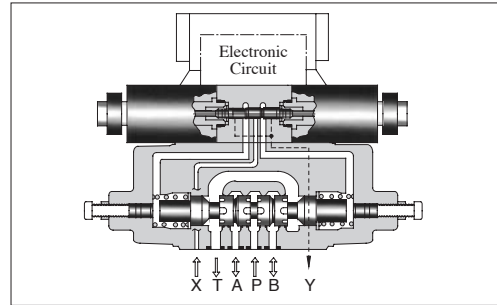


## “G” Series Shockless Type Solenoid Controlled Pilot Operated Directional Valves



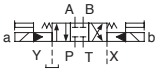

### Specifications

Descriptions		Model Numbers	G-DSHG-04-3C*-**-50/5090	G-DSHG-06-3C*-**-50/5090
Max. Flow	L/min (U.S.GPM)		160 (42.3) ★ <sup>1</sup>	250 (66.1) ★ <sup>1</sup>
Max. Operating Pres.	MPa (PSI)		25 (3630)	25 (3630)
Max. T-Line Back Pres.	MPa (PSI)		16 (2320)	16 (2320)
Max. Drain Line Back Pressure	MPa (PSI)		3 (440)	3 (440)
Max. Pilot Pressure	MPa (PSI)		16 (2320)	16 (2320)
Min. Required Pilot Pres.	MPa (PSI)		1.5 (220) ★ <sup>2</sup>	
Pilot Flow L/min (U.S.GPM)	at Normal		1 (0.3)	1 (0.3)
	at Transition		4 (1.1)	6 (1.6)
Electric Power Supply	Voltage		24 V DC (21 - 28 V DC Included Ripple): Use a stable power supply	
	Input Power at 24V		36 W	36 W
Shifting signal, low speed operation halt signal (can be used in common with electric power supply)	Voltage		5 - 48 V DC (Use a stable power supply)	
	Current		Constant at 10 mA (A constant-current circuit is used)	
	Input interface		Sink Type, Source Type	
Shifting time range (for ON and OFF)			ON: 0.06 - 1.5 s, OFF: 0.1 - 2 s	ON: 0.1 - 1 s, OFF: 0.2 - 2 s
Low speed operation flow rate (min. flow rate) range (for SOL a and b) L/min (U.S.GPM)			5 - 20 (1.3 - 5.3)	10 - 30 (2.6 - 7.9)
Low speed operation flow rate (min. flow rate) hold time			Max. 60 s (After 60 seconds, the flow rate decreases gradually.)	
Ambient Temperature			0 - 50 °C (32 - 122 °F) with circulated air	
Approx. Mass			12 kg (26.5 lbs.)	15 kg (33.1 lbs.)

★1. The maximum flow rate is constant irrespective of the working pressure.

★2. Be sure that the difference between pilot pressure and drain port back pressure is larger than the minimum pilot pressure.

## Model Number Designation

G-DSHG	-04	-3C2	-E	-R2	-S	-50	*
Series Number	Valve Size	Spool Type	Pilot Connection	Spool Control Modification (Omit if not required)	Input Interface	Design Number	Design Standards
<b>G-DSHG :</b> G Series Shockless Type Solenoid Controlled Pilot Operated Directional Valve, Sub-plate Mounting	<b>04</b>	<b>3C2</b> 	<b>None:</b> Internal Pilot	<b>R2:</b> With Stroke Adjustment, Both Ends	<b>None:</b> Sink Type (Standard)	<b>50</b>	Refer to ★
	<b>06</b>	<b>3C40</b> 	<b>E:</b> External Pilot	<b>RA:</b> With Stroke Adjustment, Port "A" End  <b>RB:</b> With Stroke Adjustment, Port "B" End	<b>S:</b> Source Type	<b>50</b>	

★ Design Standards: None ..... Japanese Standard "JIS" and European Design Standard 90 ..... N. American Design Standard

## Sub-plate

Valve Model Numbers	Japanese Standard "JIS"			European Design Standard			N. American Design Standard		
	Sub-plate Model Numbers	Thread Size	Approx. Mass kg (lbs.)	Sub-plate Model Numbers	Thread Size	Approx. Mass kg (lbs.)	Sub-plate Model Numbers	Thread Size	Approx. Mass kg (lbs.)
G-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)
G-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)

● 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.

## Attachment (Mtg. Bolts)

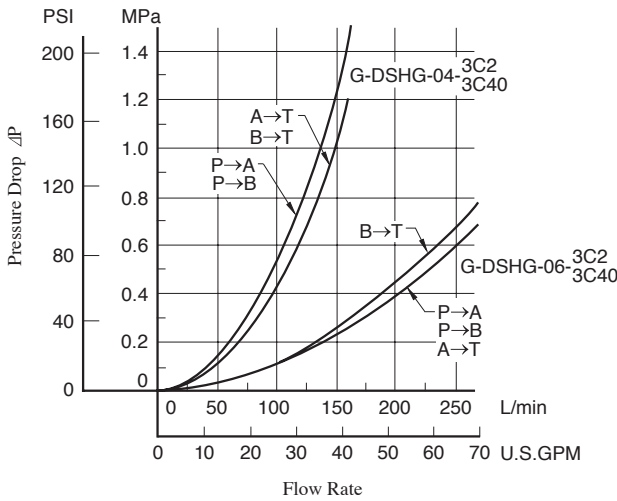
Socket head cap screws in the table below are included.

Model Numbers	Socket Head Cap Screw			
	Japanese Standard "JIS" & European Design Standard	N. American Design Standard	Qty.	Tightening Torque Nm (in. lbs.)
G-DSHG-04	M6 × 45 Lg.	1/4-20 UNC × 1-3/4 Lg.	2	12-15 (106-133)
	M10 × 50 Lg.	3/8-16 UNC × 2 Lg.	4	58-72 (513-637)
G-DSHG-06	M12 × 60 Lg.	1/2-13 UNC × 2-1/2 Lg.	6	100-123 (885-1089)

Hydraulic Fluid: Viscosity 30 mm<sup>2</sup>/s (141 SSU), Specific Gravity 0.850

**Pressure Drop**

**G-DSHG-04/06-3C2/3C40**



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

Viscosity	mm <sup>2</sup> /s	15	20	30	40	50	60	70	80	90	100
	SSU	77	98	141	186	232	278	324	371	417	464
Factor		0.84	0.91	1.00	1.07	1.14	1.19	1.24	1.28	1.32	1.35

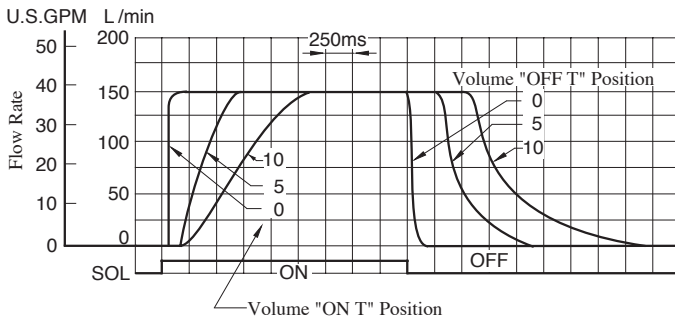
● For any other specific gravity (G'), the pressure drop (ΔP') may be obtained from the formula below.

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

**Shifting Characteristics**

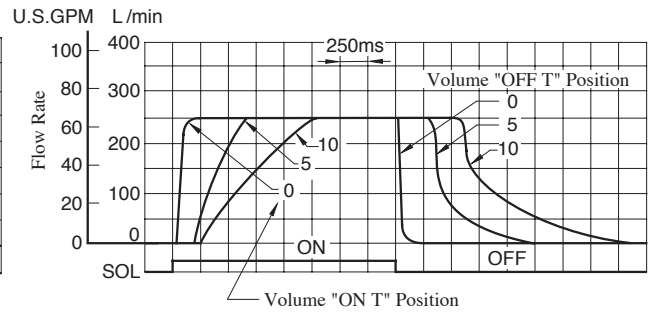
**G-DSHG-04-3C2/3C40**

Supply Pressure : 16 MPa (2320 PSI)  
 Flow Rate : 150 L/min (39.6 U.S.GPM)  
 Pilot Pressure : 16 MPa (2320 PSI)



**G-DSHG-06-3C2/3C40**

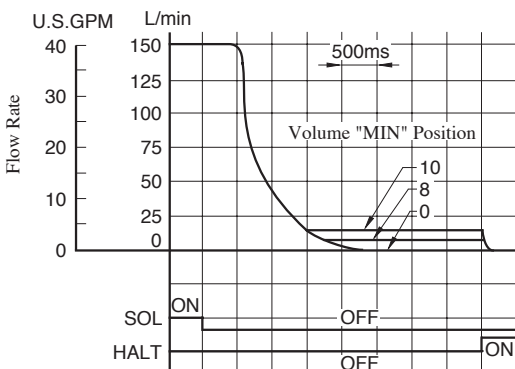
Supply Pressure : 16 MPa (2320 PSI)  
 Flow Rate : 250 L/min (66.1 U.S.GPM)  
 Pilot Pressure : 16 MPa (2320 PSI)



**Low Speed Operating Flow Characteristics**

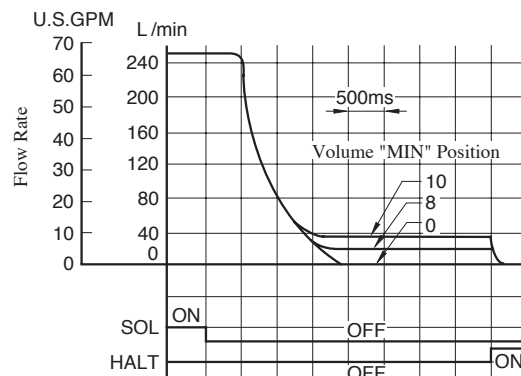
**G-DSHG-04-3C2/3C40**

Supply Pressure : 16 MPa (2320 PSI)  
 Flow Rate : 150 L/min (39.6 U.S.GPM)  
 Pilot Pressure : 16 MPa (2320 PSI)



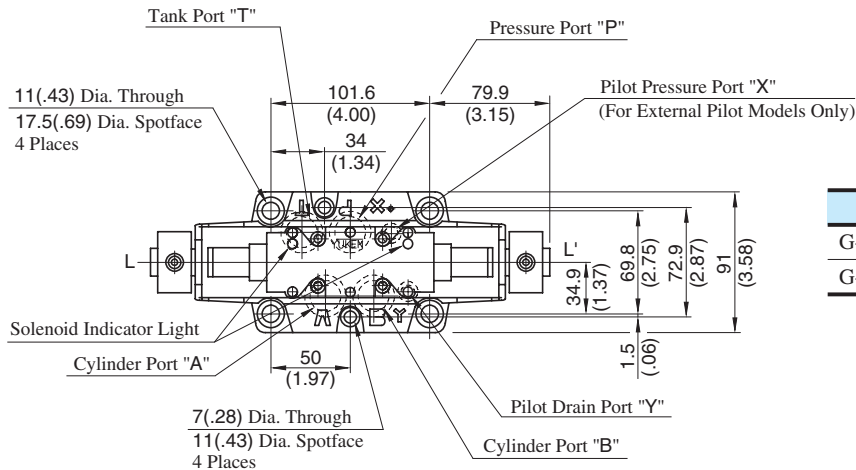
**G-DSHG-06-3C2/3C40**

Supply Pressure : 16 MPa (2320 PSI)  
 Flow Rate : 250 L/min (66.1 U.S.GPM)  
 Pilot Pressure : 16 MPa (2320 PSI)

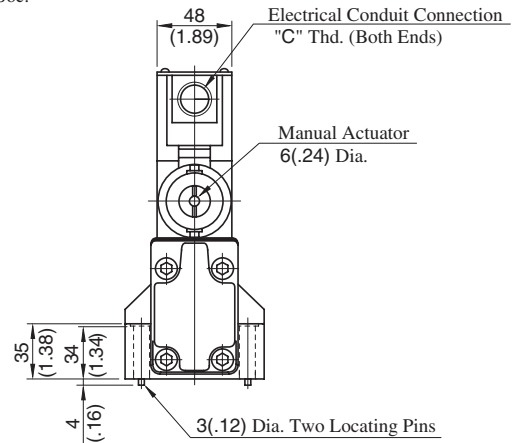
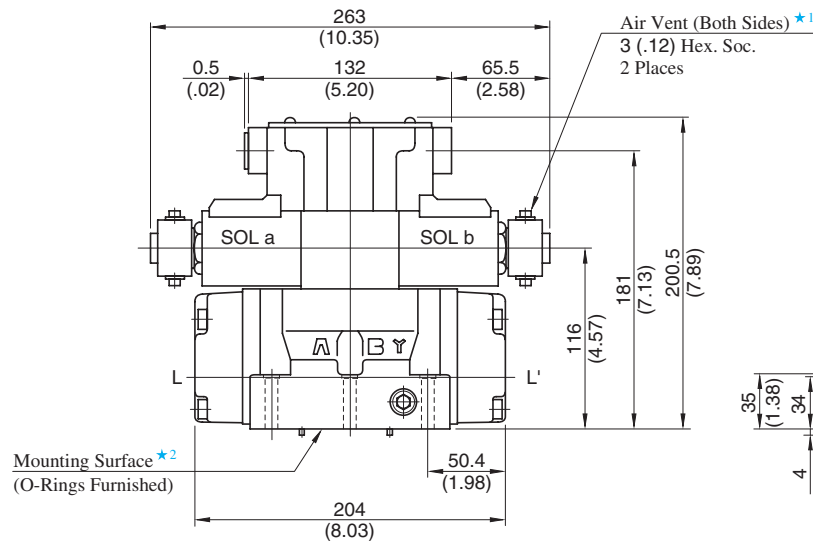


G-DSHG-04-3C\*-\*-50/5090

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



Model Numbers	"C" Thd.
G-DSHG-04-3C*-*-50	G 1/2
G-DSHG-04-3C*-*-5090	1/2 NPT



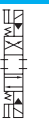
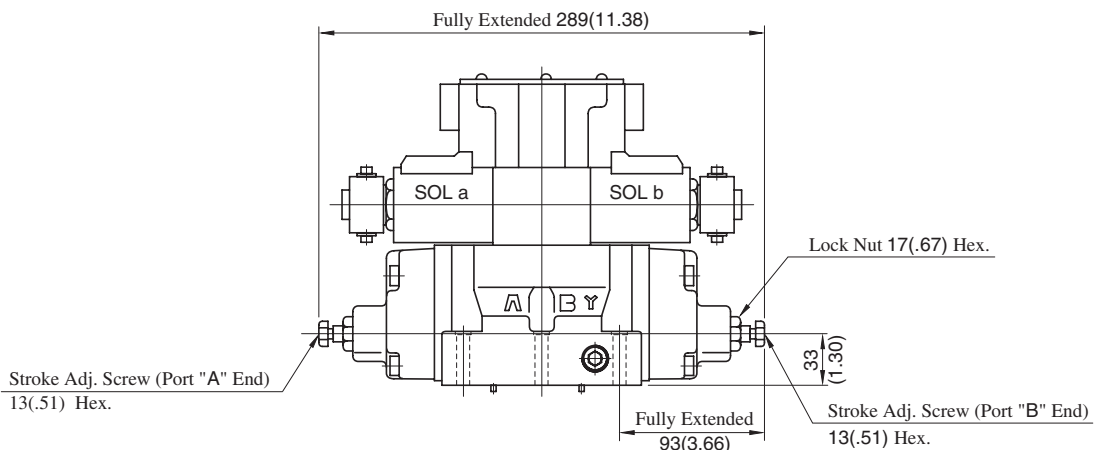
- \*1. Air vent position around valve longitudinal axis can be optionally selected.
- \*2. O-rings for ports: SO-NB-P22 for P/A/B/T ports  
SO-NB-P9 for X/Y ports

Note: For the valve mounting surface dimensions, see the dimensional drawing of the sharable sub-plate on [page 401](#).

DIMENSIONS IN  
MILLIMETRES (INCHES)

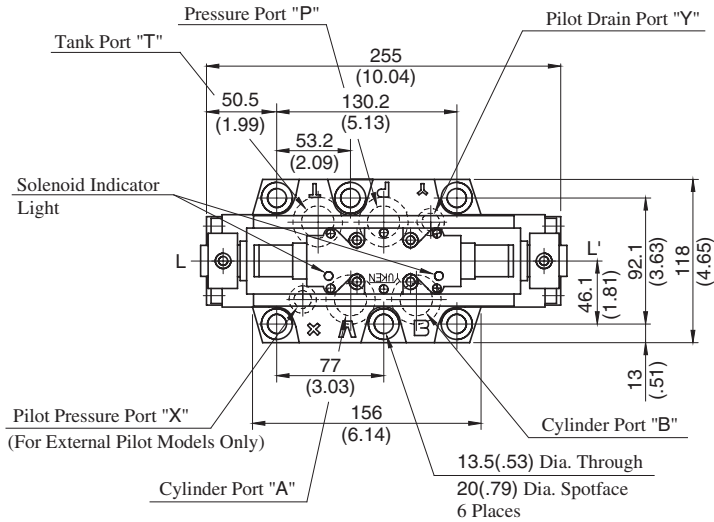
### ● Models with Stroke Adjustment (Option)

G-DSHG-04-3C\*-\*-R\*-\*-50/5090

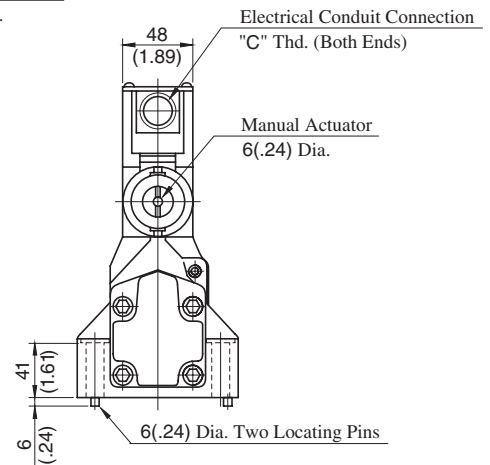
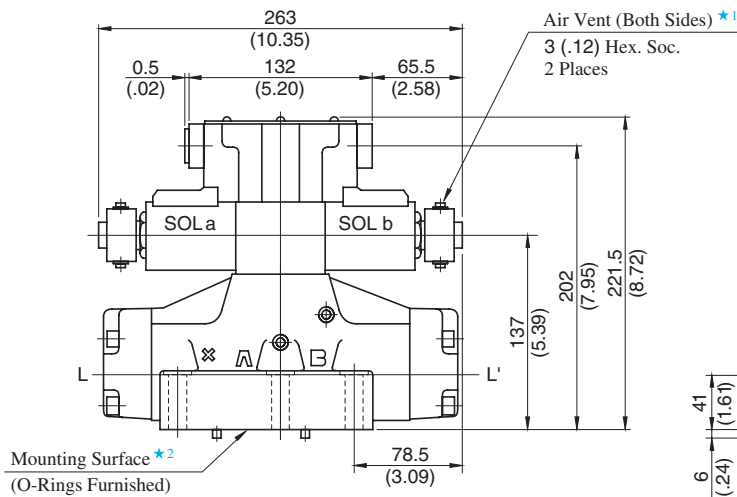


G-DSHG-06-3C\*-\*-50/5090

Mounting Surface:  
ISO4401-AE-08-4-A



Model Numbers	"C" Thd.
G-DSHG-06-3C*-*-50	G 1/2
G-DSHG-06-3C*-*-5090	1/2 NPT



- ★ 1. Air vent position around valve longitudinal axis can be optionally selected.
  - ★ 2. O-rings for ports: SO-NB-P30 for P/A/B/T ports  
SO-NB-P14 for X/Y ports
- Note: For the valve mounting surface dimensions, see the dimensional drawing of the sharable sub-plate in [page 403](#).

DIMENSIONS IN  
MILLIMETRES (INCHES)

● **Models with Stroke Adjustment (Option)**

G-DSHG-06-3C\*-\*-R\*-\*-50/5090

