SOLENOID CONTROLLED PILOT OPERATED DIRECTIONAL VALVES DSHG-01/03/04/06/10
PILOT OPERATED DIRECTIONAL VALVES DHG/04/06/10
MANUALLY OPERATED DIRECTIONAL VALVES DMG-01/03/04/06/10 DMT-03/06/10

DIRECTIONAL CONTROLS

General Information

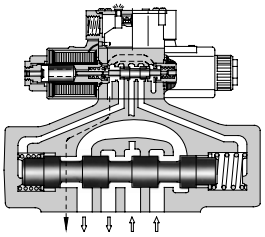
Up to 31.5 MPa (4570 PSI), 1100L/min (291 U.S.GPM)

E

Solenoid contorolled Pilot Operated Valves ..... Page 4

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**
  In these valves, the nominal size "04" can provide 300 L/min (79.3 U.S.GPM), "06" can provide 500 L/min (132 U.S.GPM) and "10" can provide 1100 L/min (291 U.S.GPM) in the maximum flow respectively and they can also withstand such a high pressure as 31.5 Mpa {4570 PSI} as the maximum operating pressure. With these features of high pressure and high flow, the valves can make the size or configuration of the equipment compact.

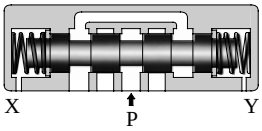


- **Low Pressure Drop**
  As the pressure drop of each size of the valve becomes minimal, the more of energy saving of the equipment is possible.

- **Easy Change of Pilot and Drain System**
  The change of the pilot from external to internal and the change of the drain from internal to external or viceversa can be done easily by putting on or removing the relevant plug on the valve.

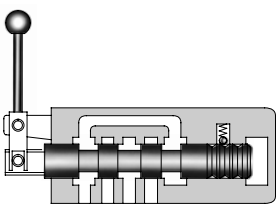
Pilot Operated Directional Valves ..... Page 34

These valves perform a change over of spool by hydraulic pilot and shift the direction of oil flow.



Manually Operated Directional Valves ..... Page 40

These valves may be used to manually shift the spool position and change the direction of oil flow.



Solenoids

(Only for Solenoid Controlled Pilot Operated Directional Valves)

Solenoid connectors (DIN Connector)

The solenoid connectors are conform to the international standard ISO 4400 (Fluid power systems and components-Three-pin electrical plug connectors-Characteristics and requirements).

AC Solenoids

50-60 Hz common service solenoids do not require rewiring when the applied frequency is changed.

DC Solenoids (Reputable K-Series)

These DC solenoids have surge absorbers for K-series functions. The three advantages of them are as mentioned below:-

1. Since surge voltage can be controlled to a very low figure, electric control devices, such as a computer, can be used without any interference like noise.
2. There being no spark between contacts, the life of the relay becomes longer.
3. Time lag for spool return after de-energisation of the solenoid is very short.

R Type Solenoids

These are rectifier and surge absorber incorporated direct current solenoids which can be used by connecting directly to the AC power source. They have, like other DC solenoids, such advantages that the sound in on-off operation is quite low and the coils are hardly burnt out even if the spool is stuck at the half way of its changeover for contaminant particles etc. Moreover, they can be used almost permanently without being affected by a surge voltage from the outside. Thus, they are the solenoids of high reliability and durability.

Insulation Class of Solenoid

Class H

Mounting

Mounting surface dimensions confrom to ISO 4401, Hydraulic fluild power-Four-port directional control valves-Mounting surfaces.

Model Numbers	ISO Code of Mounting Surface
DSHG-01 DMG-01	ISO 4401-AB-03-4-A
DMG-03	ISO 4401-AC-05-4-A
DSHG-03	ISO 4401-AC-05-4-A★
(S)-DSHG-04 DHG-04 DMG-04	ISO 4401-AD-07-4-A
(S)-DSHG-06 DHG-06 DMG-06	ISO 4401-AE-08-4-A
(S)-DSHG-10 DHG-10 DMG-10	ISO 4401-AF-10-4-A

★ The main ports conform to ISO 4401-AC-05-4-A. The pilot and drain ports conform to the ISO.

Hydraulic Fluids

Fluid Types

Any type of hydraulic fluid, listed in the table below can be used.

Type of Fluids	Remarks
Petroleum Base Oil	Use fluids equivalent to ISO VG32 or VG46.
Synthetic Fluids	Use phosphate ester or polyol ester fluid.When phosphate ester fluid is used, prefix "F-" to the model number because the special seals (fluororubber) are required to be used.
Water Containing Fluids	Use water-glycol fluids or W/O emulsion fluids.

Note) 1: For two types of manually operated directional valves, DMT-06, 06X and DMT-10, 10X, only petroleum base oils and polyol ester type fluids are available.
2: For use with hydraulic fluids other than those listed above, consult your Yuken representatives in advance.

Recommended Viscosity and Oil Temperatures

Always be sure to use hydraulic fluids within the stipulated conditions shown below:
Viscosity: 15 to 400 mm^2/s (77 to 1800 SSU), Temperature: -15 to +70°C (5 to 160°F)

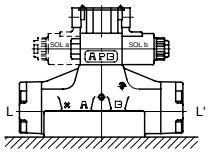
Control of Contamination

Due caution must be paid to maintaining control over contamination of the hydraulic fluids which may otherwise lead to breakdowns and shorten the life of the valve. Please maintain the degree of contamination within NAS 1638-Grade 12. Use 25 μm or finer line filter.

Instructions

Mounting Posture

In case No-spring detent type and No-spring type valves are used in the solenoid de-energised state, install the valve in such a way that the axis L-L' becomes horizontal to get the detent effect firmly. For the valve types other than the above, there are no restrictions on the mounting posture.



Solenoid Energisation

In no-spring type, either solenoid of the two should be energised continuously to avoid malfunction.
For double solenoid valves do not energise both at the same time as it will result in coils burning out.

Valve Tank Port

Avoid connecting the valve tank port to a line with possible surge pressure.
Piping end of tank line should be submerged in oil.

Pilot Drain Port for Solenoid Controlled Pilot Operated Directional Valve

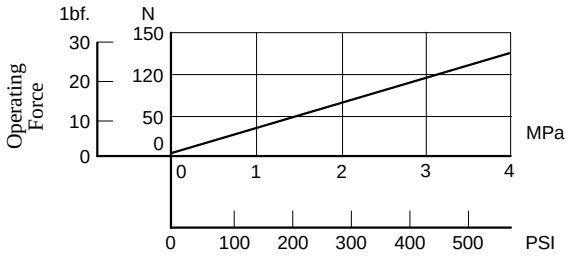
Avoid connecting the valve pilot drain port to a line with possible surge pressure.
Piping end of drain should be submerged in oil.

Shockless Type

In order to benefit from a shockless operation, it is necessary to fill the drain line with operating oil.
Only after the tank line has been filled with operating oil, start the operation of the valve on a regular basis.

Operating Force for Manual Override Push Pin

Please note that as the back pressure of the drain line rises, manually override push pin turns hard to operate (See the graph below).



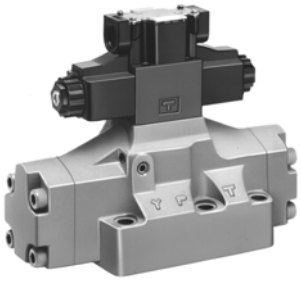
Drain Line Back Pressure

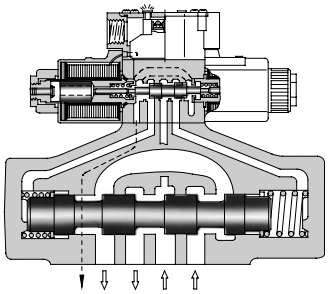
E

Solenoid Controlled Pilot Operated Directional Valves
DSHG-01/03/04/06/10
S-DSHG-04/06/10
Sub-plate Mounting

Specifications

DIRECTIONAL CONTROLS





Specifications

Valve Type	Model Numbers	Max. Flow ★1 L/min (U.S.GPM)	Max. Operating Pressure MPa(PSI)	Max. Pilot Pressure MPa(PSI)	Min ★2 Required Pilot Pres. MPa(PSI)	Max. T-Line Back Pressure MPa(PSI)		Max. Change-over Frequency min^{-1}(Cycles/Min)			Approx. Mass kg(1bs.)
						Ext.Drain	Int.Drain	AC	DC	R	
Standard Type	DSHG-01-3C∗-∗-13/1380/1390	40 (10.6)	21 (3050)	21 (3050)	1.0 (150)	16 (2320)	16 (2320)	120	120	120	3.5 (7.7)
	DSHG-01-2B∗-∗-13/1380/1390										2.9 (6.4)
	DSHG-03-3C∗-∗-13/1390	160 (42.3)	25 (3630)	25 (3630)	0.7 (100)	16 (2320)	16 (2320)	120	120	120	7.2(15.9)
	DSHG-03-2N∗-∗-13/1390										7.2(15.9)
	DSHG-03-2B∗-∗-13/1390										6.6(14.6)
	(S-)DSHG-04-3C∗-∗-51/5190	300 (79.3)	31.5 (4570)	25 (3630)	0.8 (120)	21 (3050)	16 (2320)	120	120	120	8.8(19.4)
	(S-)DSHG-04-2N∗-∗-51/5190										8.8(19.4)
	(S-)DSHG-04-2B∗-∗-51/5190										8.2(18.1)
Shockless Type	(S-)DSHG-06-3C∗-∗-52/5290	500 (132)	31.5 (4570)	25 (3630)	0.8 (120) ★3	21 (3050)	16 (2320)	120	120	120	12.7 (28)
	(S-)DSHG-06-2N∗-∗-52/5290										12.7 (28)
	(S-)DSHG-06-2B∗-∗-52/5290										12.1 (27)
	(S-)DSHG-06-3H∗-∗-52/5290			21 (3050)	1.0 (150)			110	110	110	13.5 (30)
	(S-)DSHG-10-3C∗-∗-42/4290	1100 (291)	31.5 (4570)	25 (3630)	1.0 (150) ★3	21 (3050)	16 (2320)	120	120	100	45.3(100)
	(S-)DSHG-10-2N∗-∗-42/4290							100	100	100	45.3(100)
	(S-)DSHG-10-2B∗-∗-42/4290			21 (3050)				60	60	50	44.7 (99)
	(S-)DSHG-10-3H∗-∗-42/4290										53.1(117)

★1. The maximum flow means the limited flow without inducing any abnormality to the operation (changeover) of the valve. For details, please refer to the "List of Standard Models and Maximum Flow" on pages 9 to 13.

★2. In case of internal drain type valve, the differential pressure between pilot pressure and back pressure at tank port should be kept more than the minimum pilot pressure.

★3. The minimum pilot pressure for the valve with pilot piston is 1.8 MPa (260 PSI).

Yuken can offer flanged connection valves described below. Consult Yuken 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)	
DSHF-24-∗∗∗-∗-28∗	1200 (317)	
DSHF-32-∗∗∗-∗-27∗	2400 (634)	

Solenoid Ratings

Valve Type	Electric source	Coil Type	Frequency (Hz)	Voltage (V)		Current & Power at Rated Voltage		
				Source Rating	Serviceable Range	Inrush (A) ★	Holding (A)	Power (W)
Standard Type	AC	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	

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

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.

CSA Approved Solenoid Valve

The "DSHG" series valve have been approved by the CSA(Candian Standards Association). consult us for details.

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-01-30	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-30	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-30	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.

Model Number Designation

F- Special Seals	S- Type	DSHG Series Number	-06 Valve Size	-2 No. of Valve Position	B Spool-Spring Arrangement	2 Spool Type	A Special Two Position Valve	-C2 Models with Pilot Choke Valve	-E Pilot Connection	T Drain Connection	-R2 Spool Control ★3 Modification (Omit if not required)	-A100 Coil Type	-C Manual Override of Pilot Valve	-H Bult-in Orifice for Pilot Line	-N Type of Electrical Conduit Connection	-52 Design Number	-* Design Standard	-L Models with Reverse Mtg. of Solenoid
F: For Phosphate Ester Type Fluids (Omit if not required)	**None:** Standard Type	**DSGH:** 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 **T:** Internal Drain	—	AC: **A100 , A200** **A120 , A240** DC: **D12 , D24** **D48** AC→DC **R100 , R200**	**None:** Manual Override Pin **C:** Push Button & Lock Nut	—	**None:** Terminal Box Type **N:** Plug-in Connector Type **N1:** ★4 Plug-in Connector with Indicator Light	13	**None:** Japanese Standard "JIS" **90:** N. American Design Standard	— **L** (Omit if not required)
				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)			**R2:** With Stroke Adjustment, Both Ends **RA:** With Stroke Adjustment, Port "A" End **RB:** With Stroke Adjustment, Port "B" End			—		13		
				2	**N:** No-Spring	2 3 4 40 7												
					B: Spring Offset													
	None: Standard Type **S:** Shockless Type		**04**	3	**C:** Spring Centred	2, 4, 40 60, 10, 12 (3, 5, 6 ★1) 7, 9, 11	—					AC: **A100 , A200** **A120 , A240** DC: **D12 , D24** **D48** AC→DC **R100 , R200**		—		51	**None:** Japanese Standard "JIS" & European Design Standard **80:** European Design Standard (Applicable only for DSHG-01) **90:** N. American Design Standard	— **L** (Omit if not required)
				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	**C:** Spring Centred **H:** Pressure Centred	2, 4, 40 60, 10, 12 (3, 5, 6 ★1) 7, 9, 11	—				**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		52		—
				2	**N:** No-Spring	2, 4, 40 (3, 7) ★1	**A** ★2 (Omit if not required)											
			10	2	**B:** Spring Offset	2, 4, 40 (3, 7) ★1	**A** ★2 **B** ★2 (Omit if not required)							—		42	**90:** N. American Design Standard	**L** (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	No restrictions in the combination on us
	Internal Drain (T)	

★ 1. Shckless 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 14. 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. N1 stands for Plug-in connector with solenoid indicator light. N1 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.

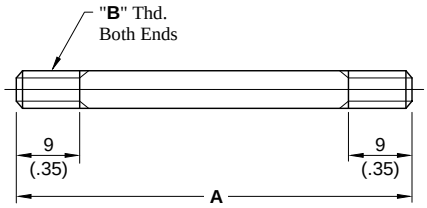
In the table above, the symbols and numbers highlighted with shade represent the optional extras. The valves with model number having such optional extras are handles as options, therefore please confirm the time of delivery with us before ordering.

Mounting Bolt

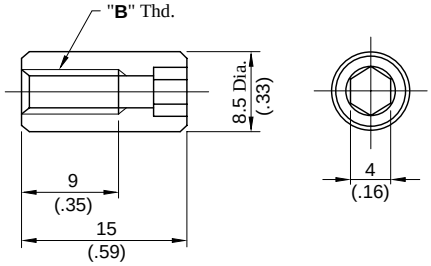
Model Numbers	Mouting Bolt				
	Name	Japanese Standard "JIS" European Design Standard	N. American Design Standard	Qty.	Tightening Torque Nm (in. 1bs.)
DSHG-01	Mtg. Bolt Kit ★3	MBK-01-01-30 ★1 MBK-01-02-30 ★2	MBK-01-01-3090 ★1 MBK-01-02-3090 ★2	1 set	5 - 6 (43 - 52)
DSHG-03	Soc. Hd. Cap Screw	M6 × 35 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)	

E

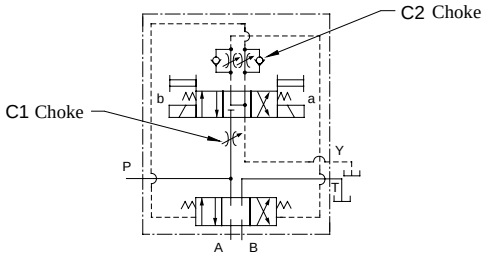
Options

Models with Pilot Choke Adjustment

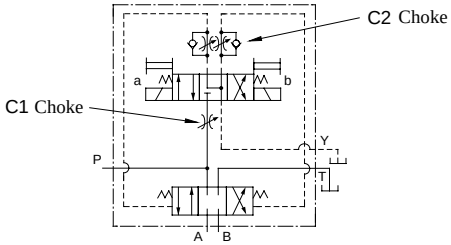
When the adjustment screw is turned clockwise, changeover speed of the main spool becomes slow. In case of the spring centred valves in particular, making slow of the returning speed of the main spool to the neutral position is possible with a C2 choke valve. These choke valves can be used in combination with the valves of spring centred, no-spring, offset, pressure centred and the valves with stroke adjustment.

Graphic Symbols (Ex.: Spring Centred)

- DSHG-01,06,10



- DSHG-03, 04

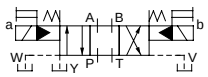


Models with Pilot Piston(P2, PA, PB)

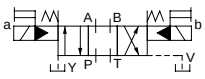
The valves with a pilot piston can be used when the high speed changeover of the main spool is required. However, please not that in case of spring centered valves, there is no change in the returning speed of the main spool to the neutral position even with the pilot piston.

Graphic Symbols (Ex.: Spring Centred)

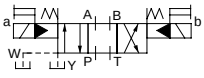
- "P2" Models



- "PA" Models



- "PB" Models

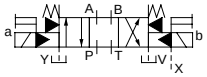


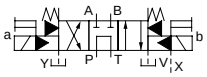
Pressure Centred Models (3H∗)

The pressure centered type can be used when the returning of the main spool to the neutral position is required to be firmly.

Graphic Symbols (Ex.: External Pilot-External Drain)

(Only for 3H6, 3H60)



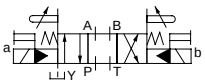


Models with Stroke Adjustment (R2, RA, RB)

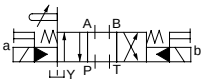
When the adjustment screw is screwed in , the main spool stroke becomes short and flow rate reduces.

Graphic Symbols (Ex.: Spring Centred)

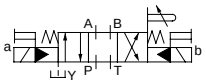
- "R2" Models



- "RA" Models



- "RB" Models



Additional Mass of Options

Add the mass described below to the mass of standard models on page 4, if options are required.

kg (1bs.)

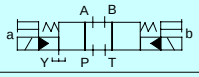
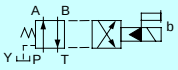
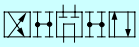
Model Numbers	Model with Pilot Choke Adj.		Models with Pilot Piston		Models with Stroke Adj.	
	C1, C2	C1C2	P2	PA PB	P2	PA PB
DSHG-03	0.65(1.4)	1.3(2.9)	—	—	0.6(1.3)	0.3 (.7)
(S-)DSHG-04	0.65(1.4)	1.3(2.9)	—	—	1.0(2.2)	0.5(1.1)
(S-)DSHG-06	0.65(1.4)	1.3(2.9)	1.0(2.2)	0.5(1.1)	1.2(2.6)	06(1.3)
(S-)DSHG-10	0.65(1.4)	1.3(2.9)	3.6(7.9)	1.8(4.0)	3.7(8.2)	1.85(4.1)

Options on Pilot Valve

The same options to DSG-01 series valves are available. Please refer to the Catalogue No. Pub. EC-0402 for the details.

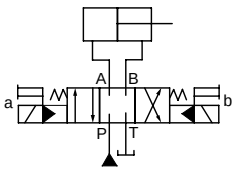
Solenoid Controlled Pilot Operated Directional Valves DSHG-01

List of Standard Models and Maximum Flow

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)				

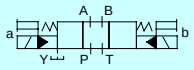
Notes) 1. Max. flow shows value at pilot pressure more than 1 MPa (150 PSI)

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.

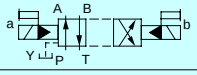
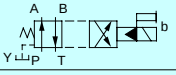


E

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)

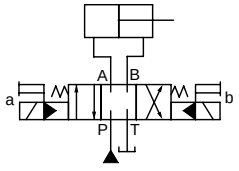
Notes: 1. The relation between max. flow and pilot pressure in the table above is as shown below.

(Example)

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

160 (42.3)	85 (22.5)	Pilot Pressure at 0.7 MPa (100 PSI).
	160 (42.3)	Pilot Pressure at 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 Standard Models and Maximum Flow

● Three Positions

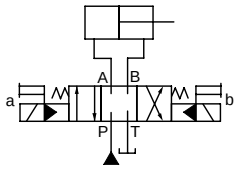
Spool Type	Spring Centred				
	Graphic Symbol	Maximum Flow L/min (U.S.GPM)			
	Model Numbers	10 MPa (1450 PSI)	16 MPa (2320 PSI)	25 MPa (3630 PSI)	31.5 MPa (4570 PSI)
"2"	DSHG-04-3C2	300 (79.3)	300 (79.3)	200 (52.8)	145 (38.3)
	(S-)DSHG-04-3C2	300 (79.3)	250 (66.1)	120 (31.7)	110 (29.1)
"3"	DSHG-04-3C3	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

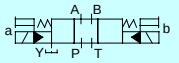
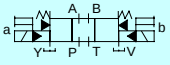
Spool Type	No-Spring					Spring Offset				
	Graphic Symbol	Maximum Flow L/min (U.S.GPM)				Graphic Symbol	Maximum Flow L/min (U.S.GPM)			
	Model Numbers	10 MPa (1450 PSI)	16 MPa (2320 PSI)	25 MPa (3630 PSI)	31.5 MPa (4570 PSI)	Model Numbers	10 MPa (1450 PSI)	16 MPa (2320 PSI)	25 MPa (3630 PSI)	31.5 MPa (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).

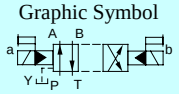
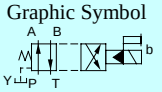
2. Max. flow in the table above represents the value in the flow condition of P → A → B → T (or P → B → A → T) as shown in the circuit diagram right.
In case the valve is used in the condition that either A or B port is blocked, the maximum flow differs according to a hydraulic circuit, therefore, please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



● 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)

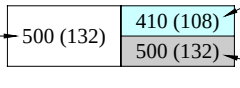
● Two Positions

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)

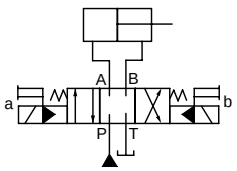
Maximum flow rate is constant regardless of pilot pressure.
Pilot Pressure more than 0.8 MPa (120 PSI).
In case pressure centred models, pilot pressure is more than 1 MPa (150 PSI).



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.



Solenoid Controlled Pilot Operated Directional Valves DSHG-10 / S-DSHG-10

List of Standard Models and Maximum Flow

● 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)

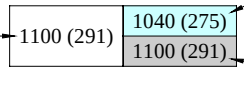
● Two Positions

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)

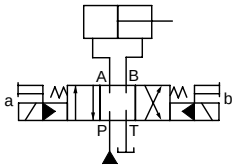
Maximum flow rate is constant regardless of pilot pressure.
Pilot Pressure more than 1 MPa (150 PSI).



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.

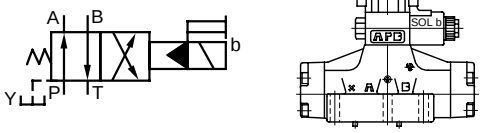


Solenoid Controlled Pilot Operated Directional Valves
DSHG-01 / 03 / 04 / 06 / 10
S-DSHG-04 / 06 / 10

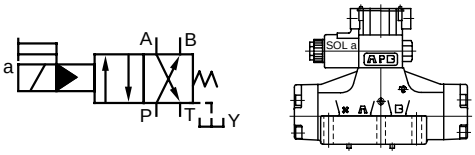
Reverse Mtg. of Sol. / Special 2-Position Valve

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

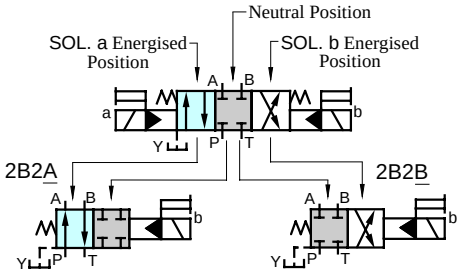


Reverse Mtg. of Solenoid ("L")

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

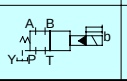
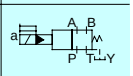
Besides the use of the standard 2-position valves aforementioned in the "List of Standard Models and Maximum Flow", the 3-position valves also can be used as the 2-position valves using the two of their three positions. In this case, there are two kinds of the valve available. One is the valve using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

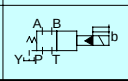
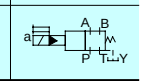
(Example) In case of Spool Type "2"

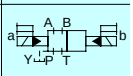


"A": Use of Neutral and SOL. a Energised Position

"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		

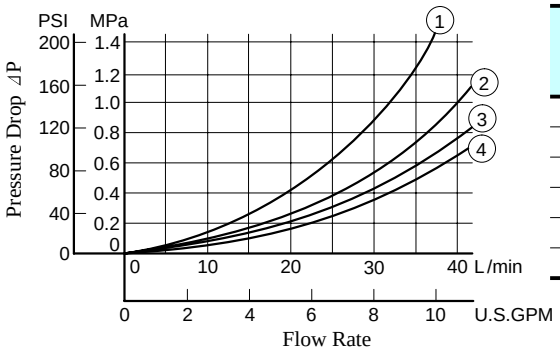
Model Numbers	Graphic Symbols	
	Standard Mtg.	Reverse Mtg. Type
04 DSHG-06-2B∗B 10		
(S-)DSHG-∗-2B2B		
DSHG-∗-2B3B		
(S-)DSHG-∗-2B4B		
(S-)DSHG-∗-2B40B		
DSHG-∗-2B5B		
DSHG-∗-2B6B		
(S-)DSHG-∗-2B60B		
DSHG-∗-2B7B		
DSHG-∗-2B9B		
(S-)DSHG-∗-2B10B		
DSHG-∗-2B11B		
(S-)DSHG-∗-2B12B		

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	

Preessure Drop

Pressure drop curves based on viscosity of 35 mm^2/s (164 SSU) and specific gravity of 0.850.

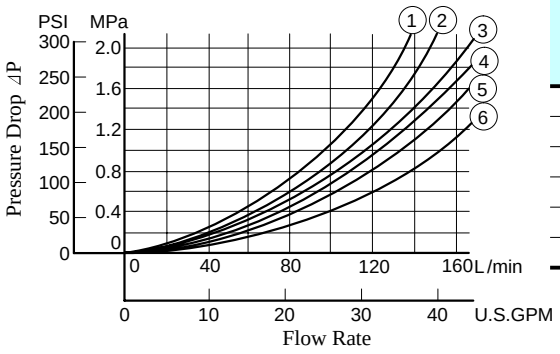
DSHG-01



DSHG-01

Spool Type	Pressure Drop Curve Numbers					Spool Type	Pressure Drop Curve Numbers				
	P→A	B→T	P→B	A→T	P→T		P→A	B→T	P→B	A→T	P→T
2	③	②	③	②	—	7	③	②	③	②	—
3	④	②	④	②	②	9	④	②	④	②	—
4	③	②	③	②	—	10	③	②	③	②	—
40	③	②	③	②	—	11	③	②	③	②	—
5	③	②	③	②	①	12	③	②	③	②	—
60	③	②	③	②	①						

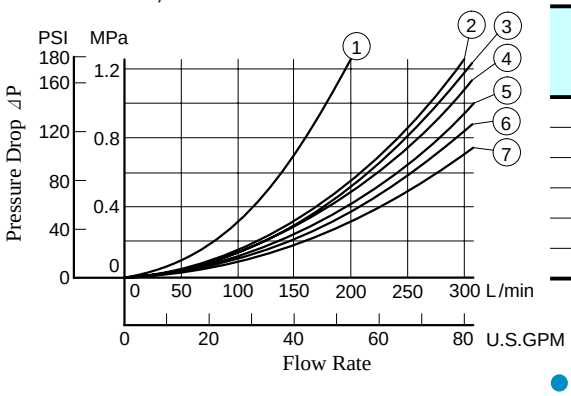
DSHG-03



DSHG-03

Spool Type	Pressure Drop Curve Numbers					Spool Type	Pressure Drop Curve Numbers				
	P→A	B→T	P→B	A→T	P→T		P→A	B→T	P→B	A→T	P→T
2	③	③	④	④	—	7	③	③	④	④	—
3	⑤	⑤	⑤	⑥	④	9	⑥	③	⑥	④	—
4	③	⑤	④	⑥	—	10	③	⑤	④	④	—
40	③	③	④	④	—	11	⑥	③	④	④	—
5	⑥	③	④	⑥	②	12	③	③	④	⑥	—
60	③	③	④	④	①						

DSHG-04, S-DSHG-04



DSHG-04

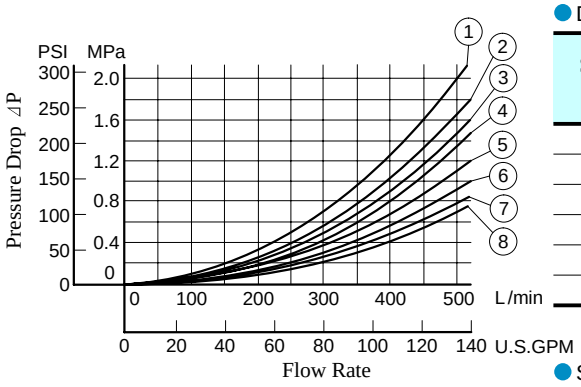
Spool Type	Pressure Drop Curve Numbers					Spool Type	Pressure Drop Curve Numbers				
	P→A	B→T	P→B	A→T	P→T		P→A	B→T	P→B	A→T	P→T
2	⑤	④	⑤	⑥	—	60	⑦	⑤	⑦	⑦	②
3	⑤	③	⑤	⑤	⑦	7	⑤	④	⑤	⑥	—
4	⑤	③	⑤	⑤	—	9	⑤	④	⑤	⑥	—
40	⑤	④	⑤	⑥	—	10	⑤	②	⑤	⑥	—
5	⑦	④	⑤	⑤	⑤	11	⑥	④	⑤	⑥	—
6	⑤	③	⑤	⑥	①	12	⑤	④	⑤	⑤	—

S-DSHG-04

Spool Type	Pressure Drop Curve Numbers					Spool Type	Pressure Drop Curve Numbers				
	P→A	B→T	P→B	A→T	P→T		P→A	B→T	P→B	A→T	P→T
2	②	②	②	④	—	60	⑥	④	⑥	⑦	②
4	②	③	②	⑤	—	10	②	②	②	④	—
40	②	④	②	⑥	—	12	②	②	②	⑤	—

E

● DSHG-06, S-DSHG-06



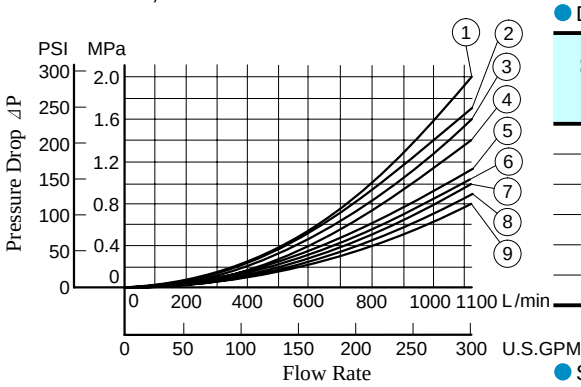
● DSHG-06

Spool Type	Pressure Drop Curve Numbers					Spool Type	Pressure Drop Curve Numbers				
	P→A	B→T	P→B	A→T	P→T		P→A	B→T	P→B	A→T	P→T
2	⑧	⑤	⑧	⑦	—	60	⑥	⑤	⑥	⑦	①
3	⑥	④	⑥	⑦	④	7	⑥	④	⑥	⑦	—
4	⑧	⑤	⑧	⑦	—	9	⑥	⑤	⑥	⑦	—
40	⑧	⑤	⑧	⑦	—	10	⑧	⑤	⑧	⑦	—
5	⑧	④	⑤	⑦	①	11	⑧	④	⑤	⑦	—
6	⑤	③	⑤	④	①	12	⑧	⑤	⑧	⑦	—

● S-DSHG-06

Spool Type	Pressure Drop Curve Numbers					Spool Type	Pressure Drop Curve Numbers				
	P→A	B→T	P→B	A→T	P→T		P→A	B→T	P→B	A→T	P→T
2	⑥	①	⑥	②	—	60	⑥	②	⑥	③	①
4	⑥	②	⑥	②	—	10	⑧	⑤	⑧	⑦	—
40	⑧	⑤	⑧	⑦	—	12	⑧	⑤	⑧	⑦	—

● DSHG-10, S-DSHG-10



● DSHG-10

Spool Type	Pressure Drop Curve Numbers					Spool Type	Pressure Drop Curve Numbers				
	P→A	B→T	P→B	A→T	P→T		P→A	B→T	P→B	A→T	P→T
2	⑨	⑥	⑨	⑧	—	60	⑧	⑤	⑧	⑤	③
3	⑦	⑥	⑦	⑦	⑤	7	⑦	⑥	⑦	⑦	—
4	⑨	⑥	⑨	⑥	—	9	⑦	⑥	⑦	⑧	—
40	⑨	⑥	⑨	⑧	—	10	⑨	⑤	⑨	⑧	—
5	⑨	⑥	⑧	⑥	①	11	⑨	⑥	⑧	⑦	—
6	⑤	③	⑤	②	②	12	⑨	⑦	⑨	⑥	—

● S-DSHG-10

Spool Type	Pressure Drop Curve Numbers					Spool Type	Pressure Drop Curve Numbers				
	P→A	B→T	P→B	A→T	P→T		P→A	B→T	P→B	A→T	P→T
2	⑧	③	⑧	④	—	60	⑧	④	⑧	④	②
4	⑧	⑤	⑧	⑥	—	10	⑨	⑤	⑨	⑧	—
40	⑨	⑥	⑨	⑧	—	12	⑨	⑦	⑨	⑥	—

● For any other viscosity, multiply the factors in the table below.

Viscosity	mm^2/s	15	20	30	40	50	60	70	80	90	100
	SSU	77	98	141	186	232	278	324	371	417	464
Factor		0.81	0.87	0.96	1.03	1.09	1.14	1.19	1.23	1.27	1.30

● For any other specific gravity (G'), the pressure drop (⊿P') may be obtained from the formula right.

$$\Delta P' = \Delta P(G'/0.850)$$

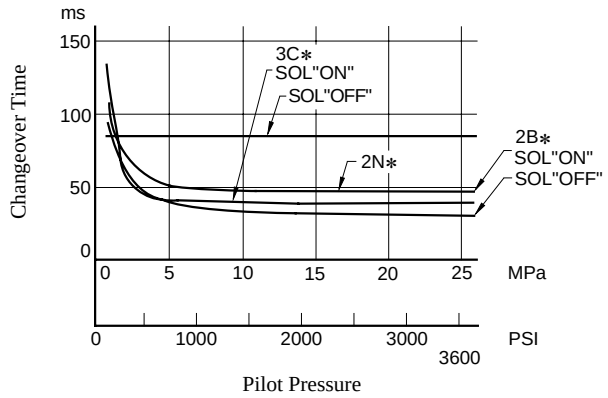
Typical Changeover Time

Changeover time varies according to oil viscosity, spool type and hydraulic circuit.

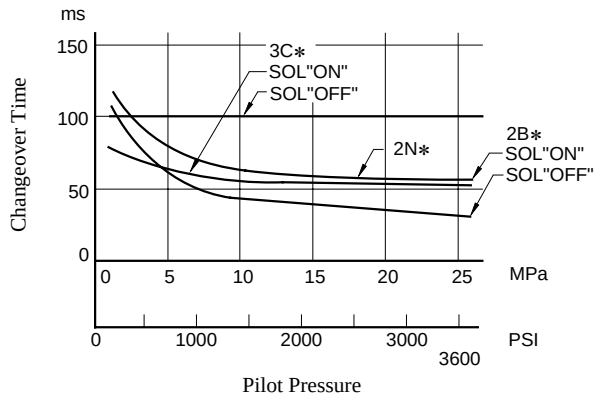
- Test Conditions

Coil Type : D∗(Models with DC solenoids)
Voltage : Rated Voltage
Oil Viscosity : 35 mm^2/s (164 SSU)

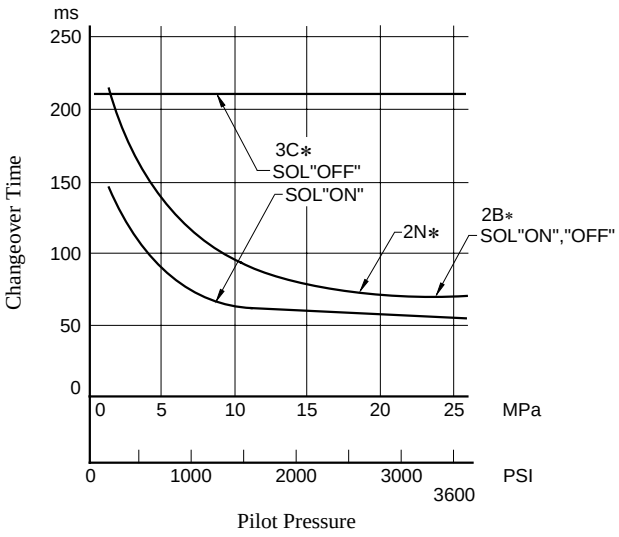
DSHG-04



DSHG-06



DSHG-10



E

Solenoid Controlled Pilot Operated Directional Valves DSHG-01

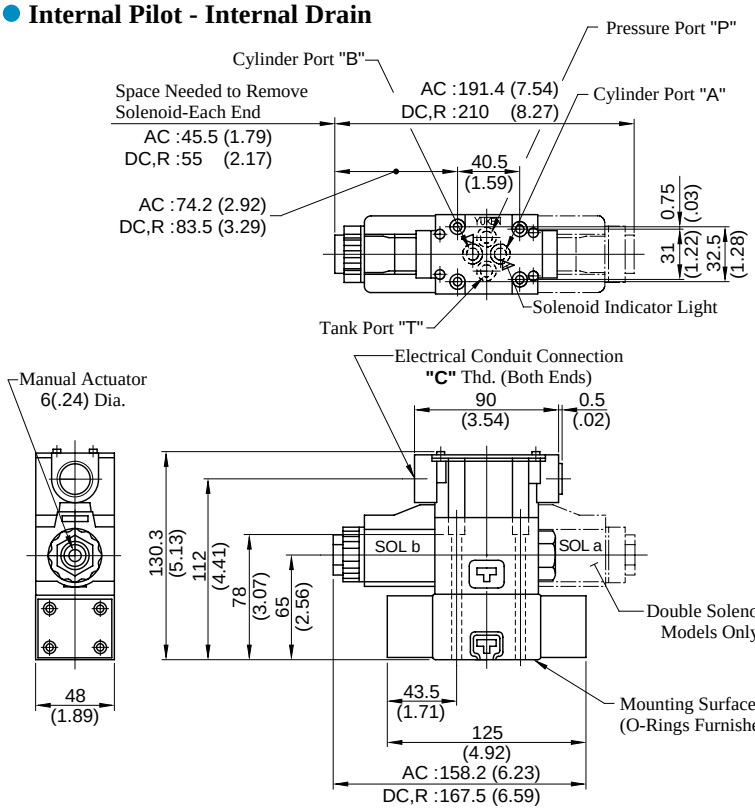
Installation Drawing

DIRECTIONAL CONTROLS

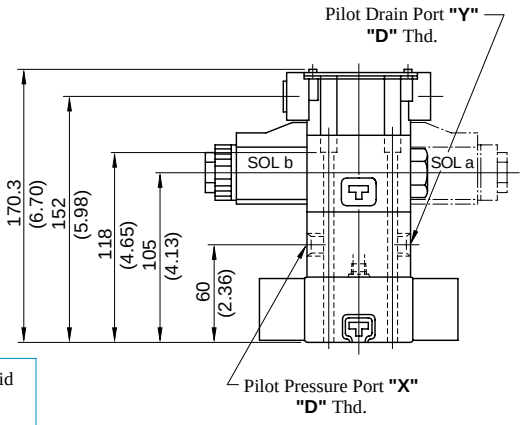
Mounting surface: ISO 4401-AB-03-4-A

Terminal Box type: DSHG-01-∗∗∗-∗-13/1390

● Internal Pilot - Internal Drain



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

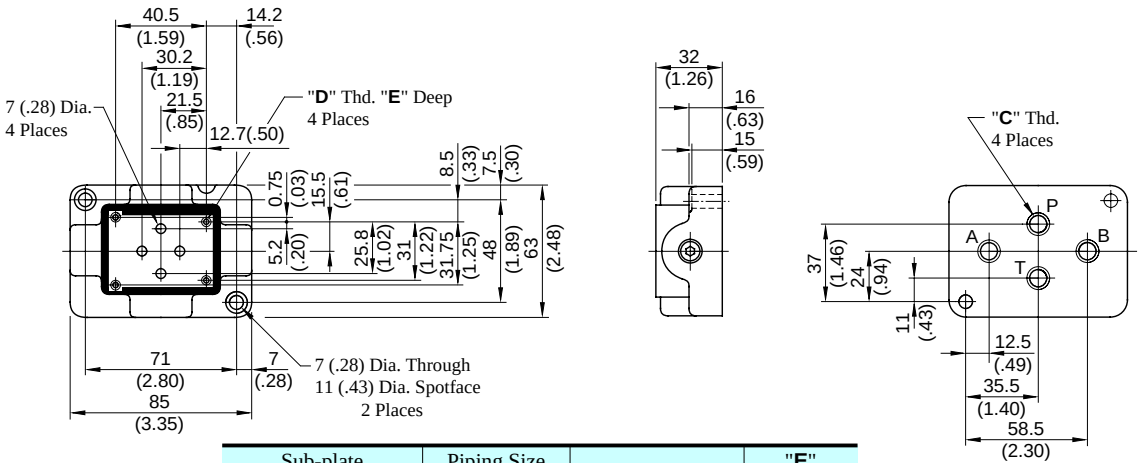


- For other dimensions, refer to "Internal Pilot Internal Drain".

Model Numbers	"C" Thd.	"D" Thd.
DSHG-01-∗∗∗-∗-13	G 1/2	Rc 1/4
DSHG-01-∗∗∗-∗-1390	1/2 NPT	1/4 NPT

DIMENSIONS IN MILLIMETRES (INCHES)

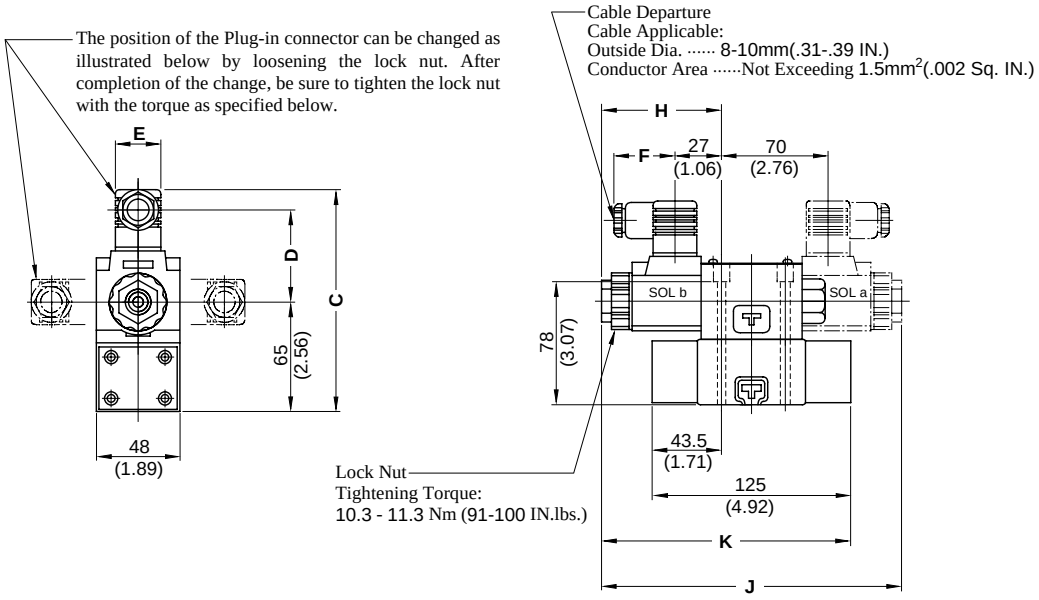
Sub- plates
DSGM-01∗-30/3080/3090



Sub-plate Model Numbers	Piping Size "C" Thd.	"D" Thd.	"E" mm (IN.)
DSGM-01-30	Rc 1/8	M5	10 (.39)
DSGM-01-3080	1/8 BSP.F		
DSGM-01-3090	1/8 NPT	No. 10-24 UNC	12 (.47)
DSGM-01X-30	Rc 1/4	M5	10 (.39)
DSGM-01X-3080	1/4 BSP.F		
DSGM-01X-3090	1/4 NPT	No. 10-24 UNC	12 (.47)
DSGM-01Y-30	Rc 3/8	M5	10 (.39)
DSGM-01Y-3090	3/8 NPT	No. 10-24 UNC	12 (.47)

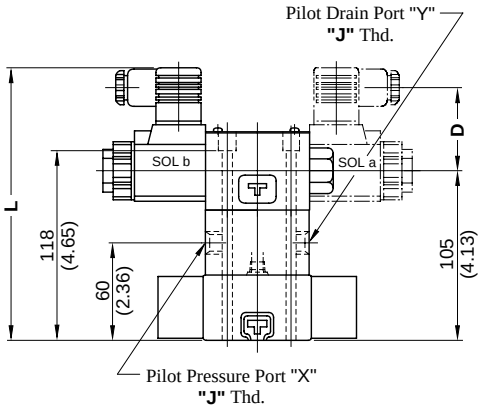
Plug-in Connector Type: DSHG-01-∗∗∗-∗-$^{N}_{N1}$-13/1380/1390

● Internal Pilot-Internal Drain



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

DIMENSIONS IN MILLIMETRES (INCHES)



Model Numbers	"J" Thd.
DSHG-01-∗∗∗-∗-N∗-13	Rc 1/4
DSHG-01-∗∗∗-∗-N∗-1380	1/4 BSP.F
DSHG-01-∗∗∗-∗-N∗-1390	1/4 NPT

Model Numbers	Dimensions mm (Inches)							
	C	D	E	F	H	J	K	L
DSHG-01-∗∗∗-∗-A∗-N/N1	130 (5.12)	53 (2.09)	27.5 (1.08)	39 (1.54)	74.2 (2.92)	191.4 (7.54)	158.2 (6.23)	170 (6.69)
DSHG-01-∗∗∗-∗-D∗-N/N1	141 (5.55)	64 (2.52)	27.5 (1.08)	39 (1.54)	83.5 (3.29)	210 (8.27)	167.5 (6.59)	181 (7.13)
DSHG-01-∗∗∗-∗-R∗-N	144 (5.67)	57.2 (2.25)	34 (1.34)	53 (2.09)				184 (7.24)

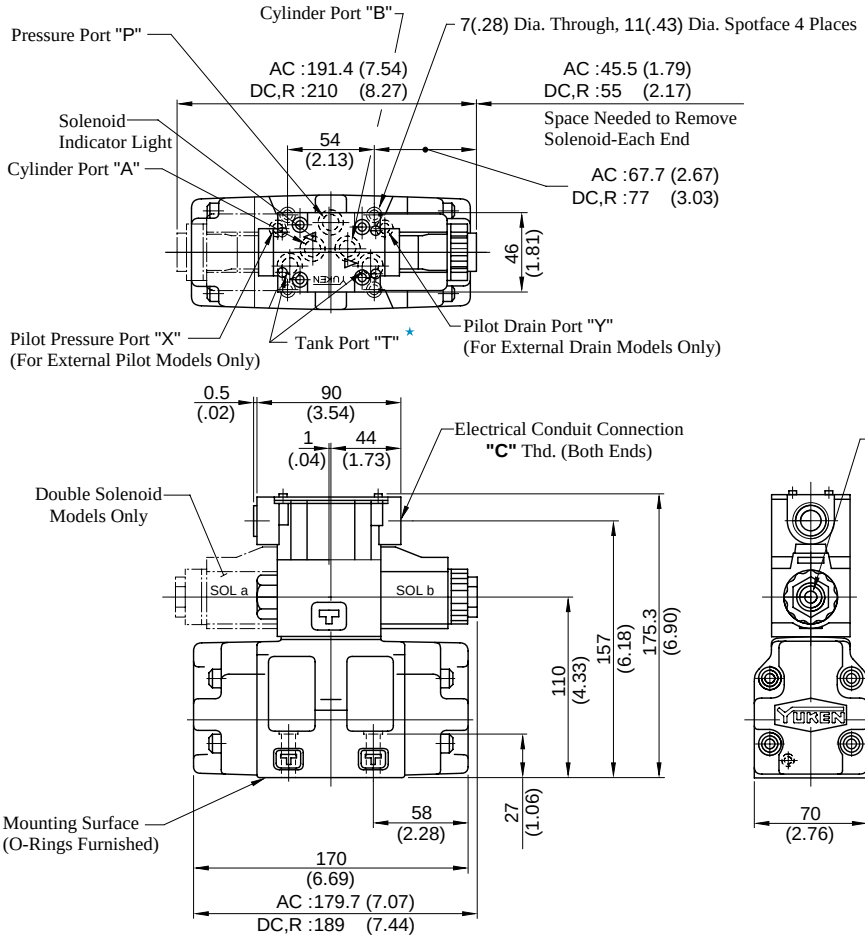
● For other dimensions, refer to "Terminal Box Type".

Solenoid Controlled Pilot Operated Directional Valves DSHG-03

Installation Drawing

Terminal Box Type: DSHG-03-∗∗∗-∗-13/1390

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

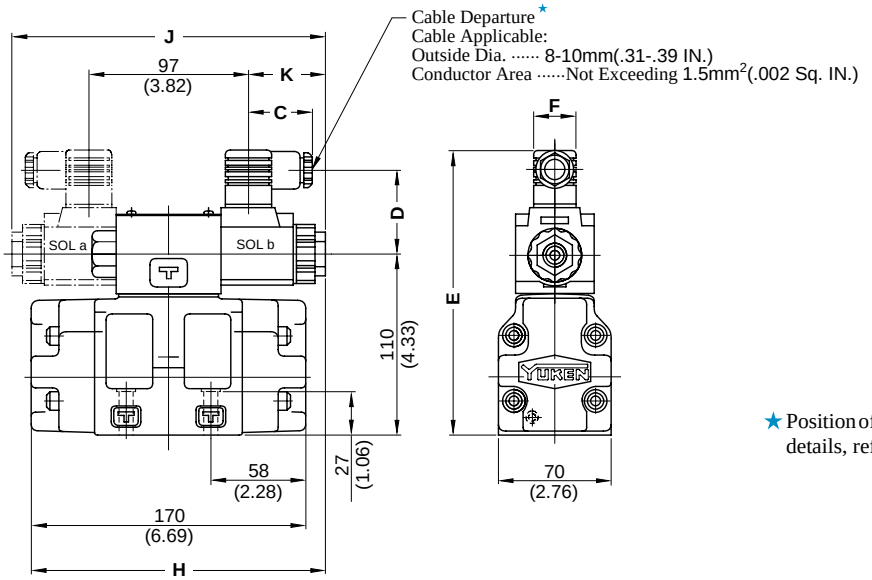


Model Numbers	"C" Thd.
DSHG-03-∗∗∗-∗-13	G 1/2
DSHG-03-∗∗∗-∗-1390	1/2 NPT

★ 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-∗∗∗-∗-$\frac{N}{N1}$-13/1390



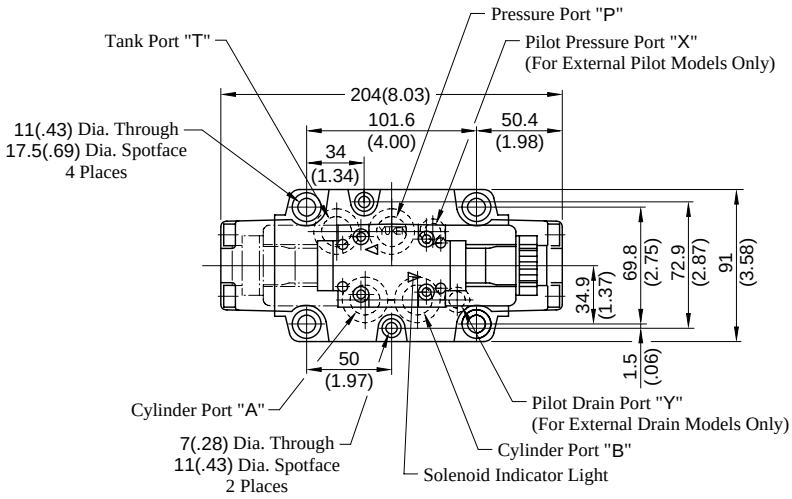
★ Position of cable departure can be changed. For details, refer to DSHG-01 valve on page 19.

Model Numbers	Dimensions mm (Inches)						
	C	D	E	F	H	J	K
DSHG-03-∗∗∗-∗-A∗-N/N1	39 (1.54)	53 (2.09)	175 (6.89)	27.5 (1.08)	179.7 (7.07)	191.4 (7.54)	47.2 (1.86)
DSHG-03-∗∗∗-∗-D∗-N/N1	39 (1.54)	64 (2.52)	186 (7.32)	27.5 (1.08)	189 (7.44)	210 (8.27)	56.5 (2.22)
DSHG-03-∗∗∗-∗-R∗-N	53 (2.09)	57.2 (2.25)	189 (7.44)	34 (1.34)			

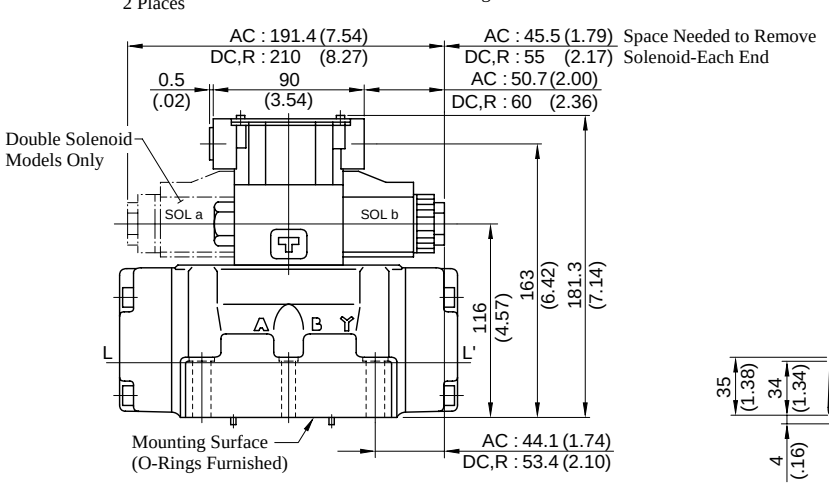
● For other dimensions, refer to "Terminal Box Type".

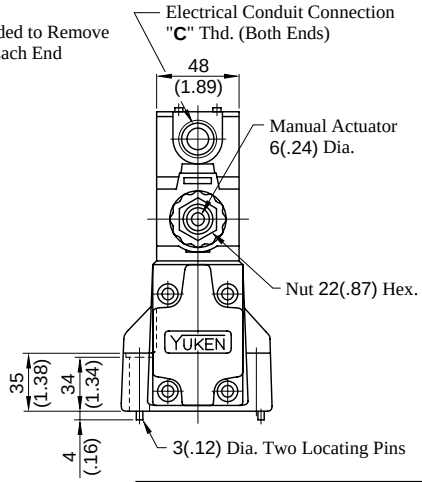
Terminal Box Type: (S-)DSHG-04-∗∗∗-∗-51/5190

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



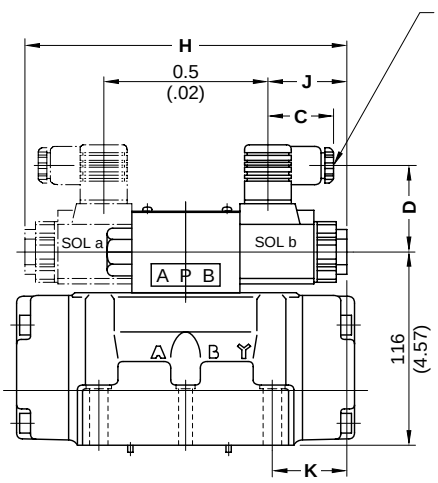
Model Numbers	"C" Thd.
(S-)DSHG-04-∗∗∗-∗-51	G 1/2
(S-)DSHG-04-∗∗∗-∗-5190	1/2 NPT

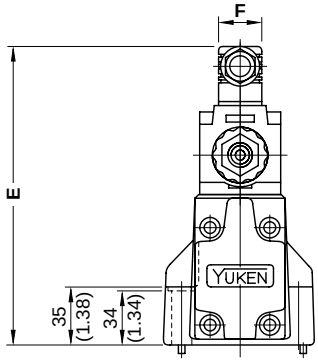




DIMENSIONS IN MILLIMETRES (INCHES)

Plug-in Connector Type: (S-)DSHG-04-∗∗∗-∗-$\frac{N}{N1}$-51/5190





★Position of cable departure can be changed. For details, refer to DSHG-01 valve on page 19.

Model Numbers	Dimensions mm (Inches)						
	C	D	E	F	H	J	K
(S-)DSHG-04-∗∗∗-A∗-N/N1	39 (1.54)	53 (2.09)	181 (7.13)	27.5 (1.08)	191.4 (7.54)	47.2 (1.86)	44.1 (1.74)
(S-)DSHG-04-∗∗∗-D∗-N/N1	39 (1.54)	64 (2.52)	192 (7.56)	27.5 (1.08)	210 (8.27)	56.5 (2.22)	53.4 (2.10)
(S-)DSHG-04-∗∗∗-R∗-N	53 (2.09)	57.2 (2.25)	195 (7.68)	34 (1.34)			

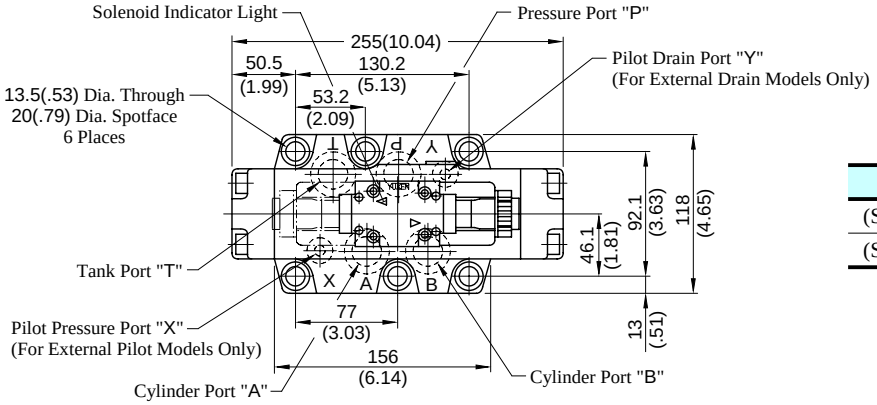
• For other dimensions, refer to "Terminal Box Type".

Solenoid Controlled Pilot Operated Directional Valves DSHG-06 / S-DSHG-06

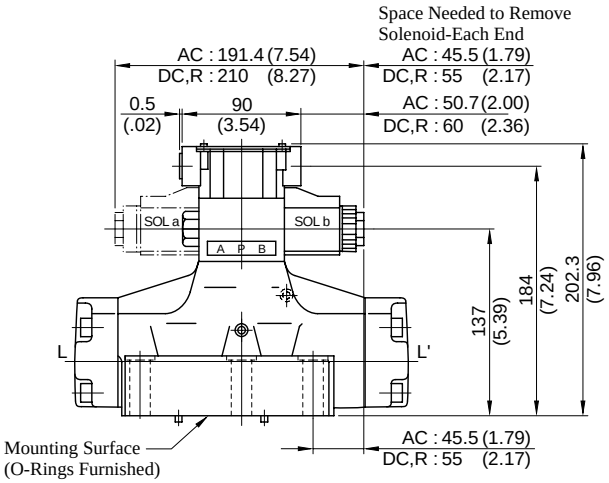
Installation Drawing

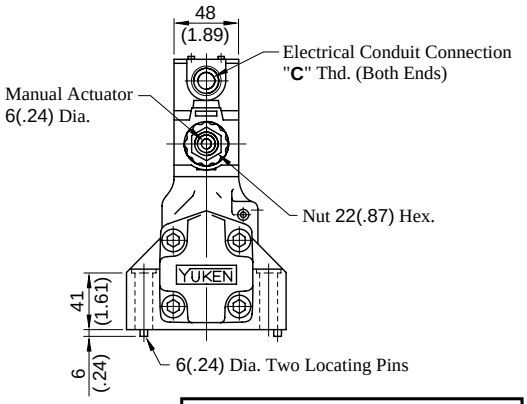
Mounting surface: ISO 4401-AE-08-4-A

Terminal Box Type: (S-)DSHG-06-∗∗∗-∗-52/5290



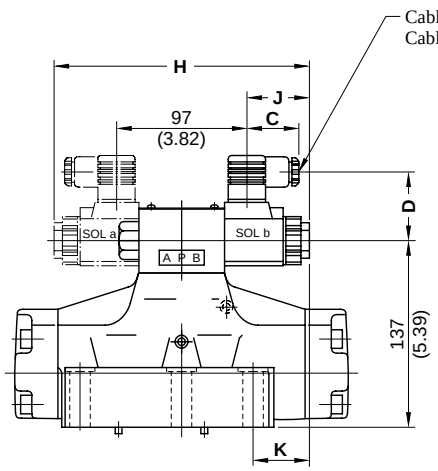
Model Numbers	"C" Thd.
(S-)DSHG-06-∗∗∗-∗-52	G 1/2
(S-)DSHG-06-∗∗∗-∗-5290	1/2 NPT

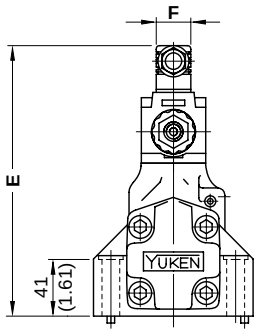




DIMENSIONS IN MILLIMETRES (INCHES)

Plug-in Connector Type: (S-)DSHG-06-∗∗∗-∗-$\frac{N}{N1}$-52/5290





★Position of cable departure can be changed. For details, refer to DSHG-01 valve on page 19.

Model Numbers	Dimensions mm (Inches)						
	C	D	E	F	H	J	K
(S-)DSHG-06-∗∗∗-A∗-N/N1	39 (1.54)	53 (2.09)	202 (7.95)	27.5 (1.08)	191.4 (7.54)	47.2 (1.86)	42.7 (1.68)
(S-)DSHG-06-∗∗∗-D∗-N/N1	39 (1.54)	64 (2.52)	213 (8.39)	27.5 (1.08)	210 (8.27)	56.5 (2.22)	52 (2.05)
(S-)DSHG-06-∗∗∗-R∗-N	53 (2.09)	57.2 (2.25)	216 (8.50)	34 (1.34)			

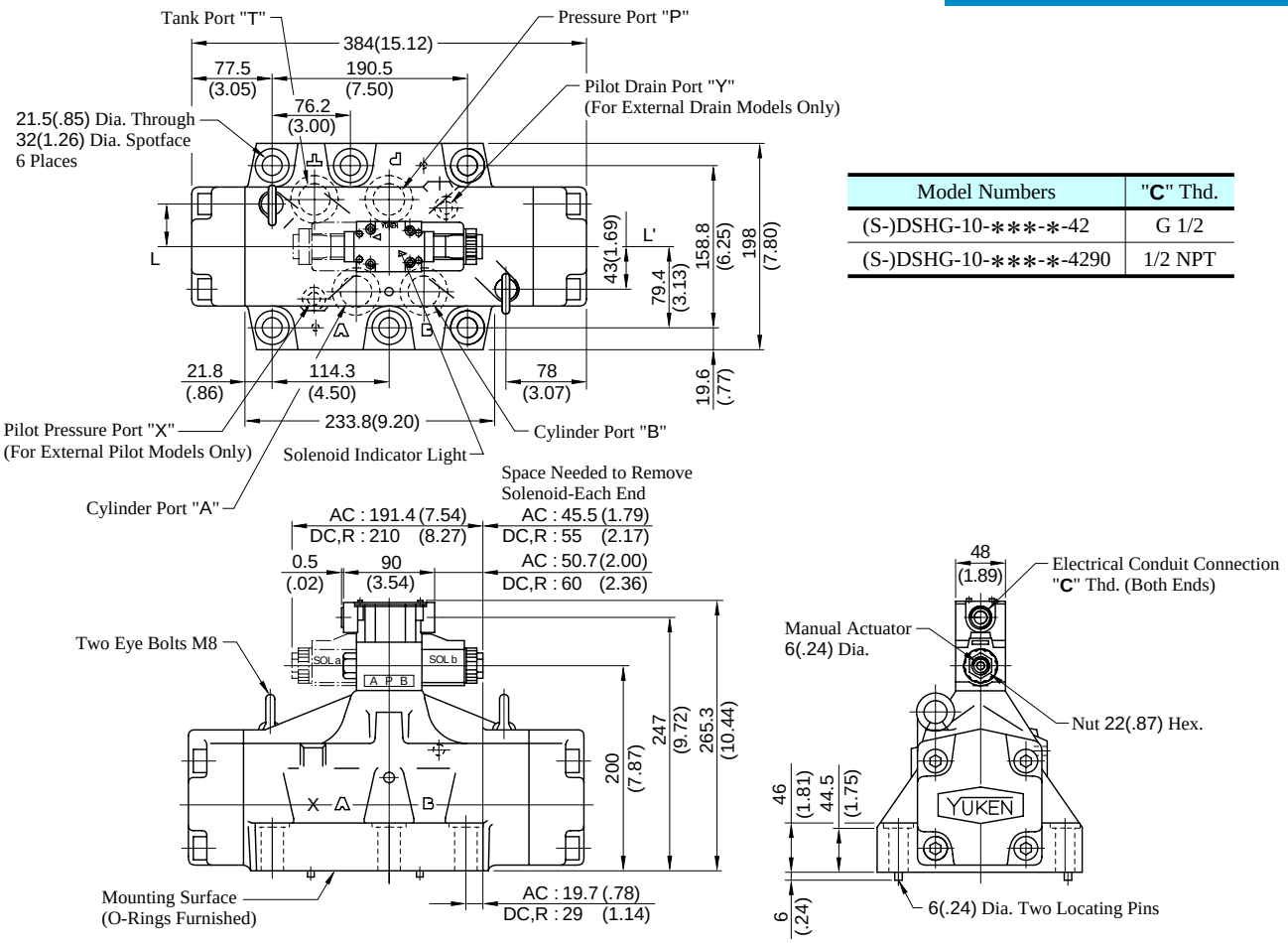
• For other dimensions, refer to "Terminal Box Type".

Solenoid Controlled Pilot Operated Directional Valves DSHG-10 / S-DSHG-10

Installation Drawing

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

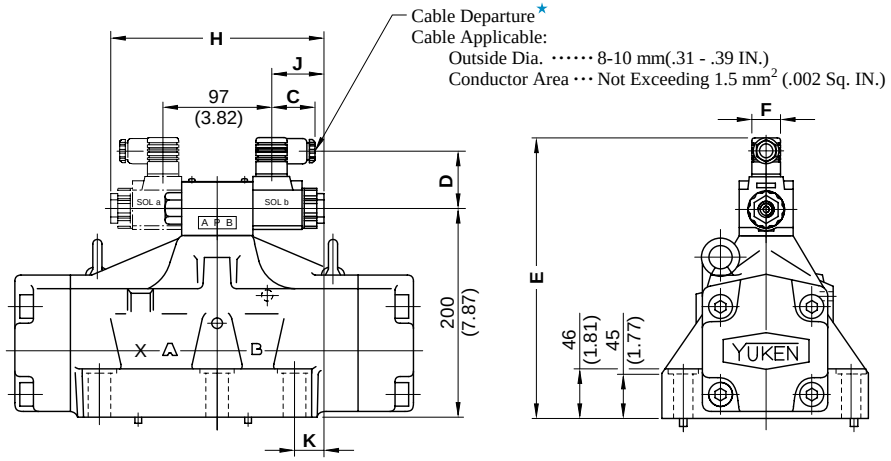
■ Terminal Box Type: (S-)DSHG-10-∗∗∗-∗-42/4290



Model Numbers	"C" Thd.
(S-)DSHG-10-∗∗∗-∗-42	G 1/2
(S-)DSHG-10-∗∗∗-∗-4290	1/2 NPT

DIMENSIONS IN MILLIMETRES (INCHES)

■ Plug-in Connector Type: (S-)DSHG-10-∗∗∗-∗-$^{N}_{N1}$-42/4290



★Position of cable departure can be changed. For details, refer to DSHG-01 valve on page 19.

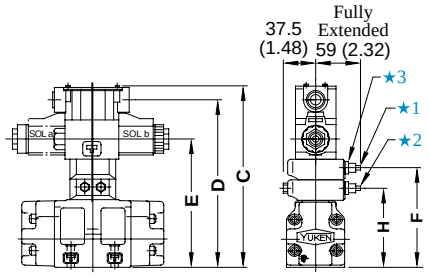
Model Numbers	Dimensions mm (Inches)						
	C	D	E	F	H	J	K
(S-)DSHG-10-∗∗∗-A∗-N/N1	39 (1.54)	53 (2.09)	265 (10.43)	27.5 (1.08)	191.4 (7.54)	47.2 (1.86)	19.7 (.78)
(S-)DSHG-10-∗∗∗-D∗-N/N1	39 (1.54)	64 (2.52)	276 (10.87)	27.5 (1.08)	210 (8.27)	56.5 (2.22)	29 (1.14)
(S-)DSHG-10-∗∗∗-R∗-N	53 (2.09)	57.2 (2.25)	279 (10.98)	34 (1.34)			

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

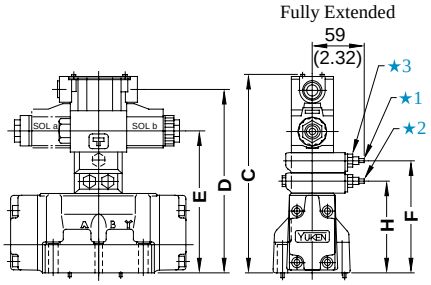
Models with Pilot Choke Valve

Terminal Box Type

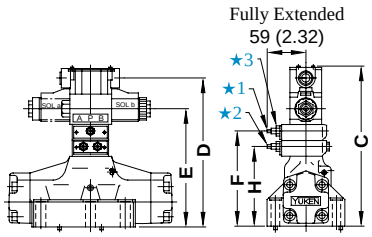
● **DSHG-03-∗∗∗-C1/C2/C1C2**



● **(S-)DSHG-04-∗∗∗-C1/C2/C1C2**

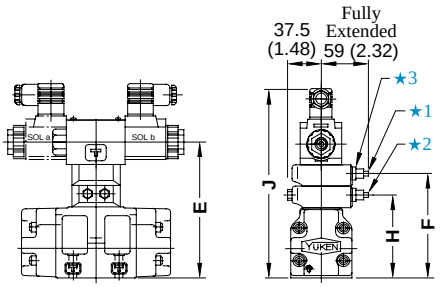


● **(S-)DSHG-$\frac{06}{10}$-∗∗∗-C1/C2/C1C2**

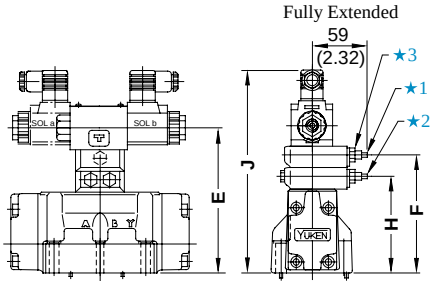


Plug-in Connector Type

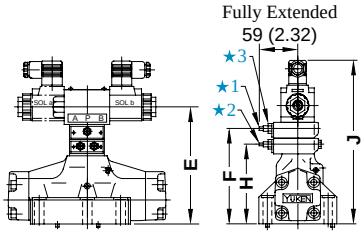
● **DSHG-03-∗∗∗-C1/C2/C1C2-$\frac{N}{N1}$**



● **(S-)DSHG-04-∗∗∗-C1/C2/C1C2-$\frac{N}{N1}$**



● **(S-)DSHG-$\frac{06}{10}$-∗∗∗-C1/C2/C1C2-$\frac{N}{N1}$**



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

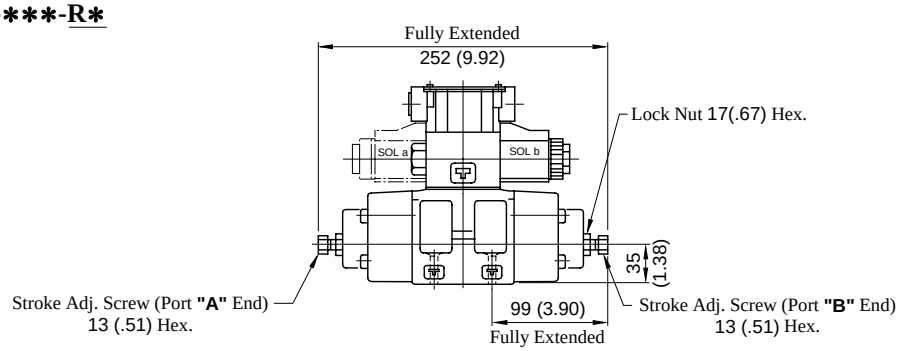
DIMENSIONS IN MILLIMETRES (INCHES)

Model Numbers	Dimensions mm (Inches)							
	C	D	E	F	H	J		
						AC SOL	DC SOL	R SOL
DSHG-03-∗∗∗-C1	200.3 (7.89)	182 (7.17)	135 (5.31)	100 (3.94)	—	200 (7.87)	211 (8.31)	214 (8.43)
DSHG-03-∗∗∗-C2				—	100 (3.94)			
DSHG-03-∗∗∗-C1C2	225.3 (8.87)	207 (8.15)	160 (6.30)	125 (4.92)	100 (3.94)	225 (8.86)	236 (9.29)	239 (9.41)
(S-) DSHG-04-∗∗∗-C1	206.3 (8.12)	188 (7.40)	141 (5.55)	106 (4.17)	—	206 (8.11)	217 (8.54)	220 (8.66)
(S-) DSHG-04-∗∗∗-C2				—	106 (4.17)			
(S-) DSHG-04-∗∗∗-C1C2	231.3 (9.11)	213 (8.39)	166 (6.54)	131 (5.16)	106 (4.17)	231 (9.09)	242 (9.53)	245 (9.65)
(S-) DSHG-06-∗∗∗-C1	227.3 (8.95)	209 (8.23)	162 (6.38)	127 (5.00)	—	227 (8.94)	238 (9.37)	241 (9.49)
(S-) DSHG-06-∗∗∗-C2				—	127 (5.00)			
(S-) DSHG-06-∗∗∗-C1C2	252.3 (9.93)	234 (9.21)	187 (7.36)	152 (5.98)	127 (5.00)	252 (9.92)	263 (10.35)	266 (10.47)
(S-) DSHG-10-∗∗∗-C1	290.3 (11.43)	272 (10.71)	225 (8.86)	190 (7.48)	—	390 (15.35)	401 (15.79)	404 (15.91)
(S-) DSHG-10-∗∗∗-C2				—	190 (7.48)			
(S-) DSHG-10-∗∗∗-C1C2	315.3 (12.41)	297 (11.69)	250 (9.84)	215 (8.46)	190 (7.48)	415 (16.34)	426 (16.77)	429 (16.89)

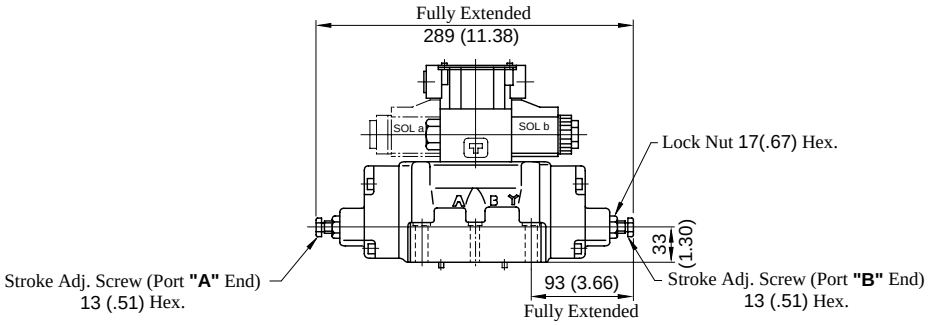
E

Models with Stroke Adjustment

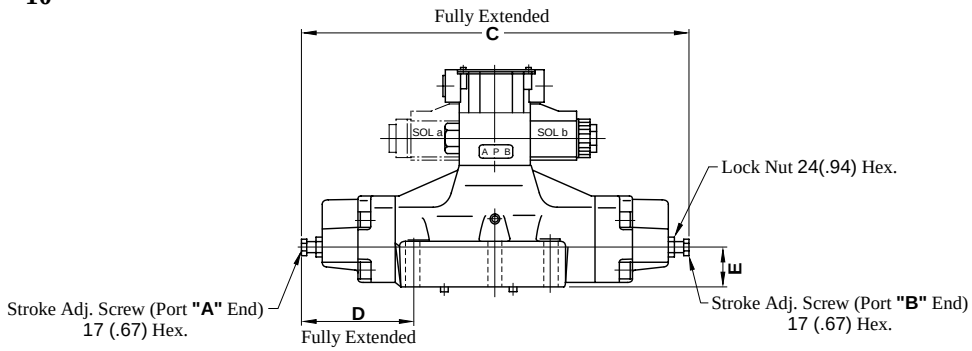
● **DSHG-03-∗∗∗-R∗**



● **(S-)DSHG-04-∗∗∗-R∗**



● **(S-)DSHG-$\frac{06}{10}$-∗∗∗-R∗**

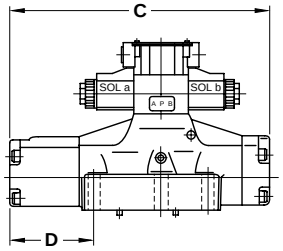


Model Numbers	C	D	E
(S-)DSHG-06-∗∗∗-R2	376 (14.80)	111 (4.37)	40 (1.57)
(S-)DSHG-10-∗∗∗-R2	558 (21.97)	164.5 (6.48)	65 (2.56)

DIMENSIONS IN MILLIMETRES (INCHES)

Pressure Centred Models

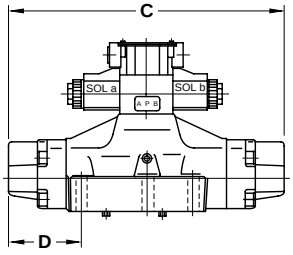
● **(S-)DSHG-$\frac{06}{10}$-3H∗**



Model Numbers	C	D
(S-)DSHG-06-3H	306.5 (12.07)	102 (4.02)
∗	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)

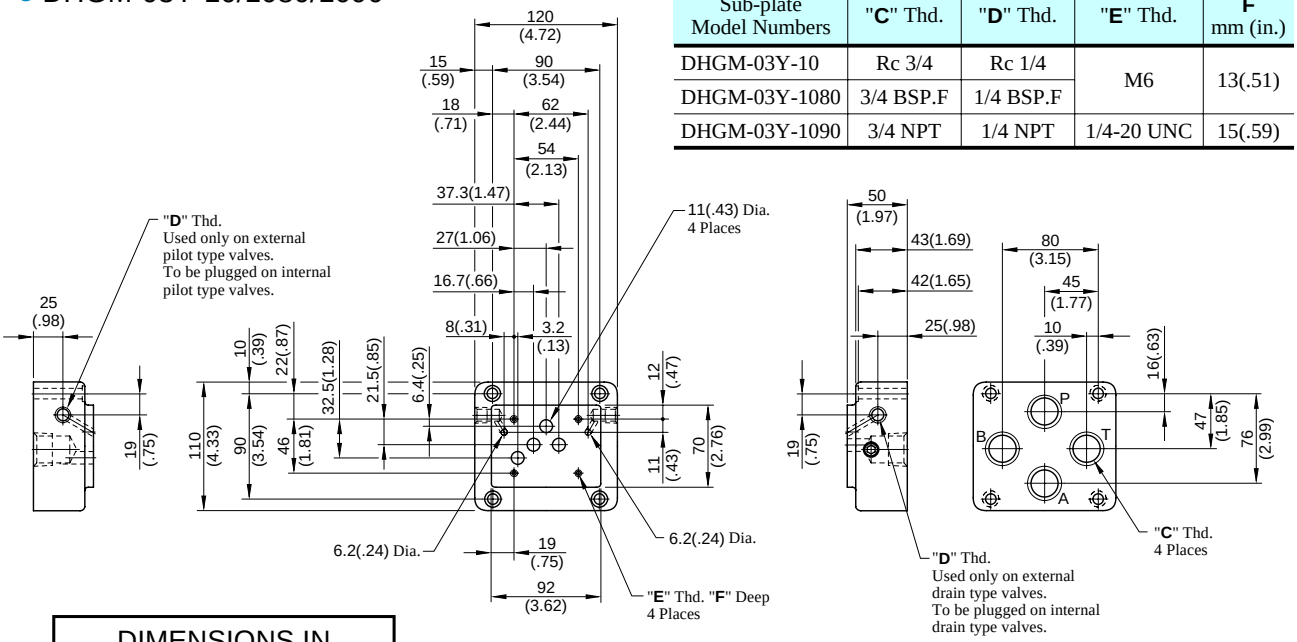
Sub-plate for Solenoid Controlled Pilot Operated Directional Valves

Installation Drawing

DIRECTIONAL CONTROLS

● DHGM-03Y-10/1080/1090

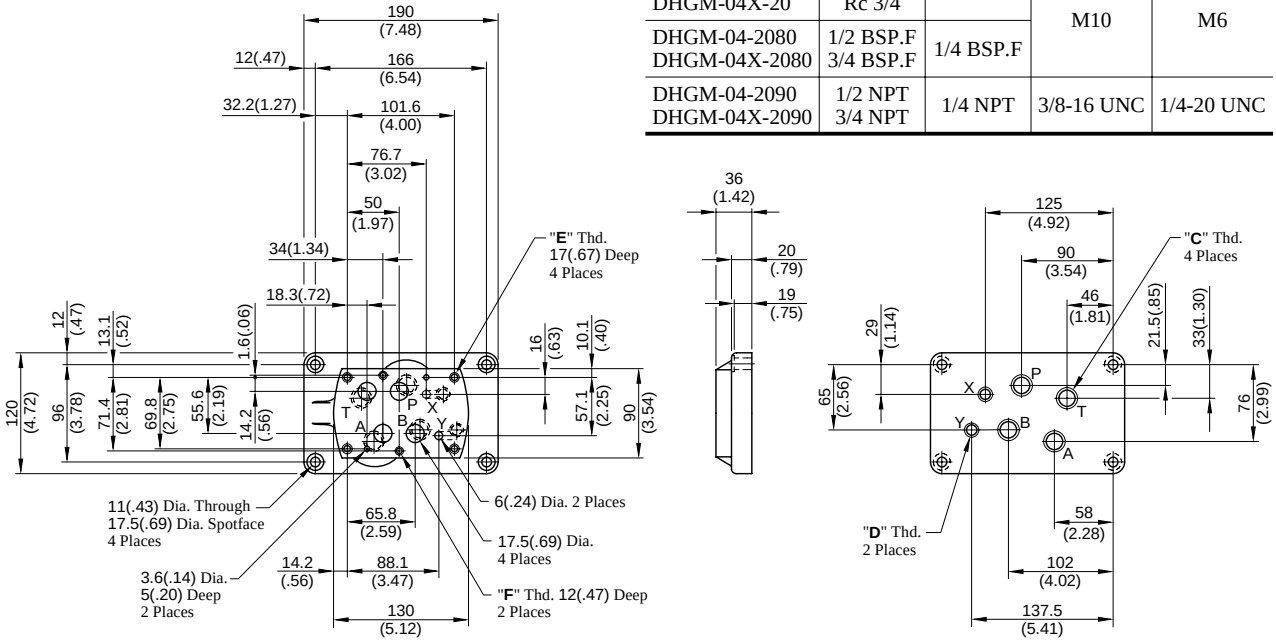
Sub-plate Model Numbers	"C" Thd.	"D" Thd.	"E" Thd.	F mm (in.)
DHGM-03Y-10	Rc 3/4	Rc 1/4	M6	13(.51)
DHGM-03Y-1080	3/4 BSP.F	1/4 BSP.F		
DHGM-03Y-1090	3/4 NPT	1/4 NPT	1/4-20 UNC	15(.59)



DIMENSIONS IN MILLIMETRES (INCHES)

● DHGM-04/04X-20/2080/2090

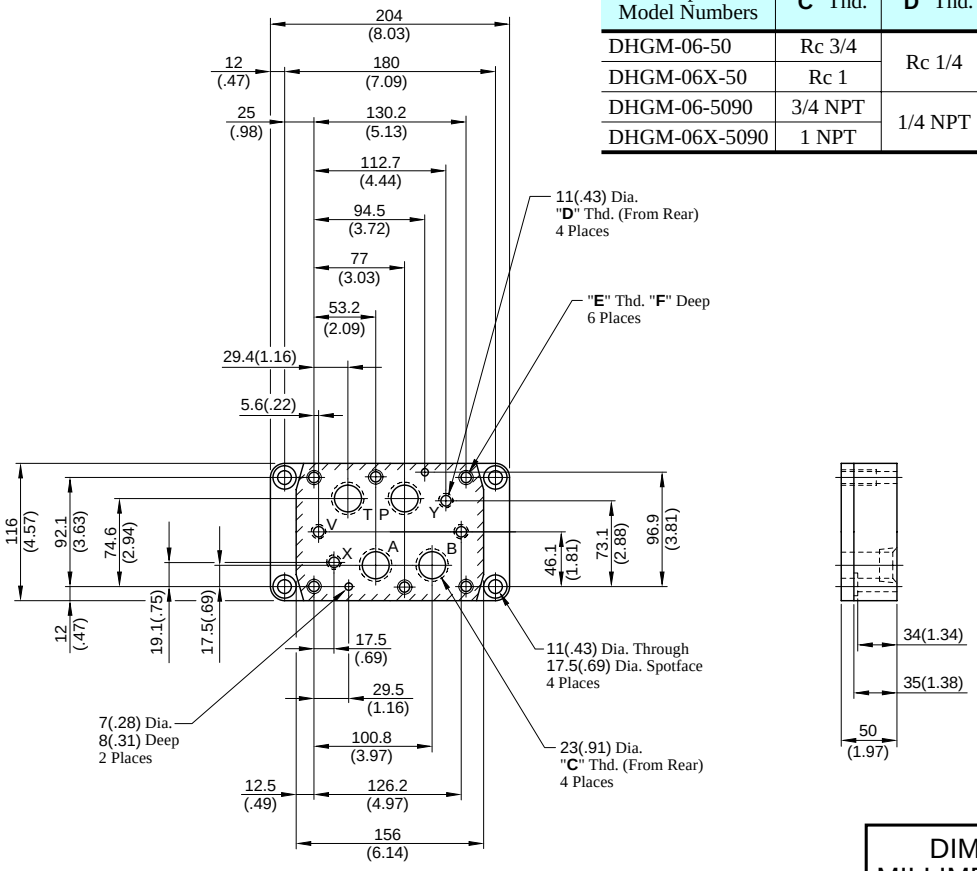
Sub-plate Model Numbers	"C" Thd.	"D" Thd.	"E" Thd.	"F" Thd.
DHGM-04-20 DHGM-04X-20	Rc 1/2 Rc 3/4	Rc 1/4	M10	M6
DHGM-04-2080 DHGM-04X-2080	1/2 BSP.F 3/4 BSP.F	1/4 BSP.F		
DHGM-04-2090 DHGM-04X-2090	1/2 NPT 3/4 NPT	1/4 NPT	3/8-16 UNC	1/4-20 UNC



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

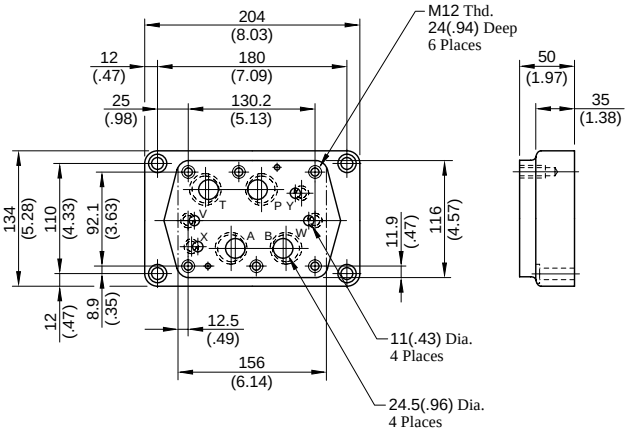
● DHGM-06/06X-50/5090

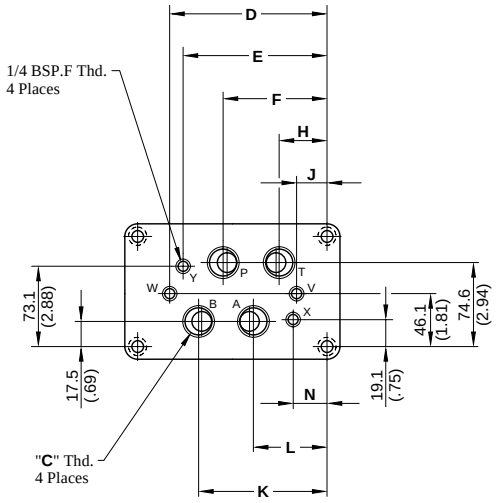
Sub-plate Model Numbers	"C" Thd.	"D" Thd.	"E" Thd.	F mm (in.)
DHGM-06-50	Rc 3/4	Rc 1/4	M12	24 (.94)
DHGM-06X-50	Rc 1			
DHGM-06-5090	3/4 NPT	1/4 NPT	1/2-13 UNC	26 (1.02)
DHGM-06X-5090	1 NPT			



DIMENSIONS IN MILLIMETRES (INCHES)

● DHGM-06/06X-5080





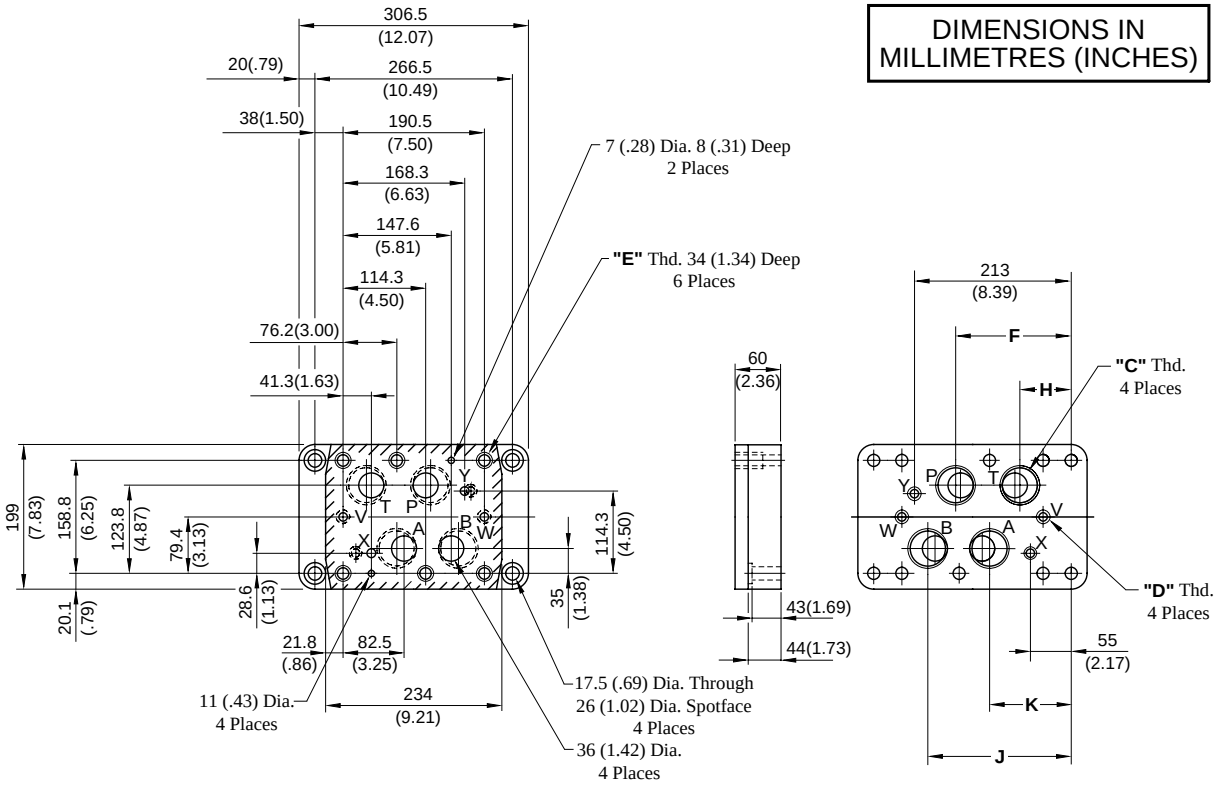
Sub-plate Model Numbers	"C" Thd.	Dimensions mm (Inches)							
		D	E	F	H	J	K	L	N
DHGM-06-5080	3/4 BSP.F	151.2 (5.95)	137.7 (5.42)	102 (4.02)	54.4 (2.14)	30.6 (1.20)	125.8 (4.95)	78.2 (3.08)	42.5 (1.67)
DHGM-06X-5080	1 BSP.F	155.2 (6.11)	148 (5.83)	106 (4.17)	50 (1.97)	25 (.98)	130 (5.12)	74 (2.91)	32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

● 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	152 (5.98)	79 (3.11)	185.5 (7.30)	120.5 (4.74)
DHGM-10-4080	1-1/4 BSP.F	3/8 BSP.F	M20				
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	156 (6.14)	74 (2.91)	194.5 (7.66)	112.5 (4.43)
DHGM-10X-4080	1-1/2 BSP.F	3/8 BSP.F	M20				
DHGM-10X-4090	1-1/2 NPT	3/8 NPT	3/4-10 UNC				

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

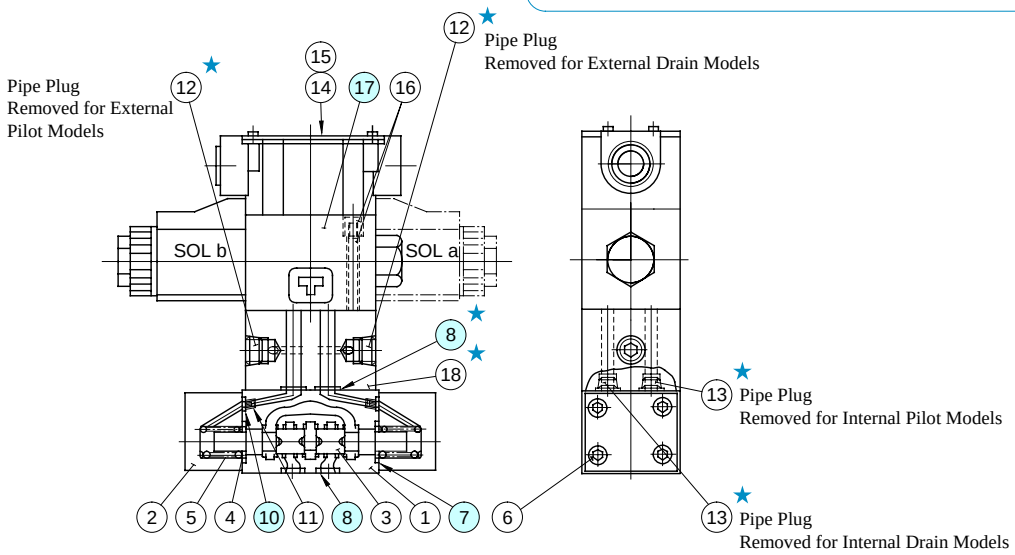
Valve Types			Pilot Pres. Port "X"	Port "Y"	Drain Port "V"	Drain Port "W"
Solenoid Controlled Pilot Operated Directional Valves	Spring Centred, No-spring, Spring Offset		Used only on external pilot type valves. To be plugged on internal pilot type valves.	Used as drain port only on external drain type 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.

⚠ CAUTION

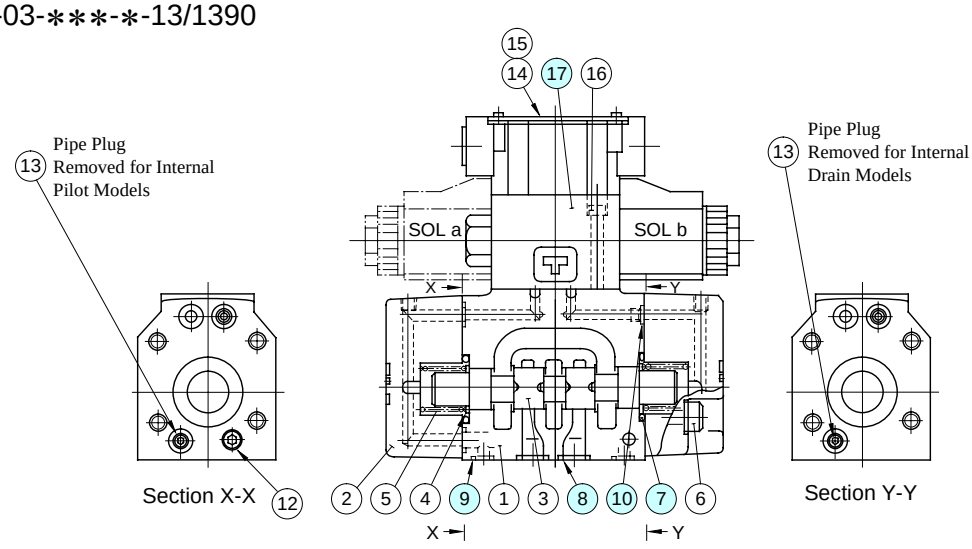
When making replacement of seals or pilot valves, please do it carefully after reading through the relevant instructions in the Operator's Manual.

DSHG-01-∗∗∗-∗-13/1380/1390



Note: Piece parts marked ★ are not available for internal pilot-internal drain type

DSHG-03-∗∗∗-∗-13/1390



● List of Seals

Item	Name	DSHG-01		DSHG-03	
		Part Numbers	Qty.	Part Numbers	Qty.
7	O-Ring	JASO-1018-1A	2	SO-NB-P28	2
8	O-Ring	SO-NB-P9	8(4)★	SO-NB-A104	5
9	O-Ring	—	—	SO-NB-P9	2
10	O-Ring	SO-NB-P5	2	SO-NB-P9	6

★ Quantities in the ( ) are applicable to internal pilot-internal drain.

Note: When ordering the o-rings, please specify the seal kit number listed in page 31. In addition to the above o-rings, o-rings for pilot valve is included in the seal kit.
For the detail of the pilot valve o-rings, see the catalogue No. Pub. EC-0402.

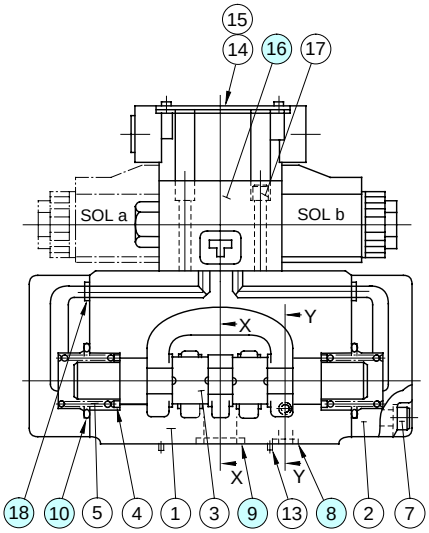
● Pilot Valves

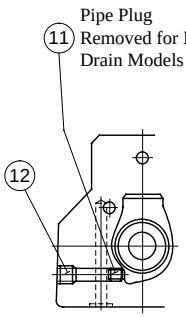
See page 31 for the pilot valve model numbers to be used.

⚠ CAUTION

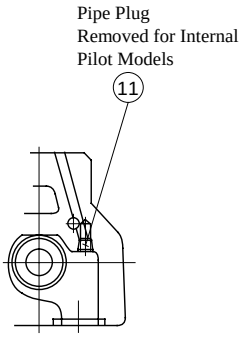
When making replacement of seals or pilot valves, please do it carefully after reading through the relevant instructions in the Operator's Manual.

(S-)DSHG-04-∗∗∗-∗-51/5190



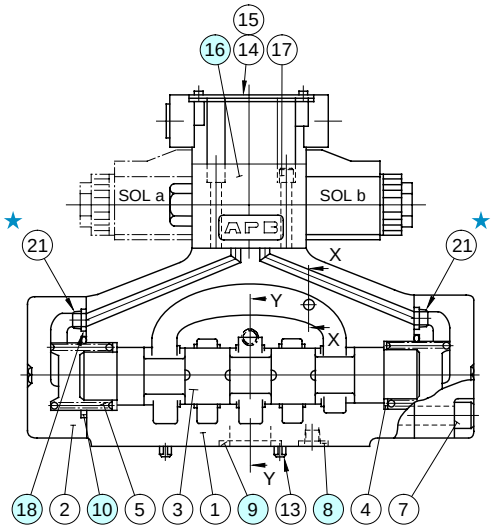


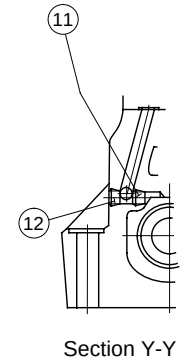
Section Y-Y



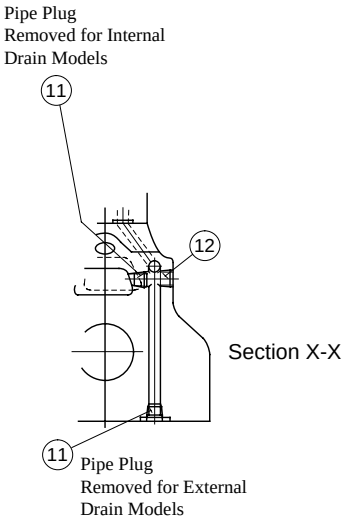
Section X-X

(S-)DSHG-06-∗∗∗-∗-52/5290
(S-)DSHG-10-∗∗∗-∗-42/4290





Section Y-Y



Section X-X

Note: Item ㉑ orifice marked ★ is applicable to pressure centred models (3H∗) with pilot pressure more than 10 MPa (1450 PSI).

● List of Seals

Item	Name	Part Numbers			Qty.
		(S-)DSHG-04	(S-)DSHG-06	(S-)DSHG-10	
8	O-Ring	SO-NB-P9	SO-NB-P14	SO-NB-P20	2
9		SO-NB-P22	SO-NB-P30	SO-NB-P42	4
10		SO-NB-P34	SO-NB-P40	SO-NB-P65	2
18		SO-NB-P9	SO-NB-P10	SO-NB-P14	2

Note: When ordering the o-rings, please specify the seal kit number listed in page 31. In addition to the above o-rings, o-rings for pilot valve is included in the seal kit.
For the detail of the pilot valve o-rings, see the catalogue No. Pub. EC-0402.

● Pilot Valves

See page 31 for the pilot valve model numbers to be used.

Valve Model Numbers	Pilot Valve Model Numbers	Seal Kit Numbers
DSHG-01-3C∗-★-▲-13 DSHG-01-3C∗-★-N-1380 DSHG-01-3C∗-★-▲-1390	DSG-01-3C4-★-▲-60 DSG-01-3C4-★-N-60 DSG-01-3C4-★-▲-6090	KS-DSHG-01-▲-13 (For Internal Pilot-Internal Drain)
DSHG-01-2B∗-★-▲-13 DSHG-01-2B∗-★-N-1380 DSHG-01-2B∗-★-▲-1390	DSG-01-2B2-★-▲-60-L DSG-01-2B2-★-N-60-L DSG-01-2B2-★-▲-6090-L	KS-DSHG-01-ET-▲-13 (Except for Internal Pilot-Internal Drain)
DSHG-03-3C∗-★-▲-13 DSHG-03-3C∗-★-▲-1390	DSG-01-3C4-★-▲-60 DSG-01-3C4-★-▲-6090	KS-DSHG-03-▲-13
DSHG-03-2B∗-★-▲-13 DSHG-03-2B∗-★-▲-1390	DSG-01-2B2-★-▲-60 DSG-01-2B2-★-▲-6090	
DSHG-03-2N∗-★-▲-13 DSHG-03-2N∗-★-▲-1390	DSG-01-2D2-★-▲-60 DSG-01-2D2-★-▲-6090	
(S-)DSHG-04-3C∗-★-▲-51 (S-)DSHG-04-3C∗-★-▲-5190	DSG-01-3C4-★-▲-60 DSG-01-3C4-★-▲-6090	KS-DSHG-04-▲-51
(S-)DSHG-04-2B∗-★-▲-51 (S-)DSHG-04-2B∗-★-▲-5190	DSG-01-2B2-★-▲-60 DSG-01-2B2-★-▲-6090	
(S-)DSHG-04-2N∗-★-▲-51 (S-)DSHG-04-2N∗-★-▲-5190	DSG-01-2D2-★-▲-60 DSG-01-2D2-★-▲-6090	
(S-)DSHG-06-3C∗-★-▲-52 (S-)DSHG-06-3C∗-★-▲-5290	DSG-01-3C4-★-▲-60 DSG-01-3C4-★-▲-6090	KS-DSHG-06-▲-52
(S-)DSHG-06-2B∗-★-▲-52 (S-)DSHG-06-2B∗-★-▲-5290	DSG-01-2B2-★-▲-60-L DSG-01-2B2-★-▲-6090-L	
(S-)DSHG-06-2N∗-★-▲-52 (S-)DSHG-06-2N∗-★-▲-5290	DSG-01-2D2-★-▲-60 DSG-01-2D2-★-▲-6090	
(S-)DSHG-10-3C∗-★-▲-42 (S-)DSHG-10-3C∗-★-▲-4290	DSG-01-3C4-★-▲-60 DSG-01-3C4-★-▲-6090	KS-DSHG-10-▲-42
(S-)DSHG-10-2B∗-★-▲-42 (S-)DSHG-10-2B∗-★-▲-4290	DSG-01-2B2-★-▲-60-L DSG-01-2B2-★-▲-6090-L	
(S-)DSHG-10-2N∗-★-▲-42 (S-)DSHG-10-2N∗-★-▲-4290	DSG-01-2D2-★-▲-60 DSG-01-2D2-★-▲-6090	

Notes) 1: Fill coil type (a symbol representing current/voltage) in section marked ★. Likewise, in section marked ▲, fill a symbol representing the type of electrical conduit connection (None: Terminal Box Type, N: Plug-in Connector Type).
2: For the details of the pilot valves, see the catalogue No. Pub.EC-0402.

E

Interchangeability between Curent and New Design

DSHG-01, 03

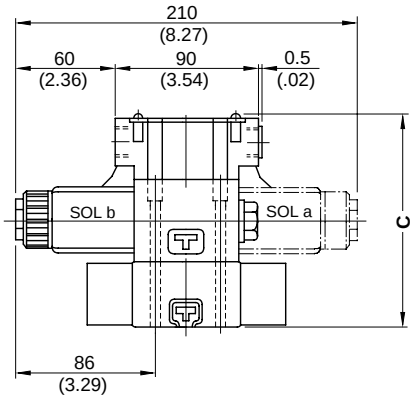
In accordance with the improvement of the pilot valve (DSG-01), DSHG-01 and -03 have been model-changed (from 12-design to 13-design).

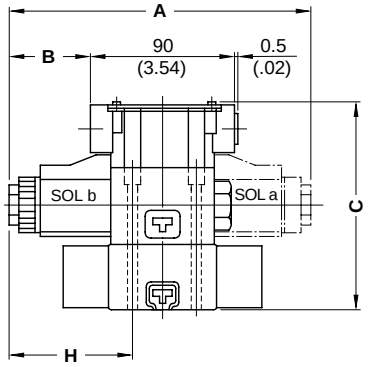
Descriptions \ Model No.	Current DSHG-01-∗∗∗-∗-12∗ DSHG-01-∗∗∗-∗-12∗	New DSHG-01-∗∗∗-∗-13∗ DSHG-01-∗∗∗-∗-13∗
Specifications	No changes	
Interchangeability in Mtg.	Yes	
Pilot Valve	DSG-01-∗∗∗-∗-50∗	DSG-01-∗∗∗-∗-60∗
	For details, refer to the Catalogue No. Pub. EC-0402	

Current

New

DSHG-01



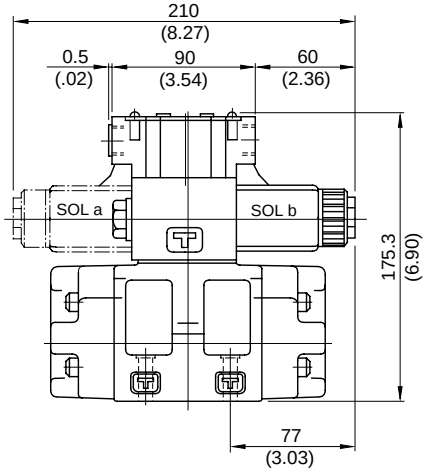


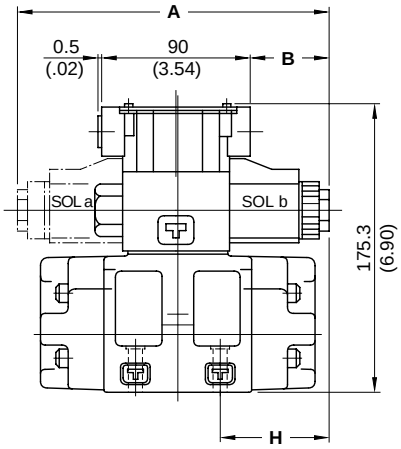
Model No.	C
DSHG-01-T	130.3 (5.13)
DSHG-01-E/ET/None	170.3 (6.70)

DIMENSIONS IN MILLIMETRES (INCHES)

Model No.		A	B	C	H
DSHG-01-T	AC	191.4 (7.54)	50.7 (2.00)	130.3 (5.13)	76.7 (3.02)
	DC R	210 (8.27)	60 (2.36)		86 (3.39)
E DSHG-01-ET None	AC	191.4 (7.54)	50.7 (2.00)	170.3 (6.70)	76.7 (3.02)
	DC R	210 (8.27)	60 (2.36)		86 (3.39)

DSHG-03





Model No.		A	B	H
DSHG-03	AC	191.4 (7.54)	50.7 (2.00)	67.7 (2.67)
	DC R	210 (8.27)	60 (2.36)	77 (3.03)

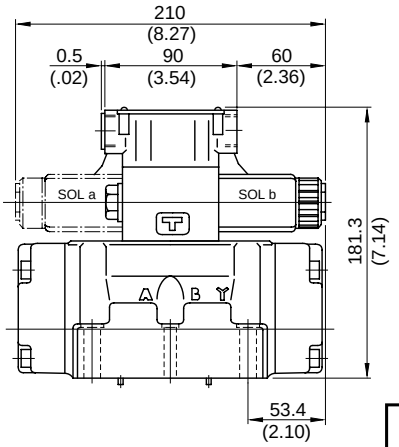
Interchangeability between Current and New Design

● (S-)DSHG-04

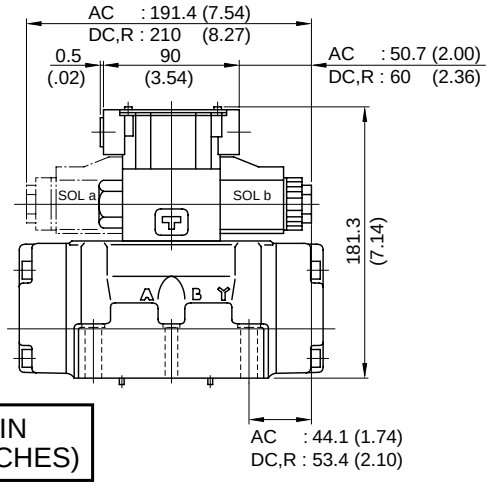
(S-) DSHG-04 has been model changed in accordance with the improvement of the pilot valve (DSG-01). For details, see the following.

Descriptions \ Model No.	Current (S-)DSHG-04-∗∗∗-∗-50∗	New (S-)DSHG-04-∗∗∗-∗-51∗
Specifications	No changes	
Interchangeability in Mtg.	Yes	
Pilot Valve	DSG-01-∗∗∗-∗-50∗	DSG-01-∗∗∗-∗-60∗
	For details, refer to the Catalogue No. Pub. EC-0402.	

Current



New



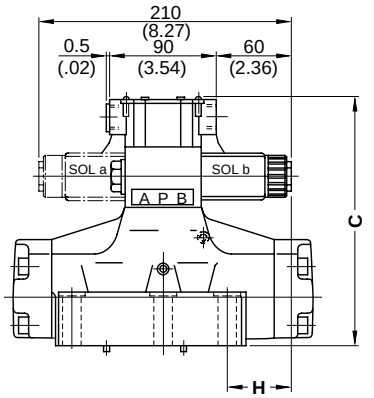
DIMENSIONS IN MILLIMETRES (INCHES)

● (S-)DSHG-06,10

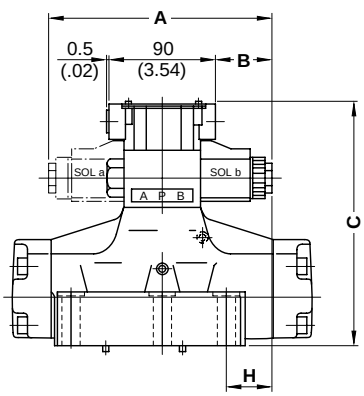
(S-) DSHG-06 and -10 have been model changed in accordance with the improvement of the pilot valve (DSG-01). For details, see below.

Descriptions \ Model No.	Current (S-)DSHG-06-∗∗∗-∗-51∗ (S-)DSHG-10-∗∗∗-∗-41∗	New (S-)DSHG-06-∗∗∗-∗-52∗ (S-)DSHG-10-∗∗∗-∗-42∗
Specifications	No changes	
Interchangeability in Mtg.	Yes	
Pilot Valve	DSG-01-∗∗∗-∗-50∗	DSG-01-∗∗∗-∗-60∗
	For details, refer to the Catalogue No. Pub. EC-0402	

Current



New



Model No.	C	H
(S-)DSHG-06	202.3 (7.96)	51.3 (2.02)
(S-)DSHG-10	265.3 (10.44)	28.5 (1.12)

Model No.		A	B	C	H
(S-)DSHG-06	AC	191.4 (7.54)	50.7 (2.00)	202.3 (7.96)	42.7 (1.68)
	DC	210 (8.27)	60 (2.36)		52 (2.05)
	R				
(S-)DSHG-10	AC	191.4 (7.54)	50.7 (2.00)	265.3 (10.44)	19.7 (.78)
	DC	210 (8.27)	60 (2.36)		29 (1.14)
	R				

E