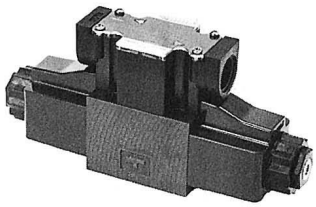
E

DIRECTIONAL CONTROLS

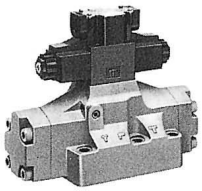
■Directional Valves

These valve are used for shifting oil flow direction of hydraulic circuit and for actuator starting/stopping as well as theoperating direction shifting of actuator.

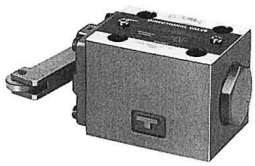
●Solenoid Operated Directional Valve



●Solenoid Controlled Pilot Operated Directional Valve



●Pilot / Mechanically Operated Directional Valves



●Check / Pilot Controlled Check Valves

Hydraulic Fluids

1. Type of Fluids

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

Type of Fluids	Petroleum Base Oils
Petroleum Base Oil	Use fluids equivalent to ISO VG32 or VG46.
Synthetic Fluids [1)]	Use phosphate ester or polyol ester type. When phosphate estertype fluid is to be used, prefix "F-" to the model numberbecause a special seal (fluororubber) will be used.
Water Containing Fluids	Use water-glycol fluids or W/O emulsion type fluids.

Note1. For use with hydraulic fluids other than those listed above, please consult your SEWON representatives is advance.

2. Recommended Viscosity and Oil Temperatures

Use hydraulic fluids which satisfy the both recommended viscosity and oil temperatures given in the table below.

Name	Viscosity	Oil Temperature	Degree of contamination
Solenoid Operated Directional Valves Solenoid Controlled Pilot Operated Directional Valves Poppet Type Solenoid Operated Directional Valves Mechanically Operated Directional Valves Check Valves Pilot Controlled Check Valves	15~400mm²/s{cSt}	−15℃ ~ + 70℃	ISO 21/18 NAS 1638-Grade 12

3. Control of Contamination

Due caution must be paid to maintaining control over contamination of the hydraulic fluids which may otherwise leadto breakdowns and shorter the life of the valve. Please maintain the degree of contamination within NAS 1638-Grade12. Use 25 μm or finer line filter.

■Water-proof, dust-proof and vibration-resistance

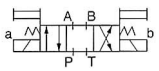
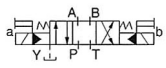
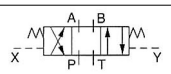
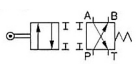
There properties are in compliance with the following standards.(The marking of O indicates compliance)

Item	Standard	Type	Description		Compliance: DSG-01 DSG-03	Compliance: DSHG-03 DSHG-04 DSHG-06 DSHG-10
★2 Water-proof	**JIS F 8001** Water-proof test for marine electric appliance	Class 1 water spray	Drip-proof construction		○	○
		Class 2 water spray	Froth-roof construction		○	○
	JIS D 0203 Damp-proof and Water-proof test for automobile parts	Damp-proof test M1	Test to examine damp-resistance of parts.		○	○
		Damp-proof test M2	Test to examine functions of part under high temperature and high humidity.		○	○
		Splash-proof test R1	Test to examine functions of parts which are likely to be exposed to water splash.		○	○
		Splash-proof test R2	Test to examine functions of parts which are indirectly exposed to stormy weather or water splash.		○	○
	JIS C 0920 Water-proof test for electromechanical parts an wiring materials	Drip-proof type	Not affected by water dropping at vertical angle of 15 degrees or less.		○	○
		Rain-proof type	Not affected by rain fall at vertical angle of 60 degrees or less.		○	○
		Froth-proof type	Not affected by water drip from any dirction.		○	○
		Jet-flow proof type	Not affected by jet flow from any direction.		○	○
	(I.E.C) PUBL.529	Protection Class 2: Drip-proof type (2)	Not affected by water drip falling at vertical angle of15 degrees or less.		○	○
		Protection Class 3: Rain-proof type	Not affected by rain falling at vertical angle of 60 degrees or less.		○	○
		Protection Class 4: Froth-proof	type Not affected by water drip from any direction. Not affected by jet flow from any direction.		○	○
Dust-proof	(I.E.C) PUBL.529	Protection Class 5: Jet-flow proof type	Not affected by jet flow from any direction.		×	×
		Protection Class 6	Fully protected from entry of dust.		○	○
Vibrationresistance	**JIS C 0911** Vibration test forsmall electricappliances	Resonace test (IC)	Vibration range: 7-59.5 Hz Duplex amplitude: 0.1 mm		○	○
		Fixed frequency resistance test (IIC)	Frequence: 20 Hz	Grade 1: duplex amplitude-0.5 mm	○	○
				Grade 2: duplex amplitude-1.2 mm	(2D※: ×)★1	(2N※: ×)★1
				Grade 3: duplex amplitude-1.8 mm	(2D※: ×)★1	(2N※: ×)★1
				Grade 4: duplex amplitude-2.4 mm	(2D※: ×)★1	(2N※: ×)★1
		Variable frequency resistance test (IIIC)	Frequency range: 7-59.5Hz	Grade1: duplex amplitude-0.3 mm	(2D※: ×)★1	(2N※: ×)★1
				Grade 2: duplex amplitude-0.5 mm	(2D※: ×)★1	(2N※: ×)★1
				Grade 3: duplex amplitude-0.75 mm	(2D※: ×)★1	(2N※: ×)★1
	JIS D 1601 Vibration test forautomobile parts	Class1: mainly for parts of passenger car	Grade A: Parts mounted on spring of body or chassishaving relatively low vibration.		○(2D※: ×)★1	○(2N※: ×)★1
			Grade B: Parts mounted on spring of body or chassishaving relatively low vibration.		○(2D※: ×)★1	○(2N※: ×)★1
			Grade C: Parts mounted in engine having relatively lowvibration.		○(2D※: ×)★1	○(2N※: ×)★1

★1. No-spring detented type (2D.) and No-spring type (2N.) can be used when energised continous for position holding.

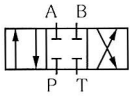
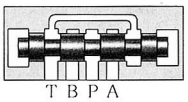
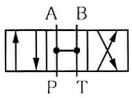
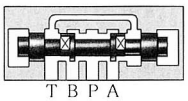
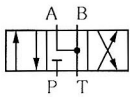
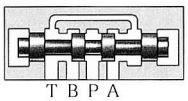
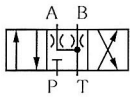
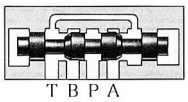
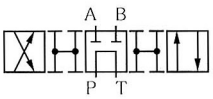
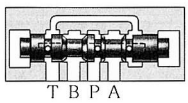
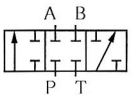
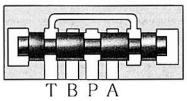
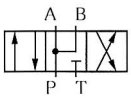
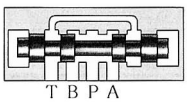
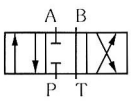
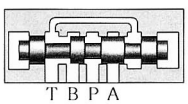
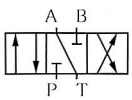
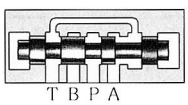
★2. For outdoor use, protect equipment with a cover, etc., to prevent direct exposure to water.

Solenoid Operated Directional Valves
Solenoid Controlled Pilot Operated Directional Valves
Pilot/Mechanically Operated Directional Valves

Valve Type	Graphic Symbols	Max.Operating Pressure MPa {kgf/cm²}	Maximum Flow L/min (1 2 5 10 20 50 100 200 500 1000 2000 5000)	Page
Solenoid Operated Directional Valves		35{357}	DSG-01	E-9
		31.5{321}	DSG-03	E-22
Solenoid Controlled Pilot Operated Directional Valve		25{255}	DSHG-03	E-35
		31.5 {321}	DSHG-04	
			DSHG-06	
			DSHG-10	
Pilot Operated Directional Valves		31.5{321}	DHG-04 06 10	E-56
Mechanically Operated Directional Valves		25{255}	Cam Operated (DC T G) 01 03	E-57

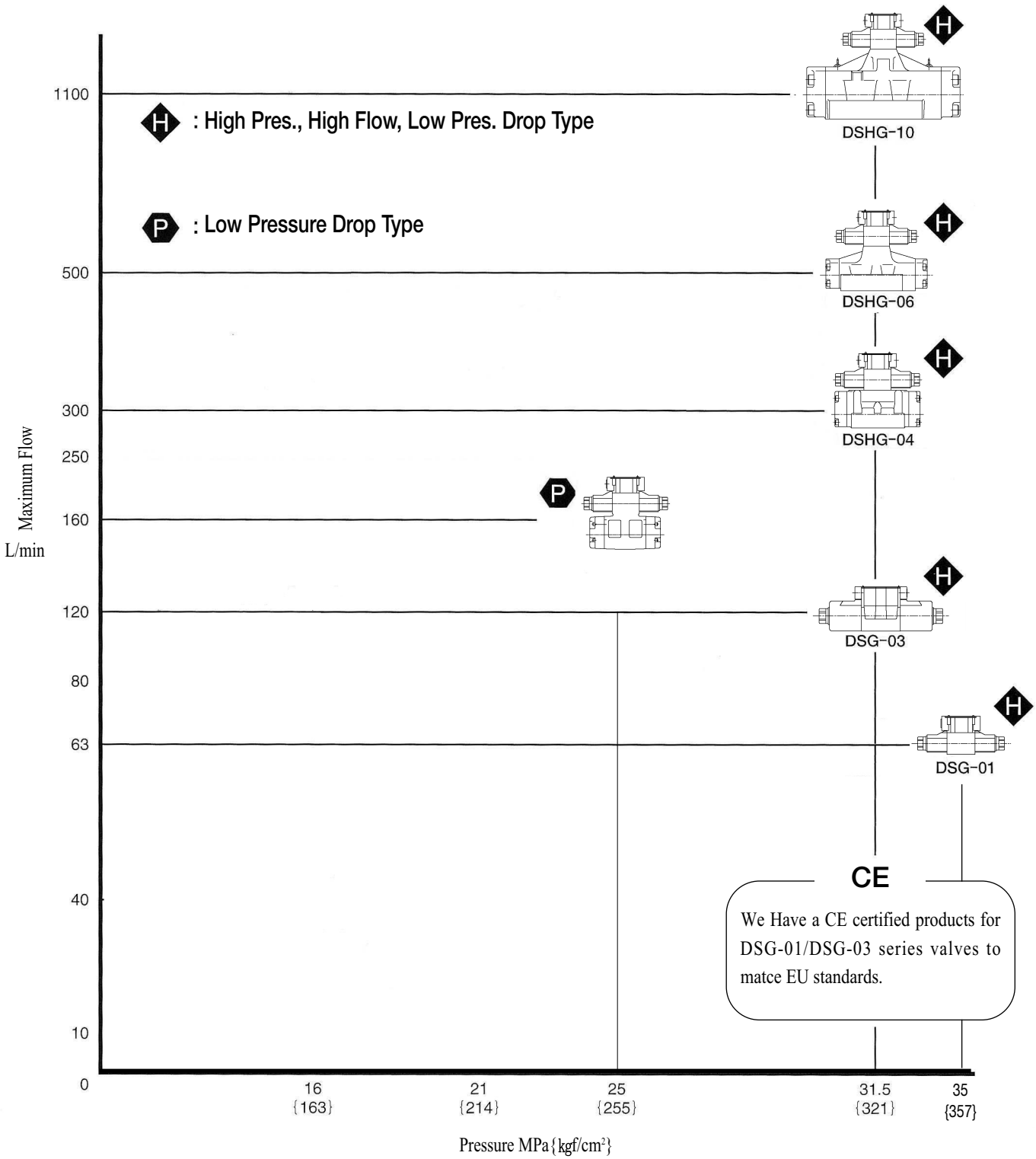
Spool Types

Spool types are classified to the condition of flow at the neutral position.

Spool Type	Graphic Symbols	Schematic Drawing (Centre Position)	Functions and Applications
"2" Closed Centre All Ports			Holds pump pressure and cylinder position at neutral. Careshould be paid if used as a 2-position type because shockoccurs when each port is blocked in transit.
"3" Open Centre All Ports			Pump can be unloaded and actuator is floating at neutral.If a 2-position type is used, shock is reduced as each ports isreleased to tank in transit.
"4" Open Centre A, B &T			Pump pressure is held and actuator is floated at neutral.2-position type is used when system pressure is required to beheld in transit. Shock during transit is less compared to spooltype "2".
"40" Open Centre A, B & T Restricted Flow			In a variation of spool type "4", a restrictor is provided in A-Tand B-T ports. Making it faster at stopping the actuator.
"60" Open Centre P & T Open Crossover			It is a variation of spool type "6".Shock is reduced as each port is released to tank on transit.
"8" 2-Way			Pump pressure Pressure and cylinder position is held at neutral in the same way as spool type "2" It is used as 2 way type.
"9" Open Centre B & T			Regenerative circuit is provided at neutral.
"10" Open Centre P, A & B			Prevent actuator from one direction drift by leakage of P port at neutral.
"12" Open Centre A & T			Prevent actuator from one direction drift by leakage of P port at neutral.

Solenoid Operated / Solenoid Controlled Operated Directional Valves

WIDE RANGE OF MODELS .
Choose the optimum valve tomeet your needs from a largeselection available.

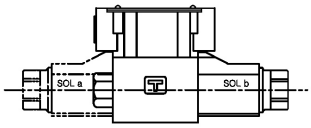
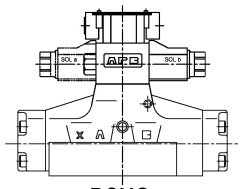


CE

We Have a CE certified products for DSG-01/DSG-03 series valves to matce EU standards.

Instructions

●Mounting

DSG-01 DSG-03	No-spring detented models not energised continuously must be installed so thatthe spool axis L-L' is horizontal. Otherwise there is no mounting restrictions.	 DSG-01/03
DSHG-03 DSHG-04 DSHG-06 DSHG-10	No-spring models not energised continuously must be installed so that the spoolaxis L-L' is horizontal. Otherwise there is no mounting restrictions.	 DSHG

●Energisation

1. No-Spring Type :One of two solenoids should be energised continuously to avoid malfunction.
2. On double solenoid valves do not energise both at the same time as it will result in coils burning out.

●Valve Tank Port

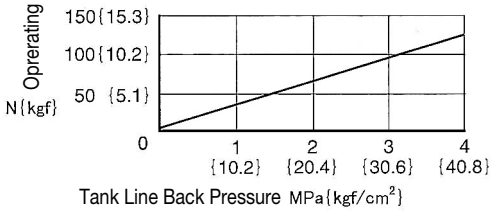
Avoid connecting the valve tank port to a line with possible surge pressure.
Piping end of tank line should be submerged in oil.

●Pilot Drain Port for Solenoid Controlled Pilot Operated Valve

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

●Operating Force be Manual Actuator

Take care as the operating force by the manual actuator increases inproportion to the tank line back pressure. (See the graph right.)



Solenoid

■Solenoid connector (DIN connector)

The solenoid connector is in accordance with the international standard ISO 4400 (Fluid power systems and components-Three-pin electrical plug connectors-Characteristics and requirements).

■AC Solenoid

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

■DC Solenoid (K-series Solenoid OperatedDirectional Valve)

These valves differ from conventional DC solenoidoperated directional valves and have the followingcharacteristics:

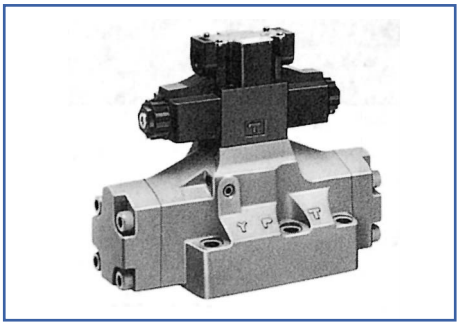
1. The spark between the relay contacts has beeneliminated and therefore the valve can be operated byminiature relays.
2. The surge voltage is approximately 10 % of thatnormally experienced.
3. Time lag on de-energisation is reduced byapproximately 50 %.

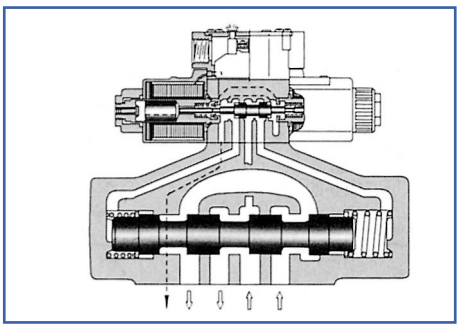
■Insulation Class of Solenoid

Model numbers	Insulation Class
DSG-01 DSG-03 E-DSG-01 DSHG-03/04/06/10	Class H

■Solenoid Controlled Pilot Operated Directional Valves

These valves are composed of a solenoid operated pilot valve and a pilotoperated slave valve. When a solenoid is energised the pilot valvedirects the flow to move the spool of the slave valve, thus changing thedirection of flow in the hydraulic circuit.





●High Pressure High Flow

High pressure [31.5 MPa]{321kgf/cm²} along which high flow means compact system design.Valve size "04" : 300L/min, "06" : 500L/min, "10" : 1100L/min (Max. Flow)

●Lower Pressure Drop

System energy saving increased as pressure drop of each valve has been greatly reduced.

●Easy Changing

Easy to change between Pilot connection and Drain connection by removable plug.

■Specifications

Valve Type	Model Numbers	Max.★1 Flow L/min	Max.Operating Pressure MPa {kgf/cm²}	Max. Pilot Pressure MPa {kgf/cm²}	Min. ★2 Required Pilot Pres. MPa {kgf/cm²}	Max. T-Line Back Pressure MPa		Max. Changeover Frequecy Cycles/Min {min.1}		Mass kg
						Ext. Drain	Int. Drain	AC	DC	
Standard Type	DSHG-03-3C※-※-60	160	25 {255}	25 {255}	0.7 {7.1}	16 {163}	16 {163}	120	120	7.2
	DSHG-03-2N※-※-60									7.2
	DSHG-03-2B※-※-60									6.6
	DSHG-04-3C※-※-60	300	31.5 {321}	25 {255}	0.8 {8.2}	21 {214}	16 {163}	120	120	8.8
	DSHG-04-2N※-※-60									8.8
	DSHG-04-2B※-※-60									8.2
	DSHG-06-3C※-※-60	500	31.5 {321}	25 {255}	0.8★3 {8.2}	21 {214}	16 {163}	120	120	12.7
	DSHG-06-2N※-※-60									12.7
	DSHG-06-2B※-※-60									12.1
	DSHG-10-3C※-※-60	1100	31.5 {321}	25 {255}	1.0★3 {10.2}	21 {214}	16 {163}	120	120	45.3
	DSHG-10-2N※-※-60							100	100	45.3
	DSHG-10-2B※-※-60			21 {214}				60	60	44.7

★1. Maximum flow indicates a ceiling flow. As the ceiling flow depends on the type of spool and operating condition, refer to the List of Spool Functions on pages E-40 to 43 for details.
★2. Pilot pressure of internal pilot drain models must always exceed tank line back pressure by a minimum required pilot pressure.
★3. Min. pilot pressure of with pilot piston in 1.8 MPa{18.4kgf/cm²}

■Solenoid Ratings

Solenoid ratings of pilot valve are identical with those of standard solenoidvalve. Refer to relevant solenoid ratings described on the page below.

Model Numbers	Pilot Valve Model Numbers	Solenoid Ratings described on the page below
DSHG-03	DSG-01-※※※-※-80	E-10
DSHG-04		
DSHG-06		
DSHG-10		

Model Number Designation

	DSHG	-06	-2	B	2	A	-C2	-E	T
Value Type	Series Number	Valve Size	No. of Valve Position	Spool-Spring Arrangement	Spool Type	Special Two Position Valve	Models with Pilot ChokeValve	Pilot Connection	Drain Connection
None: Standard Type	Solenoid Controlled Pilot, Operated Directional Valve, Sub-plate Mounting	03	3	C : Spring Centred	2 , 3 , 4 40 , 5 , 60 7 , 9 , 10 11 , 12	———	C1 : With C1 Choke (P port orifice) C2 : With C2 Choke (A,B port orifice) C1C2: With C1 & C2 Choke (A,B port orifice) + (P port orifice)	None: Internal Pilot E : External Pilot	None: External Drain T : Internal Drain
			2	N : No-Spring	2 3 4 40 7				
				B : Spring Offset					
		04	3	C : Spring Centred	2 , 4 , 40 60 , 10 , 12 (3.5), (7.9), 6, 11	———			
			2	N : No Spring Spring	2 , 4 , 40 (3 , 7)	A*2			
				B : Spring Offset	2 , 4 , 40 (3 , 7)	A*2B*2			
		06	3	C : Spring Centred	2 , 4 , 40 60 , 10 , 12 (3 , 5 , 6 7 , 9 , 11)				
		10	2	N : No Spring Spring	2 , 4 , 40 (3 , 7)	A*2			
				B : Spring Offset	2 , 4 , 40 (3 , 7)	A*2B*2			

Note: In spool type "3", "5", "6", "60", "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	

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, thereforeplease confirm the time of delivery with us before ordering.

<table>
<tr><th>-R2</th><th>-A100</th><th>-C</th><th>-N</th><th>-60</th><th>-L</th></tr>
<tr><td>Spool Control Modification
(Omit if not required)</td><td>Coil Type</td><td>Manual Override of Pilot Valve</td><td>Type of Electrical Conduit Connection</td><td>Design Number</td><td>Models with Reverse Mtg. of Solenoid</td></tr>
<tr><td rowspan="2">R2 : With Stroke adjustment, Both Ends
RA : With Stroke adjustment, Port "A" End</td><td>AC
A100 A200

DC
D12 , D24</td><td rowspan="3">None :
Manual Override Pin

C :
Push Button & Lock Nut</td><td rowspan="3">None :
Terminal Box Type

N :
Push in Connector Type

N1 :
Push in Connector with Indicator Light</td><td>60</td><td>———
L</td></tr>
<tr><td>RB : With Stroke adjustment, Port "B" End</td><td rowspan="2">AC
A100 A120

DC
D12 , D24</td><td>60</td><td>———
L</td></tr>
<tr><td>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</td><td>60

60</td><td>———

L</td></tr>
</table>

★1. Special seals (Viton seals) are required when phosphate ester type fluids are used.
(Put "F-" before model number of valve when ordering.)

★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 E-46.Furthermore, the spool types other than 2, 4, 40, (3, 7) are also available.

CSA Approved Solenoid Valve

Available to supply DSHG-06 series valve approvedby the CSA (Canadian Standards Association).Consult us for details.

■Sub-plates

Valve Model Numbers	Sub-plate Model Numbers	Thread Size (Rc, PT)	Approx. Mass kg	Pages	Remarks
DSHG-03	DSGM-03-40	3/8	3	E-30	Available only for Internal pilot-Internal drain type Common to that of DSG-03 series valve
	DSGM-03X-40	1/2			
	DSGM-03Y-40	3/4	4.7		
	DSGM-03Y-10	3/4	4.7	E-47	Available only for External pilot-External drain type
DSHG-04	DSGM-04-20	1/2	4.4	E-49	———
	DSGM-04X-20	3/4	4.1		
DSHG-06	DSGM-06-50	3/4	7.4	E-50	———
	DSGM-06X-50	1			
DSHG-10	DSGM-10-40	1 1/4	21.5	E-50	———
	DSGM-10X-40	1 1/2			

● 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.

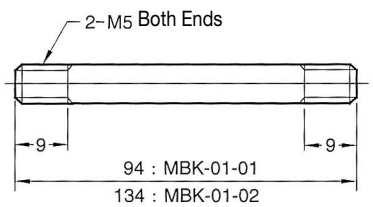
■Mounting Bolt

● Mounting Bolt

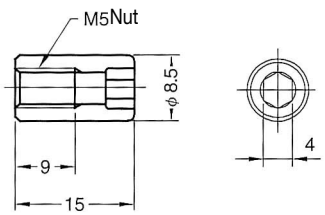
Model Numbers	Mounting Bolt	Qty.	Tightening Torque Nm{kgf/cm²}
DSHG-03	Soc. Hd. Cap Screw : M6 × 35L	4pcs	12~15{1.2~1.5}
DSHG-04	Soc. Hd. Cap Screw : M6 × 45L	2pcs	12~15{1.2~1.5}
	Soc. Hd. Cap Screw : M10 × 50L	4pcs	58~72{5.9~7.3}
DSHG-06	Soc. Hd. Cap Screw : M12 × 60L	6pcs	100~123{10.2~12.5}
DSHG-10	Soc. Hd. Cap Screw : M20 × 75L	6pcs	473~585{48.2~59.7}

●Details

• Stud Bolt ·····4pcs



• Nut·····4pcs



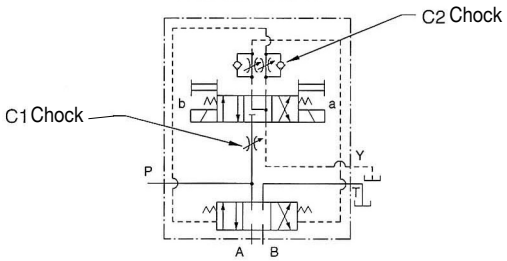
■Options

●Models with Pilot Choke Adjustment (C1, C2, C1C2)

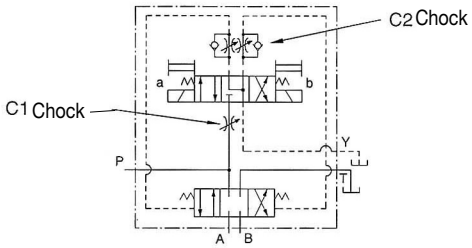
When the adjustment screw is turned clockwise,changeover speed of the main spool becomes slow. Incase of the spring centred valves in particular, makingslow of the returning speed of the main spool to theneutral position is possible with a C2 choke valve.These choke valves can be used in combination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

Graphic Symbols(Ex.: Spring Centred)

• DSHG- 06,10



• DSHG-03,04

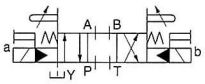


●Models with Stroke Adjustment (R2, RA, RB)

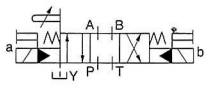
When the adjustment screw is screwed in, the main spool stroke becomes short and flow rate reduces.

Graphic Symbols(Ex.: Spring Centred)

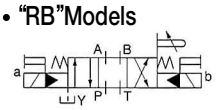
• "R2"Models



• "RA"Models



• "RB"Models

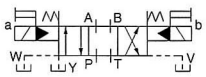


● Models with Pilot Piston(P2, PA, PB)

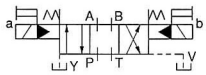
The valves with a pilot piston can be used when the high speed changeover of the main spool is required. However, please not that in case of spring centered valves, there is no change in the returning speed of the main spool to the neutral position even with the pilot piston.

Graphic Symbols(Ex.: Spring Centred)

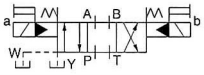
• "P2"Models



• "PA"Models



• "PB"Models



● Additional Mass of Options

Add the mass described below to the mass of standard models on page E-37, if options are required.

(kg)

Model Numbers	Model with Pilot Choke Adj.		Models with Pilot Piston		Models with Stroke Adj.	
	C1, C2	C1C2	P2	PA, PB	R2	RA, RB
DSHG-03	0.65	1.3	–	–	0.6	0.3
DSHG-04	0.65	1.3	–	–	1.0	0.5
DSHG-06	0.65	1.3	1.0	0.5	1.2	0.6
DSHG-10	0.65	1.3	3.6	1.8	3.7	1.85

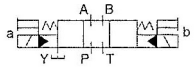
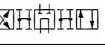
● Options on Pilot Valve

The same options to DSG-01 series valves are available.

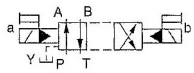
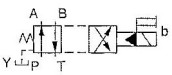
Please refer to page E-18 for the details.

■List of Spool Functions and Maximum Flow (DSHG-03)

●Three Positions

Spool Type	Spring Centred			
	Graphic Symbol 	Maximum Flow L/min		
	Model Numbers	7 MPa {71.4 kgf/cm²}	14 MPa {143 kgf/cm²}	25 MPa {255 kgf/cm²}
"2" 	DSHG-03-3C2	160	85 160	60 95
"3" 	DSHG-03-3C3	160	160	160
"4" 	DSHG-03-3C4	160	85 160	60 95
"40" 	DSHG-03-3C40	160	85 160	60 95
"5" 	DSHG-03-3C5	160	85 160	60 95
"60" 	DSHG-03-3C60	160	160	125 160
"7" 	DSHG-03-3C7	160	85 160	60 95
"9" 	DSHG-03-3C9	160	85 160	60 95
"10" 	DSHG-03-3C10	160	85 160	60 95
"11" 	DSHG-03-3C11	160	85 160	60 95
"12" 	DSHG-03-3C12	160	85 160	60 95

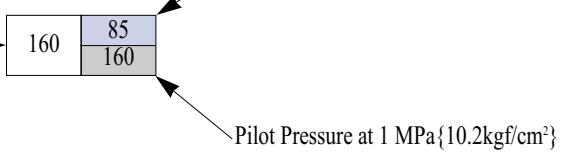
●Two Positions

Spool Type	No Spring				Spring Offset			
	Graphic Symbol 	Maximum Flow L/min			Graphic Symbol 	Maximum Flow L/min		
	Model Numbers	7 MPa {71.4 kgf/cm²}	14 MPa {143 kgf/cm²}	25 MPa {255 kgf/cm²}	Model Numbers	7 MPa {71.4 kgf/cm²}	14 MPa {143 kgf/cm²}	25 MPa {255 kgf/cm²}
"2" 	DSHG-03-2N2	160	160	85 160	DSHG-03-2B2	160	160	85 160
"3" 	DSHG-03-2N3	160	160	85 160	DSHG-03-2B3	160	160	85 160
"4" 	DSHG-03-2N4	160	160	85 160	DSHG-03-2B4	160	160	85 160
"40" 	DSHG-03-2N40	160	160	85 160	DSHG-03-2B40	160	160	85 160
"7" 	DSHG-03-2N7	160	160	85 160	DSHG-03-2B7	160	160	85 160

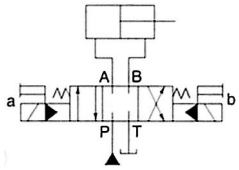
Notes1: The relation between max. flow and pilot pressure in the table above is as shown below.

(Example)

Maximum flow rate is constant regardless of pilot pressure.
Pilot Pressure more than 0.7 MPa{7.1kgf/cm²}



2. Max. flow in the table above represents the value in the flow condition of P→A→B→Tor (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 Spool Functions and Maxmum Flow (DSHG-04)

●Three Positions

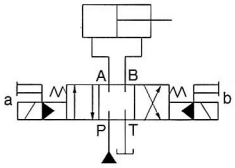
Spool Type	Spring Centred				
	Graphic Symbol	Maximum Flow L/min			
	Model Numbers	10 MPa {102 kgf/cm²}	16 MPa {163 kgf/cm²}	25 MPa {255 kgf/cm²}	31.5 MPa {321 kgf/cm²}
"2"	DSHG-04-3C2	300	300	200	145
"3"	DSHG-04-3C3	300	300	300	300
"4"	DSHG-04-3C4	300	300	250	165
"40"	DSHG-04-3C40	300	300	200	145
"5"	DSHG-04-3C5	255	250	245	235
"6"	DSHG-04-3C6	300	260	245	235
"60"	DSHG-04-3C60	300	300	300	300
"7"	DSHG-04-3C7	300	300	200	145
"9"	DSHG-04-3C9	300	300	280	250
"10"	DSHG-04-3C10	300	300	200	150
"11"	DSHG-04-3C11	300	260	160	140
"12"	DSHG-04-3C12	300	280	170	130

●Two Positions

Spool Type	No Spring					Spring Offset				
	Graphic Symbol	Maximum Flow L/min				Graphic Symbol	Maximum Flow L/min			
	Model Numbers	10 MPa {102 kgf/cm²}	16 MPa {163 kgf/cm²}	25 MPa {255 kgf/cm²}	31.5 MPa {321 kgf/cm²}	Model Numbers	10MPa {102 kgf/cm²}	16 MPa {163 kgf/cm²}	25 MPa {255 kgf/cm²}	31.5 MPa {321 kgf/cm²}
"2"	DSHG-04-2N2	300	300	300	300	DSHG-04-2B2	300	300	300	300
"3"	DSHG-04-2N3	300	300	300	300	DSHG-04-2B3	300	300	300	300
"4"	DSHG-04-2N4	300	300	300	300	DSHG-04-2B4	300	300	300	300
"40"	DSHG-04-2N40	300	300	300	300	DSHG-04-2B40	300	300	300	300
"7"	DSHG-04-2N7	300	300	300	300	DSHG-04-2B7	300	300	300	300

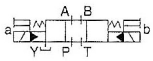
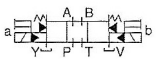
Notes: 1. Max flow described above shown value at pilot pressure more than 0.8 MPa{8.2kgf/cm²}

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 below. 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.

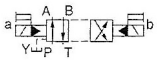
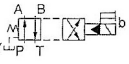


■List of Spool Functions and Maxmum Flow (DSHG-06)

●Three Positions

Spool Type	Spring Centred					Pressure Centred				
	Graphic Symbol 	Maximum Flow L/min				Graphic Symbol 	Maximum Flow L/min			
	Model Numbers	10 MPa {102 kgf/cm²}	16 MPa {163 kgf/cm²}	25 MPa {255 kgf/cm²}	31.5 MPa {321 kgf/cm²}	Model Numbers	10 MPa {102 kgf/cm²}	16 MPa {163 kgf/cm²}	25 MPa {255 kgf/cm²}	31.5 MPa {321 kgf/cm²}
"2" 	DSHG-06-3C2	500	500	410 500	310 410	DSHG-06-3H2	500	500	500	420 500
"3" 	DSHG-06-3C3	500	500	460	370	DSHG-06-3H3	500	500	500	500
"4" 	DSHG-06-3C4	500	500	410 500	310 500	DSHG-06-3H4	500	500	500	420 500
"40" 	DSHG-06-3C40	500	500	410 500	310 500	DSHG-06-3H40	500	500	500	420 500
"5" 	DSHG-06-3C5	500	500	425	350	DSHG-06-3H5	500	500	500	470 500
"6" 	DSHG-06-3C6	475	390	300	230	DSHG-06-3H6	500	500	500	420 500
"60" 	DSHG-06-3C60	475	420	340	280	DSHG-06-3H60	500	500	500	420 500
"7" 	DSHG-06-3C7	500	500	450	360	DSHG-06-3H7	500	500	500	500
"9" 	DSHG-06-3C9	500	500	450 500	360 500	DSHG-06-3H9	500	500	500	500
"10" 	DSHG-06-3C10	500	500	410 500	310 500	DSHG-06-3H10	500	500	500	460 500
"11" 	DSHG-06-3C11	500	500	410 500	310 500	DSHG-06-3H11	500	500	500	460 500
"12" 	DSHG-06-3C12	500	500	410 500	310 500	DSHG-06-3H12	500	500	50	460 500

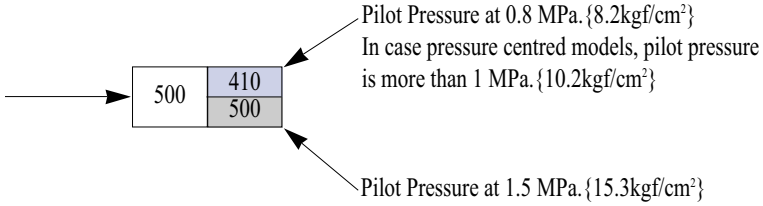
●Two Positions

Spool Type	No Spring					Spring Offset				
	Graphic Symbol 	Maximum Flow L/min				Graphic Symbol 	Maximum Flow L/min			
	Model Numbers	10 MPa {102 kgf/cm²}	16 MPa {163 kgf/cm²}	25 MPa {255 kgf/cm²}	31.5 MPa {321 kgf/cm²}	Model Numbers	10 MPa {102 kgf/cm²}	16 MPa {163 kgf/cm²}	25 MPa {255 kgf/cm²}	31.5 MPa {321 kgf/cm²}
"2" 	DSHG-06-2N2	500	500	500	500	DSHG-06-2B2	500	500	500	500
"3" 	DSHG-06-2N3	500	500	500	500	DSHG-06-2B3	500	500	500	500
"4" 	DSHG-06-2N4	500	500	500	500	DSHG-06-2B4	500	500	500	500
"40" 	DSHG-06-2N40	500	500	500	500	DSHG-06-2B40	500	500	500	500
"7" 	DSHG-06-2N7	500	500	500	500	DSHG-06-2B7	500	500	500	500

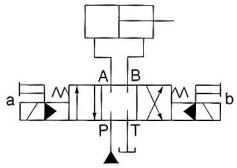
Notes: 1. The relation between max. flow and pilot pressure in the table above is as shown below.

(Example)

Maximum flow rate is constant regardless of pilot pressure. Pilot Pressure more than 0.8 MPa. {8.2kgf/cm²}
In case pressure centred models, pilot pressure is more than 1MPa. {10.2kgf/cm²}



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



List of Spool Functions and Maximum Flow (DSHG-10)

Three Positions

Spool Type	Spring Centred					Pressure Centred				
	Graphic Symbol	Maximum Flow L/min				Graphic Symbol	Maximum Flow L/min			
	Model Numbers	10 MPa 102 kgf/cm²	16 MPa 163 kgf/cm²	25 MPa 255 kgf/cm²	31.5 MPa 321 kgf/cm²	Model Numbers	10MPa 102 kgf/cm²	16 MPa 163 kgf/cm²	25 MPa 255 kgf/cm²	31.5MPa 321 kgf/cm²
"2"	DSHG-10-3C2	1100	1100	950 1100	750 1100	DSHG-10-3H2	1100	1100	1100	970 1100
"3"	DSHG-10-3C3	1100	1100	1060	895	DSHG-10-3H3	1100	1100	1100	1050 1100
"4"	DSHG-10-3C4	1100	1100	950 1100	750 1100	DSHG-10-3H4	1100	1100	1100	970 1100
"40"	DSHG-10-3C40	1100	1100	950 1100	750 1100	DSHG-10-3H40	1100	1100	1100	970 1100
"5"	DSHG-10-3C5	1100	1100	980	850	DSHG-10-3H5	1100	1100	1100	1000 1100
"6"	DSHG-10-3C6	1050	880	700	570	DSHG-10-3H6	1100	1100	1100	970 1100
"60"	DSHG-10-3C60	1050	940	785	680	DSHG-10-3H60	1100	1100	1100	970 1100
"7"	DSHG-10-3C7	1100	1100	1040 1100	870 1100	DSHG-10-3H7	1100	1100	1100	1100
"9"	DSHG-10-3C9	1100	1100	1040	870	DSHG-10-3H9	1100	1100	1100	1100
"10"	DSHG-10-3C10	1100	1100	950 1100	750 1100	DSHG-10-3H10	1100	1100	1100	1060 1100
"11"	DSHG-10-3C11	1100	1100	950 1100	750 1100	DSHG-10-3H11	1100	1100	1100	1060 1100
"12"	DSHG-10-3C12	1100	1100	950 1100	750 1100	DSHG-10-3H12	1100	1100	1100	1060 1100

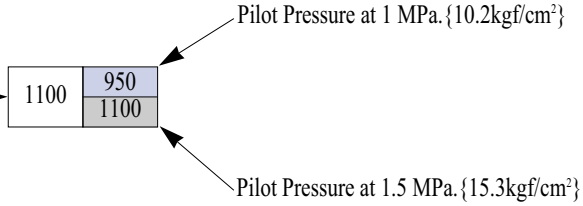
Two Positions

Spool Type	No Spring					Spring Offset				
	Graphic Symbol	Maximum Flow L/min				Graphic Symbol	Maximum Flow L/min			
	Model Numbers	10 MPa 102 kgf/cm²	16 MPa 163 kgf/cm²	25 MPa 255 kgf/cm²	31.5 MPa 321 kgf/cm²	Model Numbers	10 MPa 102 kgf/cm²	16 MPa 163 kgf/cm²	25 MPa 255 kgf/cm²	31.5 MPa 321 kgf/cm²
"2"	DSHG-10-2N2	1100	1100	1100	1100	DSHG-10-2B2	1100	1100	1100	1100
"3"	DSHG-10-2N3	1100	1100	1100	1100	DSHG-10-2B3	1100	1100	1100	1100
"4"	DSHG-10-2N4	1100	1100	1100	1100	DSHG-10-2B4	1100	1100	1100	1100
"40"	DSHG-10-2N40	1100	1100	1100	1100	DSHG-10-2B40	1100	1100	1100	1100
"7"	DSHG-10-2N7	1100	1100	1100	1100	DSHG-10-2B7	1100	1100	1100	1100

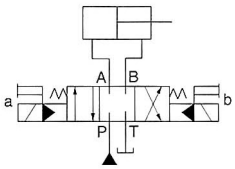
Notes: 1. The relation between max. flow and pilot pressure in the table above is as shown below.

(Example)

Maximum flow rate is constant regardless of pilot pressure.
Pilot Pressure more than 1 MPa.{10.2kgf/cm²}

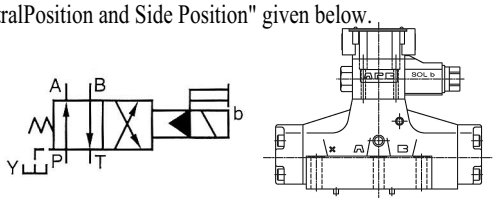


2. Max. flow in the table above represents the value in the flow condition of P→A→B→T or (P→B→A→T)as shown in the circuit diagram right. In case the valve is used in the condition that either A or B port is blocked, the maximum flow differs

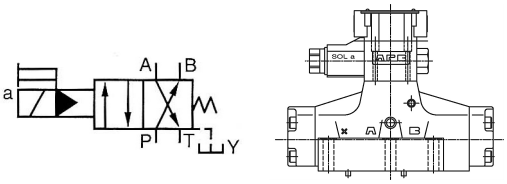


Reverse Mounting of Solenoid.

In spring offset type, it is a standard configuration that the solenoid is mounted onto the valve in the SOL bposition (side). However, in this particular spool-spring arrangement, the mounting of the solenoid onto the valve inthe 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 NeutralPosition and Side Position" given below.



Standard Mtg. of Solenoid

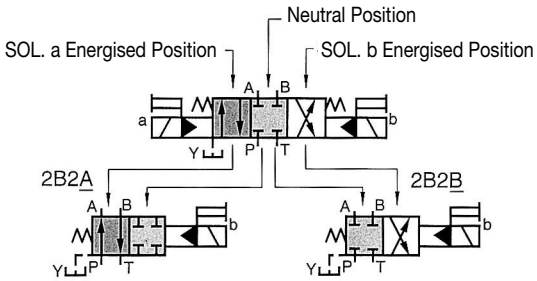


Standard Mtg. of Solenoid ("L")

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, thereare two kinds of the valve available. One is the valve using the neutral position and SOL a position (2B※A) and anotheris 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 Symbol	
	Standard Mtg.	Reverse Mtg. Type
04 DSHG-06-2B※A 10		
DSHG-※-2B2A		
DSHG-※-2B3A		
DSHG-※-2B4A		
DSHG-※-2B40A		
DSHG-※-2B5A		
DSHG-※-2B6A		
DSHG-※-2B60A		
DSHG-※-2B7A		
DSHG-※-2B9A		
DSHG-※-2B10A		
DSHG-※-2B11A		
DSHG-※-2B12A		

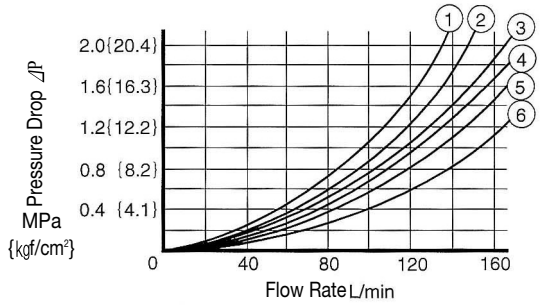
Model Numbers	Graphic Symbol	
	Standard Mtg.	Reverse Mtg. Type
04 DSHG-06-2B※B 10		
DSHG-※-2B2B		
DSHG-※-2B3B		
DSHG-※-2B4B		
DSHG-※-2B40B		
DSHG-※-2B5B		
DSHG-※-2B6B		
DSHG-※-2B60B		
DSHG-※-2B7B		
DSHG-※-2B9B		
DSHG-※-2B10B		
DSHG-※-2B11B		
DSHG-※-2B12B		

Model Numbers	Graphic Symbol
	Standard Mtg.
04 DSHG-06-2N※A 10	
DSHG-※-2N2A	
DSHG-※-2N3A	
DSHG-※-2N4A	
DSHG-※-2N40A	
DSHG-※-2N5A	
DSHG-※-2N6A	
DSHG-※-2N60A	
DSHG-※-2N7A	
DSHG-※-2N9A	
DSHG-※-2N10A	
DSHG-※-2N11A	
DSHG-※2N12A	

■Pressure Drop

Pressure drop curves based on viscosity of 35 mm2/s and specific gravity of 0.850.

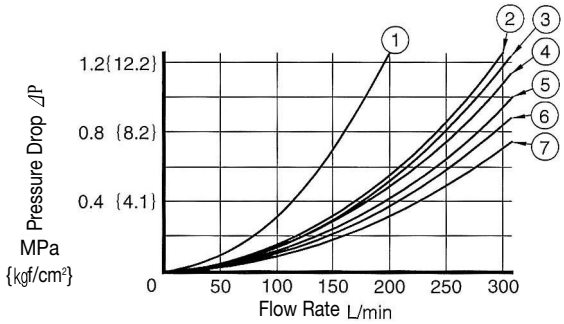
●DSHG-03



●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	④	③	④	④	①						

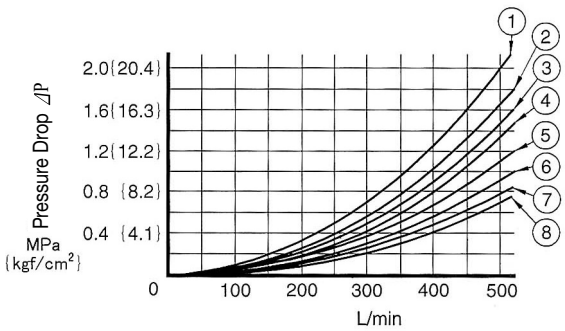
●DSHG-04



●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	–

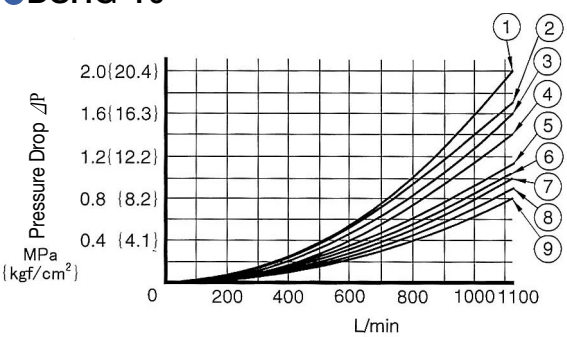
●DSHG-06



●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	–

●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	④	②	12	⑨	⑦	⑨	⑥	–

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

Viscosity	mm²/s{cSt}	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

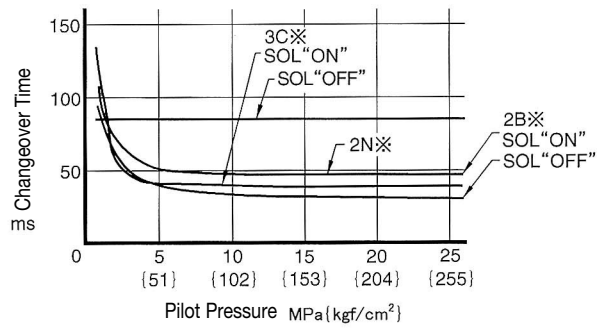
■ Typical Changeover Time

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

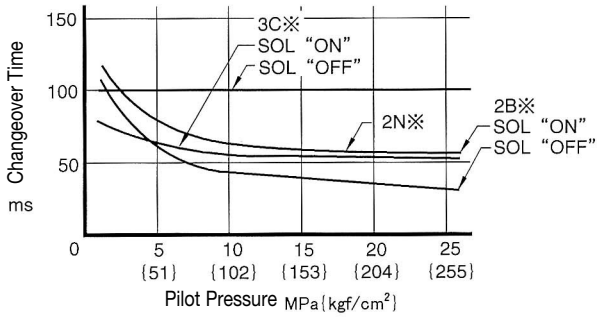
Test Conditions

Coil Type : D※ (Models with DC solenoids)
Voltage : Rated Voltage
Oil Viscosity : 35 mm²/s

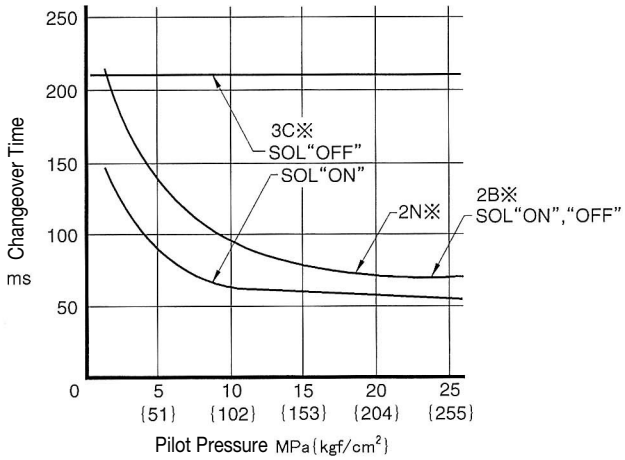
●DSHG-04



●DSHG-06

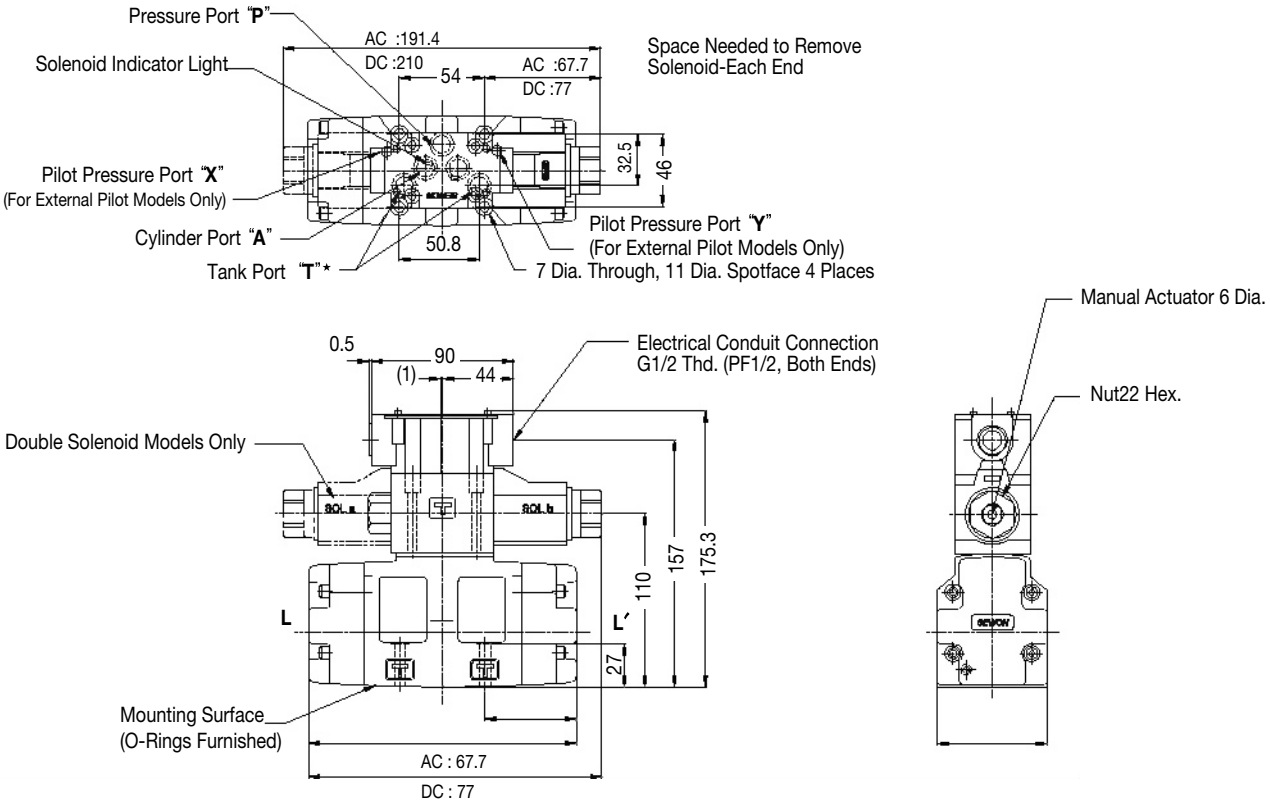


●DSHG-10



DSHG-03

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

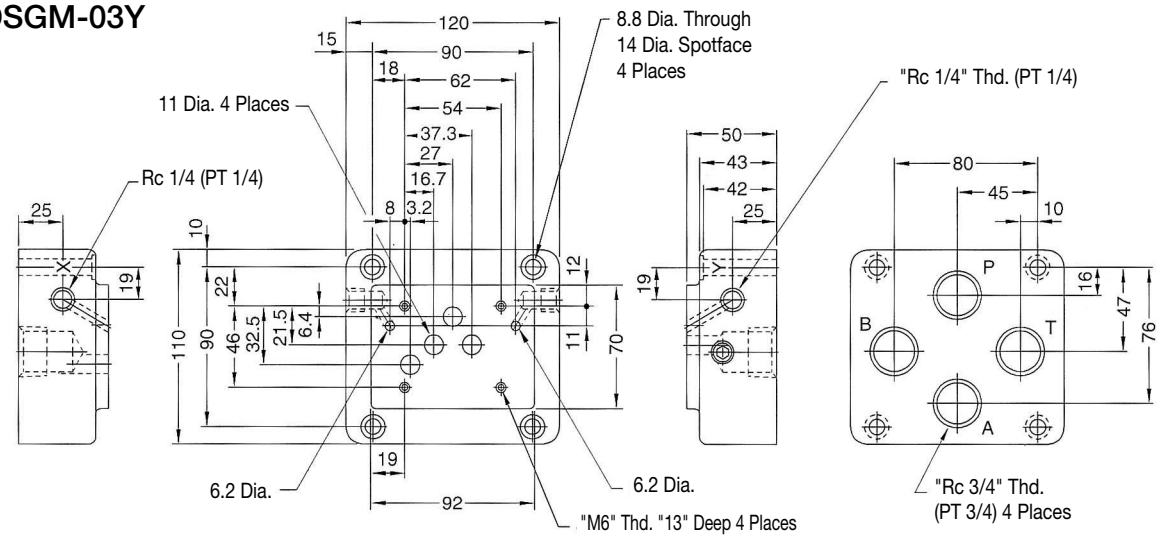


★Of the two of tank port "T", the tank port in the left side is normally used in our standard sub-plate,though, either side of the tank port "T" can be used without problem.

Note : Plug-in Connector Type Valves are available.
For the details of the pilot valves, see page E-18.

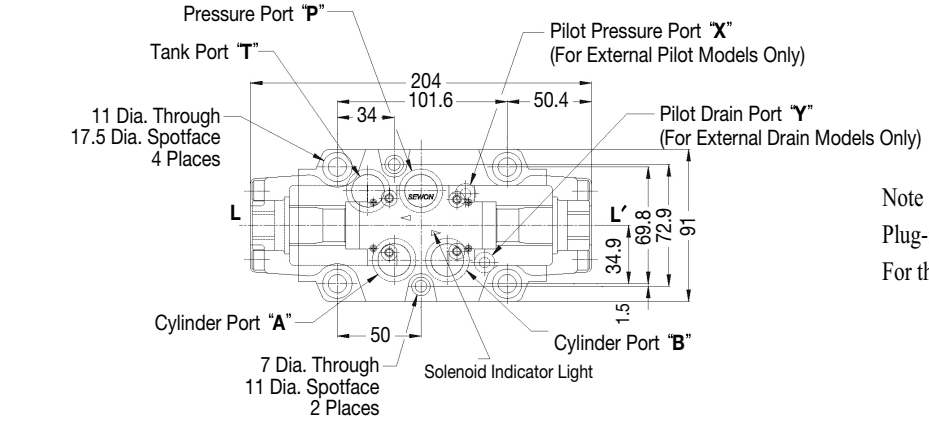
■Sub-Plate

DSGM-03Y

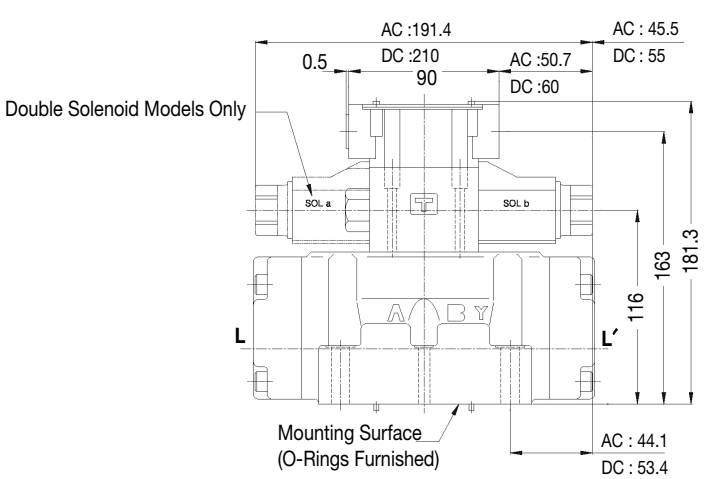


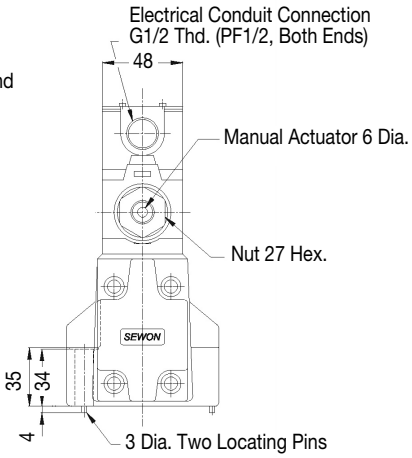
DSHG-04

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



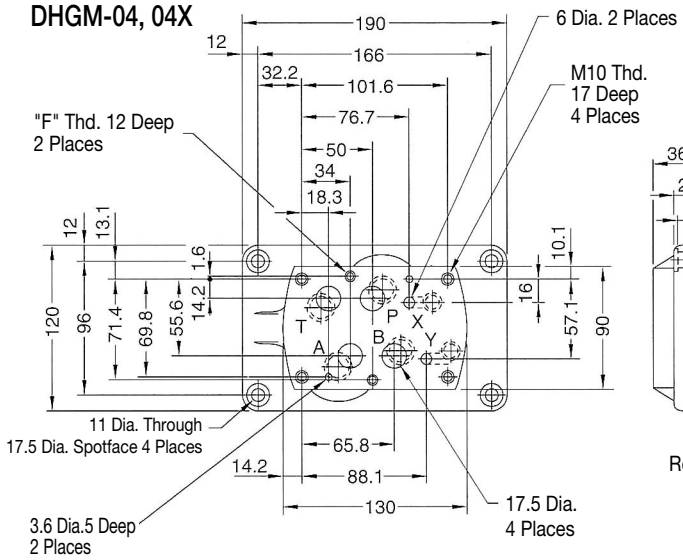
Note :
Plug-in Connector Type Valves are available.
For the details of the pilot valves, see page E-18.

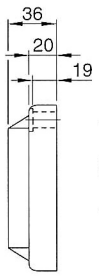


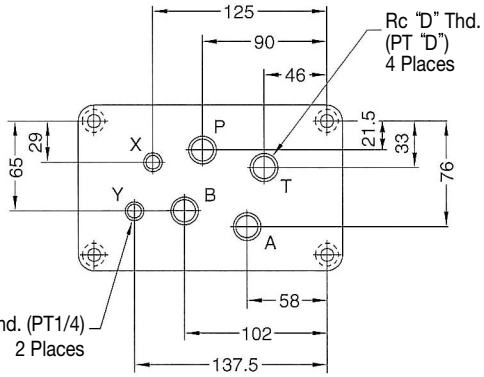


■Sub-Plate

DHGM-04, 04X







Sub-plate Model Numbers	D
DHGM-04	1/2
DHGM-04X	3/4

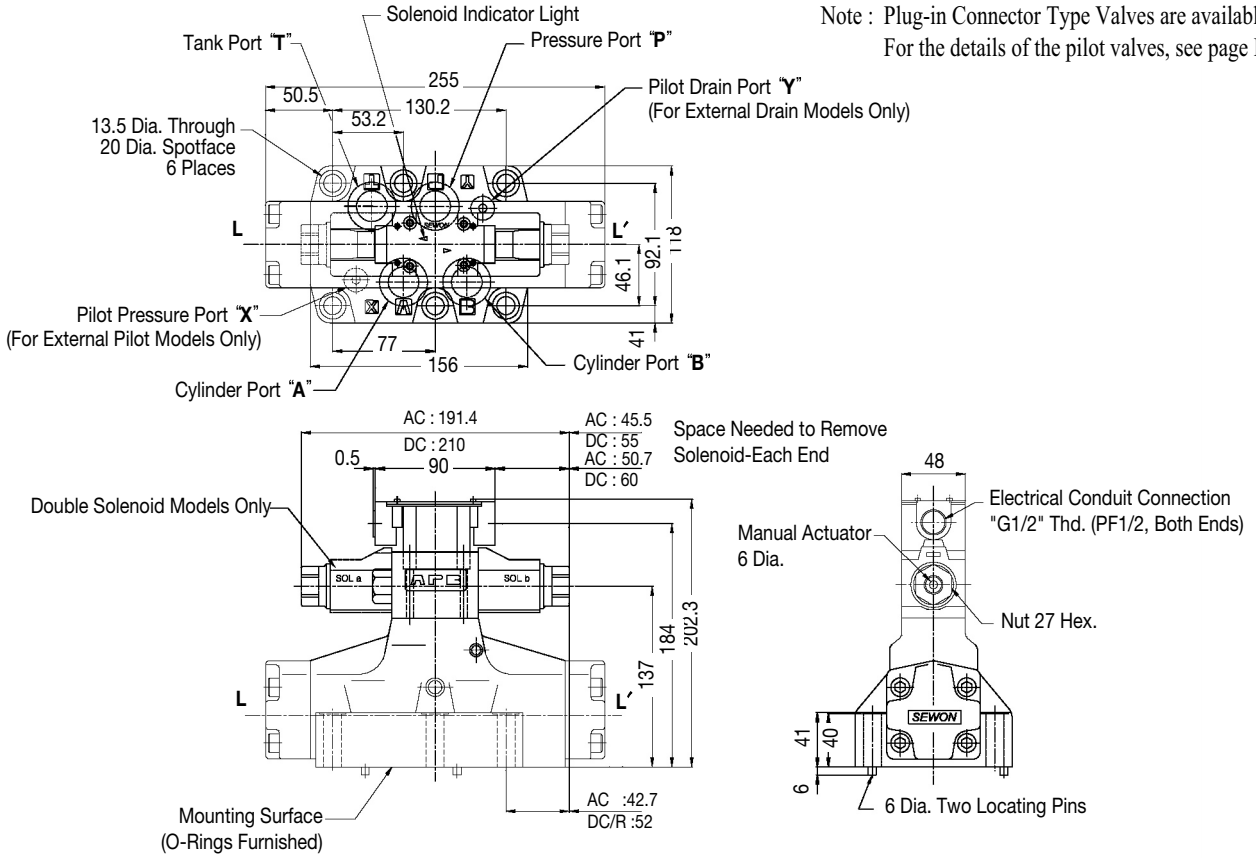
Note: Uses of port "X", "Y"

Pilot Pressure Port "X"	Drain Port "Y"
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.

DSHG-06

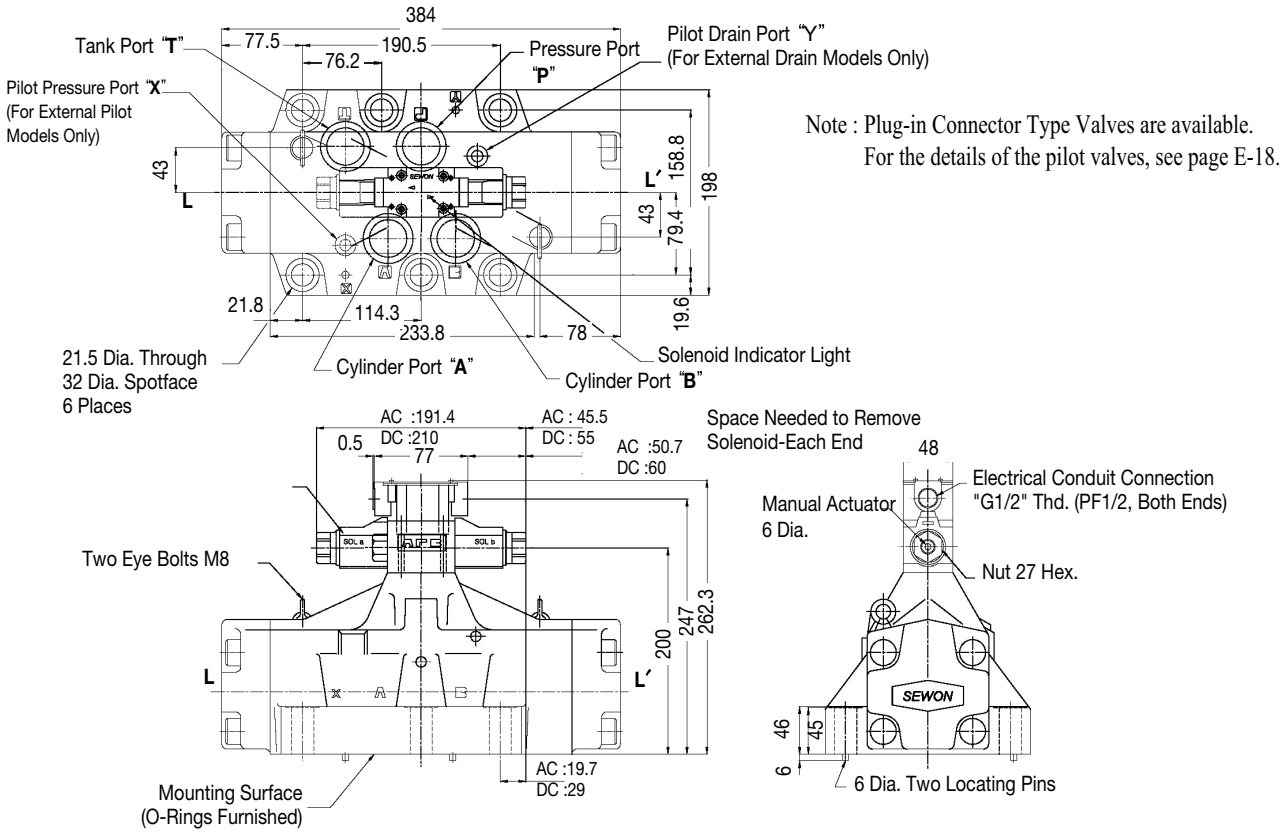
Mounting surface: ISO 4401-AB-03-4-A

Note : Plug-in Connector Type Valves are available.
For the details of the pilot valves, see page E-18.



DSHG-10

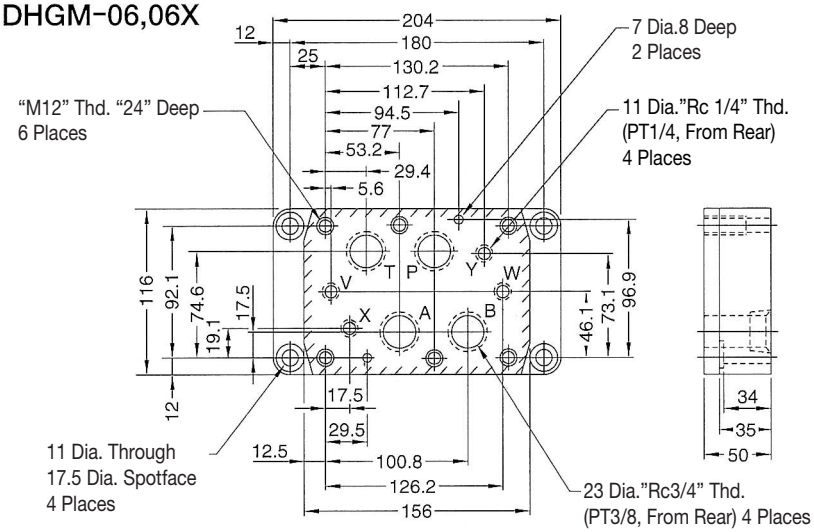
Mounting surface: ISO 4401-AB-03-4-A



Note : Plug-in Connector Type Valves are available.
For the details of the pilot valves, see page E-18.

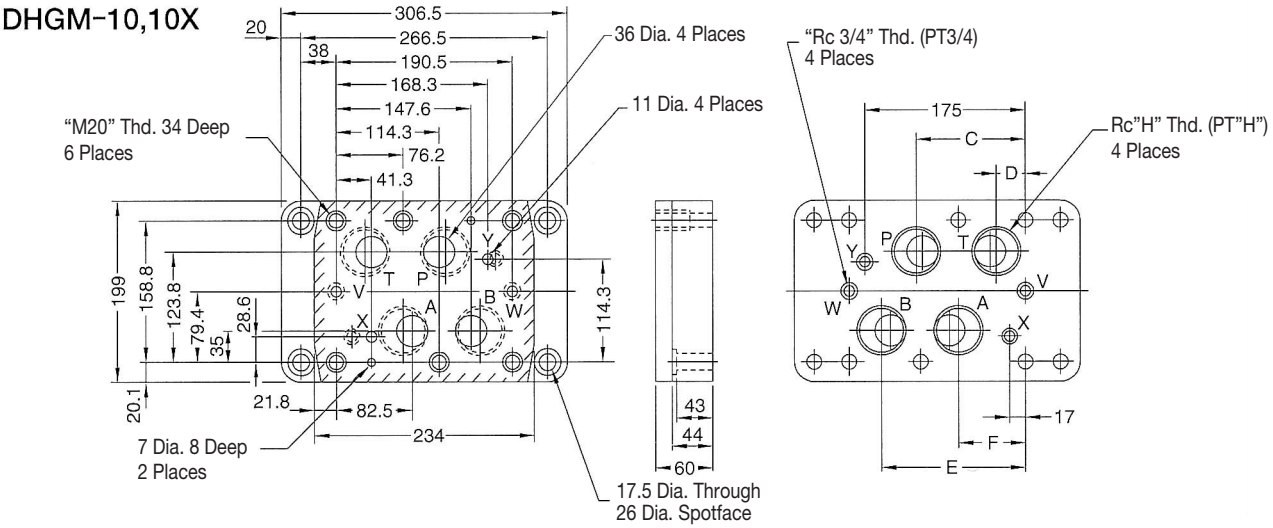
■Sub-plate

DHGM-06,06X



Sub-plate Model Numbers	D
DHGM-06	3/4
DHGM-06X	1

DHGM-10,10X



Sub-plate Model Numbers	C	D	E	F	H
DHGM-10	114	41	147.5	82.5	1¼
DHGM-10X	118	36	156.5	74.5	1½

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

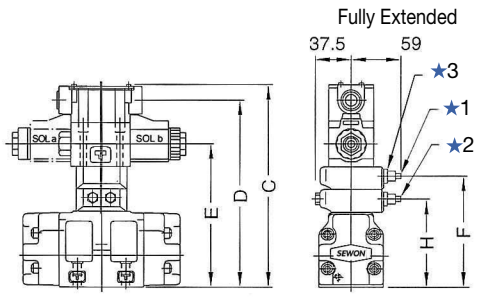
Valve Types	Pilot Pres. Port "X"	Port "Y"	Drain Port "V"	Drain Port "W"
Spring Centred, No-spring, Spring Offset	Used only on external pilot type valves.	Used as drain port onlyon external drain type valves.	Not used (plug is not required)	
Pressure Centred			Used	Not used
With Pilot Piston, Both Ends			Used	Used
With Pilot Piston, Port "A" End	To be plugged oninternal pilot type valves.	To be plugged oninternal drain type valves.★	Used	Not used(plug is required)
With Pilot Piston, Port "B" End			Not used(plug is required)	Used

★As the thread is provided on the body, plug either port on the sub-plate or port on the body.

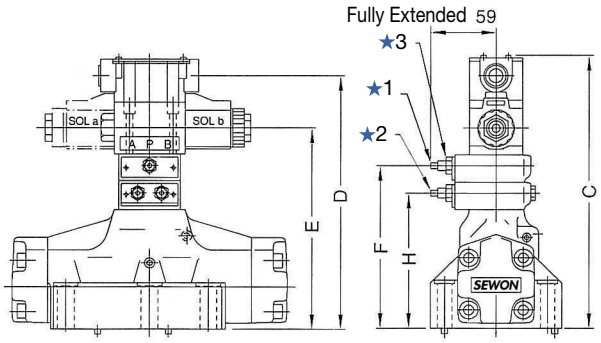
Options

■Models with Pilot Choke Valve

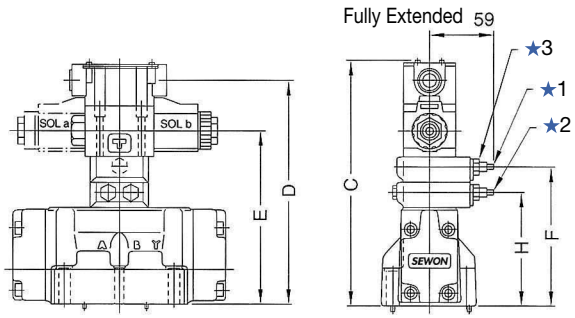
● DSHG-03-※※※-C1, C2, C1C2



● DSHG-$\frac{06}{10}$-※※※-C1, C2, C1C2



● DSHG-04-※※※-C1, C2, C1C2



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

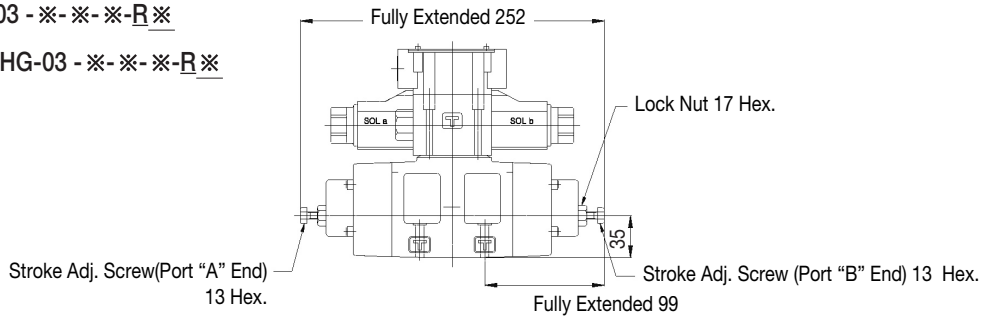
Model Numbers	C	D	E	F	H
DSHG-03-※※※-C1	200.3	182	135	100	—
DSHG-03-※※※-C2				—	100
DSHG-03-※※※-C1C2	225.3	207	160	125	100
DSHG-04-※※※-C1	206.3	188	141	106	—
DSHG-04-※※※-C2				—	106
DSHG-04-※※※-C1C2	231.3	213	166	131	106
DSHG-06-※※※-C1	227.3	209	162	127	—
DSHG-06-※※※-C2				—	127
DSHG-06-※※※-C1C2	252.3	234	187	152	127
DSHG-10-※※※-C1	290.3	272	225	190	—
DSHG-10-※※※-C2				—	190
DSHG-10-※※※-C1C2	315.3	297	250	215	190

Options

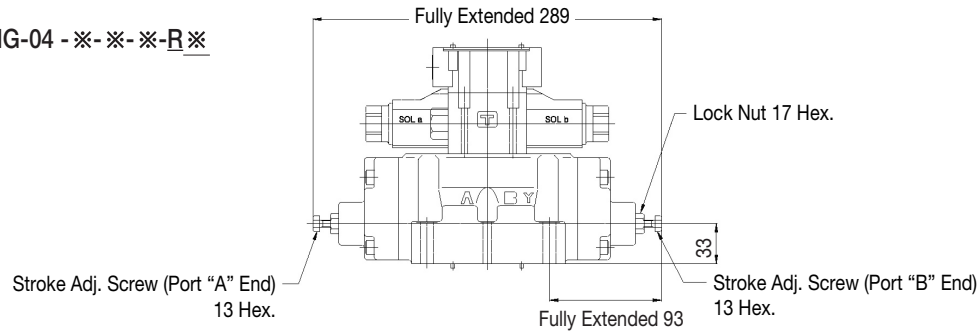
■Models with Stroke Adjustment

● DSHG-03 - ※- ※- ※-R※

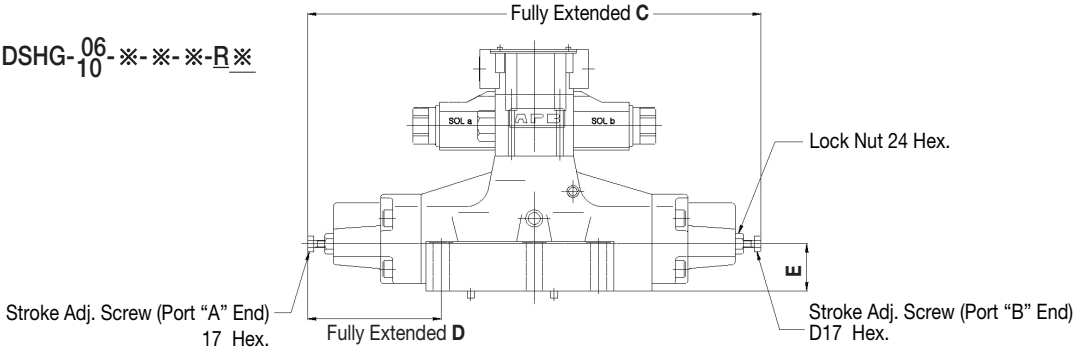
DSHG-03 - ※- ※- ※-R※



● DSHG-04 - ※- ※- ※-R※



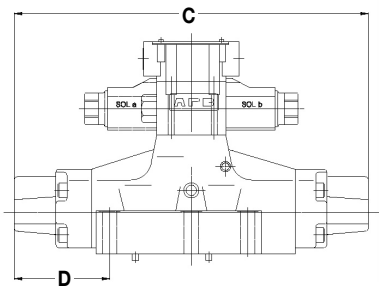
● DSHG-$\frac{06}{10}$- ※- ※- ※-R※



Model Numbers	C	D	E
DSHG-06-※※※-R2	376	111	40
DSHG-10-※※※-R2	558	164.5	65

■Models with Pilot Piston

● DSHG-$\frac{06}{10}$- ※- ※- ※-P※



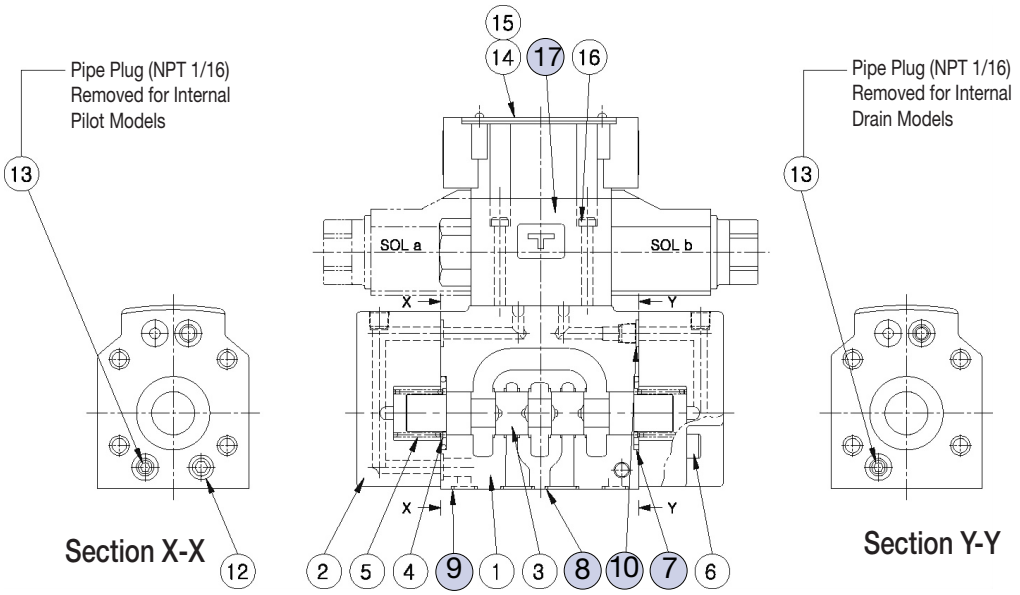
Model Numbers	C	D
DSHG-06-※※※-P2	323	84
DSHG-10-※※※-P2	479	125

■List of Seals and Pilot Valves

⚠ CAUTION

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

DSHG-03



●List of Seals

Item	Name	Part Numbers	Qty.
7	O-Ring	JIS B 2401-1B-P28	2
8		AS568-014(NBR, Hs90)	5
9		JIS B 2401-1B-P9	2
10		JIS B 2401-1B-P9	6

●List of Pilot Valves (Item ⑰)

Valve Model Numbers		⑰ Pilot Valve Model Numbers
Standard Type	DSHG-03-3C※-★-60	DSG-01-3C4-★-80
	DSHG-03-2B※-★-60	DSG-01-2B2-★-80
	DSHG-03-2N※-★-60	DSG-01-2D2-★-80

Notes)

1: Fill coil type (a symbol representing current/voltage) in section marked ★

2: For the details of the pilot valves, see page E-19.

⚠ WARNING

Keep the following points before working.

If neglected, the operation of the device or hydraulic oil spewing during the work in progressare cause the heavy accident.

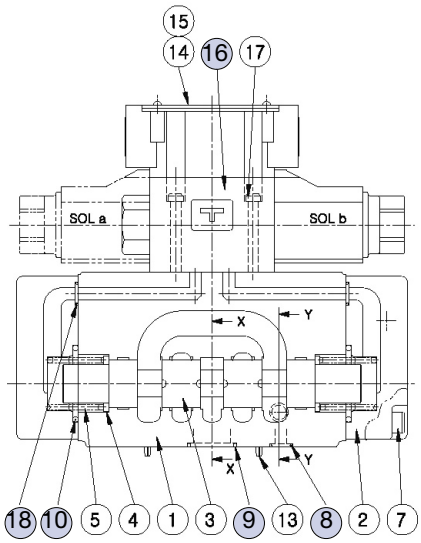
- The power switch off and then the motor and the engine make sure that are stopped.
- The pressure in the hydraulic pipe must be zero.

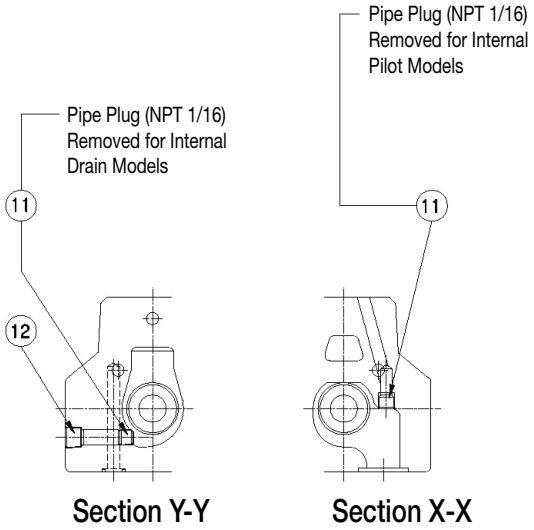
■List of Seals and Pilot Valves

⚠ CAUTION

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

DSHG-04





●List of Seals

Item	Name	Part Numbers	Qty.
8	O-Ring	JIS B 2401-1B-P9	2
9		JIS B 2401-1B-P22	4
10		JIS B 2401-1B-P34	2
18		JIS B 2401-1B-P9	2

●List of Pilot Valves (Item ⑯)

Valve Model Numbers	⑯Pilot Valve Model Numbers
DSHG-04-3C※-★-60	DSG-01-3C4-★-80
DSHG-04-2N※-★-60	DSG-01-2D2-★-80
DSHG-04-2B※-★-60	DSG-01-2B2-★-80

Notes)

1: Fill coil type (a symbol representing current/voltage) in section marked ★

2: For the details of the pilot valves, see page E-19.

⚠ WARNING

Keep the following points before working.

If neglected, the operation of the device or hydraulic oil spewing during the work in progressare cause the heavy accident.

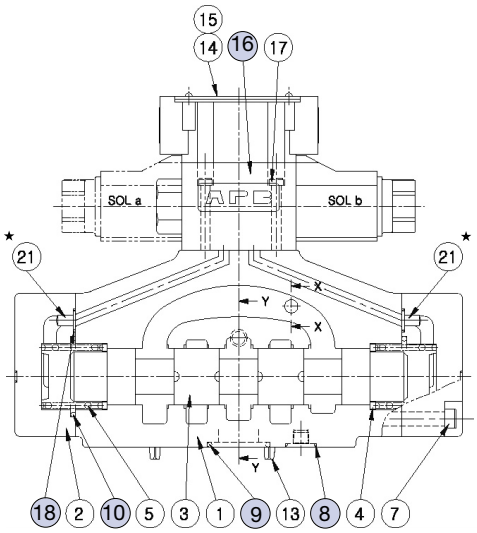
- The power switch off and then the motor and the engine make sure that are stopped.
- The pressure in the hydraulic pipe must be zero.

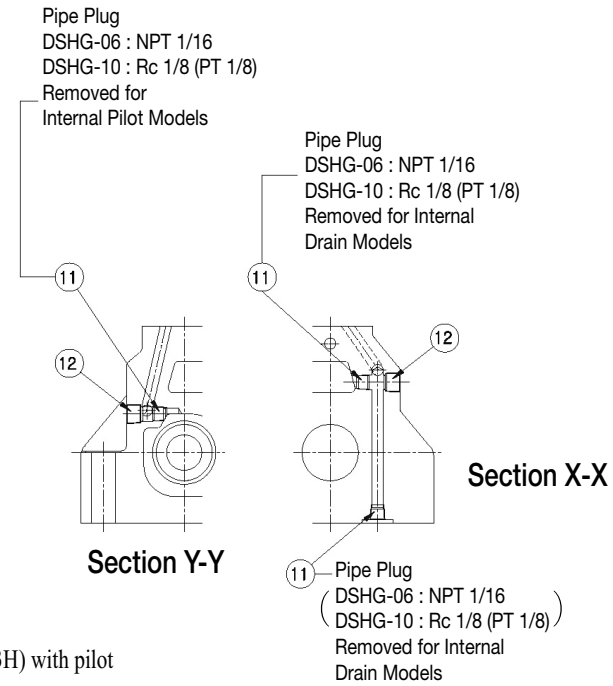
■List of Seals and Pilot Valves

⚠ CAUTION

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

DSHG-06, 10





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

Orifice Model Number :TP-OPT-1/16×2.0 ····· DSHG-06

TP-OPT-1/8×2.0 ····· DSHG-10

●List of Seals

Item	Name	Part Numbers		Qty.
		DSHG-06	DSHG-10	
8	O-Ring	JIS B 2401-1B-P14	JIS B 2401-1B-P20	2
9		JIS B 2401-1B-P30	JIS B 2401-1B-P42	4
10		JIS B 2401-1B-P40	JIS B 2401-1B-G65	2
18		JIS B 2401-1B-P10	JIS B 2401-1B-P14	2

●List of Pilot Valves (Item ⑯)

Valve Model Numbers	⑯ Pilot Valve Model Numbers
DSHG-06-3C※-★-60	DSG-01-3C4-★-80
DSHG-10-3C※-★-60	
DSHG-06-2N※-★-60	DSG-01-2D2-★-80
DSHG-10-2N※-★-60	
DSHG-06-2B※-★-60	DSG-01-2B2-★-80-L
DSHG-10-2B※-★-60	

Notes)

1:Fill coil type (a symbol representing current/voltage) in section marked ★

2: For the details of the pilot valves, see page E-19.

⚠ WARNING

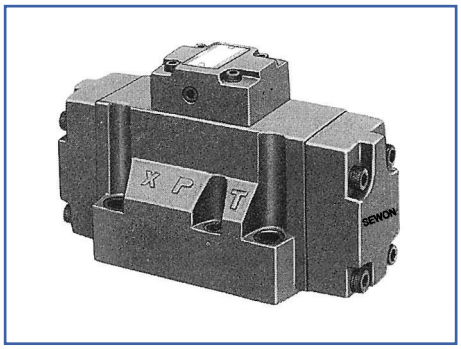
Keep the following points before working.

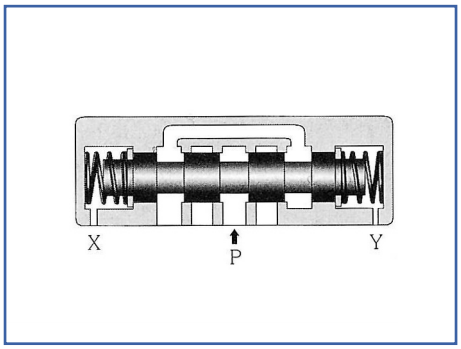
If neglected, the operation of the device or hydraulic oil spewing during the work in progressare cause the heavy accident.

- The power switch off and then the motor and the engine make sure that are stopped.
- The pressure in the hydraulic pipe must be zero.

■Pilot Operated Directional Valves

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





■Ratings

Model Numbers	Maximum Flow★ L/min	Max. Operating Pressure MPa	Max. Pilot Pressure Pressure MPa	Min. Required Pilot Pressure MPa
DHG-04-3C※-50	300	31.5{321}	25{255}	0.8{8.2}
DHG-04-2N※-50	300			
DHG-04-2B※-50	130			
DHG-06-3C※-50	500	31.5{321}	25{255}	0.8{8.2}
DHG-06-2N※-50	500			
DHG-06-2B※-50	140			
DHG-06-3H※-50	500		21{214}	1.0{10.2}
DHG-10-3C※-40	1100	31.5{321}	25{255}	1.0{10.2}
DHG-10-2N※-40	1100			
DHG-10-2B※-40	460			
DHG-10-3H※-40	1100		21{214}	

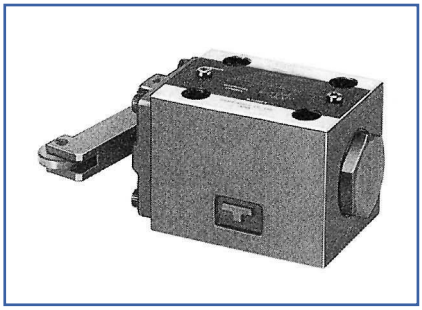
★ The maximum flow means the limited flow without inducing any abnormality to the operation (changeover) of the valve. The maximum flowdiffers according to the spool type and operating conditions. For details, please contact us.

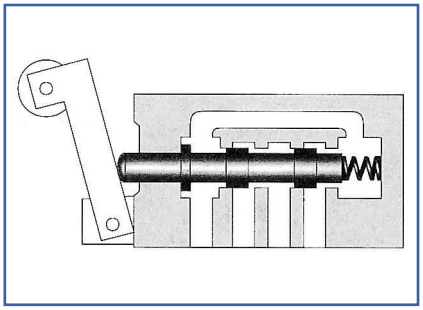
Note) Special seals (Viton seals) are required when phosphate ester type fluids are used.(Put “F-” before model number of valve when ordering.)

For details, Please contac us.

■Cam Operated Directional Valves

These valves may be used to shift the direction of oil flow by depressing the spool by way of a cam.



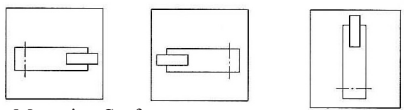


■Ratings

Model Numbers		Max. Flow★ L/min	Max. Operating Pressure MPa	Max. T-Line Pressure MPa	Approx. Mass kg	
Threaded Connection	Sub-plate Mounting				DCT Type	DCG Type
DCT-01-2B※-40	DCG-01-2B※-40	30	21{214}	7{71.4}	1.1	1.1
DCT-03-2B※-50	DCG-03-2B※-50	100	25{255}	10{102}	4.5	3.8

★Max. flow indicates the ceiling flow which does not affect the normal function (changeover) of valves.

■Model Number Designation

DC	T	-01	-2	B	2	-R	-40
Series Number	Type of Connection	Valve Size	No. of Valve Position	Spool-Spring Arrangement	Spool Type	Roller Position	Design Number
DC : Cam Operated Directional Valve	**T** : Threaded Connection	**01**	**2**	**B** : Spring Offset	**2・3・8**	**None** (Normal Position) R Y (DC*-01 only)  Mounting Surface	**40**
		03					**50**
	G : Sub-plate Mounting	**01**					**40**
		03					**50**

Note) Special seals (Viton seals) are required when phosphate ester type fluids are used.(Put "F-" before model number of valve when ordering).

■Sub-plates

Valve Model Numbers	Sub-plate Model Numbers	Thread Size Rc (PT)	Approx. Mass kg	Remarks
DCG-01	DSGM-01-30	1/8	0.8	Common to that of DSG-01 series valve. For the details, see page E-18.
	DSGM-01X-30	1/4		
	DSGM-01Y-30	3/8		
DCG-03	DSGM-03-40	3/8	3	Common to that of DSG-03 series valve. For the details, see page E-30.
	DSGM-03X-40	1/2	3	
	DSGM-03Y-40	3/4	4.7	

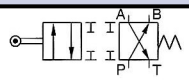
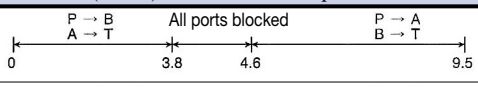
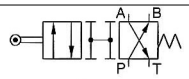
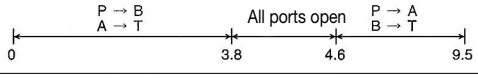
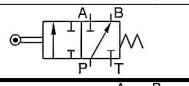
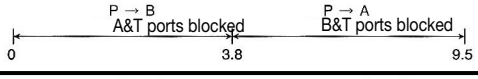
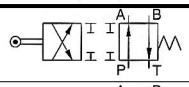
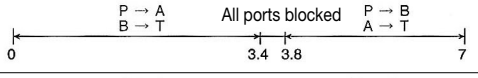
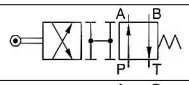
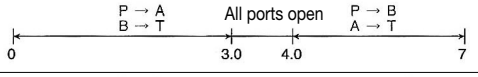
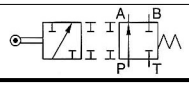
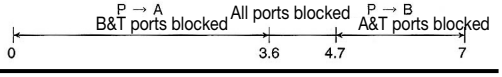
●Sub-plates are available. Specify the sub-plate model number from the table above.
When sub-plates are not used, the mounting surface should have a good machined finish.

●Mounting Bolt

Model	Soc. Hd. Cap Screw
DCT-01	M5×45L···2pcs
DCG-01	M5×45L···4pcs
DCG-03	M6×35L···4pcs

No Mounting Bolts, DCT-03 Series.

■Direction of Oil Flow for Roller Position

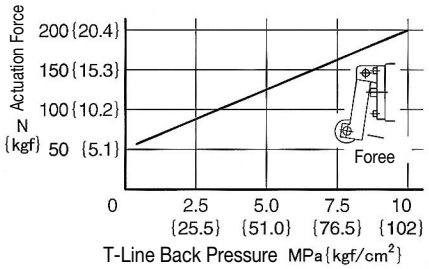
Model Numbers	Graphic Symbols	Roller Position and Direction of Oil Flow Roller Stroke from Offset Position mm Extended(Offset) Depressed
DCT DCG-01-2B2		
DCT DCG-01-2B3		
DCT DCG-01-2B8		
DCT DCG-03-2B2		
DCT DCG-03-2B3		
DCT DCG-03-2B8		

■Instructions

●Valve Type "2B8"

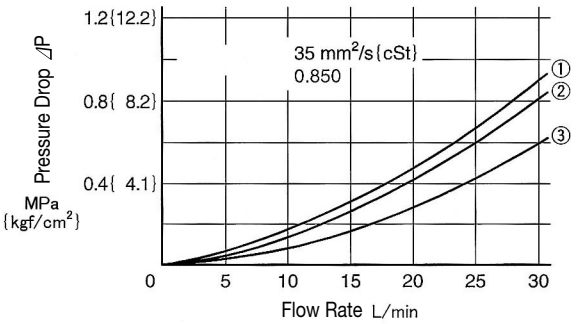
Tank port "T" functions as a drain port.
Directly connect it to the reservoir.
[Max. allowable back pressure 0.35 MPa]

●Actuation Force



■Pressure Drop

●DCT DCG-01



Model Numbers	Pressure Drop Curve No			
	P→A	B→T	P→B	A→T
DCT-01-2B2	①	①	②	①
DCT-01-2B3				
DCT-01-2B8	②	–	②	–
DCG-01-2B2	②	②	③	③
DCG-01-2B3				
DCG-01-2B8	③	–	③	–

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

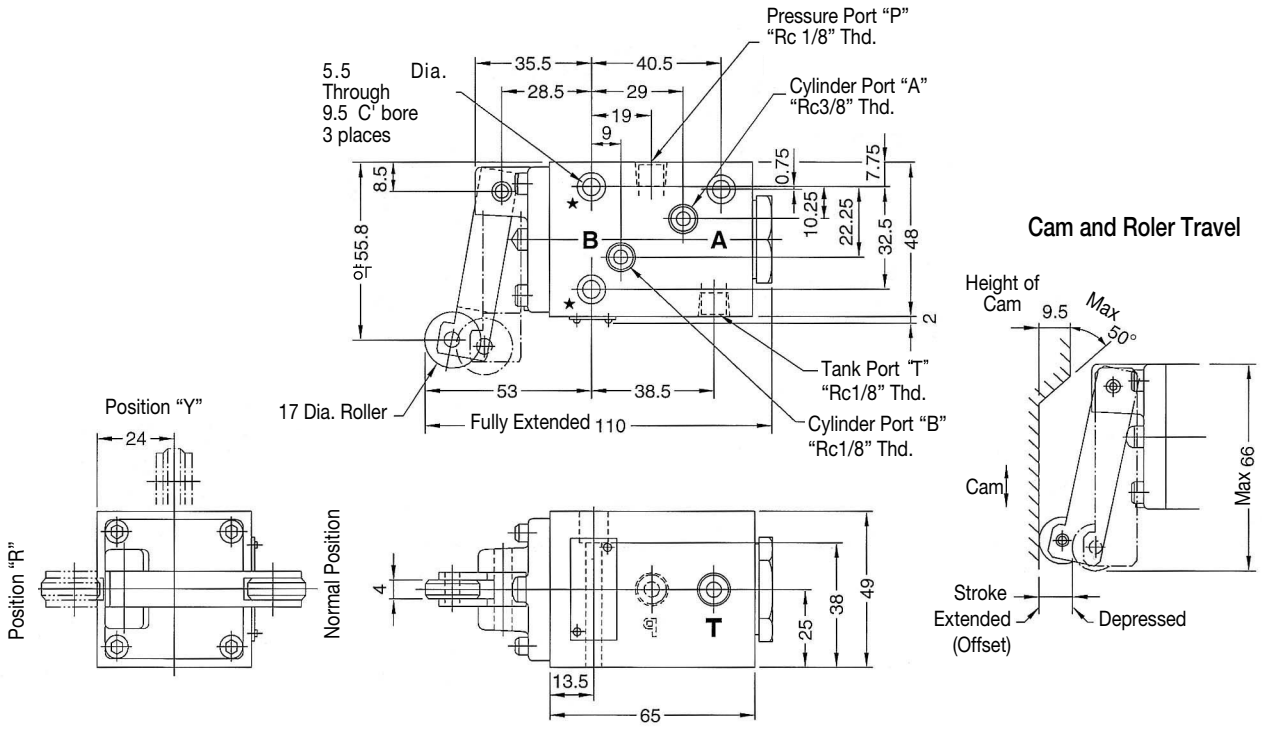
Viscosity	mm²/s {cSt}	15	20	30	40	50	60	70	80	90	100
	SSU	77	98	141	186	232	278	324	371	417	464
Factor		0.81	0.87	0.96	1.03	1.09	1.14	1.19	1.23	1.27	1.30

● For any other specific gravity(G'). the pressure drop(⊿P') may be obtained from the formula below.
P'= ⊿p(G'/G) where, ⊿P is a value on the above chart and G is 0.850.

●DCT DCG-03

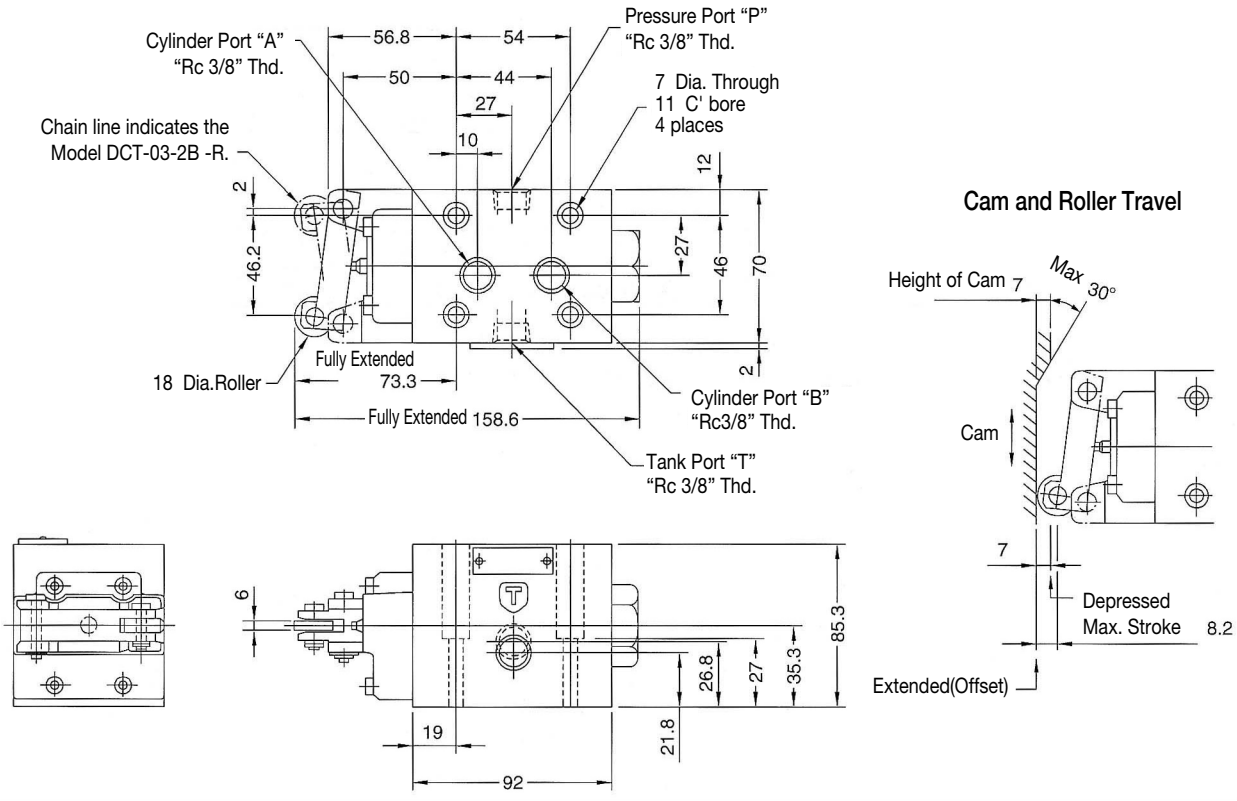
Common to that of DSG-03 series valve
For the details, see page E-30.

DCT-01



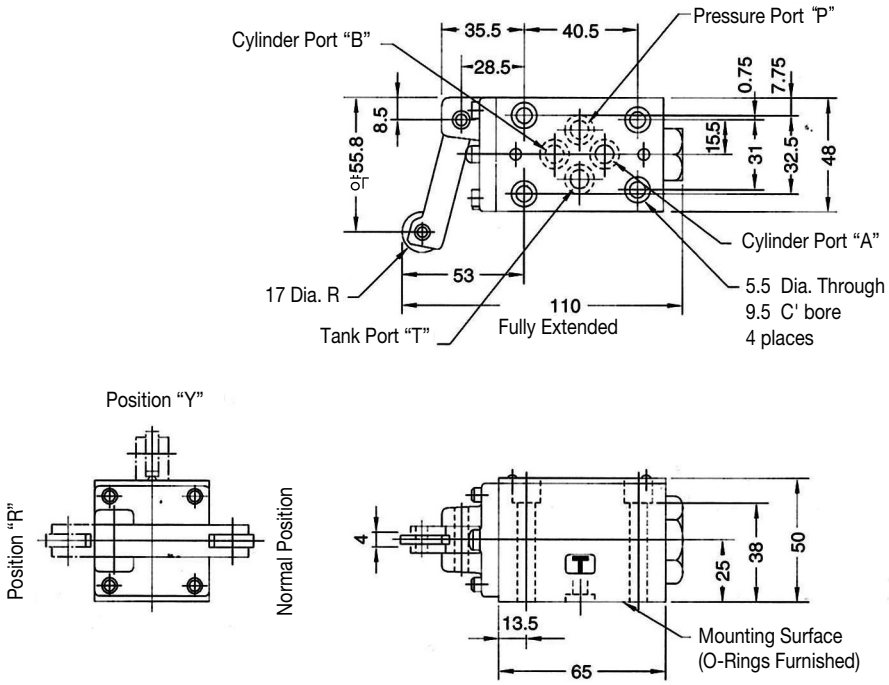
Note: When mounting the valve, be sure to use two mounting holes marked with ★

DCT-03



DCG-01

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

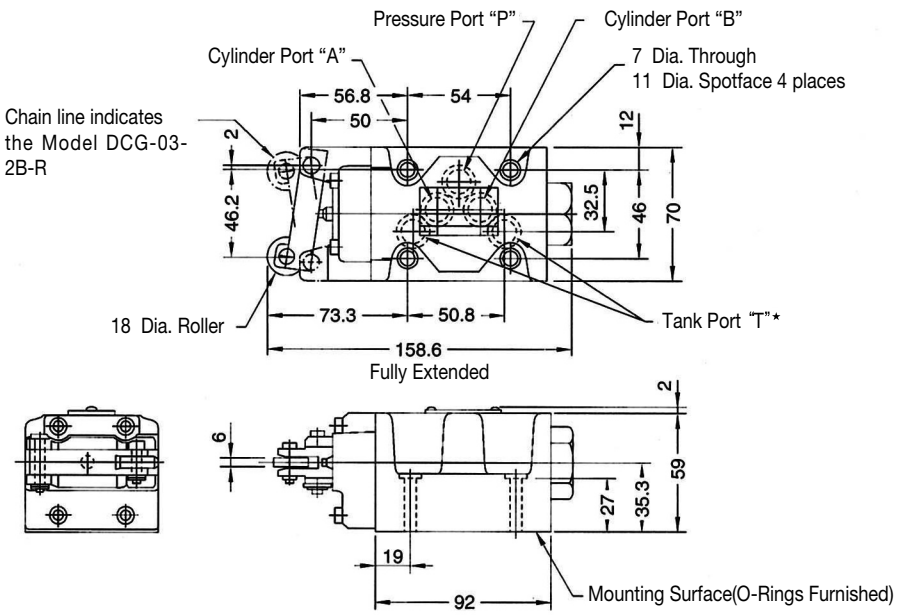


Note1: For the cam and roller travel, see DCT-01 in the previous page.

Note2: For the valve mounting surface dimensions, see the dimensional drawing of the sharable sub-plate in page E-18.

DCG-03

Mounting Surface: ISO 4401-AC-05-4-A



★ Although the tank port is shown on the left in our sub-plate, either may be used.

Note1: For the cam and roller travel, see DCT-03 in the previous page.

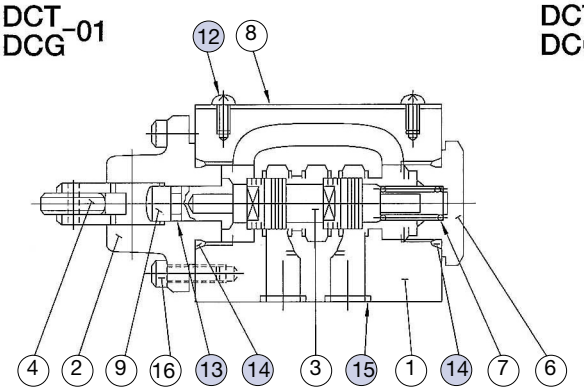
Note2: For the valve mounting surface dimensions, see the dimensional drawing of the sharable sub-plate in page E-30.

⚠ CAUTION

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

List of Seals

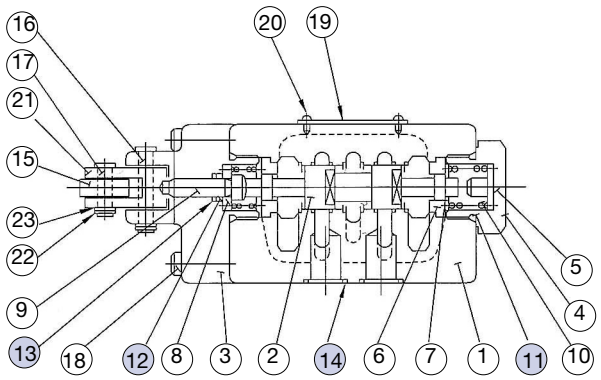
DCT-01
DCG-01



Item	Name of Parts	Part Numbers	Quantity
13	O-Ring	JIS B 2401-1A-P5	1
14	O-Ring	JIS B 2401-1B-P18	2
15	O-Ring	JIS B 2401-1B-P9	4

Note : Item ⑮ is used Sub-plate Mounting Type.

DCT-03
DCG-03



Item	Name of Parts	Part Numbers	Quantity
11	O-Ring	JIS B 2401-1B-P21	2
12	O-Ring	JIS B 2401-1A-P6	1
13	Back Up Ring	JIS B 2407-T3-P6	1
14	O-Ring	AS 568-014(NBR,Hs90)	5

Note : Item ⑭ is used Sub-plate Mounting Type.