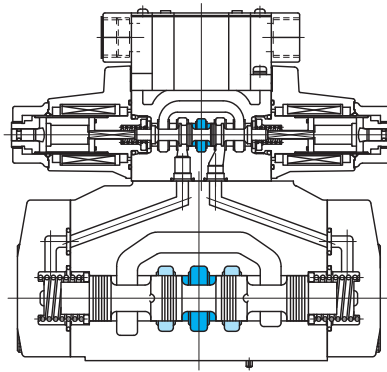
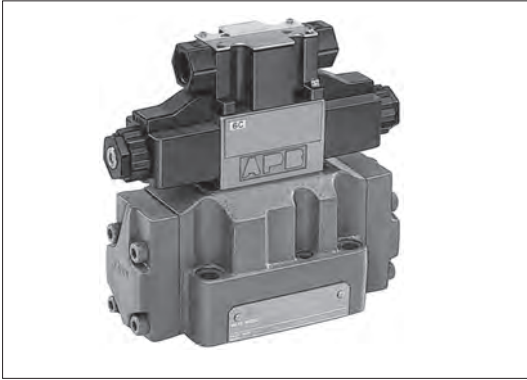


Solenoid controlled pilot operated directional control valves

DG5V-7/DG5V-H8



● Solenoid pilot operated directional valves incorporate DG4V-3-54 design pilot valves.

Model Code

(F3)-DG5V-7-2A(L)-(1)-(E)-(T)-P7-T-84-JA

1 2 3 4 5 6 7 8 9 10 11 12 13

- 1 Hydraulic fluid
Omit: mineral oil based fluid, water-glycol based fluid
F3: Phosphate ester
- 2 Solenoid controlled pilot operated directional control valve (gasket mounting)
Wet armature type
- 3 Mounting dimensions
7: ISO 4401-AD-07-4-A
H8: ISO 4401-AE-08-4-A
- 4 Spool type See page E4-4 to E4-7
- 5 Spool/spring arrangement
A: Spring offset, A type (2 position, single solenoid)
B: Spring offset, B type (2 position, single solenoid)
C: Spring centered type (3 position, double solenoid)
D: Pressure centered type (3 position, double solenoid)
N: No spring detented type (2 position, double solenoid)
- 6 Solenoid assembly configuration (for spring sets, type A and B)
Omit: standard (energized: P to B, A to T)
L: Left hand build (energized: P to A, B to T)
- 7 Spool stroke control (option)
Omit: no option (standard)
1: Stroke adjuster (both A, B ports)
2: Pilot restrictor (meter out control)
3: Pilot restrictor + stroke adjuster (both sides)
7: Stroke adjuster (A port side)
8: Stroke adjuster (B port side)
27: Pilot restrictor + stroke adjuster (A port side)
28: Pilot restrictor + stroke adjuster (B port side)
- 8 Pilot
Omit: internal pilot
E: External pilot
- 9 Drain
Omit: external drain
T: Internal drain

- 10 Electrical wiring system
P: Plug-in solenoids, conduit box, G 1/2
U: DIN43650 connectors, Pg. 11
- 11 Electrical accessories
Omit: no accessories (electrical wiring P) and for no connectors (electrical wiring U)
1: Connectors without accessories (electrical wiring U)
2: With indicator lamp (AC standard)
7: With indicator lamp and surge suppressor (DC standard)
9: ADC solenoid rectifier (fast solenoid deenergization), indicator lamp and surge suppressor
12: ADC solenoid rectifier (slow solenoid deenergization), indicator lamp and surge suppressor

Table of electrical accessories which can be selected

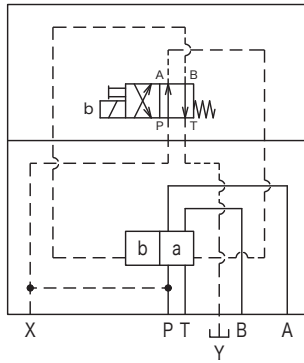
Electrical Wiring System	Solenoid Power Supply	Electrical Accessories					
		Omitted	1	2	7	9	12
P	AC	○	×	◎	○	×	×
	DC	○	×	○	◎	×	×
	AC/DC conversion	×	×	×	×	○	○
U	AC	○	○	○	○	×	×
	DC	○	○	×	○	×	×
	AC/DC conversion	×	×	×	×	×	○

◎: Standard
○: Electrical accessory which can be selected
×: Electrical accessory which cannot be selected

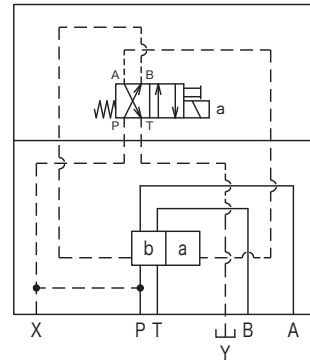
- 12 Solenoid supply voltage (See page E2-2)
- 13 Design no.

**Functional Symbols
(Internal Pilot, External Drain)**

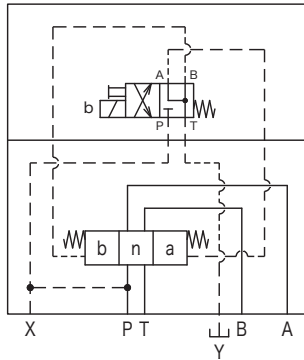
DG5V-7/H8-*A
Spring Offset, A Type



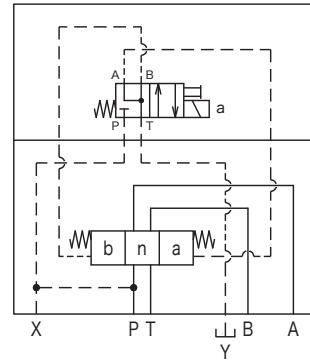
DG5V-7/H8-*AL
Spring Offset, AL Type



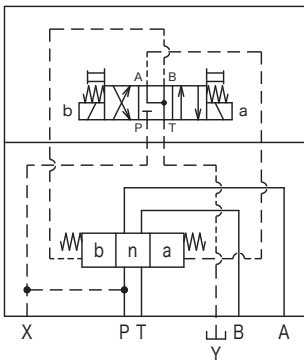
DG5V-7/H8-*B
Spring Offset, B Type



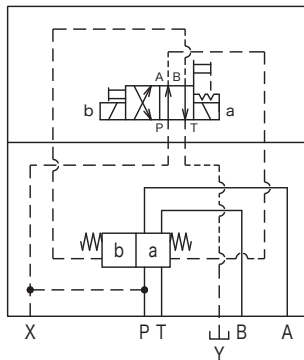
DG5V-7/H8-*BL
Spring Offset, BL Type



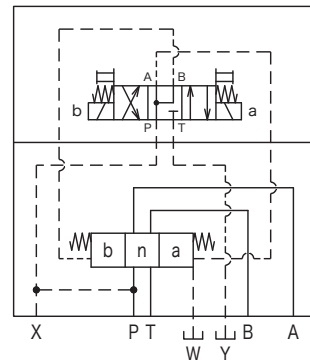
DG5V-7/H8-*C
Spring Centered Type



DG5V-7/H8-*N
No Spring Detented Type



DG5V-7/H8-*D
Pressure Centered Type



Specifications

Valve Model	Size	Max. Working Pressure MPa	Max. Flow L/min	Allowable T (Tank) Port Back Pressure MPa	Min. Pilot Pressure MPa	Max. Pilot Pressure MPa	Weight kg	
							Single Solenoids	Double Solenoids
DG5V-7	04	31.5	See Pressure-Flow Characteristics	20.6	See Min. Pilot Pressure Curves	31.5	8.6	9.1
DG5V-H8	06	31.5	See Pressure-Flow Characteristics	20.6	See Min. Pilot Pressure Curves	31.5	16.7	17.2

Solenoid Specifications and Solenoid Controlled Pilot Operated Directional Control Valve

DG4V-3 solenoid valve used as pilot. See page E2-2 for solenoid specifications. Following spool/spring arrangement valves are used.

Spring Offset, A Type: DG4V-3-2A-M-**-7-54

Spring Offset, B Type: DG4V-3-6B-M-**-7-54

Spring Centered, C Type: DG4V-3-6C-M-**-7-54

Pressure Centered, D Type: DG4V-3-7C-M-**-7-54

Spring Offset, AL Type: DG4V-3-2AL-M-**-7-54

Spring Offset, BL Type: DG4V-3-6BL-M-**-7-54

No Spring Detented, N Type: DG4V-3-2N-M-**-7-54

Note: 4/8B uses DG4V-3-6BL and 4/8BL uses DG4V-3-6B.

Two stage DG5VC-7 and DG5VC-H8 which incorporate fine current control pilot solenoid valves, DG4VC-3 (DC24V) also available. Consult Tokyo Keiki for details. (Refer to page E6-1 for details of the DC4VC-3.)

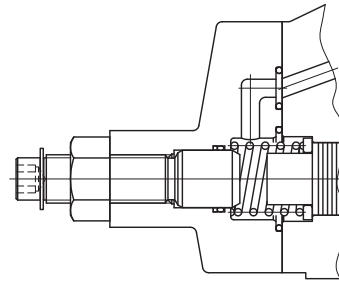
Options

Spool stroke adjustment

Spool stroke adjusters can be installed on one or both sides and provides flow control by adjustment of the spool maximum opening. Flow control can be enhanced by use X2, X33, Y2, Y33 type spools.

Pilot restrictor

A restrictor module valve incorporated with the solenoid pilot operated directional valve enables meter out control of oil from the pilot chamber during shifting of the main valve spool. This reduces transient shock. TGMFN-3-Y-A2W-B2W-50 is used as restrictor module.



Mounting Bolts (JIS B 1176, Strength Class 12.9)

Valve Model	Hex Socket Bolts	Qty
DG5V-7	M10 × 60	4
	M 6 × 55	2
DG5V-H8	M12 × 80	6

- Mounting bolts must be ordered separately.
- Tightening torque of mounting bolts
M6: 9 to 14 N·m
M10: 50 to 60 N·m
M12: 75 to 81 N·m

Subplate

Valve Model	Subplate	Connection Port Dia.	
		P, T, A, B	X, Y, W
DG5V-7	DGSMV-04-10	Rc1/2	Rc1/4
	DGSMV-04-D-10		
	DGSMV-04X-10	Rc3/4	
DGSMV-04X-D-10			
DG5V-H8	DGSMV-06-10	Rc3/4	Rc1/4
	DGSMV-06-D-10		
	DGSMV-06X-10	Rc1	
	DGSMV-06X-D-10		

- Subplate must be ordered separately.
- Subplates are supplied with hex socket bolts for mounting valve.
- See page R6-5 for dimensions.
- DGSMV-**-D-10 used is pressure centered type.
- Max. working pressure is 21 MPa. For higher pressures, valve should be mounted on manifold block.

Notes on Operation

- Mounting orientation
To ensure sure switching of no spring detented type valves, mount valves so spool axis is horizontal. There are no mounting attitude restrictions for other spool/spring arrangements.
- Solenoid energization
Always ensure that one side of solenoid is deenergized before energizing the opposite side. For spring centered, pressure centered and spring offset valves, solenoid should be continuously energized during circuit switching. Deenergization of solenoid will cause spool to return to prescribed position by spring force. For no spring detented type valves, main spool will be maintained in switched position as long as the pilot pressure is maintained. Also, to ensure sure circuit switching, solenoid should be energized for more than 0.1 second.
- Long periods of solenoid energization
Care should be paid as long periods of solenoid energization at high pressure may cause spool sticking and switching malfunction.
- Drain and pilot
 1. For internal drain type valves, pilot pressure (P port pressure of internal pilot valves) must be higher than min. pilot pressure + tank line back pressure. Therefore the pressure difference must be maintained even when surge pressures occur in the tank line.
 2. External drain type valve is recommended when surge pressures may occur in tank line. Drain line should also be piped directly to tank.
 3. In case of internal drain valve with spring sets B, C, and D and spool types 0, 1, 4, 8, 9, and 11, internal pilot type valve cannot be used if P to T port pressure drop during solenoid deenergization falls below minimum pilot pressure. Use external pilot type valve in this case.
- Manual operation
For manual switching, push the manual override pin of solenoid pilot operated directional valve while the minimum pilot pressure is maintained. Be aware that, in case of internal drain valve, actuation force increases with higher tank line back pressure. (See page E2-9)
- Solenoid indicator lamp
For valves with indicator lamps, the lamps will light when current flows to the solenoid.

Spool Types and Pressure-Flow Characteristics (DG5V-7)

Spool Center Position		Model Code, Functional Symbol			
		3 Position		2 Position	
		Spring Centered - C -	Pressure Centered Type - D -	Spring Offset, B Type - B -	
0		Open center	DG5V-7-0C 	DG5V-7-0D 	DG5V-7-0B
1		P-A-T connected	DG5V-7-1C 	DG5V-7-1D 	DG5V-7-1B
2		Closed center	DG5V-7-2C 	DG5V-7-2D 	DG5V-7-2B
3		A-T connected	DG5V-7-3C 	DG5V-7-3D 	DG5V-7-3B
4		Tandem	DG5V-7-4C 	DG5V-7-4D 	DG5V-7-4B
6		A-B-T connected	DG5V-7-6C 	DG5V-7-6D 	DG5V-7-6B
8		Tandem	DG5V-7-8C 	DG5V-7-8D 	DG5V-7-8B
9		Open center w/A,B restrictors	DG5V-7-9C 	DG5V-7-9D 	DG5V-7-9B
11		P-B-T connected	DG5V-7-11C 	DG5V-7-11D 	DG5V-7-11B
31		B-T connected	DG5V-7-31C 	DG5V-7-31D 	DG5V-7-31B
33		A-B-T connected w/restrictors	DG5V-7-33C 	DG5V-7-33D 	DG5V-7-33B
52		Closed center	DG5V-7-52C 	DG5V-7-52D 	
X2		Closed center	DG5V-7-X2C 	DG5V-7-X2D 	DG5V-7-X2B
Y2		Closed center	DG5V-7-Y2C 	DG5V-7-Y2D 	DG5V-7-Y2B
X33		A-B-T connected w/restrictors	DG5V-7-X33C 	DG5V-7-X33D 	DG5V-7-X33B
Y33		A-B-T connected w/restrictors	DG5V-7-Y33C 	DG5V-7-Y33D 	DG5V-7-Y33B

Spool Transient Condition		Model Code, Functional Symbol			
		2 Position		No Spring Detented - N -	
		Spring Offset, A Type - A -	- AL -		
0		Open center	DG5V-7-0A 	DG5V-7-0AL 	DG5V-7-0N
2		Closed center	DG5V-7-2A 	DG5V-7-2AL 	DG5V-7-2N
6		A-B-T connected	DG5V-7-6A 	DG5V-7-6AL 	DG5V-7-6N
9		Open center w/A,B restrictors	DG5V-7-9A 	DG5V-7-9AL 	DG5V-7-9N
52		Closed center	DG5V-7-52A 	DG5V-7-52AL 	DG5V-7-52N
X2		Closed center	DG5V-7-X2A 	DG5V-7-X2AL 	DG5V-7-X2N
Y2		Closed center	DG5V-7-Y2A 	DG5V-7-Y2AL 	DG5V-7-Y2N

Note: Max. flow refers to limit flow without valve malfunction for valve switching.

2 Position Spring Offset, B Type — BL —	Max. Flow L/min					Pressure Drop Curve Number				
	7 MPa	14 MPa	21 MPa	28 MPa	31.5 MPa	Switched Condition				Neutral
						P→A	B→T	P→B	A→T	P→T
DG5V-7-0BL 	300	300	300	300	300	②	①	②	③	③
DG5V-7-1BL 	260	220	120	100	90	①	②	②	③	④
DG5V-7-2BL 	300	300	300	300	300	①	②	①	②	—
DG5V-7-3BL 	300	300	300	300	300	①	②	①	③	—
DG5V-7-4BL 	260	220	120	100	90	②	②	②	①	⑥
DG5V-7-6BL 	300	300	300	300	300	①	①	①	③	—
DG5V-7-8BL 	300	300	250	165	140	②	②	②	①	⑤
DG5V-7-9BL 	260	220	120	100	90	①	②	①	③	⑦
DG5V-7-11BL 	260	220	120	100	90	②	③	①	②	④
DG5V-7-31BL 	300	300	300	300	300	①	③	①	②	—
DG5V-7-33BL 	300	300	300	300	300	①	②	①	②	—
DG5V-7-52BL 	300	300	300	300	300	②	—	③	③	—
DG5V-7-X2BL 	120	120	120	120	120	—	②	—	②	—
DG5V-7-Y2BL 	120	120	120	120	120	①	—	①	—	—
DG5V-7-X33BL 	120	120	120	120	120	—	②	—	②	—
DG5V-7-Y33BL 	120	120	120	120	120	①	—	①	—	—

Max. Flow L/min					Pressure Drop Curve Number			
7 MPa	14 MPa	21 MPa	28 MPa	31.5 MPa	Switched Condition			
					P→A	B→T	P→B	A→T
300	300	300	300	300	②	①	②	③
300	300	300	300	300	①	②	①	②
300	300	300	300	300	①	①	①	③
260	220	120	100	90	①	②	①	③
300	300	300	300	300	②	—	③	③
120	120	120	120	120	—	②	—	②
120	120	120	120	120	①	—	①	—

Spool Types and Pressure-Flow Characteristics (DG5V-H8)

Spool Center Position		Model Code, Functional Symbol			
		3 Position		2 Position	
		Spring Centered - C -	Pressure Centered Type - D -	Spring Offset, B Type - B -	
0		Open center	DG5V-H8-0C 	DG5V-H8-0D 	DG5V-H8-0B
1		P-A-T connected	DG5V-H8-1C 	DG5V-H8-1D 	DG5V-H8-1B
2		Closed center	DG5V-H8-2C 	DG5V-H8-2D 	DG5V-H8-2B
3		A-T connected	DG5V-H8-3C 	DG5V-H8-3D 	DG5V-H8-3B
4		Tandem	DG5V-H8-4C 	DG5V-H8-4D 	DG5V-H8-4B
6		A-B-T connected	DG5V-H8-6C 	DG5V-H8-6D 	DG5V-H8-6B
8		Tandem	DG5V-H8-8C 	DG5V-H8-8D 	DG5V-H8-8B
9		Open center w/A,B restrictors	DG5V-H8-9C 	DG5V-H8-9D 	DG5V-H8-9B
11		P-B-T connected	DG5V-H8-11C 	DG5V-H8-11D 	DG5V-H8-11B
31		B-T connected	DG5V-H8-31C 	DG5V-H8-31D 	DG5V-H8-31B
33		A-B-T connected w/restrictors	DG5V-H8-33C 	DG5V-H8-33D 	DG5V-H8-33B
52		Closed center	DG5V-H8-52C 	DG5V-H8-52D 	DG5V-H8-52B
X2		Closed center	DG5V-H8-X2C 	DG5V-H8-X2D 	DG5V-H8-X2B
Y2		Closed center	DG5V-H8-Y2C 	DG5V-H8-Y2D 	DG5V-H8-Y2B
X33		A-B-T connected w/restrictors	DG5V-H8-X33C 	DG5V-H8-X33D 	DG5V-H8-X33B
Y33		A-B-T connected w/restrictors	DG5V-H8-Y33C 	DG5V-H8-Y33D 	DG5V-H8-Y33B

Spool Transient Condition		Model Code, Functional Symbol			
		2 Position			
		Spring Offset, A Type - A -	No Spring Detented - AL -	No Spring Detented - N -	
0		Open center	DG5V-H8-0A 	DG5V-H8-0AL 	DG5V-H8-0N
2		Closed center	DG5V-H8-2A 	DG5V-H8-2AL 	DG5V-H8-2N
6		A-B-T connected	DG5V-H8-6A 	DG5V-H8-6AL 	DG5V-H8-6N
9		Open center w/A,B restrictors	DG5V-H8-9A 	DG5V-H8-9AL 	DG5V-H8-9N
52		Closed center	DG5V-H8-52A 	DG5V-H8-52AL 	DG5V-H8-52N
X2		Closed center	DG5V-H8-X2A 	DG5V-H8-X2AL 	DG5V-H8-X2N
Y2		Closed center	DG5V-H8-Y2A 	DG5V-H8-Y2AL 	DG5V-H8-Y2N

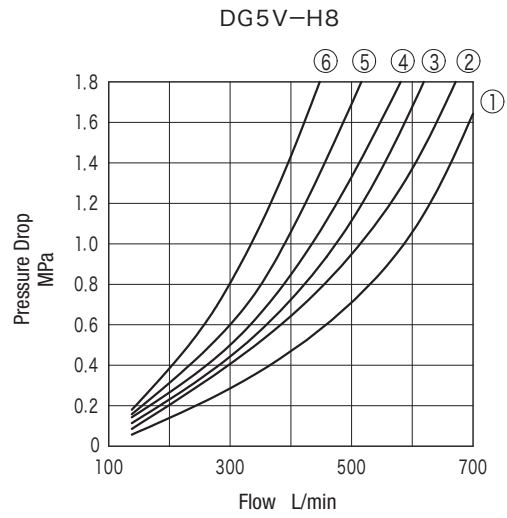
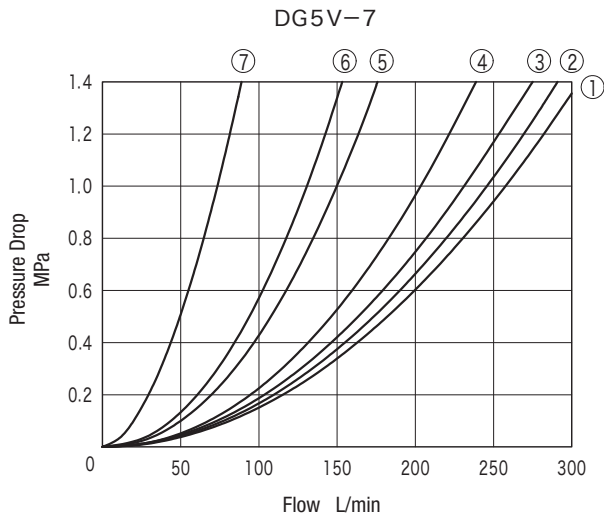
Note: • Upper values for maximum flow for spring offset, types A, AL: lower values for no spring detent types.
 • Max. flow refers to limit flow without valve malfunction for valve switching.

2 Position Spring Offset, B Type - BL -	Max. Flow L/min		Pressure Drop Curve Number				
	21 MPa	31.5 MPa	Switched Condition				Neutral
			P→A	B→T	P→B	A→T	P→T
DG5V-H8-0BL 	700	650	②	⑤	②	③	④
DG5V-H8-1BL 	650	500	①	②	②	②	⑤
DG5V-H8-2BL 	700	700	①	②	①	②	—
DG5V-H8-3BL 	700	700	①	②	①	④	—
DG5V-H8-4BL 	350	220	①	④	①	③	⑥
DG5V-H8-6BL 	650	600	①	④	①	④	—
DG5V-H8-8BL 	700	450	①	④	①	③	⑥
DG5V-H8-9BL 	350	220	②	④	②	③	—
DG5V-H8-11BL 	650	500	②	②	①	②	⑤
DG5V-H8-31BL 	700	700	①	④	①	②	—
DG5V-H8-33BL 	700	700	①	②	①	①	—
DG5V-H8-52BL 	700	700	②	—	⑤	②	—
DG5V-H8-X2BL 	300	300	—	②	—	②	—
DG5V-H8-Y2BL 	300	300	①	—	①	—	—
DG5V-H8-X33BL 	300	300	—	②	—	②	—
DG5V-H8-Y33BL 	300	300	①	—	①	—	—

Max. Flow L/min		Pressure Drop Curve Number			
21 MPa	31.5 MPa	Switched Condition			
		P→A	B→T	P→B	A→T
500 700	500 650	②	⑤	②	③
700	700	①	②	①	②
500 650	500 600	①	④	①	④
500 350	500 220	②	④	②	③
700	700	②	—	⑤	②
300	300	—	②	—	②
300	300	①	—	①	—

Characteristics Curve (viscosity 20 mm²/s , specific gravity 0.87) (typical examples)

Pressure Drop Characteristics



- For pressure drops (ΔP_1) of viscosities other than 20 mm²/s, calculate using multiplier coefficients shown in below table.
- The formula to calculate pressure drops (ΔP_1) for specific gravities other than 0.87 is as follows.

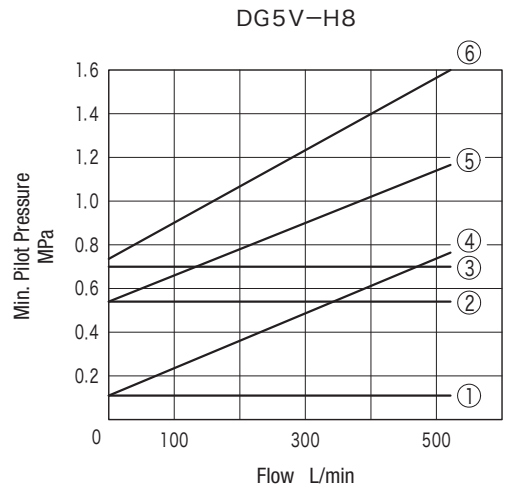
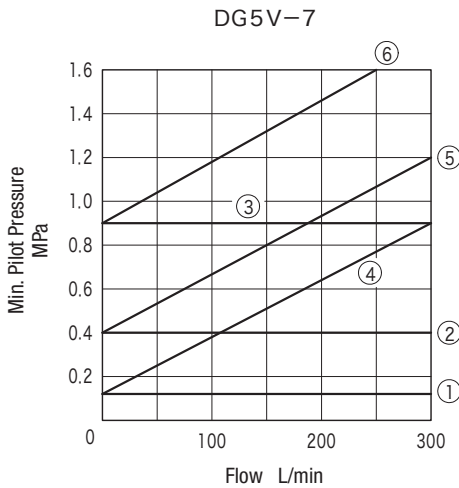
$$\Delta P_1 = \Delta P \times G_1 / G$$

ΔP Values according to characteristics curve
 G 0.87
 G_1 Desired specific gravity value

Viscosity mm ² /s	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Coefficient	0.85	1.00	1.09	1.17	1.24	1.29	1.34	1.38	1.42	1.46	1.49	1.52	1.56	1.59	1.62

Pilot

Minimum Pilot Pressure



Min. Pilot Pressure Curve No.

Spool/Spring Arrangement	Spool Type	Min. Pilot Pressure Curve No.
A, AL	0, 9	①
	2, 6, 52, X2, Y2	④
B, BL, C, N	0, 1, 4, 8, 9, 11	②
	2, 3, 6, 31, 33, 52, X2, Y2, X33, Y33	⑤
D	0, 1, 4, 8, 9, 11	③
	2, 3, 6, 31, 33, 52, X2, Y2, X33, Y33	⑥

Pilot Fluid Volume

Unit: cm³

Valve Model	Spool/Spring Arrangement	Neutral to Stroke End	Stroke End to Stroke End
DG5V-7	A, AL, N	—	8.1
	B, BL	4.1	—
	C, D	4.1	8.1
DG5V-H8	A, AL, N	—	23
	B, BL	12	—
	C, D	12	23

Note: In case of internal pilot, pilot pressure is equal to P port pressure.

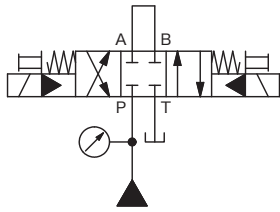
Switching Times

Unit: ms

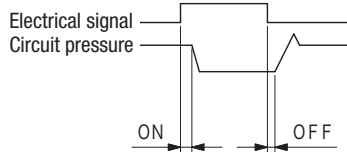
Model Code	Power Supply	Operation	Pilot Pressure				
			1.5 MPa	5 MPa	15 MPa	21 MPa	25 MPa
DG5V-7-2C	AC	Solenoid Energize	50	30	25	20	18
		Spring Return	40	40	40	40	40
DG5V-H8-2C	AC	Solenoid Energize	120	60	45	40	35
		Spring Return	85	85	85	85	85
DG5V-H8-2C	DC	Solenoid Energize	145	85	70	60	45
		Spring Return	90	90	90	90	90

Note: Values may vary slightly according to spool type, circuit conditions, and in case diode or rectifier is incorporated in electrical circuit.

[Circuit Example]



[Switching Time Definition]

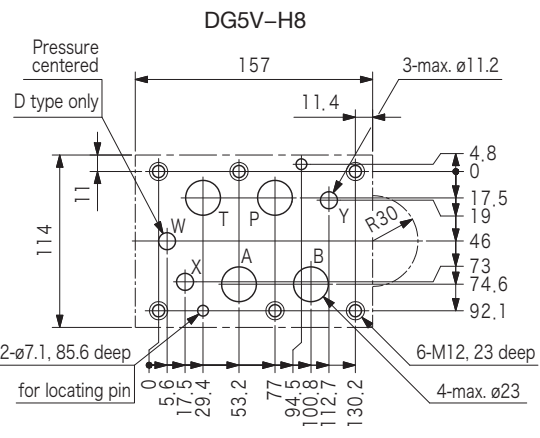
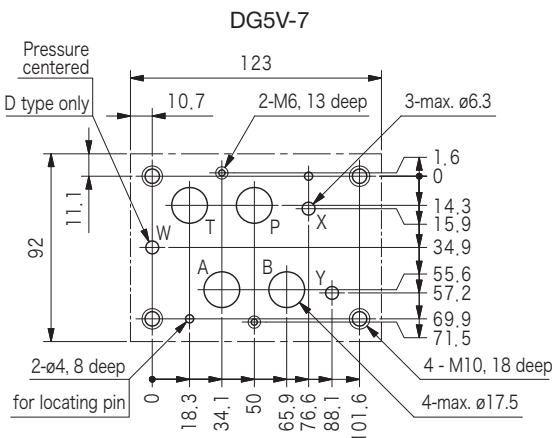


Conditions: spool type 2, spring centered type, open loop circuit, flow 300 L/min (DG5V-7), 350 L/min (DG5V-H8), supply pressure 31.5 MPa, fluid viscosity 20 mm²/s, fluid temperature 50°C

Spool Transient Condition

Detailed Symbol		Simple Symbol	Detailed Symbol		Simple Symbol	Detailed Symbol		Simple Symbol
0			11			X33		
1			31			Y33		
2			33			4		
3			52			8		
6			X2					
9			Y2					

● Mounting dimensions

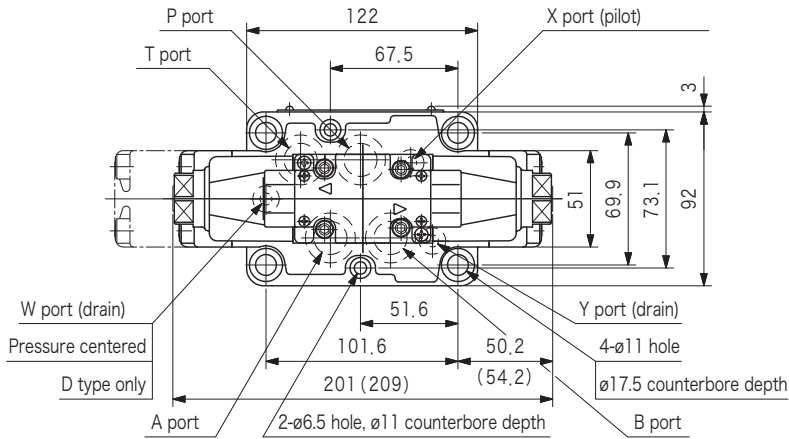


● Mounting surface machining accuracy

Surface Roughness	1.6 μm Ra	
Flatness	Less than 0.01 (□ per 100 mm)	
Permissible Tolerance	Mounting bolt hole: ±0.1 Ports: ±0.2	

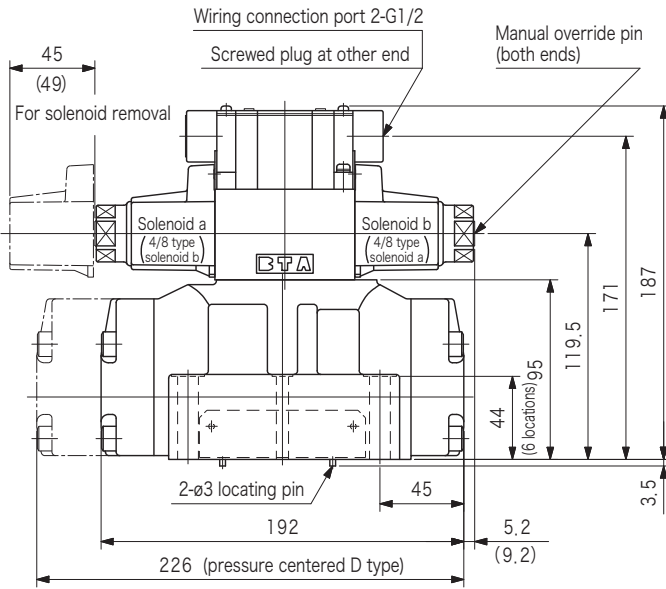
Dimensions

DG5V-7-*C
 DG5V-7-*D
 DG5V-7-*N

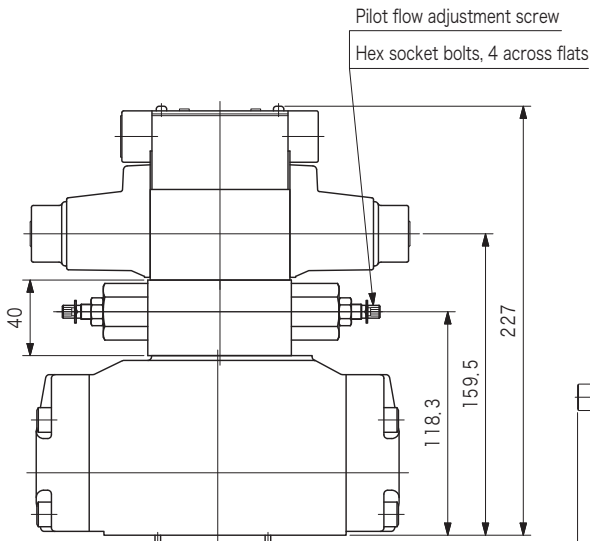


Note:

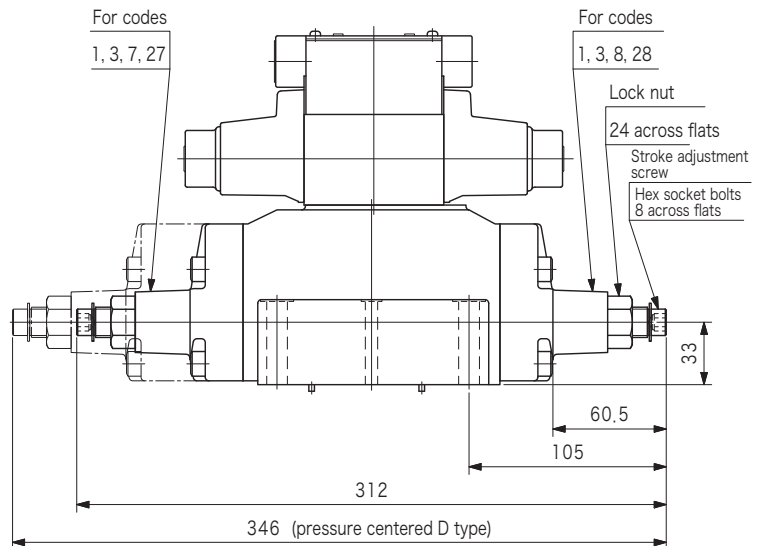
- For DG5V-7-*A, DG5V-7-*B, solenoid valve for pilot will be only for one side (side b).
- For DG5V-7-*AL, DG5V-7-*BL, solenoid valve for pilot will be only for one side (side a).
- Dimensions in () indicate DC solenoids.



With Pilot Restrictor

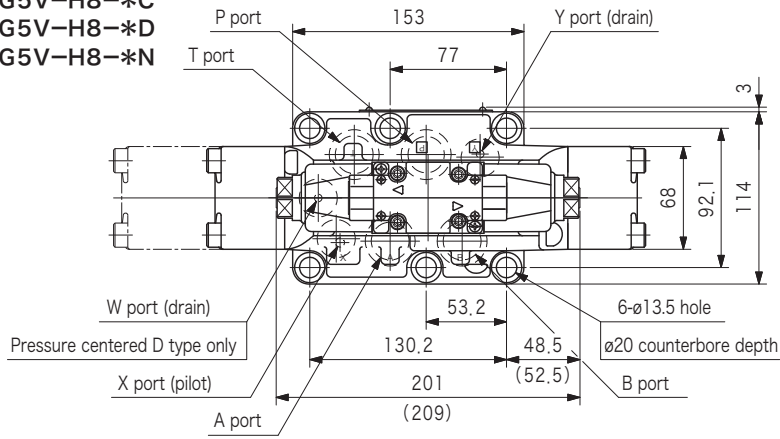


With Stroke Adjuster

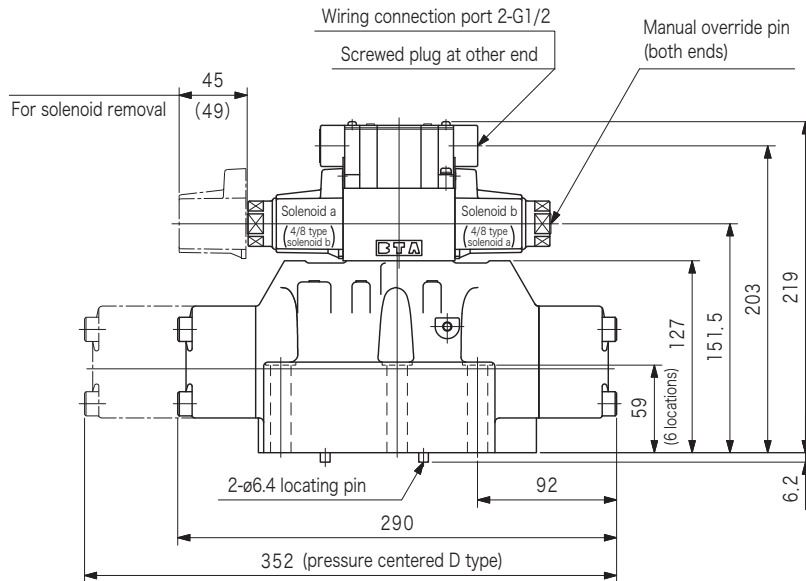


Dimensions

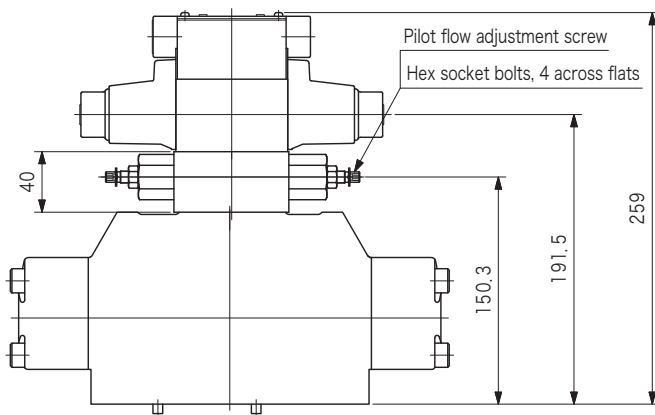
DG5V-H8-*C
 DG5V-H8-*D
 DG5V-H8-*N



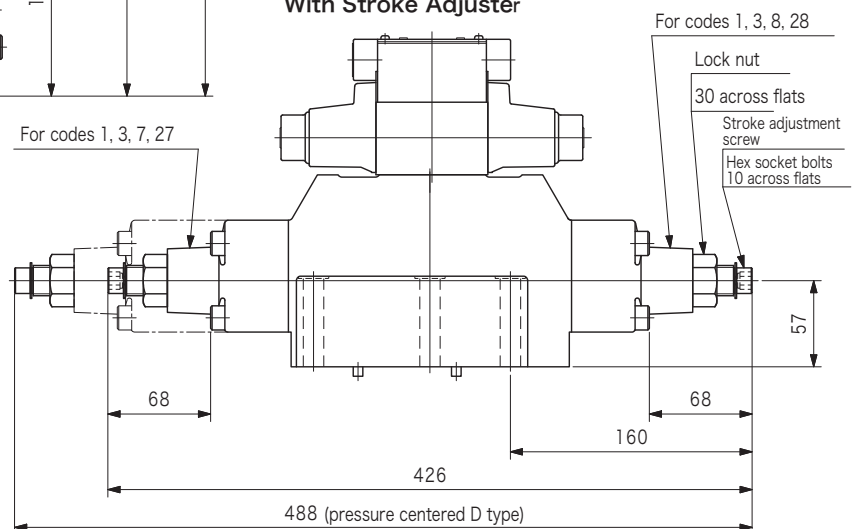
- Note:
- For DG5V-H8-*A, DG5V-H8-*B, solenoid valve for pilot will be only for one side (side b).
 - For DG5V-H8-*AL, DG5V-H8-*BL, solenoid valve for pilot will be only for one side (side a).
 - Dimensions in () indicate DC solenoids.

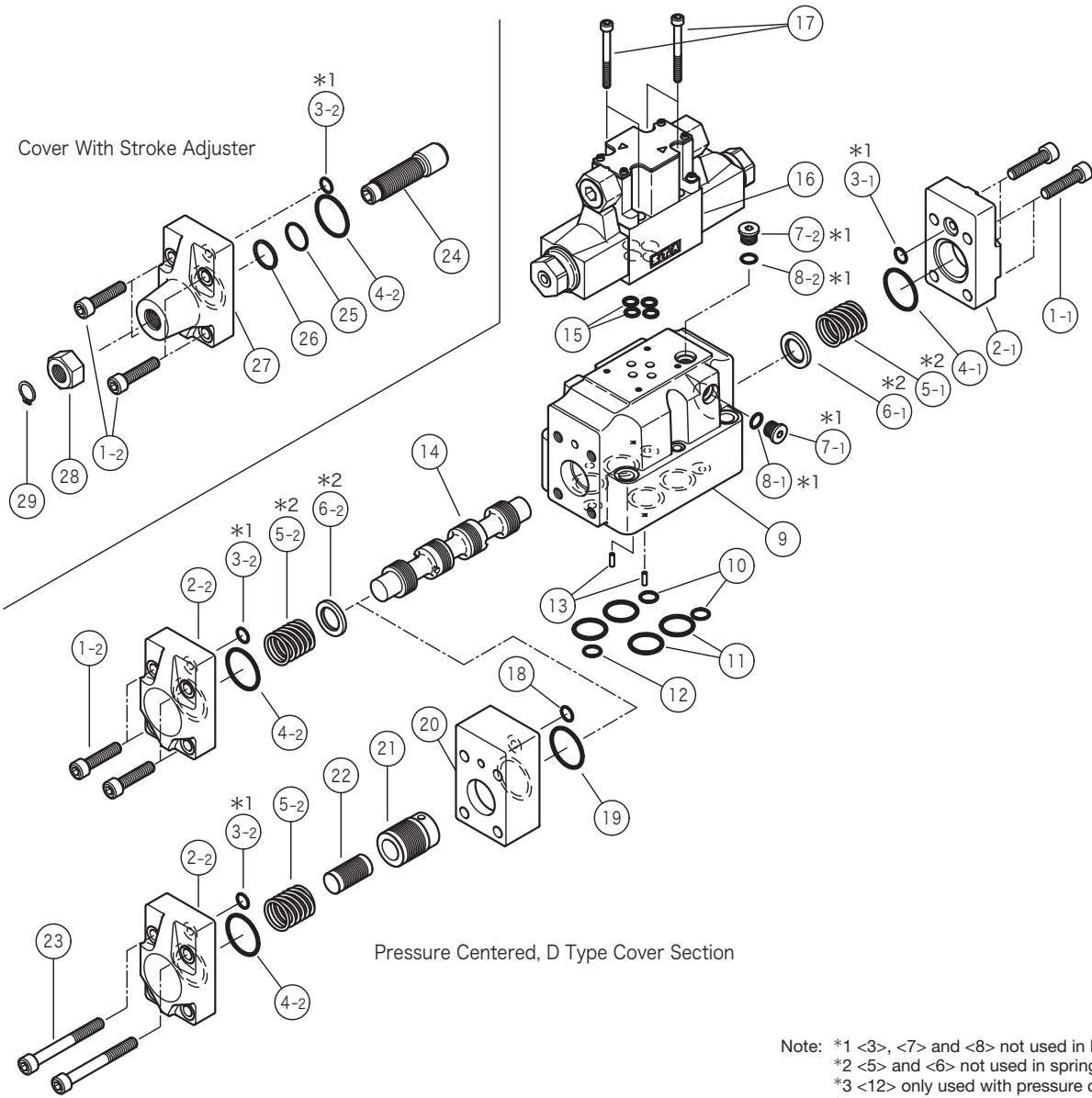


With Pilot Restrictor



With Stroke Adjuster





Note: *1 <3>, <7> and <8> not used in DG5V-H8.
 *2 <5> and <6> not used in spring offset A type.
 *3 <12> only used with pressure centered D type.
 *4 <9> body differs according to pilot, internal/external drain combination.
 *5 <16> solenoid operated directional control valve DG4V-3 model varies according to spool/spring arrangement. See page E4-2.

DG5V-7

No.	Name	Part No.	Standard	Qty
3	O-ring	007911019	AS568-110 (NBR, Hs90)	2
4	O-ring	007912319	AS568-123 (NBR, Hs90)	2
8	O-ring	008000619	JIS B 2401 1B-P8	2
10	O-ring	007901319	AS568-013 (NBR, Hs90)	2
11	O-ring	007911819	AS568-118 (NBR, Hs90)	4
12	O-ring	007901319	AS568-013 (NBR, Hs90)	1
15	O-ring	007901219	AS568-012 (NBR, Hs90)	4
18	O-ring	007911019	AS568-110 (NBR, Hs90)	1
19	O-ring	007912319	AS568-123 (NBR, Hs90)	1
25	O-ring	007901819	AS568-018 (NBR, Hs90)	1 or 2
26	Backup ring	48197576	MS28774-018	1 or 2

DG5V-H8

No.	Name	Part No.	Standard	Qty
4	O-ring	007922419	AS568-224 (NBR, Hs90)	2
10	O-ring	007921019	AS568-210 (NBR, Hs90)	2
11	O-ring	007921519	AS568-215 (NBR, Hs90)	4
12	O-ring	007921019	AS568-210 (NBR, Hs90)	1
15	O-ring	007901219	AS568-012 (NBR, Hs90)	4
18	O-ring	007901119	AS568-011 (NBR, Hs90)	1
19	O-ring	007913119	AS568-131 (NBR, Hs90)	1
25	O-ring	007902319	AS568-023 (NBR, Hs90)	1 or 2
26	Backup ring	48197581	MS28774-023	1 or 2

Note: For external pilot, external drain, <8> O-ring quantity is 1 pc.