

Directional Control Valves

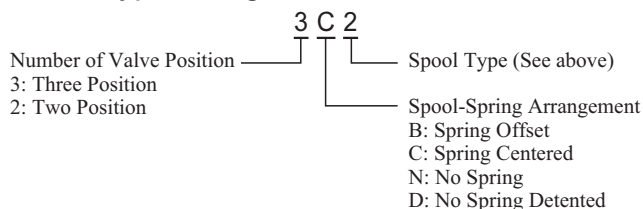
Directional Control Valves are designed to start, stop, control direction, accelerate and decelerate cylinders and hydraulic motors. Directional valves are classified into following five types depending on the operational method: Solenoid Operated Directional Valves, Solenoid Controlled Pilot Operated Directional Valves, Pilot Operated Directional Valves, Manually Operated Directional Valves, and Mechanically Operated Directional Valves.

Types of Spool

Spool No.	Schematic Drawing (Center position)	Functions	Graphic Symbols			
			Three Positions 3※※	Two Positions		
				2B※/2D※/2N※*	2B※A	2B※B
2		Closed Center all Ports				
3		Open Center all Ports				
4		Open Center A. B. & T				
40		Open Center A. B. & T Restricted Flow				
5		Open Center P. A. & T				
60		Open Center P & T Open Crossover				
7		Open Center all Ports Restricted Flow				
8		Two Way				
9		Open Center P. A. & B				
10		Open Center B. & T				
11		Open Center P. & A				
12		Open Center A. & T				

*These 2※※ type valves have no center position.

Valve Type Designation



Solenoid Operated Directional Valves Solenoid Controlled Pilot Operated Directional Valves

These valves have the following features and satisfy the needs of users in the various industries.

■ DC Solenoid (K series Solenoid Operated Directional Valve)

★ These valves differ from conventional DC solenoid operated directional valves and have the following characteristics. ★

1. The surge voltage is very low and will not jam the other electronic systems; therefore, it will not make wrong action to the computers.
2. The spark between the relay contacts has been eliminated and therefore the valve can be operated by miniature relays.
3. Time lag on de-energization is reduced approximately 50%.

Simple and Rational Structure

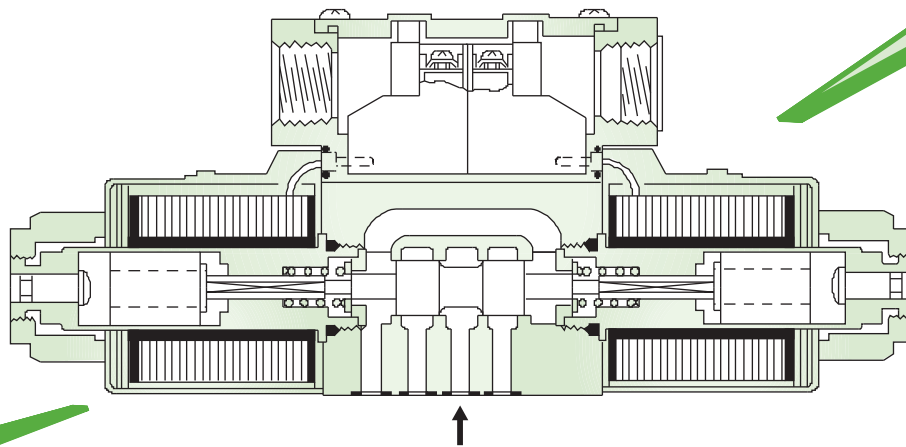
- The terminal-box type is available for electric connection.
- The terminal-box type is equipped with indicator lights as a standard.
- A drip-proof structure is employed to protect the electric devices.
- Simple dismantling and assembling makes maintenance easy.

■ R type 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.

Solenoid development is based on learned experiences

- AC Solenoid
Common two terminals for both 50Hz and 60 Hz For the AC solenoid, rewiring is not required when applied frequency is changed.
- The DC solenoid is the famous "K" series Advantages of DC control can be fully displayed.
- AC-DC convertible solenoid
This solenoid has high reliability and durability, with no coil burnout.
- Various solenoids available for different voltage.
- Winding and insulation of the solenoids are class H of IEC (Classification of Materials for insulation of Electrical Machinery and Apparatus)



Design Reaching the Ultimate of Wet-Type Solenoid

- Stable operation
Stable operation can be obtained, since these solenoids are resistant to contaminants, with high absorbing power and a strong spring returned force.
- Mould-Type coil
With the mould-type coil, it is excellent in heat radiation so that temperature rise on the solenoid surface can be reduced.
- Lower power consumption
in spite of high absorbing power, power consumption is low.

High Pressure and High Flow Rate Realized by High Technology

High pressure, high flow rate, and small pressure drop are produced by high-power wet type solenoids that are newly developed and the rational passage design of the valve.

D

Solenoid Operated Directional Valves Max. Pressure 7 MPa

The valve is specially designed for power saving, high efficiency and space saving. Its power consumption is less than DSG-01 series and its mounting dimensions is as same as DSG-01, however its length with double solenoid (DC) is 18 mm less than DSG-01 series. It is available for shoe machine, CNC machine and low-pressure automatic equipment.

D

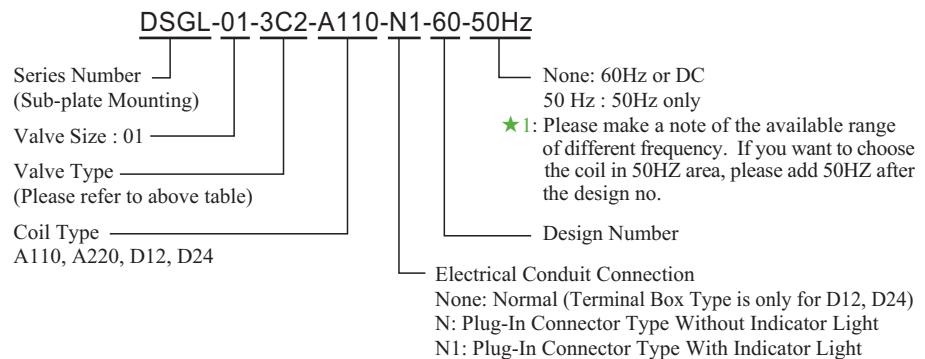


Specifications

Valve Size	Model No.	Max. flow L/min	Max. Operating pressure MPa (kgf/cm ²)	Max. T-Line Back Pressure MPa (kgf/cm ²)	Mass kg
1/8	DSGL-01-2B2-※-60	40	7 (71)	7 (71)	1.5
	★DSGL-01-2D2-※-60				2
	DSGL-01-3C※-※-60				2

★ The max. flow of 2D2 is 30 L/min.

Model Number Designation



Valve Types

Valve Type	3C2	3C4	3C10	3C12
Graphic Symbol				
Valve Type	2B2	2B3	2D2	3C9
Graphic Symbol				

- The valve other than above types are available, please contact our sales engineers for your requirement.
- These 2B2, 2B3 & 2D2 have no center position.

Mounting Bolts (Attachment)

Socket Head Cap Screw	Tightening Torque
M5 x 45 Lg. 4 Pcs	5~7 N·m (0.5~0.7 kgf·m)

Sub-plate

Valve Model No.	Sub-plate Model No.	Piping Size Rc	Mass kg
DSGL-01	DSGM-01-30	1/8	0.8
	DSGM-01X-30	1/4	
	DSGM-01Y-30	3/8	

- Sub-plates are available. When ordering, please specify sub-plate model from the table above.
- Please refer to page 84 for dimension details.

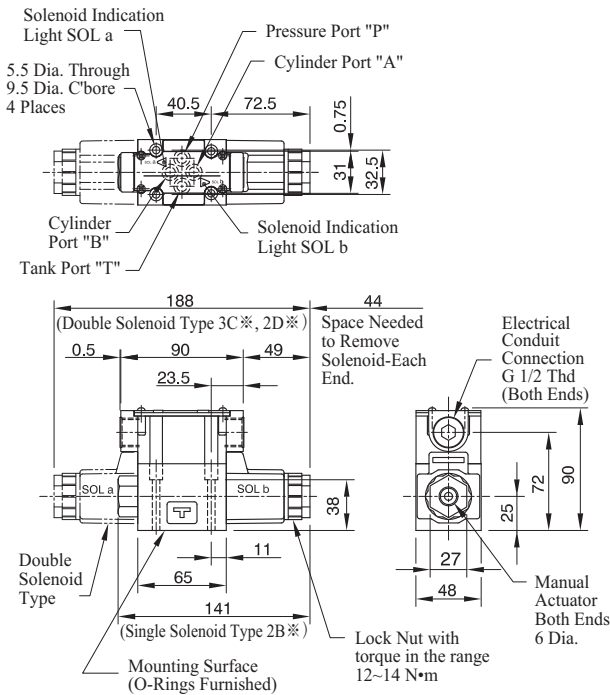
Solenoid Ratings

Electric Source	Coil Type	Serviceable Range		Current & Power at Rated Voltage		
		Frequency (Hz)	Voltage (V)	Inrush (A)	Holding (A)	Power (W)
AC	A110/50Hz	50	100-120	1.56	0.42	23
	A110/60Hz	60	100-120	1.72	0.37	18
	A220/50Hz	50	200-240	0.69	0.21	23
	A220/60Hz	60	200-240	0.82	0.18	18
DC	D12	-	10.8-13.2	-	1.75	20
	D24	-	21.6-26.4	-	0.85	20

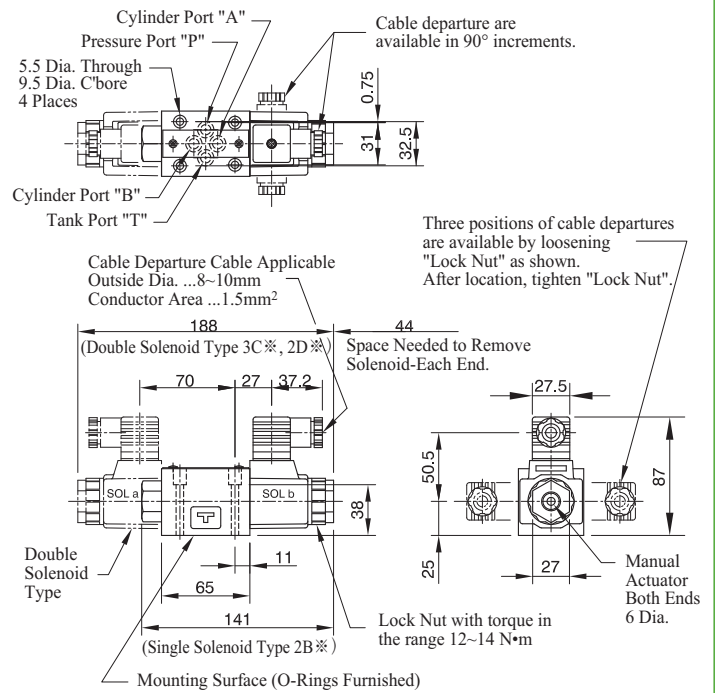
Solenoid Operated Directional Valves Max. Pressure 7 MPa

Mounting surface: ISO 4401-03-02-0-94

Model with AC solenoids : DSGL-01-***-A**



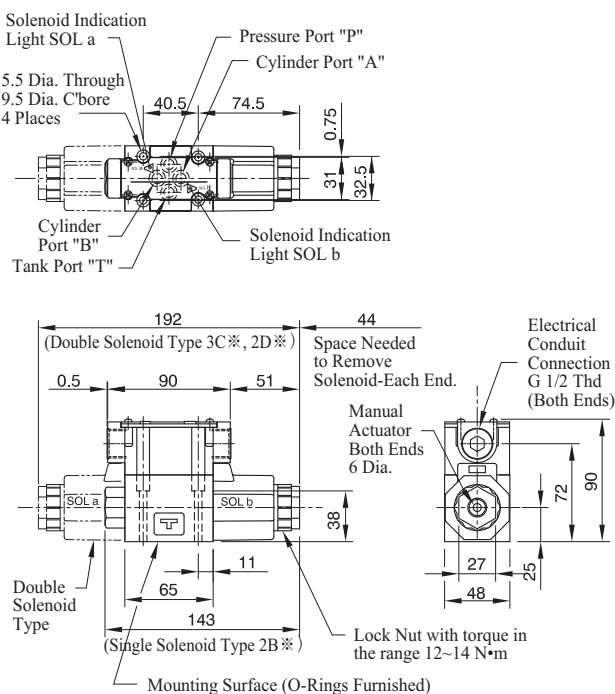
Model with AC solenoids : DSGL-01-***-A**-N/N1



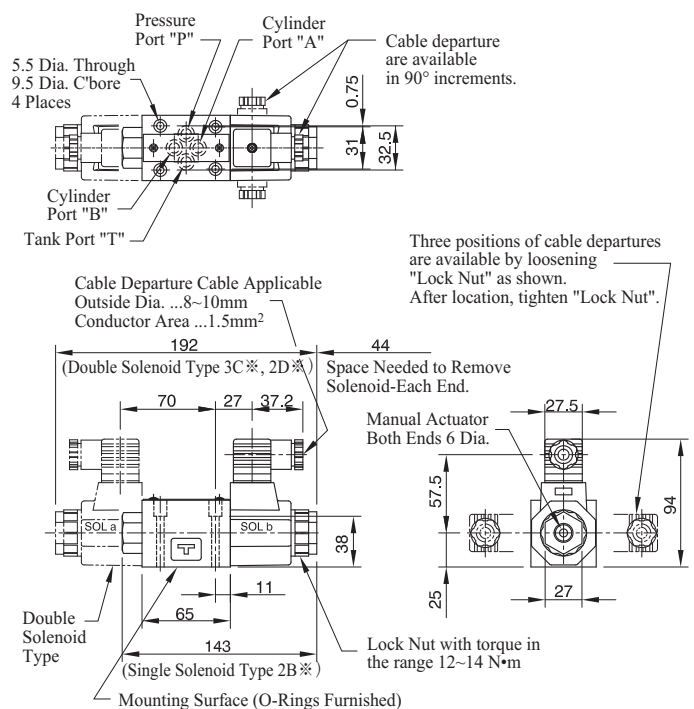
D

Mounting surface: ISO 4401-03-02-0-94

Model with DC solenoids : DSGL-01-***-D**



Model with DC solenoids : DSGL-01-***-D**-N/N1



Solenoid Operated Directional Valves Max. Pressure 31.5 MPa



D

- AC coil is 50Hz/60Hz common service.
- The hydraulic specification and the mounting dimension are interchangeable.
- The current 50Hz/60Hz coil and the new design coil is interchangeable.
- CSA certified products are also available.

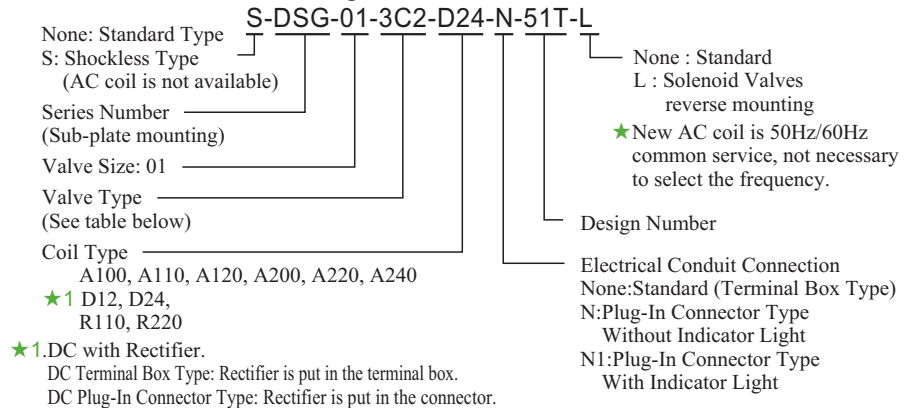
DSG-01 Series

- These valves are adapted with strong wet-type solenoid and circuit designs to accomplish high pressure, large volume flow and lower pressure drop.
- The optimum valve for any system can be utilized since many spool types and various solenoids are all available, along with other optional function.

Specifications

Valve Size	Model Number	Max. Flow L/min	Max. Pressure MPa (kgf/cm ²)	Max. T-Line Back Pressure MPa (kgf/cm ²)	Max. Changeover Frequency Cycle/min	Mass kg	
						Type of Solenoid	
						AC	DC/R
1/8	(S-)DSG-01-3C※-※-51T	63	31.5 (321) Spool Type 60 only 25 (255)	16 (163)	300 (R Type) only 120	2.2	
	(S-)DSG-01-2D※-※-51T					2.2	
	(S-)DSG-01-2B※-※-51T					1.6	

Model Number Designation



Valve Type

Valve Type	3C2	3C3	3C4	3C40	3C60	3C12
Graphic Symbol						
Valve Type	2B2	2B3	2B8	2B2B	2D2	3C9
Graphic Symbol						

- Valves, other than the types above are available, please contact our sales engineer for your requirement.
- 2B2,2B3,2B8 & 2D2 type valves have no center position.

Mounting Bolts (Attachment)

Socket Head Cap Screw	Tightening Torque
M5 x 45 Lg. 4 pcs	5 ~ 7 N•m (0.5~0.7 kgf•m) (Applicable to working pressure higher than 25 MPa) 6 ~ 7 N•m (0.6~0.7 kgf•m)

Sub-plate

Valve Model No.	Sub-plate Model No.	Piping Size Rc	Mass kg
DSG-01	DSGM-01-30	1/8	0.8
	DSGM-01X-30	1/4	
	DSGM-01Y-30	3/8	

* Sub-plates are available. When ordering, please specify sub-plate model no. from the table above.

* Please refer to page 84 for dimension details,

Solenoid Rating

Electric Source	Source Rating (V)	Coil Type	Serviceable Voltage Range		Current & Power at Rated Voltage		
			Frequency (Hz)	Voltage (V)	Inrush (A)	Holding (A)	Power (W)
AC	100	A100	50	80-110	2.33	0.51	24
			60	90-120	2.07	0.38	20
	110	A110	50	88-121	2.14	0.48	24
			60	99-132	1.91	0.36	20
	120	A120	50	96-132	1.87	0.44	24
			60	108-144	1.76	0.33	20
	200	A200	50	160-220	1.18	0.27	24
			60	180-240	1.04	0.20	20
	220	A220	50	176-242	1.06	0.24	24
			60	189-264	0.95	0.18	20
	240	A240	50	192-264	0.97	0.22	24
			60	216-288	0.86	0.16	20
DC	12	D12	-	10.8-13.2	-	2.2	26
	24	D24	-	21.6-26.4	-	1.1	26
AC→DC	110	R110	-	100-120	-	0.30	31
	220	R220	-	200-240	-	0.14	30

There are other coil types available, please contact our sales engineers for your requirement.

Solenoid Operated Directional Valves Max. Pressure 31.5 MPa

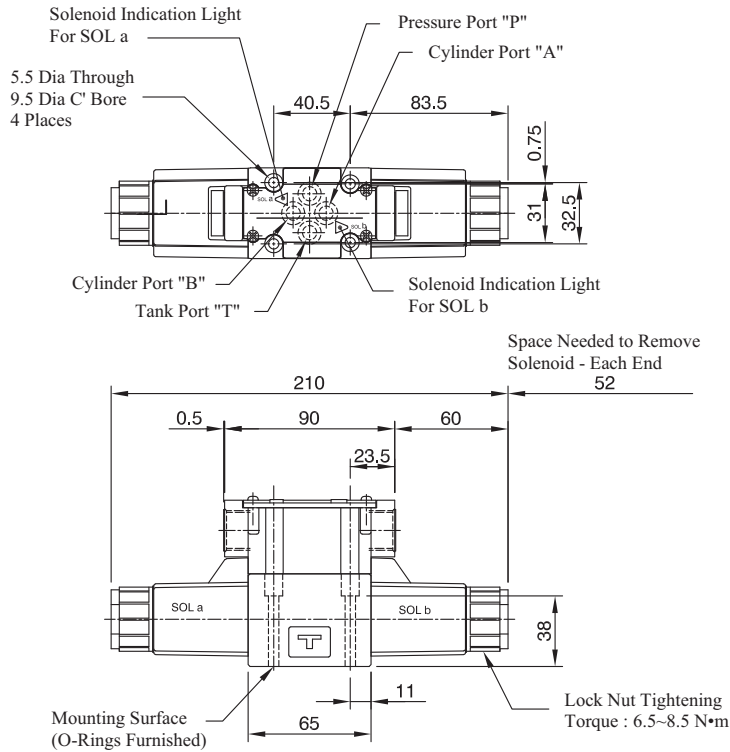
D

Models with AC Solenoids DSG-01-※-A※-

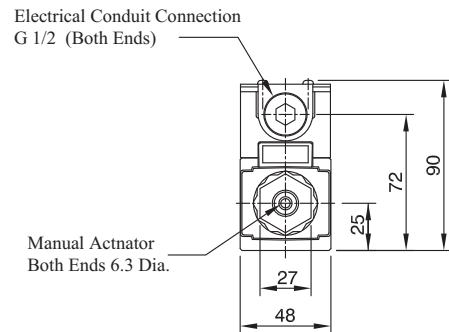
Mounting Surface : ISO 4401-03-02-0-94

- Spring Centered DSG-01-3C※-A※-
- No-Spring Detented DSG-01-2D※-A※-

- Spring Offset : DSG-01-2B※※-A※-



For other dimensions, please refer to the left diagram. Alternative models using solenoid *a* are also available.

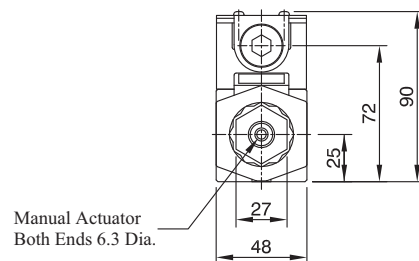
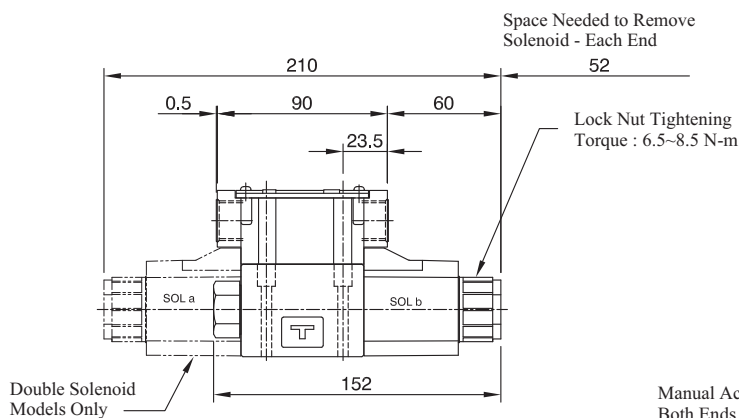


• New AC coil showed voltage only, without the frequency.

Models with DC Solenoids (S-)DSG-01-※-D※-
Models with R Solenoids (S-)DSG-01-※-R※-

Mounting Surface : ISO 4401-03-02-0-94

- Spring Centered (S-)DSG-01-3C※-D※/R※-
- No-Spring Detented (S-)DSG-01-2D※-D※/R※-
- Spring Offset (S-)DSG-01-2B※-D※/R※-



• For other dimensions, please refer to Model with AC solenoids.

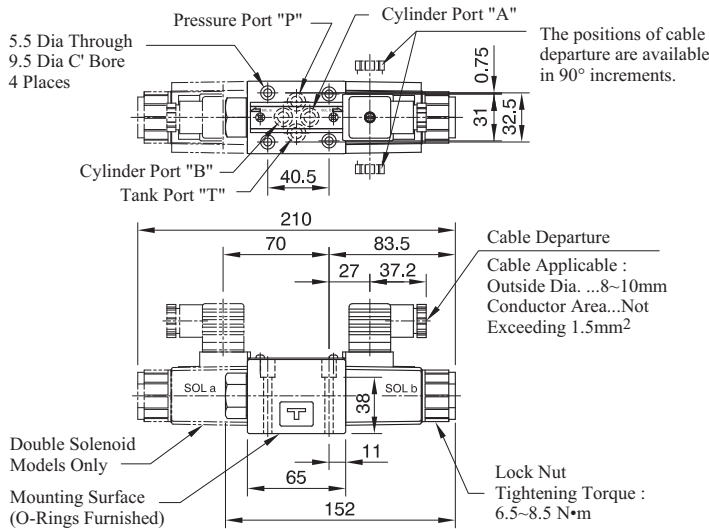
Solenoid Operated Directional Valves Max. Pressure 31.5 MPa

DIN Connector type, DIN Connector Type with Indicator Light

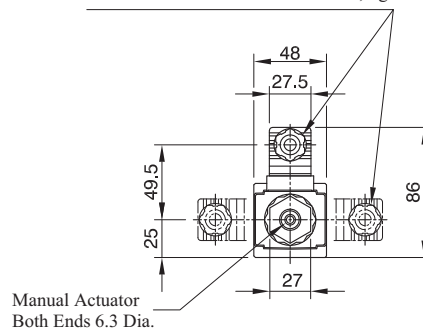
Mounting Surface : ISO 4401-03-02-0-94

Models with AC Solenoids DSG-01-※-A※-N/N1-

- Spring Centered DSG-01-3C※-A※-N/N1-
- No-Spring Detented DSG-01-2D※-A※-N/N1-
- Spring Offset DSG-01-2B※※-A※-N/N1-



Three positions of cable departures are available by loosening "Lock Nut" as shown. After location, tighten "Lock Nut".

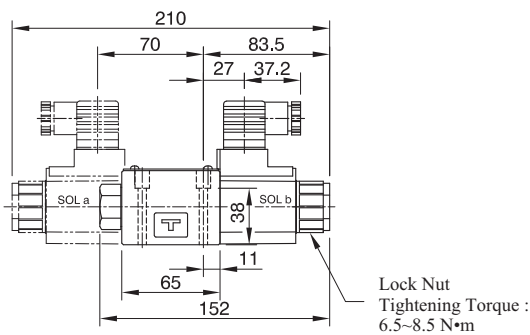


- New AC coil showed voltage only, without the frequency.

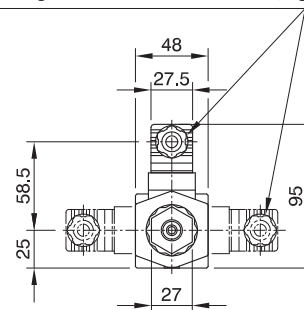
**Models with DC Solenoids (S-)DSG-01-※-D※-N/N1-
Models with R Solenoids (S-)DSG-01-※-R※-N/N1-**

Mounting Surface : ISO 4401-03-02-0-94

- Spring Centered (S-)DSG-01-3C※-D※/R※-N/N1-
- No-Spring Detented (S-)DSG-01-2D※-D※/R※-N/N1-
- Spring Offset (S-)DSG-01-2B※-D※/R※-N/N1-



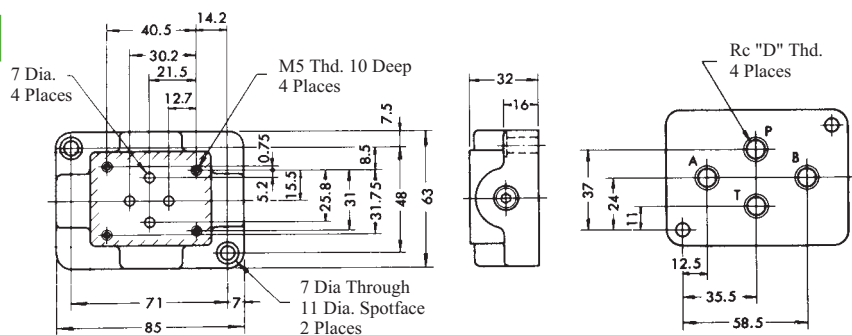
The connector can be moved to various position by loosening the "Lock Nut". After location, tighten "Lock Nut".



- For other dimensions, please refer to Terminal Box Type (page 83).

Sub-plate : DSGM-01, 01X, 01Y

Model No.	D
DSGM-01-30	1/8
DSGM-01X-30	1/4
DSGM-01Y-30	3/8



Solenoid Operated Directional Valves Max. Pressure 31.5 MPa



DSG-03 Series

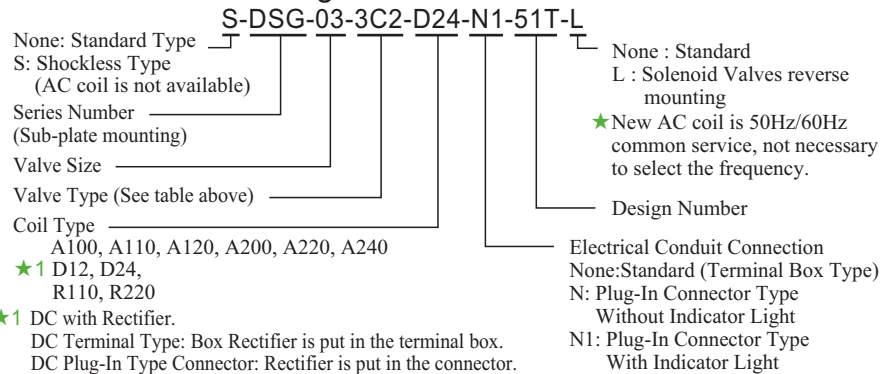
- These valves are adapted with strong wet-type solenoid and circuit designs to accomplish high pressure, large volume flow and lower pressure drop.
- The optimum valve for any system can be utilized since many spool types and various solenoids are all available, along with other optional function.
- The pressure drop caused by the passing of pressurized oil is reduced to approx. 1/2 of the conventional Yuken model.
- Good Light Weight design has accomplished to reduce body weight.

Specifications







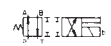

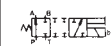
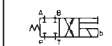
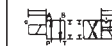

Valve Size	Model No	Max. Flow L/min	Max. Pressure MPa (kgf/cm ²)	Max. T-Line Back Pressure MPa (kgf/cm ²)	Max Changeover Frequency Cycle/min	Mass kg	
						AC	DC/R
3/8	(S-)DSG-03-2B※-※-51T	120	31.5 (321) Spool Type 60 only 25 (255)	16 (163)	240 (R Type Only 120)	2.9	3.6
	(S-)DSG-03-2D※-※-51T					3.6	5
	(S-)DSG-03-3C※-※-51T					3.6	5

- AC coil is 50Hz/60Hz common service.
- The hydraulic specification and the mounting dimension are interchangeable.
- The current 50Hz/60Hz coil and the new design coil is interchangeable.
- CSA certified products are also available.

Model Number Designation



Valve Type

Valve Type	3C2	3C3	3C4	3C40	3C60	3C12
Graphic Symbol						
Valve Type	2B2	2B3	2B8	2B2B	2D2	3C9
Graphic Symbol						

- Valve, other than the types above are available, please contact our sales engineers for your requirements.
- 2B2,2B3,2B8 & 2D2 type valves have no center position.

Sub-plate

Valve Model No.	Sub-plate Model No.	Piping Size Rc	Mass kg
DSG-03	DSGM-03-40	Rc	3
	DSGM-03X-40	3/8	
	DSGM-03Y-40	1/2	4.7

- Sub-plates are available. When ordering, please specify sub-plate model no. from the table above.
- Please refer to page 87 for dimension details.

Mounting Bolts (Attachment)

Socket Head Cap Screw	Tightening Torque
M6 x 35Lg. 4pcs	12~15 N•m (1.2~1.5 kgf•m)

Solenoid Rating

Electric Source	Source Rating (V)	Coil Type	Serviceable Voltage Range		Current & Power at Rated Voltage		
			Frequency (Hz)	Voltage (V)	Inrush (A)	Holding (A)	Power (W)
AC	100	A100	50	80-110	5.25	1.02	41
			60	90-120	4.46	0.74	36
		A110	50	88-121	4.72	0.89	40
			60	99-132	4.08	0.65	35
		A120	50	96-132	4.30	0.85	41
			60	108-144	3.69	0.62	36
	200	A200	50	160-220	2.62	0.51	41
			60	180-240	2.26	0.37	35
		A220	50	176-242	2.39	0.47	42
			60	189-264	2.07	0.34	36
		A240	50	192-264	2.20	0.43	41
			60	216-288	1.87	0.31	35
DC	12	D12	-	10.8-13.2	-	3.16	38
	24	D24	-	21.6-26.4	-	1.57	38
AC → DC	110	R110	-	100-120	-	0.40	41
	220	R220	-	200-240	-	0.19	39

There are other coil types available, please contact our sales engineers for your requirement.

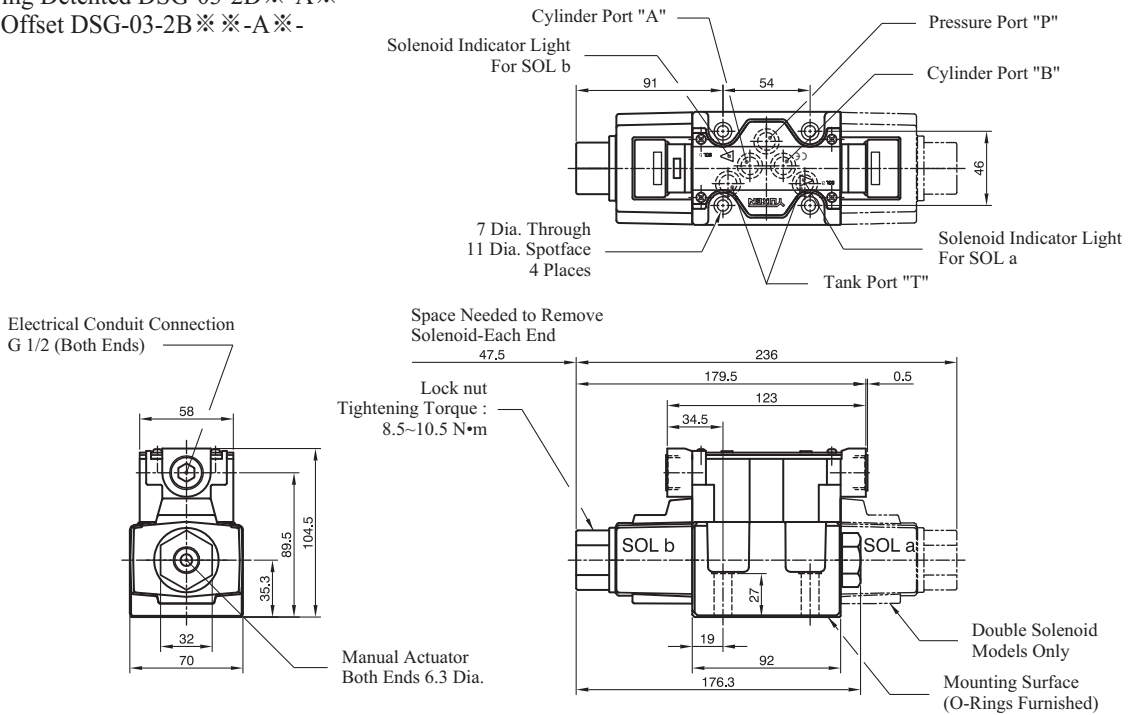
D

Solenoid Operated Directional Valves Max. Pressure 31.5 MPa

Models with AC Solenoids DSG-03-※-A※-

Mounting Surface : ISO 4401-05-04-0-94

- Spring Centered DSG-03-3C※-A※-
- No-Spring Detented DSG-03-2D※-A※-
- Spring Offset DSG-03-2B※※-A※-

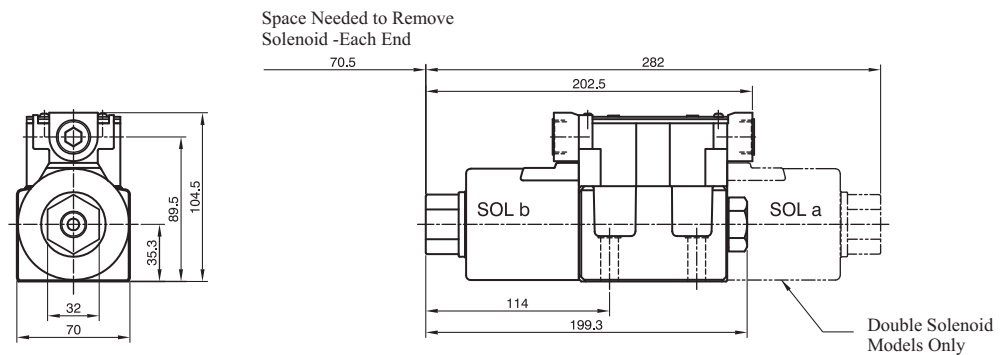


● New AC coil showed voltage only, without the frequency.

Models with DC Solenoids (S-)DSG-03-※-D※- Models with R Solenoids (S-)DSG-03-※-R※-

Mounting Surface : ISO 4401-05-04-0-94

- Spring Centered (S-)DSG-03-3C※-D※/R※-
- No-Spring Detented (S-)DSG-03-2D※-D※/R※-
- Spring Offset (S-)DSG-03-2B※-D※/R※-



● For other dimensions, Please refer to the model with AC solenoids.

Note: For dimensions of mounting surface, please refer to DSGM-03 type sub-plate on page 87.

D

Solenoid Operated Directional Valves Max. Pressure 31.5 MPa

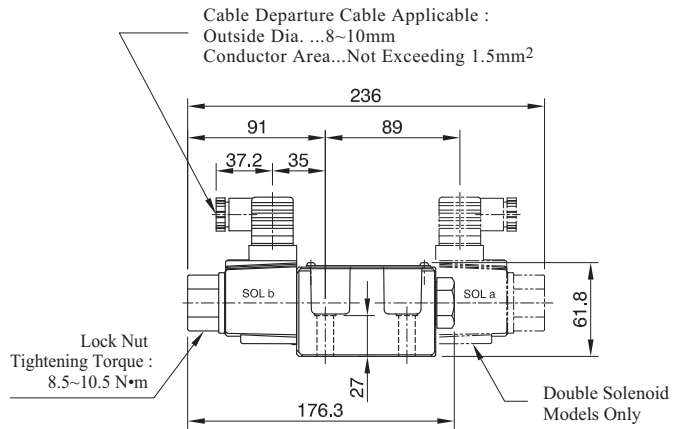
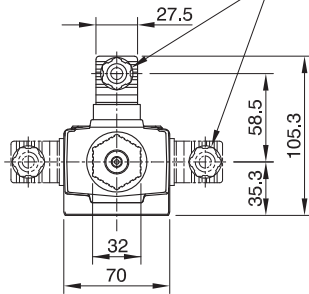
DIN type Connector, DIN Type Connector with Indicator Light

Mounting Surface : ISO 4401-05-04-0-94

Models with AC Solenoids DSG-03-※-A※-N/N1-

- Spring Centered DSG-03-3C※-A※-N/N1-
- No-Spring Detented DSG-03-2D※-A※-N/N1-
- Spring Offset DSG-03-2B※※-A※-N/N1-

Three positions of cable departures are available by loosening "Lock Nut" as shown. After location, tighten "Lock Nut".



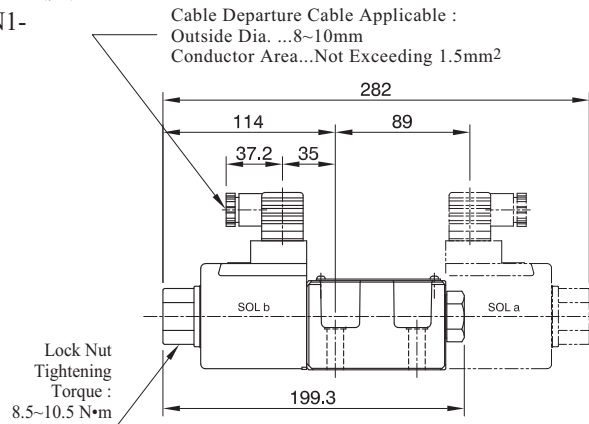
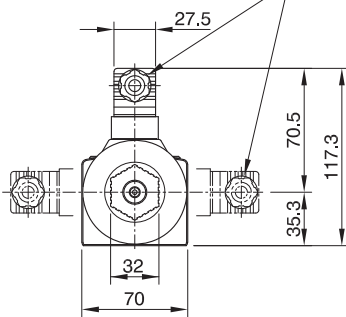
• New AC coil showed voltage only, without the frequency.

**Models with DC Solenoids (S-)DSG-03-※-D※-N/N1-
Models with R Solenoids (S-)DSG-03-※-R※-N/N1-**

Mounting Surface : ISO 4401-05-04-0-94

- Spring Centered (S-)DSG-03-3C※-D※/R※-N/N1-
- No-Spring Detented (S-)DSG-03-2D※-D※/R※-N/N1-
- Spring Offset (S-)DSG-03-2B※-D※/R※-N/N1-

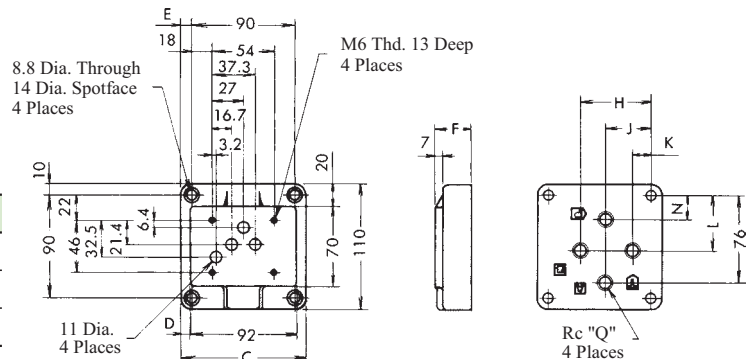
Three positions of cable departures are available by loosening "Lock Nut" as shown. After location, tighten "Lock Nut".



• For other dimensions, please refer to "Terminal Box Type".

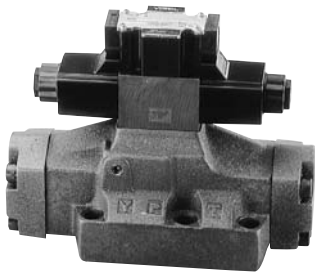
Sub-plate DSGM-03, 03X, 03Y-40

Model No.	C	D	E	F	H	J	K	L	N	Q
DSGM-03-40	110	9	10	32	62	40	16	48	21	3/8
DSGM-03X-40										1/2
DSGM-03Y-40	120	14	15	50	80	45	10	47	16	3/4



D

Solenoid Controlled Pilot Operated Directional Valves Max. Pressure 31.5 MPa



D

- AC coil is 50Hz/60Hz common service.
- The hydraulic specification and the mounting dimension are interchangeable.
- The current 50Hz/60Hz coil and the new design coil is interchangeable.

DSHG Series

These valves are composed of a solenoid operated pilot valve and a pilot operated slave valve. When a solenoid is energized the pilot valve directs the flow to move the spool of the slave valve, thus changing the direction of flow in the hydraulic circuit.

● High Pressure High Flow

High pressure (315kgf/cm²) along with high flow means compact system design. (e.g. "04" size valve- 300 L/min, "06" size valve- 500 L/min, "10" size valve- 1100 L/min.

● Lower Pressure Drop

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

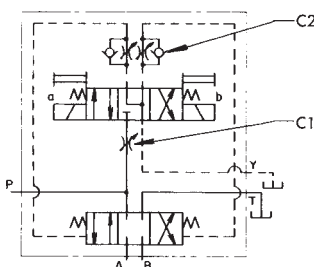
■ Specifications

Valve Size	Model Number	*1 Max Flow L/min	Max. Operating Pressure MPa (kgf/cm ²)	Max. Pilot Pressure MPa (kgf/cm ²)	Max. T-Line Back Pressure MPa [kgf/cm ²]	Changeover Frequency Cycles/min	Mass kg	
1/2	(S-)DSHG-04-2B※-※-51T	300	31.5 (321)	0.8~25 (8.2~255)	21 [214] (16)*2 [163]	120	8.2	
	(S-)DSHG-04-3C※-※-51T						8.8	
	(S-)DSHG-04-2N※-※-51T						8.8	
3/4	(S-)DSHG-06-2B※-※-52T	500	31.5 (321)	0.8~25 (8.2~255)	21 [214] (16)*2 [163]	120	12.1	
	(S-)DSHG-06-3C※-※-52T						12.7	
	(S-)DSHG-06-2N※-※-52T						12.7	
1 1/4	(S-)DSHG-10-2B※-※-42T	1100	31.5 (321)	1~21(10.2~214)	21 [214] (16)*2 [163]	60	44.7	
	(S-)DSHG-10-3C※-※-42T			1~25 (10.2~255)			100	45.3
	(S-)DSHG-10-2N※-※-42T			120			45.3	

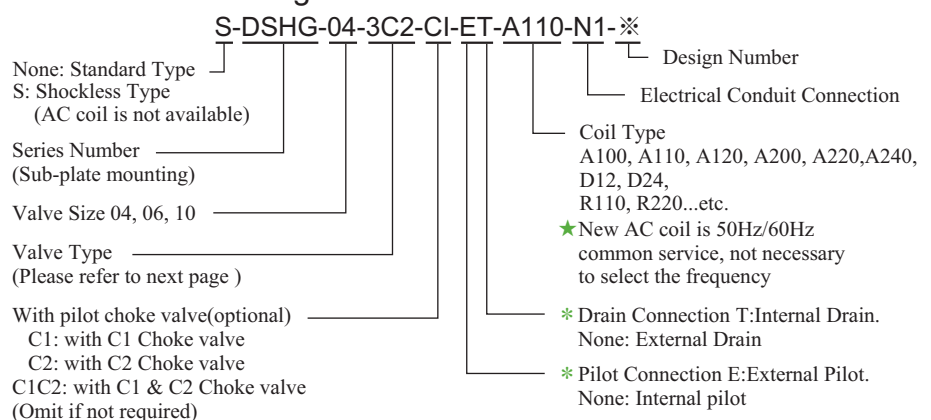
*1 Max. flow depends on the type of spool and operating conditions.

*2 Please refer to the bracket for T-Line back pressure.

■ Graphic Symbol with Choke Valve



■ Model Number Designation



* Classification of application on spool type "3", "5", "60" & "7" has been described as below.

Pilot Connection	Drain Connection	Attention
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	Combination is not available.
External Pilot	External Drain	No limitation in use.
	Internal Drain	

● Minimum Pilot pressure: 1/2, 3/4 size valve are 0.8 MPa (kgf/cm²), 1-1/4 size valve is 1 MPa (10kgf/cm²).

Solenoid Valves with Monitoring Switch-(S)-DSGS Max. Pressure 31.5 MPa

Valve Type

Valve Type	3C2	3C3	3C4	3C40	3C60*
Graphical Symbol					
Valve Type	3C12	2B2*	2B7*	2N2*	2N7*
Graphical Symbol					

- Valves, other than the type above are available, please contact our sales engineers for your requirement.
- The "2B2", "2B7", "2N2" & "2N7" type valves have no center position.

Pilot Valve Type

Valve Model No.	Pilot Valve Model No.	
DSHG-04-	2B*	DSG-01-2B2*-51T
	3C*	DSG-01-3C4*-51T
DSHG-06-	2B*	DSG-01-2B2*-51T-L
	3C*	DSG-01-3C4*-51T
DSHG-10-	2B*	DSG-01-2B2*-51T-L
	3C*	DSG-01-3C4*-51T

Please refer to page 82

Sub-plate

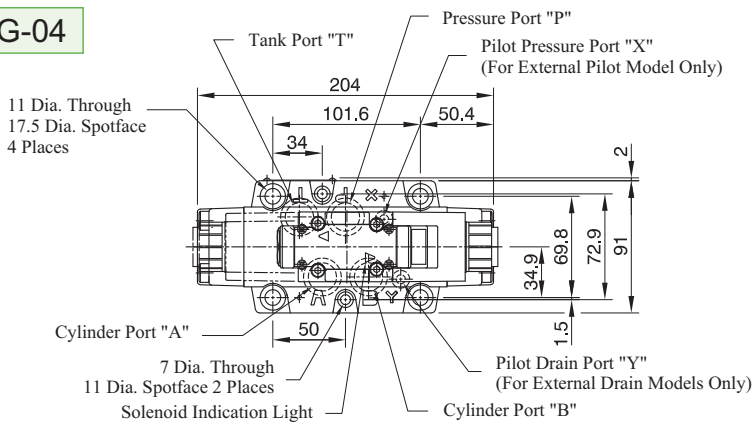
Valve Model No.	Sub-plate Model No.	Piping Size Rc	Mass kg
DSHG-04	DHGM-04-20	1/2	4.4
	DHGM-04X-20	3/4	4.1
DSHG-06	DHGM-06-50	3/4	7.4
	DHGM-06X-50	1	
DSHG-10	DHGM-10-40	1 1/4	21.5
	DHGM-10X-40	1 1/2	

Sub-plates are available. When ordering, please specify sub-plate model from the table above. Please refer to page 91, 92 for dimensions.

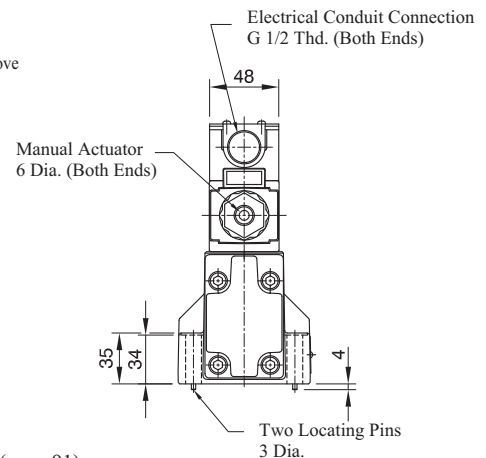
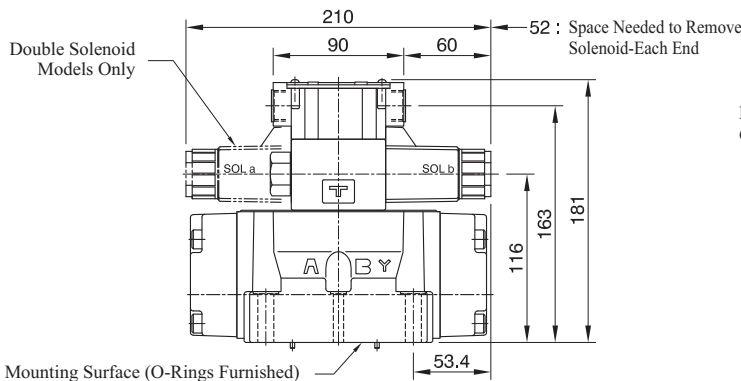
Mounting Bolts (Attachment)

Valve Model No.	Socket Head Cap Screw	Q'ty	Tightening Torque N•m (kgf•m)
DSHG-04	M6 x 45 Lg.	2	12~15 (1.2~1.5)
	M10 x 50 Lg.	4	58~72 (5.9~7.3)
DSHG-06	M12 x 60 Lg.	6	100~123 (10.2~12.5)
DSHG-10	M20 x 75 Lg.	6	473~585 (48.2~59.7)

DSHG-04



Mounting Surface:ISO 4401-07-06-0-94



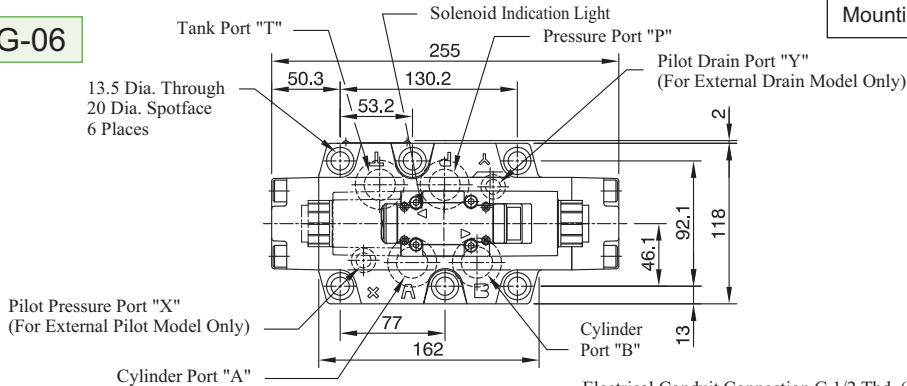
Note: For dimensions of mounting surface, please refer to DHGM-04 type sub-plate (page 91).

* There is N/N1 type valve, regarding the dimensions, please refer to Page 88 DSG-01 DIN connector type.

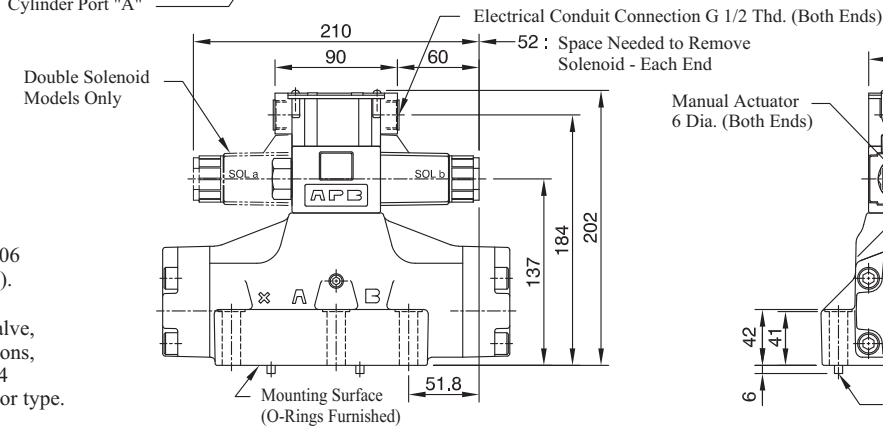
D

Solenoid Controlled Pilot Operated Directional Valves Max. Pressure 31.5 MPa

DSHG-06



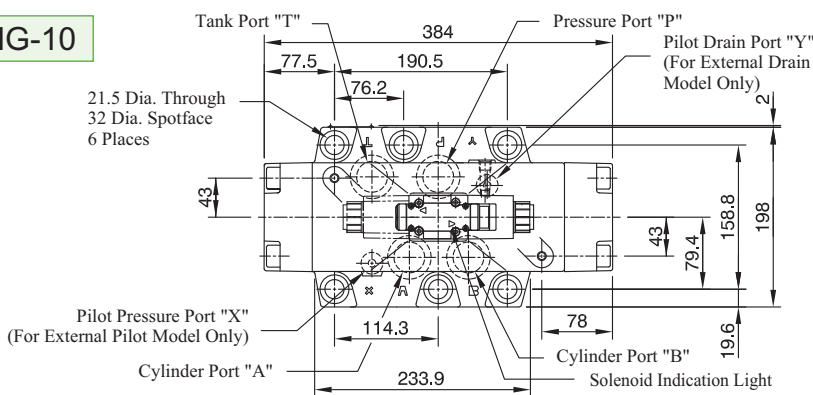
Mounting Surface: ISO 4401-08-07-0-94



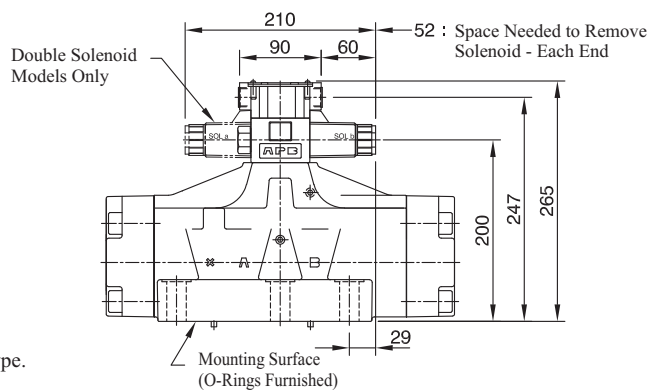
Note:
For dimensions of mounting surface, please refer to DHGM-06 type sub-plate (page 92).

* There is N/N1 type valve, regarding the dimensions, please refer to Page 84 DSG-01 DIN connector type.

DSHG-10



Mounting Surface: ISO 4401-10-08-0-94



Electrical Conduit Connection G 1/2 Thd. (Both Ends)
Manual Actuator 6 Dia. (Both Ends)

Note:
For dimensions of mounting surface, please refer to DHGM-10 type sub-plate (page 92).

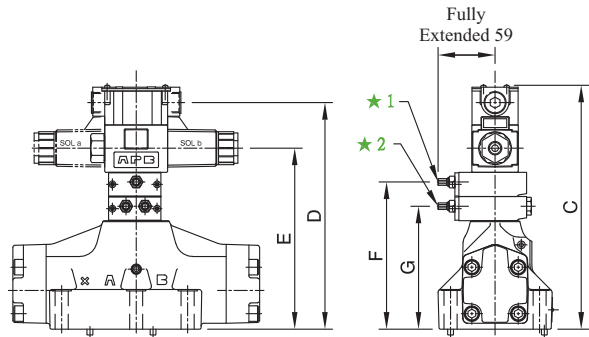
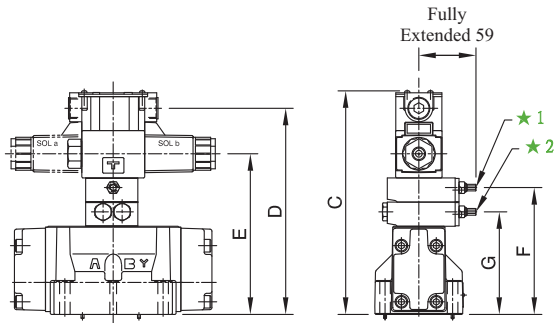
* There is N/N1 type valve, regarding the dimensions, please refer to Page 84 DSG-01 DIN connector type.

Solenoid Controlled Pilot Operated Directional Valves Max. Pressure 31.5 MPa

Options-Model with Pilot Choke Valve

DSHG-04-***-C1,C2,C1C2

DSHG-06¹⁰-***-C1,C2,C1C2



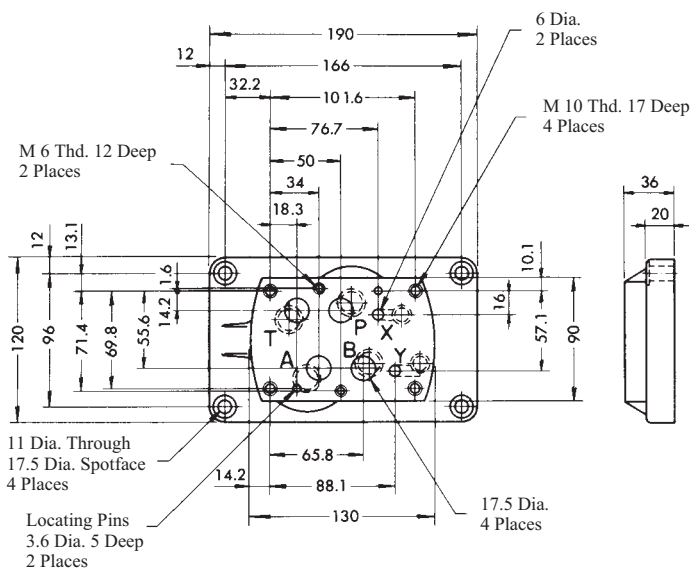
- * 1. C1 Choke Adj. (TC1G-01)
Screw 6 Hex, Lock Nut 12 Hex
- * 2. C2 Choke Adj. (TC2G-01)
Screw 6 Hex, Lock Nut 12 Hex

* There is N/N1 type valve, regarding the dimensions, please refer to Page 84 DSG-01 DIN connector type.

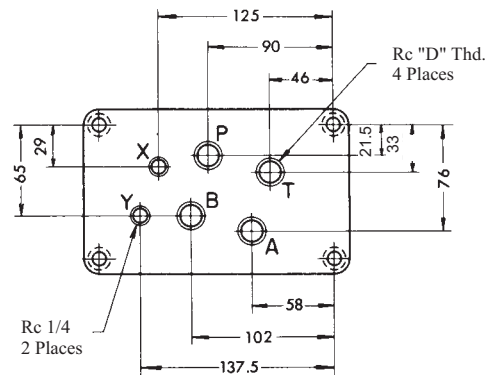
Model No.	C	D	E	F	G
DSHG-04-***-C1	206	188	141	106	-
DSHG-04-***-C2				-	106
DSHG-04-***-C1C2	231	213	166	131	106
DSHG-06-***-C1	227	209	162	127	-
DSHG-06-***-C2				-	127
DSHG-06-***-C1C2	252	234	187	152	127
DSHG-10-***-C1	290	272	225	190	-
DSHG-10-***-C2				-	190
DSHG-10-***-C1C2	315	297	250	215	190

D

Sub-Plate: DHGM-04 / 04X-20

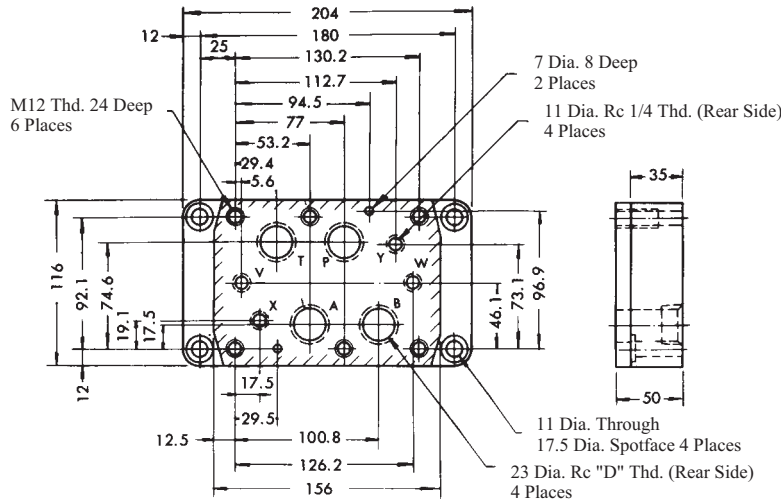


Sub-plate Model No.	D
DHGM-04-20	1/2
DHGM-04X-20	3/4



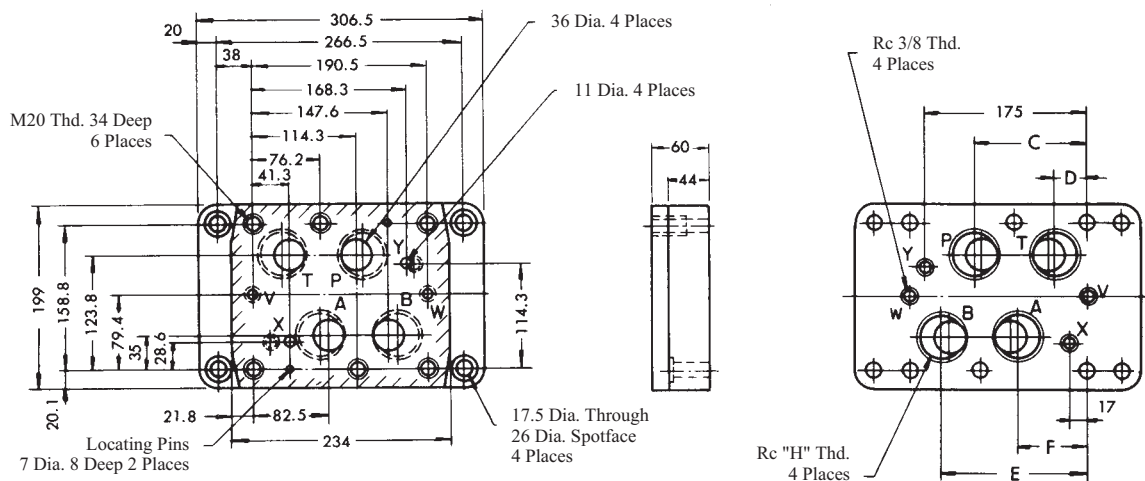
Solenoid Controlled Pilot Operated Directional Valves Max. Pressure 31.5 MPa

Sub-plate DHGM-06 / 06X-50



Model No.	D
DHGM-06-50	3/4
DHGM-06X-50	1

Sub-plate DHGM-10 / 10X-40



Model No.	C	D	E	F	H
DHGM-10-40	114	41	147.5	82.5	1-1/4
DHGM-10X-40	118	36	156.5	74.5	1-1/2

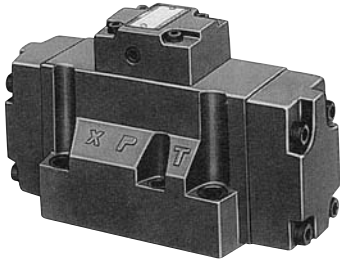
Note: For Uses of Port "X" "Y" , "V" and "W"

Valve Types		X	Y	V*W*
Solenoid Controlled Pilot Operated Directional Valves (DSHG)	Spring Centered	Used as pilot port 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	Not used (Plug is not required)
	No Spring			
Pilot Operated Directional Valves (DHG)	Spring Centered	Used as pilot pressure port / drain port	Used as pilot pressure port / drain port	
	No Spring			
	Spring Offset	Used as pilot pressure port	Used as pilot drain port	

*DHGM-04, 04X types do not have these ports. (Port "V" and Port "W")

Pilot Operated Directional Valves Max. Pressure 31.5 MPa

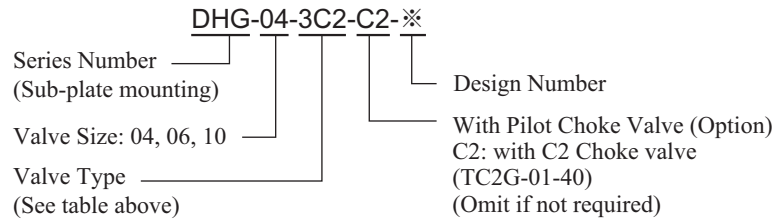
The valves control the direction of flow by way of the pilot pressure provided from a remote source.



Specifications

Valve Size	Model No.	Max. Flow L/min	Max. Pilot Pressure MPa (kgf/cm ²)	Min. Pilot Pressure MPa (kgf/cm ²)	Max. T-Line Back Press. MPa (kgf/cm ²)	Mass kg
1/2	DHG-04-2B※-50	130	31.5 (321)	0.8-25 (8.2-255)	21 (214)	7.8
	DHG-04-3C※-50	300				7.4
	DHG-04-2N※-50	300				7.4
3/4	DHG-06-2B※-50	140	31.5 (321)	0.8-25 (8.2-255)	21 (214)	11.7
	DHG-06-3C※-50	500				11.2
	DHG-06-2N※-50	500				11.2
1 1/4	DHG-10-2B※-40	460	31.5 (321)	1.0-25 (10.2-255)	21 (214)	45.6
	DHG-10-3C※-40	1100				43.8
	DHG-10-2N※-40	1100				43.8

Model Number Designation



Valve Type

Valve Type	3C2	3C4	3C40	3C5	3C60
Graphic Symbol					
Valve Type	3C12	2B2*	2B7*	2N2*	2N7*
Graphic Symbol					

• Valves, other than the type above are available, please contact our sales engineers for your requirement.
 * The 2B2, 2B7, 2N2 & 2N7 type valves have no center position.

Sub-plate

Valve Model No.	Sub-plate Model No.	Piping Size Rc	Mass kg
DHG-04	DHGM-04-20	1/2	4.4
	DHGM-04X-20	3/4	4.1
DHG-06	DHGM-06-50	3/4	7.4
	DHGM-06X-50	1	
DHG-10	DHGM-10-40	1 1/4	21.5
	DHGM-10X-40	1 1/2	

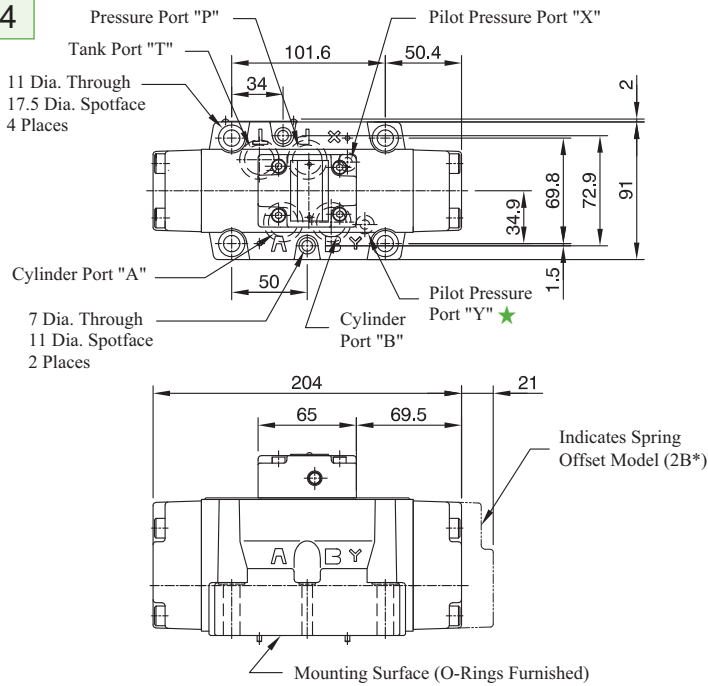
• Sub-plates are available. When ordering, please specify sub-plate model no. from the table above.
 • Please refer to page 91, 92 for dimensions.

Mounting Bolts (Attachment)

Valve Model No.	Socket Head Cap Screw	Q'ty	Tightening Torque N•m (kgf•m)
DHG-04	M6 x 45 Lg.	2	12~15 (1.2~1.5)
	M10 x 50 Lg.	4	58~72 (5.9~7.3)
DHG-06	M12 x 60 Lg.	6	100~123 (10.2~12.5)
DHG-10	M20 x 75 Lg.	6	473~585 (48.2~59.7)

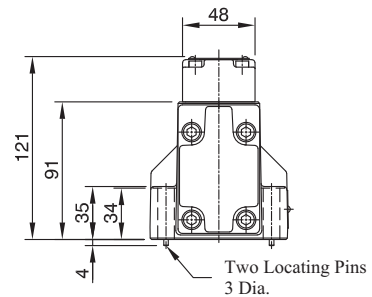
Pilot Operated Directional Valves Max. Pressure 31.5 MPa

DHGM-04



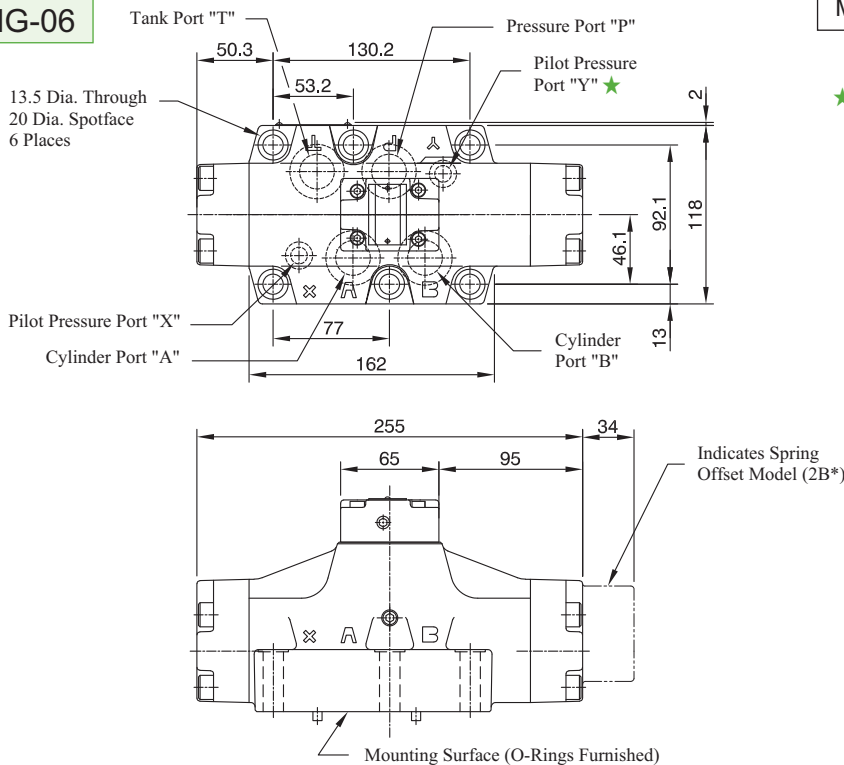
Mounting Surface: ISO 4401-07-06-0-94

★ In case of Spring Offset model (2B※)
It functions as a drain port.
When the model is used, please connect it
directly to the reservoir.



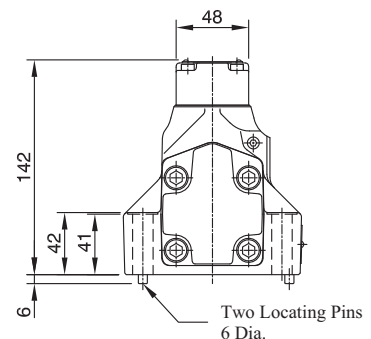
Note: For dimensions of mounting surface, please refer to DHGM-04 type sub-plate (page 91).

DHGM-06



Mounting Surface: ISO 4401-08-07-0-94

★ In case of Spring Offset model (2B※)
It functions as a drain port.
When the model is used, please connect it
directly to the reservoir.



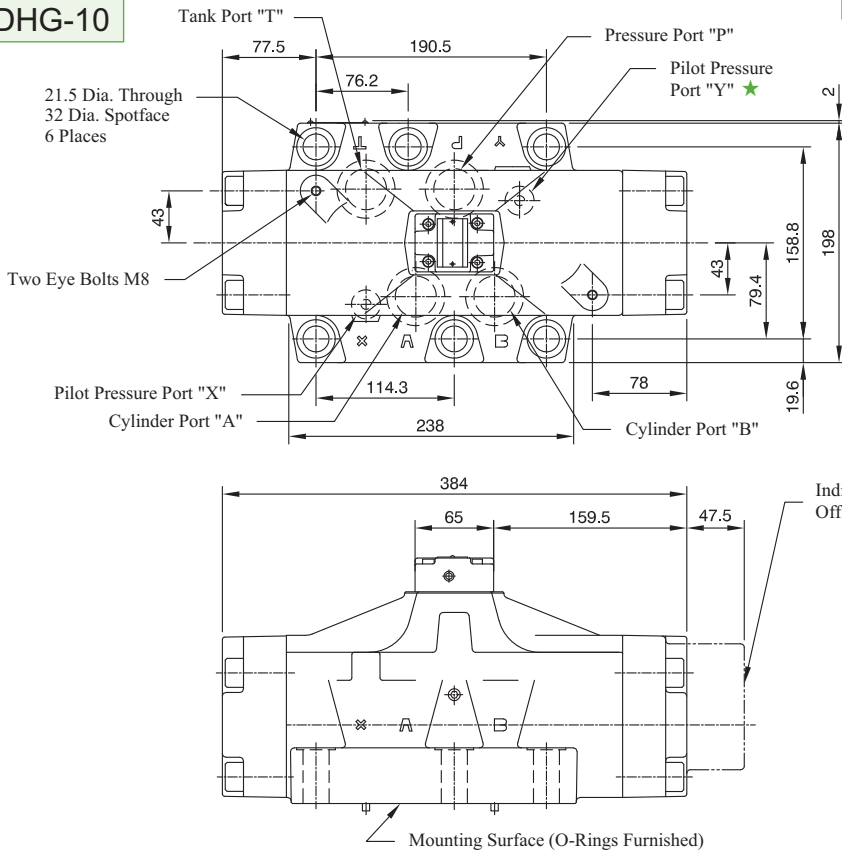
Note: For dimensions of mounting surface, please refer to DHGM-06 type sub-plate (page 92).

Pilot Operated Directional Valves

Max. Pressure 31.5 MPa

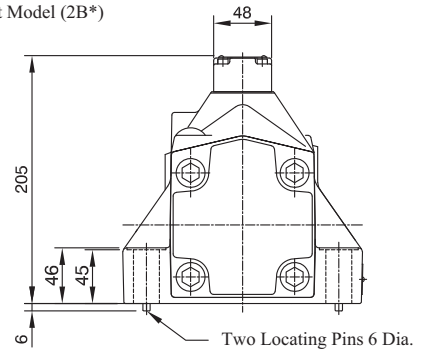
DHG-10

Mounting Surface: ISO 4401-10-08-0-94



★ In case of Spring Offset model (2B※)
It functions as a drain port.
When the model is used, please connect it directly to the reservoir.

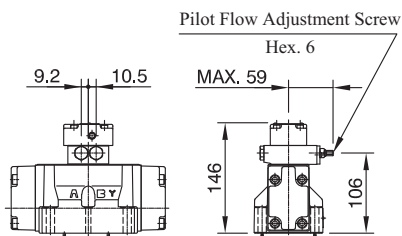
Indicates Spring Offset Model (2B*)



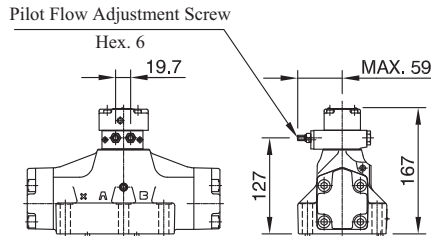
Note: For dimensions of mounting surface, please refer to DHGM-10 type sub-plate (page 92).

Options with Choke Valves

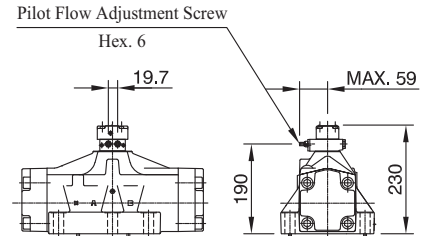
DHG-04-※※※-C2



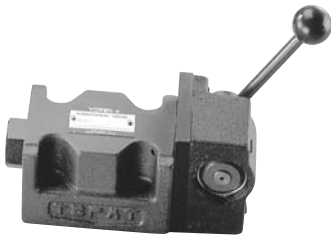
DHG-06-※※※-C2



DHG-10-※※※-C2



Manually Operated Directional Valves Max. Pressure 25 MPa



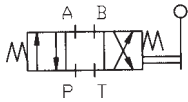
These valves may be used to manually shift the spool position and change the direction of oil flow.

Specifications

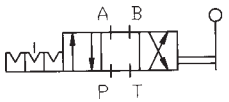
Valve Size	Model No.	Max. Flow L/min	Max. Pressure MPa (kgf/cm ²)	Max. T-Line Back Pressure MPa (kgf/cm ²)	Mass Kg.
3/8	DM※-03-2B※-50	100	25 (255)	16 (163)	DMT:5
	DM※-03-2D※-50				DMG:4
	DM※-03-3C※-50				
	DM※-03-3D※-50				

Graphic Symbol

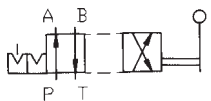
Spring Centered Models 3C※



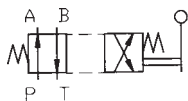
No-Spring Detented Models 3D※



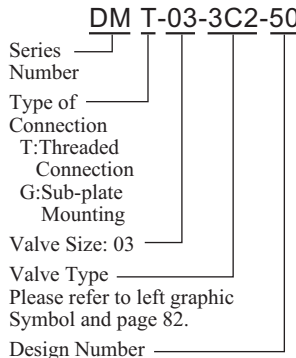
No-Spring Detented Models 2D※



Spring Offset Models 2B※



Model Number Designation



Note: For other valve types, please contact our sales engineers.

Sub-plates

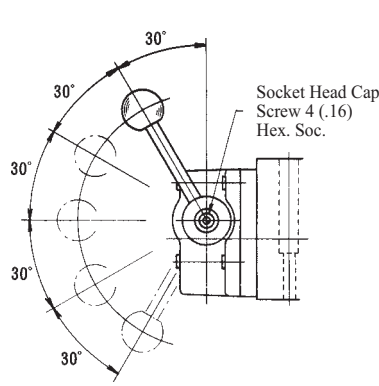
Valve Model No.	Sub-plate Model No.	Piping Size Rc	Mass kg
DMG-03	DSGM-03-40	3/8	3
	DSGM-03X-40	1/2	
	DSGM-03Y-40	3/4	4.7

Mounting Bolts (Attachment)

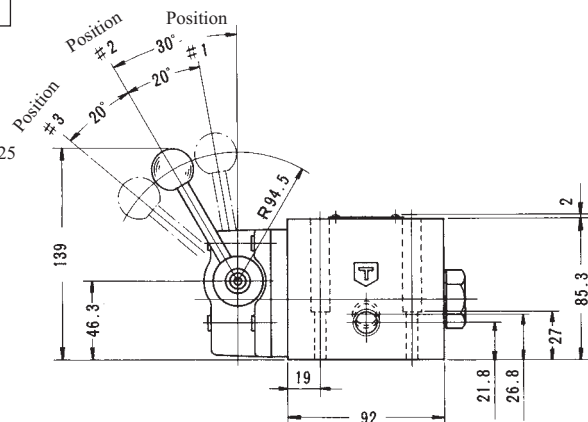
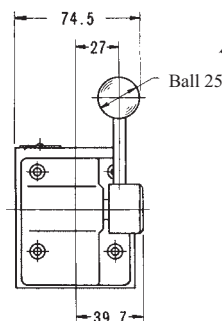
Model No.	Socket Head Cap Screw	Q'ty	Tightening Torque N•m (kgf•m)
DMG-03	M6 x 35 Lg.	4	12~15 (1.2~1.5)

DMT-03 How to change lever position

The lever position can be changed to any position in five different positions shown on the sketch in the right. For the lever position change, remove the Soc. Hd. Cap Screw and lever, set the lever at the required position and tighten it with Soc. Hd. Cap Screw firmly.



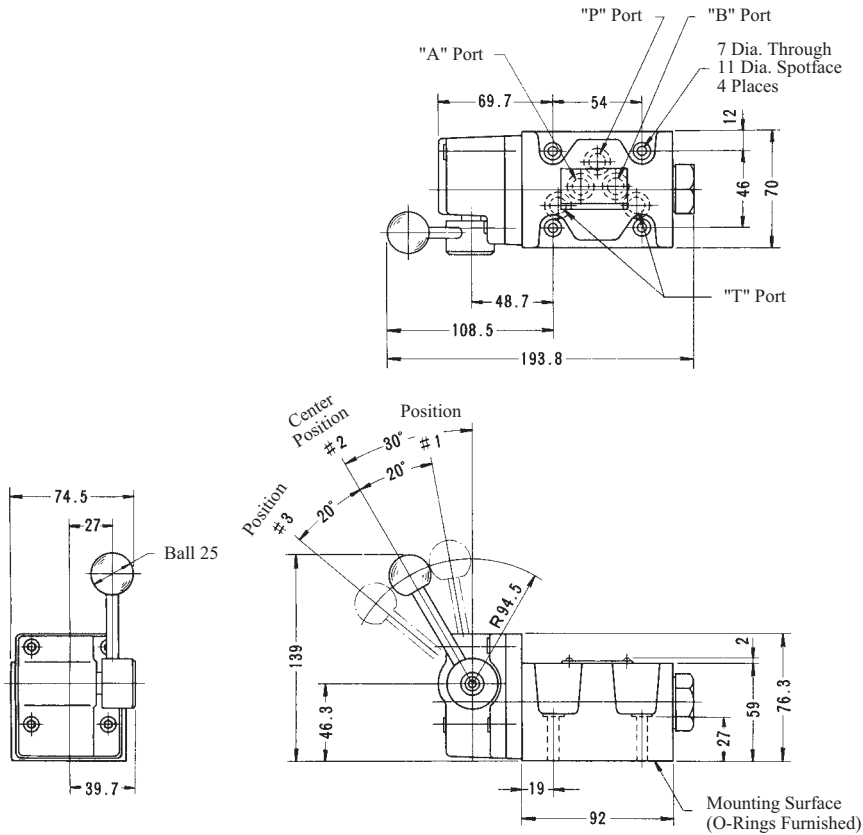
* Lever Operating Torque Not exceeding 30 N•m (3.06 kgf•m)



Manually Operated Directional Valves Max. Pressure 25 MPa

DMG-03

Mounting Surface:ISO 4401-05-04-0-94



- ★1. The position of operating the lever can be changed as required. For the details, please see the DMT-03 in the previous page.
- ★2. Max. torque of operating the lever: 30 N•m (3.06 kgf . m)

D

Note: For dimensions of mounting surface, please refer to the dimensional drawing of the sharable sub-plate (page 87).

Manually Operated Directional Valves Max. Pressure 25 MPa

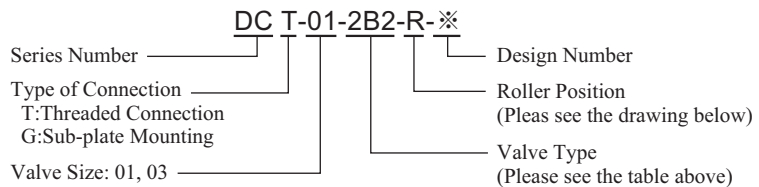


These valves may be used to shift the direction of oil flow by depressing the spool by way of a cam.

Specifications

Valve Size	Model No	Max. Flow L/min	Max. Pressure MPa (kgf/cm ²)	Max. T-Line Back Press. MPa (kgf/cm ²)	Mass kg
1/8	DCT-01-2B※-40	30	21 (214)	7.0 (71)	1.1
	DCG-01-2B※-40				
3/8	DCT-03-2B※-50	100	25 (255)	10.0 (102)	4.5
	DCG-03-2B※-50				3.8

Model Number Designation

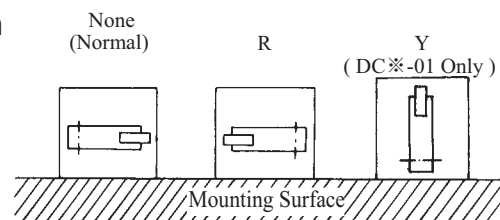


Valve Type Note: 01 and 03 graphic symbols are different.

Valve Type	2B2	2B3	2B8*
DCG DCT -01			
DCG DCT -03			

*Valve type 2B8, Tank port "T" functions as a drain port. Please connect it directly to the reservoir (Max. allowable T-line back pressure 0.35 MPa)

Roller Position



Mounting Bolts (Attachment)

Model No.	Socket Head Cap Screw	Q'ty	Tightening Torque N•m (kgf•m)
DCT-01	M5 x 45 Lg.	2	5~7 (0.5~0.7)
DCG-01	M5 x 45 Lg.	4	
DCG-03	M6 x 35 Lg.	4	12~15 (1.2~1.5)

※DCT-03 Type is without mounting bolts.

Sub-plate

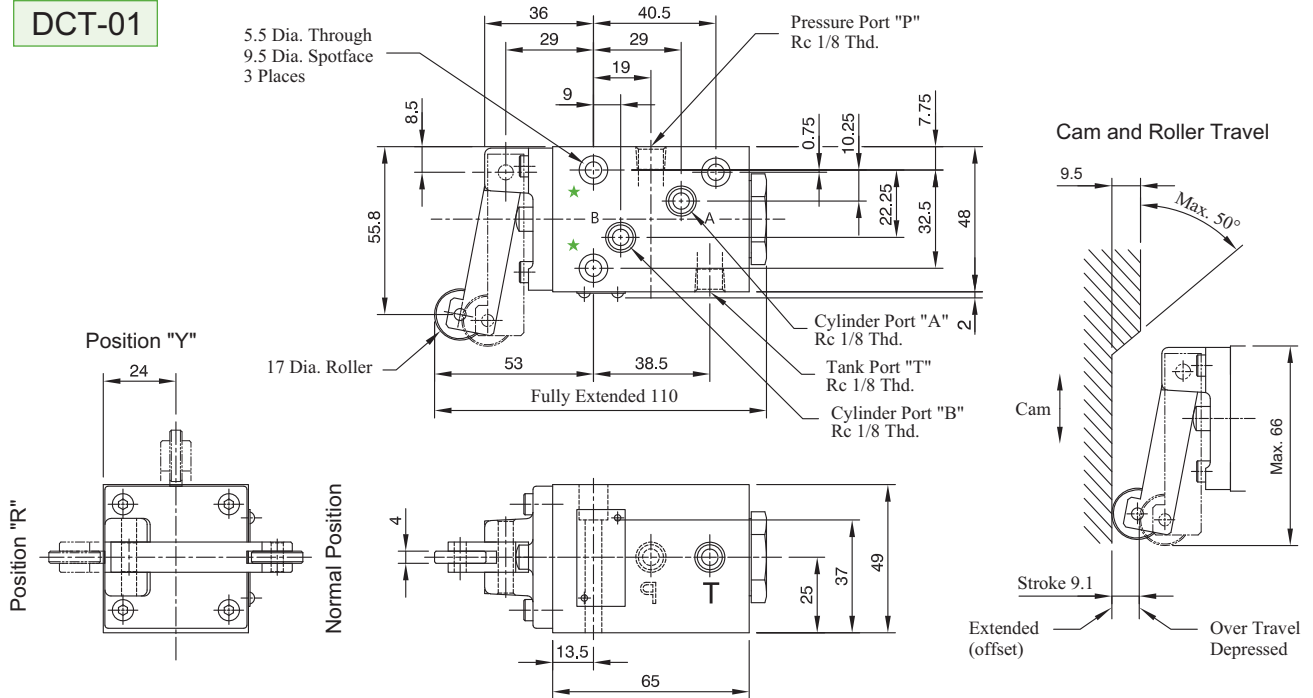
Valve Model No.	Sub-plate Model No.	Piping Size Rc	Mass kg
DCG-01	DSGM-01-30	1/8	0.8
	DSGM-01X-30	1/4	
	DSGM-01Y-30	3/8	
DCG-03	DSGM-03-40	3/8	3
	DSGM-03X-40	1/2	3
	DSGM-03Y-40	3/4	4.7

• When ordering sub-plate, please specify sub-plate model no. from the table above.
• Please refer to page 84 (DSGM-01) and page 87 (DSGM-03) for dimensions.

Mechanically Operated Directional Valves Max. Pressure 25 MPa

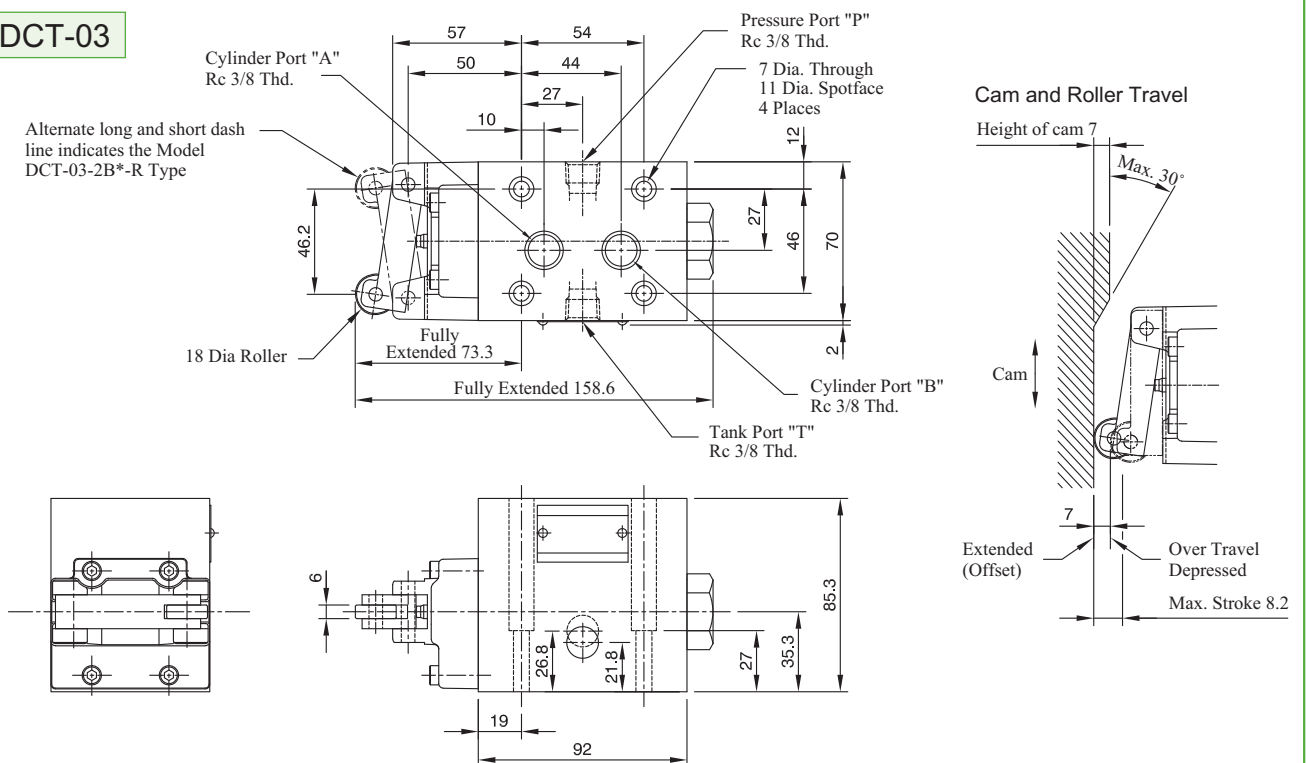
D

DCT-01



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

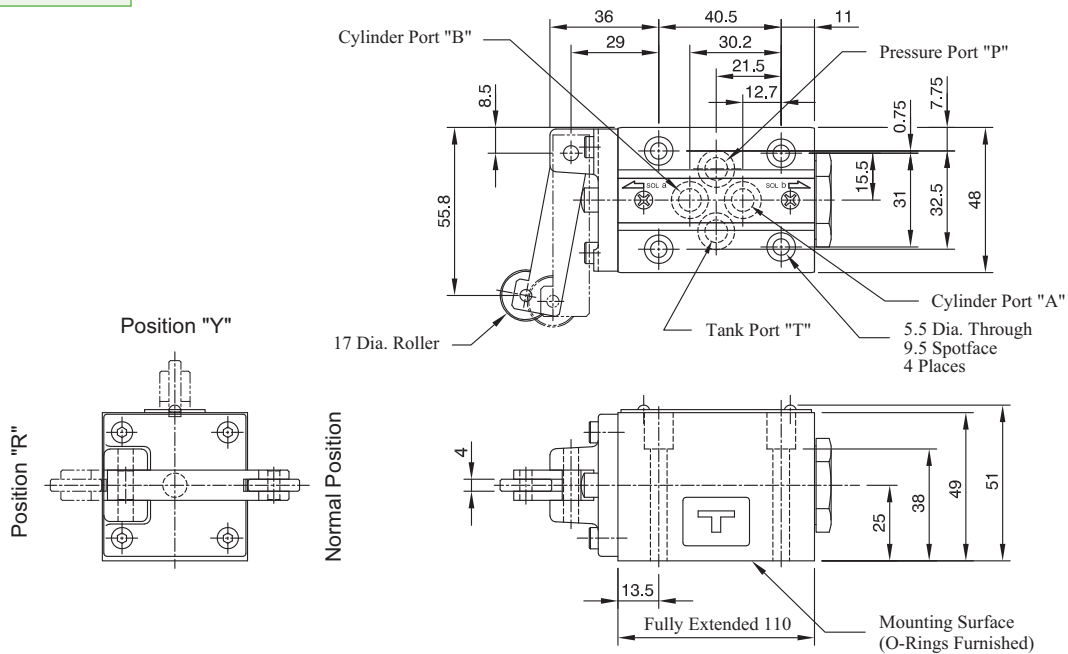
DCT-03



Mechanically Operated Directional Valves Max. Pressure 25 MPa

DCG-01

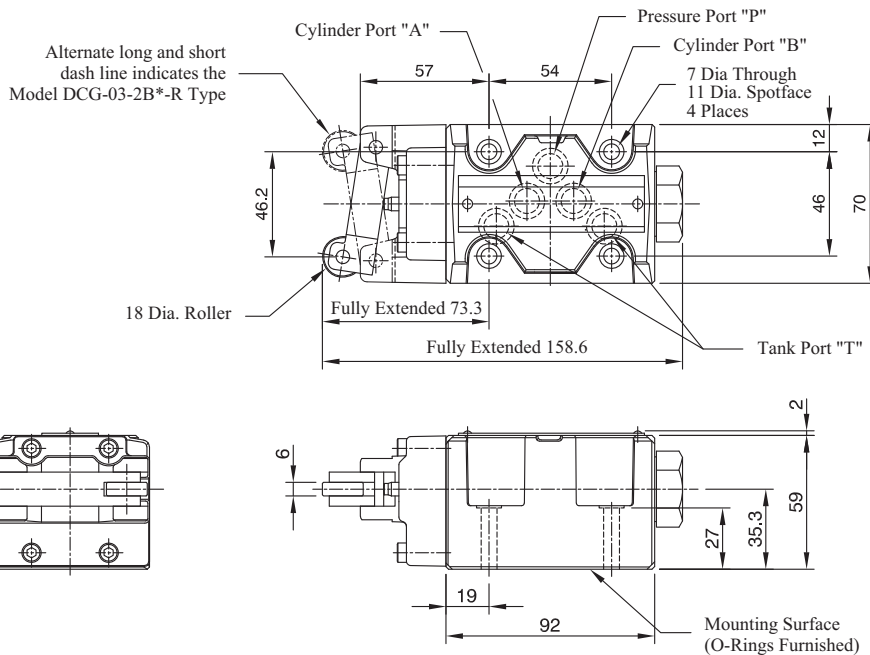
Mounting Surface:ISO 4401-03-02-0-94



Note: 1. For the cam and roller travel, please refer to DCT-01 in the previous page.
2. For the valve's mounting surface dimensions, please refer to DSGM-01 type sub-plate (page 84).

DCG-03

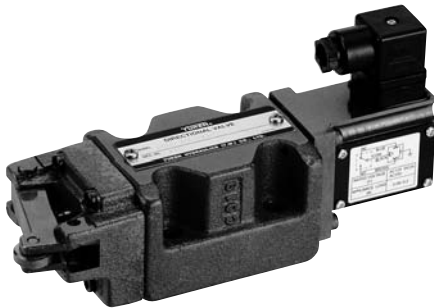
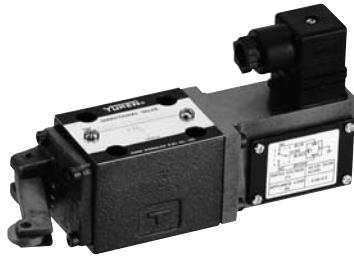
Mounting Surface:ISO 4401-05-04-0-94



Note: 1. For the cam and roller travel, please refer to DCT-03 in the previous page.
2. For the valve's mounting surface dimensions, please refer to DSGM-03 type sub-plate (page 87).

Mechanically Operated Directional Valves with Monitoring Switch-DCGS

Max. Pressure 25 MPa



- The monitoring switch can monitor the spool shifting to make sure the safety door open or close correctly.
- The monitoring switch is secluded from the outside circumstance and will not be influenced by the pollution.
- Degree of protection is IP 65.
- It will not be interfered by the external magnetic field.

Specifications

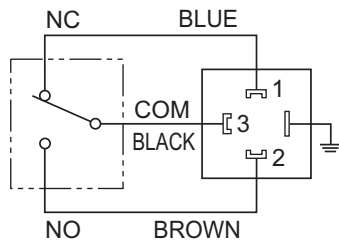
Valve size	Model No.	Max. Flow L/min	Max. Pressure MPa (kgf/cm ²)	Max. T-Line Back Pressure MPa (kgf/cm ²)	Mass kg
1/8	DCGS-01-2B※-40	30	21 (214)	5 (5.1)	1.8
	DCTS-01-2B※-40				1.8
3/8	DCGS-03-2B※-50	100	25 (255)	5 (5.1)	3.4
	DCTS-03-2B※-50				4.7

Monitoring Switch Specification

Rated Voltage (V) ± 10%	Load available (A)	Life time (Cycle)
AC 125 AC 250 DC 24	0.08 ~ 0.2	3 x 10 ⁶ (Operating frequency 30 cycle/min)

- ※ 1. Max. changeover frequency :60 cycle/min.
- 2. Ambient temperature: 0 ~ 70°C, under 60%RH.
- 3. When DC current controlled, please use surge absorber to control the circuit.

Mounting Switch Wiring Diagram



Model No. Note: 01 and 03 graphic symbols are different

Valve Type	2B2	2B3	2B8 ★
DCGS-01 DCTS-01			
DCGS-03 DCTS-03			

★2B8 Type: Tank port "T" functioned as a drain port and connect it directly to the reservoir. (Max. allowable T-line back pressure: 0.35 MPa)

Mounting Switch Movement Range

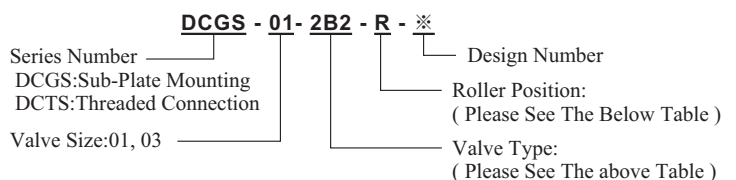
Item	Spool Position		
	Switching	Crossover	Returning
NO			
NC			

Mounting Bolts (Attachment)

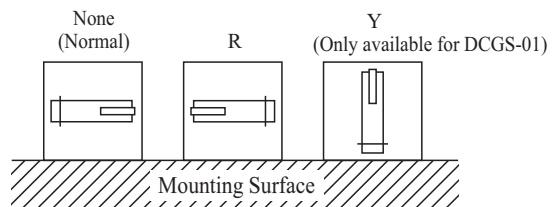
Model No.	Socket Head Cap. Screw	Tightening Torque N•m (kgf•m)
DCGS-01	M5 x 45Lg. 4 Pcs	5~7 (0.5~0.7)
DCTS-01	M5 x 45Lg. 2 Pcs	
DCGS-03	M6 x 35Lg. 4 Pcs	12~15 (1.2~1.5)

DCTS-03 type is without mounting bolts

Model Number Designation



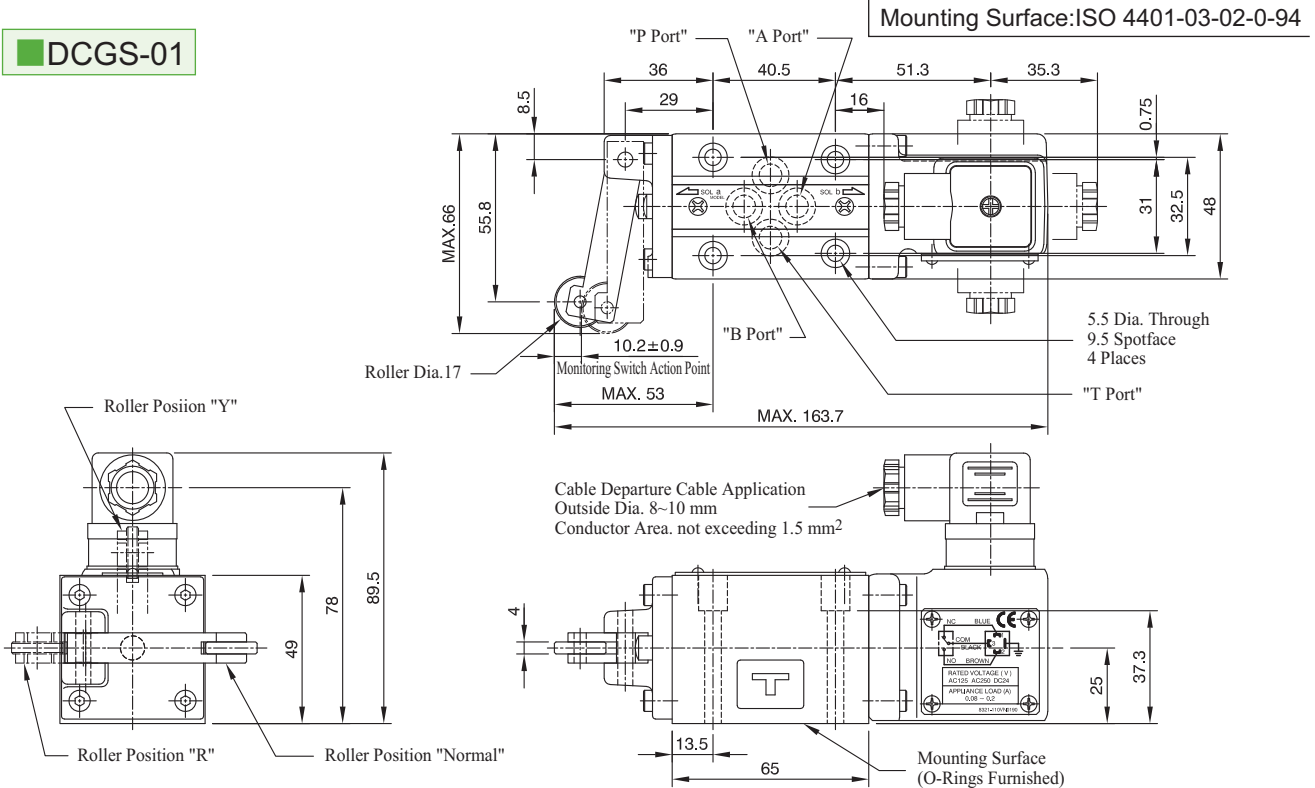
Roller Position



Mechanically Operated Directional Valves with Monitoring Switch-DCGS

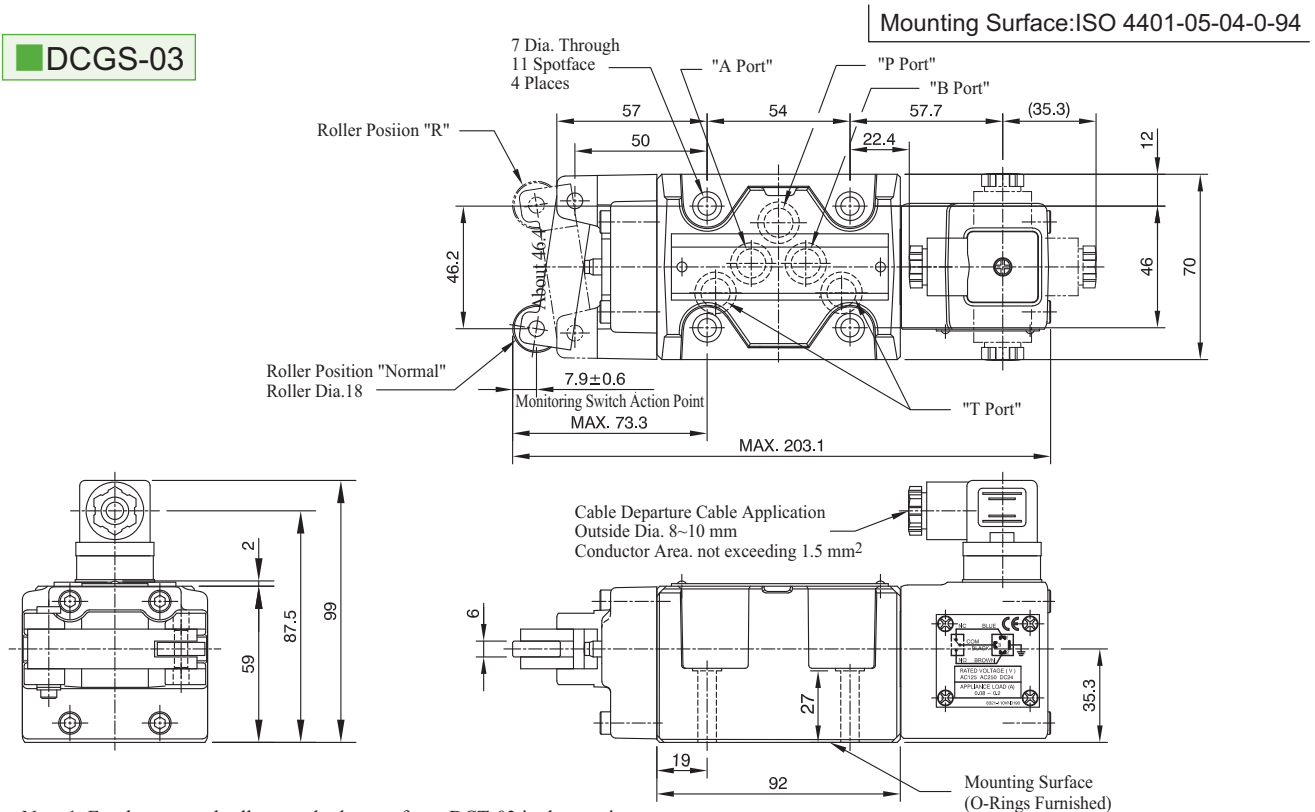
Max. Pressure 25 MPa

DCGS-01



Note: 1. For the cam and roller travel, please refer to DCT-01 in the previous page.
2. For the valve's mounting surface dimensions, please refer to DSGM-01 type sub-plate.

DCGS-03



Note: 1. For the cam and roller travel, please refer to DCT-03 in the previous page.
2. For the valve's mounting surface dimensions, please refer to DSGM-03 type sub-plate.

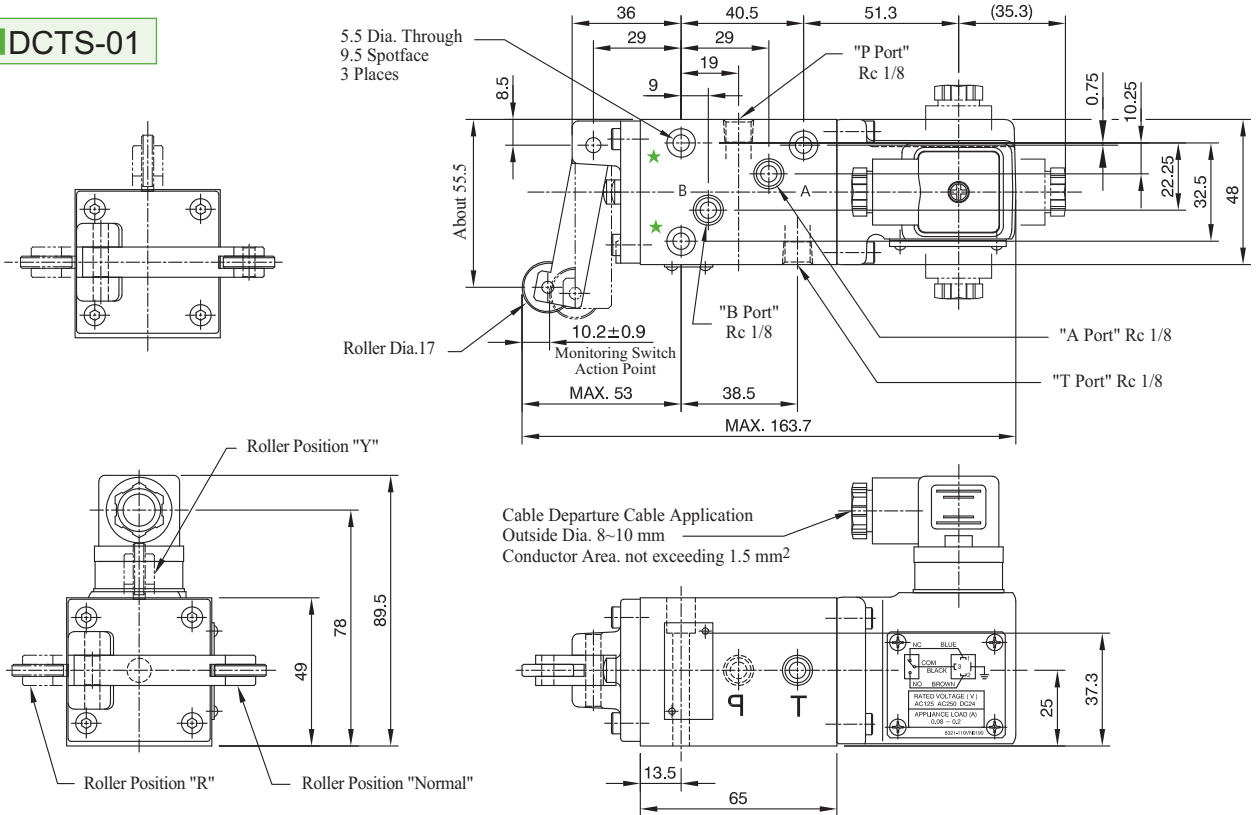
D

Mechanically Operated Directional Valves with Monitoring Switch-DCGS

Max. Pressure 25 MPa

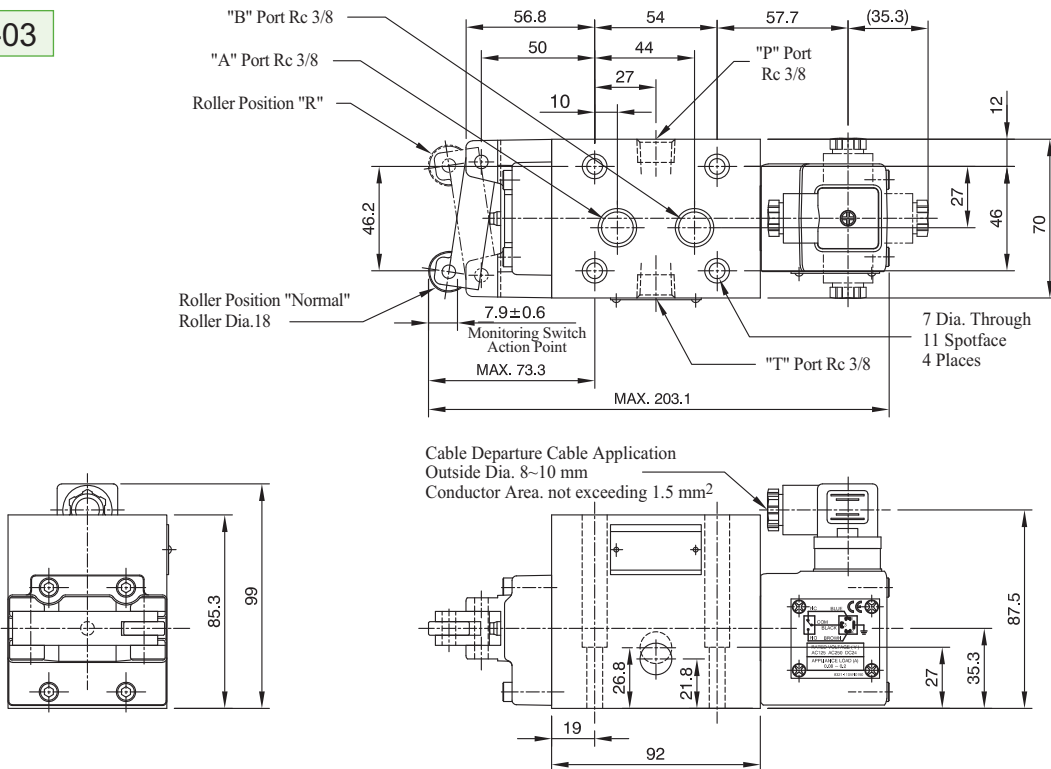
D

DCTS-01



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

DCTS-03



Check Valves

Max. Pressure 21 MPa



CIT Type



CRG Type

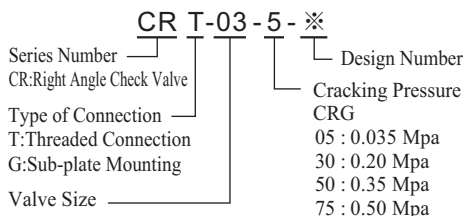
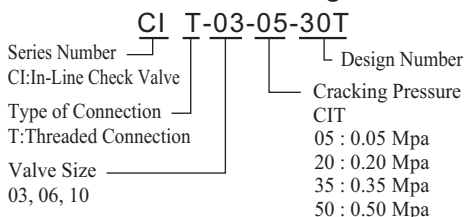
These valves allow free flow in one direction and prevent flow in the reverse direction. Cracking pressure specified is the pressure required to open the valve and allow free flow.

Specifications

Valve Size	Model No.		Rated Flow L/min	Cracking Pressure MPa (kgf/cm ²)	Mass kg	
	Threaded Connection	Sub-plate Mounting			Threaded Connection	Sub-plate Mounting
3/8	CIT-03-※-30T	-	30	0.05 (0.5)	0.18	-
3/4	CIT-06-※-30T	-	80	0.2 (2)	0.65	-
1-1/4	CIT-10-※-30T	-	200	0.35 (3.6)	2.1	-
				0.50 (5.1)		
3/8	CRT-03-※-31	CRG-03-※-30	30	0.035 (0.36)	0.8	2.3
3/4	CRT-06-※-31	CRG-06-※-30	100	0.2 (2)	1.6	4.1
				0.35 (3.6)		
1-1/4	CRT-10-※-30	CRG-10-※-30	250	0.5 (5.1)	5.5	7.8

* There is 50T design for CRG series, that is ISO 5781 mounting dimension, Please contact our sales people for details.

Model Number Designation



Sub-plate

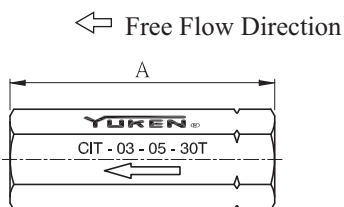
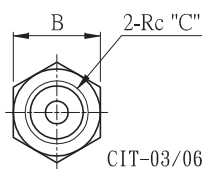
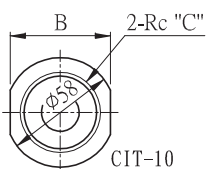
Valve Model No.	Sub-plate Model No.	Piping Size Rc	Mass kg
CRG-03	CRGM-03-30	Rc 3/8	0.9
CRG-06	CRGM-06-30	Rc 3/4	2.7
CRG-10	CRGM-10-30	Rc 1-1/4	6.6

Sub-plates are available. When ordering, please specify sub-plate model no. from the table above. For dimension of the sub-plate. Please see page 105.

Mounting Bolts (Attachment)

Model No.	Socket Head Cap Screw	Q'ty	Tightening Torque N·m (kgf·m)
CRG-03	M10 x 60Lg.	4	60~74 (6.1~7.5)
CRG-06	M16 x 60Lg.	4	253~310 (25.8~31.6)
CRG-10	M20 x 75Lg.	4	493~603 (50.3~61.5)

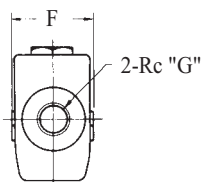
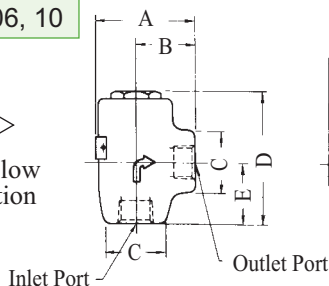
CIT-03, 06, 10



Model No.	A	B	C
CIT-03	70	23	3/8
CIT-06	90	35	3/4
CIT-10	133	53	1-1/4

CRT-03, 06, 10

Free Flow Direction



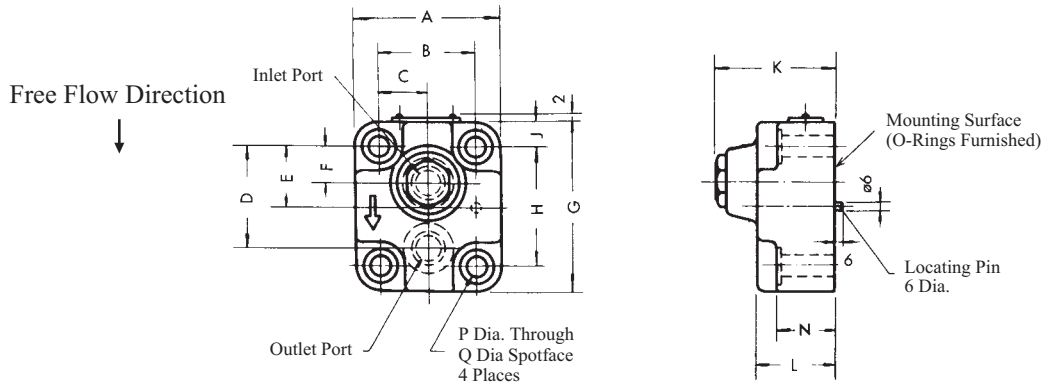
Model No.	A	B	C	D	E	F	G
CRT-03	59	36	ø36	78	33	47	3/8
CRT-06	74.5	47	ø45	106	51	57	3/4
CRT-10	105	65	ø80	126	62	83	1-1/4

Check Valves

Max. Pressure 21 MPa

D

CRG-03, 06, 10

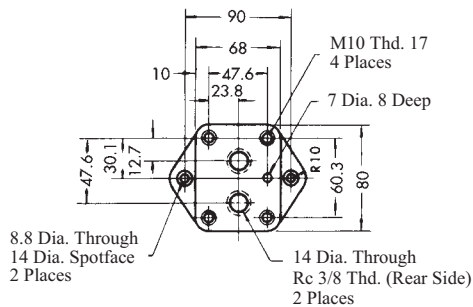


Model No.	A	B	C	D	E	F	G	H	J	K	L	N	P	Q
CRG-03	68	47.6	23.8	47.6	30.1	12.7	80	60.3	10	72	55	46	11	17.5
CRG-06	98	65.1	32.6	68.2	40.5	22.2	114	80.9	16.5	81	53	38	17.5	26
CRG-10	130	92.1	46.1	71.4	46	20.6	130	92.1	19	96	65	47	21.5	32

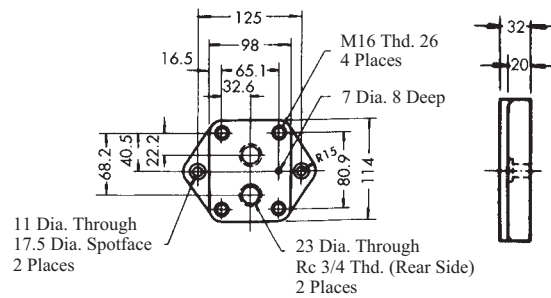
Note: For dimensions of valve's mounting surface, please refer to the diagram below.

Sub-plate

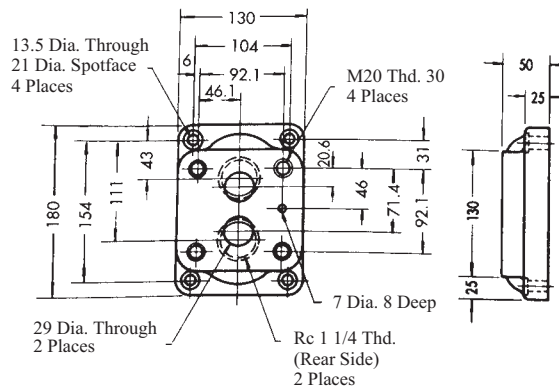
CRGM-03-30



CRGM-06-30



CRGM-10-30



Pilot Controlled Check Valves

Max. Pressure 25 MPa



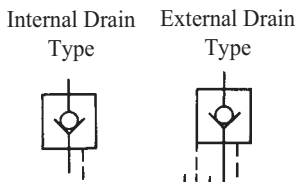
These check valves allow free flow in one direction and prevent reverse flow in the reverse direction until operated by a pilot pressure to allow free reverse flow. The specified cracking pressure is required to open the valve to allow free flow direction.

D

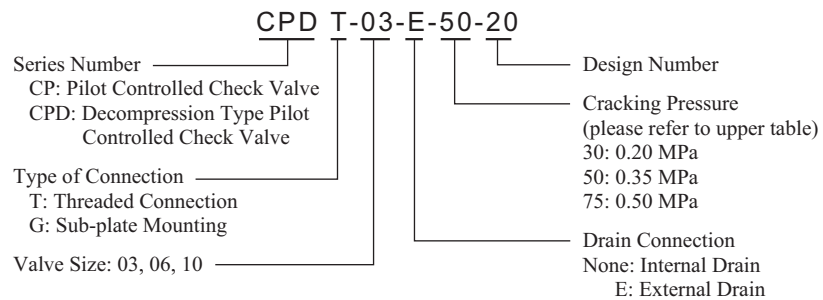
Specifications

Valve Size	Model No.		Rated Flow L/min	Cracking Pressure MPa (kgf/cm ²)	Mass kg	
	Threaded Connection	Sub-plate Mounting			Threaded	Sub-Plate
3/8	CP※T-03-※-※-20	CP※G-03-※-※-20	50	0.20 (2)	3.4	4.5
3/4	CP※T-06-※-※-20	CP※G-06-※-※-20	125	0.35 (3.6)	5.2	7
1-1/4	CP※T-10-※-※-20	CP※G-10-※-※-20	315	0.50 (5.1)	11.6	12

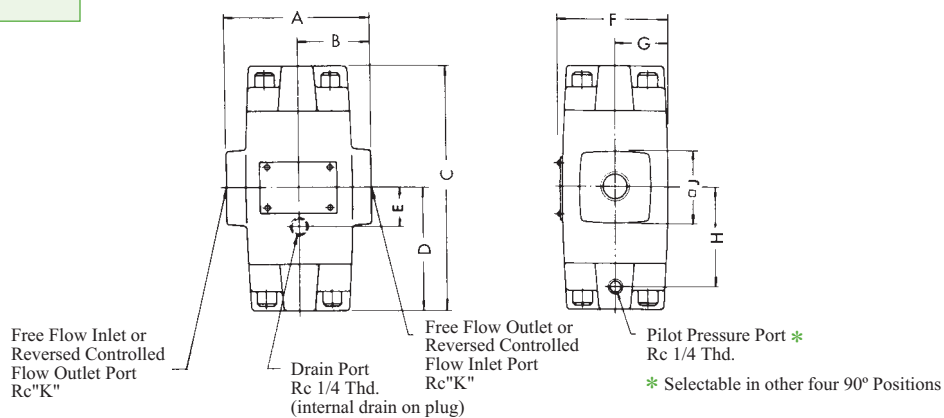
Graphic Symbol



Model Number Designation



CPT -03, 06, 10
CPDT



Model No.	A	B	C	D	E	F	G	H	J	K
CP※T-03	80	40	144	72	21	66	32	58	36	3/8
CP※T-06	96	48	168	84	26	78	38	70	60	3/4
CP※T-10	140	70	208	104	35	92	45	84	79	1-1/4

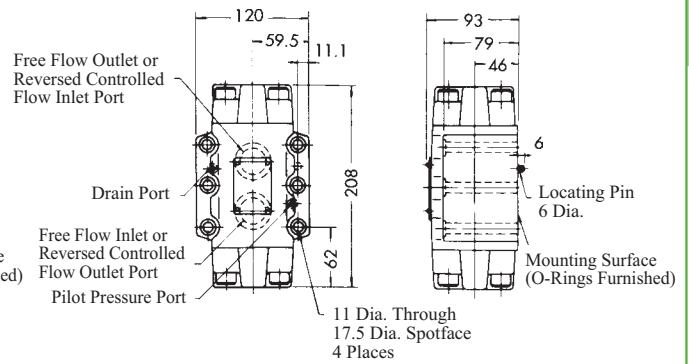
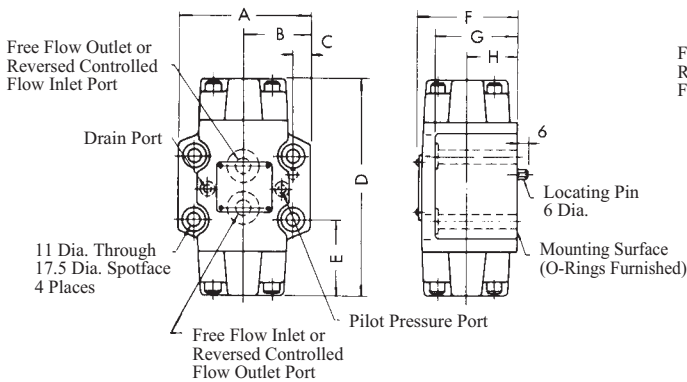
Pilot Controlled Check Valves

Max. Pressure 25 MPa

D

CPG -03, 06
CPDG

CPG -10
CPDG



Model No.	A	B	C	D	E	F	G	H
CP※G-03	90	44.5	11.1	144	50.6	68	59	35
CP※G-06	102	51	11.3	168	54	80	69	40

Note: For dimensions of mounting surface, please refer to HGM type sub-plate (page 59).

Sub-plate

Valve Model no.	Sub-plate Model No.	Piping Size Rc	Mass kg
CPG -03 CPDG	HGM-03-20	3/8	1.6
	HGM-03X-20	1/2	1.6
CPG -06 CPDG	HGM-06-20	3/4	2.4
	HGM-06X-20	1	3.0
CPG -10 CPDG	HGM-10-20	1-1/4	4.8
	HGM-10X-20	1-1/2	5.7

Sub-plates are available. When ordering, please specify sub-plate model no. from the table above. Please refer to page 59.

Mounting Bolts (Attachment)

Model No.	Socket Head Cap Screw	Qty.	Tightening Torque N·m (kgf·m)
CP※G-03	M10 x 70 Lg.	4	60 ~74 (6.1~7.5)
CP※G-06	M10 x 80 Lg.	4	
CP※G-10	M10 x 90 Lg.	6	

Prefill Valve

Max. Pressure 25 MPa



These valves are physically small, however, offer high flow rate without internal leakage. Before opening the valves, Please make sure to decompress the pressure first.

Specifications

1 MPa = 10.2 kgf/cm²

Valve Size	Model Number	Max. Flow L/min	Cracking Pressure MPa (kgf/cm ²)	Mass kg
3	PF-80-※-20	400	0.012 (0.12)	8
3 1/2	PF-90-※-20	630	0.012 (0.12)	11.3
4	PF-100-※-20	1000	0.012 (0.12)	14.5
5	PF-125-※-20	1600	0.012 (0.12)	23
6	PF-150-※-20	2500	0.013 (0.13)	37

Note 1. To avoid possible shock, decompress the pressure in the cylinder line first before the valve operates, otherwise the valve does not perform well.
 (The pilot pressure should be 4.5 times more higher than the main pressure)
 Note 2. The pressure drop is about 0.3 MPa in the maximum flow rate on the table above.
 Note 3. The pilot pressure should be kept below 14.0 MPa.
 Note 4. The high pressure drop is not easy to happen in reality, selecting according to the calculation, 70% of the max. flow rate will be the best choice.

Mounting Bolts

Model No.	Socket Head Cap Screw	Q'ty	Tightening Torque N·m (kgf·m)
PF-80	M16 x 55 Lg.	6	253 ~ 310 (25.8~31.6)
PF-90	M18 x 65 Lg.	6	352 ~ 431 (35.9~43.9)
PF-100	M20 x 70 Lg.	6	493 ~ 603 (50.3~61.5)
PF-125	M20 x 80 Lg.	12	
PF-150	M20 x 95 Lg.	16	

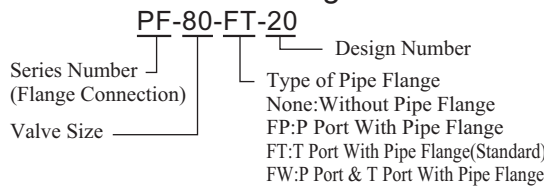
Note: Use high tension bolts of which strength are 12.9T. No bolts and nuts are supplied in case the P and T pipe flanges are not ordered.

D

Graphic Symbol



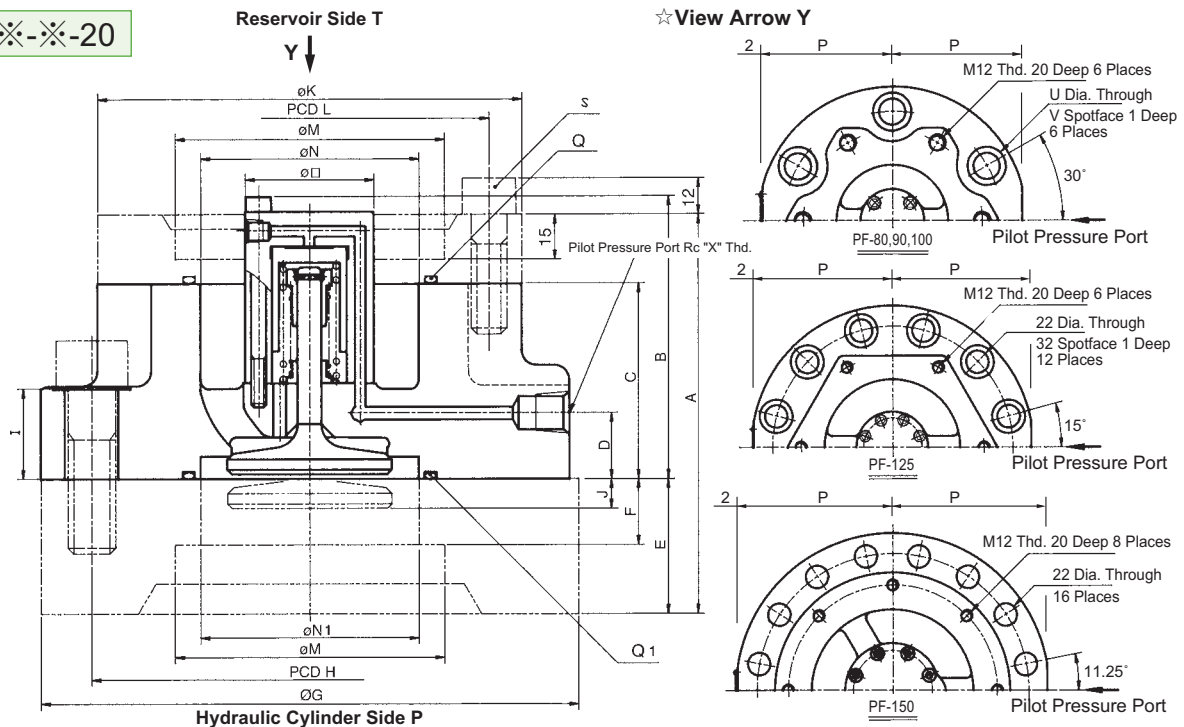
Model Number Designation



Flange's Mass / kg

Model Number	P Port with Pipe Flange	T Port with Pipe Flange
PF-80	6.6	2.2
PF-90	8.8	2.6
PF-100	14.2	2.6
PF-125	25.5	4
PF-150	28	8

PF-※-※-20



Model No.	Valve Size	A	B	C	D	E	F	G	H	I	J	K	L	M	N	N1	O	P	Q	Q1	S	U	V	X
PF-80	3	133	94	65	22	45	22	180	146	30	10	142	120	90.2	71	71	43	87	G80	G80	6-M12x40	18	26	Rc 1/4
PF-90	3 1/2	145	119	72	27	50	30	200	165	38	13	160	135	101.6	88	88	50	77	G100	G100	6-M12x40	20	29	Rc 1/4
PF-100	4	157	132.5	74	31.5	60	32	230	191	40	18	170	148	115.5	106	106	56	113	G115	G115	6-M12x40	22	32	Rc 1/4
PF-125	5	188	165	85	43	80	50	270	230	50	23.5	200	175	141.2	130	130	69	133	G140	G140	6-M12x40	22	-	Rc 1/4
PF-150	6	208	204	105	45	80	40	300	260	64	25	225	200	167	156	168	95	148	G170	G180	8-M12x40	22	-	Rc 3/8

Decompression Type Prefill Valve Max. Pressure 25 MPa



This valve is physically small, and easy to install, with high flow rate and little internal leakage: no need to install decompression valve and it can decompress pressure and open the valve at the same time. While decompressing, the min. cracking pressure is only 12~17% of the main cylinder.

Specifications

1 MPa = 10.2 kgf/cm²

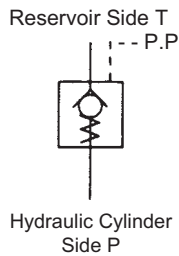
Valve Size	Model Number	Max. Flow L/min	Mass kg
3	PDF-80-※-※-20	400	8.1
3 1/2	PDF-90-※-※-20	630	11.4
4	PDF-100-※-※-20	1000	14.6
5	PDF-125-※-※-20	1600	23.2
6	PDF-150-※-※-20	2500	37.5

Mounting Bolts

Model No.	Socket Head Cap Screw	Q'ty	Tightening Torque N·m (kgf·m)
PDF-80	M16 x 55 Lg.	6	253 ~ 310 (25.8~31.6)
PDF-90	M18 x 65 Lg.	6	352 ~ 430 (35.9~43.9)
PDF-100	M20 x 70 Lg.	6	493 ~ 603 (50.3~61.5)
PDF-125	M20 x 80 Lg.	12	
PDF-150	M20 x 95 Lg.	16	

D

Graphic Symbol

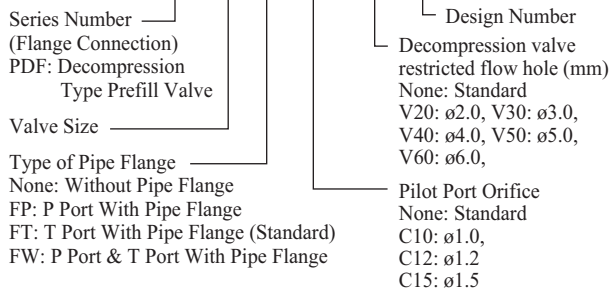


- Note 1. While the Max. flow rate showed in the above table, the pressure drop is about 0.03 MPa.
- Note 2. Regarding the pilot pressure, please refer the characteristics as follows.
- Note 3. The high pressure drop is not easy to happen in reality, selecting according to the calculation, 70% of the max. flow rate will be the best choice.

- *) Use high tension bolts of which strength are 12.9T.
- *) No bolts and nuts are supplied in case the P and T pipe flanges are not ordered.

Model Number Designation

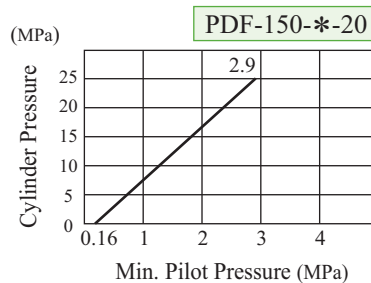
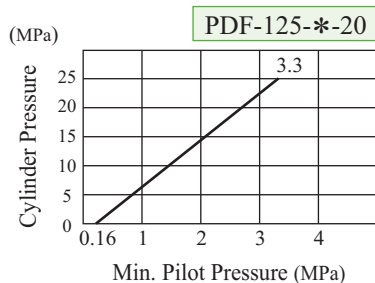
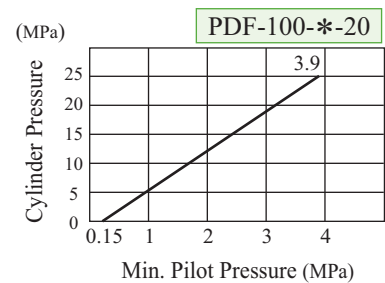
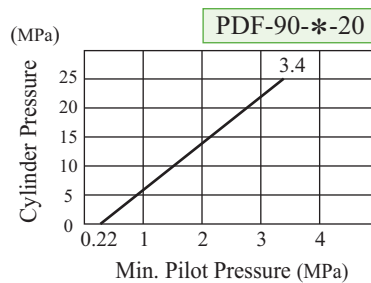
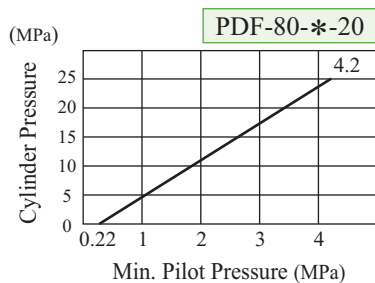
PDF-90-※-C※ V※-20



Flange's Mass / kg

Model Number	Flange's Mass / kg	
	P Port with Pipe Flange	T Port with Pipe Flange
PDF-80-※-20	6.6	2.2
PDF-90-※-20	8.8	2.6
PDF-100-※-20	14.2	2.6
PDF-125-※-20	25.5	4
PDF-150-※-20	28	8

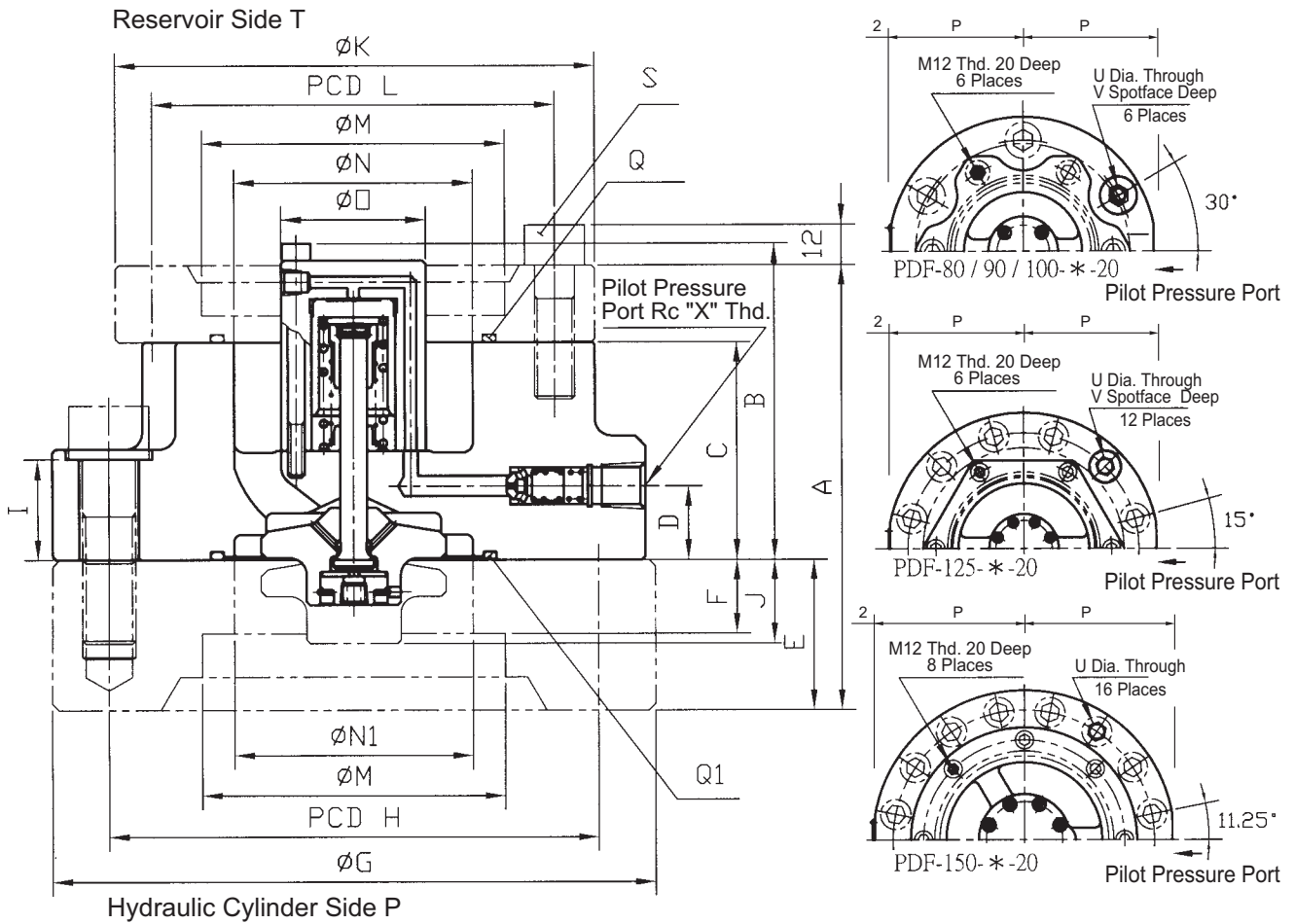
Min. Pilot Pressure While Decompressing



Decompression Type Prefill Valve

Max. Pressure 25 MPa

PDF-80/90/100/125/150-※-20



Model No.	Valve Size	A	B	C	D	E	F	G	H	I	J	K	L	M	N	N1	O	P	Q	Q1	S	U	V	X
PDF-80	3	133	94	65	22	45	22	180	146	30	10	142	120	90.2	71	71	43	87	G80	G80	6-M12x40	18	26	Rc 1/4
PDF-90	3 1/2	145	119	72	27	50	30	200	165	38	13	160	135	101.6	88	88	50	77	G100	G100	6-M12x40	20	29	Rc 1/4
PDF-100	4	157	132.5	74	31.5	60	32	230	191	40	18	170	148	115.5	106	106	56	113	G115	G115	6-M12x40	22	32	Rc 1/4
PDF-125	5	188	165	85	43	80	50	270	230	50	23.5	200	175	141.2	130	130	69	133	G140	G140	6-M12x40	22	32	Rc 1/4
PDF-150	6	208	204	105	45	80	40	300	260	64	25	225	200	167	156	168	95	148	G170	G180	8-M12x40	22	-	Rc 3/8

Prefill Valve

Max. Pressure 25 MPa



This valve is small and easy to install; high flow and less internal drain. Before operating the valve, you have to unload pressure first. This valve is two-way shift not spring-returned type. Please refer the circuit as follows.

Specifications

1 MPa = 10.2 kgf/cm²

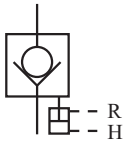
Valve Size	Model Number	Max. Flow L/min	Max Pilot Pressure MPa (kgf/cm ²)	Main Valve and Pilot Valve Square Measure Ratio	Mass without flange kg
8	PF-200-※-20T211	4000	10 (102)	5.1:1	110
12	PF-300-※-20T211	7000	10 (102)	5.1:1	160

Note 1. To avoid possible shock, decompress the pressure in the cylinder line first before the valve operates, otherwise the valve does not perform well. (The pilot pressure should be 4.5 times more higher than the main pressure)

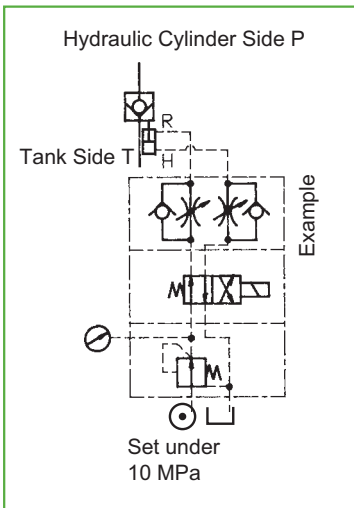
Note 2. The pressure drop is about 0.03 MPa in the maximum flow rate on the table above.

Note 3. The high pressure drop is not easy to happen in reality, selecting according to the calculation, 70% of the max. flow rate will be the best choice.

Graphic Symbol



Sample Circuit



Mounting Bolts

Model No.	Socket Head Cap Screw	Qty	Tightening Torque N·m (kgf·m)
PF-200	M30x120 Lg.	16	1420-1735 (144.8-176.9)
PF-300	M30x130 Lg.	20	

Model Number Designation

PF-200-FT-20T211

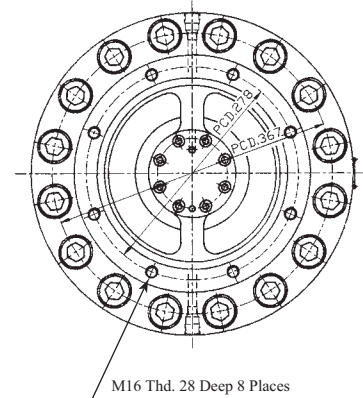
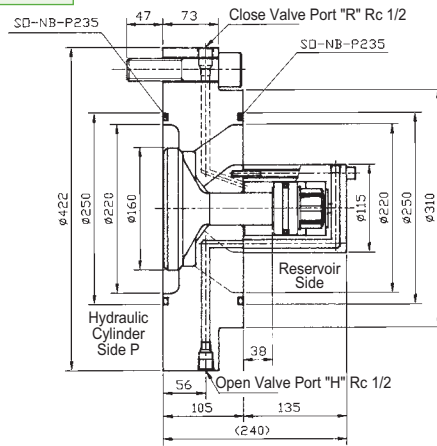
Series Number (Flange Connection)

Design Number

Valve Size
200 : 8" pipe
300 : 12" pipe

Type of Pipe Flange
None: Without Pipe Flange
FP: P Port With Pipe Flange
FT: T Port With Pipe Flange (Standard)
FW: P Port & T Port With Pipe Flange

PF-200



PF-300

