4ManPro

Elements For Manufacturing Processes

CONTROLES DIRECCIONALES

E7

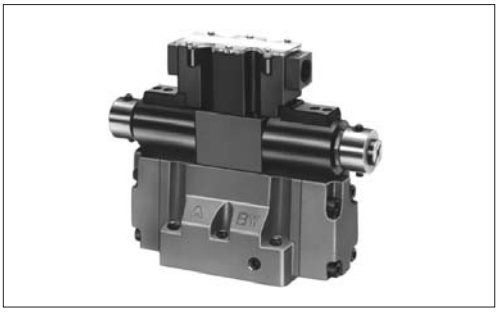
VÁLVULAS DIRECCIONALES OPERADAS POR SOLENOIDE PILOTO TIPO G A PRUEBA DE GOLPES

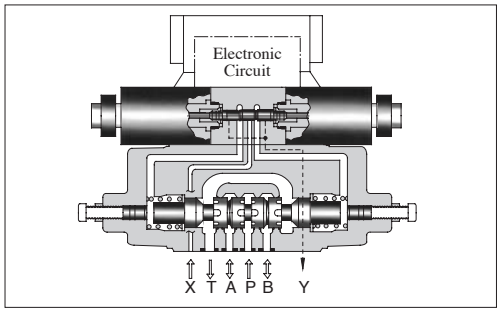
YUKEN 油圧機器

油研工業株式會社

FINCSA GROUP

"G" Series Shockless Type Solenoid Controlled Pilot Operated Directional Valves



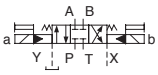
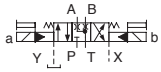


Specifications

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) ★1	250 (66.1) ★1
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) ★2	
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
G-DSHG: G Series Shockless Type Solenoid Controlled Pilot Operated Directional Valve, Sub-plate Mounting	**04**	**3C2** 	**None**: Internal Pilot	**R2**: With Stroke Adjustment, Both Ends	**None**: Sink Type (Standard)	**50**	Refer to ★
	06	**3C40** 	**E**: External Pilot	**RA**: With Stroke Adjustment, Port "A" End **RB**: With Stroke Adjustment, Port "B" End	**S**: Source Type	**50**	

★ 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 DHGM-04X-20	Rc 1/2 Rc 3/4	4.4 (9.7) 4.1 (9.0)	DHGM-04-2080 DHGM-04X-2080	1/2 BSP.F 3/4 BSP.F	4.4 (9.7) 4.1 (9.0)	DHGM-04-2090 DHGM-04X-2090	1/2 NPT 3/4 NPT	4.4 (9.7) 4.1 (9.0)
G-DSHG-06	DHGM-06-50 DHGM-06X-50	Rc 3/4 Rc 1	7.4 (16.3) 7.4 (16.3)	DHGM-06-5080 DHGM-06X-5080	3/4 BSP.F 1 BSP.F	8.5 (18.7) 8.5 (18.7)	DHGM-06-5090 DHGM-06X-5090	3/4 NPT 1 NPT	7.4 (16.3) 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)

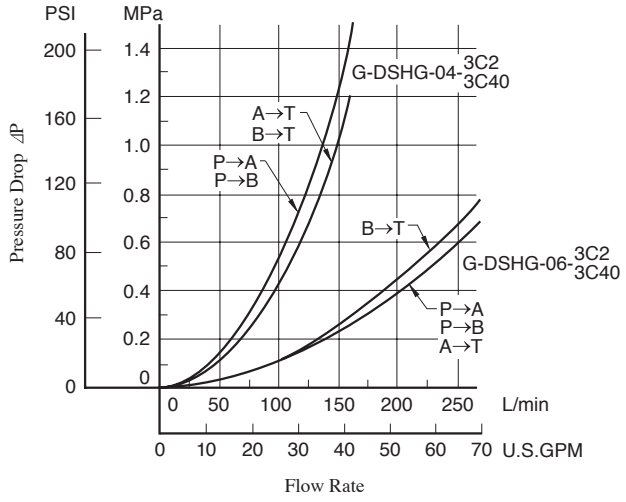
Socket head cap screws in the table below are included.

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. M10 × 50 Lg.	1/4-20 UNC × 1-3/4 Lg. 3/8-16 UNC × 2 Lg.	2 4	12-15 (106-133) 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 mm²/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.

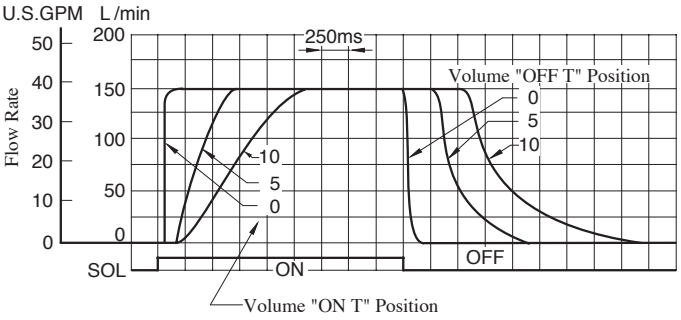
Viscosity	mm²/s	15	20	30	40	50	60	70	80	90	100
	SSU	77	98	141	186	232	278	324	371	417	464
Factor		0.84	0.91	1.00	1.07	1.14	1.19	1.24	1.28	1.32	1.35

- For any other specific gravity (G'), the pressure drop (⊿P') may be obtained from the formula below.
  ⊿P'=⊿P (G'/0.850)

Shifting Characteristics

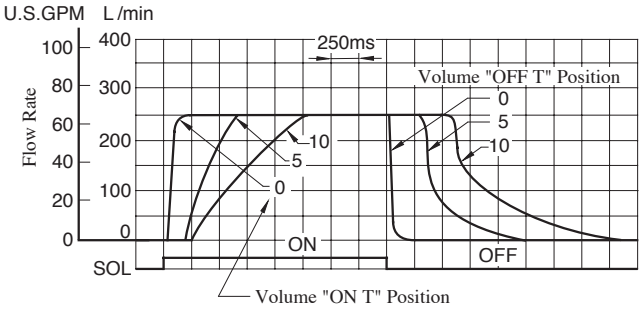
G-DSHG-04-3C2/3C40

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

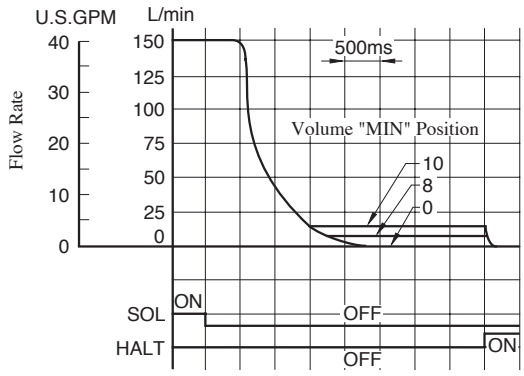
Supply Pressure : 16 MPa (2320 PSI)
Flow Rate : 250 L/min (66.1 U.S.GPM)
Pilot Pressure : 16 MPa (2320 PSI)



Low Speed Operating Flow Characteristics

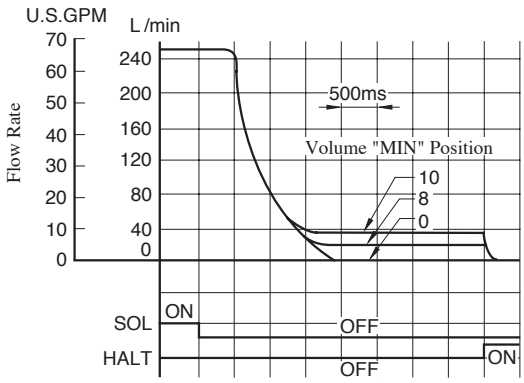
G-DSHG-04-3C2/3C40

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



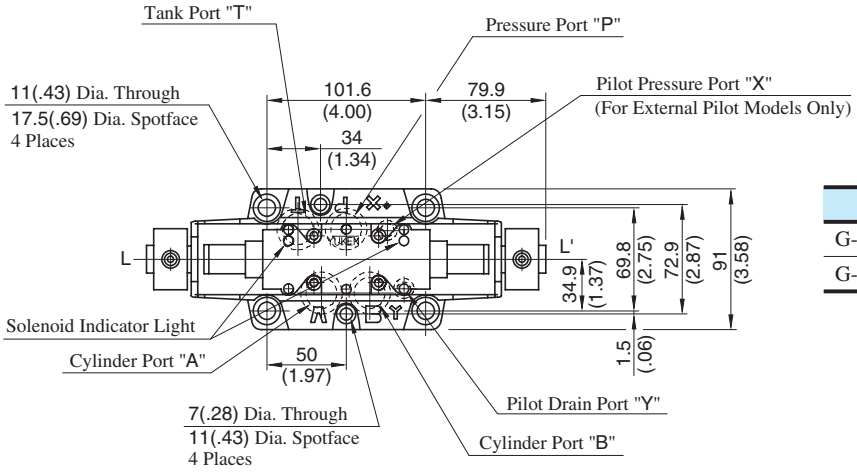
G-DSHG-06-3C2/3C40

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

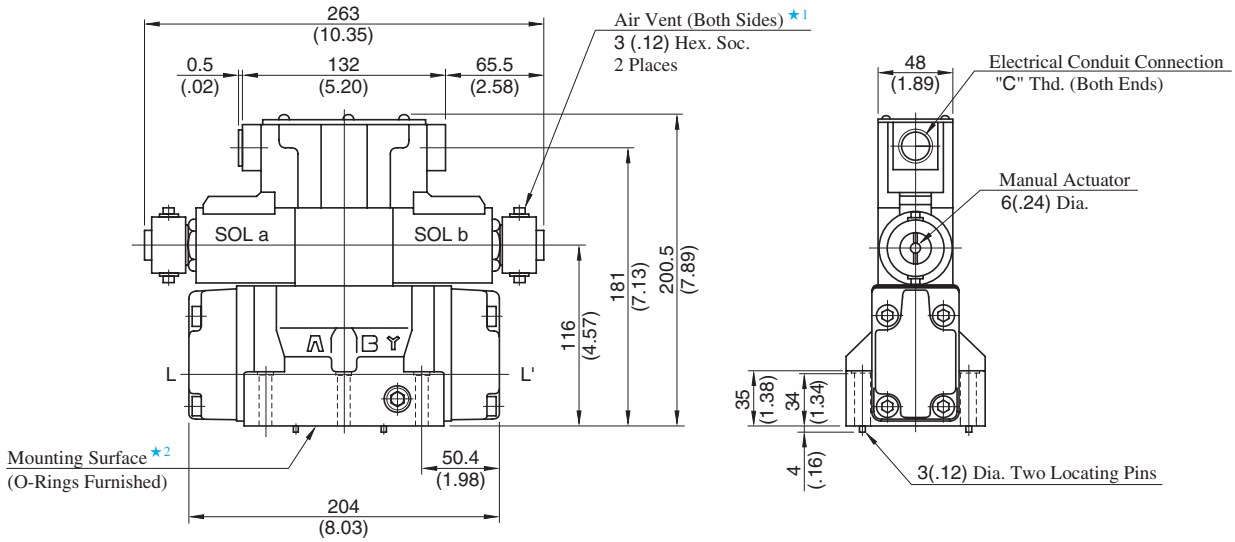


G-DSHG-04-3C∗-∗-∗-50/5090

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

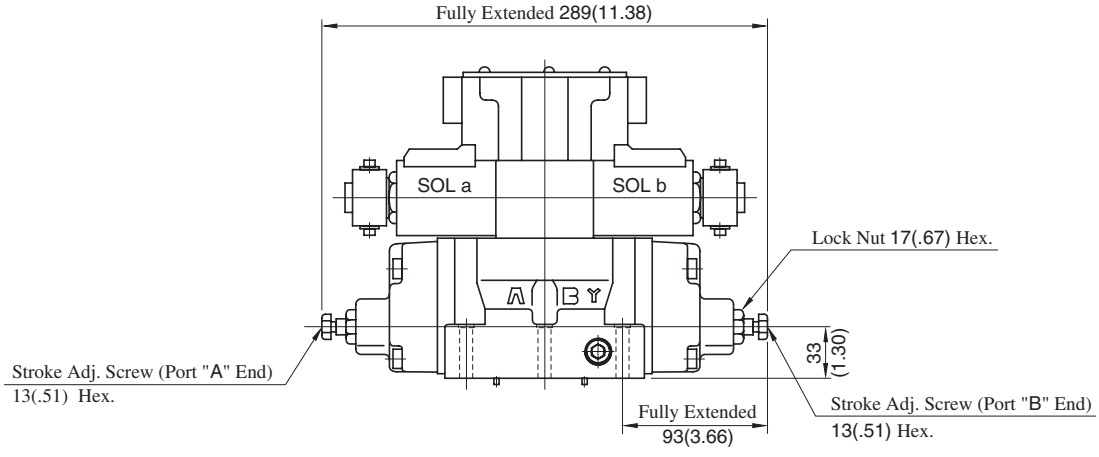


★1. Air vent position around valve longitudinal axis can be optionally selected.
★2. O-rings for ports: SO-NB-P22 for P/A/B/T ports
SO-NB-P9 for X/Y ports
Note: For the valve mounting surface dimensions, see the dimensional drawing of the sharable sub-plate on page 401.

DIMENSIONS IN MILLIMETRES (INCHES)

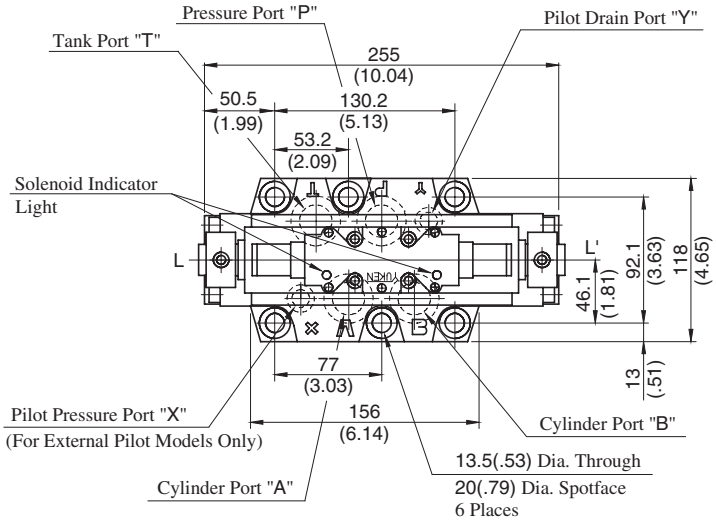
● Models with Stroke Adjustment (Option)

G-DSHG-04-3C∗-∗-R∗-∗-50/5090

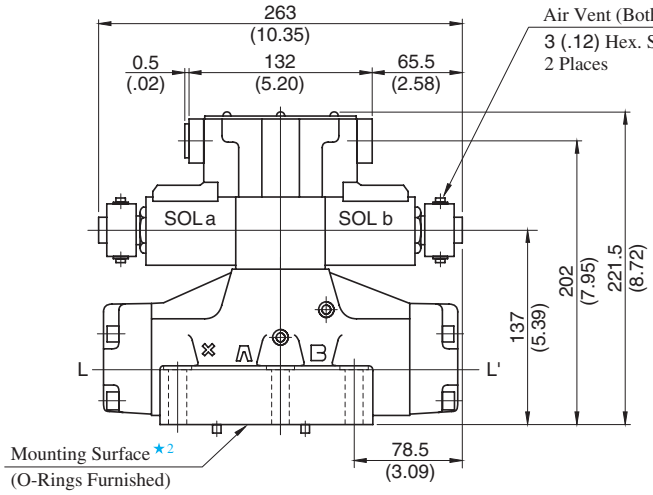


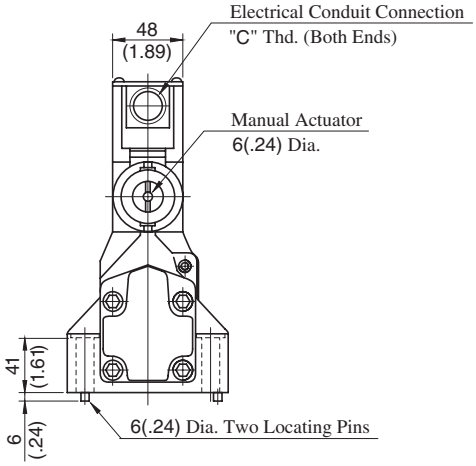
G-DSHG-06-3C∗-∗-∗-50/5090

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



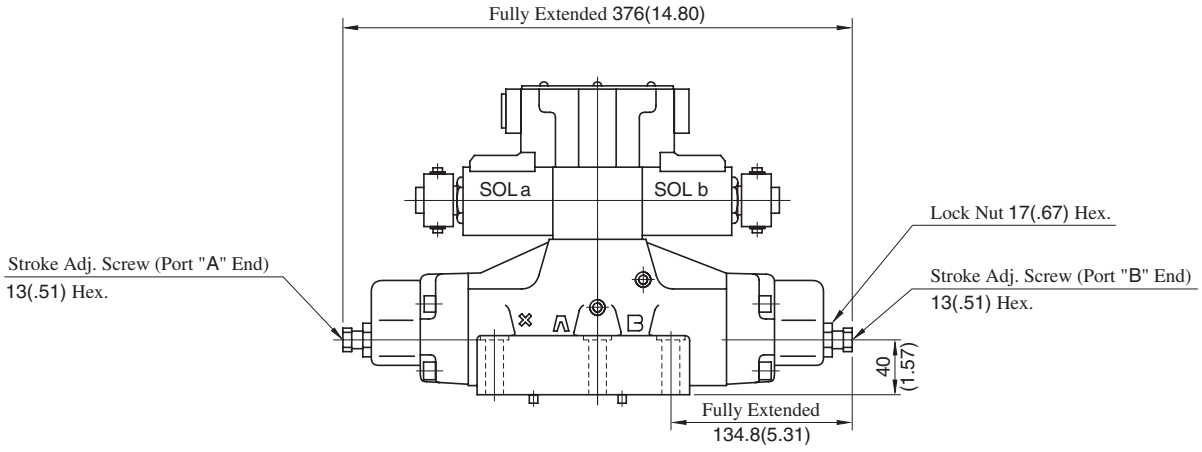


★1. Air vent position around valve longitudinal axis can be optionally selected.
★2. O-rings for ports: SO-NB-P30 for P/A/B/T ports
SO-NB-P14 for X/Y ports
Note: For the valve mounting surface dimensions, see the dimensional drawing of the sharable sub-plate in page 403.

DIMENSIONS IN MILLIMETRES (INCHES)

● Models with Stroke Adjustment (Option)

G-DSHG-06-3C∗-∗-R∗-∗-50/5090



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