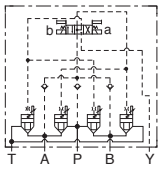
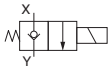
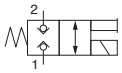
Poppet Type Directional Valves

Valve Type	Graphic Symbols	Max. Operating Pressure MPa	Maximum Flow L/min (1 2 5 10 20 50 100 200 500 1000)	Page
Multi Purpose Control Valves		25	DSLHG-04 DSLHG-06 DSLHG-10	E-102
Solenoid Operated Poppet Type Two-Way Valves		21	CDSC-01	E-122
		14	CDSC-03 CDST-03* CDSG-03	
Shut-off Type Solenoid Operated Directional Valves		25	DSPC-01 DSPG-01 DSPC-03 DSPG-03	E-128

Mounting Surface

Mounting surface dimensions conform to ISO standard described in the below table.

Name	Model Numbers	ISO Code of Mounting Surface
Shut-off Type Solenoid Operated Directional Valves	DSPG-01	ISO 4401-03-02-0-05
	DSPG-03	ISO 4401-05-04-0-05
	DSPC-01	ISO 7789 20-01-0-07
	DSPC-03	ISO 7789 27-01-0-07
Multi Purpose Control Valves	DSLHG-04	ISO 4401-07-07-0-05
	DSLHG-06	ISO 4401-08-08-0-05
	DSLHG-10	ISO 4401-10-09-0-05

Interchangeability in Installation between Current and New Design

Model change has been made on the following products.
The difference between current and new design has been described on the paragraph of "Interchangeability in Installation between Current and New Design". Refer to relevant pages on each series.

Name	Model Numbers		Mtg. Interchangeability	Page	Major Changes
	Current	New			
1/2, 3/4, 1 1/4 Multi Purpose Control Valves	DSLHG-04-＊-＊-12 DSLHG-06-＊-＊-12 DSLHG-10-＊-＊-12	DSLHG-04-＊-＊-13 DSLHG-06-＊-＊-13 DSLHG-10-＊-＊-13	Yes	—	• Pilot valve (DSG-01) changed 60→70 design.
Solenoid Operated Poppet Type Two-Way Valves	CDS＊-03＊-C-＊-20	CDS＊-03＊-C-＊-21	Yes	E-127	• The change of solenoid ratings.
Shut-off Type Solenoid Operated Directional Valves	DSP＊-01-C-＊-20	DSP＊-01-C-＊-30	Yes	E-135	• High pressure and the change of solenoid ratings.

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 rewiring when the applied frequency is changed.

DC Solenoid

K-series DC Solenoid which has a reputation for excellent DC control is employed.

★Three Characteristics of K-series★

1. Avoid malfunction of computers.
   (The surge voltage is low, so these valves do not give bad influences like noise to electronic devices)

2. The relays last for long time.
   (The spark between the relay contacts has been eliminated and therefore drastically decrease damages of contacts)

3. Time lag on de-energisation is reduced.

R Type Models with Current Rectifier and DC Solenoid

Specially designed DC solenoids and receptacle (or connector) containing AC-DC rectifier and transient peak suppressor are provided. Connection to be made to AC power source as with conventional AC solenoid.
Remarkably high reliability and long life and other advantages including quiet valve operation. No overheating of coil due to the spool sticking and protection against transient voltage peaks are assured.

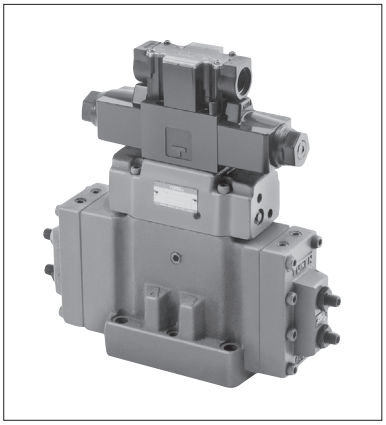
Insulation Class of Solenoid

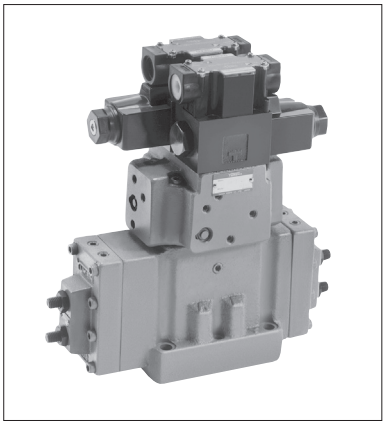
Model Numbers	Insulation Class
DSLHG-04/06/10	Class H
CDSC-01 CDS＊-03＊ DSP＊-01/03	

Multi Purpose Control Valves

The Yuken Multi-Purpose Control Valves Comply with The Needs of Reducing Cost and Size of Your Machine

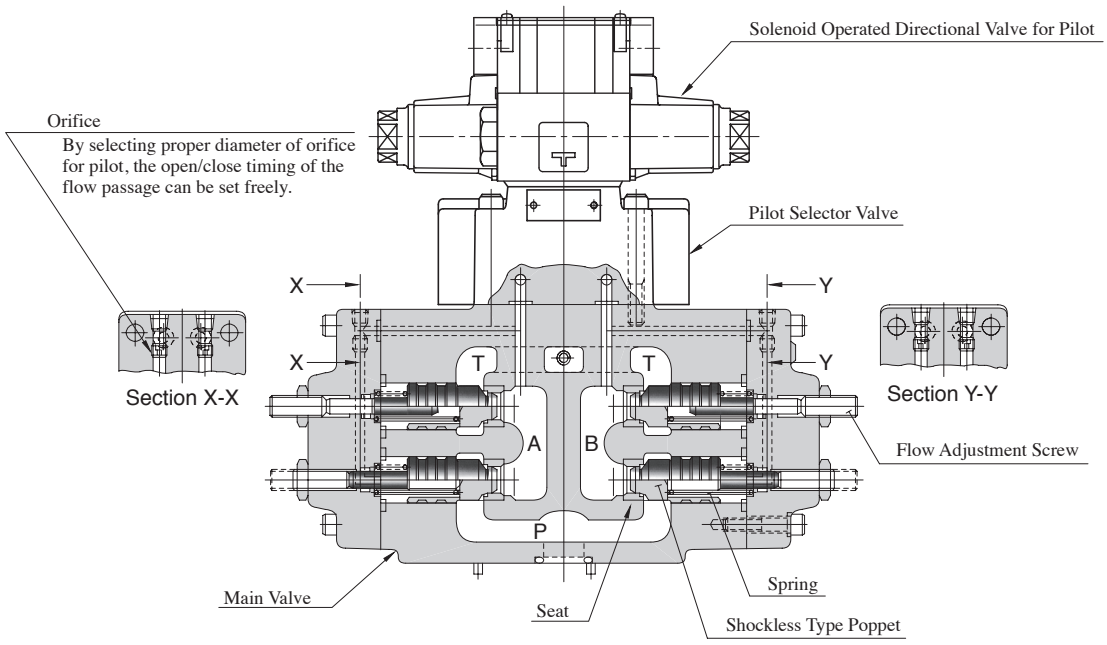
YUKEN's Multi Purpose Control Valves are compound valves composed of the main valve having four poppets, 1/8 Solenoid Operated Directional Valves for pilot and Pilot Selector Valves. This valve is multifunctionalized by having individual poppet had functions such as directional control, flow control or pressure control according to the combination of the main valve and pilot selector valve.





Features

- **Multi-purpose control valves**
  The valves combine three functions of directional control, flow control and of pilot operated check valve (or counterbalance valve). The valves contribute for reducing a number of valves in applications and space for installation and then eventually leads to reduction in size and cost of your machines.
- **Quick response, High reliability**
  Changeover response time is very quick as the valves are poppet type, there is no over-lap.
  No hydraulic lock occurs as there is no leakage of pressurised oil from the seat parts.
- **Easy to reduce shock in your hydraulic system**
  By selecting proper diameter of orifice for pilot, the open/close timing of the flow passage can be set freely. Therefore, smooth starting and stopping of actuator can be done combined with using shockless type poppet. Noise of ON/OFF and vibration of piping in hydraulic system can be also reduced.
- **For regenerative circuit**
  4 position-4 way type, which is to compose regenerative circuit, is available. By adopting regenerative circuit, gaining fast feed speed by using smaller volume pump is possible. Therefore saving electric power of system is possible.
- **The mounting dimensions are conformed with ISO standard**
  The valves are interchangeable with our conventional valves in mounting.



Specifications

Model Numbers	Max. Flow L/min	Max. Operating Pressure MPa	Max. Pilot Pressure MPa	Max. T-Line Back Pres. MPa	Pressure Adj. Range of Counterbalance MPa	Ratio of Poppet Area (Seat Area: Annular Area)		Approx. Mass kg
						Direction & Flow Control	Pressure Control	
DSLHG-04-1-∗-13∗	150 (39.6)	25	25	16	—	1:1	—	15
DSLHG-04-2-∗-13∗								15
DSLHG-04-3-∗-13∗								19
DSLHG-04-4∗-∗-∗-13∗	150 {100}★				Refer to Model No. Designation	1:1	24:1	20
DSLHG-04-5∗-∗-∗-13∗								22.5
DSLHG-06-1-∗-13∗	300 (79.3)	25	25	16	—	1:1	—	26.5
DSLHG-06-2-∗-13∗								26.5
DSLHG-06-3-∗-13∗								28
DSLHG-06-4∗-∗-13∗	300 {200}★				Refer to Model No. Designation	1:1	24:1	31
DSLHG-06-5∗-∗-13∗								34.5
DSLHG-10-1-∗-13∗	500 (132)	25	25	16	—	1:1	—	59
DSLHG-10-2-∗-13∗								59
DSLHG-10-3-∗-13∗								62
DSLHG-10-4∗-∗-13∗	500 {300}★				Refer to Model No. Designation	1:1	24:1	63.5
DSLHG-10-5∗-∗-13∗								67

★In case of counterbalance function line, maximum flow is limited to the values in brackets.

Solenoid Ratings

Refer to Pilot Valve (DSG-01 Series Solenoid Operated Directional Valve) Solenoid Ratings on page E-23.

Model Number Designation

DSLH	G	-04	-4	A	-B
Series Number	Type of Mounting	Valve Size	Type of Pilot Control	Counterbalance Function	Pressure Adj. Range of Counterbalance MPa
DSLH: Multi-Purpose Control Valve	**G**: Sub-plate Mounting	**04**	**1** **2** **3**	—	—
			4 **5**	**A** : AT Line **W**: AT & BT Lines	**B** : ∗★1- 7 **H** : 6 - 25
		06	**1** **2** **3**	—	—
			4 **5**	**A** : AT Line **W**: AT & BT Lines	**None**: ∗★1- 25
		10	**1** **2** **3**	—	—
			4 **5**	**A** : AT Line **W**: AT & BT Lines	**None**: ∗★1- 25
			See page E-105 for functions and purpose of use.		

★1. See "Min. Adjustment Pressure", page E-107, for information on minimum adjustment pressure.

Sub-plate

Valve Model Numbers	Japanese Standard "JIS"		
	Sub-plate Model Numbers	Thread Size	Approx. Mass kg
DSLHG-04	DHGM-04-20 DHGM-04X-20	Rc 1/2 Rc 3/4	4.4 4.1
DSLHG-06	DHGM-06-50 DHGM-06X-50	Rc 3/4 Rc 1	7.4 7.4
DSLHG-10	DHGM-10-40 DHGM-10X-40	Rc 1-1/4 Rc 1-1/2	21.5 21.5

- 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. ($\overset{1.6}{\nabla}$)
- These sub-plates are sharable with those for DSHG Series Solenoid Controlled Pilot Operated Directional Valve. For dimensions, see pages E-85 and E-87.

Mounting Bolts

Socket head cap screws in the table below are included.

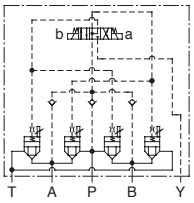
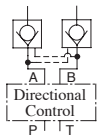
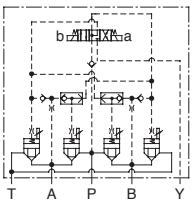
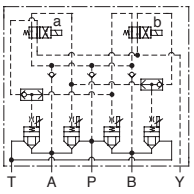
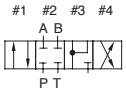
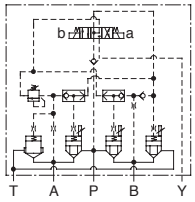
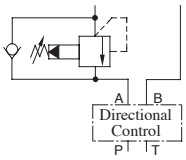
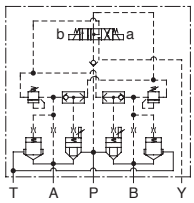
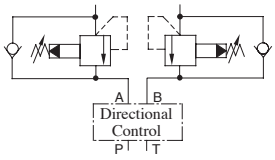
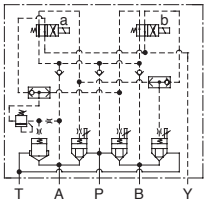
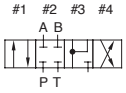
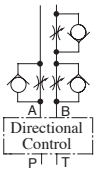
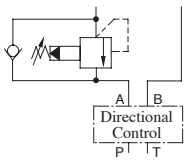
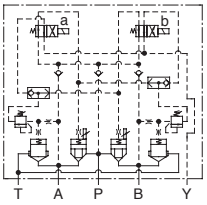
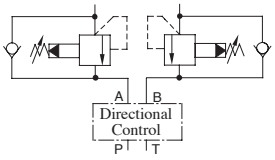
Model Numbers	Socket Head Cap Screw
DSLHG-04	M6 × 40 M10 × 45
DSLHG-06	M12 × 60
DSLHG-10	M20 × 75

-E	T	-A100	-C	-N	-13
Pilot Connection	Drain ★2 Connection	Coil Type	Manual Override	Electrical Conduit Connection	Design Number
None: Internal Pilot **E**: External Pilot	**None**: External Drain **T**: Internal Drain	AC: **A100** **A120** **A200** **A240** DC: **D12** **D24** **D48** R: (AC→DC) **R100** **R200**	**None**: Manual Override Pin **C**: Push Button & Lock Nut (Options)	**None**: Terminal Box Type **N**: Plug-in Connector Type	**13** **13** **13**

★2. In case of lines with counterbalance function (-4$\frac{A}{W}$, -5$\frac{A}{W}$), External Drain must be selected for Drain Connection.

The coil type numbers in the shaded column are handled as optional extras. In case these coils are required to be chosen, please confirm the time of delivery with us before ordering.

Function and Purpose of Use

Type of Pilot Control	Model No.	Graphic Symbols	Function: Directional Control	Function: Flow Control	Function: Pilot Operated Check Valve / Pressure Control	Purpose of Use
Type "1"	DSLHG-∗-1					● Functions as Three Position Four-Way Valve (Spring Centered Model).
Type "2"	DSLHG-∗-2		Position | #1 | #2 | #3 SOL a | ON | OFF | OFF SOL b | OFF | OFF | ON	Both Meter-in and Meter-out are possible	To get a function of pilot operated check valve, the following conditions should be fulfilled. ● Internal pilot type ("P" port pressure) ≧ ("A""B" ports pressure) ● External pilot type (Pilot pressure) ≧ ("A""B" ports pressure)	● Functions as Three Position Four-Way Valve (Spring Centered Model) as well as Two Position Valve which uses positions #1 and #3. ● Effective especially when the actuator has inertia force.
Type "3"	DSLHG-∗-3		 Position | #1 | #2 | #3 | #4 SOL a | ON | OFF | ON | OFF SOL b | OFF | OFF | ON | ON			● Functions as Four Position Four-Way Valve. ● Regenerative circuit can be constructed at the Position #3.
Type "4"	DSLHG-∗-4A		 Position | #1 | #2 | #3 SOL a | ON | OFF | OFF SOL b | OFF | OFF | ON			● Pressure control function (counterbalance valve) has been added to Type "2" to make this type.
	DSLHG-∗-4W					● Used to control the back pressure of the actuator.
Type "5"	DSLHG-∗-5A		 Position | #1 | #2 | #3 | #4 SOL a | ON | OFF | ON | OFF SOL b | OFF | OFF | ON | ON			● Pressure control function (counterbalance valve) has been added to Type "3" to make this type.
	DSLHG-∗-5W					● Used to control the back pressure of the actuator.

Instructions

- **Pilot Pressure**
  Pilot pressure of external pilot drain models must always exceed the pressure of the main pressure port "P".

- **Pilot Drain Port**
  Avoid connecting the pilot drain port to a line with possible surge pressure.

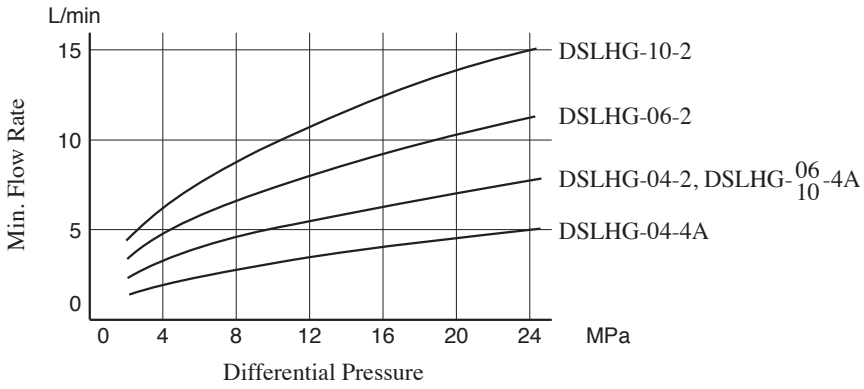
- **Drain Connection when with Counterbalance Function**
  When a valve having counterbalance function is used with internal drain type, the counterbalance pilot valve is subjected to pressure fluctuation and the pressure setting becomes unstable. For this reason, be sure to use external drain type valve.

- **Flow Adjustment**
  To perform the flow adjustment, loosen the lock nut, then turn the flow adjustment screw clockwise to decrease the flow. Be sure to re-tighten the lock nut after the adjustment.

- **Pressure Adjustment**
  To perform the pressure adjustment, loosen the lock nut, then turn the pressure adjustment screw clockwise to increase the pressure. Be sure to re-tighten the lock nut after the adjustment.

- **Min. Controlled Flow for Types "2" and "4A" at The Time of Meter-out Control**
  Minimum controlled flow at the time of meter-out control is limited (this does not happen during meter-in control) as shown in the figure below only in the case of pilot control types "2" (DSLHG-✻-2) and "4A" (DSLHG-✻-4A).

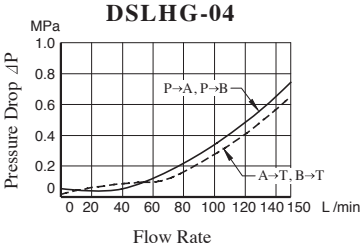
Min. Controlled Flow for Types "2" and "4A" at The Time of Meter-out Control



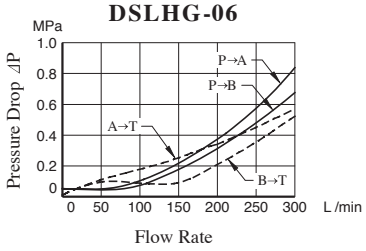
Hydraulic Fluid: Viscosity 35 mm²/s, Specific Gravity 0.850

Pressure Drop

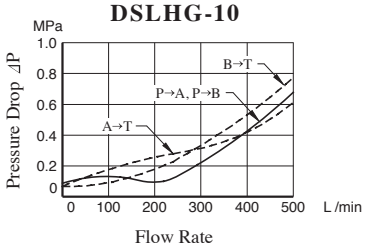
DSLHG-04



DSLHG-06



DSLHG-10



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

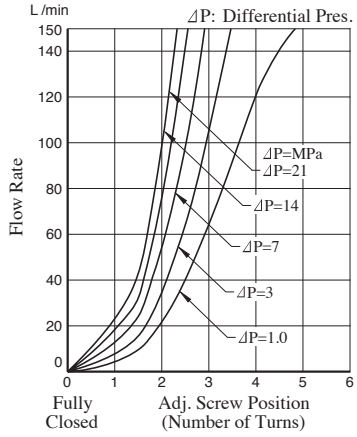
Viscosity	mm²/s	15	20	30	40	50	60	70	80	90	100
Factor		0.81	0.87	0.96	1.03	1.09	1.14	1.19	1.23	1.27	1.30

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

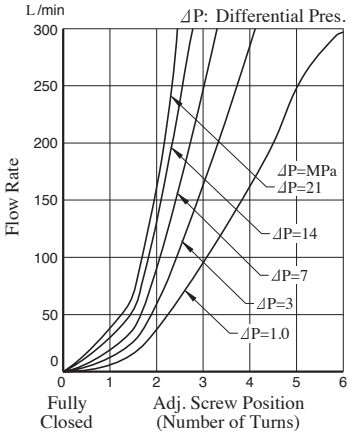
$$\Delta P' = \Delta P \, (G'/0.850)$$

Flow vs. Adjustment Revolutions

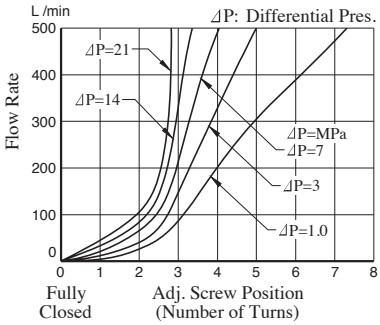
DSLHG-04



DSLHG-06



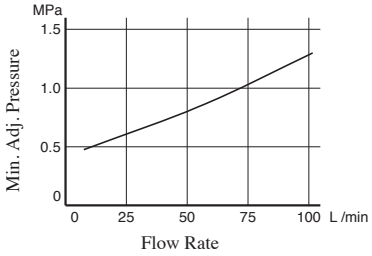
DSLHG-10



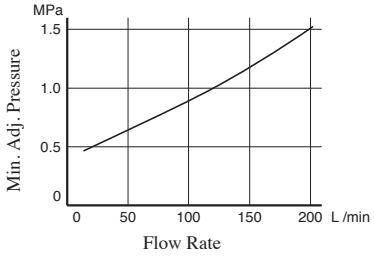
Minimum Adjustment Pressure

Because the minimum adjustment pressure varies with the tank line back pressure, add the tank line back pressure to the value on the following lines.

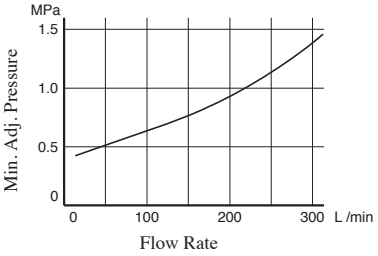
DSLHG-04-$\frac{4}{5}$*



DSLHG-06-$\frac{4}{5}$*



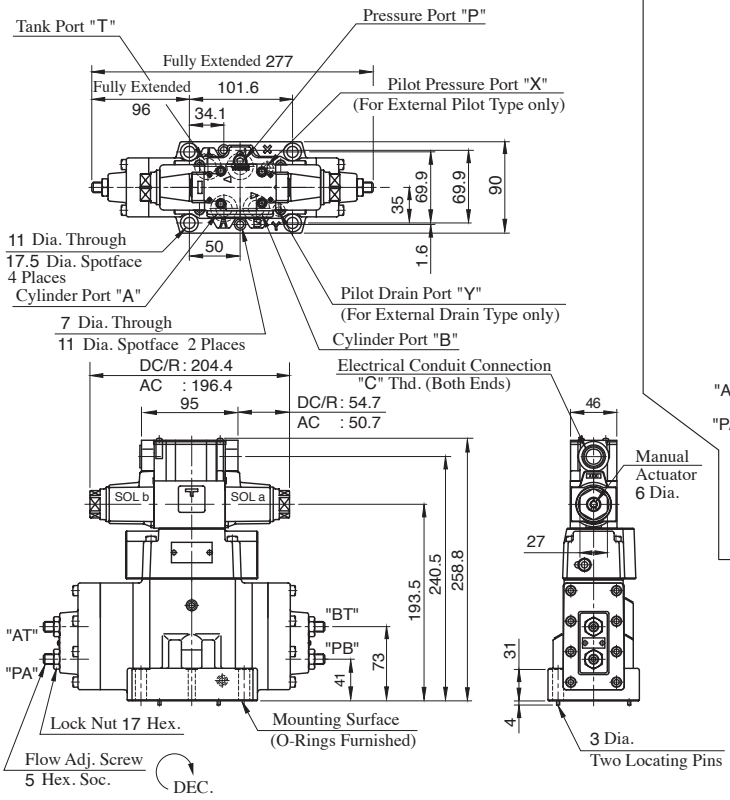
DSLHG-10-$\frac{4}{5}$*



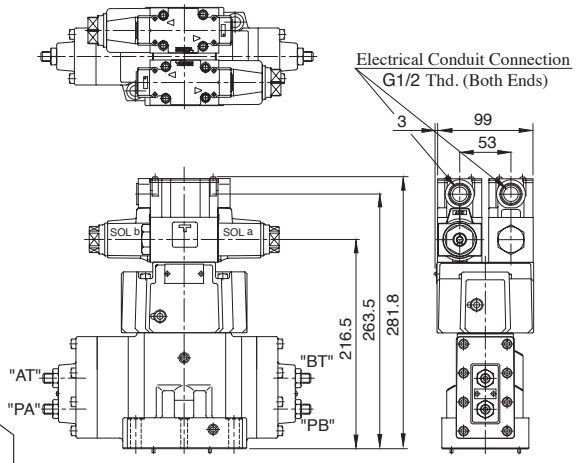
DSLHG-04-$\frac{1}{2}$-∗-13

Terminal Box Type

Mounting Surface:
ISO 4401-07-07-0-05

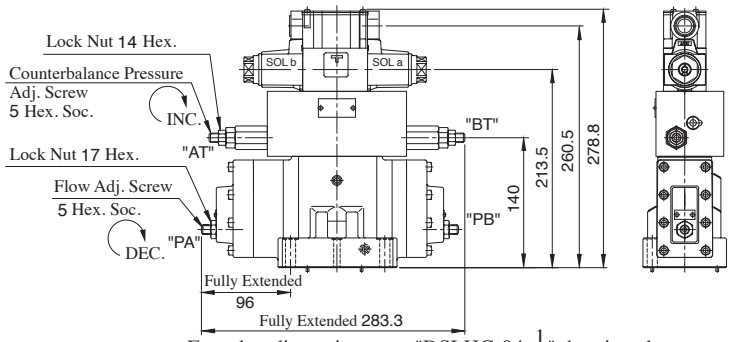


DSLHG-04-3-∗-13



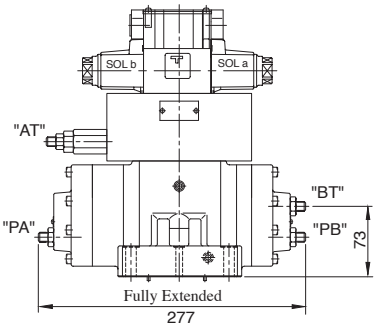
For other dimensions, see "DSLHG-04-$\frac{1}{2}$" drawing left.

DSLHG-04-4W-∗-∗-13



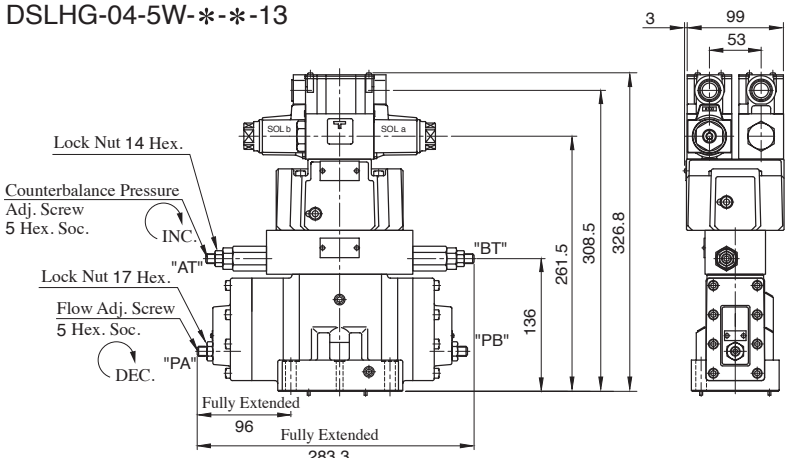
For other dimensions, see "DSLHG-04-$\frac{1}{2}$" drawing above.

DSLHG-04-4A-∗-∗-13



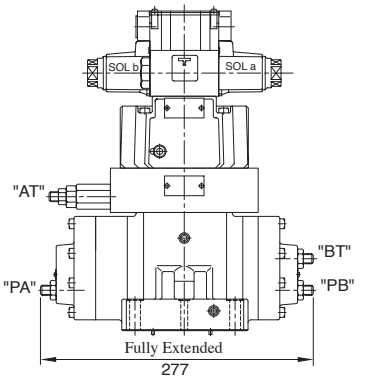
For other dimensions, see "DSLHG-04-4W" drawing left.

DSLHG-04-5W-∗-∗-13



For other dimensions, see "DSLHG-04-$\frac{1}{2}$" drawing above.

DSLHG-04-5A-∗-∗-13

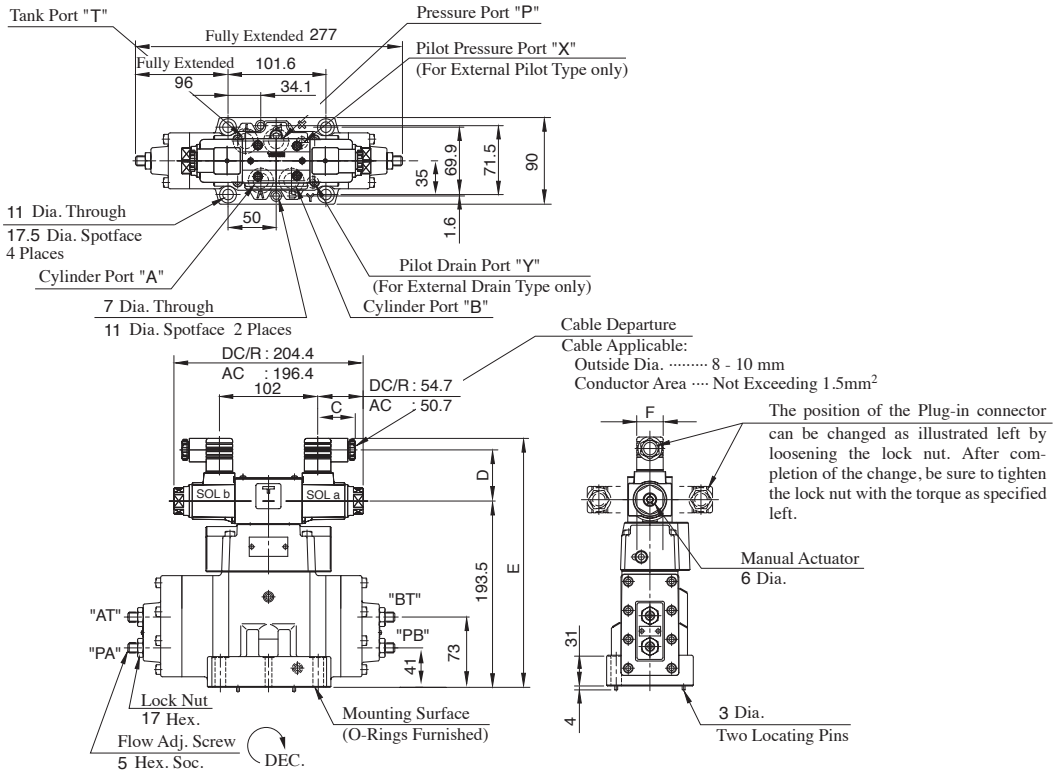


For other dimensions, see "DSLHG-04-5W" drawing left.

DSLHG-04-$\frac{1}{2}$-∗-N-13

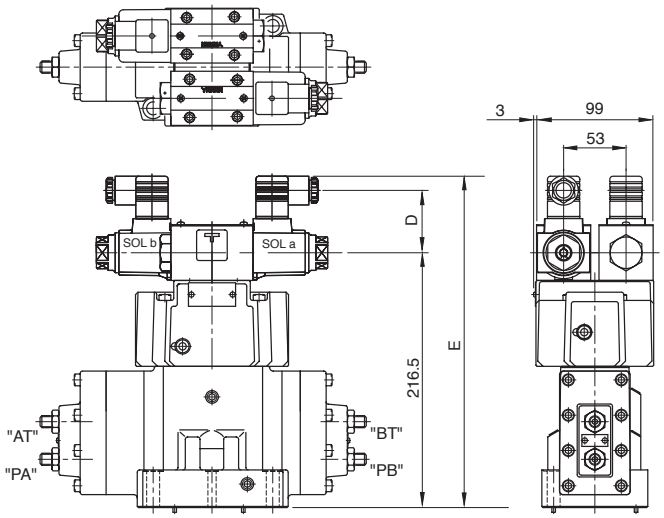
Plug-in Connector Type

Mounting Surface:
ISO 4401-07-07-0-05



Model Numbers	C	D	E	F
DSLHG-04-∗-A∗-N	39	53	258.5	27.5
DSLHG-04-∗-D∗-N	39	64	269.5	27.5
DSLHG-04-∗-R∗-N	53	57.2	272.5	34

DSLHG-04-3-∗-N-13



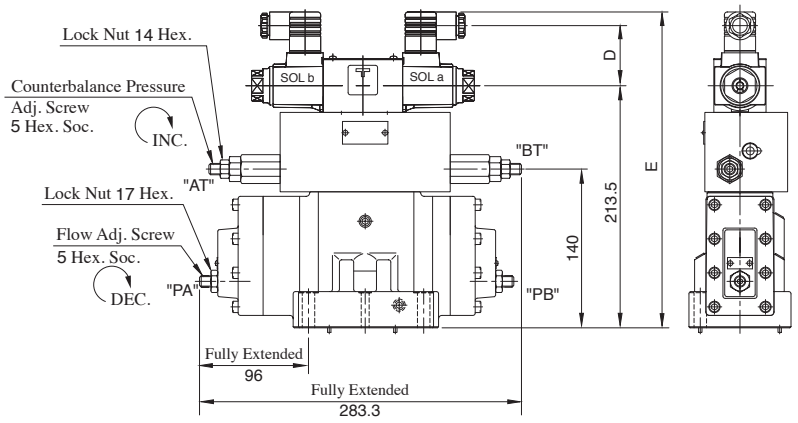
Model Numbers	D	E
DSLHG-04-3-A∗-N	53	281.5
DSLHG-04-3-D∗-N	64	292.5
DSLHG-04-3-R∗-N	57.2	299.5

For other dimensions, see "DSLHG-04-$\frac{1}{2}$-∗-N" drawing above.

Plug-in Connector Type

Mounting Surface:
ISO 4401-07-07-0-05

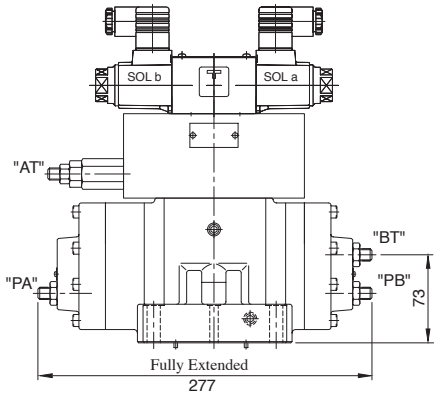
DSLHG-04-4W-∗-∗-N-13



Model Numbers	D	E
DSLHG-04-4W-∗-A∗-N	53	278.5
DSLHG-04-4W-∗-D∗-N	64	289.5
DSLHG-04-4W-∗-R∗-N	57.2	292.5

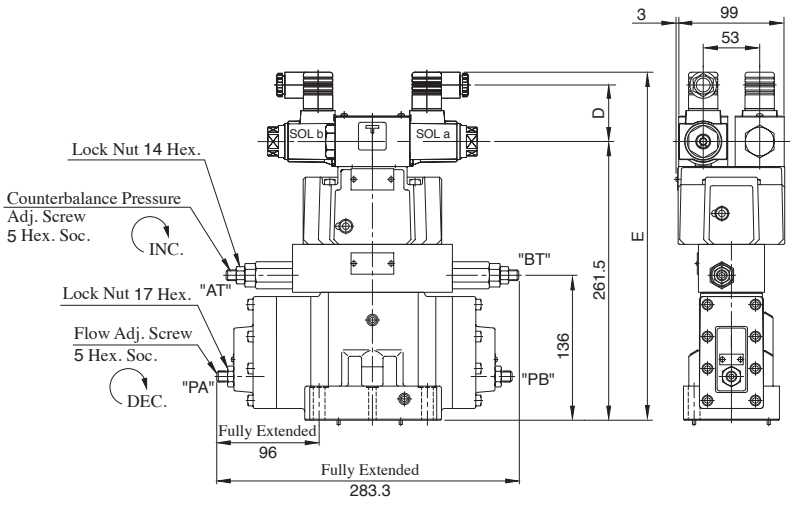
For other dimensions, see DSLHG-04-$\frac{1}{2}$-∗-N on the previous page.

DSLHG-04-4A-∗-∗-N-13



For other dimensions, see "DSLHG-04-4W-∗-∗-N" drawing left.

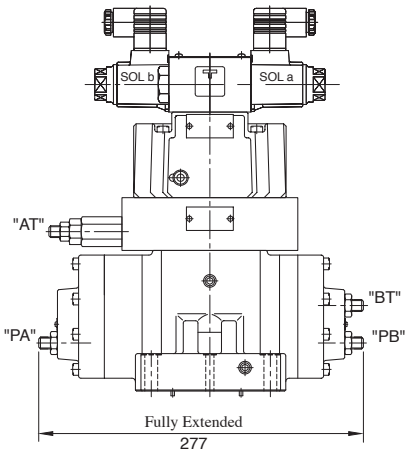
DSLHG-04-5W-∗-∗-N-13



Model Numbers	D	E
DSLHG-04-5W-∗-A∗-N	53	326.5
DSLHG-04-5W-∗-D∗-N	64	337.5
DSLHG-04-5W-∗-R∗-N	57.2	340.5

For other dimensions, see DSLHG-04-$\frac{1}{2}$-∗-N on the previous page.

DSLHG-04-5A-∗-∗-N-13

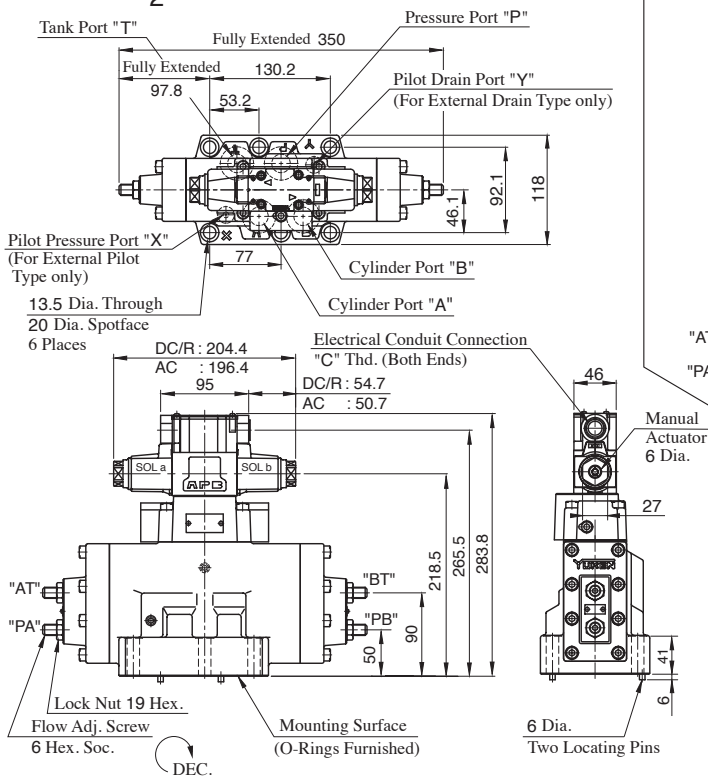


For other dimensions, see "DSLHG-04-5W-∗-∗-N" drawing left.

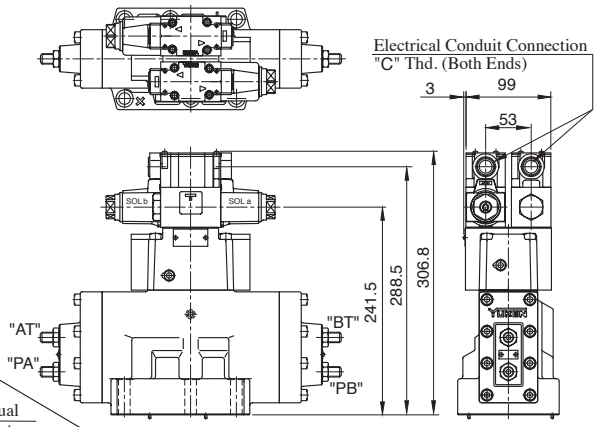
Terminal Box Type

Mounting Surface:
ISO 4401-08-08-0-05

DSLHG-06-$\frac{1}{2}$-∗-13

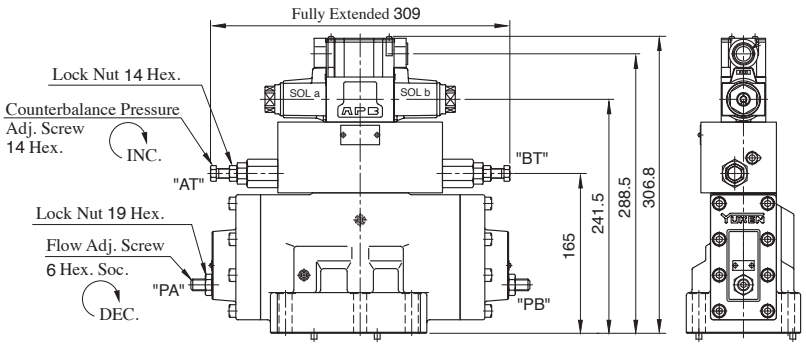


DSLHG-06-3-∗-13



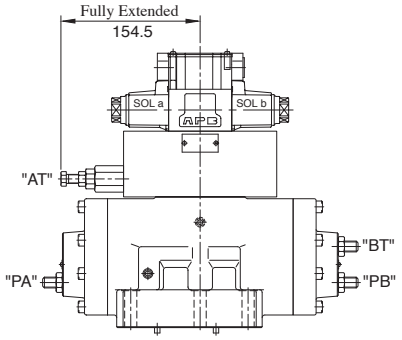
For other dimensions, see "DSLHG-06-$\frac{1}{2}$" drawing left.

DSLHG-06-4W-∗-13



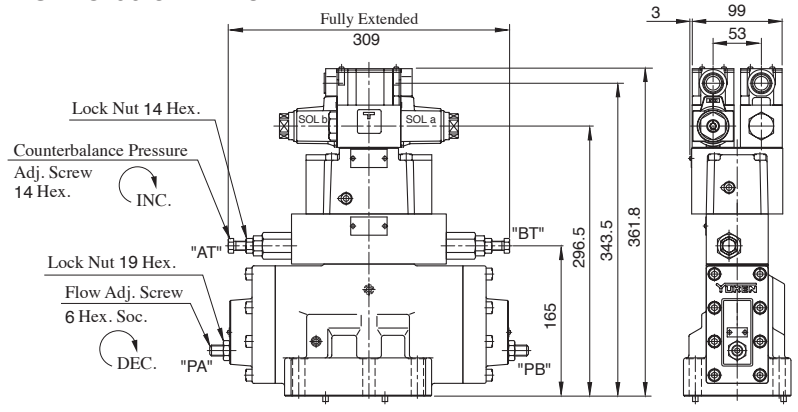
For other dimensions, see "DSLHG-06-$\frac{1}{2}$" drawing above.

DSLHG-06-4A-∗-13



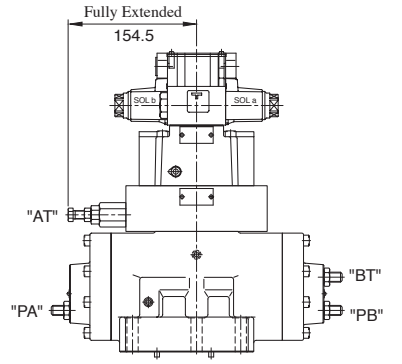
For other dimensions, see "DSLHG-06-4W" drawing left.

DSLHG-06-5W-∗-13



For other dimensions, see "DSLHG-06-$\frac{1}{2}$" drawing above.

DSLHG-06-5A-∗-13

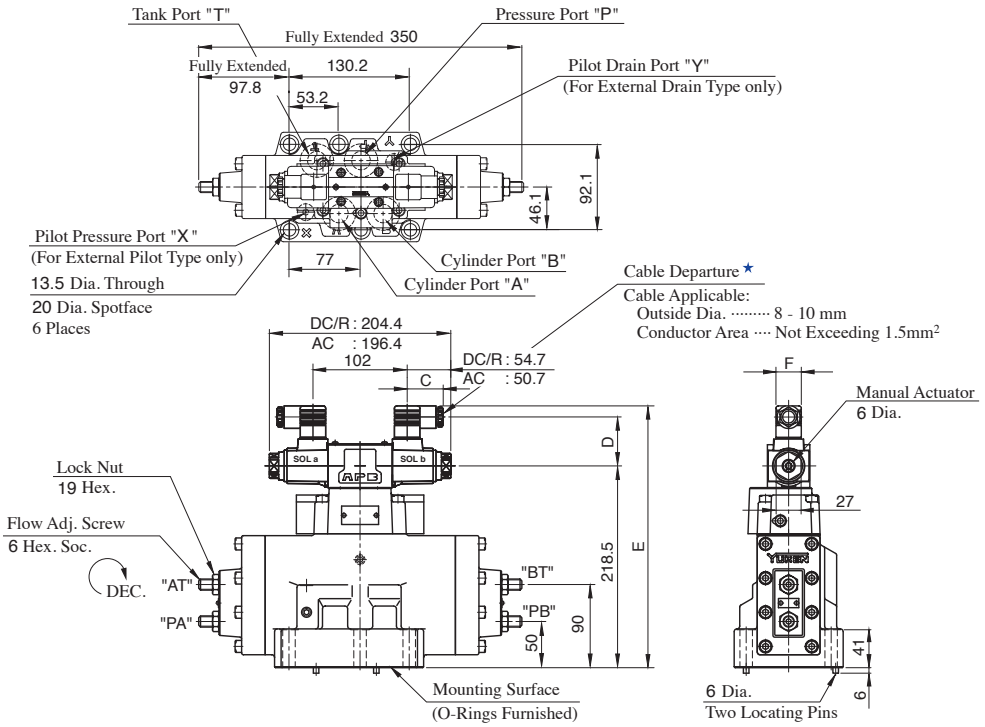


For other dimensions, see "DSLHG-06-5W" drawing left.

DSLHG-06-$\frac{1}{2}$-∗-N-13

Plug-in Connector Type

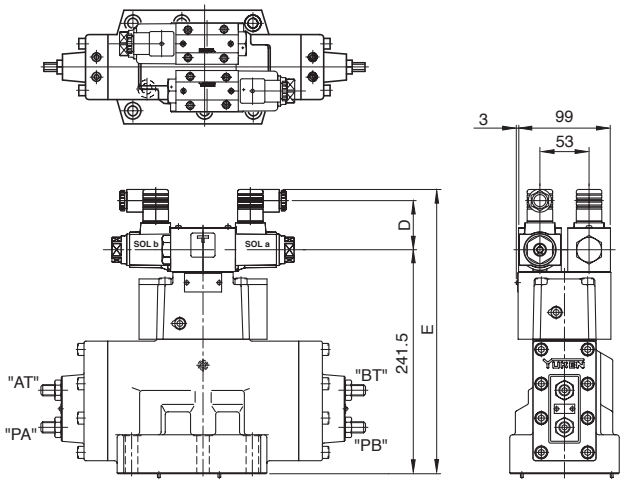
Mounting Surface:
ISO 4401-08-08-0-05



Model Numbers	C	D	E	F
DSLHG-06-∗-A∗-N	39	53	283.5	27.5
DSLHG-06-∗-D∗-N	39	64	294.5	27.5
DSLHG-06-∗-R∗-N	53	57.2	297.5	34

★ Position of cable departure can be changed. For the details, refer to DSLHG-04 valve on page E-109.

DSLHG-06-3-∗-N-13



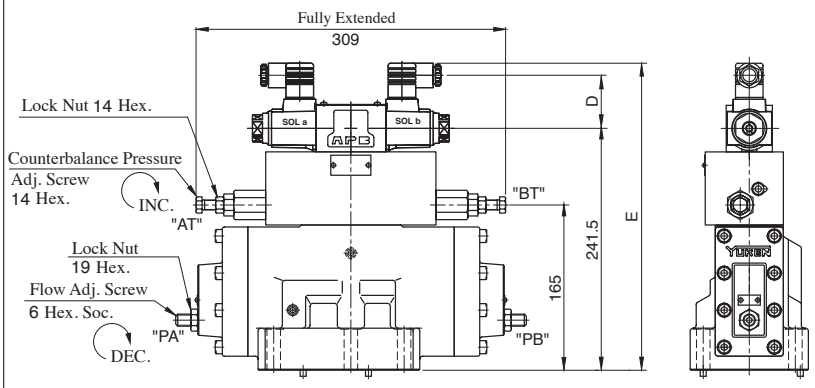
Model Numbers	D	E
DSLHG-06-3-A∗-N	53	306.5
DSLHG-06-3-D∗-N	64	317.5
DSLHG-06-3-R∗-N	57.2	320.5

For other dimensions, see "DSLHG-06-$\frac{1}{2}$-∗-N" drawing above.

Plug-in Connector Type

Mounting Surface:
ISO 4401-08-08-0-05

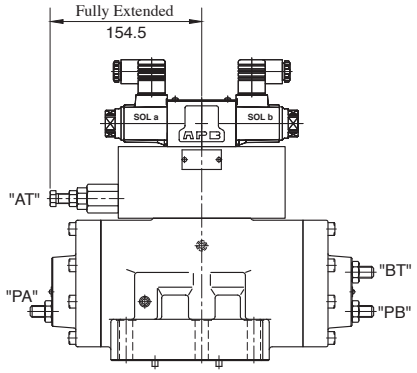
DSLHG-06-4W-∗-N-13



Model Numbers	D	E
DSLHG-06-4W-A∗-N	53	306.5
DSLHG-06-4W-D∗-N	64	317.5
DSLHG-06-4W-R∗-N	57.2	320.5

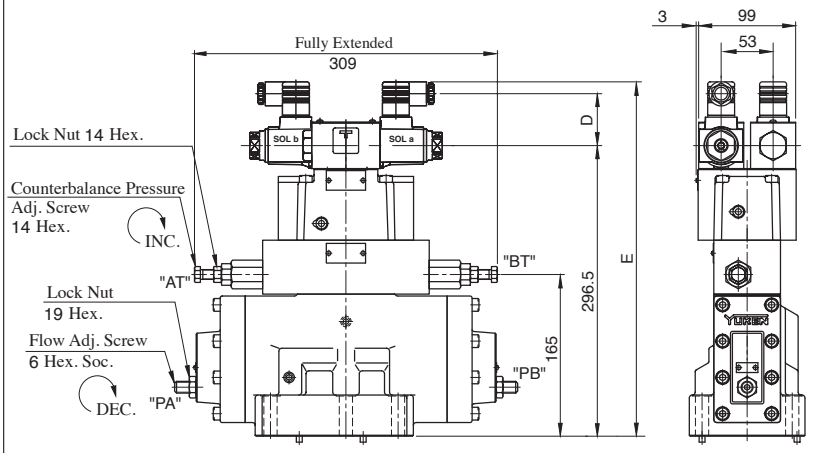
For other dimensions, see DSLHG-06-$\frac{1}{2}$-∗-N on the previous page.

DSLHG-06-4A-∗-N-13



For other dimensions, see "DSLHG-06-4W-∗-N" drawing left.

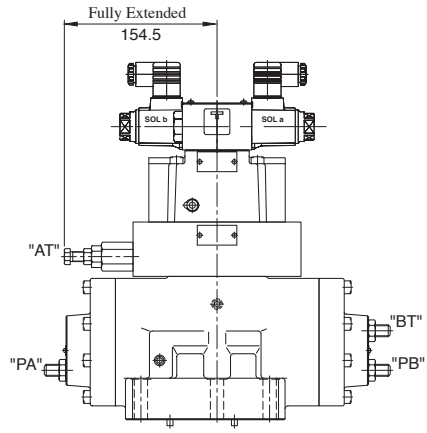
DSLHG-06-5W-∗-N-13



Model Numbers	D	E
DSLHG-06-5W-A∗-N	53	361.5
DSLHG-06-5W-D∗-N	64	372.5
DSLHG-06-5W-R∗-N	57.2	375.5

For other dimensions, see DSLHG-06-$\frac{1}{2}$-∗-N on the previous page.

DSLHG-06-5A-∗-N-13

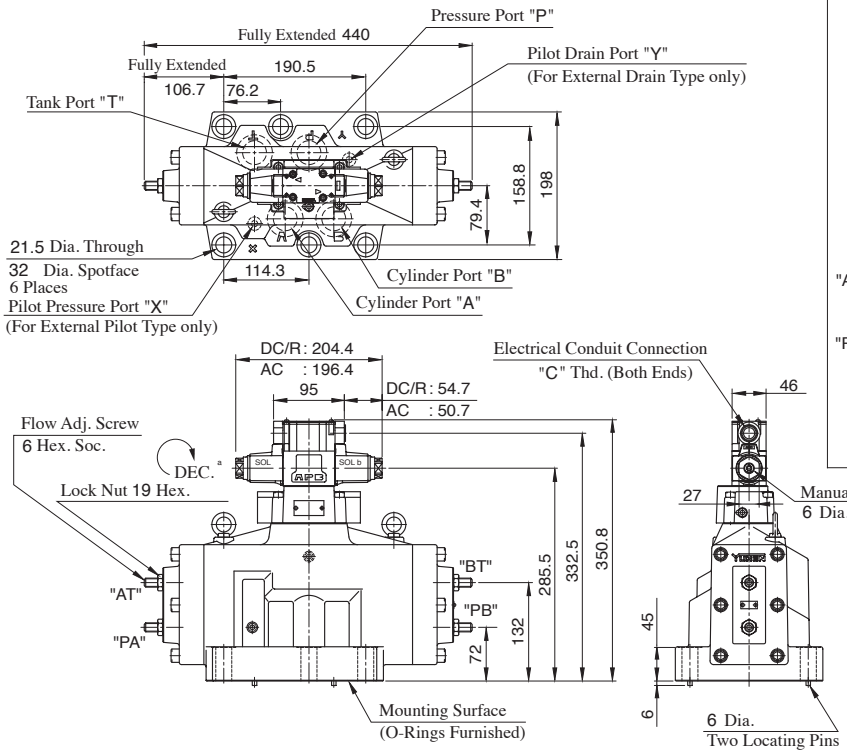


For other dimensions, see "DSLHG-06-5W-∗-N" drawing left.

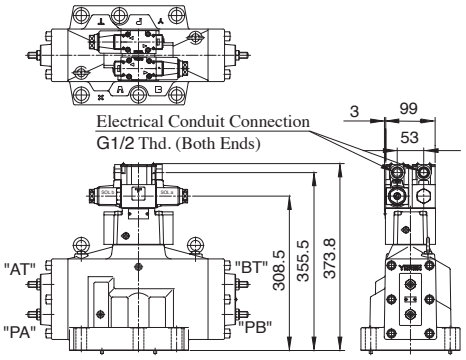
Terminal Box Type

Mounting Surface:
ISO 4401-10-09-0-05

DSLHG-10-$\frac{1}{2}$-∗-13

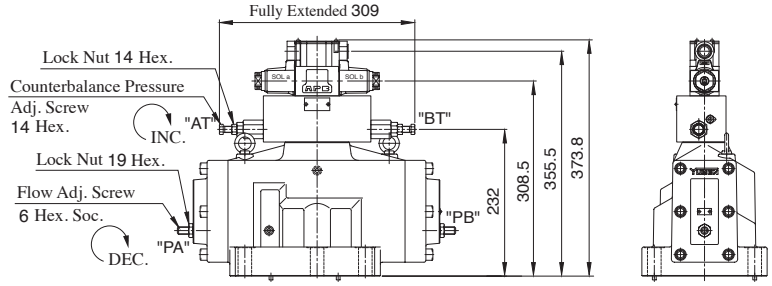


DSLHG-10-3-∗-13



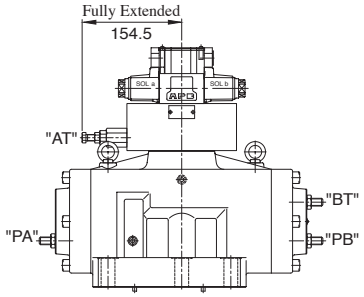
For other dimensions, see "DSLHG-10-$\frac{1}{2}$" drawing left.

DSLHG-10-4W-∗-13



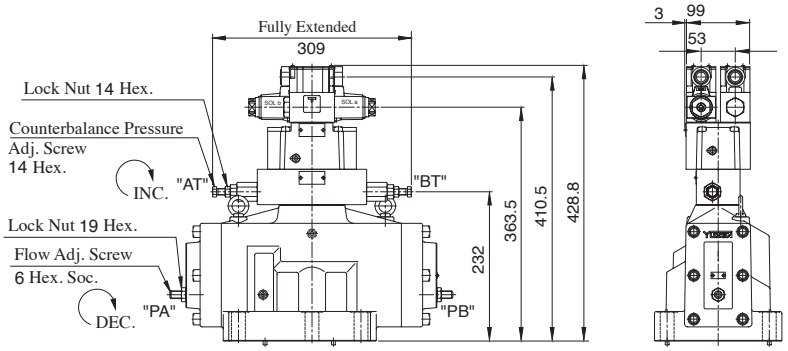
For other dimensions, see "DSLHG-10-$\frac{1}{2}$" drawing above.

DSLHG-10-4A-∗-13



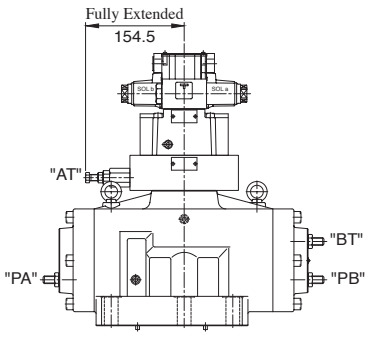
For other dimensions, see "DSLHG-10-4W" drawing left.

DSLHG-10-5W-∗-13



For other dimensions, see "DSLHG-10-$\frac{1}{2}$" drawing above.

DSLHG-10-5A-∗-13

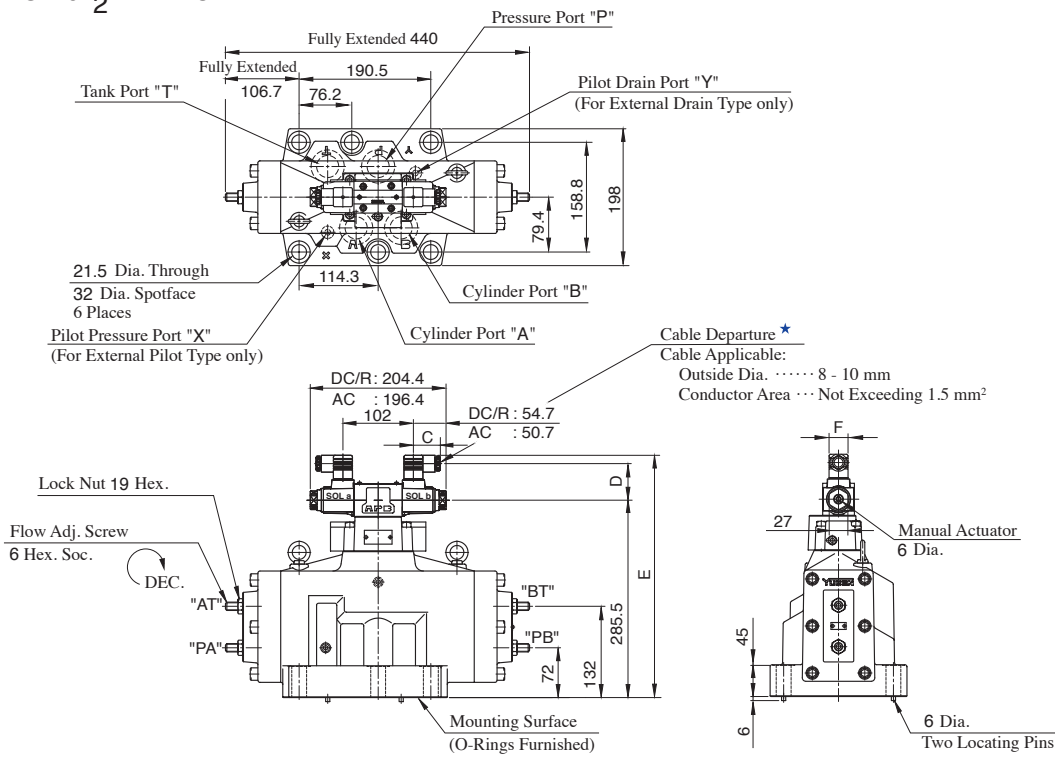


For other dimensions, see "DSLHG-10-5W" drawing left.

Plug-in Connector Type

Mounting Surface:
ISO 4401-10-09-0-05

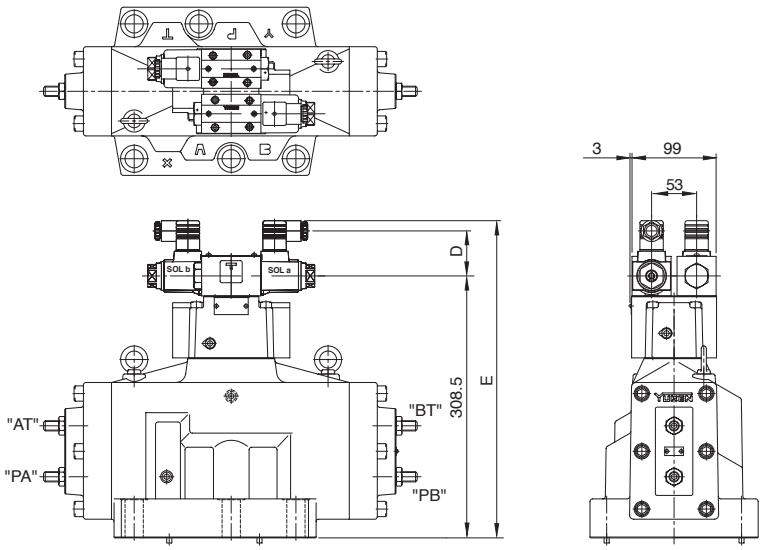
DSLHG-10-$\frac{1}{2}$-∗-N-13



Model Numbers	C	D	E	F
DSLHG-10-∗-A∗-N	39	53	350.5	27.5
DSLHG-10-∗-D∗-N	39	64	361.5	27.5
DSLHG-10-∗-R∗-N	53	57.2	364.5	34

★ Position of cable departure can be changed. For the details, refer to DSLHG-04 valve on page E-109.

DSLHG-10-3∗ -N-13



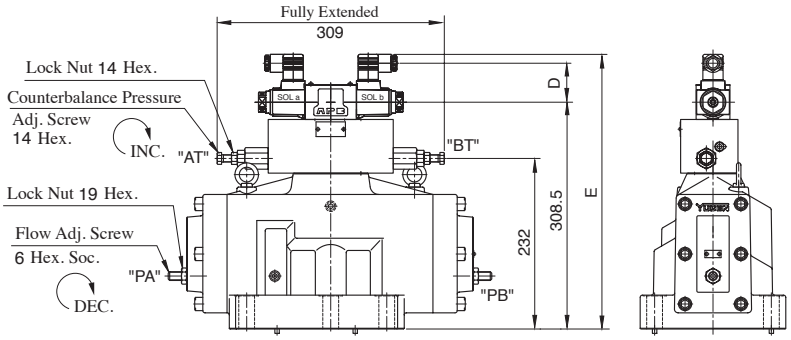
Model Numbers	D	E
DSLHG-10-3-A∗-N	53	373.5
DSLHG-10-3-D∗-N	64	384.5
DSLHG-10-3-R∗-N	57.2	387.5

For other dimensions, see "DSLHG-10-$\frac{1}{2}$-∗-N" drawing above.

Plug-in Connector Type

Mounting Surface:
ISO 4401-10-09-0-05

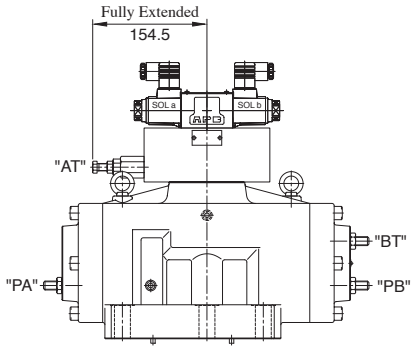
DSLHG-10-4W-∗-N-13



Model Numbers	D	E
DSLHG-10-4W-A∗-N	53	373.5
DSLHG-10-4W-D∗-N	64	384.5
DSLHG-10-4W-R∗-N	57.2	387.5

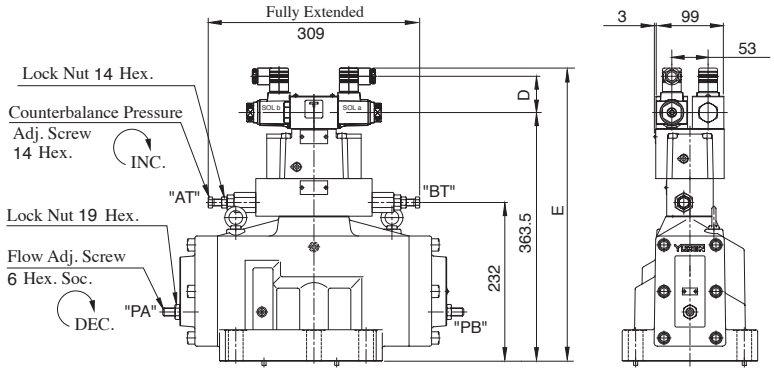
For other dimensions, see DSLHG-10-$\frac{1}{2}$-∗-N on the previous page.

DSLHG-10-4A-∗-N-13



For other dimensions, see
"DSLHG-10-4W-∗-N" drawing left.

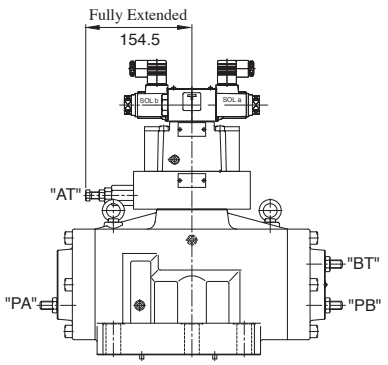
DSLHG-10-5W-∗-N-13



Model Numbers	D	E
DSLHG-10-5W-A∗-N	53	428.5
DSLHG-10-5W-D∗-N	64	439.5
DSLHG-10-5W-R∗-N	57.2	442.5

For other dimensions, see DSLHG-10-$\frac{1}{2}$-∗-N on the previous page.

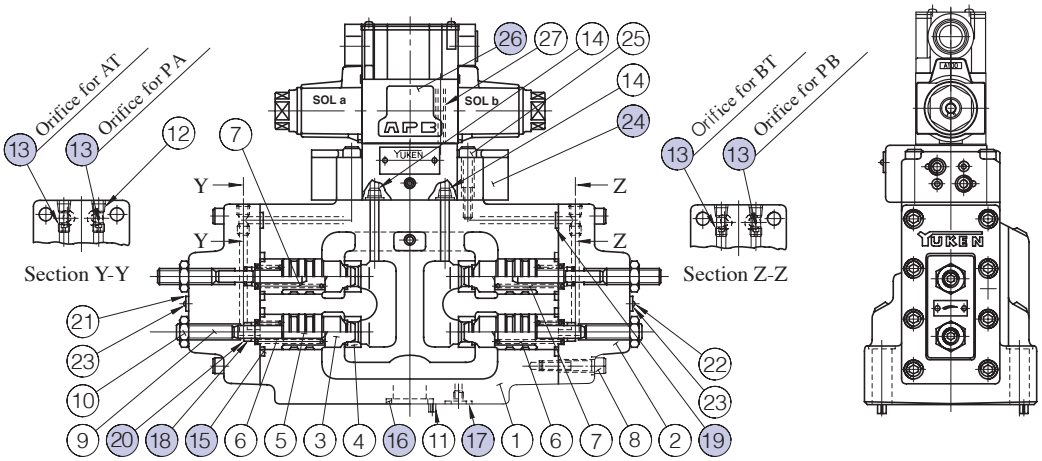
DSLHG-10-5A-∗-N-13



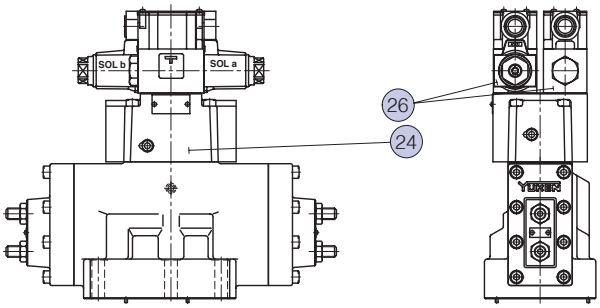
For other dimensions, see
"DSLHG-10-5W-∗-N" drawing left.

List of Seals for Main Valve, Pilot Selector Valve and Orifice

DSLHG-04/06/10-$\frac{1}{2}$-∗-13



DSLHG-04/06/10-3-∗-13



Note) Main valve is same as above drawings.

List of Seals for Main Valves

Item	Name of Parts	Part Numbers			Qty.
		DSLHG-04	DSLHG-06	DSLHG-10	
15	O-Ring	OR NBR-90 P22-N	OR NBR-90 G30-N	OR NBR-90 G40-N	4
16	O-Ring	OR NBR-90 P22-N	OR NBR-90 P30-N	OR NBR-90 P42-N	4
17	O-Ring	OR NBR-90 P9-N	OR NBR-90 P14-N	OR NBR-90 P14-N	2
18	O-Ring	OR NBR-70 P8-N	OR NBR-70 P10-N	OR NBR-70 P16-N	4
19	O-Ring	OR NBR-90 P8-N	OR NBR-90 P9-N	OR NBR-90 P11-N	4
20	Back Up Ring	BR JIS B 2401-4-T2-P8	BR JIS B 2401-4-T2-P10	BR JIS B 2401-4-T2-P16	4

Item (13) Orifice

The timing of flow path opening/closing can be adjusted as required by selecting the appropriate pilot orifice diameter. When the diameter of the orifice is to be changed, another orifice should be ordered. Standard built-in orifice diameters and selectable orifice diameters are listed in the table below.

Orifice Type	TP-OPT-1/16 x d		
Model Numbers	Orifice Diameter "d" mm		
	Standard Built-in	Selectable	Max. Dia. at Pressure over 20 MPa
DSLHG-04	1.0	0.5, 0.6, 0.8, 1.0	1.2
DSLHG-06	1.2	1.2, 1.4, 1.6, 1.8	
DSLHG-10	1.4	2.0, 2.5	1.4

Item (24) Pilot Selector Valve List

Multi-Purpose Control Valve Model Numbers	(24) Pilot Selector Valve Model Numbers
DSLHG-04-1	CG-04-1-10
DSLHG-04-2	CG-04-2-10
DSLHG-04-3	CG-04-3-10
DSLHG-06-1	CG-06-1-10
DSLHG-06-2	CG-06-2-10
DSLHG-06-3	CG-06-3-10
DSLHG-10-1	CG-06-1-10
DSLHG-10-2	CG-06-2-10
DSLHG-10-3	CG-06-3-10

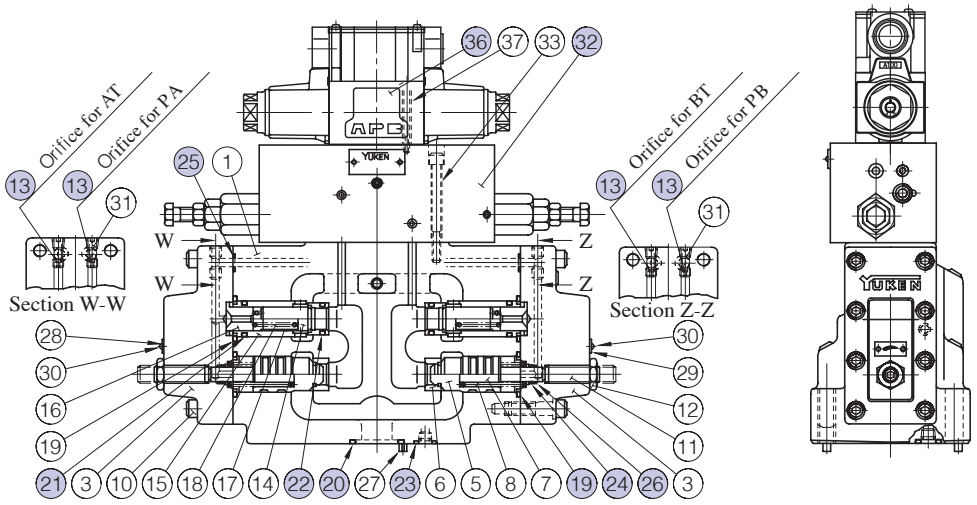
Note For details of Pilot Selector Valve, see page E-119.

Pilot Valve

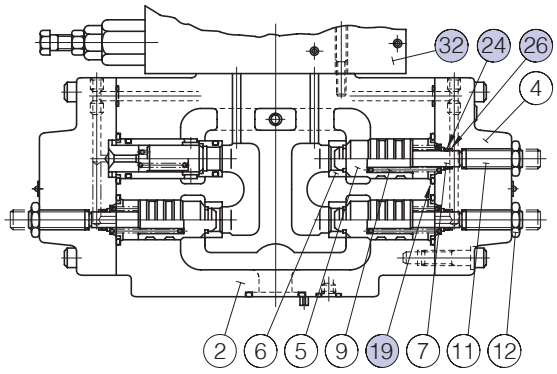
Refer to page E-121 for Pilot Valve Model Numbers.

■ List of Seals for Main Valves and Pilot Selector Valve

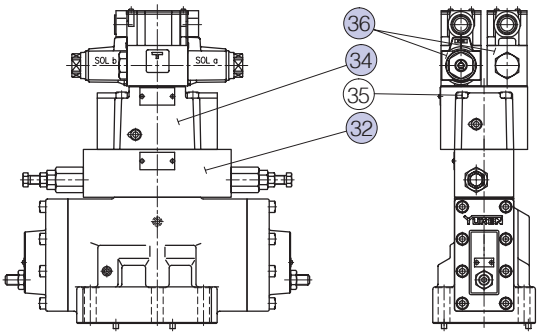
DSLHG-04/06/10-4W-∗-12



DSLHG-04/06/10-$^{4A}_{5A}$-∗-12



DSLHG-04/06/10-5W-∗-12



Note) Main valve is the same as above drawings.

● List of Seals for Main Valves

Item	Name of Parts	Part Numbers			Qty.
		DSLHG-04	DSLHG-06	DSLHG-10	
19	O-Ring	OR NBR-90 P22-N	OR NBR-90 G30-N	OR NBR-90 G40-N	4
20	O-Ring	OR NBR-90 P22-N	OR NBR-90 P30-N	OR NBR-90 P42-N	4
21	O-Ring	OR NBR-90 P16-N	OR NBR-90 P22-N	OR NBR-90 P30-N	2(1)
22	O-Ring	OR NBR-90 P14-N	OR NBR-90 P20-N	AS568-A122(NBR-90)	2(1)
23	O-Ring	OR NBR-90 P9-N	OR NBR-90 P14-N	OR NBR-90 P14-N	2
24	O-Ring	OR NBR-70 P8-N	OR NBR-70 P10-N	OR NBR-70 P16-N	2(3)
25	O-Ring	OR NBR-90 P8-N	OR NBR-90 P9-N	OR NBR-90 P11-N	4
26	Back Up Ring	BR JIS B 2401-4-T2-P8	BR JIS B 2401-4-T2-P10	BR JIS B 2401-4-T2-P16	2(3)

Note 1: The figures in ( ) indicate the quantity of seals used for 4A and 5A.

● Pilot Valve

Refer to page E-121 for Pilot Valve Model Numbers.

● Pilot Selector Valve List

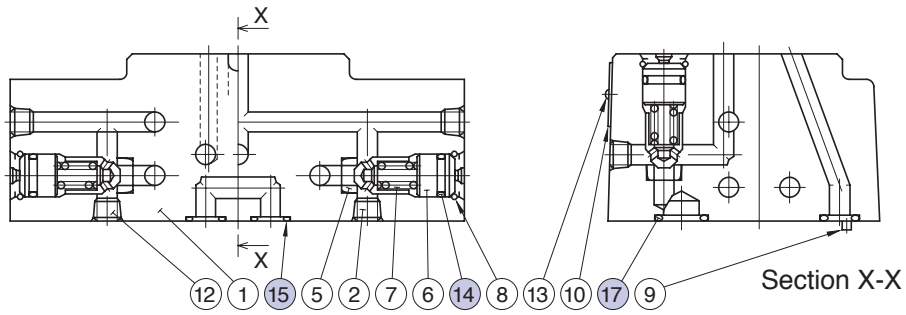
Multi-Purpose Control Valve Model Numbers	Pilot Selector Valve Model Numbers	
	Item (32)	Item (34)
DSLHG-04-4A-■	CG-04-4A-■-10	—
DSLHG-04-4W-■	CG-04-4W-■-10	—
DSLHG-04-5A-■	CG-04-5A-■-10	CG-04-3-10
DSLHG-04-5W-■	CG-04-5W-■-10	
DSLHG-06-4A	CG-06-4A-10	—
DSLHG-06-4W	CG-06-4W-10	—
DSLHG-06-5A	CG-06-5A-10	CG-06-3-10
DSLHG-06-5W	CG-06-5W-10	
DSLHG-10-4A	CG-06-4A-10	—
DSLHG-10-4W	CG-06-4W-10	—
DSLHG-10-5A	CG-06-5A-10	CG-06-3-10
DSLHG-10-5W	CG-06-5W-10	

Note: Fill "B" or "H" representing the pressure adjustment range in section marked with ■.
See page E-120 for the details of the pilot selector valves.

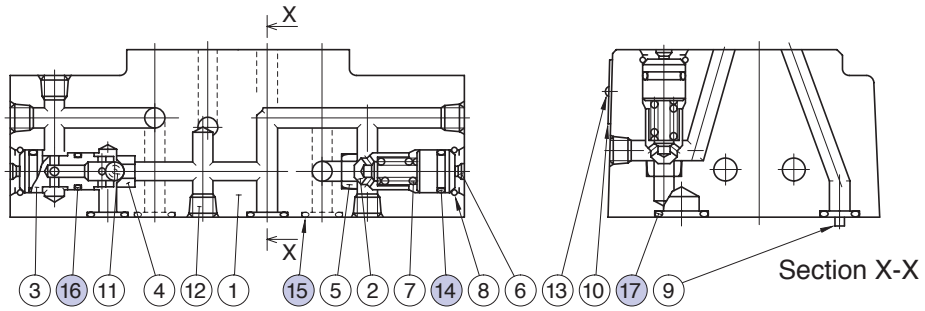
● See the previous page for Item (13) Orifice.

■ List of Seals (Pilot Selector Valves)

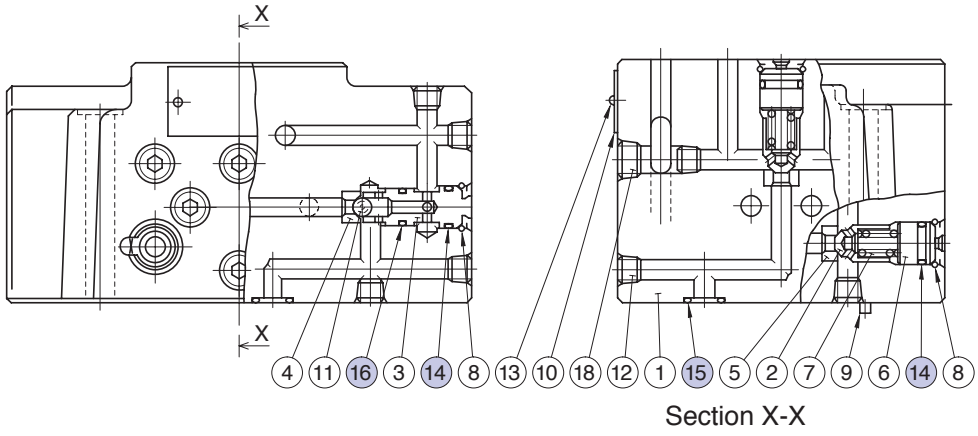
CG-04/06-1-10



CG-04/06-2-10



CG-04/06-3-10

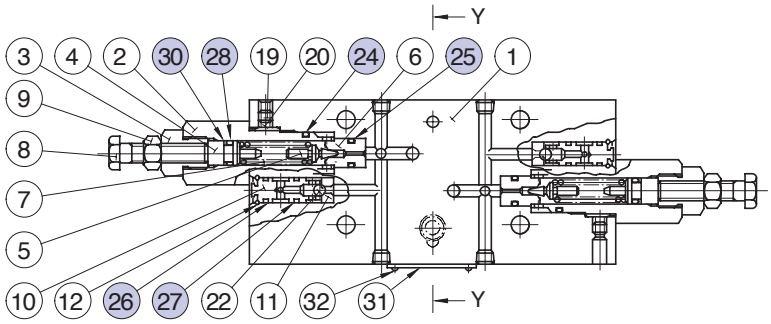


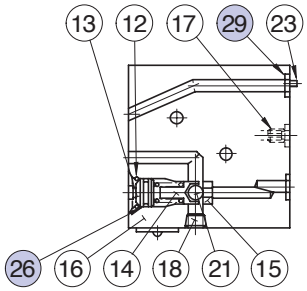
● List of Seals

Item	Name of Parts	CG-04				CG-06			
		Part Numbers	Quantity			Part Nmbers	Quantity		
			CG-04-1	CG-04-2	CG-04-3		CG-06-1	CG-06-2	CG-06-3
14	O-Ring	OR NBR-90 P10-N	3	5	5	OR NBR-90 P10-N	3	5	5
15	O-Ring	OR NBR-90 P8-N	7	7	8	OR NBR-90 P9-N	7	7	8
16	O-Ring	OR NBR-90 P8-N	—	2	2	OR NBR-90 P8-N	—	2	2
17	O-Ring	OR NBR-90 P8-N	1	1	—	AS568-A014(NBR-90)	1	1	—

■ List of Seals (Pilot Selector Valves)

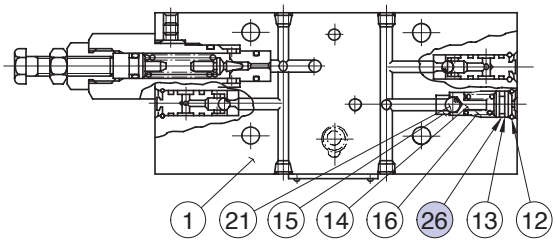
CG-04/06-4W-10



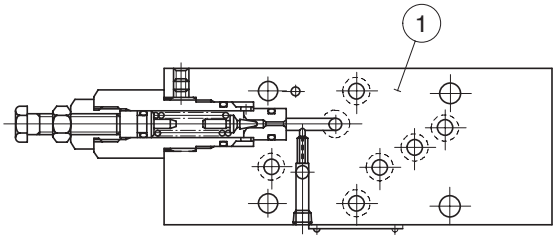


Section Y-Y

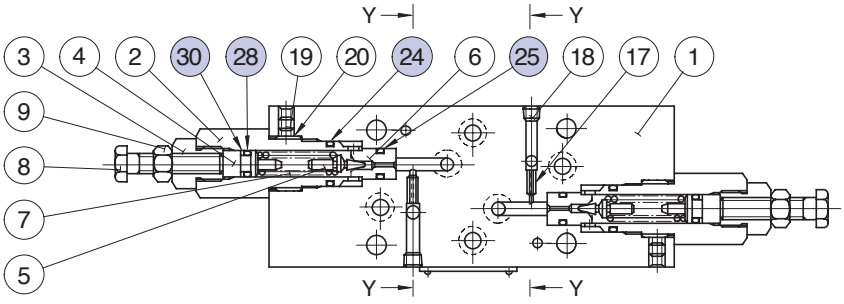
CG-04/06-4A-10

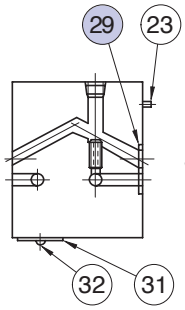


CG-04/06-5A-10



CG-04/06-5W-10





Section Y-Y

● List of Seals

Item	Name of Parts	CG-04					CG-06				
		Part Numbers	Quantity				Part Nmbers	Quantity			
			-4W-	-4A-	-5W-	-5A-		-4W-	-4A-	-5W-	-5A-
24	O-Ring	OR NBR-90 P12-N	2	1	2	1	OR NBR-90 P16-N	2	1	2	1
25	O-Ring	OR NBR-90 P9-N	2	1	2	1	OR NBR-90 P11-N	2	1	2	1
26	O-Ring	OR NBR-90 P10-N	3	4	—	—	OR NBR-90 P10-N	3	4	—	—
27	O-Ring	OR NBR-90 P8-N	2	2	—	—	OR NBR-90 P8-N	2	2	—	—
28	O-Ring	OR NBR-70 P6-N	2	1	2	1	OR NBR-70 P9-N	2	1	2	1
29	O-Ring	OR NBR-90 P8-N	8	8	8	8	OR NBR-90 P9-N	8	8	8	8
30	Back Up Ring	BR JIS B 2401-4-T2-P6	2	1	2	1	BR JIS B 2401-4-T2-P9	2	1	2	1

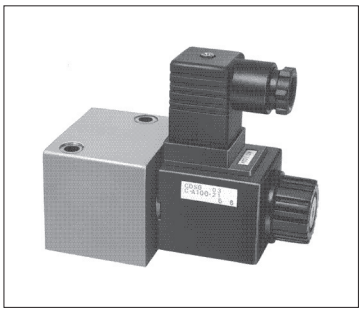
List of Pilot Valves

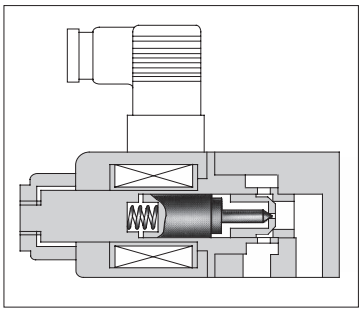
Model Numbers	Pilot Valve Model Numbers
DSLHG-04-1-★-▲-13	DSG-01-3C9-★-▲-70
DSLHG-04-2-★-▲-13	DSG-01-3C9-★-▲-70
DSLHG-04-3-★-▲-13	DSG-01-2B2-★-▲-70
DSLHG-04-4A-✻-★-▲-13	DSG-01-3C9-★-▲-70
DSLHG-04-4W-✻-★-▲-13	DSG-01-3C9-★-▲-70
DSLHG-04-5A-✻-★-▲-13	DSG-01-2B2-★-▲-70
DSLHG-04-5W-✻-★-▲-13	DSG-01-2B2-★-▲-70
DSLHG-06-1-★-▲-13	DSG-01-3C9-★-▲-70
DSLHG-06-2-★-▲-13	DSG-01-3C9-★-▲-70
DSLHG-06-3-★-▲-13	DSG-01-2B2-★-▲-70
DSLHG-06-4A-★-▲-13	DSG-01-3C9-★-▲-70
DSLHG-06-4W-★-▲-13	DSG-01-3C9-★-▲-70
DSLHG-06-5A-★-▲-13	DSG-01-2B2-★-▲-70
DSLHG-06-5W-★-▲-13	DSG-01-2B2-★-▲-70
DSLHG-10-1-★-▲-13	DSG-01-3C9-★-▲-70
DSLHG-10-2-★-▲-13	DSG-01-3C9-★-▲-70
DSLHG-10-3-★-▲-13	DSG-01-2B2-★-▲-70
DSLHG-10-4A-★-▲-13	DSG-01-3C9-★-▲-70
DSLHG-10-4W-★-▲-13	DSG-01-3C9-★-▲-70
DSLHG-10-5A-★-▲-13	DSG-01-2B2-★-▲-70
DSLHG-10-5W-★-▲-13	DSG-01-2B2-★-▲-70

Note 1: Fill coil type (a symbol representing current/voltage) in section marked ★. Likewise, in section marked ▲, fill a symbol representing the type of electrical conduit connection (None: Terminal Box Type, N: Plug-in Connector Type).
2: See page E-22 for the detailed information on the pilot valves.

Solenoid Operated Poppet Type Two-Way Valves

These valves are used for opening/closing the oil path by having the poppet valve operated with an electric signal via solenoid. Because these are poppet type valves, the internal leakage is quite small and there is no worry about hydraulic lock.





Specifications

Model Numbers	Max. Flow★1 L/min	Max. Operating Pressure MPa	Internal leakage cm^3/min	Max. Changeover Frequency min^{-1}	Approx. Mass kg
CDSC-01-C-D24-10	15	21★2	0.25 or less	240	0.35
CDSC-03-C-＊-21	50	14	0.25 or less	AC：300 DC：240 R ：120	0.5
CDST-$^{03W}_{03}$-C-＊-21					0.85
CDSG-03-C-＊-21					0.85

★1. The maximum flow means the limited flow without inducing any abnormality to the operation (changeover) of the valve.

★2. When the valve is operated at 18.5 MPa or higher pressure, continuous energies time is restricted with max. 30 min., and also the energies ratio less than 90 %.

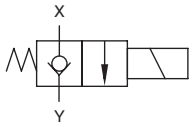
Solenoid Ratings

Electric Source	Coil Type	Frequency (Hz)	Voltage (V)		Current & Power at Rated Voltage		
			Source Rating	Serviceable Range	Inrush (A)	Holding (A)	Power (W)
AC	A 100	50	100	80 - 100	1.12	0.55	—
		60	100	90 - 120	0.95	0.40	
			110		0.86	0.36	
	A 120	50	120	96 - 132	0.93	0.46	
		60		108 - 144	0.79	0.33	
	A 200	50	200	160 - 220	0.56	0.28	
		60	200	180 - 240	0.48	0.20	
			220		0.43	0.18	
	A 240	50	240	192 - 264	0.47	0.23	
		60		216 - 288	0.40	0.17	
DC (K Series)	D 12	—	12	10.8 - 13.2	—	2.20	26
	D 24★		24	21.6 - 26.4		1.10	
	D 100		100	90 - 110		0.27	
AC → DC Rectified	R 100	50/60	100	90 - 110	—	0.30	26
	R 200		200	180 - 220		0.15	

★CDSC-01 is available with coil type “D24” only.

- Because both AC and DC solenoids employ the plug-in type electrical wiring, the valve can be removed without removing the wiring. (Coil type of CDSC-01 is flying lead wire only.)
- Being 50-60 Hz common service AC solenoids, do not require rewiring when the applied frequency is changed.
- K-Series DC Solenoid which has a reputation for excellent DC control is employed. (Coil type of CDSC-01 is with Surge Suppressor.)

Graphic Symbol



Instructions

Direction of flow when the solenoid is energised

These valves do not allow flow from Y to X when the solenoid is energised.

Mounting

There are no mounting restrictions for any models.

At the time of test run

At the time of test run, there is a possibility that the oil may not flow even after the solenoid is energised because of the residual air in the valve, so please release the air by few times solenoid energising at on-load condition.

Accessories

Mounting bolt below is attached only for Gasket mounting type valve (CDSG-03).

Socket Head Cap Screws：
M6×60L ...2pcs.

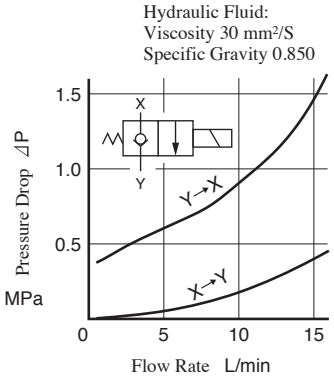
Model Number Designation

CDS	T	–03	–C	–D12	–21
Series Number	Type of Connection	Valve Size	Valve Type	Coil Type	Design Number
CDS：Solenoid Operated Poppet Type Two-Way Valves	C：Cartridge Type	01	C：Normally Closed	DC D24	10
		03		AC A100 A120 A200 A240	21
	T：Threaded Connection	03W (Rc 1/4)		DC D12 D24 D100	21
		03 (Rc 3/8)			
	G：Gasket Mounting	03		AC DC Rectified R100 R200	21

★ Models for phosphate ester fluid are available. When phosphate ester fluid is used, prefix “F-” to the model number because the special seals (fluororubber) are required to be used.

Pressure Drop

CDSC–01



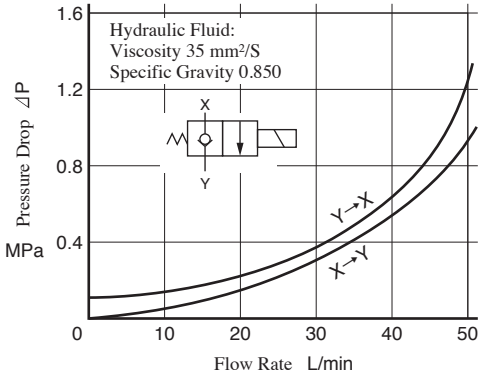
For any other viscosity, multiply the factors in the table below.

Viscosity mm²/s	15	20	30	40	50	60	70	80	90	100
Factor	0.84	0.91	1.00	1.07	1.14	1.19	1.24	1.28	1.32	1.35

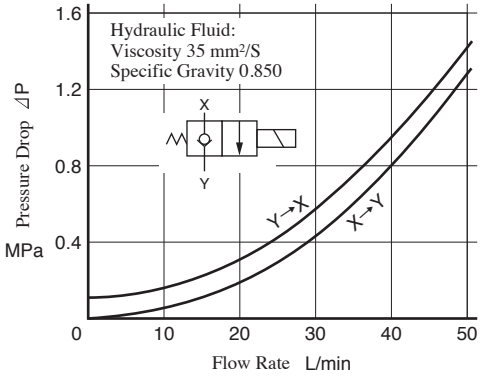
For any other specific gravity (G'), the pressure drop (⊿P') may be obtained from the formula below.

⊿P' = ⊿P(G'/0.850)

CDSC–03
CDST–03
CDSG–03



CDST–03W



Note: Measuring has been made for the CDSC-03 (Cartridge type) when it is equipped with the same body as the threaded connections and the gasket mounting type.

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

Viscosity mm²/s	15	20	30	40	50	60	70	80	90	100
Factor	0.81	0.87	0.96	1.03	1.09	1.14	1.19	1.23	1.27	1.30

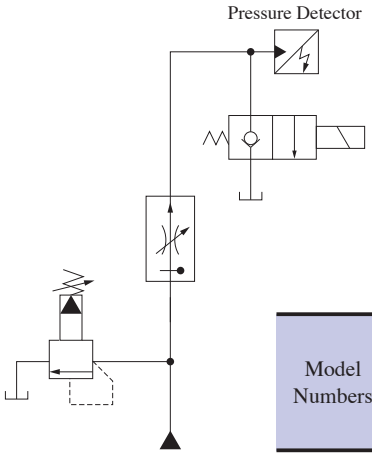
For any other specific gravity (G'), the pressure drop (⊿P') may be obtained from the formula below.

⊿P' = ⊿P(G'/0.850)

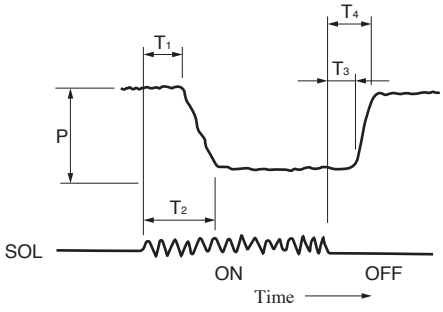
Changeover Time

Changeover time, T_2 and T_4, in particular, varies according to the hydraulic circuit and operating conditions. As an example, the following figures show how the measurement is made.

Test Circuit



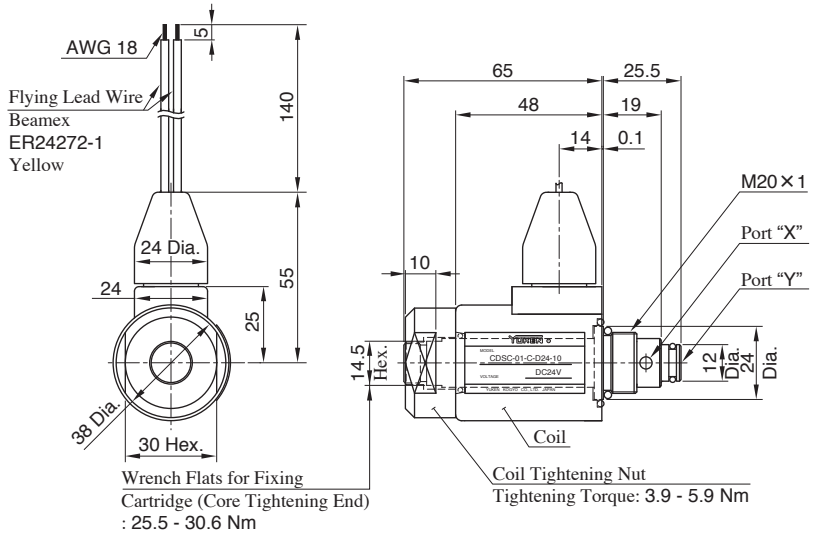
Result of measurement



Model Numbers	Solenoid Types	Condition		Time ms			
		Pressure "P" MPa	Flow Rate L/min	SOL"ON"(Open→Close)		SOL"OFF"(Open→Close)	
				T_1	T_2 (ex.)	T_3	T_4 (ex.)
CDSC-01	DC	10	15	21.4	44.0	29.0	38.4
		21	15	30.6	47.0	27.0	44.0
CDS＊-03	AC	7	50	10.0	86.0	20.0	44.0
		14	50	11.0	43.0	12.0	54.0
	DC	7	50	22.0	104.0	44.0	66.0
		14	50	24.0	60.0	41.0	73.0
	AC→DC Rectified	7	50	27.0	100.0	114.0	146.0
		14	50	32.0	66.0	108.0	142.0

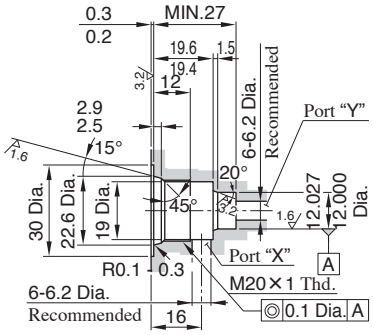
Note: Shifting time above is the value at rated voltage.

CDSC-01



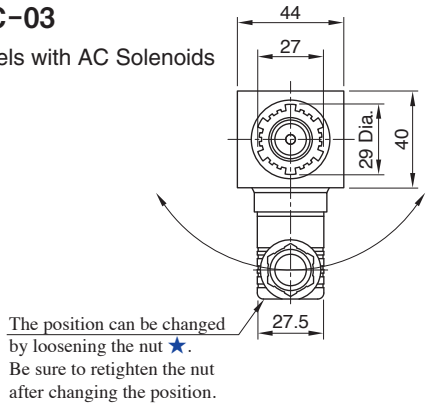
Details of Mounting Holes

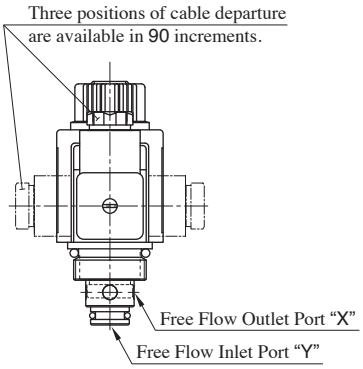
How to mount, see CDSC-03 below.

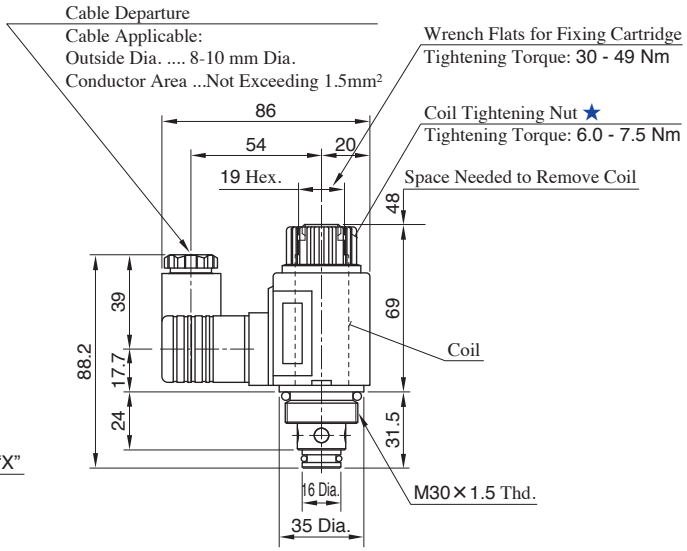


CDSC-03

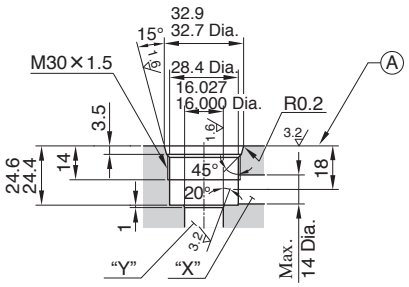
Models with AC Solenoids







Details of Mounting Holes



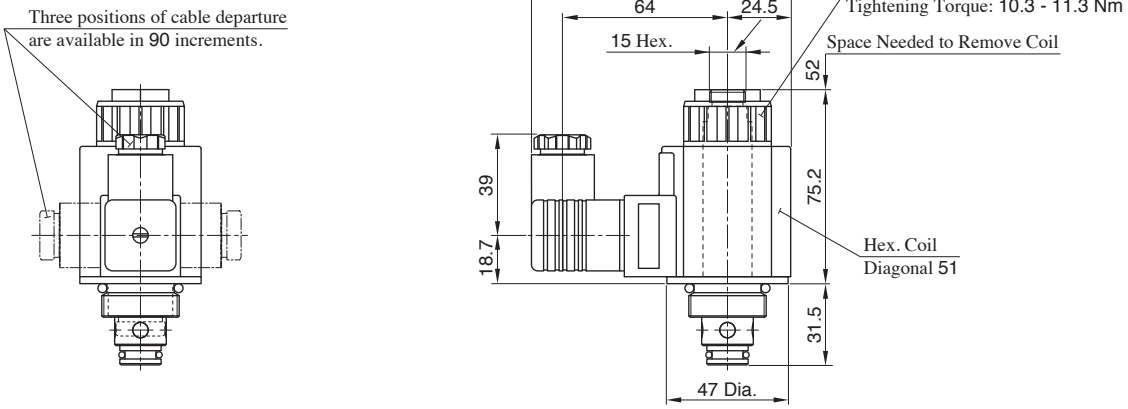
How to Mount

When mounting, the following steps must be followed:

1. Loosen the nut★, then remove the coil.
2. Thread the cartridge, making sure that the collar (AC:35 Dia.,DC/R:47 Dia.) of the cartridge is well fitted to the component surface (Ⓐ surface in the left drawing).
3. Attach the coil and secure it with a nut.

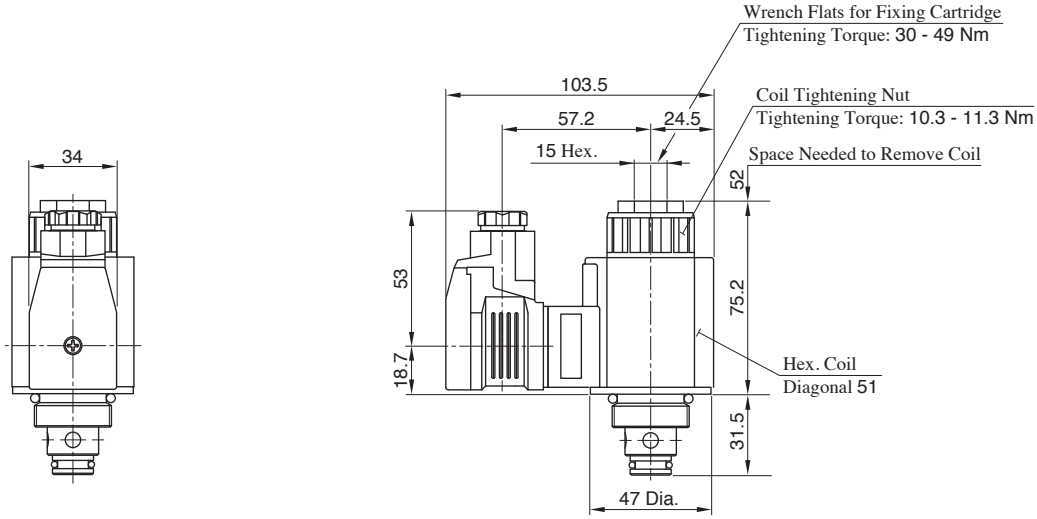
CDSC-03

● Models with DC Solenoids



● For other dimensions, refer to the "Models with AC Solenoids".
● How to mount, refer to the previous page.

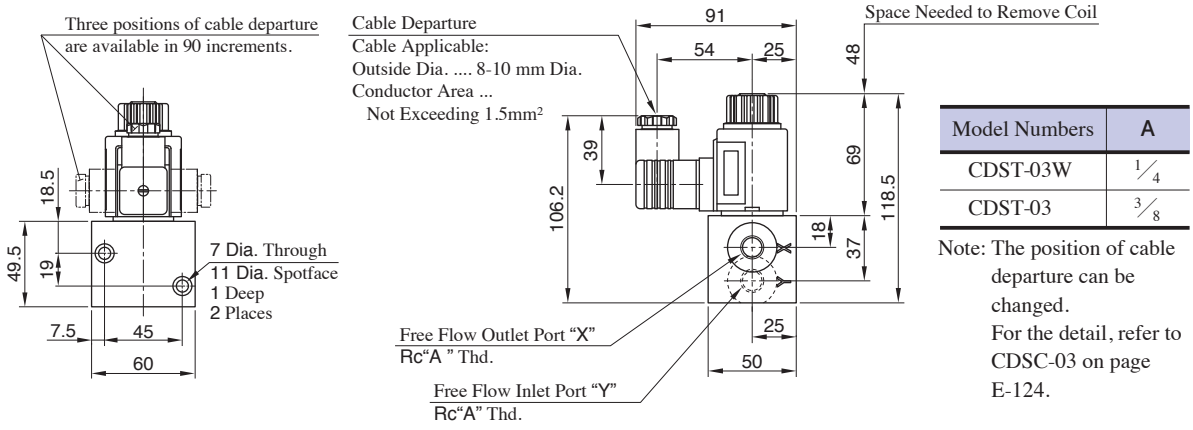
● Models with R Type Solenoids



● For other dimensions, refer to the "Models with AC Solenoids".
● How to mount, refer to the previous page.

CDST-03, 03W

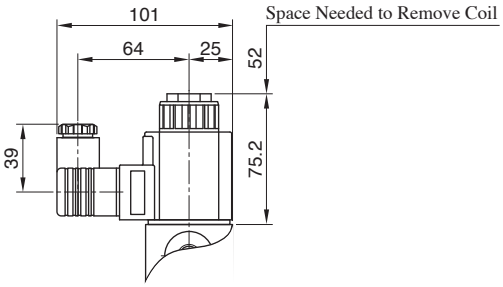
Models with AC Solenoids



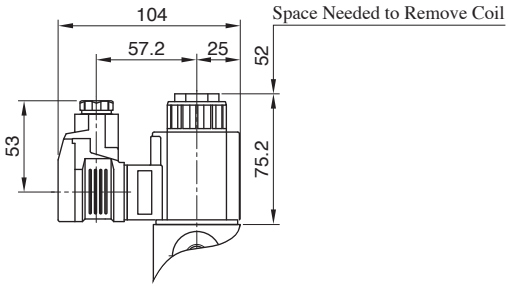
Model Numbers	A
CDST-03W	1/4
CDST-03	3/8

Note: The position of cable departure can be changed.
For the detail, refer to CDSC-03 on page E-124.

Models with DC Solenoids



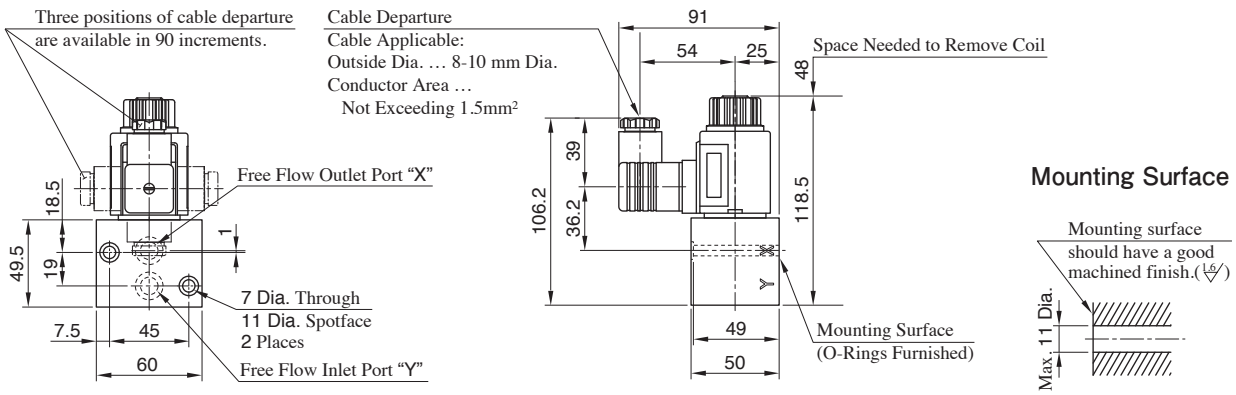
Models with R Type Solenoids



● For other dimensions, refer to the "Models with AC Solenoids".

CDSG-03

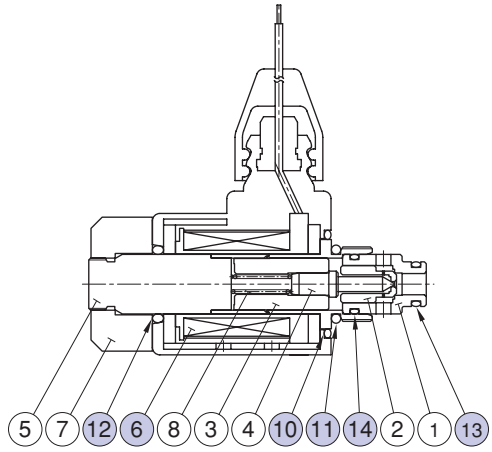
Models with AC Solenoids



Note) 1. For models with DC solenoids and models with R type solenoids, refer to CDST-03, 03W.
2. The position of cable departure can be changed. For the detail, refer to CDSC-03 on page E-124.

List of Seals, Solenoid Ass'y, Coil Ass'y

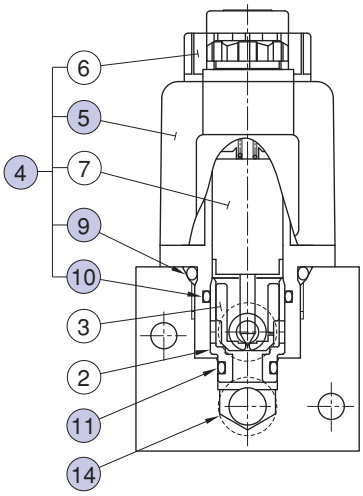
CDSC-01



List of Seals and Coil Ass'y

Item	Name of Parts	Part Numbers	Qty.
6	Coil Ass'y	2697-VK317470-3	1
10	O-Ring	JASO 2025 4 D	1
11	O-Ring	OR NBR-90 P18-N	1
12	O-Ring	OR NBR-90 P16-N	1
13	O-Ring	OR NBR-90 P9-N	1
14	O-Ring	AS 568-014 (NBR-90)	1

CDSC/CDST/CDSG-03∗



List of Seals

Item	Name of Parts	Part Numbers	Qty.	Remarks
9	O-Ring	OR NBR-90 P26-N	1	Included in Solenoid Ass'y
10	O-Ring	OR NBR-90 P20-N	1	
11	O-Ring	OR NBR-90 P12-N	1	
14	O-Ring	AS 568-014 (NBR-90)	2	only for CDSG

Solenoid Ass'y, Coil Ass'y

Valve Model No.	④ Solenoid Ass'y No.	⑤ Coil Ass'y No.
CDS∗-03∗-C-A100	CSA1-100-20	C-CSA1-100-20
CDS∗-03∗-C-A120	CSA1-120-20	C-CSA1-120-20
CDS∗-03∗-C-A200	CSA1-200-20	C-CSA1-200-20
CDS∗-03∗-C-A240	CSA1-240-20	C-CSA1-240-20
CDS∗-03∗-C-D 12	CSD1-12-20	C-SD1-12-N-50
CDS∗-03∗-C-D 24	CSD1-24-20	C-SD1-24-N-50
CDS∗-03∗-C-D100	CSD1-100-20	C-SD1-100-N-50
CDS∗-03∗-C-R100	CSR1-100-20	C-SR1-100-N-50
CDS∗-03∗-C-R200	CSR1-200-20	C-SR1-200-N-50

Interchangeability between Current and New Design

Because of solenoid assembly improvements, CDS -03 has been model-changed (design 20 to design 21).

Specifications and Characteristics

There are no changes in the specifications and characteristics of the valves themselves.

Solenoid Ratings

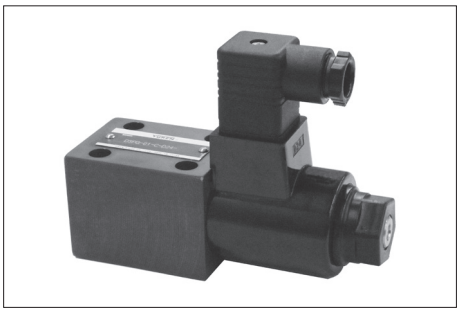
There are changes in the inrush current, holding current and power, but there are no technical problem.

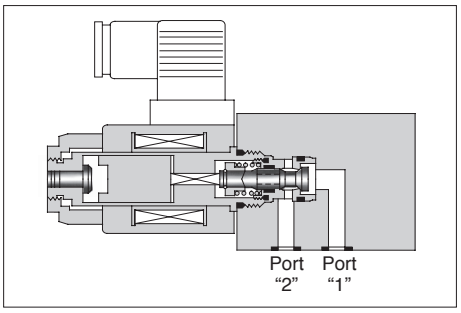
Interchangeability in Installation

There are some changes in dimensions about solenoids, but interchangeability in installation is no problem.

Shut-off Type Solenoid Operated Directional Valves

The shut-off type solenoid operated directional valves are poppet type solenoid operated two-way directional valves developed to meet the needs of this age such as energy and resources saving.





● High-response

High response is provided by the poppet design.

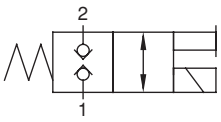
● Smallest internal leakage

Internal leakage are very small, less than 5 drips per min., which is achieved by the poppet design.

● Two mounting types: cartridge and sub-plate

Mounting dimensions for both types conform to ISO standard.

Graphic Symbol



■ Specifications

Model Numbers	Max. Flow★1 L/min	Max. Operating Pressure MPa			Max. Changeover Frequency min^{-1}	Internal leakage cm^3/min	Approx. Mass kg
		Port"1"		Port "2"			
		"1"→"2"Flow	"2"→"1"Flow				
DSPC-01-C-D24-30★2	40	10	21	25	300	0.25 or Less	0.6
DSPG-01-C-D24-30★2							1.6
DSPC-03-C-D24-10★2	80		16		240	0.25 or Less	1.0
DSPG-03-C-D24-10★2							3.9

★1. Maximum flow rates depend on operating conditions. For details, see page E-130.
★2. Protections against dust and water conform to the international electric standard below.
DSPC-01, DSPG-01 : (I.E.C) PUBL.529 IP65
DSPC-03, DSPG-03 : (I.E.C) PUBL.529 IP64

■ Instructions

- Do not connect port "1" to a line subjected to surge pressures. In addition, if you use port "1" for tank line, be sure to keep the end of the line in the oil.
- In the case of "DSPC", use iron material for installation body.

Model Number Designation

DSP	G	–01	–C	–D24	–30
Series Number	Type of Connection	Valve Size	Valve Type	Coil Type	Design Number
DSP : Shut-off Type Solenoid Operated Directional Valves	C : Cartridge Type G : Sub-plate Mounting	01	C : Normally Closed	DC D24	30
		03		DC D12 D24	10

★ Models for phosphate ester fluid are available. When phosphate ester fluid is used, prefix "F-" to the model number because the special seals (fluororubber) are required to be used.

Solenoid Ratings

Electric Source	Coil Type	Frequency (Hz)	Voltage (V)		Current & Power at Rated Voltage					
			Source Rating	Serviceable Range	Inrush★1 (A)		Holding (A)		Power (W)	
					01	03	01	03	01	03
DC★2	D12	—	12	10.8 - 13.2	—	—	—	3.16	—	38
	D24		24	21.6 - 26.4			1.22	1.57	29	

★ 1. Inrush current in the above table shows rms values at maximum stroke.
★ 2. K-Series DC Solenoid which has a reputation for excellent DC control is employed.

Sub-plates

Valve Model Numbers	Sub-plate Model Numbers	Thread Size Rc	Approx. Mass kg
DSPG-01	DSGM-01-31	1/8	0.8
	DSGM-01X-31	1/4	
	DSGM-01Y-31	3/8	
DSPG-03	DSGM-03-40	3/8	3
	DSGM-03X-40	1/2	
	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. (▽6.3)
- These sub-plates are sharable with those for DSG-01/03 Series Solenoid Operated Directional Valve. For dimensions, see pages E-31 and E-47.

Accessories

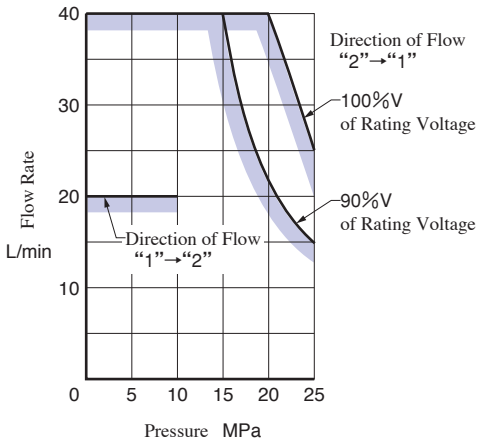
Valve Model Numbers	Mounting Bolts (Soc. Hd. Cap Screw)	
	Size	Tightening Torque
DSPG-01	M5×50L ……4 pcs.	5 - 7 Nm
DSPG-03	M6×80L ……4 pcs.	12 - 15 Nm

Characteristics Typical Performance Characteristics at Viscosity 30 mm²/s (ISO VG 46 oils, 50°C)

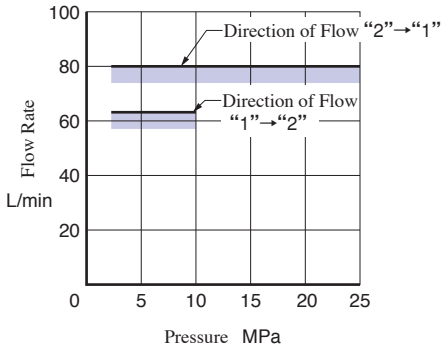
Maximum Flow Rate

The zone under each shaded line denotes the flow rate ranges being free of trouble in changeover.

DSPC/DSPG-01



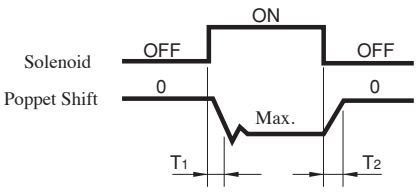
DSPC/DSPG-03



Typical Changeover Time

[Test Conditions]

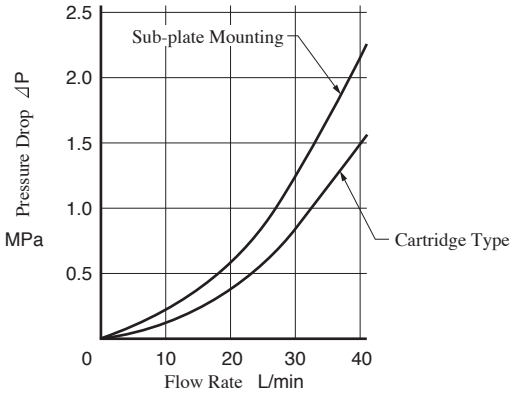
- Pressure : 15 MPa
- Flow Rate : (01) 30 L/min
  (03) 63 L/min
- Voltage : 100%Vof Rating Voltage
- Direction of Flow : "2"→"1"



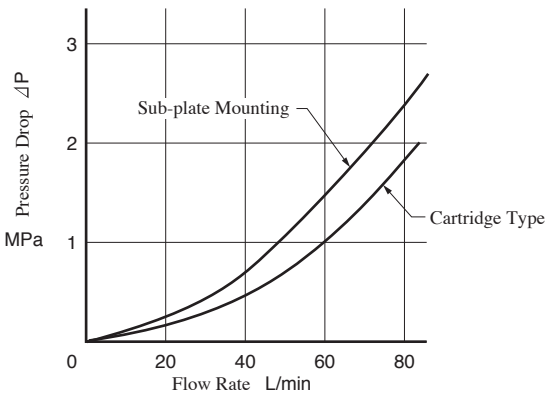
Model Numbers	Time ms	
	T_1	T_2
DSP∗-01-C-D∗	69	14
DSP∗-03-C-D∗	60	80

Pressure Drop

DSPC/DSPG-01



DSPC/DSPG-03

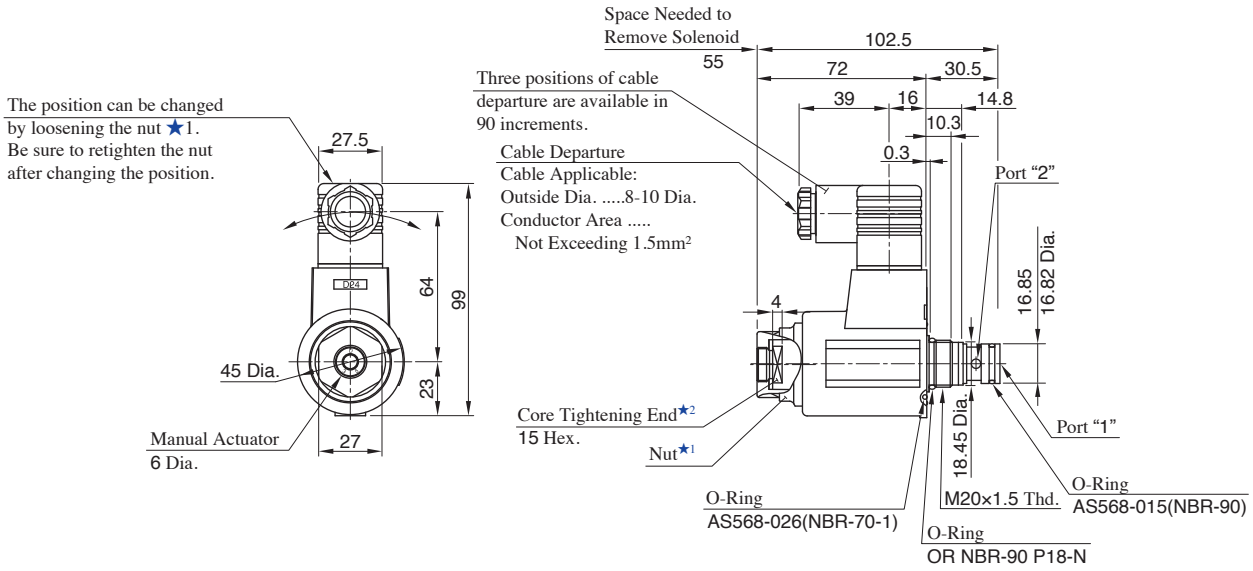


- For any other viscosity, multiply the factors in the table right.
- For any other specific gravity (G'), the pressure drop (⊿P') may be obtained from the formula below.
  ⊿P' = ⊿P(G'/0.850)

Viscosity mm²/s	15	20	30	40	50	60	70	80	90	100
Factor	0.84	0.91	1.00	1.07	1.14	1.19	1.24	1.28	1.32	1.35

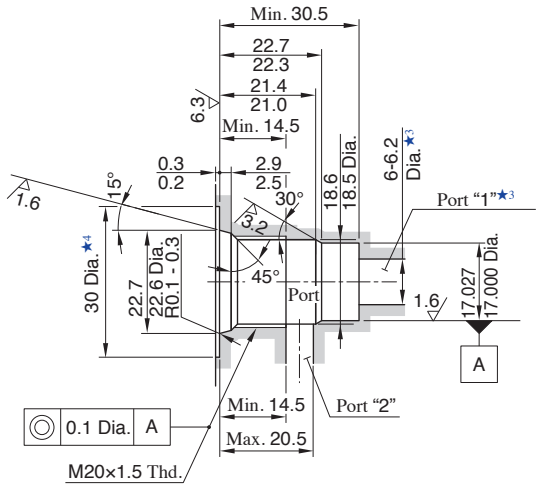
DSPC-01

Mounting Surface: ISO 7789 20-01-0-07



★1. Tightening Torque for Nuts : 10.3 - 11.3 Nm
★2. Tightening Torque for Iron Core Assembly : 20.5 - 25.5 Nm

Details of Mounting Holes



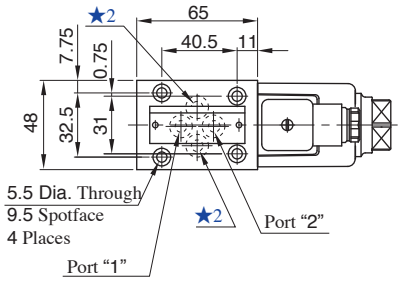
How to Mount

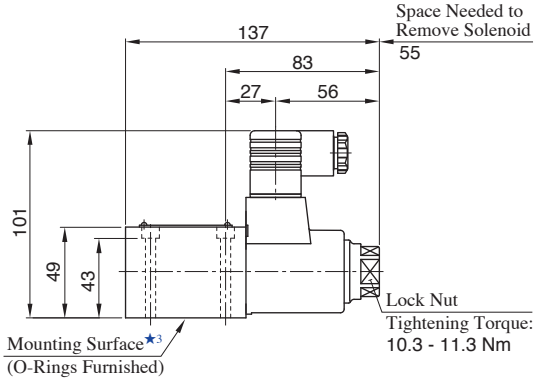
When mounting, the following steps must be followed.
1. Loosen the coil fastening the nut ★2 and remove the coil.
2. Making use of the core tightening end ★1, screw the cartridge in.
3. Attach the coil and fix it with the nut.

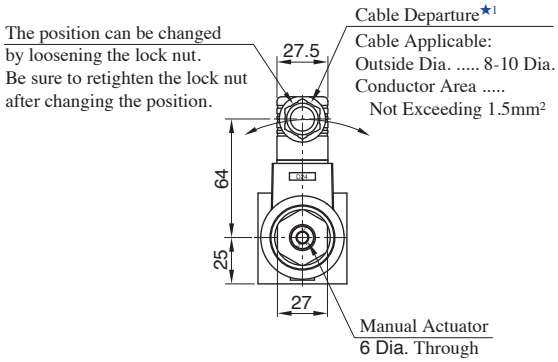
Note 1) ★3 Port diameter of 6.2 Dia. recommended.
Note 2) Mounting hole dimensions conform to ISO 7789 20-01-0-07, only ★4 dimension is different.
So in case that 30 design products mount on 33 Dia. hole of current design (10,20 design), those of water-proof function decrease to about IP 64 level.
Note 3) Use iron materials for the mounting section.

DSPG-01

Mounting Surface: ISO 4401-03-02-0-05





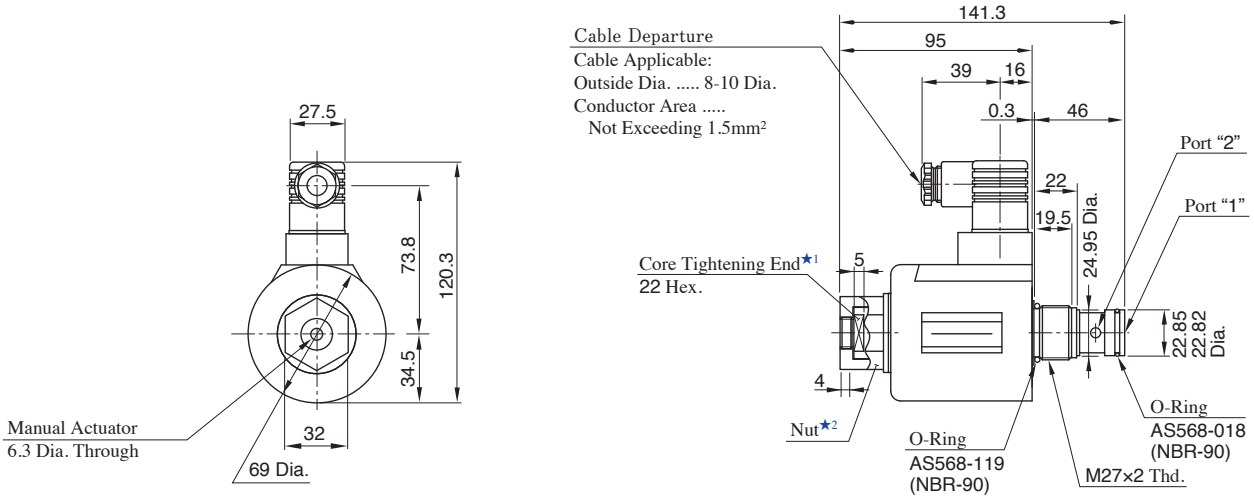


★1. The location and the position of the cable departure can be changed. For details, see the cartridge type.
★2. These ports (2 places) are not used. In addition, the body has the O-ring grooves and O-rings are included in the body.
★3. Ports A and B are used as ports "2" and "1" respectively.
★4. O-rings for Ports: OR NBR-90 P9-N

Note) Dimensions of valve mounting surface are shared with those of sub-plates, refer to page E-31.

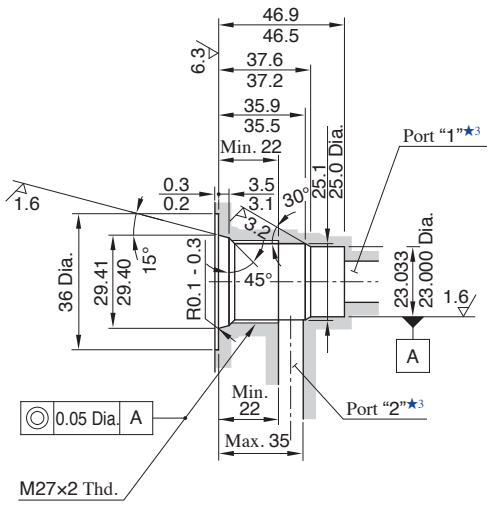
DSPC-03

Mounting Surface: ISO 7789 27-01-0-07



★1. Tightening Torque for Iron Core Assembly：110 - 140 Nm
★2. Tightening Torque for Nuts：8.5 - 10.5 Nm

Details of Mounting Holes



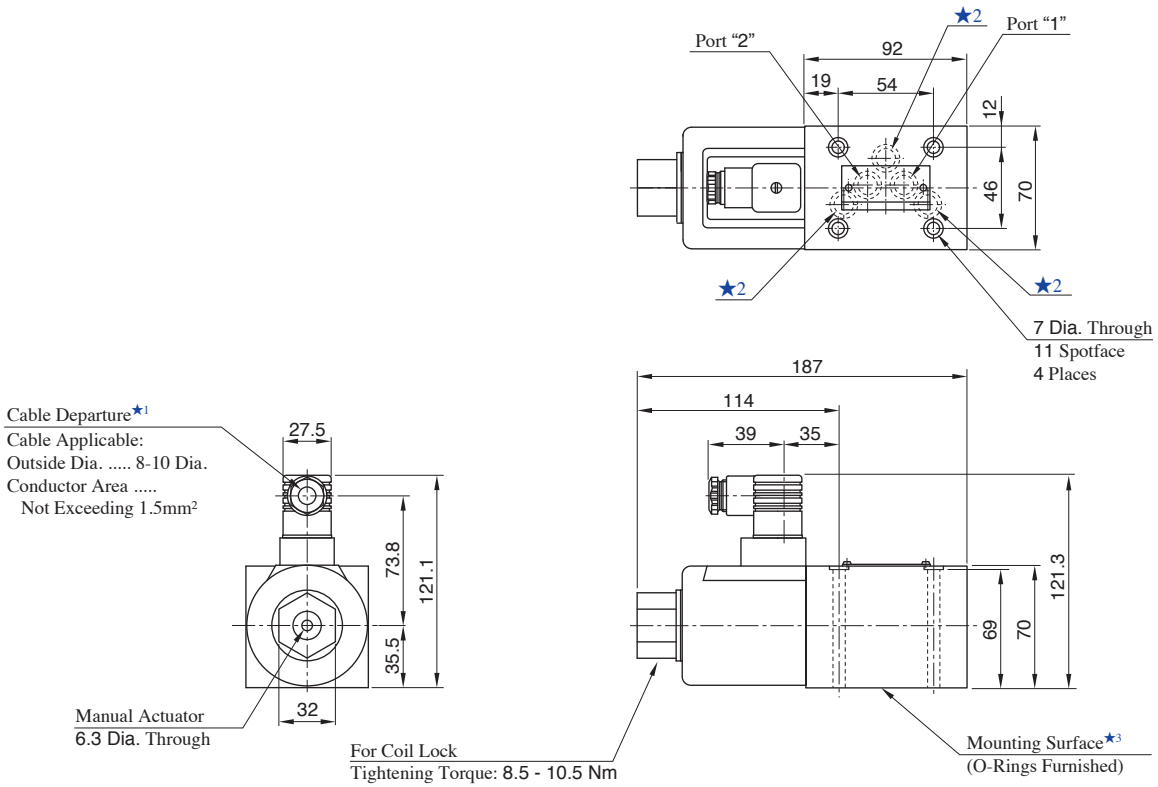
How to Mount

When mounting, the following steps must be followed.
1. Loosen the coil fastening the nut ★2 and remove the coil.
2. Making use of the core tightening end ★1, screw the cartridge in.
3. Attach the coil and fix it with the nut.

Note 1) ★3 Port diameter of 11 Dia. recommended.
Note 2) Use iron materials for the mounting section.

DSPG-03

Mounting Surface: ISO 4401-05-04-0-05

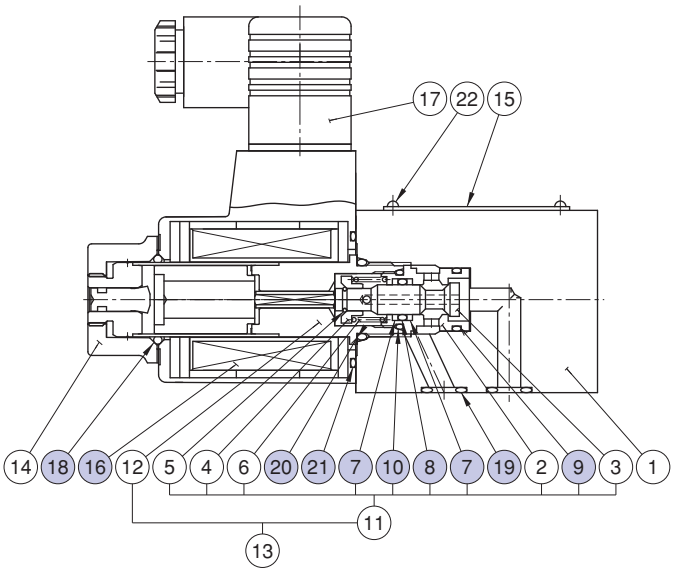


★1. The location and the position of the cable departure can be changed. For details, see the DSG-03 Series Solenoid Operated Valves on page E-48.
★2. These ports (3 places) are not used. In addition, the body has the O-ring grooves and O-rings are included in the body.
★3. Ports A and B are used as ports "2" and "1" respectively.
★4. O-rings for ports: AS 568-014 (NBR-90)

Note) Dimensions of valve mounting surface are shared with those of sub-plates, refer to page E-47.

List of Seals, Solenoid Ass'y, Coil Ass'y

DSPC/DSPG-01
DSPC/DSPG-03



List of Seals

Item	Name of Parts	DSP＊–01		DSP＊–03	
		Part Numbers	Qty.	Part Numbers	Qty.
7	Back Up Ring	SD 1286-VK420107-5	2	2691-VK418550-0	2
8	O-Ring	OR NBR-70-1 P8-N	1	OR NBR-70-1 P12-N	1
9	O-Ring	AS 568-015 (NBR-90)	1	AS 568-018 (NBR-90)	1
10	O-Ring	AS 568-014 (NBR-90)	1	AS 568-017 (NBR-90)	1
18	O-Ring	OR NBR-70-1 P20-N	1	—	—
19★	O-Ring	OR NBR-90 P9-N	4	AS 568-014 (NBR-90)	5
20	O-Ring	OR NBR-90 P18-N	1	AS 568-119 (NBR-90)	1
21	O-Ring	AS 568-026 (NBR-70-1)	1	—	—

★ O-ring item ⑲, use only for sub-plates mounting type (DSPG-01/03).

List of Solenoid Ass'y, Coil Ass'y

Valve Model No.	Solenoid Ass'y No.	⑯Coil Ass'y No.
DSPC/DSPG-01-C-D24	—★	C-SD1H-24-N-70
DSPC/DSPG-03-C-D12	SD3-12-N-5130	C-SD3-12-N-51
DSPC/DSPG-03-C-D24	SD3-24-N-5130	C-SD3-24-N-51

★About replacement of DSPC/DSPG-01 solenoid ass'y, please contact us.

Interchangeability between Current and New Design

Because of solenoid assembly improvements, DSP*-03 has been model-changed (design 20 to design 30).

Specifications and Characteristics

Max. operating pressure at port "1" flow "2"→"1", pressure changed 16MPa → 21 MPa.

Solenoid Ratings

There are changes in the holding current, but there are no technical problem.

But the coil type is limited only for D24, about replacement of solenoid ass'y, please contact us.

Dust and Water Proof Specifications

Water-proof protection level is upgraded. (IEC) PUBL.529 IP64 → (IEC) PUBL.529 IP65

In case that DSPC-01 mount on 33 Dia. hole of current design, those of water-proof function decrease to IP 64 level.

Interchangeability in Installation

There are some changes in dimensions about solenoids, but interchangeability in installation is no problem.

Models with AC Solenoids

Because of the component parts stock shortage, stop selling.

По вопросам продаж и поддержки обращайтесь:

Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курган (3522)50-90-47
Курск (4712)77-13-04
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Новосибирск (383)227-86-73
Ноябрьск (3496)41-32-12
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Пермь (342)205-81-47
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саранск (8342)22-96-24
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35
Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Улан-Удэ (3012)59-97-51
Ульяновск (8422)24-23-59
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

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