

■ **“G” Series Shockless Type Solenoid Operated Directional Valves  
(Shifting Time Adjustable)**

***CREATED BY YUKEN MECHATRONICS  
Solenoid Operated, Shockless, Directional Valves  
Shifting Time Adjustable.***

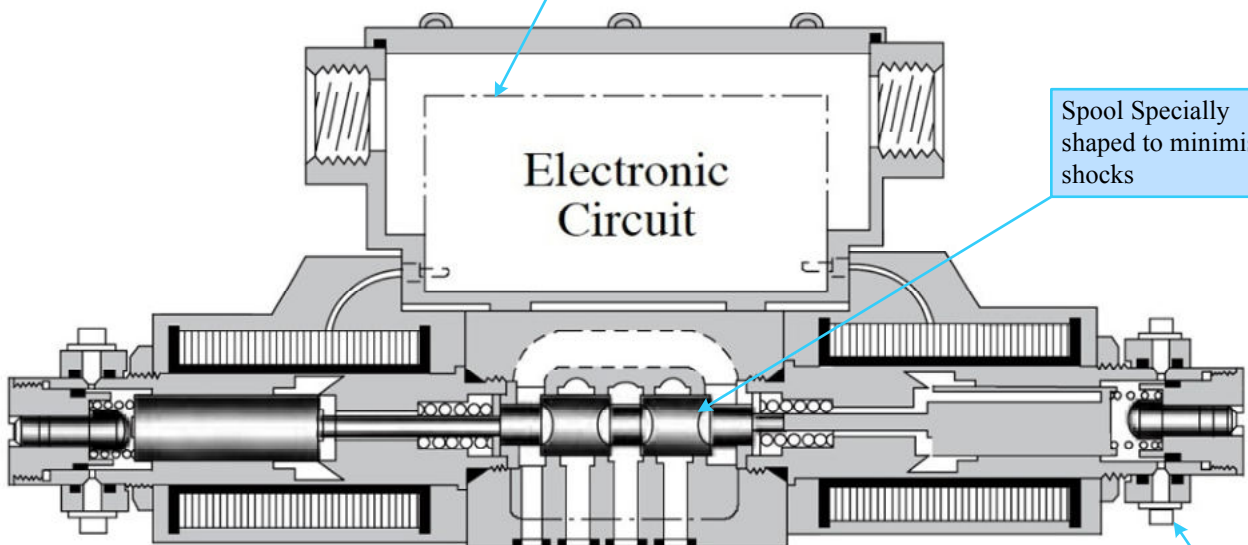
The G-Series Solenoid Operated Directional Valves incorporate electronic circuits to enable adjustment of the spool shifting time.

A special spool shape that minimizes shock is used, shock caused by the actuator starting and stopping, as well as vibration due to oil hammering.

The shifting time of conventional Solenoid Operated Shockless, Directional Valves is constant and cannot be adjusted.

As the shifting time of the G-Series valves can be adjusted, it can be set at an optional level to minimise shocks to the machine.

The renowned Yuken mechatronics, evident with the development of the Proportional Electro-Hydraulic Controls, E and EH, has been utilized to design a valve mounted compact electronic circuit.



The mounting surface conforms to international standards (ISO).  
A control circuit can be easily constructed by combining it with a modular valve.

Air bleeder incorporated, allowing for easy air bleeding. (Can be rotated 360°)

**“G” Series Shockless Type  
Solenoid Operated Directional Valves**

**Specifications**

Descriptions		Model Numbers	G-DSG-01-※※※-※-50	G-DSG-03-※※※-※-50
Max. Flow <sup>*1</sup>	L/min.		10, 20, 30, 40	40, 60, 80
Max. Operating Pres. <sup>*2</sup>	Kgf/cm <sup>2</sup>		250	250
Max. T-Line Back Pres.	Kgf/cm <sup>2</sup>		160	160
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)			0.1 – 1 s	0.3 – 1 s
Low speed operation flow rate (min. flow rate) range (for SOL a and b)		L/min.	0.5 – 5	1 – 10
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	Single Solenoid		2.1Kg.	5.3 Kg.
	Double Solenoid		3.0 Kg.	7.5 Kg.

**Model Number Designation**

G-DSG	-01	-10	-2B7	-S	-50 <sup>*1</sup>	-L
Series Number	Valve Size	Metred Flow Capacity	Spool Type	Input Interface	Design Number	Model with Alternate Offset Solenoid
<b>G-DSG:</b> G Series Shockless Type Solenoid Operated Directional Valve, Sub-plate Mounting	01	None: 40 L/min. 10 : 10 L/min. 20 : 20 L/min.		None: Sink Type (Standard)  S: Source Type	50	L Applicable only for 2B7 (Omit if not required)  
		None : 30 L/min. 10 : 10 L/min. 20 : 20 L/min.				
	03	None : 80 L/min. 40 : 40 L/min. 60 : 60 L/min.			50	
		None : 60 L/min. 40 : 40 L/min.				

\*1 Consult YUKEN for availability.

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### ■ Sub-plates

Valve Model Numbers	European Design Standard		Approx. Mass Kg.
	Sub-plate Model Numbers	Thread Size	
G-DSG-01	DSGM-01-3180	1/8 BSP.F	0.8
	DSGM-01X-3180	1/4 BSP.F	0.8
G-DSG-03	DSGM-03-2180	3/8 BSP.F	3.0
	DSGM-03X-2180	1/2 BSP.F	3.0
	DSGM-03Y-2180	3/4 BSP.F	4.7

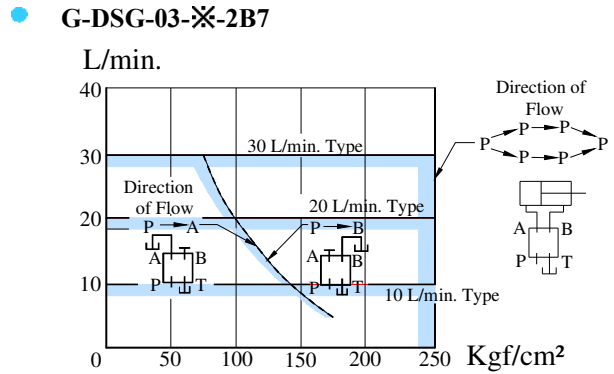
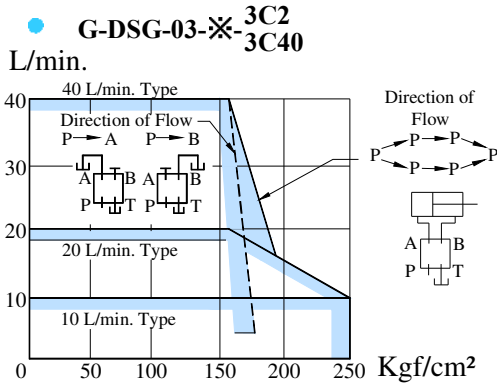
Sub-plates are available . Specify the sub-plate model number from the table above.  
When sub-plates are not used, the mounting surface should have a good machined finish.

### ■ Mounting Bolts

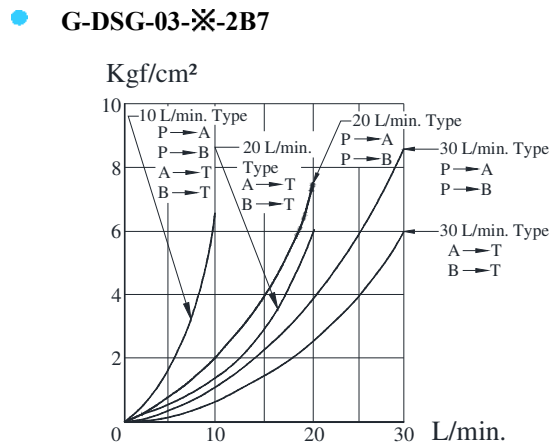
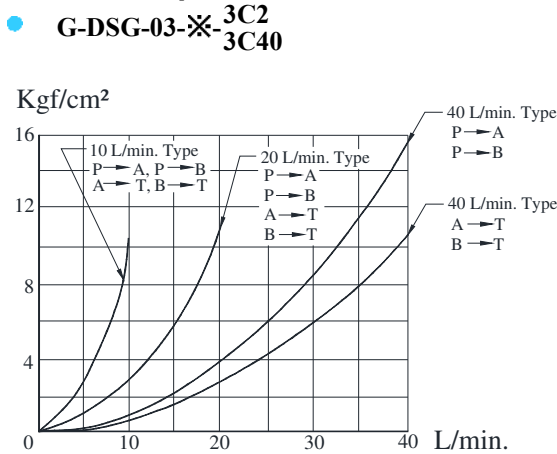
Four socket head cap screws in the table below are included.

Model Numbers	Socket Head Cap Screw		
	Japanese Standard "JIS" & European Design Standard	Qty.	Mounting Bolt Ordering Code
G-DSG-01	M5 x 45 Lg.	4	BKDSG-01-50
G-DSG-03	M6 x 35 Lg.	4	BKDSG-03-50

**Maximum Flow Rate**



**Pressure Drop**



- \* For any other viscosity, multiply the factors in the table right.
- \* For any other specific gravity (G'), the pressure drop ( $\Delta P'$ ) may be obtained from the formula below.

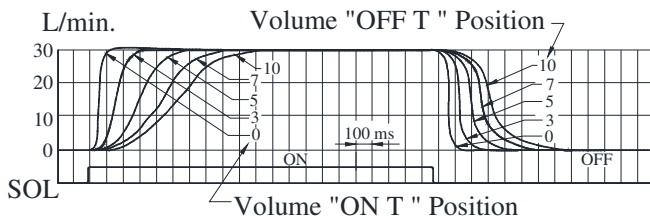
$$\Delta P' = \Delta P (G'/0.850)$$

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
Factor		0.84	0.91	1.00	1.07	1.14	1.19	1.24	1.28	1.32	1.35

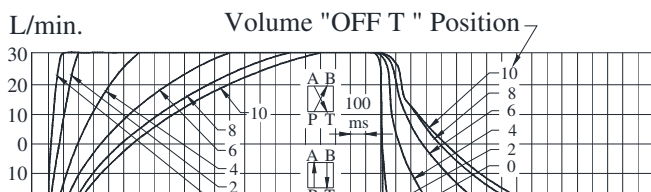
**Shifting Characteristics**

Supply Pressure : 160 Kgf/cm<sup>2</sup>  
Flow Rate : 60 L/min.

- **3C2, 3C40**

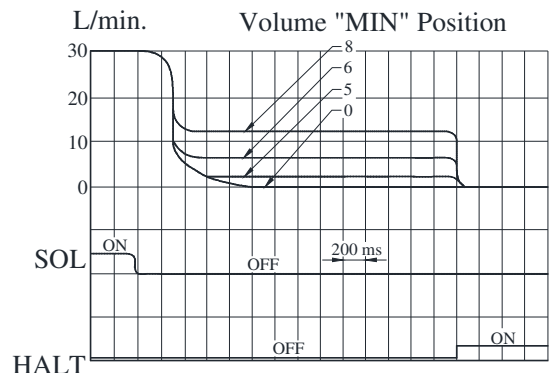


- **2B7**



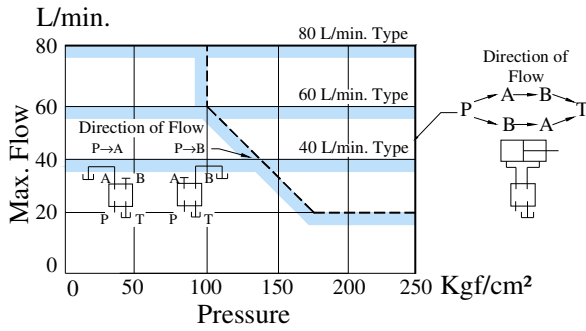
**Low Speed Operation Flow Characteristics**

Supply Pressure : 160 Kgf/cm<sup>2</sup>  
Flow Rate : 60 L/min.

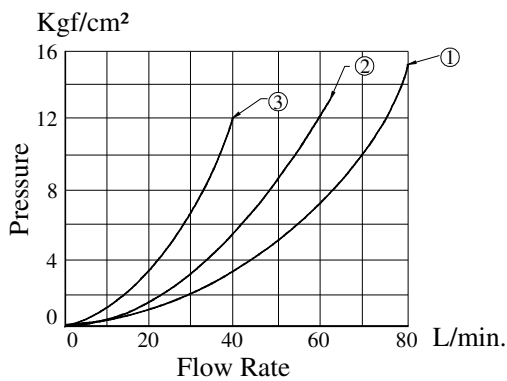
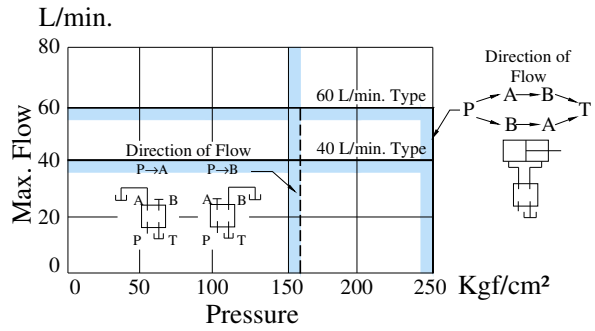


**Maximum Flow Rate**

● G-DSG-03-※-3C2  
3C40



● G-DSG-03-※-2B7



Model Numbers	Pressure Drop Curve Numbers
G-DSG-03-3C2 3C40	①
G-DSG-03-40-3C2 3C40	③
G-DSG-03-60-3C2 3C40	②
G-DSG-03-2B7	①
G-DSG-03-40-2B7	③

\* The numbers of the pressure drop curves are the same P→A, P→B, A→T and B→T.

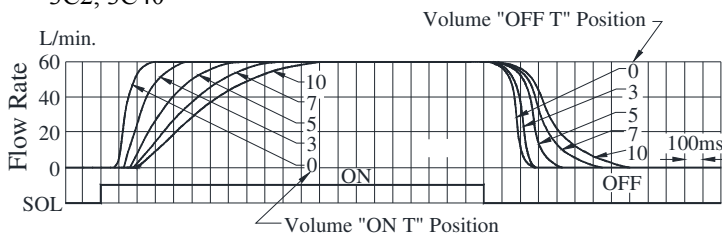
- \* For any other viscosity, multiply the factors in the table right.
- \* For any other specific gravity (G'), the pressure drop ( $\Delta P'$ ) may be obtained from the formula below.  
 $\Delta P' = \Delta P (G'/0.850)$

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
Factor		0.84	0.91	1.00	1.07	1.14	1.19	1.24	1.28	1.32	1.35

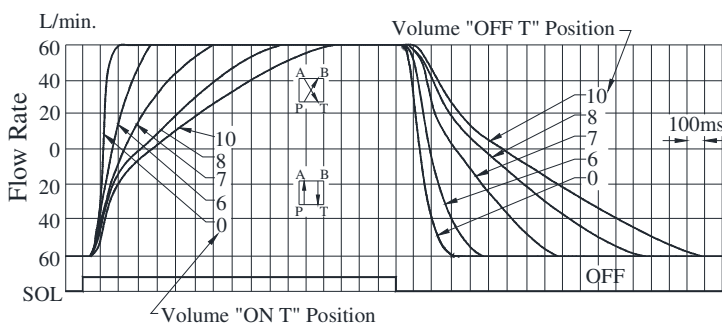
**Shifting Characteristics**

Supply Pressure : 160 Kgf/cm<sup>2</sup>  
Flow Rate : 60 L/min.

● 3C2, 3C40

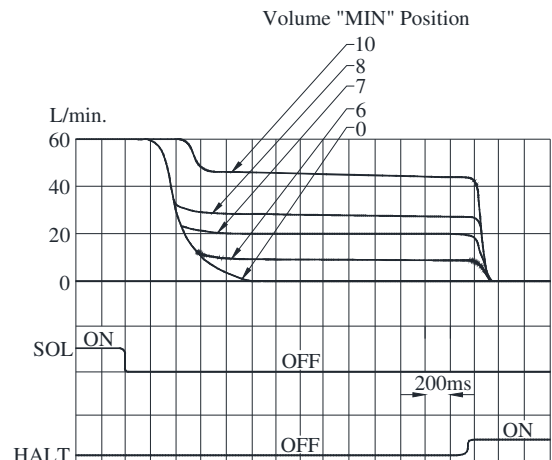


● 2B7



**Low Speed Operation Flow Characteristics**

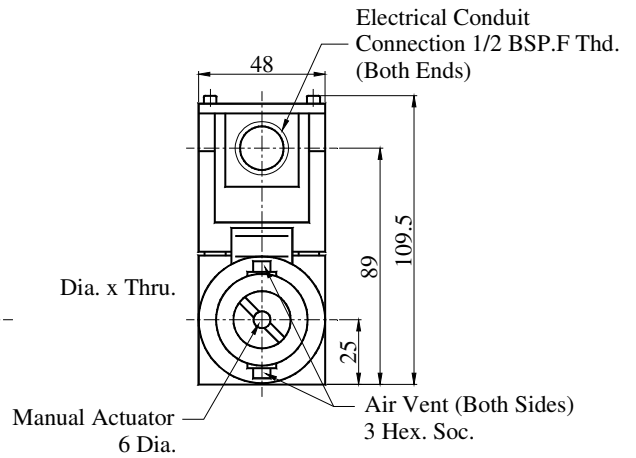
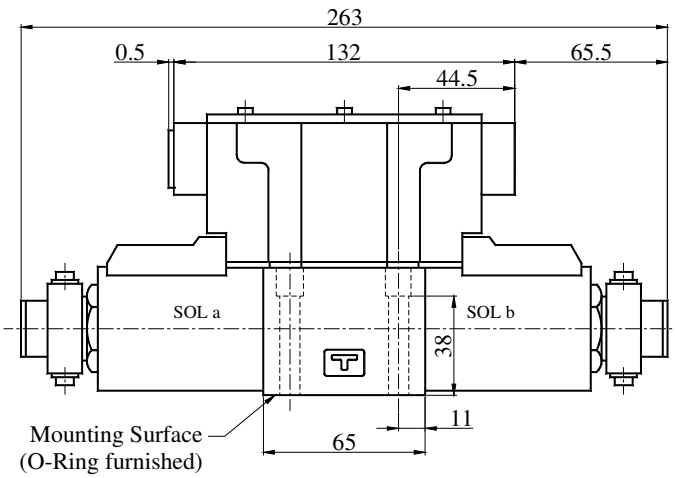
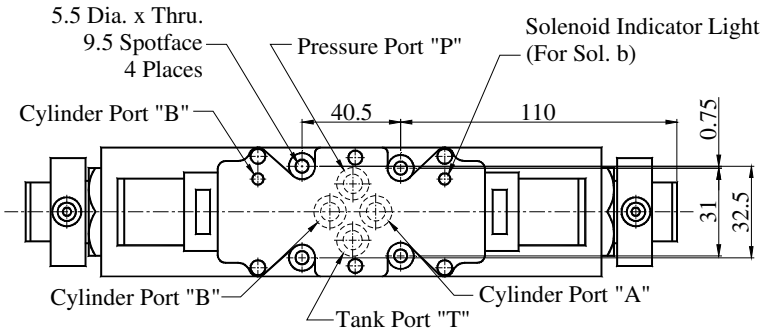
Supply Pressure : 160 Kgf/cm<sup>2</sup>  
Flow Rate : 60 L/min.



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■ G-DSG-01-※-3C2/3C40-※-50

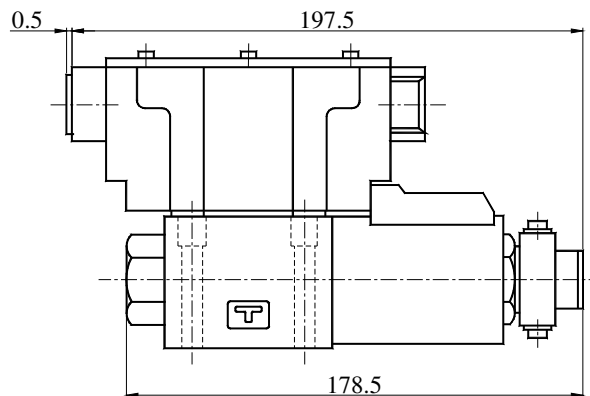
Mounting Surface:  
ISO4401-AC-05-4-A



\*1 Air vent position around valve longitudinal axis can be optionally selected.

DIMENSIONS IN  
MILLIMETRES

■ G-DSG-01-※-2B7-※-50



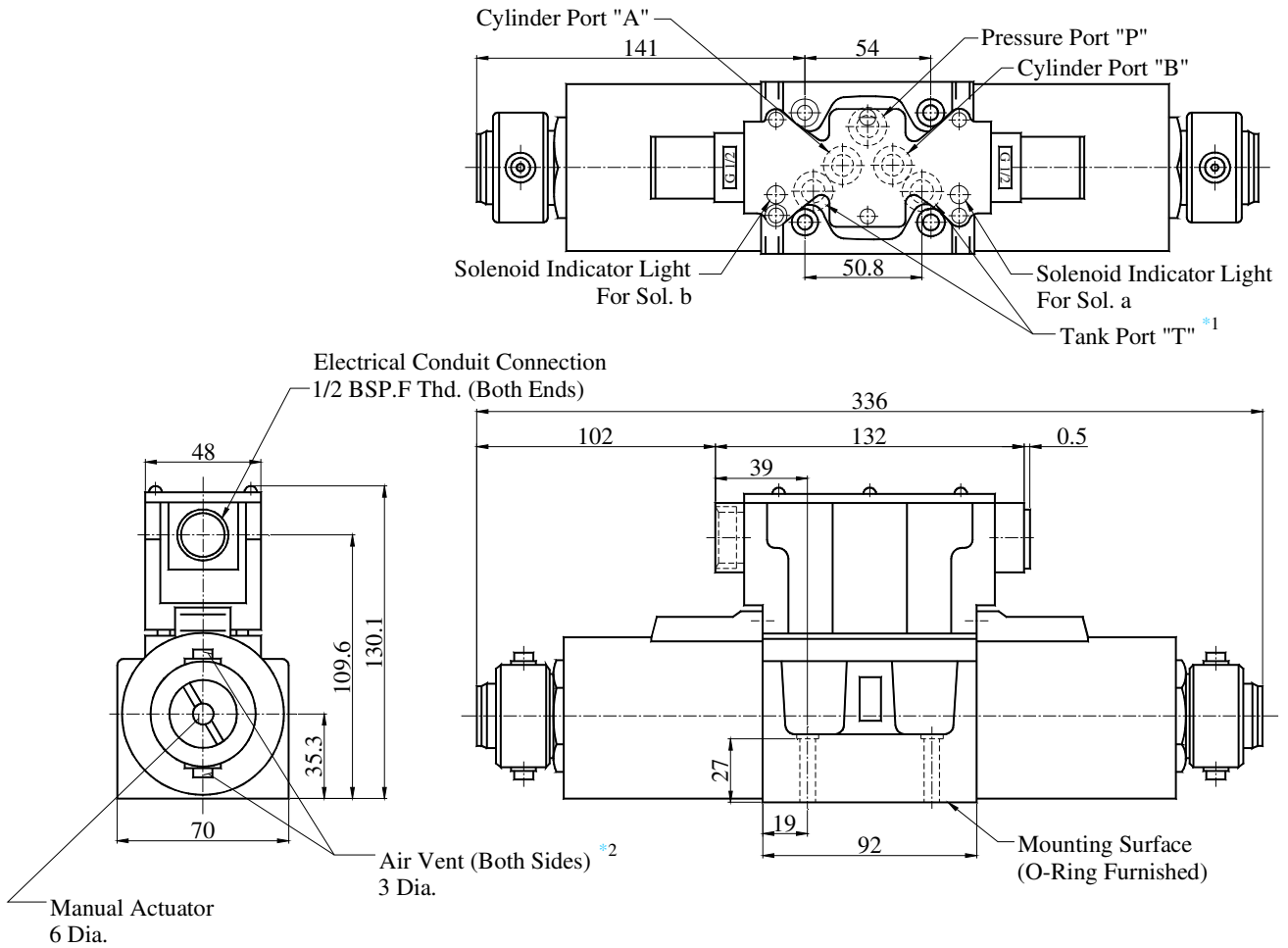
● For other dimensions, refer to "Flange Mtg".

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**G-DSG-03-※-3C2/3C40-※-50**

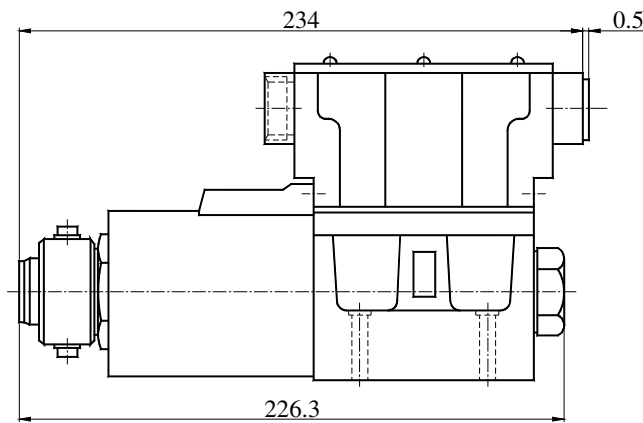
Mounting Surface:  
ISO4401-AC-05-4-A



\*1 Although the tank port is shown on the left in our sub-plate, either may be used.  
\*2 Air vent position around valve longitudinal axis can be optionally selected.

**DIMENSIONS IN MILLIMETRES**

**G-DSG-03-※-2B7-※-50**



● For other dimensions, refer to "Flange Mtg".

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