 (4.92)	62.6 (2.46)	34 (1.34)	53 (2.09)

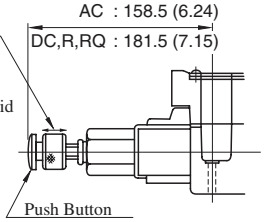
● For other dimensions, refer to "Terminal Box Type" (Page 372 – 373).

DIMENSIONS IN MILLIMETRES (INCHES)

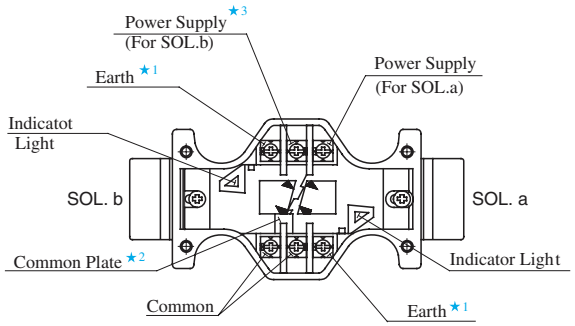
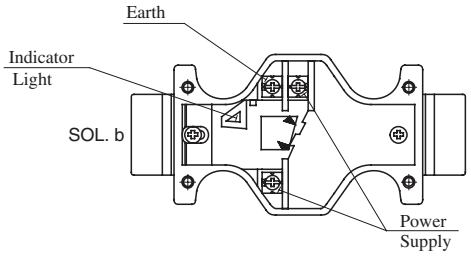
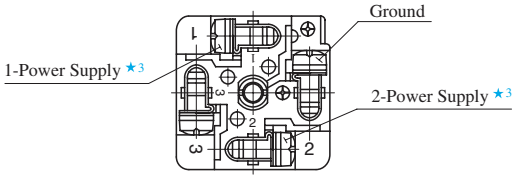
■ Options

Models with Push Button & Lock Nut: (S-)DSG-03-∗∗∗-∗C(-$^{N}_{N1}$)-50/5090

Lock Nut
Press the "Push Button" then turn "Lock Nut" clockwise. The position of the "Push Button" is held.
Be sure to loosen "LockNut" fully before solenoid is energised



Details of Receptacle

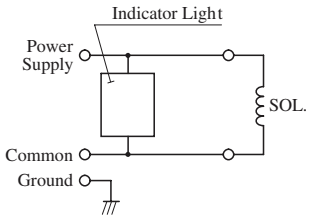
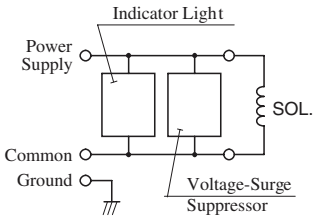
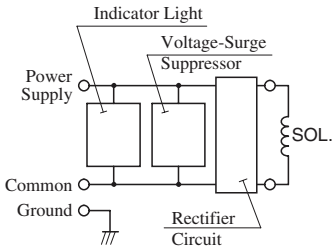
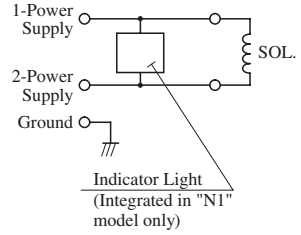
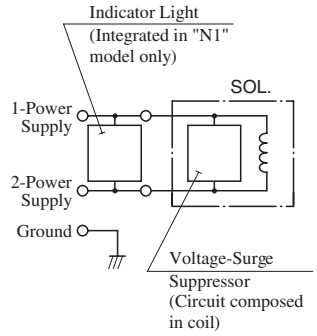
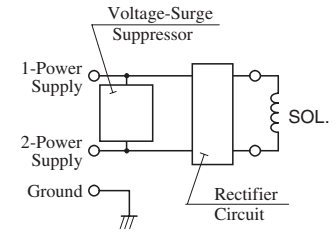
Type of Electrical Conduit Connection	Double Solenoid Type	Single Solenoid Type
Terminal Box Type		
Plug-in Connector Type		

★1. There are two grounding terminals. You can use either one.
★2. If you do not need the common plate, remove it.
★3. With DC solenoids, polarity is no question.

⚠ DANGER

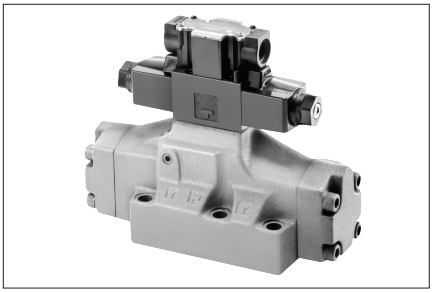
- Do not perform wiring while the power is on. Doing so may result in electric shock, burns or death.
- Make the wiring properly. Improper wiring will cause an irregular movement of the machine, resulting in a grave accident.

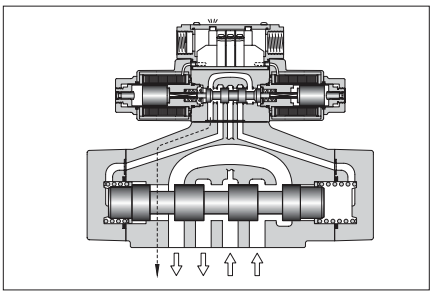
Electrical Circuit

Type of Electrical Conduit Connection	Electric Source		
	AC	DC	AC→DC Rectified
Terminal Box Type			
Plug-in Connector Type			

Solenoid Controlled Pilot Operated Directional Valves

These valves are composed of a solenoid operated pilot valve and a pilot operated slave valve. When a solenoid is energised the pilot valve directs the flow to move the spool of the slave valve, thus changing the direction of flow in the hydraulic circuit.





- **High Pressure High Flow**
  High pressure [31.5 MPa (4570 PSI)] along which high flow means compact system design.

- **Lower Pressure Drop**
  System energy saving increased as pressure drop of each valve has been greatly reduced.

Specifications

Valve Type	Model Numbers	Max. Flow L/min (U.S.GPM) ★1	Max. Operating Pressure MPa (PSI)	Max. Pilot Pressure MPa (PSI)	Min. Required Pilot Pres. MPa (PSI) ★2	Max. T-Line Back Pressure MPa (PSI)		Max. Change-over Frequecy Cycles/Min {min⁻¹}			Mass kg (lbs.)
						Ext. Drain	Int. Drain	AC	DC	R	
Standard Type	DSHG-01-3C∗-∗-14/1480/1490	40 (10.6)	21 (3050)	21 (3050)	1.0 (145)	16 (2320)	16 (2320)	120	120	120	3.2 (7.1)
	DSHG-01-2B∗-∗-14/1480/1490										2.7 (6.0)
	DSHG-03-3C∗-∗-14/1490	160 (42.3)	25 (3630)	25 (3630)	0.7 (100)	16 (2320)	16 (2320)	120	120	120	6.9 (15.2)
	DSHG-03-2N∗-∗-14/1490										6.9 (15.2)
	DSHG-03-2B∗-∗-14/1490										6.4 (14.1)
	(S-)DSHG-04-3C∗-∗-52/5290	300 (79.3)	31.5 (4570)	25 (3630)	0.8 (120)	21 (3050)	16 (2320)	120	120	120	8.5 (18.7)
	(S-)DSHG-04-2N∗-∗-52/5290										8.5 (18.7)
	(S-)DSHG-04-2B∗-∗-52/5290										8.0 (17.6)
Shockless Type	(S-)DSHG-06-3C∗-∗-53/5390	500 (132)	31.5 (4570)	25 (3630)	0.8 (120) ★3	21 (3050)	16 (2320)	120	120	120	12.4 (27.3)
	(S-)DSHG-06-2N∗-∗-53/5390										12.4 (27.3)
	(S-)DSHG-06-2B∗-∗-53/5390										11.9 (26.2)
	(S-)DSHG-06-3H∗-∗-53/5390			21 (3050)	1.0 (145)			110	110	110	13.2 (29.1)
	(S-)DSHG-10-3C∗-∗-43/4390	1100 (291)	31.5 (4570)	25 (3630)	1.0 (145) ★3	21 (3050)	16 (2320)	120	120	100	45.0 (99.2)
	(S-)DSHG-10-2N∗-∗-43/4390							100	100	100	45.0 (99.2)
	(S-)DSHG-10-2B∗-∗-43/4390			21 (3050)				60	60	50	44.5 (98.1)
	(S-)DSHG-10-3H∗-∗-43/4390										52.9 (116.6)

★1. Maximum flow indicates a ceiling flow. As the ceiling flow depends on the type of spool and operating condition, refer to the List of Spool Functions on pages 386 to 390 for details.
★2. Pilot pressure of internal pilot drain models must always exceed tank line back pressure by a minimum required pilot pressure.
★3. Min. pilot pressure of with pilot piston in 1.8 MPa (260 PSI).

Yuken can offer flanged connection valves described below.
Consult us for the details.

Model Numbers	Rated Flow l/min (U.S.GPM)	Max. Pressure MPa (PSI)
DSHF-10-∗∗∗-∗-27∗	315 (83)	21 (3050)
DSHF-16-∗∗∗-∗-37∗	500 (132)	21 (3050)
DSHF-24-∗∗∗-∗-28∗	1200 (317)	21 (3050)
DSHF-32-∗∗∗-∗-27∗	2400 (634)	21 (3050)

Solenoid Ratings

Solenoid ratings of pilot valve are identical with those of standard solenoid valve. Refer to relevant solenoid ratings described on the page below.

Model Numbers	Pilot Valve Model Numbers	Solenoid Ratings described on the page below
DSHG-01	DSG-01-∗∗∗-∗-70∗	345
DSHG-03		
(S-)DSHG-04		
(S-)DSHG-06		
(S-)DSHG-10		

CSA Approved Solenoid Valve

Available to supply DSHG-06 series valve approved by the CSA (Canadian Standards Association).
Consult us for details.

Model Number Designation

F-	S-	DSHG	-06	-2	B	2	A	-C2	-E	T
Special Seals	Type	Series Number	Valve Size	No. of Valve Position	Spool-Spring Arrangement	Spool Type	Special Two Position Valve	Models with Pilot Choke Valve	Pilot Connection	Drain Connection
F: For Phosphate Ester Type Fluids (Omit if not required)	**None**: Standard Type	**DSHG**: Solenoid Controlled Pilot Operated Directional Valve, Sub-plate Mounting	**01**	**3**	**C**: Spring Centred	**2, 3, 4 40, 5, 60 7, 9, 10 11, 12**	—	—	**None**: Internal Pilot **E**: External Pilot	**None**: External Drain **E**: Internal Drain
				2	**B**: Spring Offset	**2, 3, 4 40, 7**				
			03	**3**	**C**: Spring Centred	**2, 3, 4 40, 5, 60 7, 9, 10 11, 12**	—	**C1**: With C1 Choke **C2**: With C2 Choke **C1C2**: With C1 & C2 Choke (Omit if not required)		
				2	**N**: No-Spring	**2 3 4 40 7**				
					B: Spring Offset					
	None: Standard Type **S**: Shock-less Type		**04**	**3**	**C**: Spring Centred	**2, 4, 40 60, 10, 12 (3, 5, 6 7, 9, 11)** ★1	—			
				2	**N**: No-Spring	**2, 4, 40 (3, 7)** ★1	**A** ★2 (Omit if not required)			
					B: Spring Offset	**2, 4, 40 (3, 7)** ★1	**A** ★2 **B** ★2 (Omit if not required)			
			06	**3**	**H**: Pressure Centred **C**: Spring Centred	**2, 4, 40 60, 10, 12 (3, 5, 6 7, 9, 11)** ★1	—			
			10	**2**	**N**: No-Spring	**2, 4, 40 (3, 7)** ★1	**A** ★2 (Omit if not required)			
					B: Spring Offset	**2, 4, 40 (3, 7)** ★1	**A** ★2 **B** ★2 (Omit if not required)			

Note: In spool type “3”, “5”, “6”, “60”, and “7”, the combination applicable between pilot system and drain system is as described in the table below.

Pilot Connection	Drain Connection	Care in Application
Internal Pilot	External Drain	Hold back pressure in the tank line so that the difference between pilot pressure and drain pressure is always more than minimum required pilot pressure.
	Internal Drain (T)	Combination is not applicable
External Pilot (E)	External Drain Internal Drain (T)	No restrictions in the combination on us

-R2	-A100	-C	-H	-N	-53	-*	-L
Spool Control ★3 Modification (Omit if not required)	Coil Type	Manual Override of Pilot Valve	Bult-in Orifice for Pilot Line	Type of Electrical Conduit Connection	Design Number	Design Standard	Models with Reverse Mtg. of Solenoid
——	AC: **A100** , **A200** **A120** , **A240** DC: **D12** , **D24** **D48** AC → DC **R100** , **R200**	**None** : Manual Override Pin	——	**None**: Terminal Box Type	**14**	**None**: Japanese Standard "JIS"	—— **L** (Omit if not required)
R2: With Stroke Adjustment, Both Ends **RA**: With Stroke Adjustment, Port "A" End **RB**: With Stroke Adjustment, Port "B" End			——		**14**	**90**: N. American Design Standard	**L** (Omit if not required)
	AC: **A100** , **A200** **A120** , **A240** DC: **D12** , **D24** **D48** AC → DC **R100** , **R200**	**C**: Push Button & Lock Nut	——	**N**: Push-in Connector Type	**52**	**None**: Japanese Standard "JIS" & European Design Standard	—— **L** (Omit if not required)
R2: With Stroke Adj., Both Ends **RA**: With Stroke Adj., Port "A" End **RB**: With Stroke Adj., Port "B" End **P2**: With Pilot Piston, Both Ends **PA**: With Pilot Piston, Port "A" End **PB**: With Pilot Piston, Port "B" End			—— **H**: Refer to ★5	**N1**: Push-in Connector with Indicator Light ★4	**53**	**80**: European Design Standard (Applicable only for DSHG-01)	——
			——		**43**	**90**: N. American Design Standard	**L** (Omit if not required)

★1. Shekless type (S-DSHG) are not available for spool type marked ( ).
★2. As for the details of the valve using the neutral position and the side position (either SOL a or SOL b side), please refer to page 391. Furthermore, the spool types other than "2", "4", "40" (3, 7) are also available.
★3. In spool-spring arrangement "H" (Pressure centred models), the valves with stroke adjustment (R*) and pilot-piston (P*) are not available.
★4. NI stands for Plug-in connector with solenoid indicator light. NI is not available for R-type solenoids.
★5. In spool-spring arrangement "H" (pressure centred models), in case the pilot pressure is more than 10 MPa (1450 PSI), please specify that the valve should have the built-in orifice to the pilot line.

In the table above, the symbols and numbers highlighted with shade represent the optional extras. The valves with model number having such optional extras are handles as options, therefore please confirm the time of delivery with us before ordering.

Sub-plates

Valve Model Numbers	Japanese Standard "JIS"			European Design Standard			N. American Design Standard		
	Sub-plate Model Numbers	Thread Size	Approx. Mass kg (1bs.)	Sub-plate Model Numbers	Thread Size	Approx. Mass kg (1bs.)	Sub-plate Model Numbers	Thread Size	Approx. Mass kg (1bs.)
DSHG-01	DSGM-01-31	Rc 1/8	0.8 (1.8)	DSGM-01-3080	1/8 BSP.F	0.8 (1.8)	DSGM-01-3090	1/8 NPT	0.8 (1.8)
	DSGM-01X-31	Rc 1/4	0.8 (1.8)	DSGM-01X-3080	1/4 BSP.F	0.8 (1.8)	DSGM-01X-3090	1/4 NPT	0.8 (1.8)
	DSGM-01Y-31	Rc 3/8	0.8 (1.8)	—	—	—	DSGM-01Y-3090	3/8 NPT	0.8 (1.8)
DSHG-03	DSGM-03-40★	Rc 3/8	3.0 (6.6)	DSGM-03-2180★	3/8 BSP.F	3.0 (6.6)	DSGM-03-2190★	3/8 NPT	3.0 (6.6)
	DSGM-03X-40★	Rc 1/2	3.0 (6.6)	DSGM-03X-2180★	1/2 BSP.F	3.0 (6.6)	DSGM-03X-2190★	1/2 NPT	3.0 (6.6)
	DSGM-03Y-40★	Rc 3/4	4.7 (10.4)	DSGM-03Y-2180★	3/4 BSP.F	4.7 (10.4)	DSGM-03Y-2190★	3/4 NPT	4.7 (10.4)
	DHGM-03Y-10	Rc 3/4	4.7 (10.4)	DHGM-03Y-1080	3/4 BSP.F	4.7 (10.4)	DHGM-03Y-1090	3/4 NPT	4.7 (10.4)
DSHG-04	DHGM-04-20	Rc 1/2	4.4 (9.7)	DHGM-04-2080	1/2 BSP.F	4.4 (9.7)	DHGM-04-2090	1/2 NPT	4.4 (9.7)
	DHGM-04X-20	Rc 3/4	4.1 (9.0)	DHGM-04X-2080	3/4 BSP.F	4.1 (9.0)	DHGM-04X-2090	3/4 NPT	4.1 (9.0)
DSHG-06	DHGM-06-50	Rc 3/4	7.4 (16.3)	DHGM-06-5080	3/4 BSP.F	8.5 (18.7)	DHGM-06-5090	3/4 NPT	7.4 (16.3)
	DHGM-06X-50	Rc 1	7.4 (16.3)	DHGM-06X-5080	1 BSP.F	8.5 (18.7)	DHGM-06X-5090	1 NPT	7.4 (16.3)
DSHG-10	DHGM-10-40	Rc 1-1/4	21.5 (47.4)	DHGM-10-4080	1-1/4 BSP.F	21.5 (47.4)	DHGM-10-4090	1-1/4 NPT	21.5 (47.4)
	DHGM-10X-40	Rc 1-1/2	21.5 (47.4)	DHGM-10X-4080	1-1/2 BSP.F	21.5 (47.4)	DHGM-10X-4090	1-1/2 NPT	21.5 (47.4)

★ DSGM-03∗ is available only for Internal pilot-Internal drain type (Use DHGM-03Y for other valves).

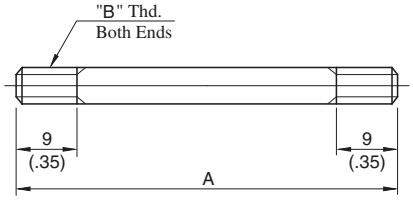
● Sub-plates are available. Specify the sub-plate model number from the table above.
When sub-plates are not used, the mounting surface should have a good machined finish.

Mounting Bolt

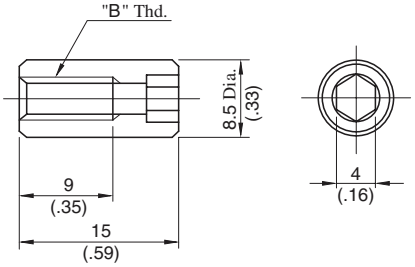
Model Numbers	Mouting Bolt				
	Name	Japanese Standard "JIS" European Design Standard	N. American Design Standard	Qty.	Tightening Torque Nm (in. 1bs.)
DSHG-01	Mtg. Bolt Kit★3	MBK-01-01-30★1 MBK-01-02-30★2	MBK-01-01-3090★1 MBK-01-02-3090★2	1 set	5 - 6 (43 - 52)
DSHG-03	Soc. Hd. Cap Screw	M6 × 35 Lg.	1/4-20 UNC × 1-3/4 Lg.	4	12 - 15 (104 - 130)
(S-)DSHG-04	Soc. Hd. Cap Screw	M6 × 45 Lg. M10 × 50 Lg.	1/4-20 UNC × 1-3/4 Lg. 3/8-16 UNC × 2 Lg.	2 4	12 - 15 (104 - 130) 58 - 72 (504 - 625)
(S)-DSHG-06	Soc. Hd. Cap Screw	M12 × 60 Lg.	1/2-13 UNC × 2-1/2 Lg.	6	100 - 123 (868 - 1068)
(S)-DSHG-10	Soc. Hd. Cap Screw	M20 × 75 Lg.	3/4-10 UNC × 3 Lg.	6	473 - 585 (4106 - 5078)

★1. For Internal Pilot-Internal Drain.
★2. For External Pilot or External Drain.
★3. Mounting bolt kit is common to that of 01 series modular valves.
Refer to figure below for the dimensions of bolt kit.

● Stud Bolt



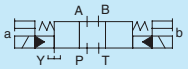
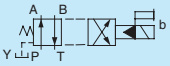
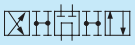
● Nut



DIMENSIONS IN MILLIMETRES (INCHES)

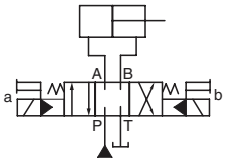
Model Numbers	A mm (In.)	"B" Thd.
MBK-01-01-30	94 (3.70)	M5
MBK-01-02-30	134 (5.28)	
MBK-01-01-3090	94 (3.70)	No.10-24 UNC
MBK-01-02-3090	134 (5.28)	

List of Spool Functions and Maxmum Flow (DSHG-01)

Spool Type	Three Positions Spring Centred				Two Positions Spring Centred			
	Graphic Symbol 	Maximum Flow L/min (U.S.GPM)			Graphic Symbol 	Maximum Flow L/min (U.S.GPM)		
	Model Numbers	7 MPa (1020 PSI)	14 MPa (2030 PSI)	21 MPa (3050 PSI)	Model Numbers	7 MPa (1020 PSI)	14 MPa (2030 PSI)	21 MPa (3050 PSI)
"2" 	DSHG-01-3C2	40 (10.6)	40 (10.6)	40 (10.6)	DSHG-01-2B2	40 (10.6)	40 (10.6)	40 (10.6)
"3" 	DSHG-01-3C3	40 (10.6)	40 (10.6)	40 (10.6)	DSHG-01-2B3	40 (10.6)	40 (10.6)	40 (10.6)
"4" 	DSHG-01-3C4	40 (10.6)	40 (10.6)	40 (10.6)	DSHG-01-2B4	40 (10.6)	40 (10.6)	40 (10.6)
"40" 	DSHG-01-3C40	40 (10.6)	40 (10.6)	40 (10.6)	DSHG-01-2B40	40 (10.6)	40 (10.6)	40 (10.6)
"5" 	DSHG-01-3C5	40 (10.6)	40 (10.6)	40 (10.6)				
"60" 	DSHG-01-3C60	40 (10.6)	40 (10.6)	40 (10.6)				
"7" 	DSHG-01-3C7	40 (10.6)	40 (10.6)	40 (10.6)	DSHG-01-2B7	40 (10.6)	40 (10.6)	40 (10.6)
"9" 	DSHG-01-3C9	40 (10.6)	40 (10.6)	40 (10.6)				
"10" 	DSHG-01-3C10	40 (10.6)	40 (10.6)	40 (10.6)				
"11" 	DSHG-01-3C11	40 (10.6)	40 (10.6)	40 (10.6)				
"12" 	DSHG-01-3C12	40 (10.6)	40 (10.6)	40 (10.6)				

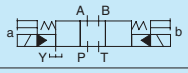
Notes) 1. Max. flow shows value at pilot pressure more than 1 MPa (150 PSI)

2. Max. flow in the table above represents the value in the flow condition of P→ A → B → T (or P → B → A → T) as shown in the circuit diagram right.
In case the valve is used in the condition that either A or B port is blocked, the maximum flow differs according to a hydraulic circuit, therefore, please consult us for details.

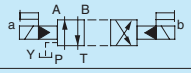
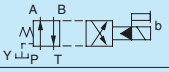


List of Spool Functions and Maxmum Flow (DSHG-03)

Three Positions

Spool Type	Spring Centred			
	Graphic Symbol 	Maximum Flow L/min (U.S.GPM)		
	Model Numbers	7 MPa (1020 PSI)	14 MPa (2030 PSI)	25 MPa (3630 PSI)
"2" 	DSHG-03-3C2	160 (42.3)	85 (22.5) 160 (42.3)	60 (15.9) 95 (25.1)
"3" 	DSHG-03-3C3	160 (42.3)	160 (42.3)	160 (42.3)
"4" 	DSHG-03-3C4	160 (42.3)	85 (22.5) 160 (42.3)	60 (15.9) 95 (25.1)
"40" 	DSHG-03-3C40	160 (42.3)	85 (22.5) 160 (42.3)	60 (15.9) 95 (25.1)
"5" 	DSHG-03-3C5	160 (42.3)	85 (22.5) 160 (42.3)	60 (15.9) 95 (25.1)
"60" 	DSHG-03-3C60	160 (42.3)	160 (42.3)	125 (33.0) 160 (42.3)
"7" 	DSHG-03-3C7	160 (42.3)	85 (22.5) 160 (42.3)	60 (15.9) 95 (25.1)
"9" 	DSHG-03-3C9	160 (42.3)	85 (22.5) 160 (42.3)	60 (15.9) 95 (25.1)
"10" 	DSHG-03-3C10	160 (42.3)	85 (22.5) 160 (42.3)	60 (15.9) 95 (25.1)
"11" 	DSHG-03-3C11	160 (42.3)	85 (22.5) 160 (42.3)	60 (15.9) 95 (25.1)
"12" 	DSHG-03-3C12	160 (42.3)	85 (22.5) 160 (42.3)	60 (15.9) 95 (25.1)

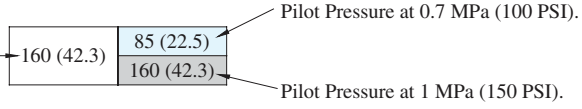
Two Positions

Spool Type	No-Spring				Spring Offset			
	Graphic Symbol 	Maximum Flow L/min (U.S.GPM)			Graphic Symbol 	Maximum Flow L/min (U.S.GPM)		
	Model Numbers	7 MPa (1020 PSI)	14 MPa (2030 PSI)	25 MPa (3630 PSI)	Model Numbers	7 MPa (1020 PSI)	14 MPa (2030 PSI)	25 MPa (3630 PSI)
"2" 	DSHG-03-2N2	160 (42.3)	160 (42.3)	85 (22.5) 160 (42.3)	DSHG-03-2B2	160 (42.3)	160 (42.3)	85 (22.5) 160 (42.3)
"3" 	DSHG-03-2N3	160 (42.3)	160 (42.3)	85 (22.5) 160 (42.3)	DSHG-03-2B3	160 (42.3)	160 (42.3)	85 (22.5) 160 (42.3)
"4" 	DSHG-03-2N4	160 (42.3)	160 (42.3)	85 (22.5) 160 (42.3)	DSHG-03-2B4	160 (42.3)	160 (42.3)	85 (22.5) 160 (42.3)
"40" 	DSHG-03-2N40	160 (42.3)	160 (42.3)	85 (22.5) 160 (42.3)	DSHG-03-2B40	160 (42.3)	160 (42.3)	85 (22.5) 160 (42.3)
"7" 	DSHG-03-2N7	160 (42.3)	160 (42.3)	85 (22.5) 160 (42.3)	DSHG-03-2B7	160 (42.3)	160 (42.3)	85 (22.5) 160 (42.3)

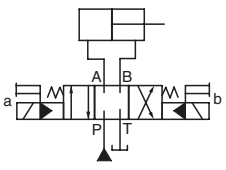
Notes:1. The relation between max. flow and pilot pressure in the table above is as shown below.

(Example)

Maximum flow rate is constant regardless of pilot pressure.
Pilot Pressure more than 0.7 MPa (100 PSI).

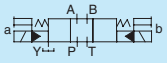


2. Max. flow in the table above represents the value in the flow condition of P → A → B → T (or P → B → A → T) as shown in the circuit diagram right.
In case the valve is used in the condition that either A or B port is blocked, the maximum flow differs according to a hydraulic circuit, therefore, please consult us for details.

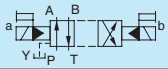
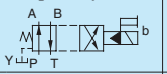


List of Spool Functions and Maxmum Flow (DSHG-04/S-DSHG-04)

Three Positions

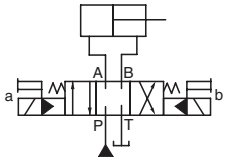
Spool Type	Spring Centred				
	Graphic Symbol 	Maximum Flow L/min (U.S.GPM)			
	Model Numbers	10 MPa (1450 PSI)	16 MPa (2320 PSI)	25 MPa (3630 PSI)	31.5 MPa (4570 PSI)
"2" 	DSHG-04-3C2	300 (79.3)	300 (79.3)	200 (52.8)	145 (38.3)
	(S-)DSHG-04-3C2	300 (79.3)	250 (66.1)	120 (31.7)	110 (29.1)
"3" 	DSHG-04-3C3	300 (79.3)	300 (79.3)	300 (79.3)	300 (79.3)
"4" 	DSHG-04-3C4	300 (79.3)	300 (79.3)	250 (66.1)	165 (43.6)
	(S-)DSHG-04-3C4	300 (79.3)	300 (79.3)	140 (37.0)	110 (29.1)
"40" 	DSHG-04-3C40	300 (79.3)	300 (79.3)	200 (52.8)	145 (38.3)
	(S-)DSHG-04-3C40	300 (79.3)	250 (66.1)	120 (31.7)	110 (29.1)
"5" 	DSHG-04-3C5	250 (66.1)	250 (66.1)	245 (64.7)	245 (64.7)
"6" 	DSHG-04-3C6	300 (79.3)	260 (68.7)	245 (64.7)	235 (62.1)
"60" 	DSHG-04-3C60	300 (79.3)	300 (79.3)	300 (79.3)	300 (79.3)
	(S-)DSHG-04-3C60				
"7" 	DSHG-04-3C7	300 (79.3)	300 (79.3)	200 (52.8)	145 (38.3)
"9" 	DSHG-04-3C9	300 (79.3)	300 (79.3)	280 (74.0)	250 (66.1)
"10" 	DSHG-04-3C10	300 (79.3)	300 (79.3)	200 (52.8)	150 (39.6)
	(S-)DSHG-04-3C10	300 (79.3)	250 (66.1)	120 (31.7)	110 (29.1)
"11" 	DSHG-04-3C11	300 (79.3)	260 (68.7)	160 (42.3)	140 (37.0)
"12" 	DSHG-04-3C12	300 (79.3)	280 (74.0)	170 (44.9)	135 (35.7)
	(S-)DSHG-04-3C12	300 (79.3)	250 (66.1)	120 (31.7)	110 (29.1)

Two Positions

Spool Type	No-Spring					Spring Offset				
	Graphic Symbol 	Maximum Flow L/min (U.S.GPM)				Graphic Symbol 	Maximum Flow L/min (U.S.GPM)			
	Model Numbers	10 MPa (1450 PSI)	16 MPa (2320 PSI)	25 MPa (3630 PSI)	31.5 MPa (4570 PSI)	Model Numbers	10 MPa (1450 PSI)	16 MPa (2320 PSI)	25 MPa (3630 PSI)	31.5 MPa (4570 PSI)
"2" 	(S-)DSHG-04-2N2	300 (79.3)	300 (79.3)	300 (79.3)	300 (79.3)	(S-)DSHG-04-2B2	300 (79.3)	300 (79.3)	300 (79.3)	300 (79.3)
"3" 	DSHG-04-2N3	300 (79.3)	300 (79.3)	300 (79.3)	300 (79.3)	DSHG-04-2B3	300 (79.3)	300 (79.3)	300 (79.3)	300 (79.3)
"4" 	(S-)DSHG-04-2N4	300 (79.3)	300 (79.3)	300 (79.3)	300 (79.3)	(S-)DSHG-04-2B4	300 (79.3)	300 (79.3)	300 (79.3)	300 (79.3)
"40" 	(S-)DSHG-04-2N40	300 (79.3)	300 (79.3)	300 (79.3)	300 (79.3)	(S-)DSHG-04-2B40	300 (79.3)	300 (79.3)	300 (79.3)	300 (79.3)
"7" 	DSHG-04-2N7	300 (79.3)	300 (79.3)	300 (79.3)	300 (79.3)	DSHG-04-2B7	300 (79.3)	300 (79.3)	300 (79.3)	300 (79.3)

Notes: 1. Max flow described above shown value at pilot pressure more than 0.8 MPa (120 PSI).

2. Max. flow in the table above represents the value in the flow condition of P→ A → B → T (or P → B → A → T) as shown in the circuit diagram right.
In case the valve is used in the condition that either A or B port is blocked, the maximum flow differs according to a hydraulic circuit, therefore, please consult us for details.



List of Spool Functions and Maxmum Flow (DSHG-06/S-DSHG-06)

Three Positions

Spool Type	Spring Centred					Pressure Centred				
	Graphic Symbol	Maximum Flow L/min (U.S.GPM)				Graphic Symbol	Maximum Flow L/min (U.S.GPM)			
	Model Numbers	10 MPa (1450 PSI)	16 MPa (2320 PSI)	25 MPa (3630 PSI)	31.5 MPa (4570 PSI)	Model Numbers	10 MPa (1450 PSI)	16 MPa (2320 PSI)	25 MPa (3630 PSI)	31.5 MPa (4570 PSI)
"2"	(S-)DSHG-06-3C2	500 (132)	500 (132)	410 (108) 500 (132)	310 (81.9) 500 (132)	(S-)DSHG-06-3H2	500 (132)	500 (132)	500 (132)	420 (111) 500 (132)
"3"	DSHG-06-3C3	500 (132)	500 (132)	460 (122)	370 (97.8)	DSHG-06-3H3	500 (132)	500 (132)	500 (132)	500 (132)
"4"	(S-)DSHG-06-3C4	500 (132)	500 (132)	410 (108) 500 (132)	310 (81.9) 500 (132)	(S-)DSHG-06-3H4	500 (132)	500 (132)	500 (132)	420 (111) 500 (132)
"40"	(S-)DSHG-06-3C40	500 (132)	500 (132)	410 (108) 500 (132)	310 (81.9) 500 (132)	(S-)DSHG-06-3H40	500 (132)	500 (132)	500 (132)	420 (111) 500 (132)
"5"	DSHG-06-3C5	500 (132)	500 (132)	425 (112)	350 (92.5)	DSHG-06-3H5	500 (132)	500 (132)	500 (132)	470 (124) 500 (132)
"6"	DSHG-06-3C6	475 (125)	390 (103)	300 (79.3)	230 (60.8)	DSHG-06-3H6	500 (132)	500 (132)	500 (132)	420 (111) 500 (132)
"60"	(S-)DSHG-06-3C60	475 (125)	420 (111)	340 (89.8)	280 (74.0)	(S-)DSHG-06-3H60	500 (132)	500 (132)	500 (132)	420 (111) 500 (132)
"7"	DSHG-06-3C7	500 (132)	500 (132)	450 (119)	360 (95.1)	DSHG-06-3H7	500 (132)	500 (132)	500 (132)	500 (132)
"9"	DSHG-06-3C9	500 (132)	500 (132)	450 (119) 500 (132)	360 (95.1) 500 (132)	DSHG-06-3H9	500 (132)	500 (132)	500 (132)	500 (132)
"10"	(S-)DSHG-06-3C10	500 (132)	500 (132)	410 (108) 500 (132)	310 (81.9) 500 (132)	(S-)DSHG-06-3H10	500 (132)	500 (132)	500 (132)	460 (122) 500 (132)
"11"	DSHG-06-3C11	500 (132)	500 (132)	410 (108) 500 (132)	310 (81.9) 500 (132)	DSHG-06-3H11	500 (132)	500 (132)	500 (132)	460 (122) 500 (132)
"12"	(S-)DSHG-06-3C12	500 (132)	500 (132)	410 (108) 500 (132)	310 (81.9) 500 (132)	(S-)DSHG-06-3H12	500 (132)	500 (132)	500 (132)	460 (122) 500 (132)

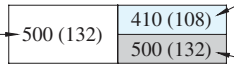
Two Positions

Spool Type	No-Spring					Spring Offset				
	Graphic Symbol	Maximum Flow L/min (U.S.GPM)				Graphic Symbol	Maximum Flow L/min (U.S.GPM)			
	Model Numbers	10 MPa (1450 PSI)	16 MPa (2320 PSI)	25 MPa (3630 PSI)	31.5 MPa (4570 PSI)	Model Numbers	10 MPa (1450 PSI)	16 MPa (2320 PSI)	25 MPa (3630 PSI)	31.5 MPa (4570 PSI)
"2"	(S-)DSHG-06-2N2	500 (132)	500 (132)	500 (132)	500 (132)	(S-)DSHG-06-2B2	500 (132)	500 (132)	500 (132)	500 (132)
"3"	DSHG-06-2N3	500 (132)	500 (132)	500 (132)	500 (132)	DSHG-06-2B3	500 (132)	500 (132)	500 (132)	500 (132)
"4"	(S-)DSHG-06-2N4	500 (132)	500 (132)	500 (132)	500 (132)	(S-)DSHG-06-2B4	500 (132)	500 (132)	500 (132)	500 (132)
"40"	(S-)DSHG-06-2N40	500 (132)	500 (132)	500 (132)	500 (132)	(S-)DSHG-06-2B40	500 (132)	500 (132)	500 (132)	500 (132)
"7"	DSHG-06-2N7	500 (132)	500 (132)	500 (132)	500 (132)	DSHG-06-2B7	500 (132)	500 (132)	500 (132)	500 (132)

Notes: 1. The relation between max. flow and pilot pressure in the table above is as shown below.

(Example)

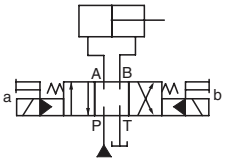
Maximum flow rate is constant regardless of pilot pressure.
Pilot Pressure more than 0.8 MPa (120 PSI).
In case pressure centred models, pilot pressure is more than 1 MPa (150 PSI).



Pilot Pressure at 0.8 MPa (120 PSI).
In case pressure centred models, pilot pressure is more than 1 MPa (150 PSI)

Pilot Pressure at 1.5 MPa (220 PSI).

2. Max. flow in the table above represents the value in the flow condition of P→ A → B → T (or P → B → A → T) as shown in the circuit diagram right.
In case the valve is used in the condition that either A or B port is blocked, the maximum flow differs according to a hydraulic circuit, therefore, please consult us for details.



List of Spool Functions and Maxmum Flow (DSHG-010/S-DSHG-10)

Three Positions

Spool Type	Spring Centred					Pressure Centred				
	Graphic Symbol	Maximum Flow L/min (U.S.GPM)				Graphic Symbol	Maximum Flow L/min (U.S.GPM)			
	Model Numbers	10 MPa (1450 PSI)	16 MPa (2320 PSI)	25 MPa (3630 PSI)	31.5 MPa (4570 PSI)	Model Numbers	10 MPa (1450 PSI)	16 MPa (2320 PSI)	25 MPa (3630 PSI)	31.5 MPa (4570 PSI)
"2"	(S-)DSHG-10-3C2	1100 (291)	1100 (291)	950 (251) 1100 (291)	750 (198) 1100 (291)	(S-)DSHG-10-3H2	1100 (291)	1100 (291)	1100 (291)	970 (256) 1100 (291)
"3"	DSHG-10-3C3	1100 (291)	1100 (291)	1060 (280)	895 (236)	DSHG-10-3H3	1100 (291)	1100 (291)	1100 (291)	1050 (277) 1100 (291)
"4"	(S-)DSHG-10-3C4	1100 (291)	1100 (291)	950 (251) 1100 (291)	750 (198) 1100 (291)	(S-)DSHG-10-3H4	1100 (291)	1100 (291)	1100 (291)	970 (256) 1100 (291)
"40"	(S-)DSHG-10-3C40	1100 (291)	1100 (291)	950 (251) 1100 (291)	750 (198) 1100 (291)	(S-)DSHG-10-3H40	1100 (291)	1100 (291)	1100 (291)	970 (256) 1100 (291)
"5"	DSHG-10-3C5	1100 (291)	1100 (291)	980 (259)	850 (225)	DSHG-10-3H5	1100 (291)	1100 (291)	1100 (291)	1000 (264) 1100 (291)
"6"	DSHG-10-3C6	1050 (277)	880 (232)	700 (185)	570 (151)	DSHG-10-3H6	1100 (291)	1100 (291)	1100 (291)	970 (256) 1100 (291)
"60"	(S-)DSHG-10-3C60	1050 (277)	940 (248)	785 (207)	680 (180)	(S-)DSHG-10-3H60	1100 (291)	1100 (291)	1100 (291)	970 (256) 1100 (291)
"7"	DSHG-10-3C7	1100 (291)	1100 (291)	1040 (275) 1100 (291)	870 (230) 1100 (291)	DSHG-10-3H7	1100 (291)	1100 (291)	1100 (291)	1100 (291)
"9"	DSHG-10-3C9	1100 (291)	1100 (291)	1040 (275)	870 (230)	DSHG-10-3H9	1100 (291)	1100 (291)	1100 (291)	1100 (291)
"10"	(S-)DSHG-10-3C10	1100 (291)	1100 (291)	950 (251) 1100 (291)	750 (198) 1100 (291)	(S-)DSHG-10-3H10	1100 (291)	1100 (291)	1100 (291)	1060 (280) 1100 (291)
"11"	DSHG-10-3C11	1100 (291)	1100 (291)	950 (251) 1100 (291)	750 (198) 1100 (291)	DSHG-10-3H11	1100 (291)	1100 (291)	1100 (291)	1060 (280) 1100 (291)
"12"	(S-)DSHG-10-3C12	1100 (291)	1100 (291)	950 (251) 1100 (291)	750 (198) 1100 (291)	(S-)DSHG-10-3H12	1100 (291)	1100 (291)	1100 (291)	1060 (280) 1100 (291)

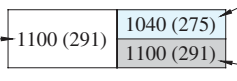
Two Positions

Spool Type	No-Spring					Spring Offset				
	Graphic Symbol	Maximum Flow L/min (U.S.GPM)				Graphic Symbol	Maximum Flow L/min (U.S.GPM)			
	Model Numbers	10 MPa (1450 PSI)	16 MPa (2320 PSI)	25 MPa (3630 PSI)	31.5 MPa (4570 PSI)	Model Numbers	10 MPa (1450 PSI)	16 MPa (2320 PSI)	25 MPa (3630 PSI)	31.5 MPa (4570 PSI)
"2"	(S-)DSHG-10-2N2	1100 (291)	1100 (291)	1100 (291)	1100 (291)	(S-)DSHG-10-2B2	1100 (291)	1100 (291)	1100 (291)	1100 (291)
"3"	DSHG-10-2N3	1100 (291)	1100 (291)	1100 (291)	1100 (291)	DSHG-10-2B3	1100 (291)	1100 (291)	1100 (291)	1100 (291)
"4"	(S-)DSHG-10-2N4	1100 (291)	1100 (291)	1100 (291)	1100 (291)	(S-)DSHG-10-2B4	1100 (291)	1100 (291)	1100 (291)	1100 (291)
"40"	(S-)DSHG-10-2N40	1100 (291)	1100 (291)	1100 (291)	1100 (291)	(S-)DSHG-10-2B40	1100 (291)	1100 (291)	1100 (291)	1100 (291)
"7"	DSHG-10-2N7	1100 (291)	1100 (291)	1100 (291)	1100 (291)	DSHG-10-2B7	1100 (291)	1100 (291)	1100 (291)	1100 (291)

Notes) 1. The relation between max. flow and pilot pressure in the table above is as shown below.

(Example)

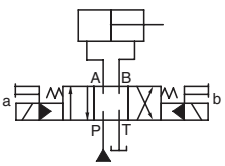
Maximum flow rate is constant regardless of pilot pressure.
Pilot Pressure more than 1 MPa (150 PSI).



Pilot Pressure at 1 MPa (150 PSI).

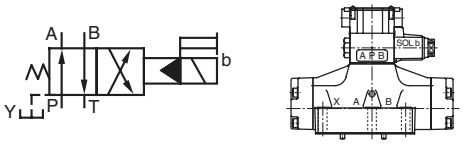
Pilot Pressure at 1.5 MPa (220 PSI).

2. Max. flow in the table above represents the value in the flow condition of P → A → B → T (or P → B → A → T) as shown in the circuit diagram right.
In case the valve is used in the condition that either A or B port is blocked, the maximum flow differs according to a hydraulic circuit, therefore, please consult us for details.

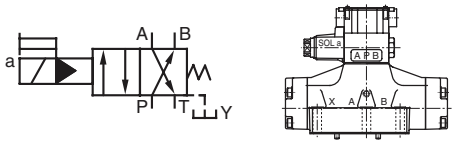


Reverse Mounting of Solenoid.

In spring offset type, it is a standard configuration that the solenoid is mounted onto the valve in the SOL b position (side). However, in this particular spool-spring arrangement, the mounting of the solenoid onto the valve in the reverse position - SOL a side - is also available. The graphic symbol for this reverse mounting is as shown below. As for the valve type 2B∗A and 2B∗B, please refer to the explanation under the heading of "Valves Using Neutral Position and Side Position" given below.



Standard Mtg. of Solenoid

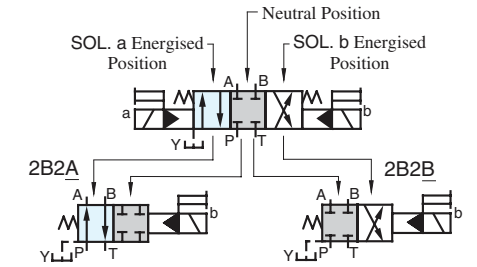


Reverse Mtg. of Solenoid ("L")

Valves Using Neutral Position and Side Position. (Special Two position Valve)

Besides the use of the standard 2-position valves aforementioned in the "List of Standard Models and Maximum Flow", the 3-position valves also can be used as the 2-position valves using the two of their three positions. In this case, there are two kinds of the valve available. One is the valve using the neutral position and SOL a position (2B∗A) and another is the valve using the neutral position and SOL b position (2B∗B).

(Example) In case of Spool Type "2"



"A": Use of Neutral and SOL. a Energised Position

"B": Use of Neutral and SOL. b Energised Position

Model Numbers	Graphic Symbols	
	Standard Mtg.	Reverse Mtg. Type
04 DSHG-06-2B∗A 10		
(S-)DSHG-∗-2B2A		
DSHG-∗-2B3A		
(S-)DSHG-∗-2B4A		
(S-)DSHG-∗-2B40A		
DSHG-∗-2B5A		
DSHG-∗-2B6A		
(S-)DSHG-∗-2B60A		
DSHG-∗-2B7A		
DSHG-∗-2B9A		
(S-)DSHG-∗-2B10A		
DSHG-∗-2B11A		
(S-)DSHG-∗-2B12A		

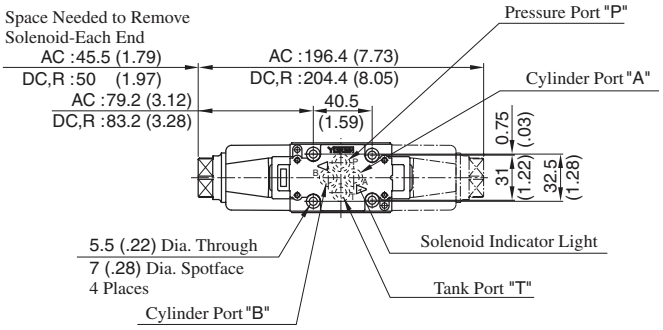
Model Numbers	Graphic Symbols	
	Standard Mtg.	Reverse Mtg. Type
04 DSHG-06-2B∗B 10		
(S-)DSHG-∗-2B2B		
DSHG-∗-2B3B		
(S-)DSHG-∗-2B4B		
(S-)DSHG-∗-2B40B		
DSHG-∗-2B5B		
DSHG-∗-2B6B		
(S-)DSHG-∗-2B60B		
DSHG-∗-2B7B		
DSHG-∗-2B9B		
(S-)DSHG-∗-2B10B		
DSHG-∗-2B11B		
(S-)DSHG-∗-2B12B		

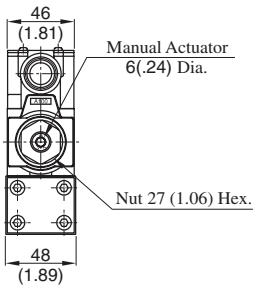
Model Numbers	Graphic Symbols
	Standard Mtg.
04 DSHG-06-2N∗A 10	
(S-)DSHG-∗-2N2A	
DSHG-∗-2N3A	
(S-)DSHG-∗-2N4A	
(S-)DSHG-∗-2N40A	
DSHG-∗-2N5A	
DSHG-∗-2N6A	
(S-)DSHG-∗-2N60A	
DSHG-∗-2N7A	
DSHG-∗-2N9A	
(S-)DSHG-∗-2N10A	
DSHG-∗-2N11A	
(S-)DSHG-∗-2N12A	

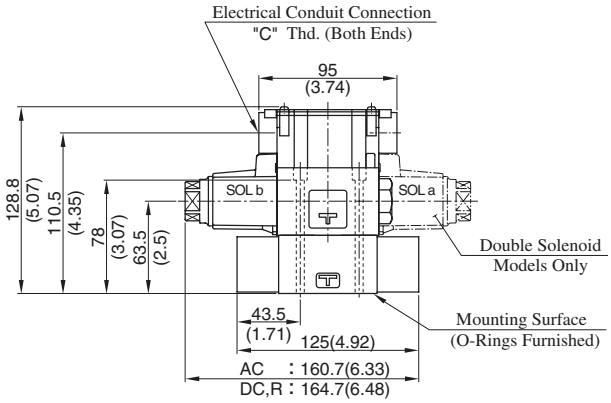
Mounting surface: ISO 4401-AB-03-4-A

Terminal Box type: DSHG-01-∗∗∗-∗-14/1490

- **Internal Pilot - Internal Drain**



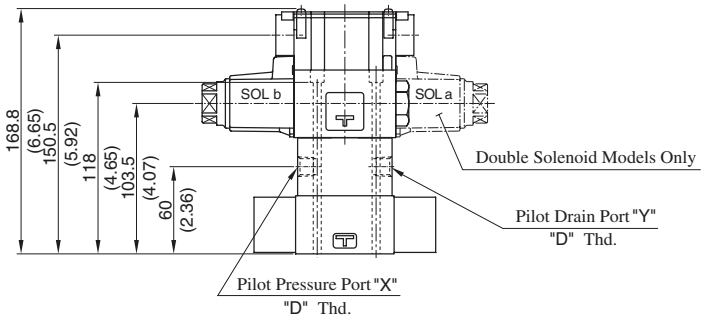




Model Numbers	"C" Thd.	"D" Thd.
DSHG-01-∗∗∗-∗-14	G 1/2	Rc 1/4
DSHG-01-∗∗∗-∗-1490	1/2 NPT	1/4 NPT

DIMENSIONS IN MILLIMETRES (INCHES)

- **External Pilot - External Drain**
- **External Pilot - Internal Drain**
- **Internal Pilot - External Drain**

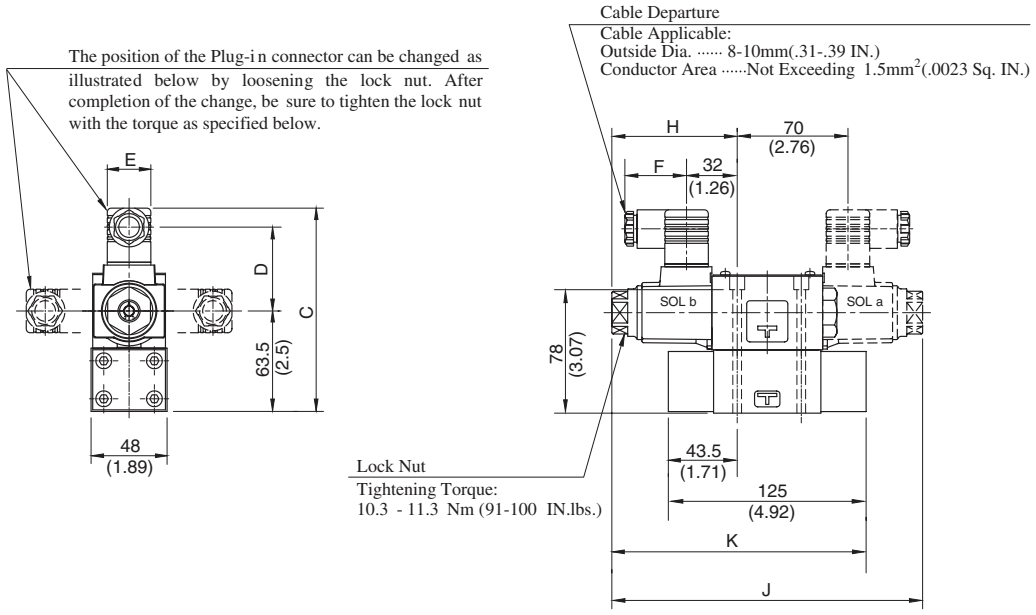


- For other dimensions, refer to "Internal Pilot Internal Drain".

Mounting surface: ISO 4401-AB-03-4-A

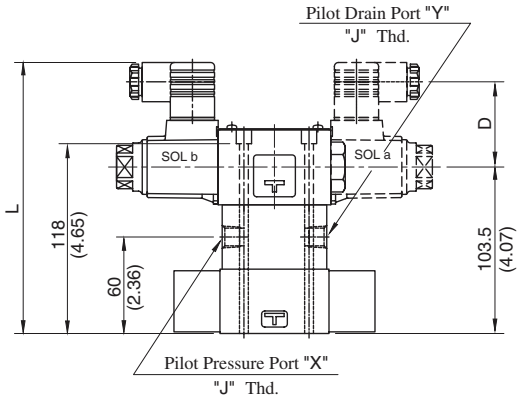
Plug-in Connector Type: DSHG-01-∗∗∗-∗-$^{N}_{N1}$-14/1480/1490

● **Internal Pilot-Internal Drain**



DIMENSIONS IN MILLIMETRES (INCHES)

● **External Pilot-External Drain**
● **External Pilot-Internal Drain**
● **Internal Pilot-External Drain**



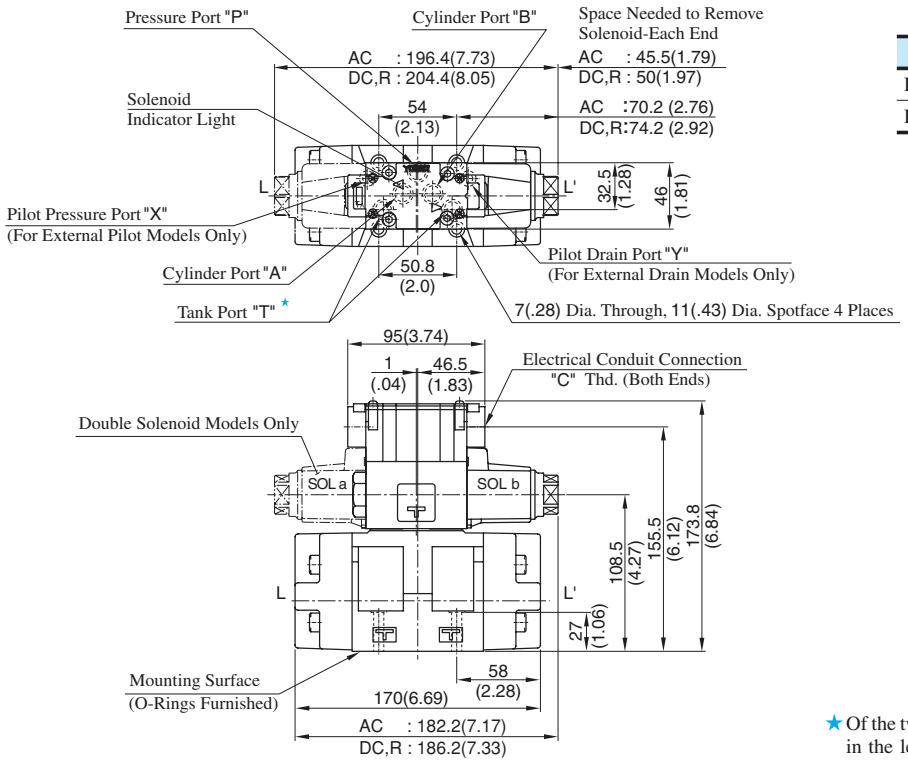
Model Numbers	"J" Thd.
DSHG-01-∗∗∗-∗-N∗-14	Rc 1/4
DSHG-01-∗∗∗-∗-N∗-1480	1/4 BSP.F
DSHG-01-∗∗∗-∗-N∗-1490	1/4 NPT

Model Numbers	Dimensions mm (Inches)							
	C	D	E	F	H	J	K	L
DSHG-01-∗∗∗-∗-A∗-N/N1	128.5 (5.06)	53 (2.09)	27.5 (1.08)	39 (1.54)	79.2 (3.12)	196.4 (7.73)	160.7 (6.33)	168.5 (6.63)
DSHG-01-∗∗∗-∗-D∗-N/N1	139.5 (5.49)	64 (2.52)	27.5 (1.08)	39 (1.54)	83.2 (3.28)	204.4 (8.05)	164.7 (6.48)	179.5 (7.07)
DSHG-01-∗∗∗-∗-R∗-N	142.5 (5.61)	57.2 (2.25)	34 (1.34)	53 (2.09)				182.5 (7.19)

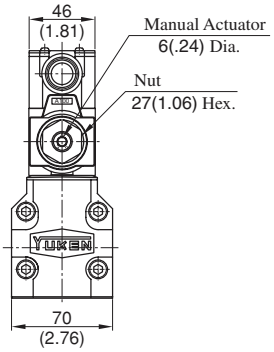
● For other dimensions, refer to "Terminal Box Type".

Terminal Box Type: DSHG-03-∗∗∗-∗-14/1490

Mounting surface: ISO 4401-AC-05-4-A
(The pilot and drain ports in accordance with the ISO original draft)



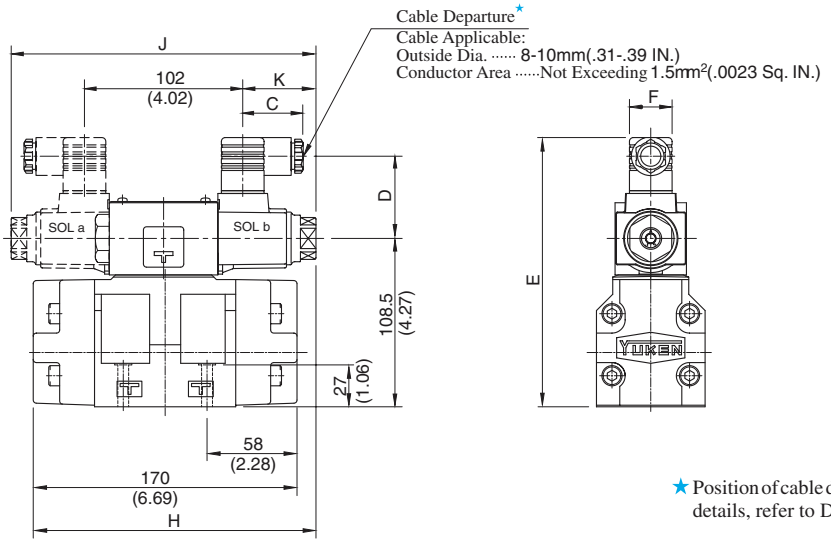
Model Numbers	"C" Thd.
DSHG-03-∗∗∗-∗-14	G 1/2
DSHG-03-∗∗∗-∗-1490	1/2 NPT



★ Of the two of tank port "T", the tank port in the left side is normally used in our standard sub-plate, though, either side of the tank port "T" can be used without problem.

DIMENSIONS IN MILLIMETRES (INCHES)

Plug-in Connector Type: DSHG-03-∗∗∗-∗-$^{N}_{N1}$-14/1490



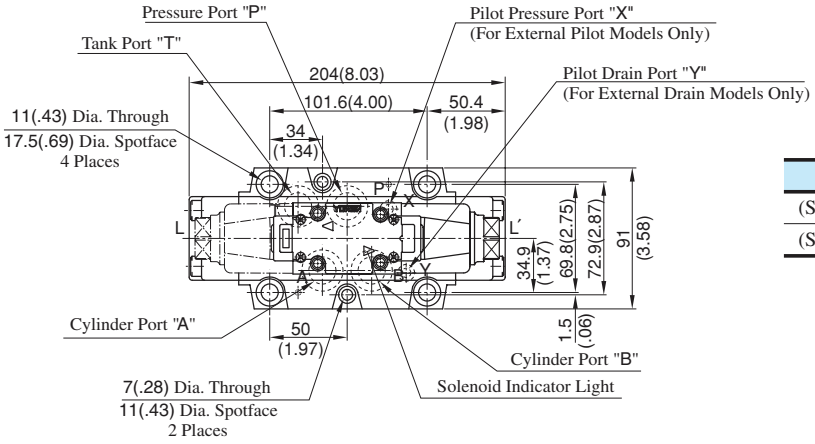
★ Position of cable departure can be changed. For details, refer to DSHG-01 valve on page 396.

Model Numbers	Dimensions mm (Inches)						
	C	D	E	F	H	J	K
DSHG-03-∗∗∗-∗-A∗-N/N1	39 (1.54)	53 (2.09)	173.5 (6.83)	27.5 (1.08)	182.2 (7.17)	196.4 (7.73)	47.2 (1.86)
DSHG-03-∗∗∗-∗-D∗-N/N1	39 (1.54)	64 (2.52)	184.5 (7.26)	27.5 (1.08)	186.2 (7.33)	204.4 (8.05)	51.2 (2.02)
DSHG-03-∗∗∗-∗-R∗-N	53 (2.09)	57.2 (2.25)	187.5 (7.38)	34 (1.34)			

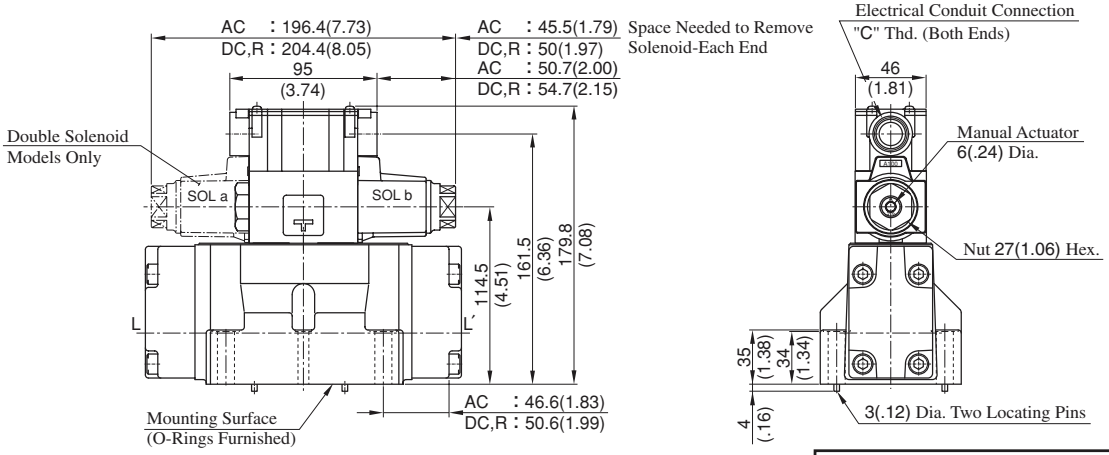
● For other dimensions, refer to "Terminal Box Type".

Terminal Box Type: (S-)DSHG-04-∗∗∗-∗-52/5290

Mounting surface:
ISO 4401-AD-07-4-A

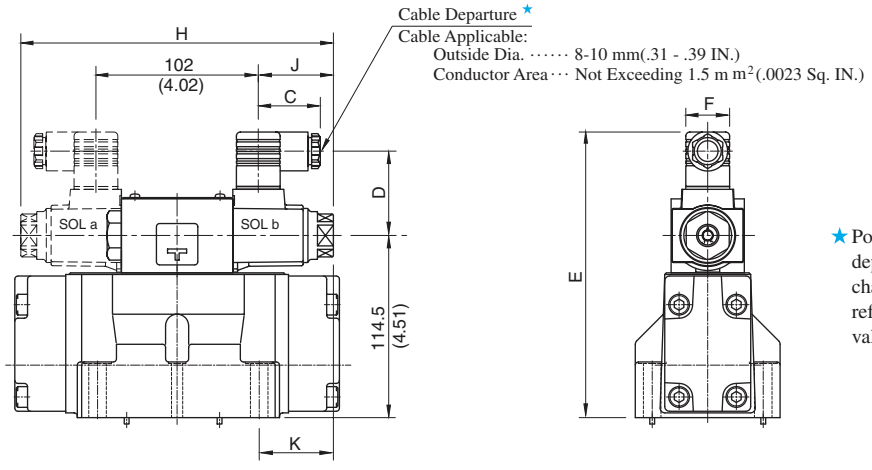


Model Numbers	"C" Thd.
(S-)DSHG-04-∗∗∗-∗-52	G 1/2
(S-)DSHG-04-∗∗∗-∗-5290	1/2 NPT



DIMENSIONS IN MILLIMETRES (INCHES)

Plug-in Connector Type: (S-)DSHG-04-∗∗∗-∗-$^{N}_{N1}$-52/5290



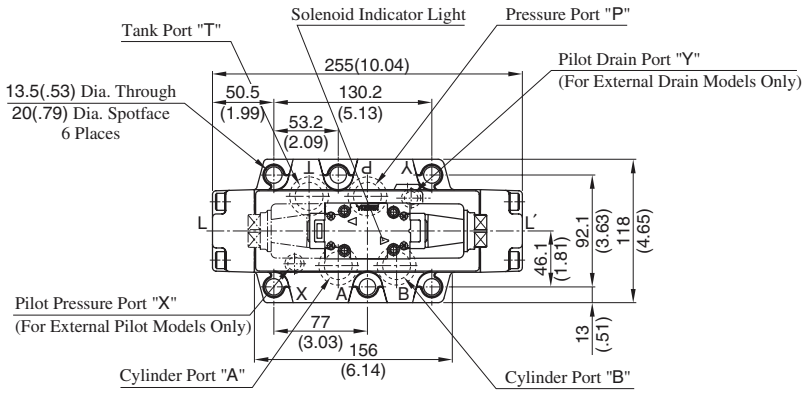
★ Position of cable departure can be changed. For details, refer to DSHG-01 valve on page 396.

Model Numbers	Dimensions mm (Inches)						
	C	D	E	F	H	J	K
(S-)DSHG-04-∗∗∗-A∗-N/N1	39 (1.54)	53 (2.09)	173.5 (6.83)	27.5 (1.08)	196.4 (7.73)	47.2 (1.86)	45.6 (1.80)
(S-)DSHG-04-∗∗∗-D∗-N/N1	39 (1.54)	64 (2.52)	184.5 (7.26)	27.5 (1.08)	204.4 (8.05)	51.2 (2.02)	49.6 (1.95)
(S-)DSHG-04-∗∗∗-R∗-N	53 (2.09)	57.2 (2.25)	187.6 (7.39)	34 (1.34)			

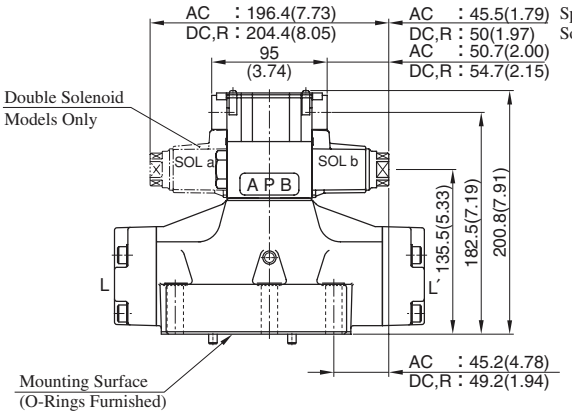
● For other dimensions, refer to "Terminal Box Type".

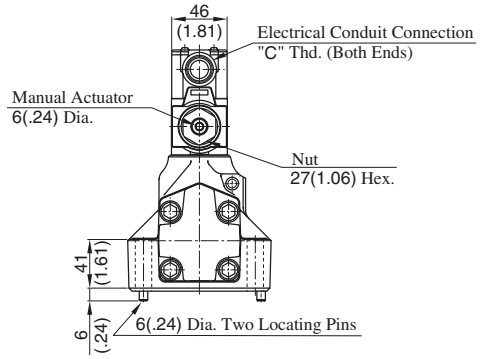
Terminal Box Type: (S-)DSHG-06-∗∗∗-∗-53/5390

Mounting surface:
ISO 4401-AE-08-4-A



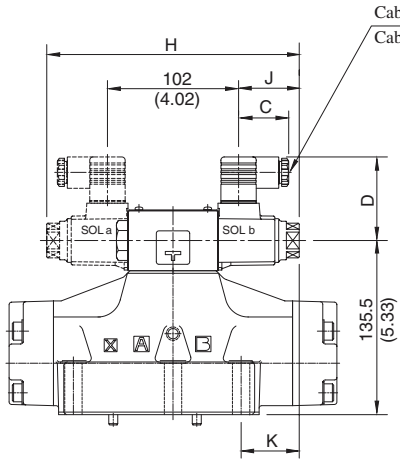
Model Numbers	"C" Thd.
(S-)DSHG-06-∗∗∗-∗-53	G 1/2
(S-)DSHG-06-∗∗∗-∗-5390	1/2 NPT

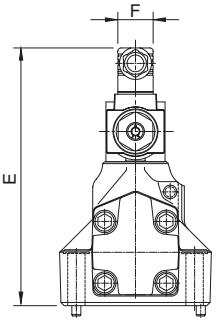




DIMENSIONS IN MILLIMETRES (INCHES)

Plug-in Connector Type: (S-)DSHG-06-∗∗∗-∗-$\frac{N}{N1}$-53/5390





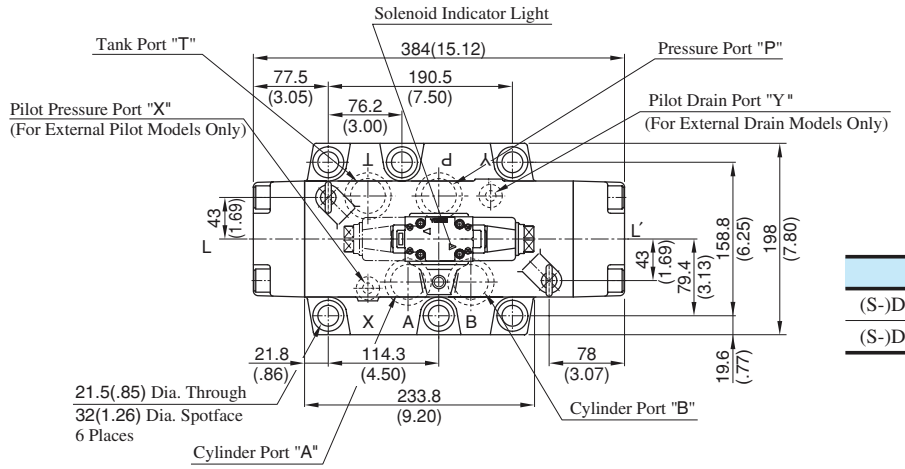
★Position of cable departure can be changed. For details, refer to DSHG-01 valve on page 396.

Model Numbers	Dimensions mm (Inches)						
	C	D	E	F	H	J	K
(S-)DSHG-06-∗∗∗-A∗-N/N1	39 (1.54)	53 (2.09)	200.5 (7.95)	27.5 (1.08)	196.4 (7.73)	47.2 (1.86)	45.2 (1.78)
(S-)DSHG-06-∗∗∗-D∗-N/N1	39 (1.54)	64 (2.52)	211.5 (8.33)	27.5 (1.08)	204.4 (8.05)	51.2 (2.02)	49.2 (1.94)
(S-)DSHG-06-∗∗∗-R∗-N	53 (2.09)	57.2 (2.25)	214.5 (8.44)	34 (1.34)			

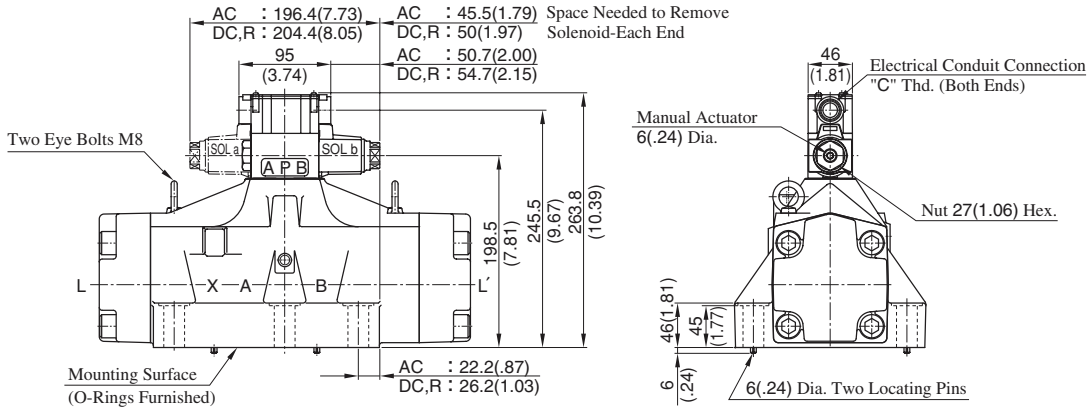
• For other dimensions, refer to "Terminal Box Type".

Terminal Box Type: (S-)DSHG-10-∗∗∗-∗-43/4390

Mounting surface:
ISO 4401-AF-10-4-A

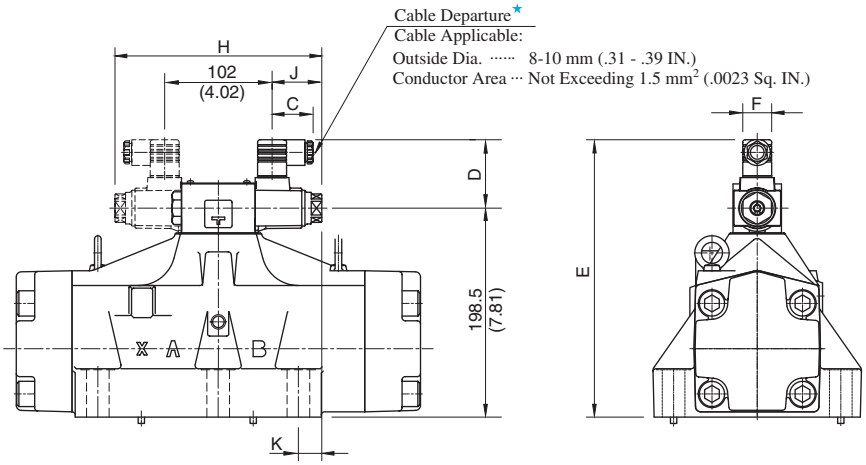


Model Numbers	"C" Thd.
(S-)DSHG-10-∗∗∗-∗-43	G 1/2
(S-)DSHG-10-∗∗∗-∗-4390	1/2 NPT



DIMENSIONS IN MILLIMETRES (INCHES)

Plug-in Connector Type: (S-)DSHG-10-∗∗∗-∗-$\frac{N}{N1}$-43/4390



★Position of cable departure can be changed. For details, refer to DSHG-01 valve on page 396.

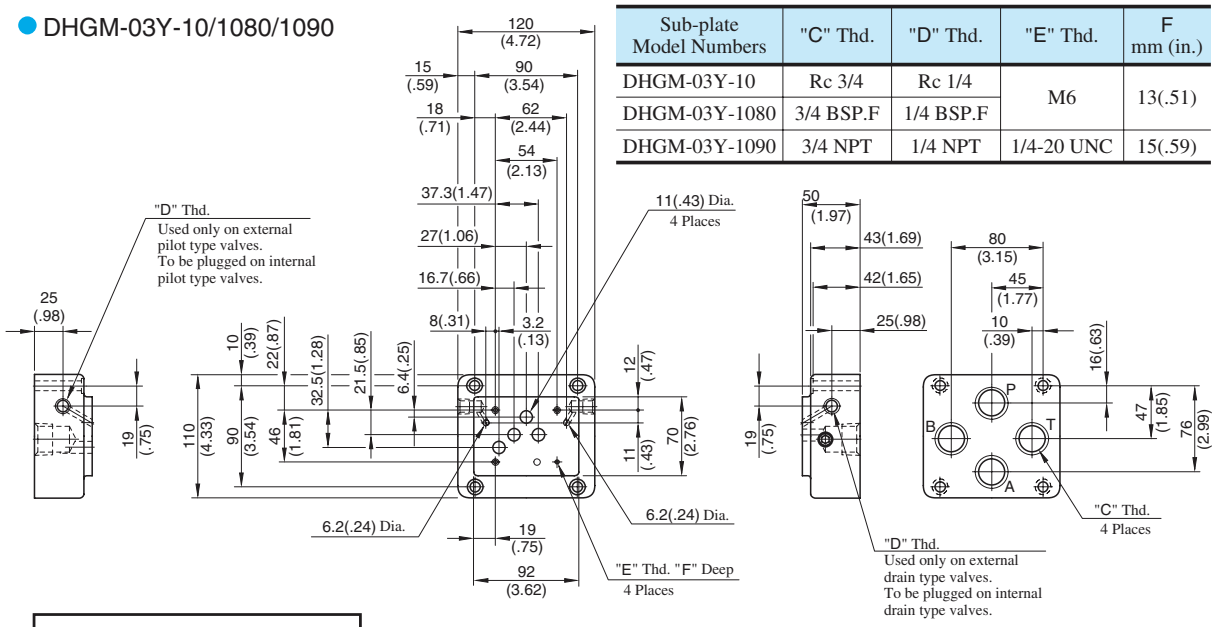
Model Numbers	Dimensions mm (Inches)						
	C	D	E	F	H	J	K
(S-)DSHG-10-∗∗∗-A∗-N/N1	39 (1.54)	53 (2.09)	263.5 (10.37)	27.5 (1.08)	196.4 (7.73)	47.2 (1.86)	22.2 (.87)
(S-)DSHG-10-∗∗∗-D∗-N/N1	39 (1.54)	64 (2.52)	274.5 (10.81)	27.5 (1.08)	204.4 (8.05)	51.2 (2.02)	26.2 (1.03)
(S-)DSHG-10-∗∗∗-R∗-N	53 (2.09)	57.2 (2.25)	277.5 (10.93)	34 (1.34)			

● For other dimensions, refer to "Terminal Box Type".

Sub-plate

DHGM-03Y-10/1080/1090

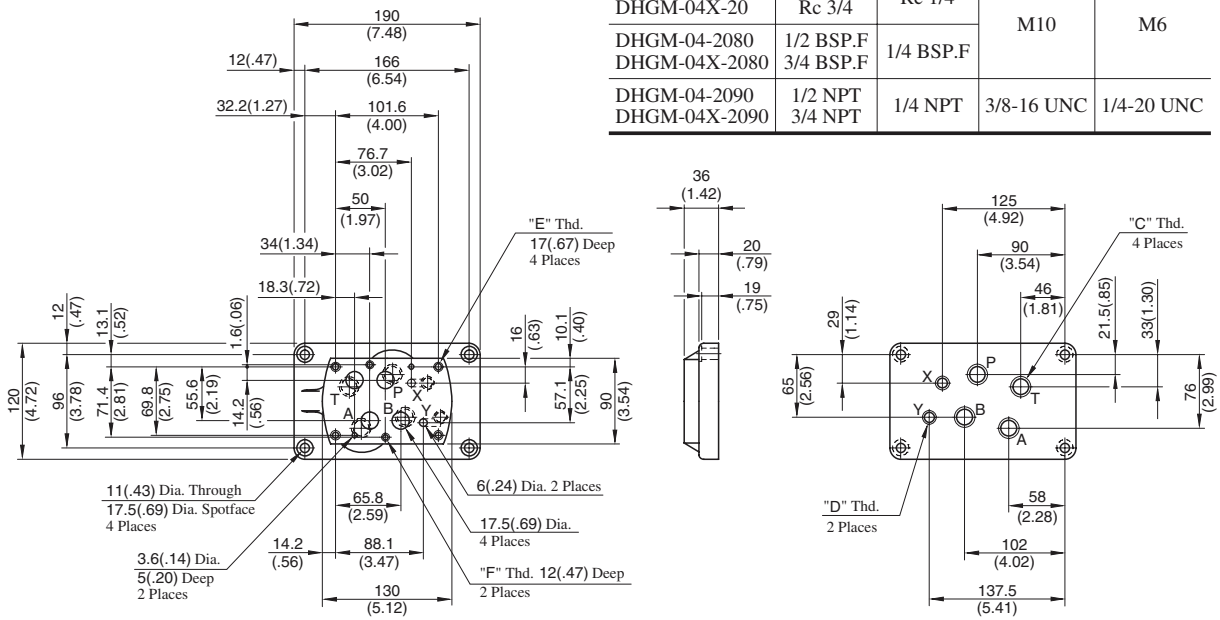
Sub-plate Model Numbers	"C" Thd.	"D" Thd.	"E" Thd.	F mm (in.)
DHGM-03Y-10	Rc 3/4	Rc 1/4	M6	13(.51)
DHGM-03Y-1080	3/4 BSP.F	1/4 BSP.F		
DHGM-03Y-1090	3/4 NPT	1/4 NPT	1/4-20 UNC	15(.59)



DIMENSIONS IN MILLIMETRES (INCHES)

DHGM-$^{04}_{04X}$-20/2080/2090

Sub-plate Model Numbers	"C" Thd.	"D" Thd.	"E" Thd.	"F" Thd.
DHGM-04-20 DHGM-04X-20	Rc 1/2 Rc 3/4	Rc 1/4	M10	M6
DHGM-04-2080 DHGM-04X-2080	1/2 BSP.F 3/4 BSP.F	1/4 BSP.F		
DHGM-04-2090 DHGM-04X-2090	1/2 NPT 3/4 NPT	1/4 NPT	3/8-16 UNC	1/4-20 UNC

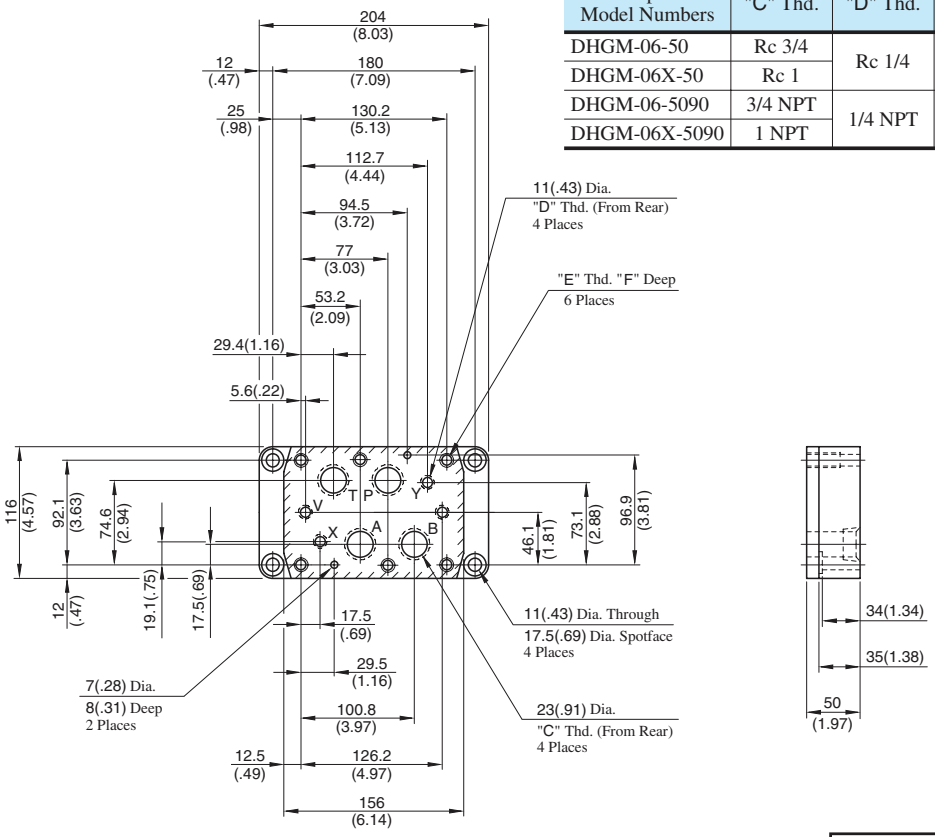


Valve Types		Pilot Pressure Port "X"	Port "Y"
Solenoid Controlled Pilot Operated Directional Valves		Used only on external pilot type valves. To be plugged on internal pilot type valves.	Used as drain port only on external drain type valves. To be plugged on internal drain type valves.
Pilot Operated Directional Valves	Spring Centred No-spring	Used	Used as pilot pressure port
	Spring Offset		Used as pilot drain port
Manually Operated Directional Valves		Not used (plug is not required)	Used as drain port

Sub-plate

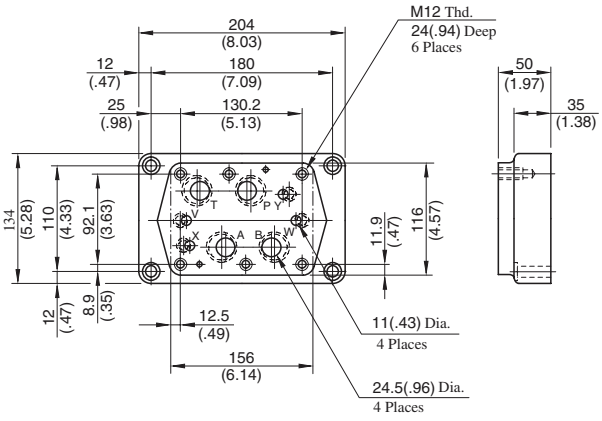
DHGM-$^{06}_{06X}$-50/5090

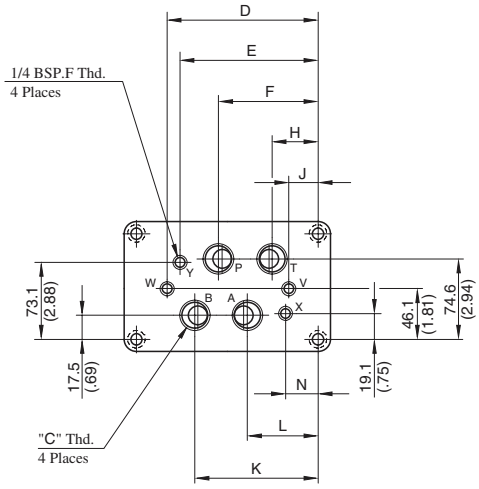
Sub-plate Model Numbers	"C" Thd.	"D" Thd.	"E" Thd.	F mm (in.)
DHGM-06-50	Rc 3/4	Rc 1/4	M12	24 (.94)
DHGM-06X-50	Rc 1			
DHGM-06-5090	3/4 NPT	1/4 NPT	1/2-13 UNC	26 (1.02)
DHGM-06X-5090	1 NPT			



DIMENSIONS IN MILLIMETRES (INCHES)

DHGM-$^{06}_{06X}$-5080





Sub-plate Model Numbers	"C" Thd.	Dimensions mm (Inches)							
		D	E	F	H	J	K	L	N
DHGM-06-5080	3/4 BSP.F	151.2 (5.95)	137.7 (5.42)	102 (4.02)	54.4 (2.14)	30.6 (1.20)	125.8 (4.95)	78.2 (3.08)	42.5 (1.67)
DHGM-06X-5080	1 BSP.F	155.2 (6.11)	148 (5.83)	106 (4.17)	50 (1.97)	25 (.98)	130 (5.12)	74 (2.91)	32 (1.26)

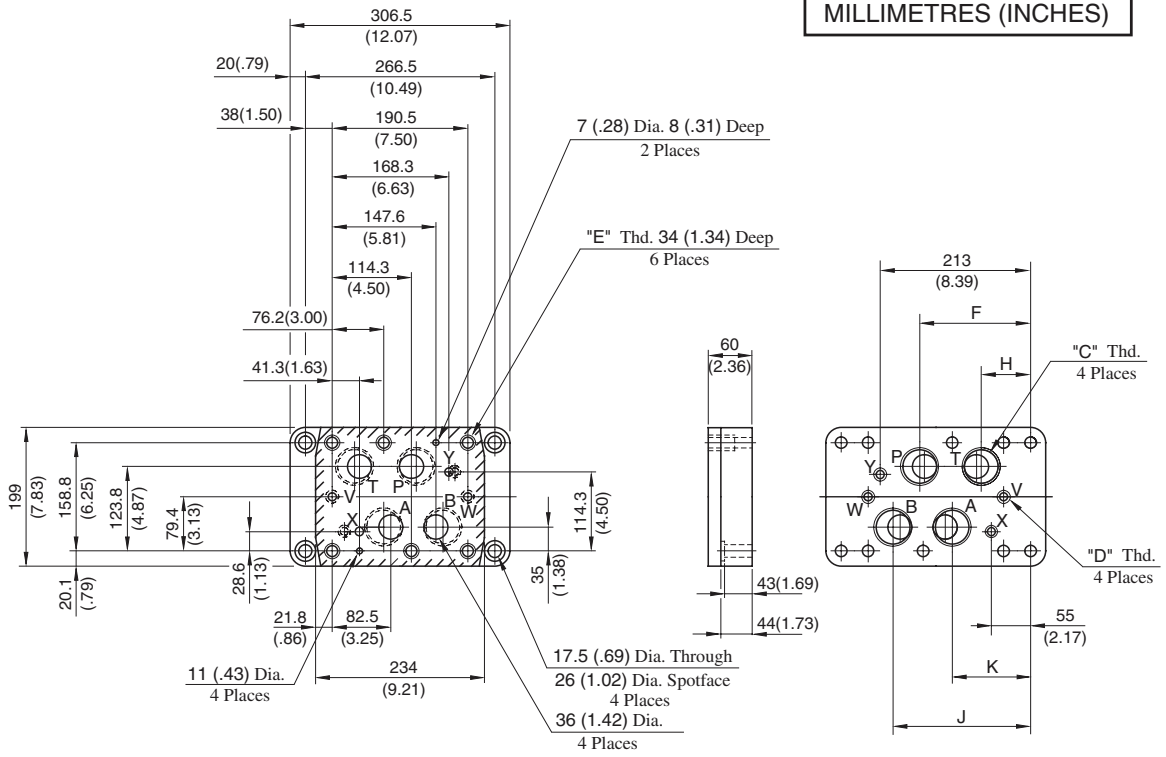
For other dimensions, refer to "DHGM-06∗-50/5090" above.

∗ For Uses of Port "X", "Y", "V", "W", refer to DHGM-10 ∗ on the following page.

Sub-plate

● DHGM-$^{10}_{10X}$-40/4080/4090

DIMENSIONS IN MILLIMETRES (INCHES)



Sub-plate Model Numbers	"C" Thd.	"D" Thd.	"E" Thd.	Dimensions mm (Inches) F	H	J	K
DHGM-10-40	Rc 1-1/4	Rc 3/8	M20				
DHGM-10-4080	1-1/4 BSP.F	3/8 BSP.F	M20	152 (5.98)	79 (3.11)	185.5 (7.30)	120.5 (4.74)
DHGM-10-4090	1-1/4 NPT	3/8 NPT	3/4-10 UNC				
DHGM-10X-40	Rc 1-1/2	Rc 3/8	M20				
DHGM-10X-4080	1-1/2 BSP.F	3/8 BSP.F	M20	156 (6.14)	74 (2.91)	194.5 (7.66)	112.5 (4.43)
DHGM-10X-4090	1-1/2 NPT	3/8 NPT	3/4-10 UNC				

Note: Uses of port "X", "Y", "V", and "W"

Valve Types			Pilot Pres. Port "X"	Port "Y"	Drain Port "V"	Drain Port "W"
Solenoid Controlled Pilot Operated Directional Valves	Spring Centred, No-spring, Spring Offset		Used only on external pilot type valves. To be plugged on internal pilot type valves.	Used as drain port only on external drain type valves. To be plugged on★ internal drain type valves.	Not used (plug is not required)	
	Pressure Centred				Used	Not used
	With Pilot Piston, Both Ends				Used	Used
	With Pilot Piston, Port "A" End				Used	Not used (plug is required)
	With Pilot Piston, Port "B" End				Not used (plug is required)	Used
Pilot Operated Directional Valves	Spring Centred, No-spring		Used	Used as pilot pres. port	Not used (plug is not required)	
	Spring Offset			Used as pilot drain port		
	Pressure Centred			Used as pilot pres. port	Used	Not used
	With Pilot Piston, Both Ends				Used	Used
	With Pilot Piston, Port "B" End				Not used (pllug is required)	Used
	With Pilot Piston Port "A" End	Spring Centred No-spring		Used as pilot pres. port	Used	Not used (plug is required)
		Spring Offset		Used as pilot drain port		
Manually Operated Directional Valves			Not used (plug is not required)	Not used (plug is not required)	Used	Not used (plug is not required)

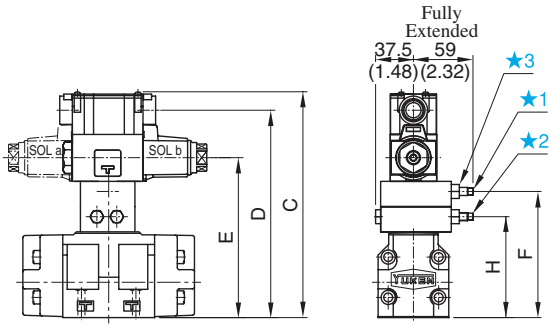
★ As the thread is provided on the body, plug either port on the sub-plate or port on the body.

Options

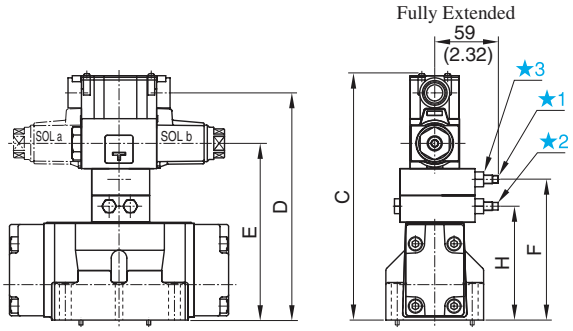
Models with Pilot Choke Valve

Terminal Box Type

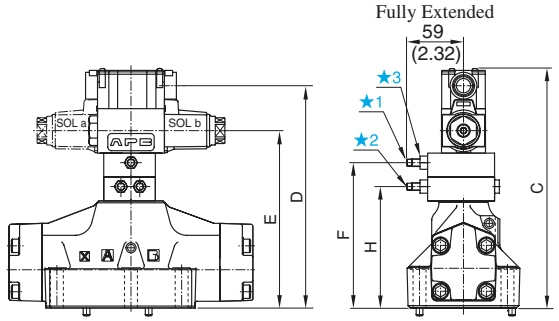
● DSHG-03- ✱✱✱-C1/C2/C1C2



● (S-)DSHG-04- ✱✱✱ -C1/C2/C1C2

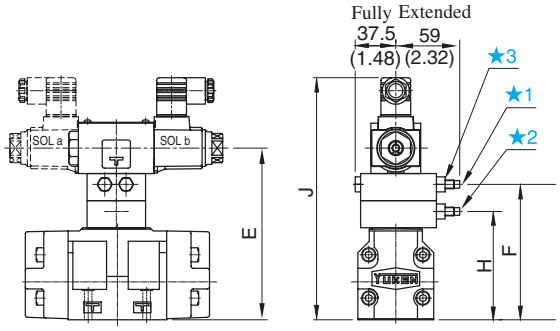


● (S-)DSHG-06 10 - ✱✱✱-C1/C2/C1C2

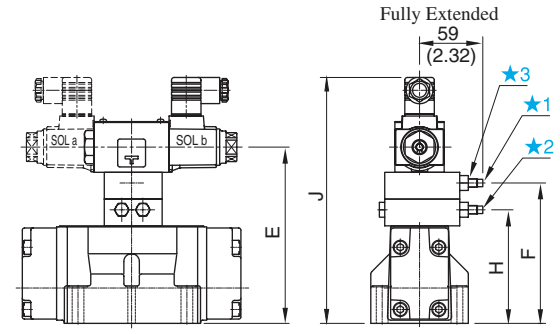


Plug-in Connector Type

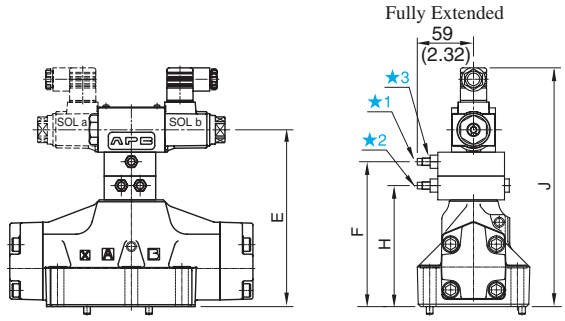
● DSHG-03- ✱✱✱-C1/C2/C1C2- N N1



● (S-)DSHG-04- ✱✱✱ -C1/C2/C1C2- N N1



● (S-)DSHG-06 10 - ✱✱✱-C1/C2/C1C2- N N1



★1. "C1" Choke Adj. Screw 6 (.24) Hex.
★2. "C2" Choke Adj. Screw 6 (.24) Hex.
★3. Lock Nut 12 (.47) Hex.

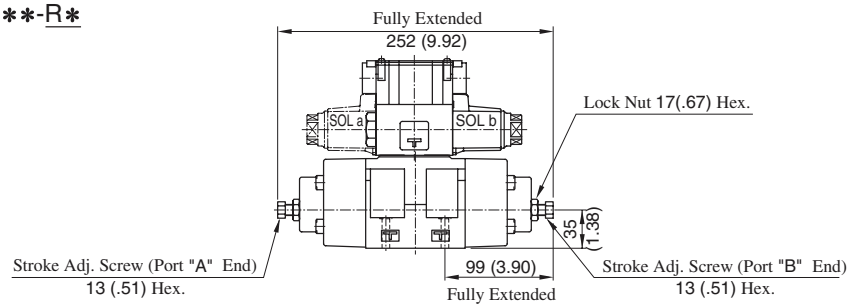
DIMENSIONS IN MILLIMETRES (INCHES)

Model Numbers	Dimensions mm (Inches)							
	C	D	E	F	H	J		
						AC SO L	DC SO L	R SOL
DSHG-03- ✱✱✱ -C1	198.8 (7.83)	180.5 (7.11)	133.5 (5.26)	100 (3.94)	—	198.5 (7.81)	209.5 (8.25)	212.5 (8.37)
DSHG-03- ✱✱✱ -C2				—	100 (3.94)			
DSHG-03- ✱✱✱ -C1C2	223.8 (8.81)	205.5 (8.09)	158.5 (6.24)	125 (4.92)	100 (3.94)	223.5 (8.80)	234.5 (9.23)	237.5 (9.35)
(S-) DSHG-04- ✱✱✱ -C1	204.8 (8.06)	186.5 (7.34)	139.5 (5.49)	106 (4.17)	—	204.5 (8.05)	215.5 (8.48)	218.5 (8.60)
(S-) DSHG-04- ✱✱✱ -C2				—	106 (4.17)			
(S-) DSHG-04- ✱✱✱ -C1C2	229.8 (9.05)	211.5 (8.33)	164.5 (6.48)	131 (5.16)	106 (4.17)	229.5 (9.04)	240.5 (9.47)	243.5 (9.59)
(S-) DSHG-06- ✱✱✱ -C1	225.8 (8.89)	207.5 (8.17)	160.5 (6.32)	127 (5.00)	—	225.5 (8.88)	236.5 (9.31)	239.5 (9.43)
(S-) DSHG-06- ✱✱✱ -C2				—	127 (5.00)			
(S-) DSHG-06- ✱✱✱ -C1C2	250.8 (9.87)	232.5 (9.15)	185.5 (7.30)	152 (5.98)	127 (5.00)	250.5 (9.86)	261.5 (10.30)	264.5 (10.41)
(S-) DSHG-10- ✱✱✱ -C1	288.8 (11.37)	270.5 (10.65)	223.5 (8.80)	190 (7.48)	—	288.5 (11.36)	299.5 (11.79)	302.5 (11.91)
(S-) DSHG-10- ✱✱✱ -C2				—	190 (7.48)			
(S-) DSHG-10- ✱✱✱ -C1C2	313.8 (12.35)	295.5 (11.63)	248.5 (9.78)	215 (8.46)	190 (7.48)	313.5 (12.34)	324.5 (12.78)	327.5 (12.89)

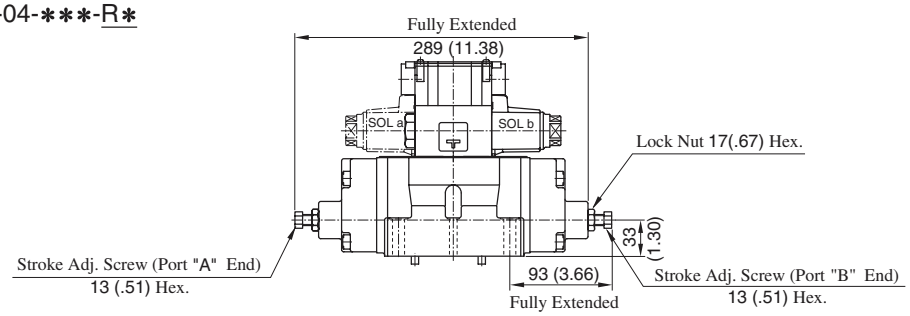
Options

Models with Stroke Adjustment

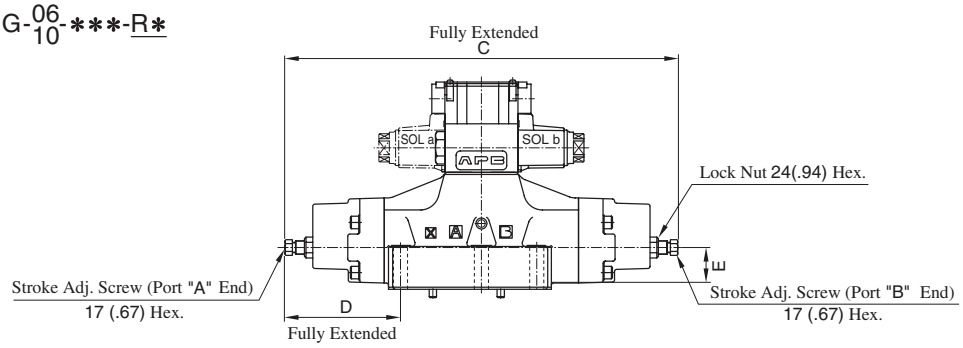
● DSHG-03-∗∗∗-R∗



● (S-)DSHG-04-∗∗∗-R∗



● (S-)DSHG-$\frac{06}{10}$-∗∗∗-R∗

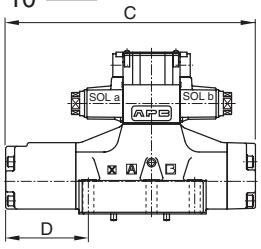


Model Numbers	C	D	E
(S-)DSHG-06-∗∗∗-R2	376 (14.80)	111 (4.37)	40 (1.57)
(S-)DSHG-10-∗∗∗-R2	558 (21.97)	164.5 (6.48)	65 (2.56)

DIMENSIONS IN MILLIMETRES (INCHES)

Pressure Centred Models

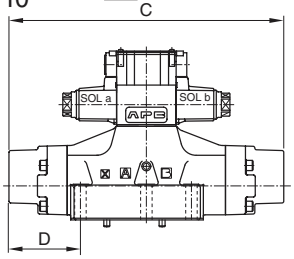
● (S-)DSHG-$\frac{06}{10}$-3H∗



Model Numbers	C	D
(S-)DSHG-06-3H∗	306.5 (12.07)	102 (4.02)
(S-)DSHG-10-3H∗	456 (17.95)	149.5 (5.89)

Models with Pilot Piston

● (S-)DSHG-$\frac{06}{10}$-∗∗∗-P∗



Model Numbers	C	D
(S-)DSHG-06-∗∗∗-P2	323 (12.72)	84 (3.31)
(S-)DSHG-10-∗∗∗-P2	479 (18.86)	125 (4.92)