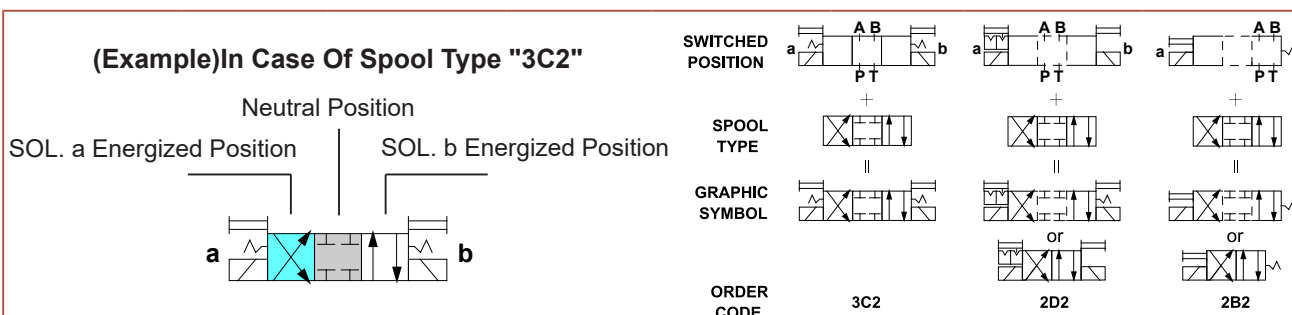


A

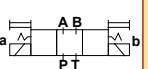
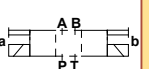
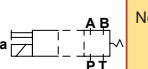
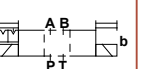
DIRECTIONAL CONTROLS

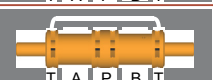


【 GRAPHICAL SYMBOLS 】



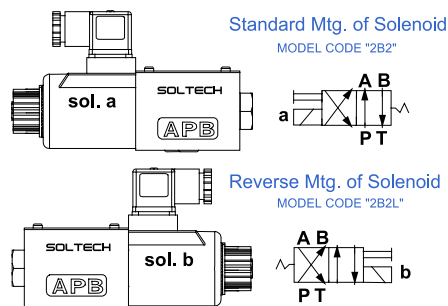
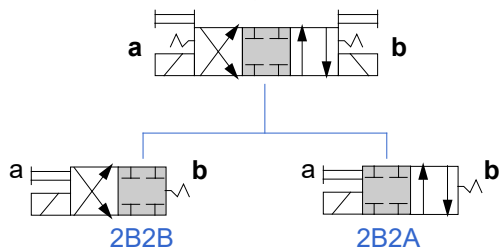
- 1) Example: Three switched positions, spring centred(3C) with spool type "2", ordering code "3C2".
- 2) Example: Two switched positions, no spring, with detent(2D) and spool type "2", ordering code "2D2".
- 3) Example: Two switched positions, spring offset(2B) with spool type "2" (reverse assembled), ordering code "2B2(L)".
- 4) The dotted line of graphical symbol(2B, 2D, 2N) represent the momentary switched position.

Three Switched Position	Graphical Symbol	Two Switched Position	Graphical Symbol	Two Switched Position	Graphical Symbol	Two Switched Position	Graphical Symbol
Spring Centred		No Spring		Spring Offset		No Spring-With Detent	
Model No: "3C"+ Spool Type		Model No: "2N"+ Spool Type		Model No: "2B"+ Spool Type		Model No: "2D"+ Spool Type	

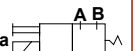
Spool Type	Graphical Symbol	Physical Relationship (Neutral Position)	Spool SWG-02	Spool SWG-03	Remark
"2"					Holds pump pressure and cylinder position at neutral. Care should be paid if used as a 2-position type because shock occurs when each port is blocked in transit.
"3"					Pump can be unloaded and actuator is floating at neutral. If a 2-position type is used, shock is reduced as each port is released to tank in transit.
"4"					Pump pressure is held and actuator is floated at neutral. 2-position type is used when system pressure is required to be held in transit. Shock during transit is less compared to spool type "2".
"40"					In a variation of spool type "4", a restrictor is provided in A-T and B-T ports. Making it faster at stopping the actuator.
"5"					It can be used when a pump is unloading at neutral and actuator is halted at one way flow.
"60"					Pump is unloading and actuator position held at neutral. Suitable for series operation. Shock is reduced as each port is released to tank on transit.
"7"					Mainly used as a 2-position type. Shock is reduced on transit.
"8"					Pump pressure and cylinder position is held at neutral in the same way as spool type "2". It is used as 2 way type.
"85"					
"9"					Regenerative circuit is provided at neutral.
"10"					Prevent actuator from one direction drift by leakage of P port at neutral.
"11"					Half actuator movement positively at B. T ports blocked. P.A port connected at neutral.
"12"					Prevent actuator from one direction drift by leakage of P port at neutral.

【 GRAPHICAL SYMBOLS 】

Model No. Explanation
型號說明



- 1) Example: Two switched positions, spring offset(2B) with spool type "2B" , ordering code "2B2B".
- 2) Example: Two switched positions, spring offset(2B) with spool type "2A" , reverse assembled, ordering code "2B2AL".
- 3) Valves Only Using Neutral Position and Side Positions.

Two Switched Position Spring Offset Model No: "2B"+ Spool Type	Graphical Symbol		3D Pictures	Two Switched Position Spring Offset Model No: "2B"+ Spool Type	Graphical Symbol		3D Pictures
	Standard Assembled	Reverse Assembled			Standard Assembled	Reverse Assembled	
							

Spool Type	Graphical Symbols		3D Pictures		Spool Type	Graphical Symbols		3D Pictures	
			SWG-02	SWG-03				SWG-02	SWG-03
2A					2B			As The Same As Spool Type "2"~"12".	
3A					3B				
4A					4B				
40A					40B				
5A					5B				
60A					60B				
7A					7B				
8A					8B				
9A					9B				
10A					10B				
11A					11B				
12A					12B				

【MODEL DESIGNATION】

SWG	-	(H)	-	(AP)	-	02	-	2B	2	(L)	-	A220	-	(S)	-	(N)	-	(90)
I		II		III		IV		V	VI	VII		VIII		IX		X		XI

※ The item with "()" can be omitted.

I) Series No.

II) Omit: 31.5 MPa
315 kg/cm²(Bar)
4570 psi

H: 35 MPa
350 kg/cm²(Bar)
5070 psi

S: Shockless Type(DC voltage only)

III) Valve Body Antirust Treatment(Color)

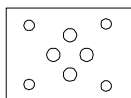
Omit : Phosphate Surface Treatment(Black)

AP : Antirust Painting(Blue)

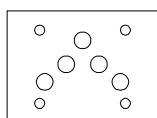
NS : Nickel Surface Plating(Silver)

IV) Valve Size

02: 1/4"
ISO4401-03-02-0-94
NFPA-D03
CETOP 3
DIN 24340 NG6



03: 3/8"
ISO 4401-AC-05-4-A
NFPA-D05(FORMERLY D02)
CETOP 5
DIN 24340 NG10



V) 2B: Two Switched Position With
Intermediate Or Momentary
Switched Position

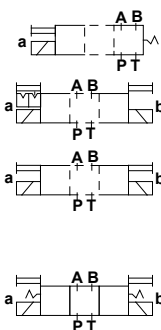
2B: Spring Offset

2D: With Detent

2N: No Spring

3C: Three Switched Position

3C: Spring Centred

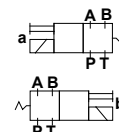


VI) Spool Type

(Referring to Graphical Symbols, Page 6)

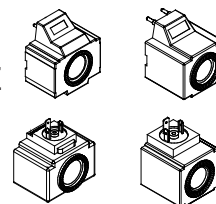
VII) Assembled Direction

Omit: Standard Assembled
L: Reverse Assembled

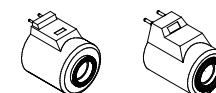


VIII) Voltage

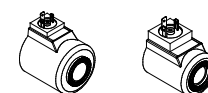
A110: AC 110V/50(60)HZ
A220: AC 220V/50(60)HZ
A24: AC 24V/50HZ
A240: AC 240V/50HZ
A380: AC 380V/50HZ



D12: DC 12V
D24: DC 24V
D48: DC 48V
D96: DC 96V



R1: RF 110V/50(60)HZ
(Rectified)
R2: RF 220V/50(60)HZ
(Rectified)



IX) Coil Type

Omit: Encapsulated by Epoxy

S: Silver Shell(DC or Rectified Voltage only)
(Bosch Rexroth Type)

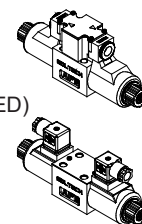
X) Connector Type

Omit: Terminal Box

N : Plug-In Connector (With LED)
DIN 43650
ISO 4400

N1 : Plug-In Connector (Without LED)

L : Lead Wire
SWP Connector
DT04-2P Connector



X I) Mounting Bolts Standard

Omit: DIN 912 Bolts
90: UNC Bolts(North America Design Std.)

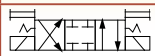
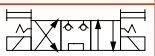
A

【SWG-VH】

※SPECIFICATION

MODEL	MAX. OPER. PRES. Kg/cm ² /(MPa)	ALLOWABLE BACK PRES. Kg/cm ² /(MPa)	RATED FLOW (ℓ/min)	WEIGHT (Kg)
SWG-VH	720(72)	140(14)	12	2.4

※GRAPHIC SYMBOL

3C2	3C3	3C4	3C6	3C60
				

Refer to Page 5&6. For more spool type, please contact SOLTECH

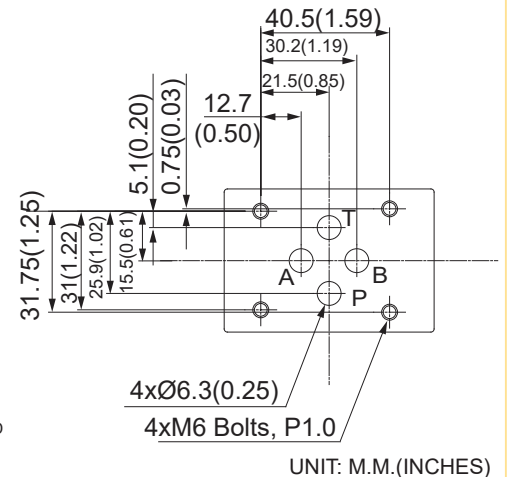
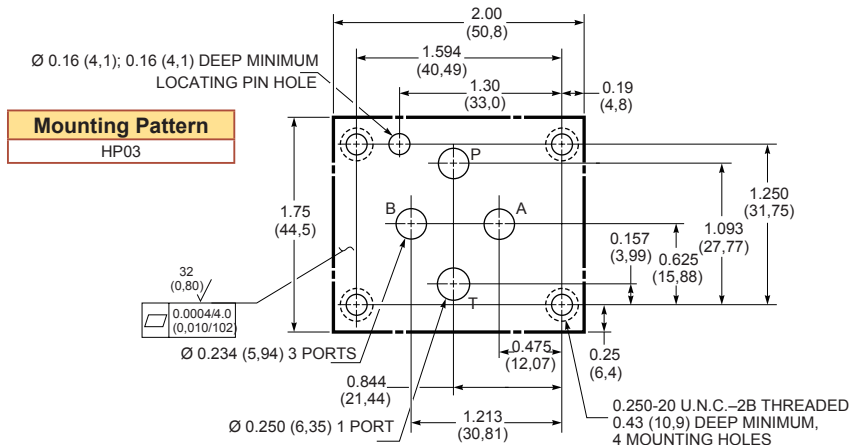
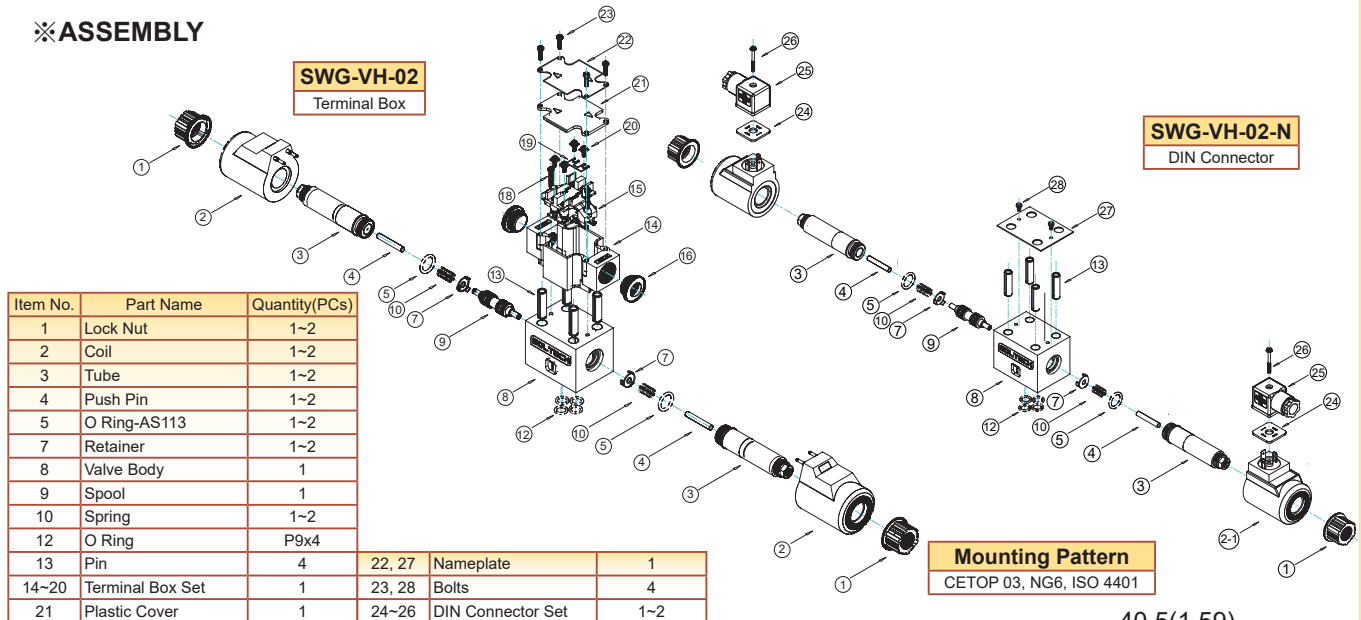
*Note : 3C6 is only available for HP03 Pattern

**Note : 3C60 is achieved by "SWG-VH-3C3" + "MPC-VH-W"

※MODEL NUMBER DESIGNATION

SWG-	VH-	(PA)-	3C2-	D2-	(N)-	(HP03)-	(90)
SERIES NO.	HIGH PRES. 72 MPa	ACTUATION TYPES: OMIT: SOLENOID OPERATION PA: PNEUMATIC ACTUATION ML: MANUAL LEVER	SPOOL TYPE: REFER TO PAGE 5&6 2B*/3C*: SPRING RETURN 2D*/3D*: WITH DETENT REFER TO PAGE 39	VOLTAGE R1: AC 110V/50HZ AC 110V/60HZ R2: AC 240V/50HZ AC 220V/50HZ AC 220V/60HZ D1: DC 12V D2: DC 24V	CONNECTOR TYPE OMIT: TERMINAL BOX N: PLUG-IN CONNECTOR DIN 43650 ISO 4400	MOUNTING INTERFACE OMIT: CETOP 03, NG6, ISO 4401 HP03: HP03 PATTERN	DESIGN NO. OMIT: DIN 912 BOLTS 90: UNC BOLTS (NORTH AMERICA STANDARD)

※ASSEMBLY





SOLTECH

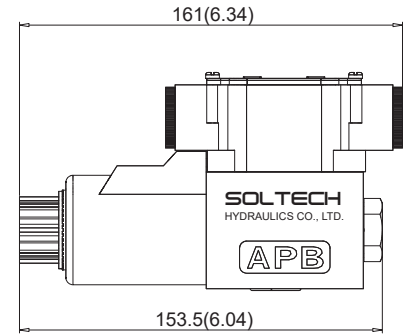
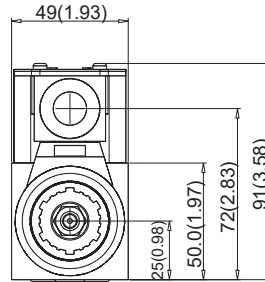
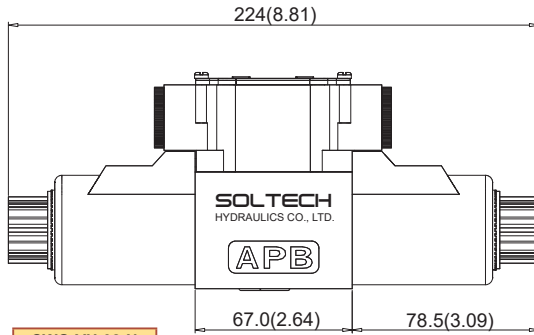
DIRECTIONAL CONTROLS

SOLENOID OPERATED DIRECTIONAL CONTROL VALVES 【72MPa】

※DIMENSIONS

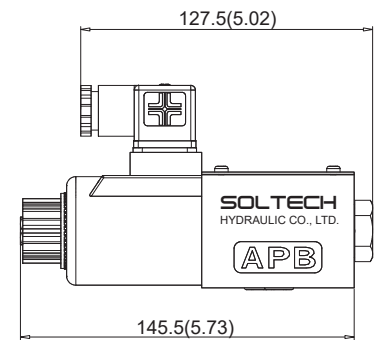
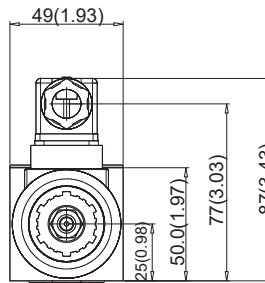
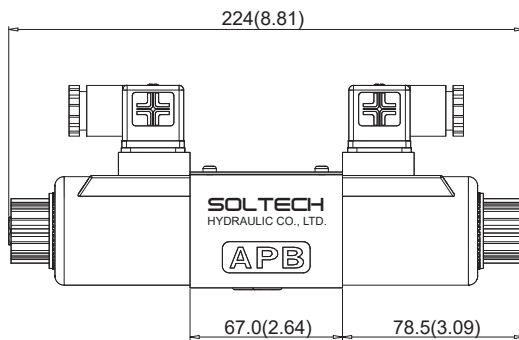
SWG-VH-02

Terminal Box Type



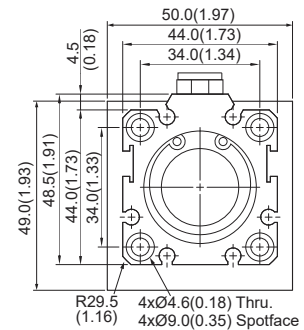
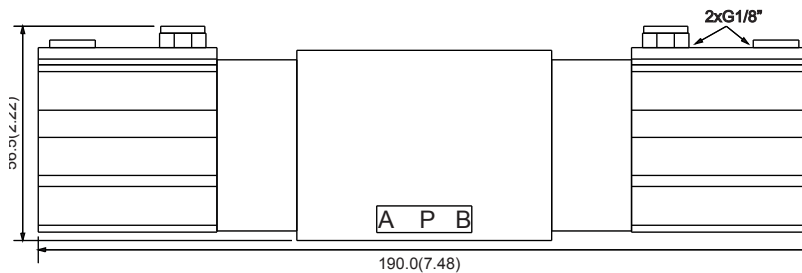
SWG-VH-02-N

DIN Connector Type



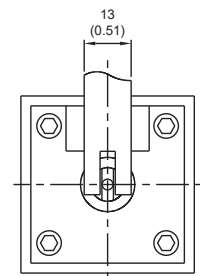
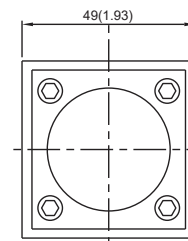
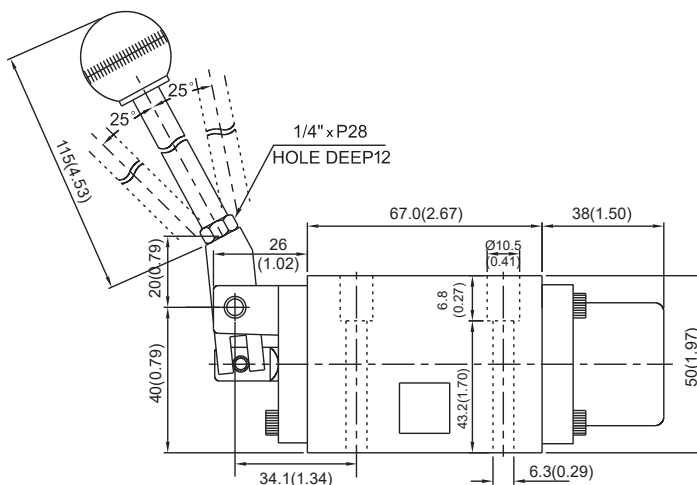
SWG-VH-PA-02

Pneumatic Actuation



SWG-VH-ML-02

Manual Lever



UNIT: M.M.(INCHES)

A



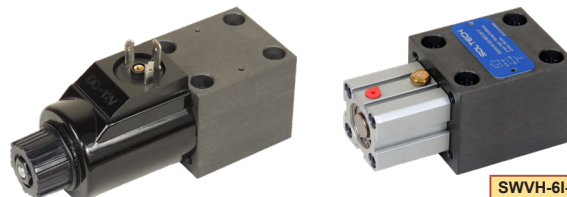
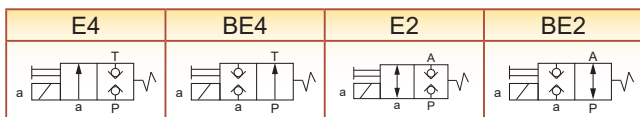
SOLTECH

DIRECTIONAL CONTROLS

DIRECTIONAL POPPET VALVE 【700 Bar】

【SWVH-6I】

※GRAPHIC SYMBOL



SWVH-6I-Air

※TECHNICAL DATA

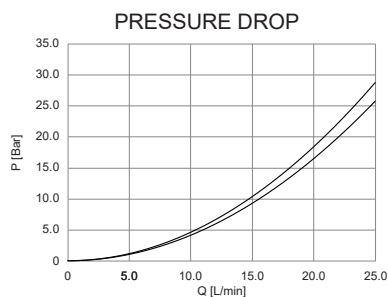
Hydraulic fluid	Porting	Max. operating pressure connection P, A, B, T	Max. Flow Rate (L/min.)	Filtration (recommendation)	Weight (Kg)
Mineral oil according to DIN 51524 (other fluids on request)	NG 6 according to DIN 24340 / ISO 4401 / CETOP RP 121 H	700 bar	25	according to NAS 1638, class 6 resp. ISO/DIN 4406 class 17/15/12	1.6/ 1.2(Air)

※MODEL NUMBER DESIGNATION

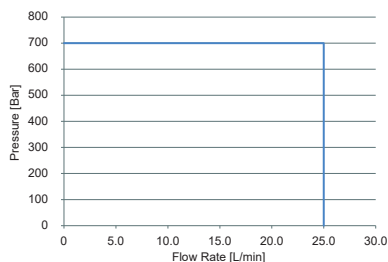
SWVH-	6I-	(Air)-	2/	2-	E2-	(24)-	V-	(90)
SERIES NO.	Normal Size ISO Connection	Actuation Type Omit: Solenoid	Number of Ports 2	Number of Positions 2	Switching Functions see Graphic Symbol	Solenoid 12: DC12V 24: DC24V 110: 110VAC 220: 220VAC	Seal Material V: FKM	Design No. Omit: DIN 912 Bolts 90: UNC Bolts (North American Design)
		Air: Air						

※ The item with "("" could be omitted.

※PERFORMANCE CURVE



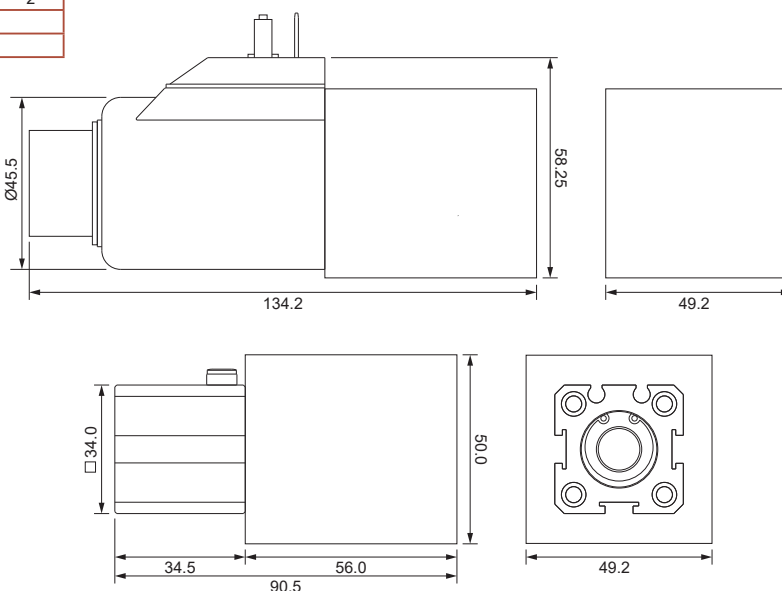
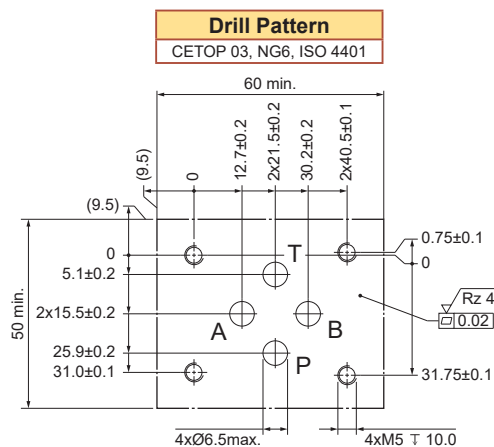
HYDRAULIC SWITCHING CAPACITY



Hydraulic switching capacity at nominal operating voltage and at operating temperature.
Switch on current $I_{ON} \geq 0.7 \times I_N$

Valve Type	Control Function	a (switched)		0 (initial position)	
		P-A	P-T	P-A	P-T
2/2	E4		2		
2/2	BE4				2
2/2	E2	1			
2/2	BE2			2	

※DIMENSIONS



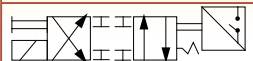
UNIT: M.M.(INCHES)

【SWGS】

※SPECIFICATION

MODEL	MAX. OPER. PRES. Kg/cm ² /(MPa)	ALLOWABLE BACK PRES. Kg/cm ² /(MPa)	RATED FLOW (ℓ/min)	WEIGHT (Kg)
SWGS-02	250(25)	160(16)	63	2.2
SWGS-03	250(25)	160(16)	120	4.8

※GRAPHIC SYMBOL

2B2	2B3
	

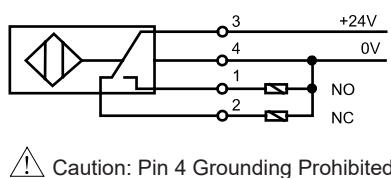
※MODEL NUMBER DESIGNATION

SWGS-	02-	2B2-	D2-	(90)
SERIES NO.	VALVE SIZE 02: NG06, CETOP 03 03: NG10, CETOP 05	SPOOL TYPE	VOLTAGE R1: AC 110V/50HZ AC 110V/60HZ R2: AC 240V/50HZ AC 220V/50HZ AC 220V/60HZ D1: DC 12V D2: DC 24V	DESIGN NO. OMIT: DIN 912 BOLTS 90: UNC BOLTS (NORTH AMERICA)

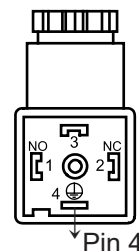
※SPECIFICATION-PROXIMITY SWITCH

DESCRIPTION	PS-24VDC
Power supply	24V ± 20% DC
Protection	IP 65, DIN 40 050
Repeatability	<0.03%
Temperature	-25~70°C
Max. Loading Current	400mA

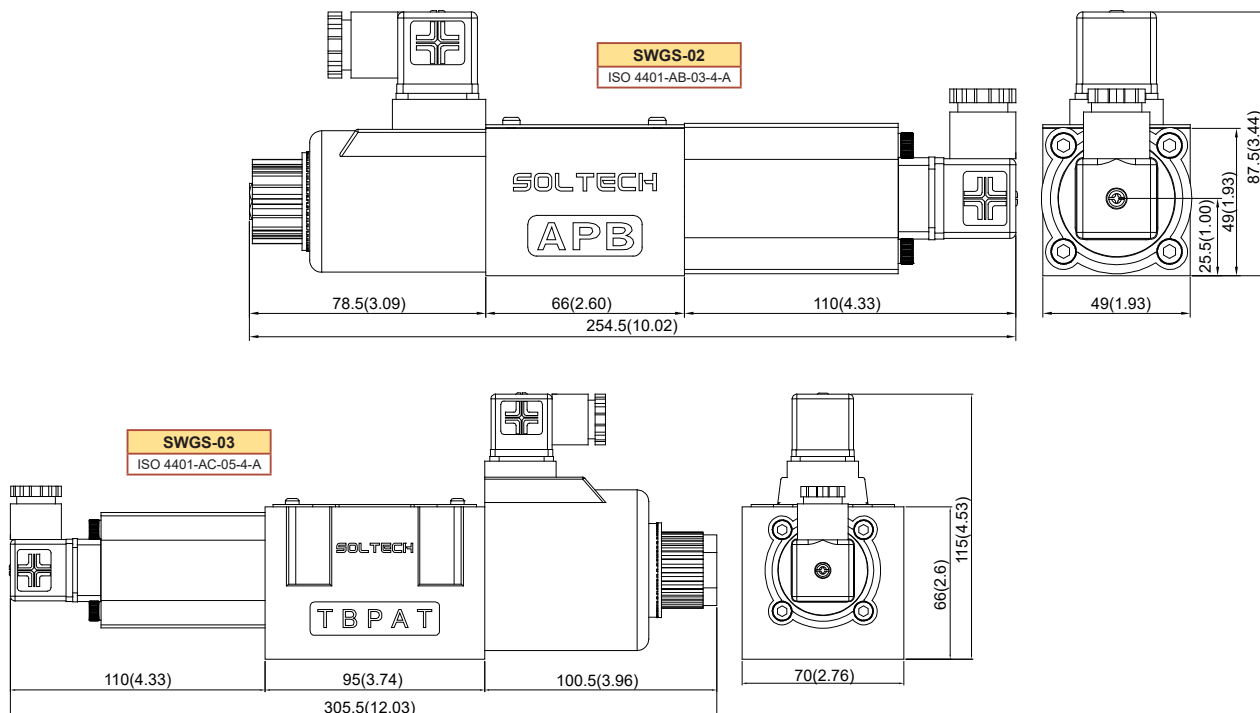
※WIRING DIAGRAM



⚠ Caution: Pin 4 Grounding Prohibited



※DIMENSIONS

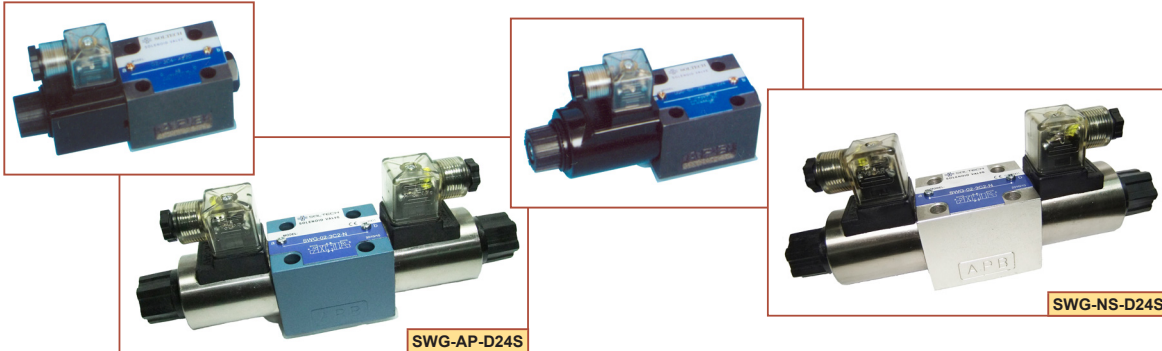


UNIT: M.M.(INCHES)

A

【SWG-02】

"ISO4401-03-02-0-94、NFPA-D03、CETOP 3、DIN 24340 NG6"



■ WITHIN CE MARKING REQUIREMENT

The apparatus meets the requirements of the following standards and hence fulfills the requirements of EMC Directive 89/336/EEC as amended by Directives 92/31/EEC and 93/68/EEC within CE marking requirement.

EN61000-6-3 : 2001+A11 : 2004 : CISPR 22 : 1997+A1:2000+A2 : 2002 Class B,
IEC61000-3-2 : 2000, modified
EN61000-3-3 :1994+A1:2001
EN61000-6-1 : 2001 : IEC61000-4-2 :1995+A1:1998+A2: 2000
IEC61000-4-3 : 2002, IEC61000-4-4 :2004
IEC61000-4-5 : 1995+A1:2000 IEC61000-4-6 :1996+A1:2000
IEC61000-4-8 : 1993+A1:2000 IEC61000-4-11:1994+A1:2000.

■ STABLE OPERATION

With a strong magnet and spring force, the valves are tough against contamination and thus ensure a stable operation. Under standard operation, the durability to 10 million spool shifts.(Average)

■ HIGH QUALITY & COMPETITIVE PRICE

All products are 100% tested by professional testing machinery. The material of tube is imported from Japan, and all parts are processed by professional specific automatic machinery. But the price is less 30% than leading brands.

■ EASY MAINTENANCE

Plug-in solenoid, all spools and bodies are interchangeable, the head of tube is design to hexnut to simplifying maintenance and reduce damage when assembly.

■ HIGH PERFORMANCE □ SWGH SERIES □

High pressure(up to 35MPa), high flow rating, provides low pressure drop, with maximum performance. If need more details please consult our distributors.

■ CUSTOMIZATION

According to the requirement of customer to customize the product, and 100% satisfy their need.

※MOUNTING BOLTS :

Descriptions	Soc.Hd.Cap Screw(4 pcs.)	Tightening Torque
Taiwan Design Standard	02 : M5 × 45 Lg 02	0.5 - 0.7Kgf m(43 - 60 in. lbs)
European Design Standard		
N.America Design Standard	No.10 - 24 UNC × 1 - 3/4 Lg.	

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

※SPECIFICATION :

Max. Pressure (kgf/cm ²)	Rated Flow (l/min.)	Max. T-Line Back Pressure kgf/cm ²	Max.Frequency of Operation (cycle/min.)	Filtration (Micron.)	Ambient Temperature Range(°C)	Weight (kgs)
315 (31.5 Mpa) (4570 psi)	65 (17.1gpm)	160 (16 MPa) (2320 psi)	240	25 β ₂₅ ≥ 75	-5 ~ 60	3C、2D、2N AC:2 DC:2.3 2B AC:1.7 DC:1.8

★Spool type "5", "6", "60" Max. Pressure : 250 kgf/cm²(25MPa, 3630psi)

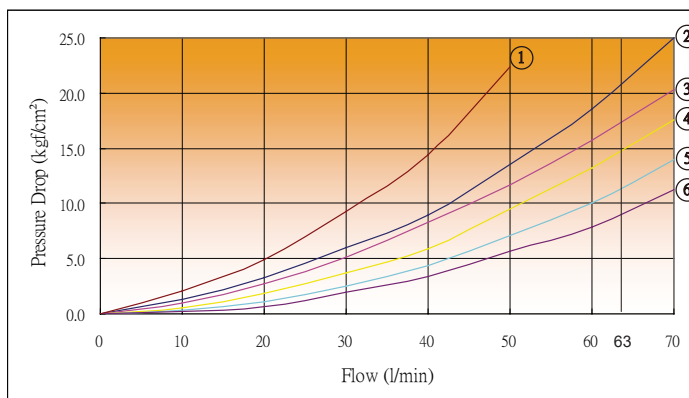
※SOLENOID RATING :

Power	Voltage (V)	Frequency (HZ)	Current At Rated Voltage		
			In-Rush Current(A)	Holding Current(A)	Power (W)
AC	A110	50	1.6	0.46	26
		60	1.4	0.32	
			1.5	0.39	
	A120	50	1.3	0.38	
		60	1.2	0.27	
	A220	50	0.80	0.23	
		60	0.70	0.16	
			0.75	0.19	
	A240	50	0.67	0.19	
		60	0.59	0.13	
DC	D12			2.2	26
	D24			1.1	

★Solenoid Isulation Class: Class H

※PERFORMANCE CURVES :

Test fluid viscosity:35 cst(175ssu)
Test temperature: 50°C(122°F)

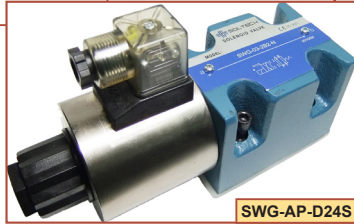
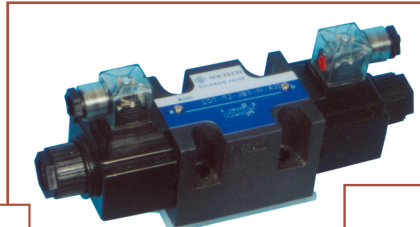


Spool Type	P→A	B→T	P→B	A→T	P→T
3C2	5	5	5	5	-
3C3	6	6	6	6	4
3C4	5	6	5	6	-
3C40	5	5	5	5	-
3C5	1	1	1	1	4
3C6	1	1	1	1	4
3C60	1	1	1	1	4
3C7	6	5	6	5	-
3C8	5	5	5	6	-
3C9	6	5	6	5	-
3C10	5	6	5	5	-
3C11	6	5	5	5	-
3C12	5	5	5	6	-
2D2	5	2	5	2	-
2D3	6	3	5	3	-
2B2	2	2	5	5	-
2B3	3	3	5	5	-

A

【SWG-03】

"ISO4401-AC-05-4-A、NFPA-D05、CETOP 5、DIN 24340 NG10"



■ WITHIN CE MARKING REQUIREMENT

The apparatus meets the requirements of the following standards and hence fulfills the requirements of EMC Directive 89/336/EEC as amended by Directives 92/31/EEC and 93/68/EEC within CE marking requirement.

EN61000-6-3 : 2001+A11 : 2004 : CISPR 22 : 1997+A1:2000+A2 : 2002 Class B,
IEC61000-3-2 : 2000, modified
EN61000-3-3 :1994+A1:2001
EN61000-6-1 : 2001 : IEC61000-4-2 :1995+A1:1998+A2: 2000
IEC61000-4-3 : 2002, IEC61000-4-4 :2004
IEC61000-4-5 : 1995+A1:2000 IEC61000-4-6 :1996+A1:2000
IEC61000-4-8 : 1993+A1:2000 IEC61000-4-11:1994+A1:2000.

■ STABLE OPERATION

With a strong magnet and spring force, the valves are tough against contamination and thus ensure a stable operation. Under standard operation, the durability to 10 million spool shifts.(Average)

■ HIGH QUALITY & COMPETITIVE PRICE

All products are 100% tested by professional testing machinery. The material of tube is imported from Japan, and all parts are processed by professional specific automatic machinery. But the price is less 30% than leading brands.

■ EASY MAINTENANCE

Plug-in solenoid, all spools and bodies are interchangeable, the head of tube is design to hexnut to simplifying maintenance and reduce damage when assembl.

■ HIGH PERFORMANCE □ SWGH SERIES □

High pressure(up to 35MPa), high flow rating, provides low pressure drop, with maximum performance. If need more details please consult our distributors.

■ CUSTOMIZATION

According to the requirement of customer to customize the product, and 100% satisfy their need.

※MOUNTING BOLTS :

Descriptions	Soc.Hd.Cap Screw(4 pcs.)	Tightening Torque
Taiwan Design Standard	03 : M6 × 35 Lg 03	0.5 - 0.7Kgf m(43 - 60 in. lbs)
European Design Standard		
N.America Design Standard	No.1/4-20 UNC × 1-1/2 Lg.	

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

※SPECIFICATION :

Max. Pressure (kgf/cm ²)	Rated Flow (l/min.)	Max. T-Line Back Pressure kgf/cm ²	Max.Frequency of Operation (cycle/min.)	Filtration (Micron.)	Ambient Temperature Range(°C)	Weight (kgs)
315 (31.5MPa) (4570 psi)	100 (26.3gpm)	160 (16 MPa) (2320 psi)	240	25 β ₂₅ ≥ 75	-5 ~ 60	3C、2D、2N - AC:4.6 DC:5.8 2B - AC:3.8 DC:4.4

★Spool type "5", "6", "60" Max. Pressure : 250 kgf/cm²(25MPa, 3630psi)

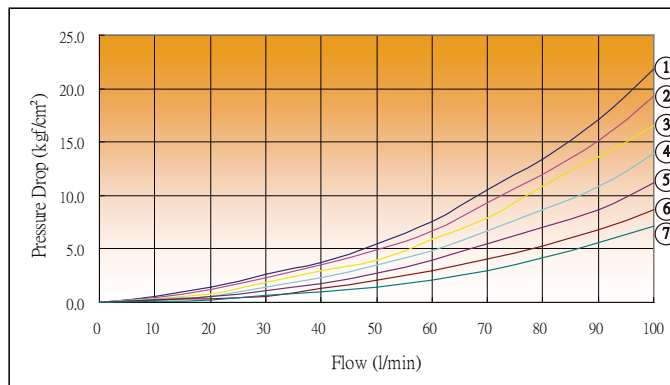
※SOLENOID RATING :

Power	Voltage (V)	Frequency (HZ)	Current At Rated Voltage		
			In-Rush Current(A)	Holding Current(A)	Power (W)
AC	A110	50	3.20	0.80	
		60	2.90	0.65	
			3.10	0.70	
	A120	50	2.50	0.84	
		60	2.97	0.64	
	A220	50	1.72	0.42	
		60	1.47	0.32	
			1.63	0.35	
	A240	50	1.73	0.42	
		60	1.47	0.32	
DC	D12			3.1	38
	D24			1.6	

★Solenoid Isulation Class: Class H

※PERFORMANCE CURVES :

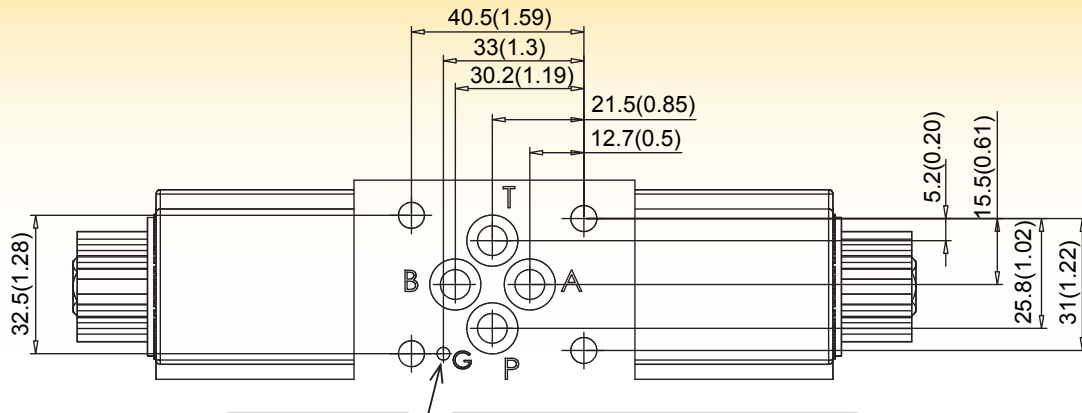
Test fluid viscosity:35 cst(175ssu)
Test temperature: 50°C(122°F)



Spool Type	P→A	B→T	P→B	A→T	P→T
3C2	4	5	4	5	-
3C3	6	6	6	6	6
3C4	4	7	4	7	-
3C40	4	5	4	5	-
3C5	6	5	4	6	2
3C6	5	5	5	5	1
3C60	5	5	5	5	1
3C7	6	5	6	5	-
3C8	4	5	4	7	-
3C9	6	5	4	5	-
3C10	5	6	4	5	-
3C11	6	5	4	5	-
3C12	4	5	4	7	-
2D2	3	3	4	5	-
2D3	3	3	5	5	-
2B2	2	2	4	5	-
2B3	2	2	5	6	-

【 DIMENSIONS 】

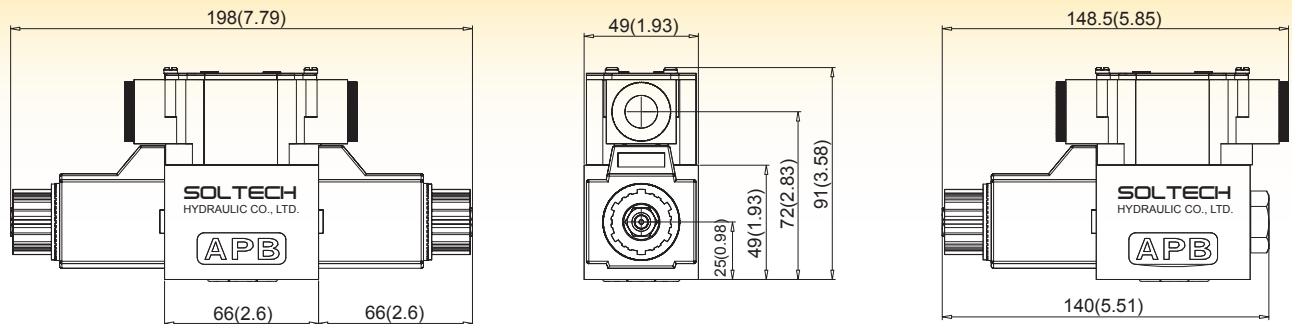
ISO4401-03-02-0-94、NFFA-D03、CETOP 3、DIN 24340 NG6



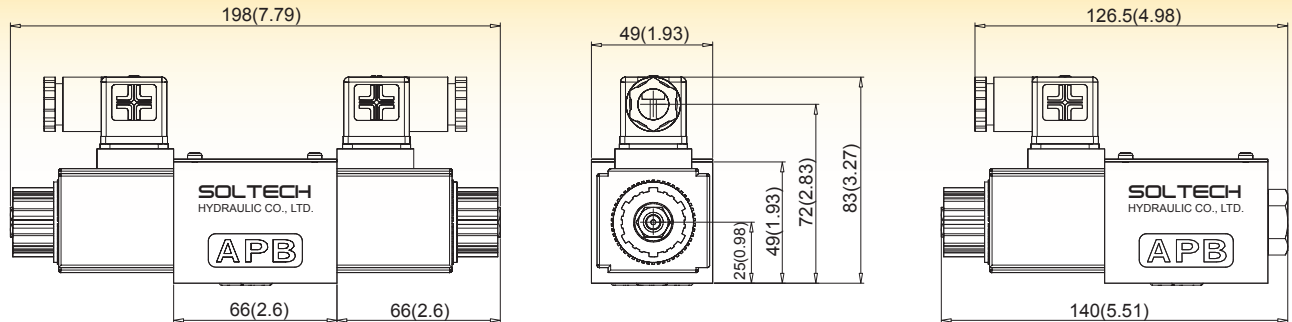
Locating pin can be fitted to this hole to conform with ISO 4401-03-02-0-94. However, locating pin is not provided to standard design valve. When ordering valve with a locating pin, please consult SOLTECH.

UNIT: M.M.

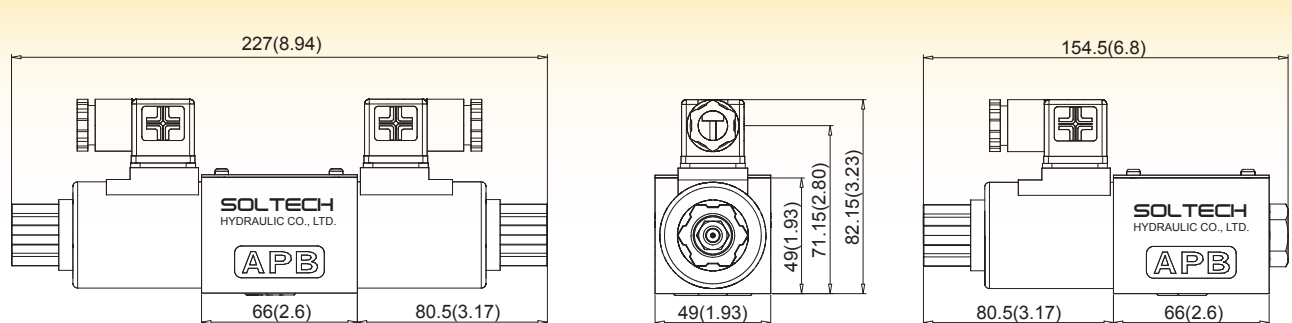
SWG-(H)-02-***-AC SERIES



SWG-(H)-02-***-AC-N SERIES

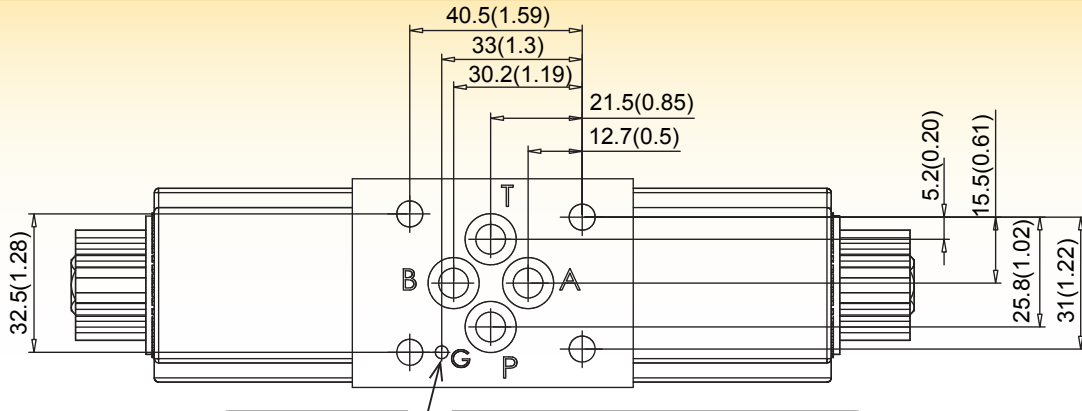


SWG-(H)-02-***-DC-S-N SERIES



【 DIMENSIONS 】

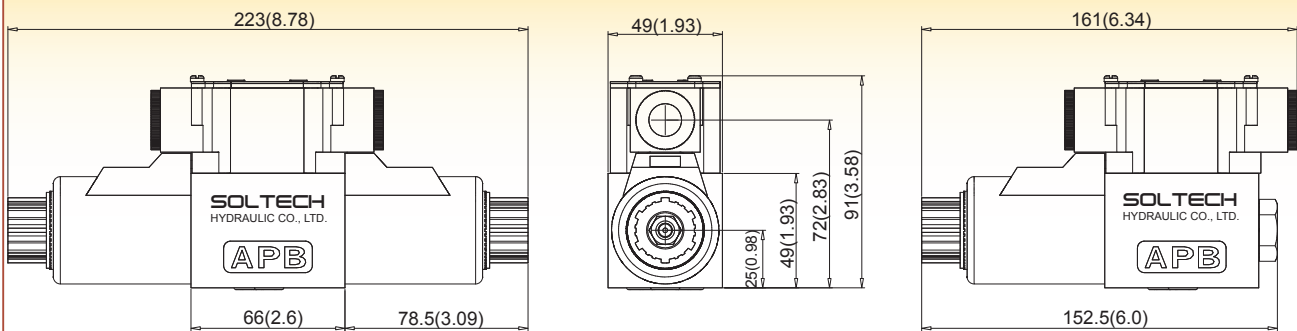
ISO4401-03-02-0-94、NFFA-D03、CETOP 3、DIN 24340 NG6



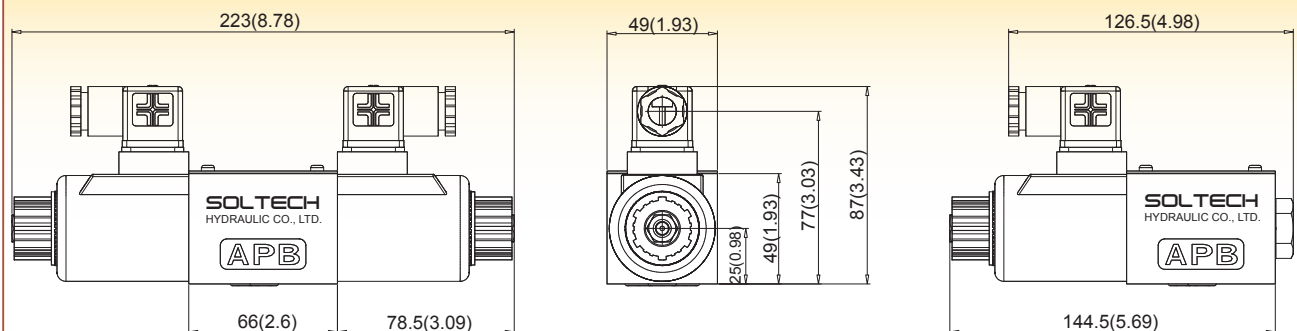
Locating pin can be fitted to this hole to conform with ISO 4401-03-02-0-94. However, locating pin is not provided to standard design valve. When ordering valve with a locating pin, please consult SOLTECH.

UNIT: M.M.

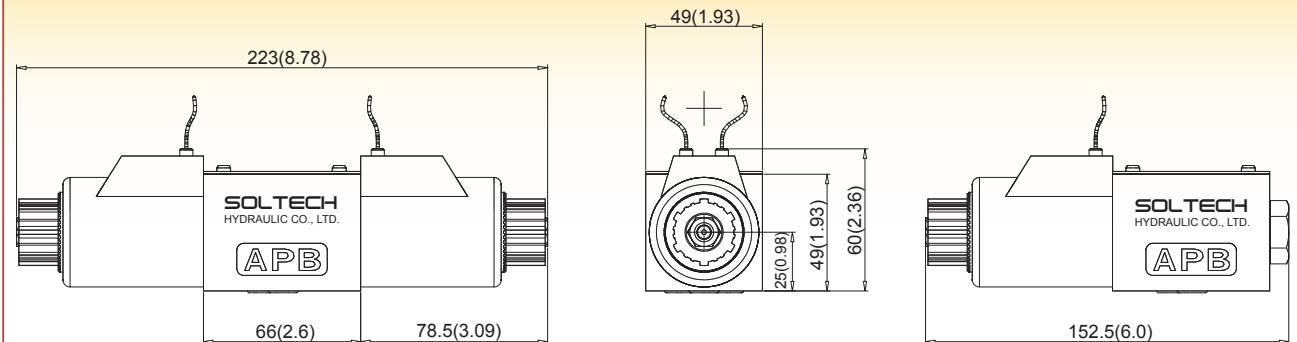
SWG-(H)-02-※※※-DC SERIES



SWG-(H)-02-※※※-DC-N SERIES

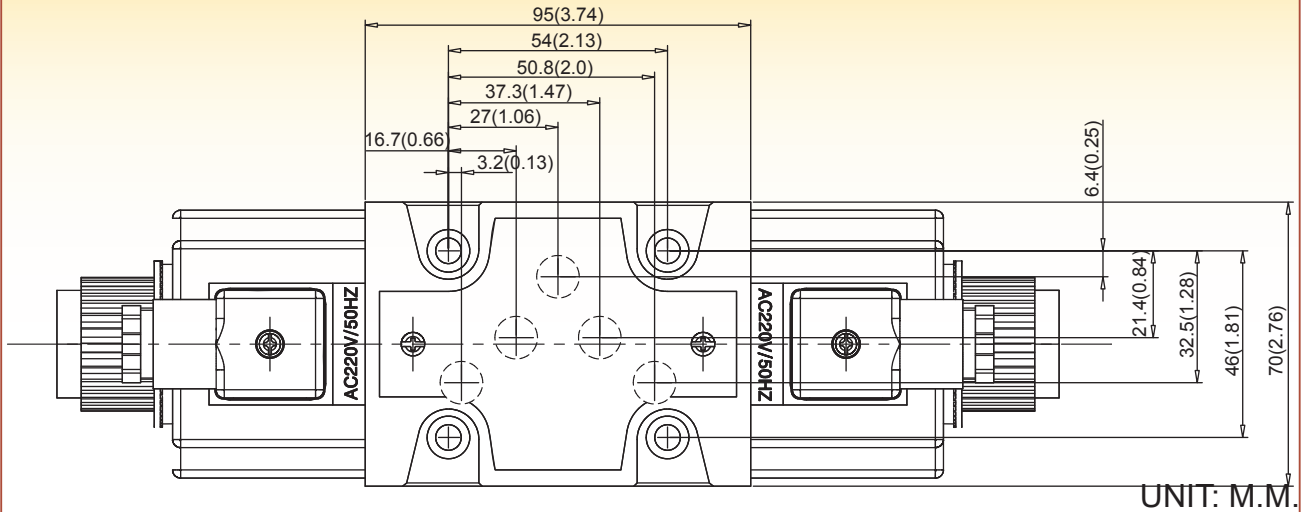


SWG-(H)-02-※※※-DC-L SERIES

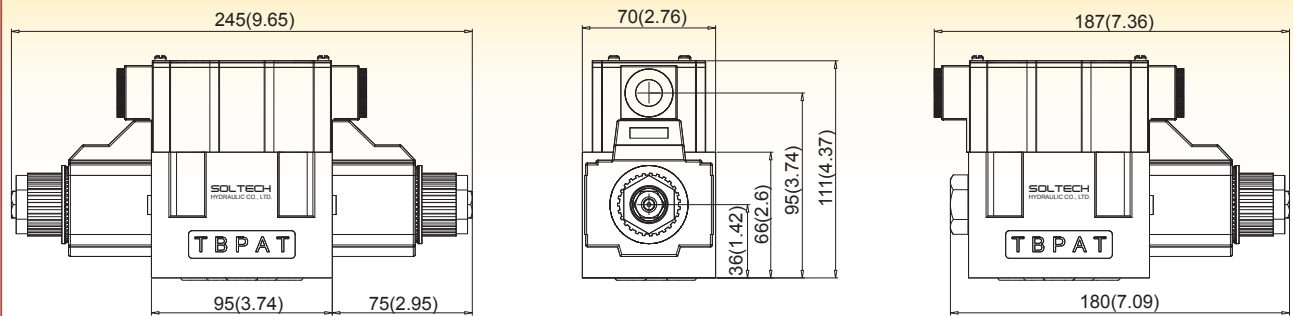


【 DIMENSIONS 】

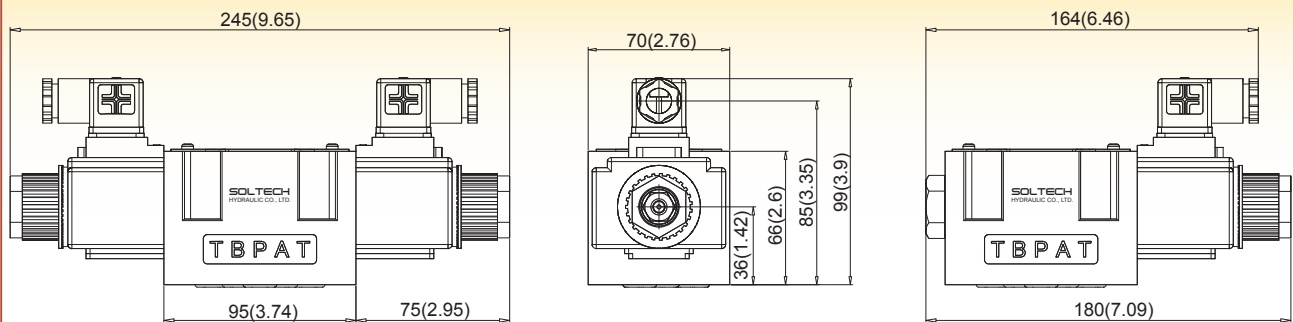
ISO4401-AC-05-4-A 、 NFPA-D05 、 CETOP 5 、 DIN 24340 NG10



SWG-(H)-03-※※※-AC SERIES

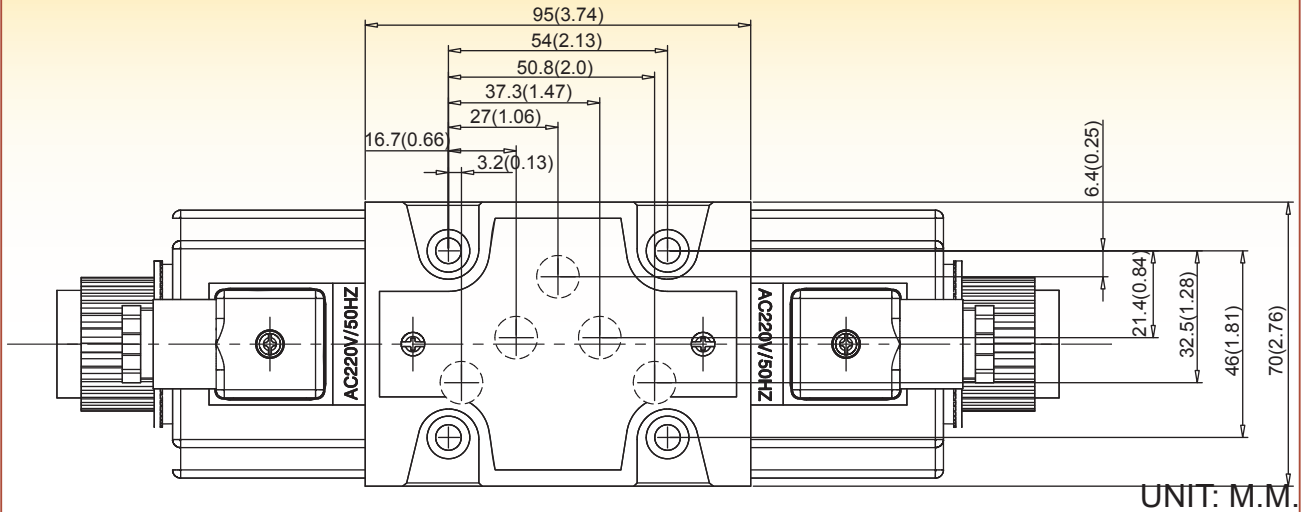


SWG-(H)-03-※※※-AC-N SERIES

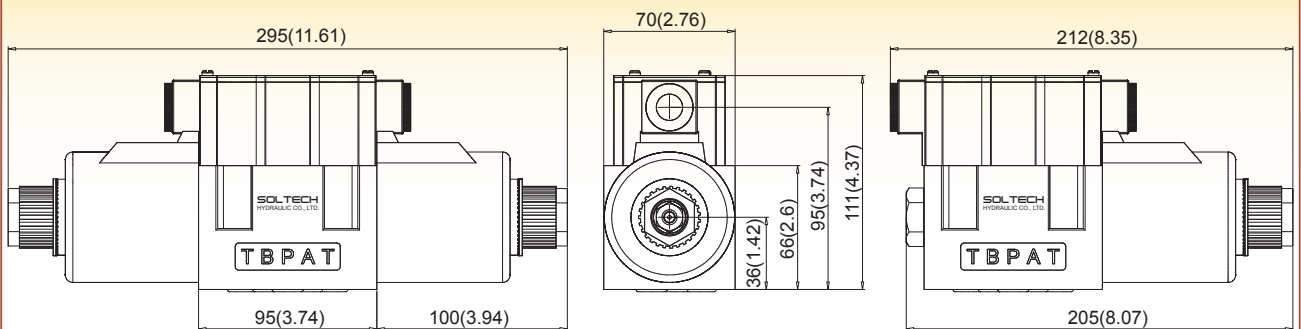


【 DIMENSIONS 】

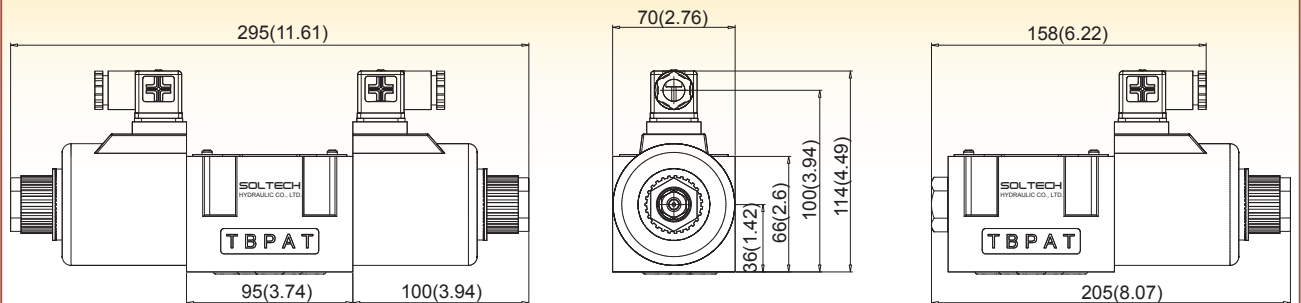
ISO4401-AC-05-4-A 、 NFPA-D05 、 CETOP 5 、 DIN 24340 NG10



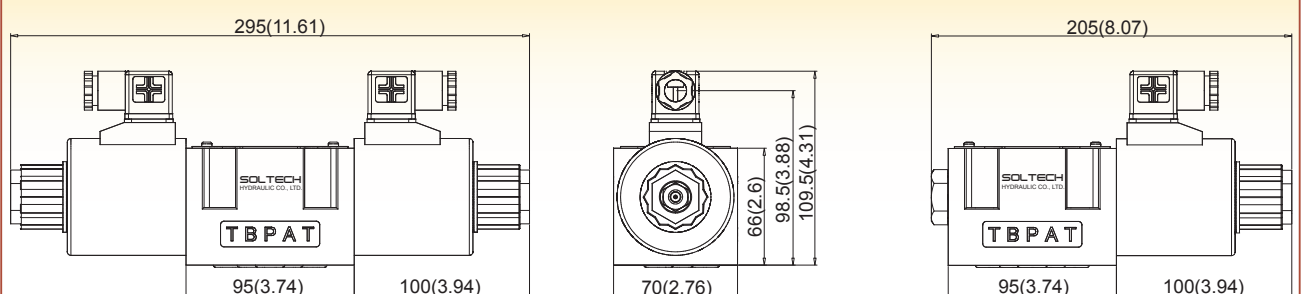
SWG-(H)-03-※※※-DC SERIES



SWG-(H)-03-※※※-DC-N SERIES

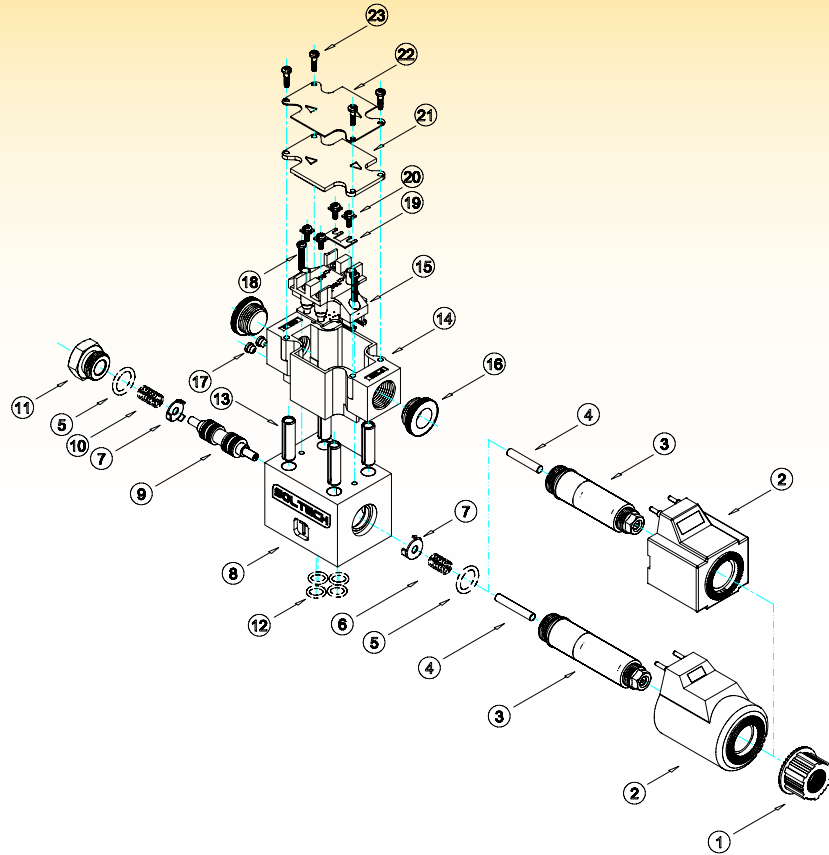


SWG-(H)-03-※※※-DC-S-N SERIES

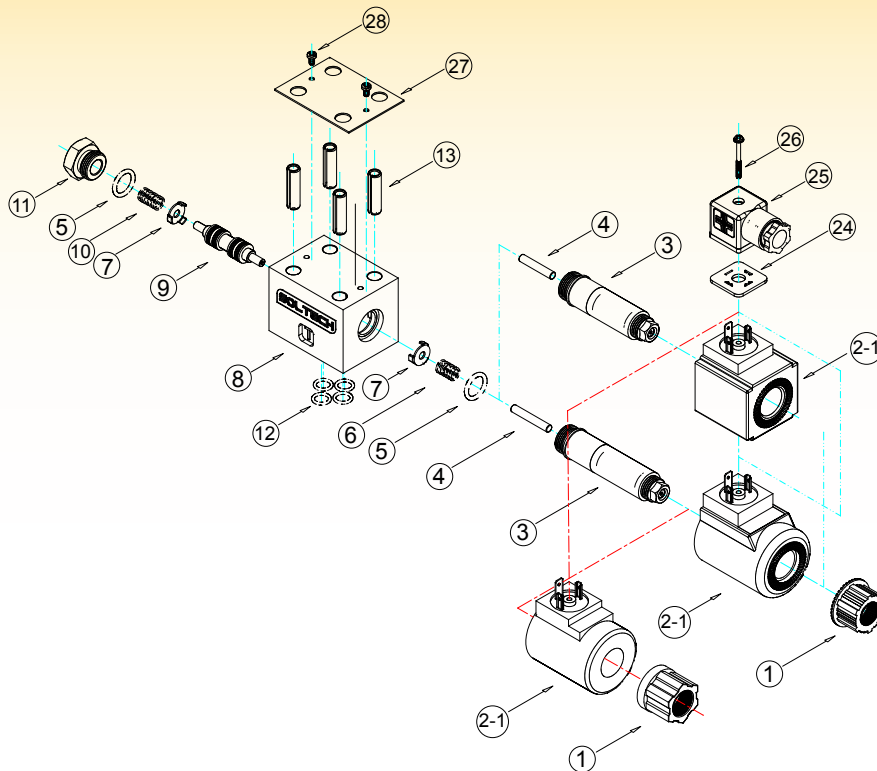


A

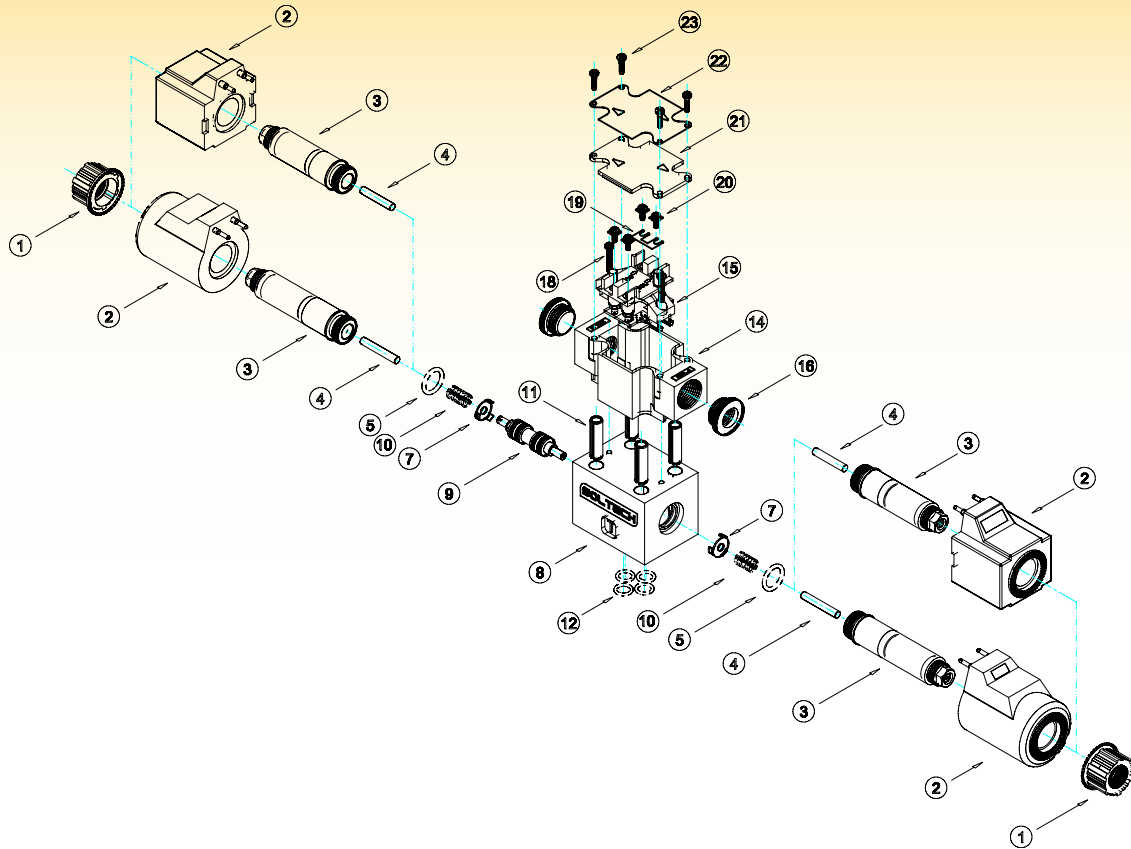
SWG-(H)-02-2B2-AC(DC) ASSEMBLY (PARTS LIST SEE PAGE 23)



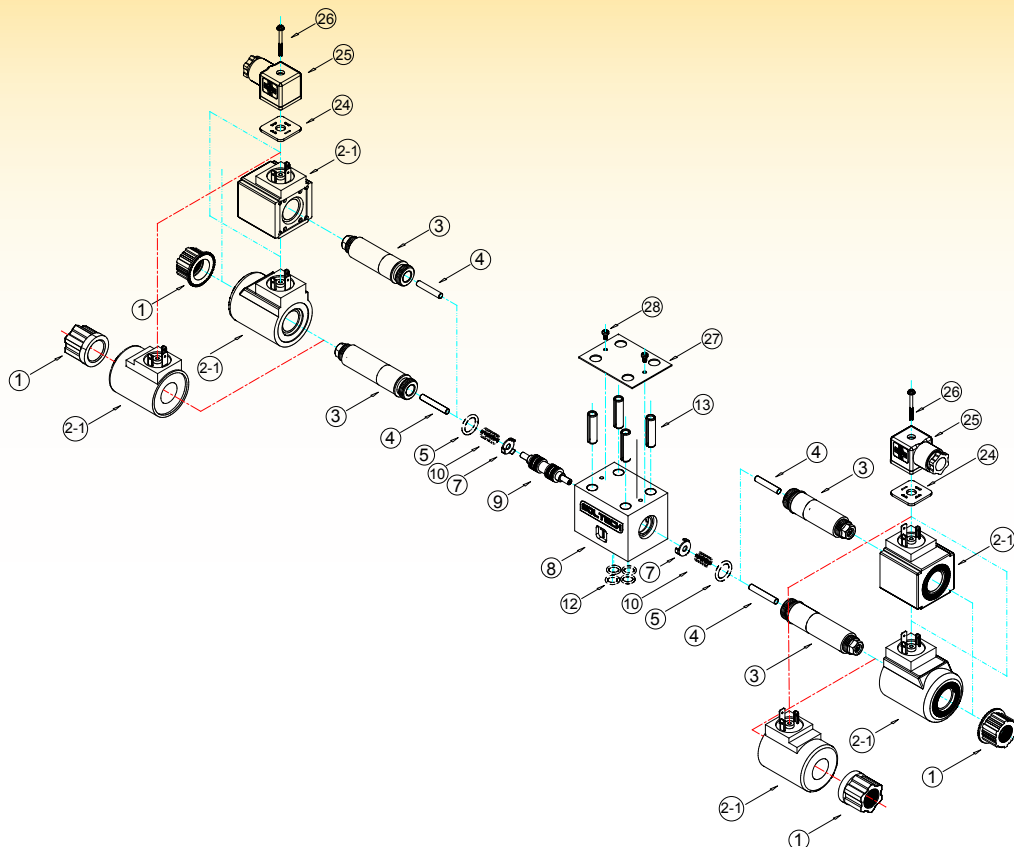
SWG-(H)-02-2B2-AC(DC)-(S)-N ASSEMBLY (PARTS LIST SEE PAGE 23)



SWG-(H)-02-3C2-AC(DC) ASSEMBLY (PARTS LIST SEE PAGE 23)

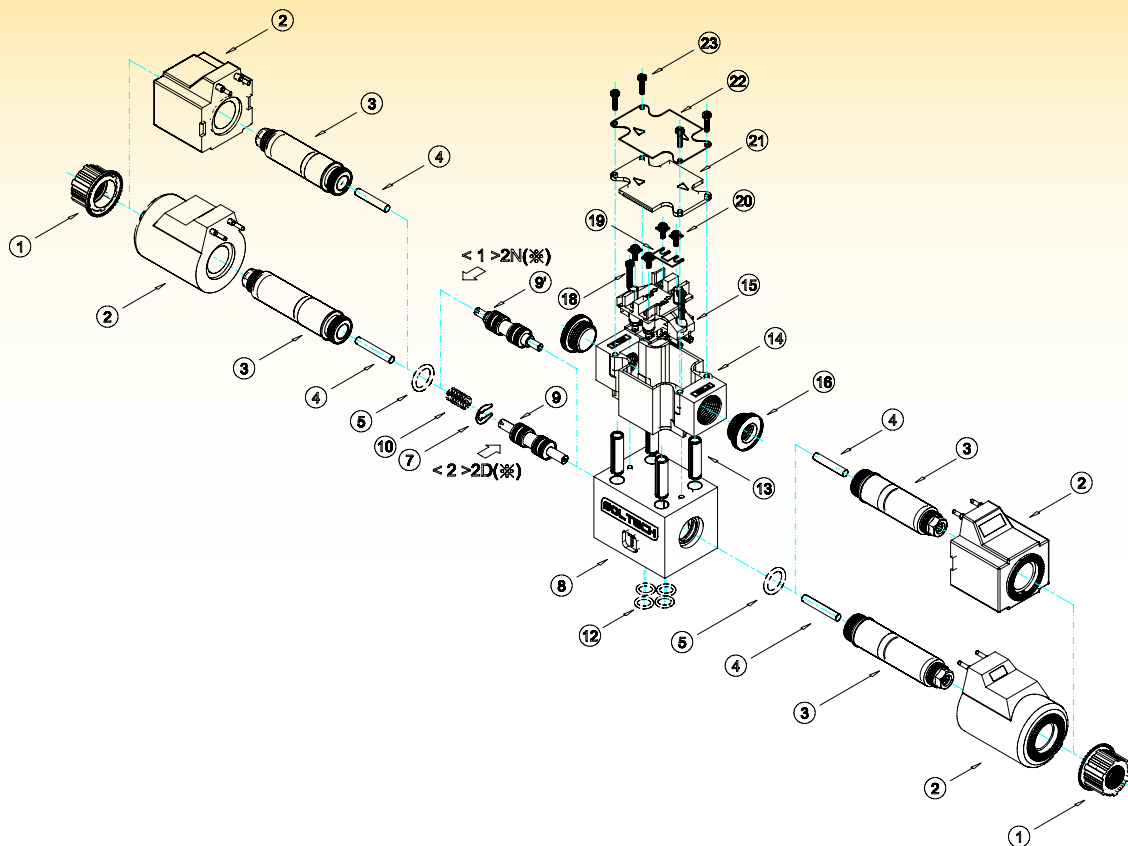


SWG-(H)-02-3C2-AC(DC)-(S)-N ASSEMBLY (PARTS LIST SEE PAGE 23)

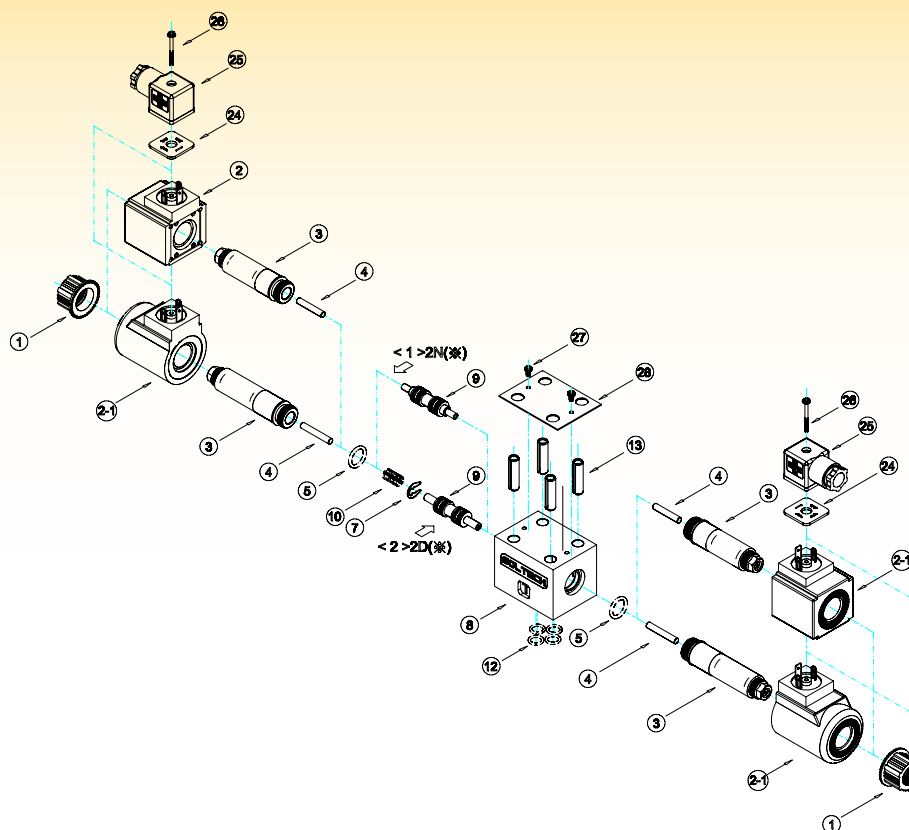


A

SWG-(H)-02-2D2(2N2)-AC(DC) ASSEMBLY (PARTS LIST SEE PAGE 23)



SWG-(H)-02-2D2(2N2)-AC(DC)-N ASSEMBLY (PARTS LIST SEE PAGE 23)



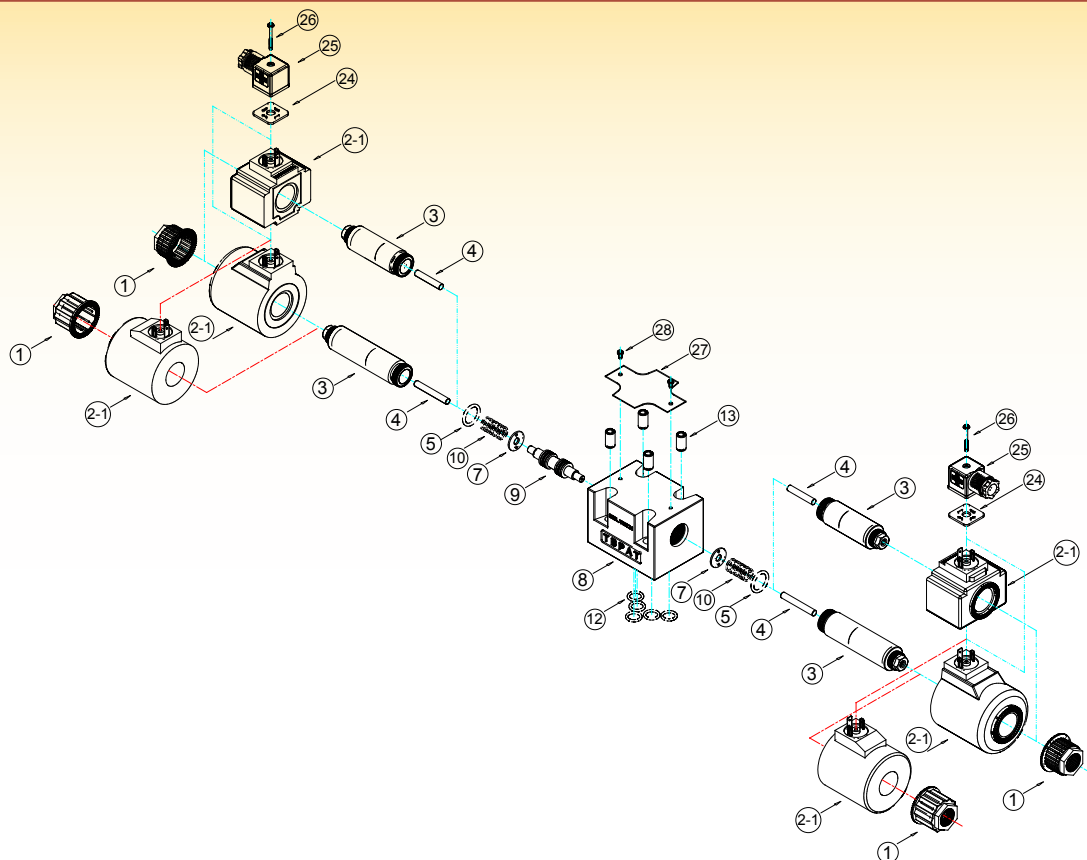


A

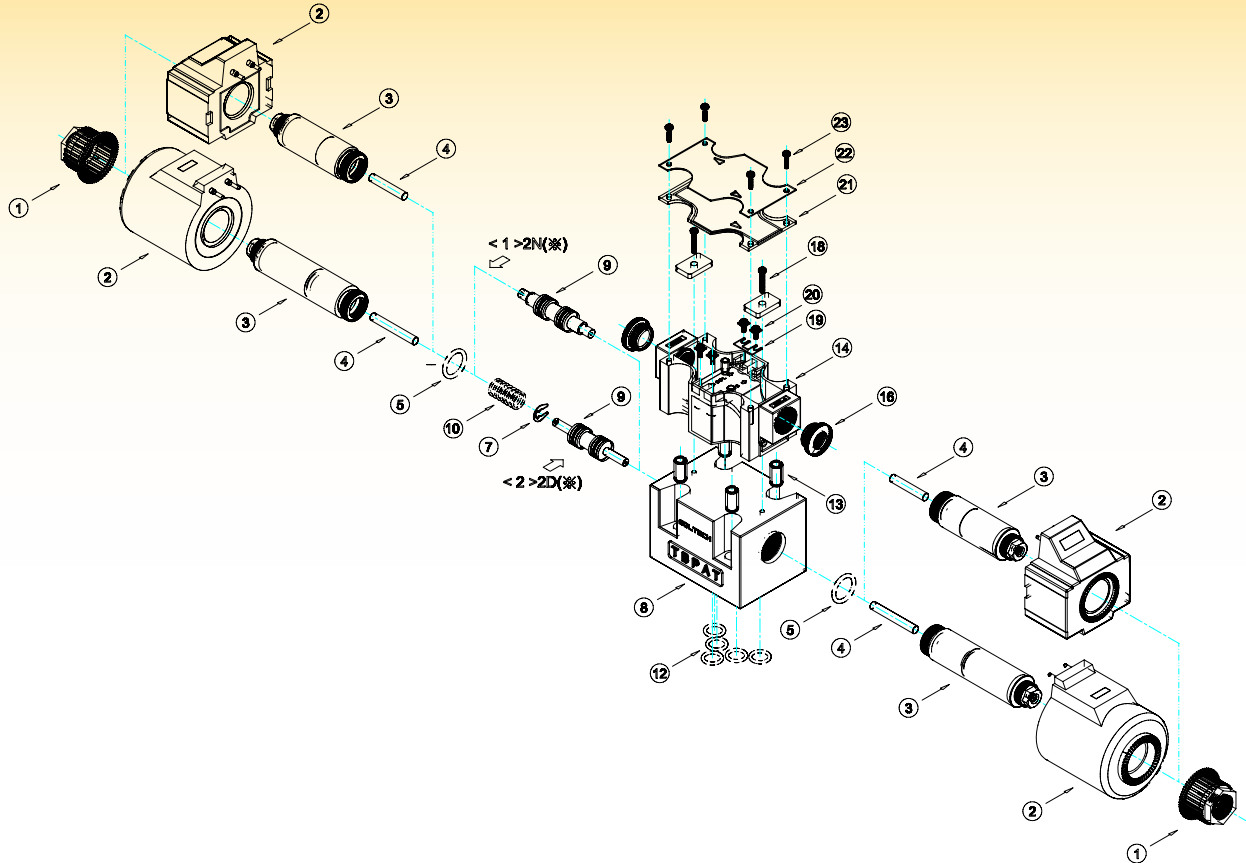




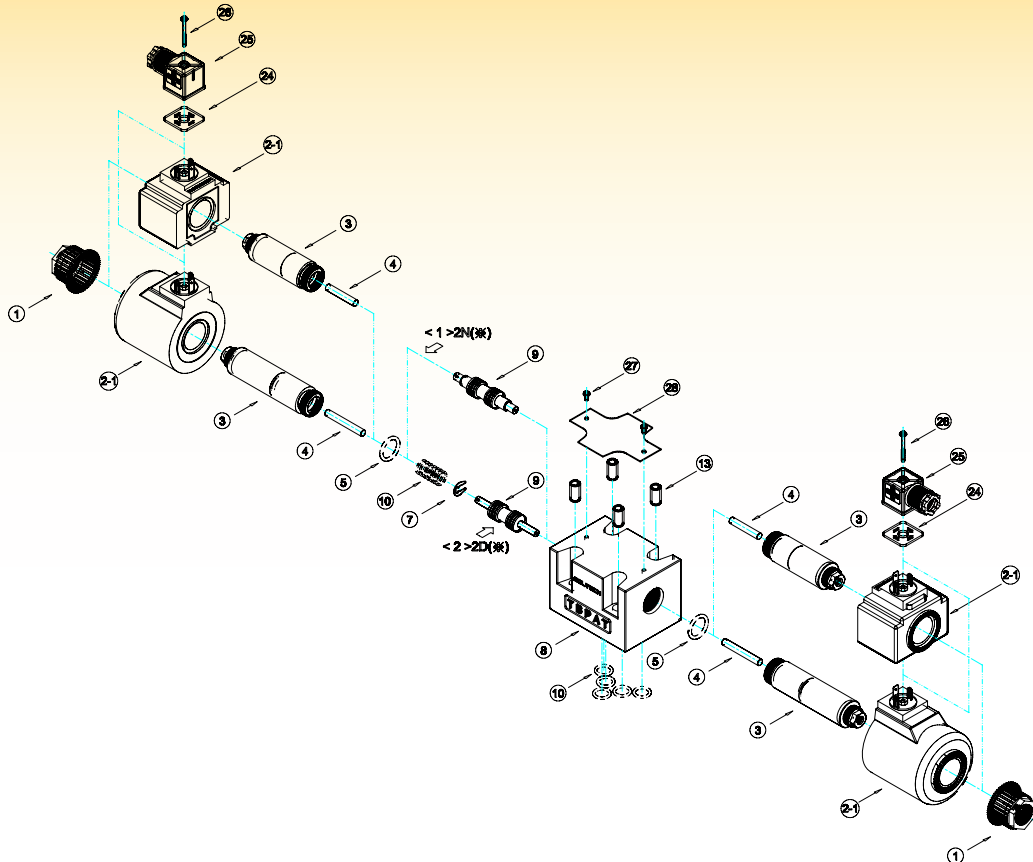
A



SWG-03-2D2(2N2)-AC(DC) ASSEMBLY (PARTS LIST SEE PAGE 23)



SWG-03-2D2(2N2)-AC(DC)-N ASSEMBLY (PARTS LIST SEE PAGE 23)



【 PARTS LIST OF "SWG" SERIES 】

NO.	PART NAME	SWG-02-AC	QTY.	SWG-02-DC-(S)	QTY.	SWG-03-AC	QTY.	SWG-03-DC-(S)	QTY.
1	Lock Nut	05080102	1~2	05080102(S)	1~2	05080101	1~2	05080101(S)	1~2
3	Tube	05072901	1~2	05072903	1~2	05072904	1~2	05072905	1~2
4	Push Pin	06011701	1~2	05071409	1~2	05071408	1~2	05071407	1~2
5	O Ring-AS113	05072601	1~2	05072601	1~2	05072605	1~2	05072605	1~2
6	Spring for Single Sol.	05081004	0~1	05081004	0~1	05081003	0~1	05081003	0~1
7	Retainer	05071501	2	05071501	2	05071502	2	05071502	2
8	Body	05010701	1	05010701	1	05010801	1	05010801	1
9	Spool	See page 3,4	1	See page 3,4	1	See page 3,4	1	See page 3,4	1
10	Spring for Double Sol.	05080103	1~2	05080103	1~2	05081002	1~2	05081002	1~2
11	Back Cover	05072001	0~1	05072001	0~1	05071903	0~1	05071903	0~1
12	O Ring	05072603	4	05072603	4	05072604	4	05072604	4
13	Pin	05071503	4	05071503	4	05071504	4	05071504	4

TERMINAL BOX TYPE

NO.	PART NAME	SWG-02-AC	QTY.	SWG-02-DC	QTY.	SWG-03-AC	QTY.	SWG-03-DC	QTY.
2	Coil	05080403	1~2	05081108	1~2	05081107	1~2	05080404	1~2
14	Terminal Box	05100608	1	05100608	1	05100705	1	05100705	1
15	Terminal Base	06012003	1	06012003	1	----	1	----	1
16	Gland Nut	05081001	2	05081001	2	05081001	2	05081001	2
17	Plastic Cover for	05072909	0~2	05072909	0~2	05072909	0~2	05072909	0~2
18	Fixing Screw-M3.5x19	06011801	2	06011801	2	06011801	2	06011801	2
19	Cooper	04050801	0~1	04050801	0~1	04050801	0~1	04050801	0~1
20	Fixing Screw-M3x8	06012502	2	06012502	2	06012502	2	06012502	2
21	Plastic Cover	05100701	1	05100701	1	05100708	1	05100708	1
22	NamePlate	06021605	1	06021605	1	06021607	1	06021607	1
23	Fixing Screw	06012004	2	06012004	2	06012004	2	06012004	2

DIN CONNECTOR TYPE "DIN 46350"

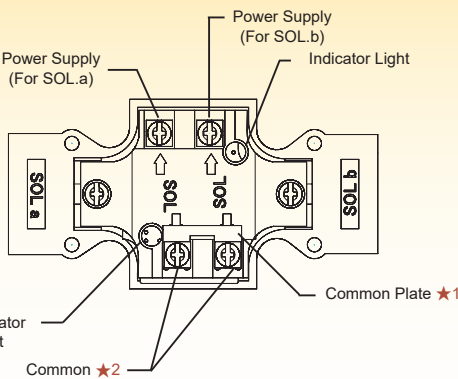
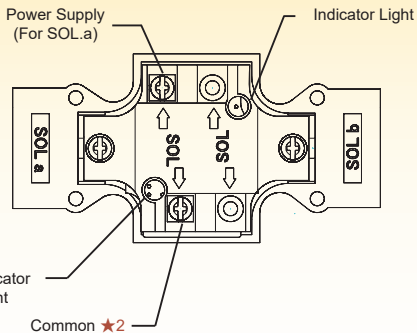
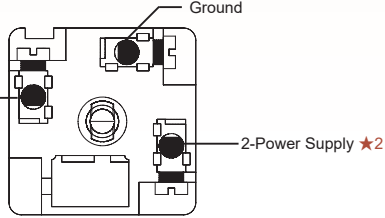
NO.	PART NAME	SWG-02-AC	QTY.	SWG-02-DC-(S)	QTY.	SWG-03-AC	QTY.	SWG-03-DC-(S)	QTY.
2-1	Coil	05081107	1~2	05080404(S)	1~2	05040801	1~2	05080505(S)	1~2
24	Gasket	06021603	1~2	06021603	1~2	06021603	1~2	06021603	1~2
25	Housing	06021601	1~2	06021602	1~2	06021601	1~2	06021602	1~2
26	Fixing Screw	06021604	1~2	06021604	1~2	06021604	1~2	06021604	1~2
27	Fixing Screw-M3.5x6	05100501	2	05100501	2	05100501	2	05100501	2
28	Nameplate	06021606	1	06021606	1	06021608	1	06021608	1

LEAD WIRE TYPE: "SWP CONNECTOR OR DT-04-2P CONNECTOR"

NO.	PART NAME	SWG-02-AC	QTY.	SWG-02-DC	QTY.	SWG-03-AC	QTY.	SWG-03-DC	QTY.
2-2	Coil	06021609	1~2	06021610	1~2	06021611	1~2	06021612	1~2
29	SWP Connector	06021613	1~2	06021613	1~2	06021613	1~2	06021613	1~2
30	DT04-2P Connector	06021614	1~2	06021614	1~2	06021614	1~2	06021614	1~2

- The value of "1~2" in the "QTY.", means that if the valve is single solenoid, it needs "1" unit, if the valve is double solenoid, it needs "2" units.
- The value of "06021614" in the "SWG-02-AC", means the part No. and CAD No., if you need the CAD file, please contact with SOLTECH.
- The spool type includes "2B2, 2B3, 3C2, 3C3...", please see the page 3 and 4.
- The coil include Alternate Current: AC 110V/50HZ, 220V/50HZ, 240V/50HZ or Direct Current: DC 12V, 24V...
- As for DIN CONNECTOR TYPE, the part No. of Coil(2-1) for SWG-02-DC is 05080404; for SWG-02-DC-S is 05080404S respectively.

LEAD WIRE CONNECTION AND DETAILS OF RECEPTACLE-"SWG-02 SERIES"

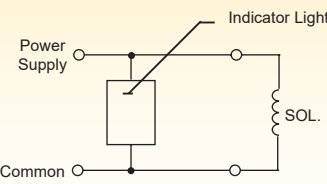
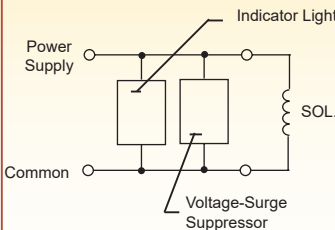
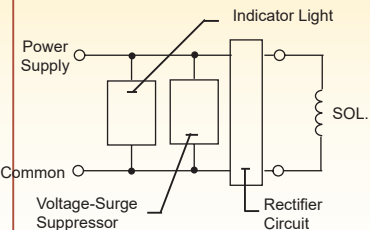
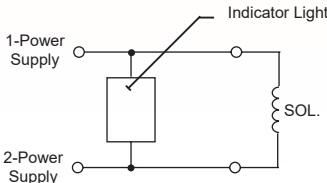
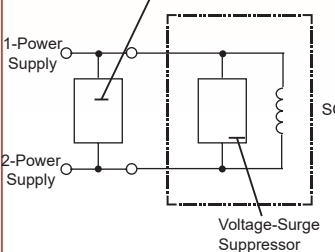
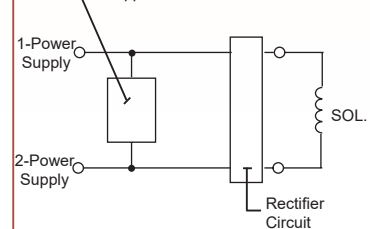
Type of Electrical Conduit Connection	Double Solenoid Type	Single Solenoid Type
Terminal Box Type		
Plug-in Connector Type		

- ★1. If you do not need the common plate, remove it.
 ★2. With DC solenoids, polarity is no question.

! DANGER !

- Do not perform wiring while the power is on. Doing so may result in electric shock, burns or death.
- Make the wiring properly. Improper wiring will cause an irregular movement of the machine, resulting in a grave accident.

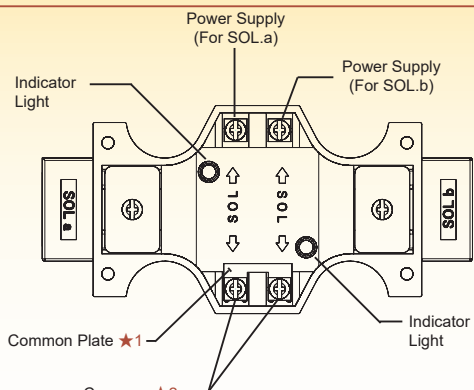
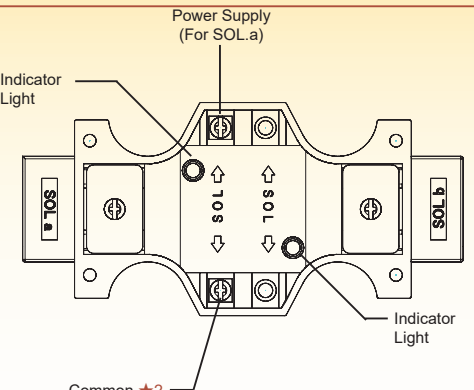
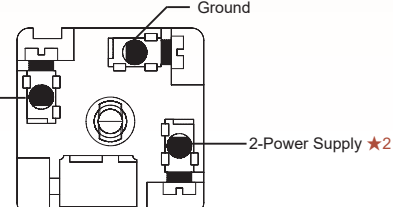
ELECTRICAL CIRCUIT

Type of Electrical Conduit Connection	Electric Source		
	AC	DC	AC→DC Rectified
Terminal Box Type			
Plug-in Connector Type			

- Voltage-Surge Suppressor(Circuit composed in coil) is not added in standard design. if need please consult SOLTECH.

A

LEAD WIRE CONNECTION AND DETAILS OF RECEPTACLE-"SWG-03 SERIES"

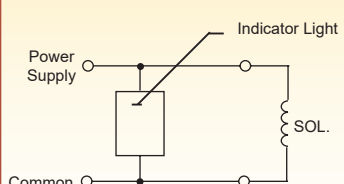
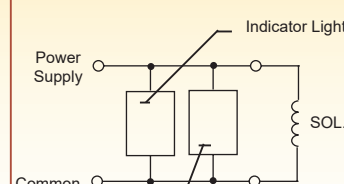
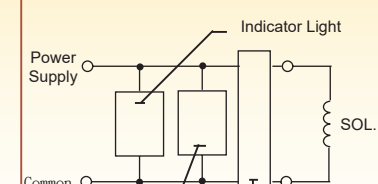
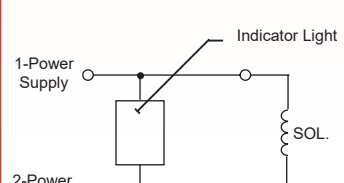
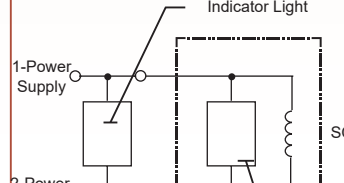
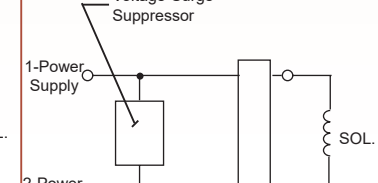
Type of Electrical Conduit Connection	Double Solenoid Type	Single Solenoid Type
Terminal Box Type		
Plug-in Connector Type		

- ★1. If you do not need the common plate, remove it.
 ★2. With DC solenoids, polarity is no question.

! DANGER !

- Do not perform wiring while the power is on. Doing so may result in electric shock, burns or death.
- Make the wiring properly. Improper wiring will cause an irregular movement of the machine, resulting in a grave accident.

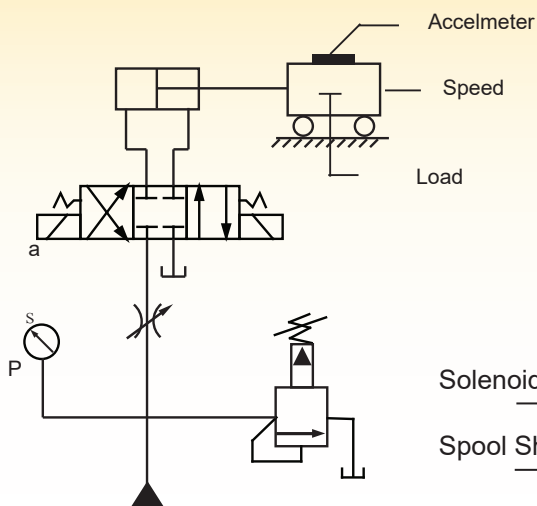
ELECTRICAL CIRCUIT

Type of Electrical Conduit Connection	Electric Source		
	AC	DC	AC→DC Rectified
Terminal Box Type			
Plug-in Connector Type			

- Voltage-Surge Suppressor(Circuit composed in coil) is not added in standard design. if need please consult SOLTECH.

【CHANGEOVER TIME】

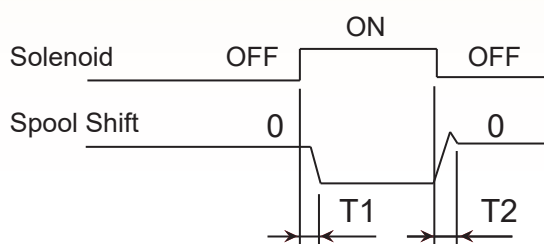
●Test Circuit and Conditions



●Test Conditions

Pressure: 16MPa(163 kgf/cm²)
 Flow: 31.5 L/min
 Viscosity: 35mm²/s{cst}
 Voltage:100% of rated voltage(After the coil temperature raises and saturated)

●Result of Measurement



Type	Model No.	Time(ms)		Type	Model No.	Time(ms)	
		T1	T2			T1	T2
AC	SWG-(H)-02-3C2-A※-(※)	12	5	AC	SWG-(H)-03-3C2-A※-(※)	29	25
DC	SWG-(H)-02-3C2-D※-(※)	51	22	DC	SWG-(H)-03-3C2-D※-(※)	100	37
RF	SWG-(H)-02-3C2-R※-(※)	57	104	RF	SWG-(H)-03-3C2-R※-(※)	100	204

【INSTRUCTIONS】

※ MOUNTING : No-spring detented models not energized continuously must be installed so that the spool axis will be horizontal. Other models are not restricted to mounting horizontally.

※ ENERGIZATION : On double solenoid valves, do not energize both solenoids at the same time. Solenoid burn-out may occur.

※ VALVE TANK PORT : Avoid connection of the valve tank port to a line where surge pressure is likely to occur. Pipe end of tank line should be submerged in oil.

※ HYDRAULIC FLUID :

◎ Type of Fluid

- ★ Petroleum based fluids: Equivalent to ISO VG32 or 46.
- ★ Synthetic fluids: Phosphate ester or Polyol ester type.
- ★ Water Containing Fluids: Water-glycol fluids or W/O emulsion type.

◎ Recommended Viscosity and Temperature

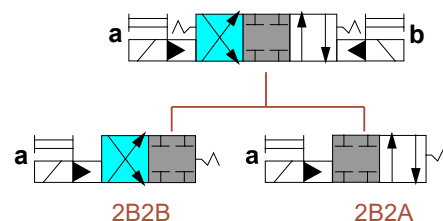
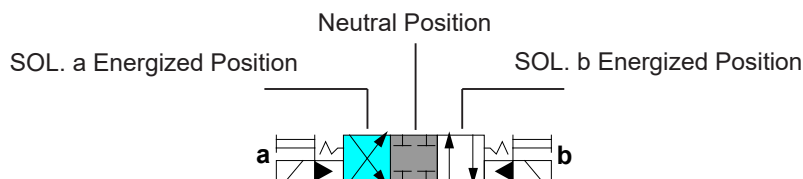
- ★ Always be sure to use hydraulic fluids within the stipulated conditions as follows:
 Oil Temperature: 5 to 160 degrees F
 Viscosity: 77 to 1800 SSU

◎ Control of Contamination

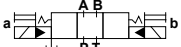
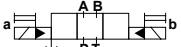
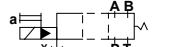
- ★ Due caution must be used to maintain control over contamination of hydraulic fluids which may otherwise lead to breakdown and shorter valve life.
- ★ Please maintain the degrees of contamination between NAS 1638-Grade 12, Use 9.8 x 10 inch or filter line filter.

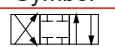
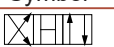
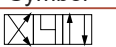
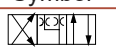
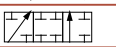
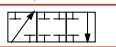
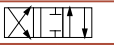
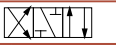
【 GRAPHICAL SYMBOLS 】

(Example) In Case Of Spool Type "3C2"

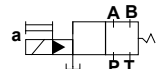
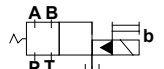
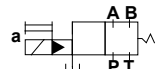
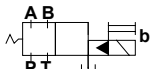


- 1) Example: Three switched position(3C) with spool type "2", ordering code "3C2".
- 2) Example: Two switched position(2B) with spool type "60", ordering code "2B2".
- 3) Example: Two switched position(2B) with spool type "8" and reverse assembled, ordering code "2B8L".
- 4) The dotted line of graphical symbol(2B, 2N) represent the momentary switched position.

Three Switched Position	Graphical Symbol	Two Switched Position	Graphical Symbol	Two Switched Position	Graphical Symbol
Spring Centred		No Spring		Spring Offset	
Model No: "3C"+ Spool Type		Model No: "2N"+ Spool Type		Model No: "2B"+ Spool Type	

Spool Type	Graphical Symbol	Spool Type	Graphical Symbol	Spool Type	Graphical Symbol	Spool Type	Graphical Symbol	Spool Type	Graphical Symbol
"2"		"3"		"4"		"40"		"5"	
"60"		"7"		"8"		"85"		"9"	
"10"		"11"		"12"					

- 1) Example: Two switched position(2B) with spool type "2A", ordering code "2B2A".
- 2) Example: Two switched position(2B) with spool type "8B" and reverse assembled, ordering code "2B8BL".
- 3) Example: Two switched position(2B) with spool type "12A" and reverse assembled, ordering code "2B12AL".
- 4) Valves Only Using Neutral Position and Side Position (Two Position Valve, No Intermediate or Momentary Switched Position)

Two Switched Position	Graphical Symbol		Three Switched Position	Graphical Symbol	
	Standard Assembled	Reverse Assembled		Standard Assembled	Reverse Assembled
Spring Offset			Spring Offset		
Model No: "2B"+ Spool Type		Model No: Spool Type + "L" 	Model No: "2B"+ Spool Type		Model No: Spool Type + "L" 

Spool Type	Graphical Symbols		Spool Type	Graphical Symbols	
2A			2B		
3A			3B		
4A			4B		
40A			40B		
5A			5B		
60A			60B		
7A			7B		
8A			8B		
9A			9B		
10A			10B		
11A			11B		
12A			12B		

【DSHG-03/04/06/10】

※SPECIFICATION

Model	Max. Flow (ℓ/min)/(U.S.GPM)	Max. Pressure (MPa)/(PSI)	Pilot Pressure (MPa)/(PSI)	Weight (kg)
DSHG-03	150(39.6)	31.5(4570)	25(3630)	5.4
DSHG-04	300(79.3)	31.5(4570)	25(3630)	6.2
DSHG-04-AB				8
DSHG-06	500(132)	31.5(4570)	25(3630)	12
DSHG-06-AB				14
DSHG-10	1100(291)	31.5(4570)	25(3630)	50
DSHG-10-AB				51.5



A

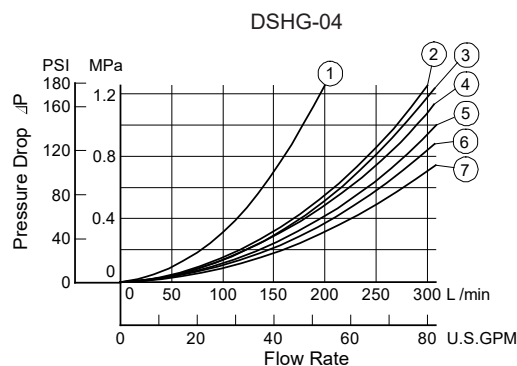
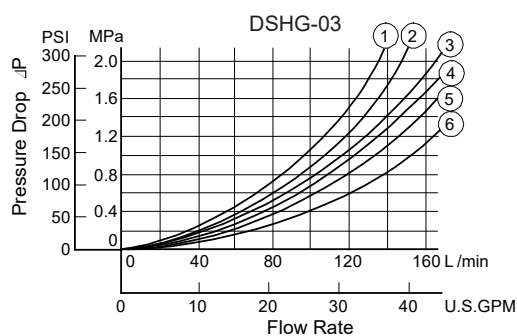
※ACCESSORIES

Model	Socket Head Screw Cap				O Ring (JIS B 2401-1B)		
	European Design Std.	North America Design Std.					
DSHG-03	M6 × 40 Lg.	1/4-20 UNC × 1-1/2 Lg.	4	Pcs	P12	5	Pcs
DSHG-04-(AB)	M6 × 45 Lg.	1/4-20 UNC × 1-3/4 Lg.	2	Pcs	P9	2	Pcs
	M10 × 50 Lg.	3/8-16 UNC × 2 Lg.	4	Pcs	P22A	4	Pcs
DSHG-06-(AB)	M12 × 60 Lg.	1/2-13 UNC × 2-1/2 Lg.	6	Pcs	P14	2	Pcs
					P32	4	Pcs
DSHG-10-(AB)	M20 × 75 Lg.	3/4-10 UNC × 3 Lg.	6	Pcs	P20	2	Pcs
					P42	4	Pcs

※MODEL NUMBER DESIGNATION

DSHG	04	3C60	AB	(E)	(T)	(90)
SERIES NO.	VALVE SIZE 03 : ISO 4401-05, CETOP5, NFPA-D05 04: ISO 4401-07, CETOP7, NFPA-D07 06: ISO 4401-08, CETOP8, NFPA-D08 10: ISO 4401-10, CETOP10, NFPA-D10	SPOOL TYPE	ADJ. HANDHOLD	E:EXTERNAL PILOT OMIT:INTERNAL PILOT	T:INTERNAL DRAIN OMIT:EXTERNAL DRAIN	DESIGN NO. OMIT: DIN 912 BOLTS 90: UNC BOLTS (NORTH AMERICA)

※PERFORMANCE CURVE



Spool Type	Pressure Drop Curve Numbers				
	P→A	B→T	P→B	A→T	P→T
2	3	3	4	4	---
3	5	5	5	6	4
4	3	5	4	6	---
40	3	3	4	4	---
5	6	3	4	6	2
60	3	3	4	4	1
7	3	3	4	4	---
9	6	3	6	4	---
10	3	5	4	4	---
11	6	3	4	4	---
12	3	3	4	6	---

Spool Type	Pressure Drop Curve Numbers				
	P→A	B→T	P→B	A→T	P→T
2	5	4	5	6	---
3	5	3	5	5	7
4	5	3	5	5	---
40	5	4	5	6	---
5	7	4	5	5	5
6	5	3	5	6	1
60	7	5	7	7	2
7	5	4	5	6	---
9	5	4	5	6	---
10	5	2	5	6	---
11	6	4	5	6	---
12	5	4	5	5	---

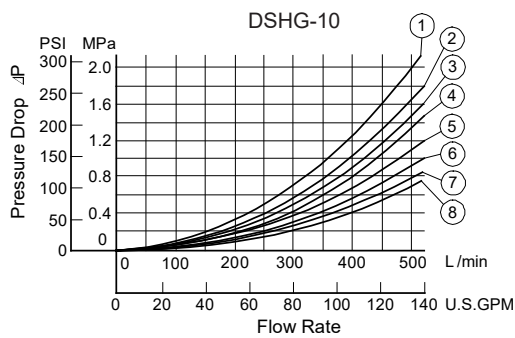
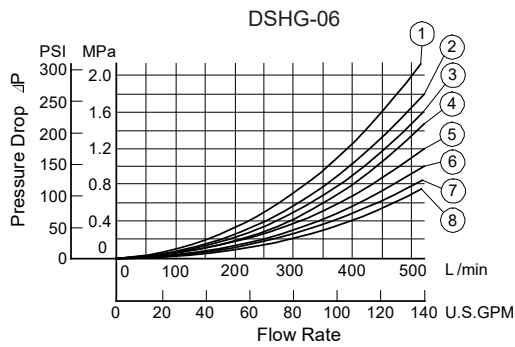


SOLTECH

DIRECTIONAL CONTROLS

SOLENOID CONTROLLED PILOT DIRECTIONAL CONTROL VALVES

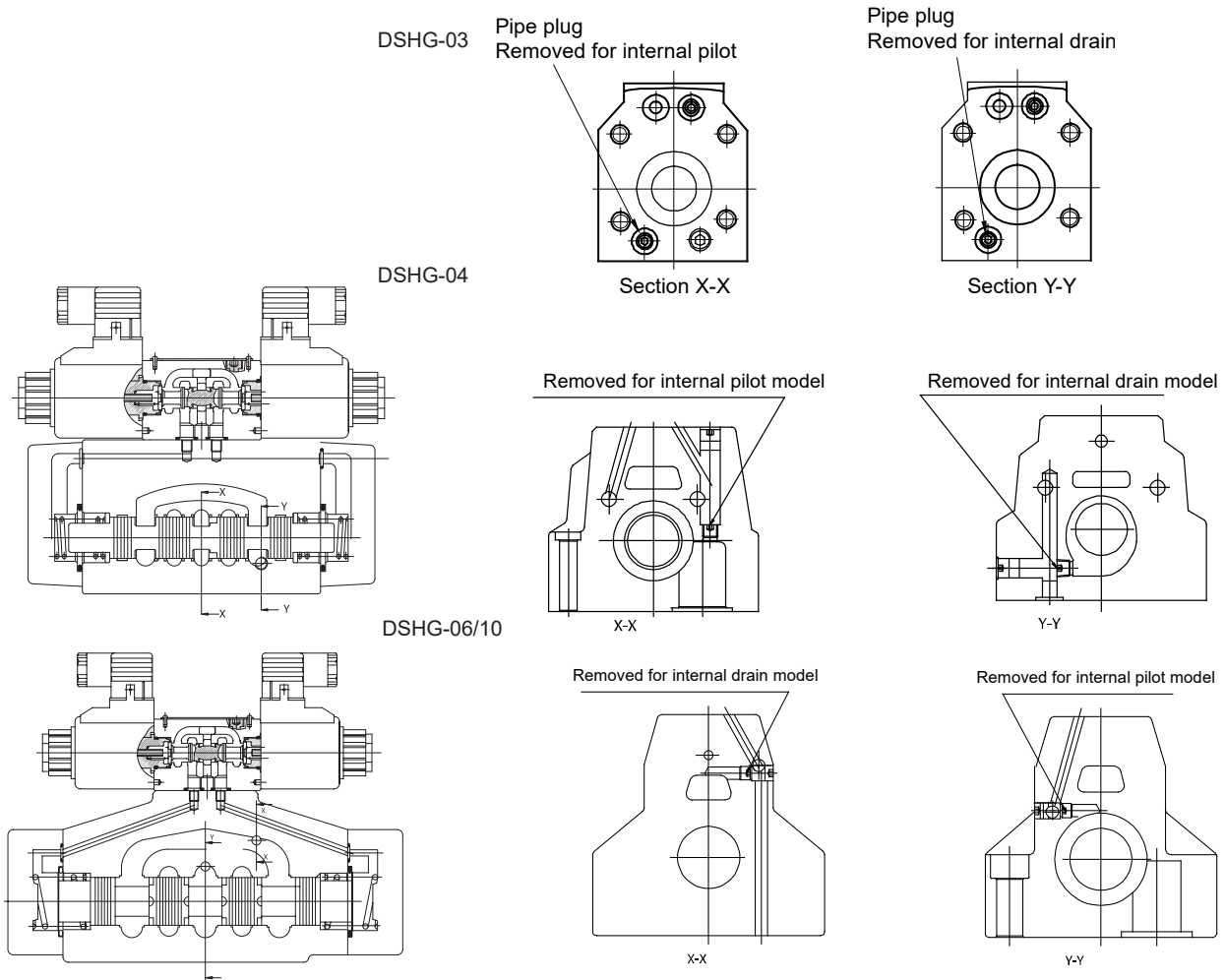
A

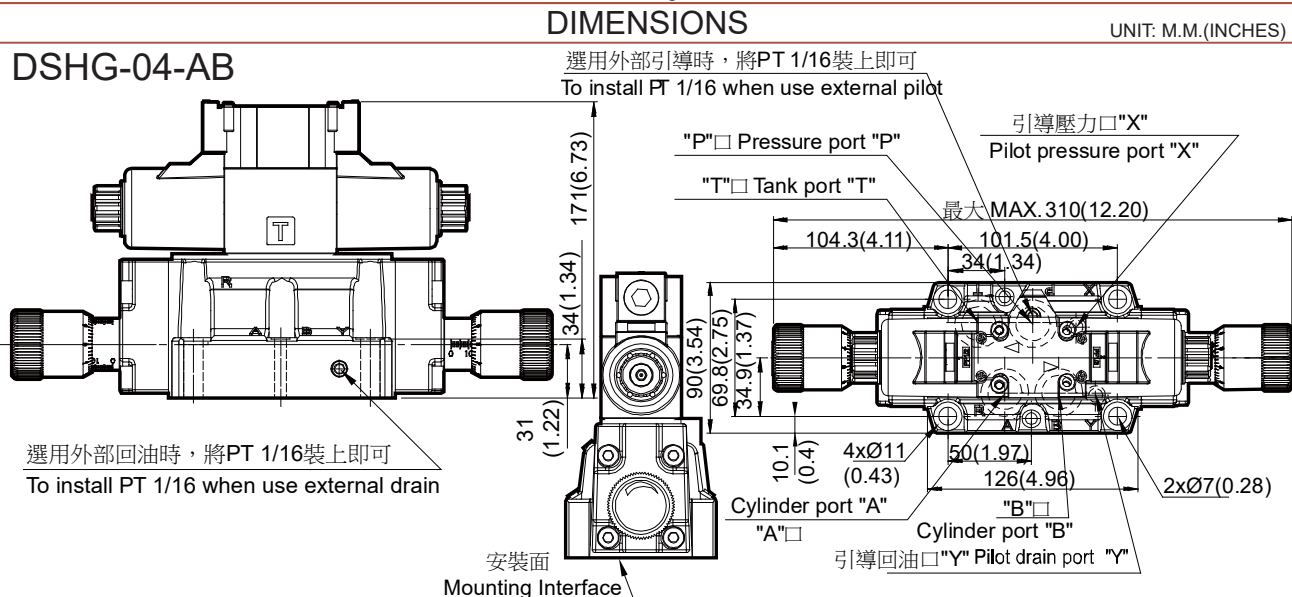
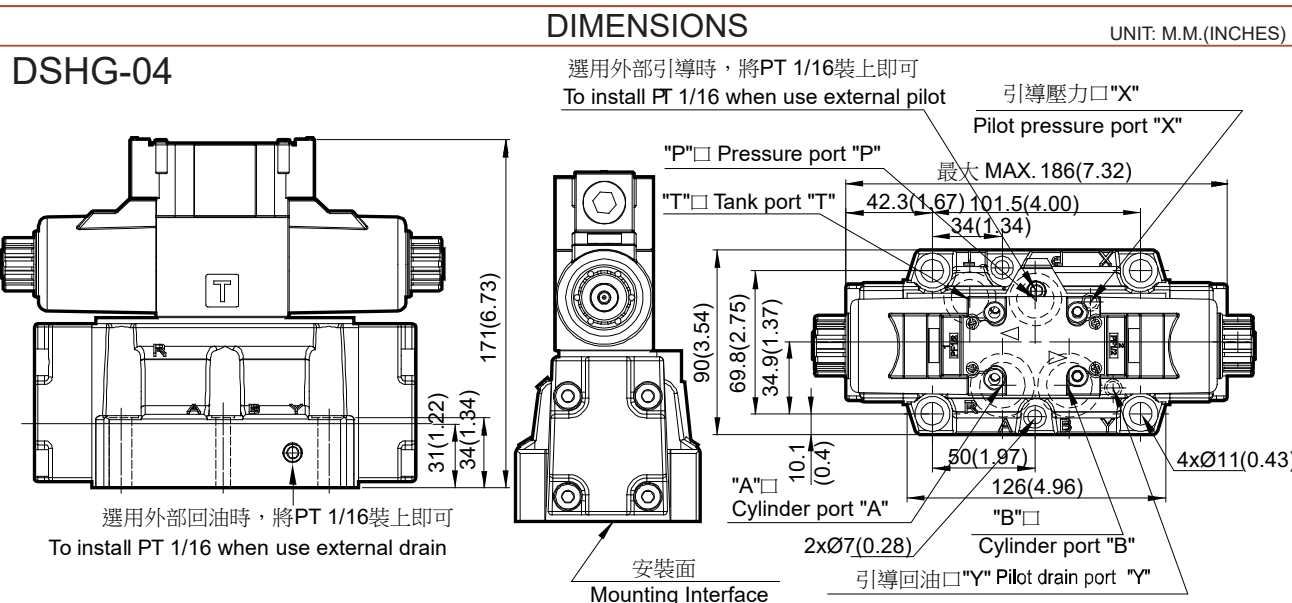
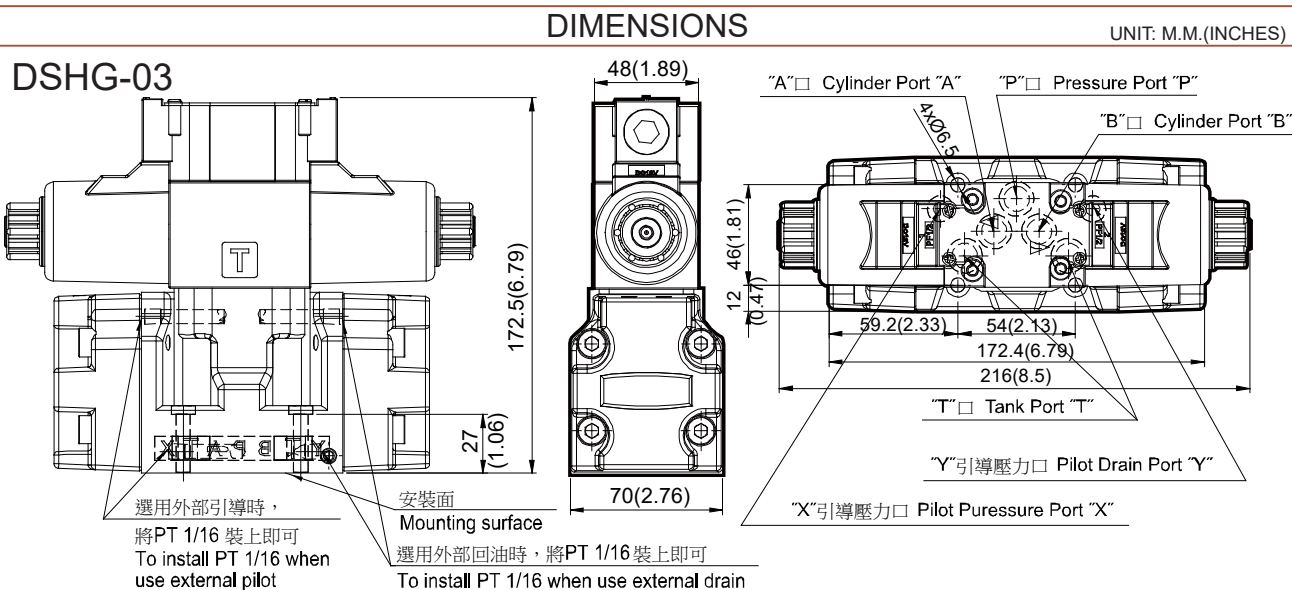


Spool Type	Pressure Drop Curve Numbers				
	P→A	B→T	P→B	A→T	P→T
2	8	5	8	7	---
3	6	4	6	7	4
4	8	5	8	7	---
40	8	5	8	7	---
5	8	4	5	7	1
6	5	3	5	4	1
60	6	5	6	7	1
7	6	4	6	7	---
9	6	4	6	7	---
10	8	5	8	7	---
11	8	4	5	7	---
12	8	5	8	7	---

Spool Type	Pressure Drop Curve Numbers				
	P→A	B→T	P→B	A→T	P→T
2	9	6	9	8	---
3	7	6	7	7	5
4	9	6	9	6	---
40	9	6	9	8	---
5	9	6	8	6	1
6	5	3	5	4	2
60	8	5	8	5	2
7	7	6	7	7	---
9	7	6	7	8	---
10	9	5	9	8	---
11	9	6	8	7	---
12	9	7	9	6	---

※FUNCTION DESCRIPTION



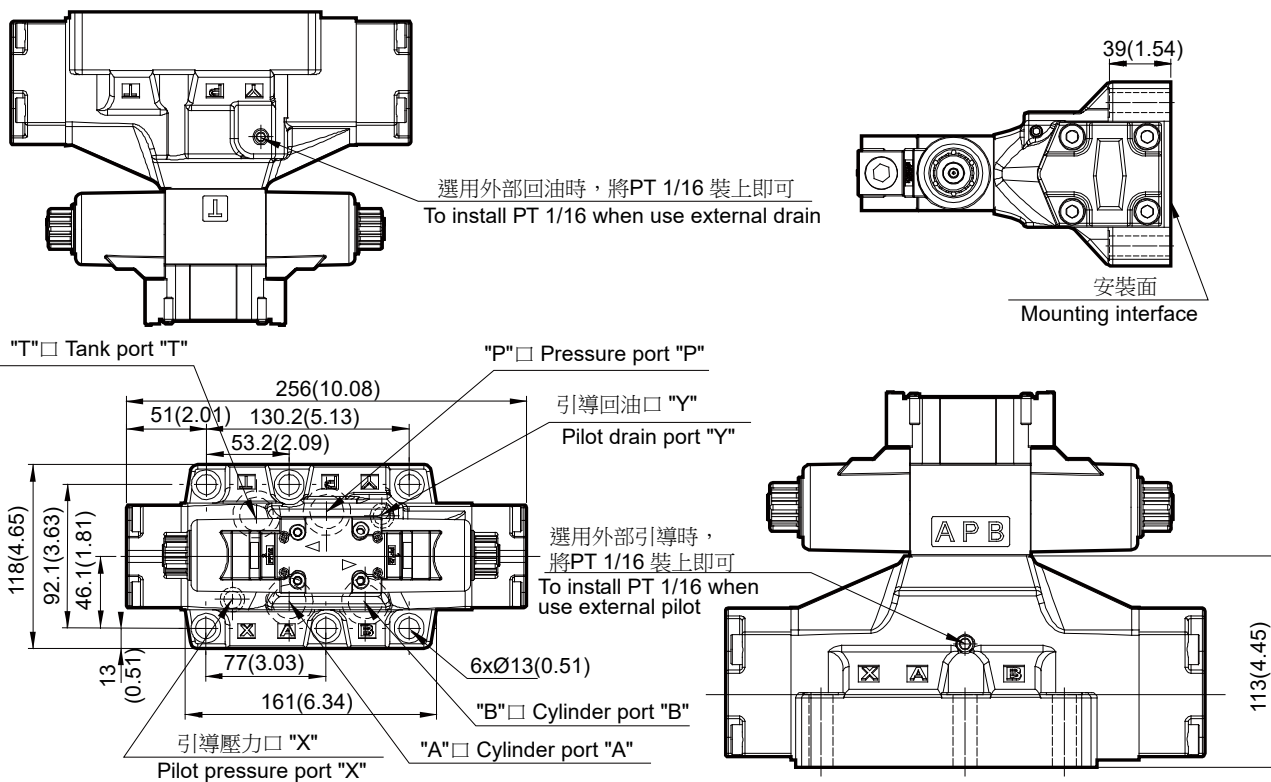


A

DIMENSIONS

UNIT: M.M.(INCHES)

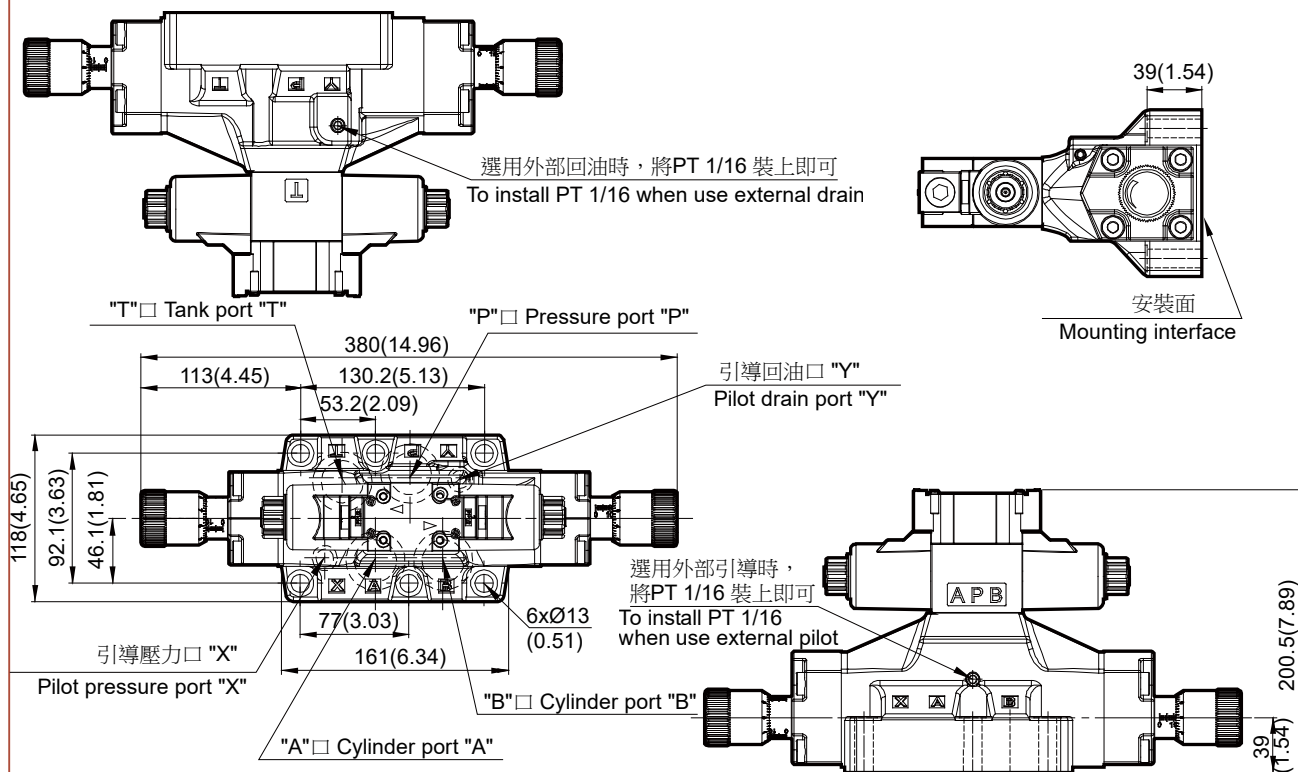
DSHG-06



DIMENSIONS

UNIT: M.M.(INCHES)

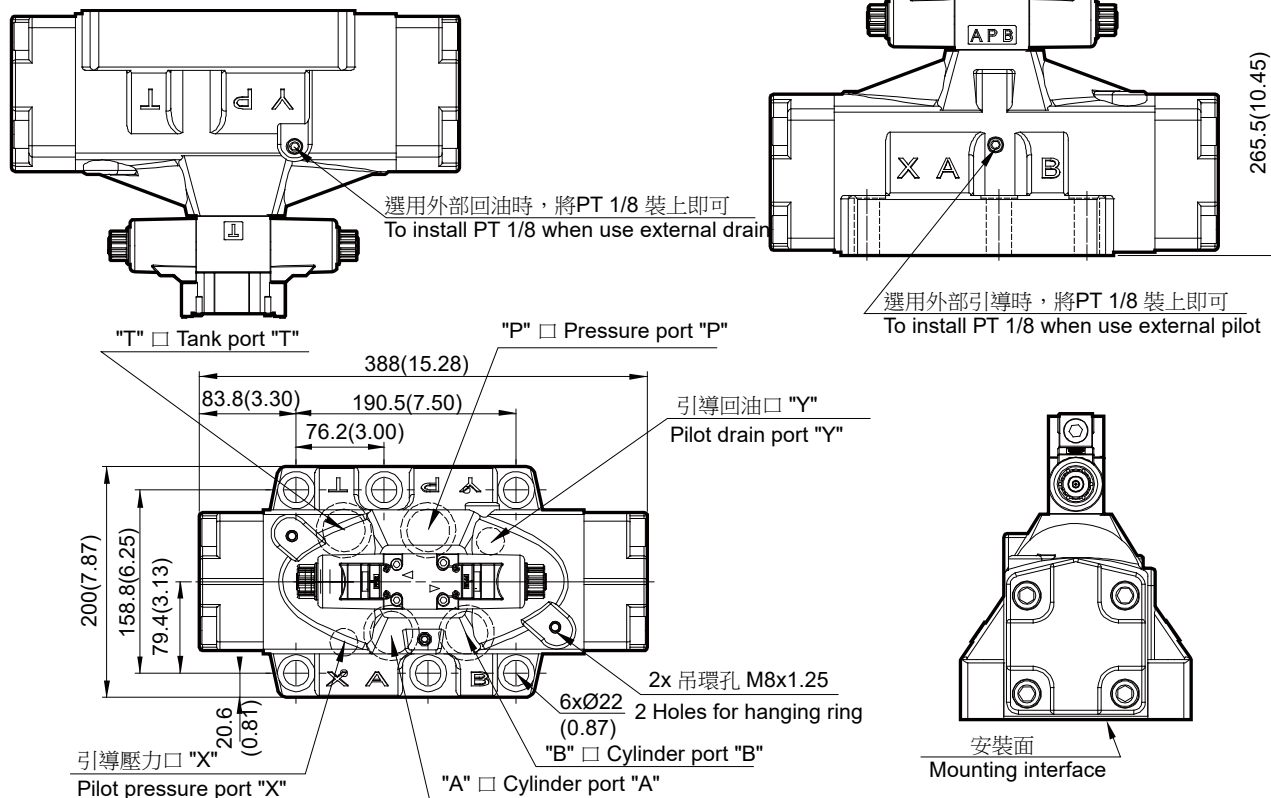
DSHG-06-AB



DIMENSIONS

UNIT: M.M.(INCHES)

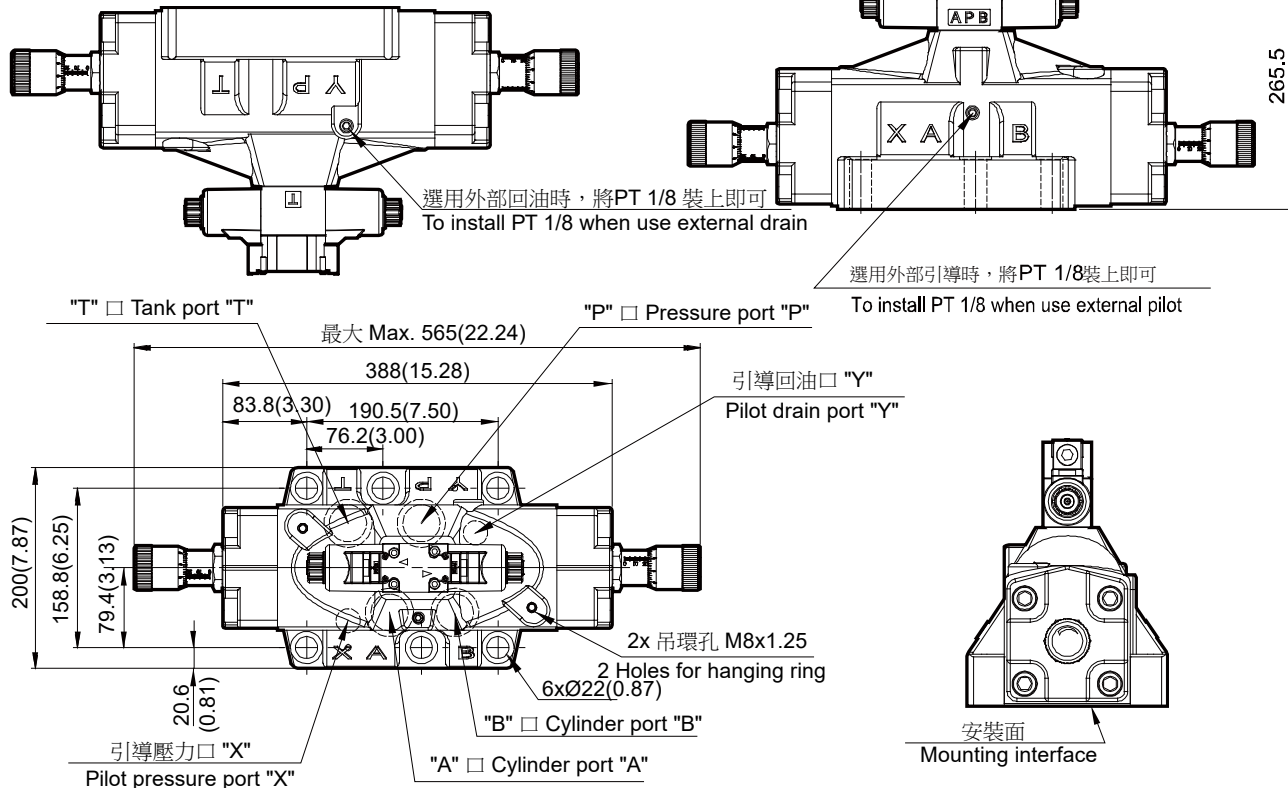
DSHG-10



DIMENSIONS

UNIT: M.M.(INCHES)

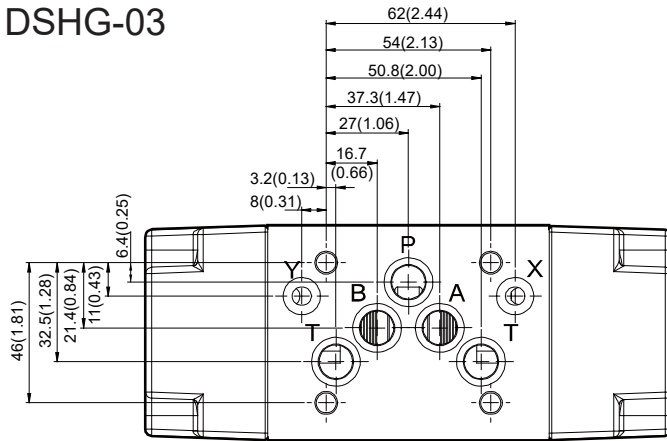
DSHG-10-AB



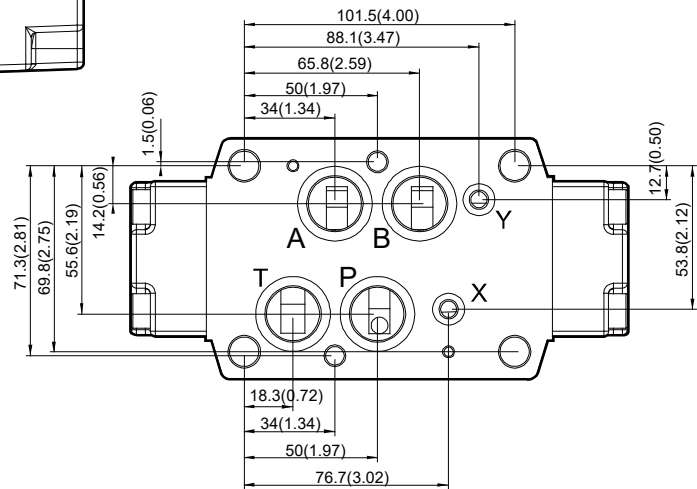
MOUNTING INTERFACE DIMENSIONS

UNIT: M.M.(INCHES)

DSHG-03



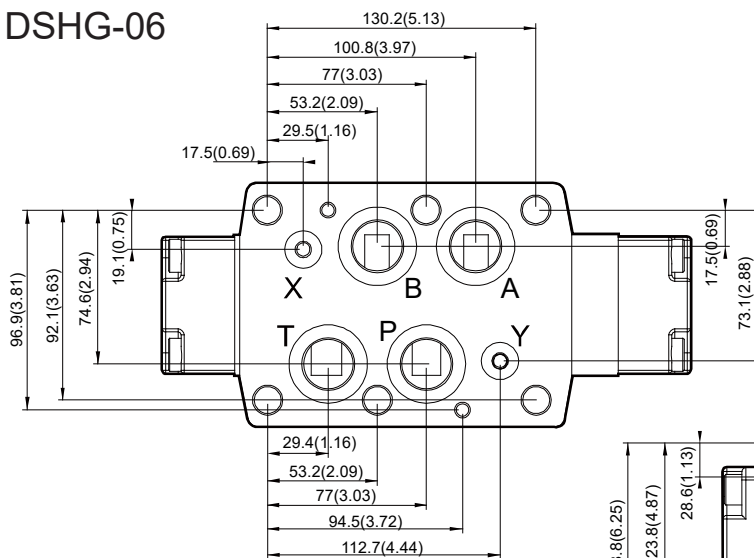
DSHG-04



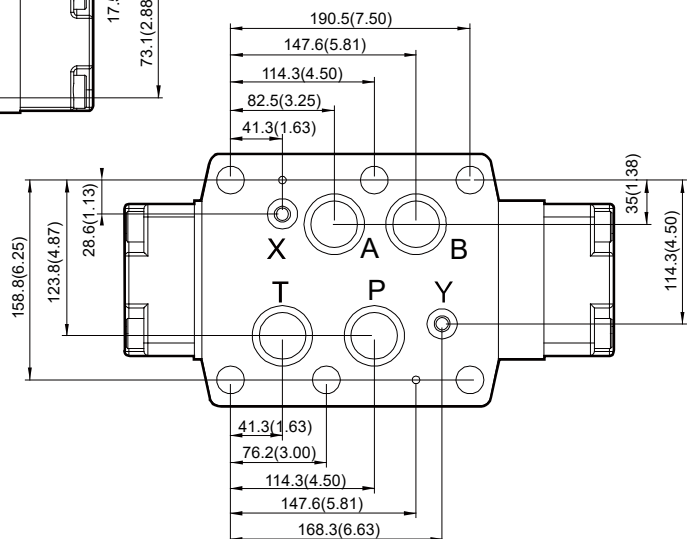
MOUNTING INTERFACE DIMENSIONS

UNIT: M.M.(INCHES)

DSHG-06

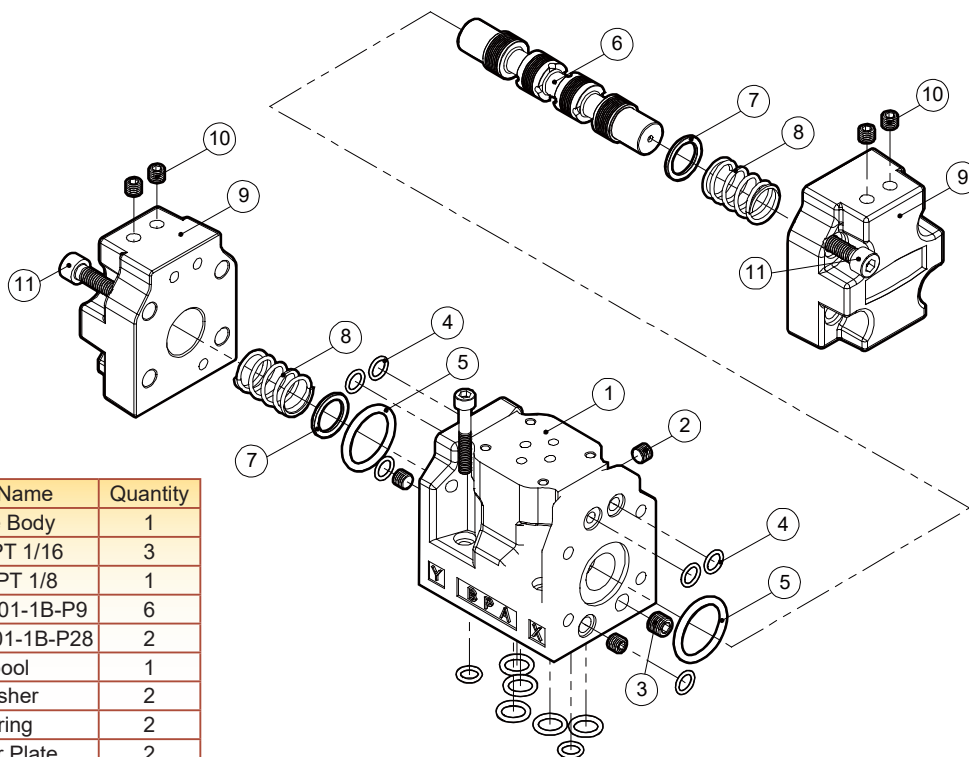


DSHG-10



ASSEMBLY

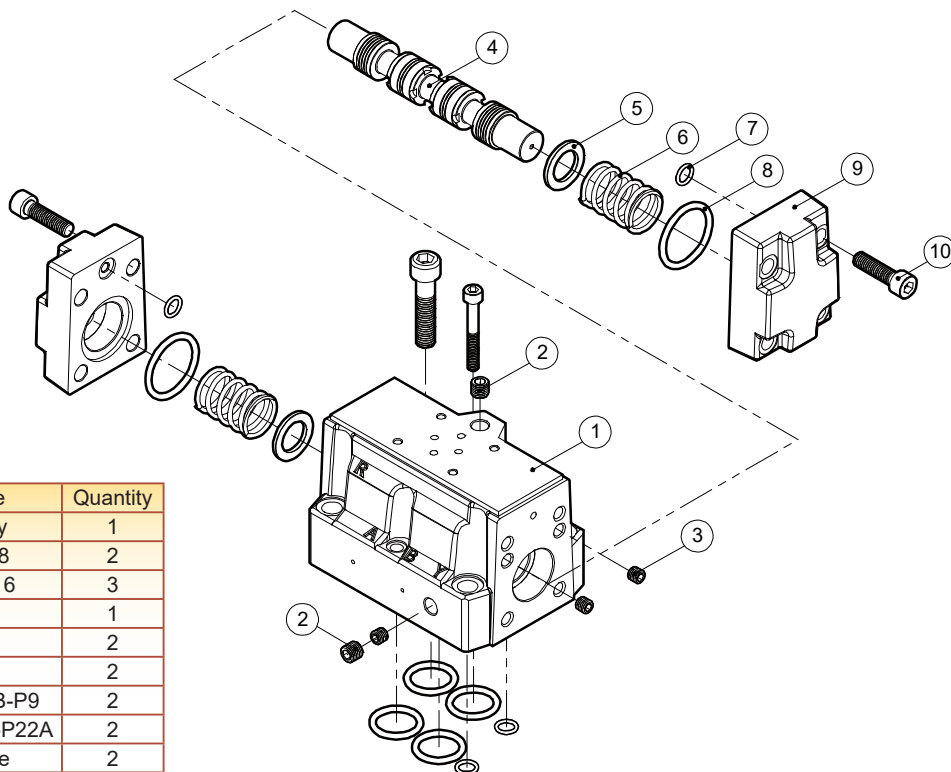
DSHG-03



Item No.	Part Name	Quantity
1	Valve Body	1
2	Plug PT 1/16	3
3	Plug PT 1/8	1
4	JIS B 2401-1B-P9	6
5	JIS B 2401-1B-P28	2
6	Spool	1
7	Washer	2
8	Spring	2
9	Cover Plate	2
10	Plug PT 1/16	4
11	Bolt M8X30L	8

ASSEMBLY

DSHG-04



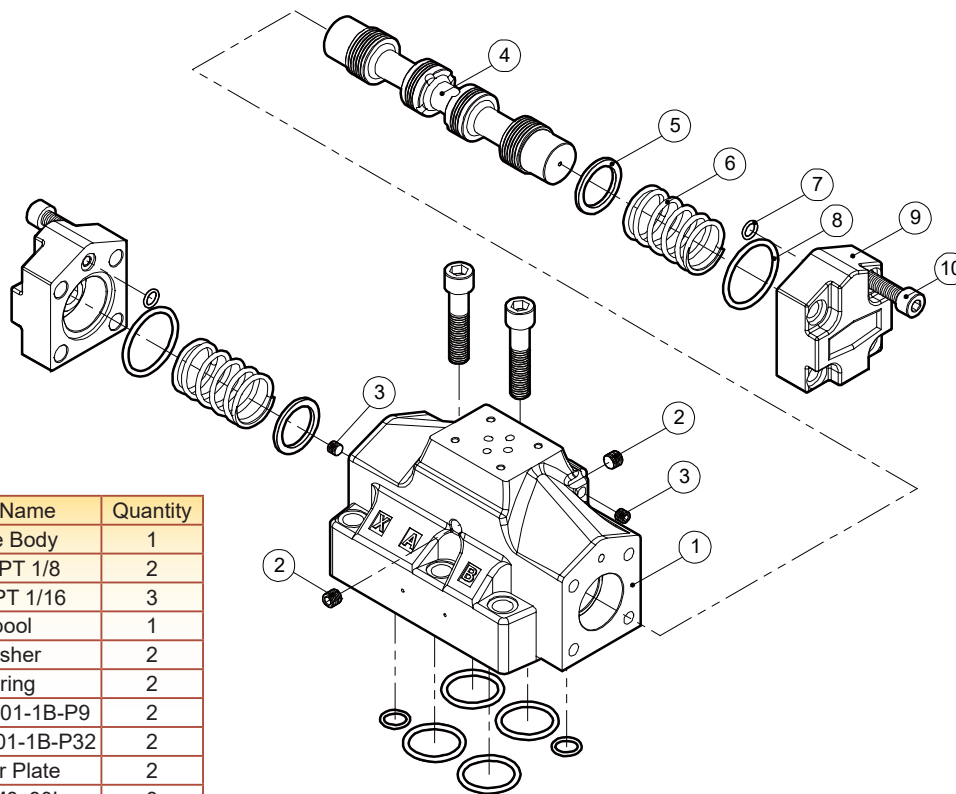
Item No.	Part Name	Quantity
1	Valve Body	1
2	Plug PT 1/8	2
3	Plug PT 1/16	3
4	Spool	1
5	Washer	2
6	Spring	2
7	JIS B 2401-1B-P9	2
8	JIS B 2401-1B-P22A	2
9	Cover Plate	2
10	Bolt M8x30L	8

A

ASSEMBLY

DSHG-06

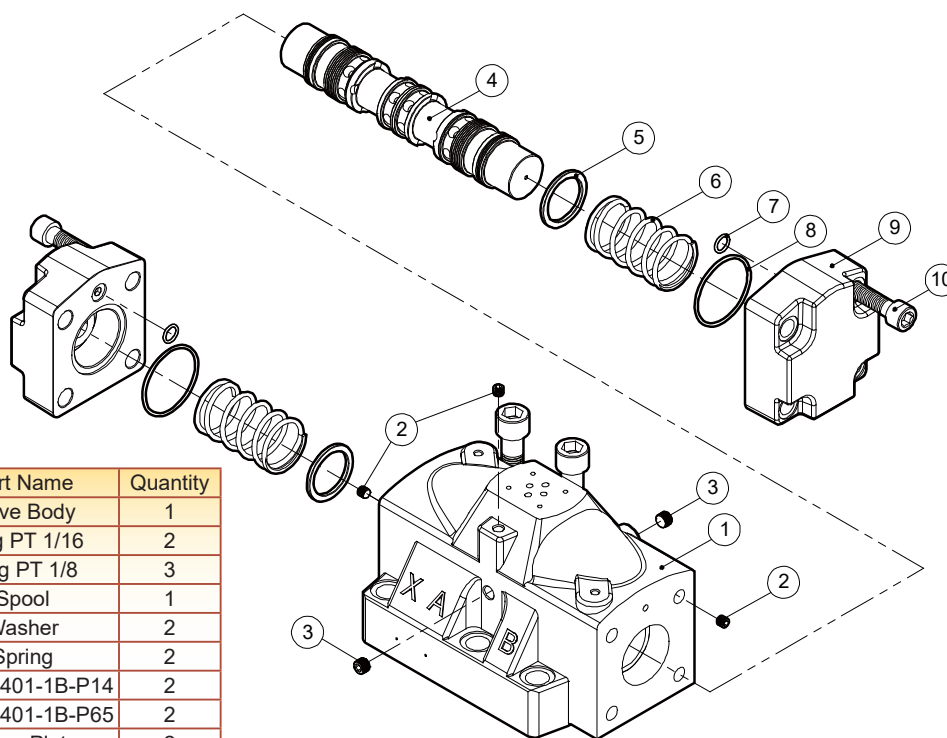
Item No.	Part Name	Quantity
1	Valve Body	1
2	Plug PT 1/8	2
3	Plug PT 1/16	3
4	Spool	1
5	Washer	2
6	Spring	2
7	JIS B 2401-1B-P9	2
8	JIS B 2401-1B-P32	2
9	Cover Plate	2
10	Bolt M8x30L	8



ASSEMBLY

DSHG-10

Item No.	Part Name	Quantity
1	Valve Body	1
2	Plug PT 1/16	2
3	Plug PT 1/8	3
4	Spool	1
5	Washer	2
6	Spring	2
7	JIS B 2401-1B-P14	2
8	JIS B 2401-1B-P65	2
9	Cover Plate	2
10	Bolt M16x55L	8



[DCG]

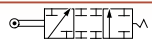
ISO4401-AB-03-4-A

A

※SPECIFICATION

Model	Max. Flow (ℓ/min)/(U.S.GPM)	Max. Oper. Pres. (MPa)/(PSI)	Weight (kg)
DCG-02	30(7.9)	31.5(4570)	1

※GRAPHIC SYMBOL

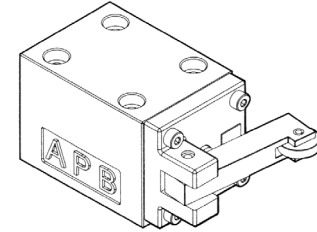
2B2	2B3	2B8
		

※ACCESSORIES

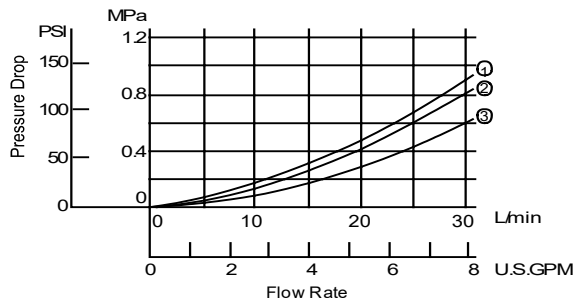
Model	Socket Head Screw Cap		O Ring
	European Design Std.	North America Design Std.	
DCG-02	M5 × 45 Lg.	10-24 UNC × 1-3/4 Lg.	4 Pcs P9 4 Pcs

※MODEL NUMBER DESIGNATION

DC	G	02	2B2	(90)
SERIES NO.	CONNECTION TYPE G: SUB-PLATE TYPE T: THREADED TYPE	VALVE SIZE 02 : NG06	SPOOL TYPE	DESIGN NO. OMIT: DIN 912 BOLTS 90: UNC BOLTS (NORTH AMERICA)

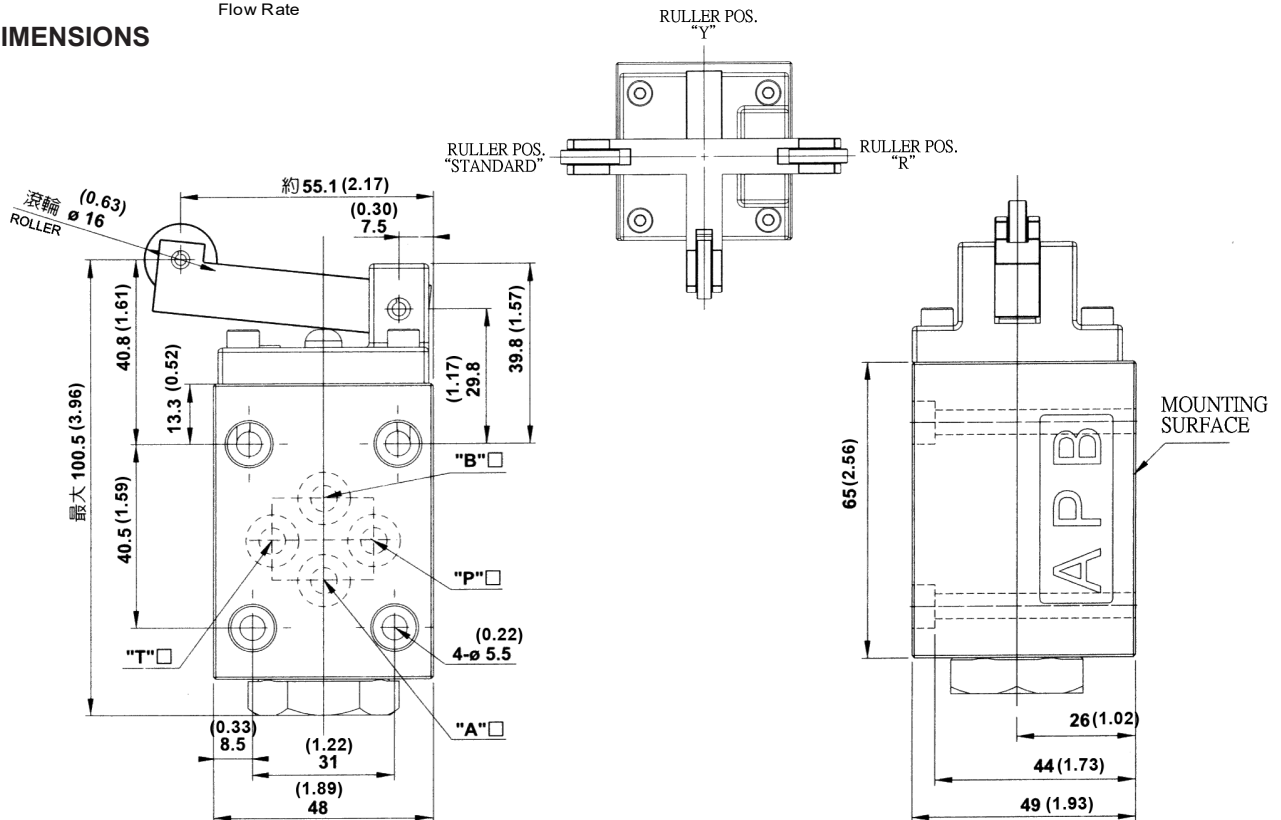


※PERFORMANCE CURVE



Model Numbers	Pressure Drop Curve No.			
	P→A	B→T	P→B	A→T
DCG-02-2B2	2	2	3	3
DCG-02-2B3	2	2	3	3
DCG-02-2B8	3	---	3	---

※DIMENSIONS

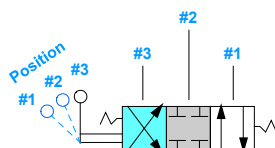


UNIT: M.M.(INCHES)

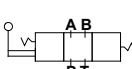
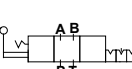
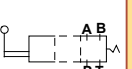
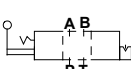
THE DIMENSIONS OF MOUNTING INTERFACE PLEASE REFER TO PAGE 35

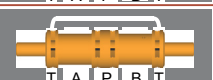
【GRAPHICAL SYMBOLS】

(Example): In Case Of Spool Type "3C2"
範例：芯軸型式'3C2'



- 1) Example: Three switched position(3C) with spool type "2", ordering code "3C2".
- 2) Example: Two switched position(2B) with spool type "2", ordering code "2B2".
- 3) Example: Three switched position(3D) with spool type "2", ordering code "3D2".
- 4) The dotted line of graphical symbol(2B, 2D) represent the momentary switched position.

Three Switched Position	Graphical Symbol	Three Switched Position	Graphical Symbol	Two Switched Position	Graphical Symbol	Two Switched Position	Graphical Symbol
Spring Centred		No Spring-With Detent		Spring Offset		No Spring-With Detent	
Model No: "3C"+ Spool Type		Model No: "3D"+ Spool Type		Model No: "2B"+ Spool Type		Model No: "2D"+ Spool Type	

Spool Type	Graphical Symbol	Physical Relationship (Neutral Position)	Spool 02	Spool 03	Funtions and Applications
"2"					Holds pump pressure and cylinder position at neutral. Care should be paid if used as a 2-position type because shock occurs when each port is blocked in transit.
"3"					Pump can be unloaded and actuator is floating at neutral. If a 2-position type is used, shock is reduced as each port is released to tank in transit.
"4"					Pump pressure is held and actuator is floated at neutral. 2-position type is used when system pressure is required to be held in transit. Shock during transit is less compared to spool type "2".
"40"					In a variation of spool type "4", a restrictor is provided in A-T and B-T ports. Making it faster at stopping the actuator.
"5"					It can be used when a pump is unloading at neutral and actuator is halted at one way flow.
"60"					Pump is unloading and actuator position held at neutral. Suitable for series operation. Shock is reduced as each port is released to tank on transit.
"7"					Mainly used as a 2-position type. Shock is reduced on transit.
"8"					Pump pressure and cylinder position is held at neutral in the same way as spool type "2". It is used as 2 way type.
"85"					
"9"					Regenerative circuit is provided at neutral.
"10"					Prevent actuator from one direction drift by leakage of P port at neutral.
"11"					Half actuator movement positively at B. T ports blocked P.A port connected at neutral.
"12"					Prevent actuator from one direction drift by leakage of P port at neutral.

[DMG/DMT 02, 03, 04, 06, 10]

※SPECIFICATION

NG 6, 10, 16, 25, 32

Model	Max. Flow (ℓ/min)/(U.S.GPM)	Max. Oper. Pres. (MPa)/(PSI)	Allow Back Pres. (MPa)/(PSI)	Weight (kg)
DMG-02	50(13.2)	31.5(4570)	2(290)	3.4
DRT-03				3.4
DMT(G)-03			10(1450)	4.0
DMT-04	100(26.4)		14(2030)	7.6
DMT(G)-06	180(47.6)			13.0
DMT-10	39.6			22.0

※ACCESSORIES

Model	Socket Head Screw Cap		O Ring	
	European Design Std.	North America Design Std.		
DMG-02	M5 × 45 Lg.	10-24 UNC × 1-3/4 Lg.	4 Pcs P9	4 Pcs
DMG-03	M6 × 45 Lg.	1/4-20 UNC × 1-1/2 Lg.	4 Pcs P12	5 Pcs

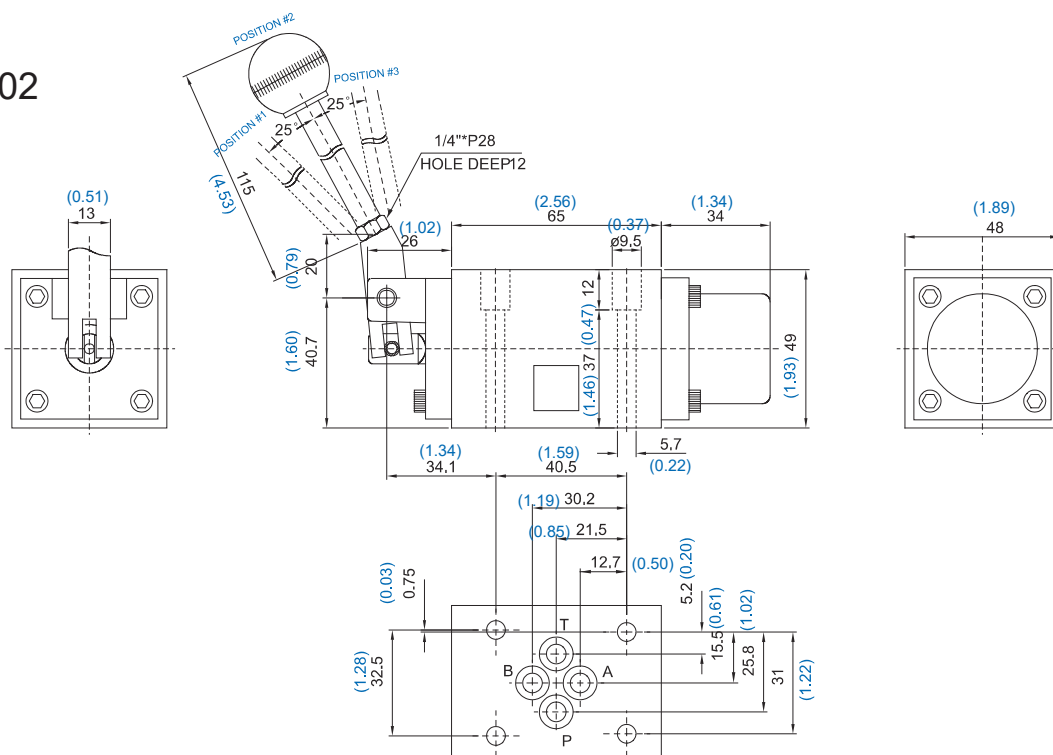


※MODEL NUMBER DESIGNATION

D	M	T	04	3C60	(90)
SERIES NO.	MANUAL CONTROL TYPE M : VERTICAL OPERATION R : ROTARY TYPE	CONNECTION TYPE G: SUBPLATE TYPE T: THREADED TYPE	VALVE SIZE 02: 1/4", ISO 4401-AB-03-4-A, NG6, CETOP 3 03: 3/8", ISO 4401-AC-05-4-A, NG10, CETOP 5 04 : 1/2", ISO 4401-AD-07-4-A NG16, CETOP 7 06: 3/4", ISO 4401-AE-08-4-A, NG25, CETOP 8 10: 1-1/4", ISO 4401-AF-10-4-A, NG32, CETOP 10	SPOOL TYPE	DESIGN NO. OMIT: DIN 912 BOLTS 90: UNC BOLT(NORTH AMERICA)

※DIMENSIONS

DMG-02

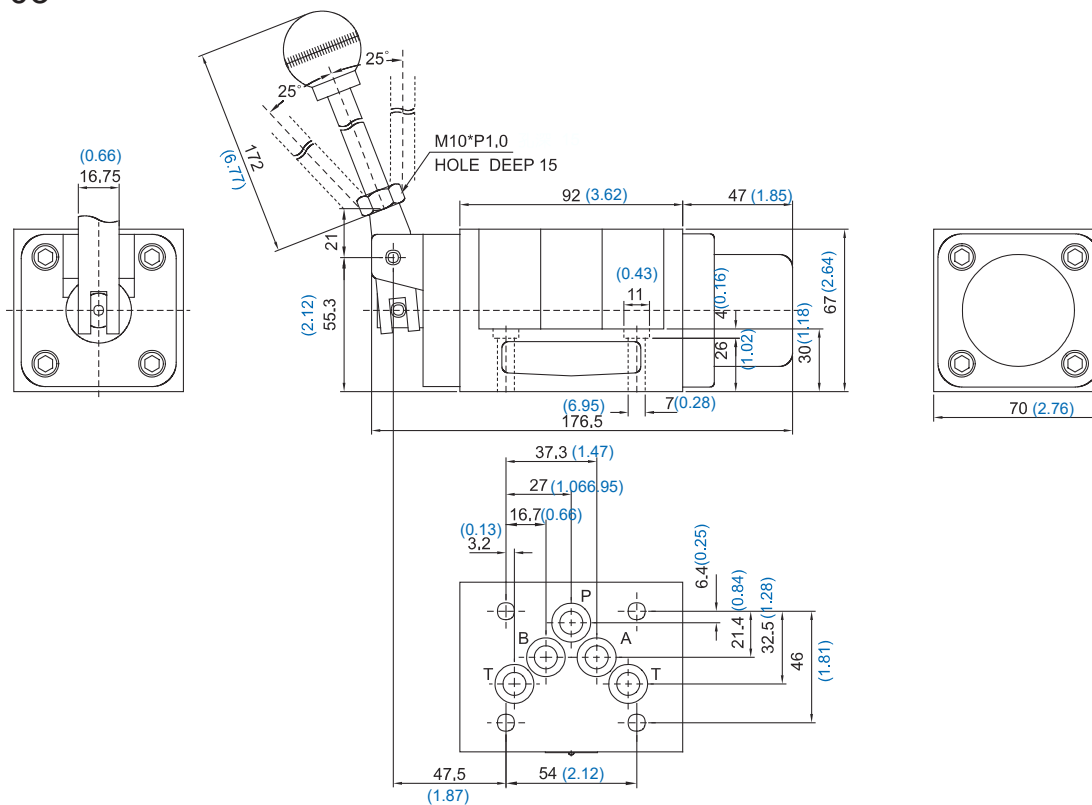


UNIT: M.M.(INCHES)

A

DIMENSIONS

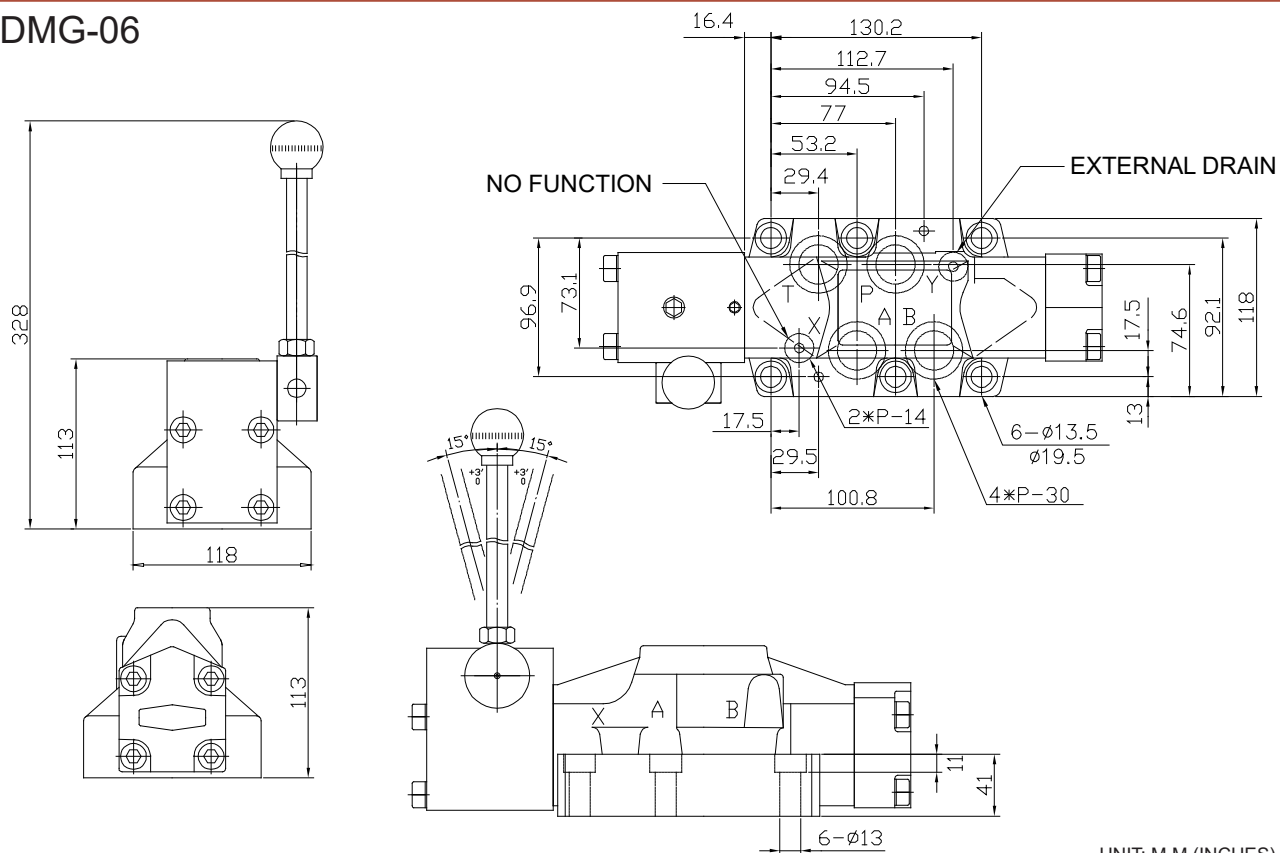
DMG-03



UNIT: M.M.(INCHES)

DIMENSIONS

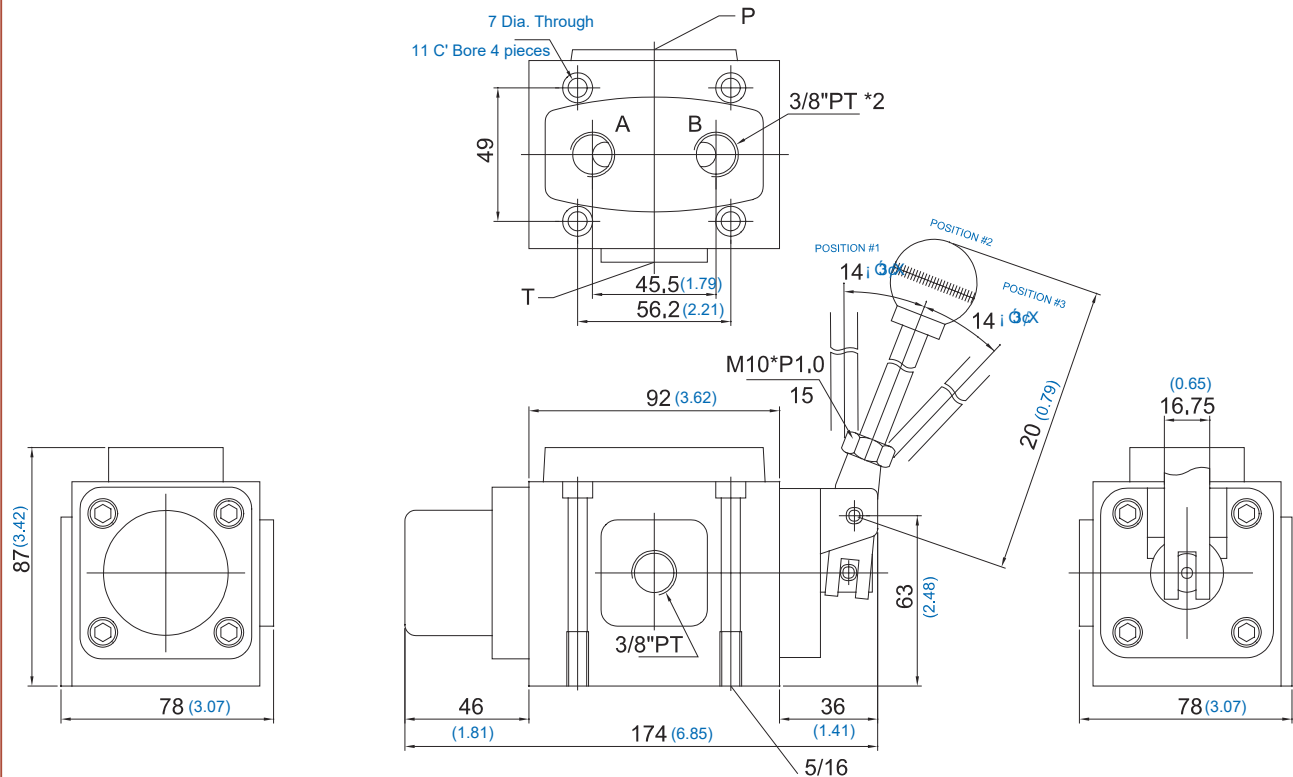
DMG-06



UNIT: M.M.(INCHES)

DIMENSIONS

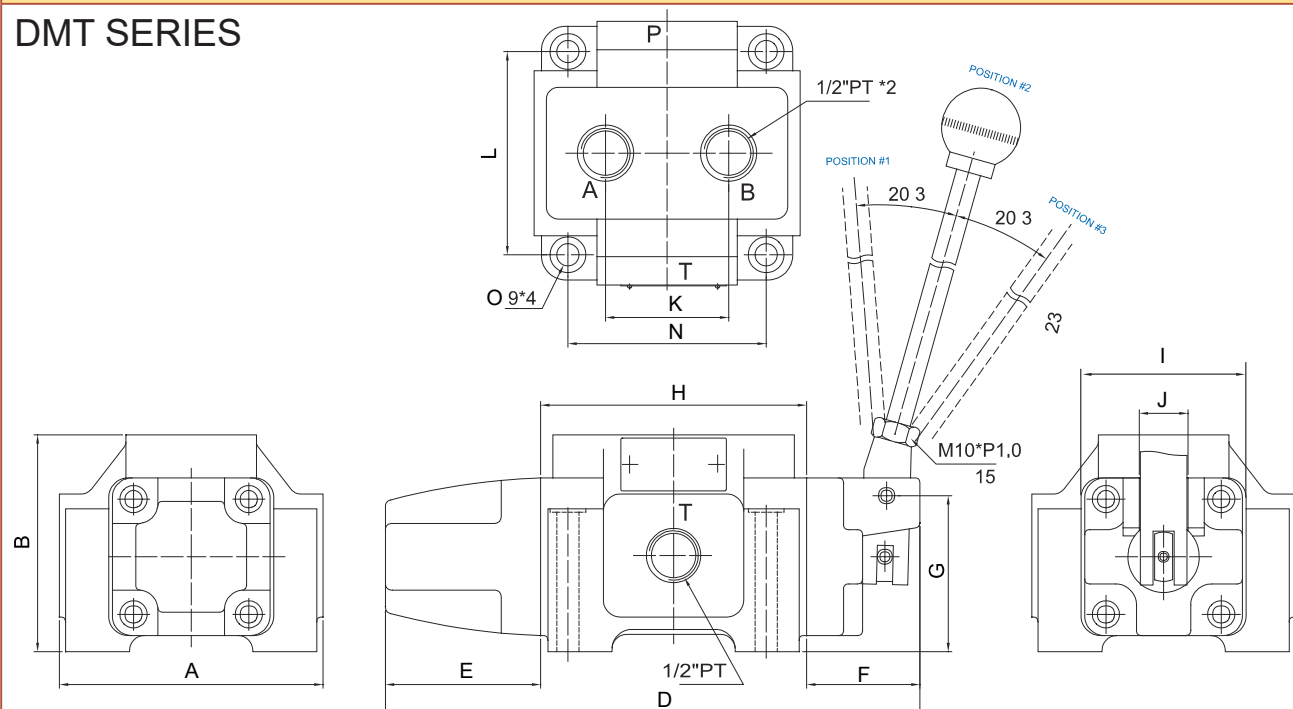
DMT-03



UNIT: M.M.(INCHES)

DIMENSIONS

DMT SERIES



MODEL	A	B	C	D	E	F	G	H	I	J	K	L	M
DMT-04	107(4.21)	88.5(3.48)	***	227.5(8.95)	63.5(2.50)	46(1.81)	63(2.48)	118(4.64)	***	19.8(0.77)	50(1.96)	82.5(3.24)	80.5(3.16)
DMT-06	128(5.03)	99(3.89)	78(3.07)	258(10.1)	72(2.83)	56(2.20)	69(2.71)	130(5.11)	78(3.07)	19.8(0.77)	64.8(2.55)	94.4(3.71)	97(3.81)
DMT-10	163(6.41)	121(4.76)	98(3.85)	335(13.1)	94(3.70)	70(2.75)	88.5(3.48)	171(6.73)	99(3.89)	22.7(0.89)	79(3.11)	126(4.96)	132.3(5.20)

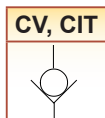
UNIT: M.M.(INCHES)

【CV, CIT】

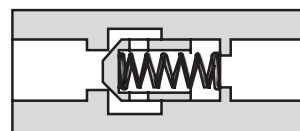
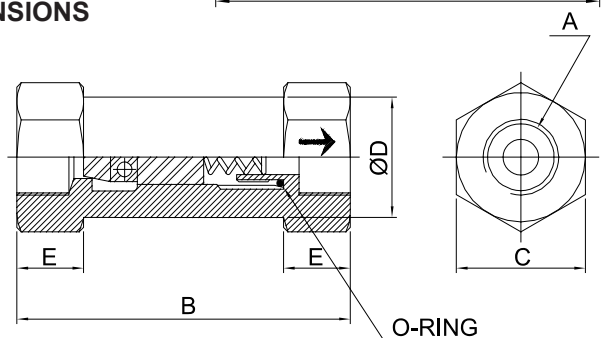
※MODEL NUMBER DESIGNATION

CIT	03	05	(90)
SERIES NO. CV: 21 MPa(3000 PSI) CIT: 35(5075 PSI)	VALVE SIZE	CRACKING PRESSURE MPa(psi) 05: 0.05(6) 50: 0.5(70)	DESIGN NO. OMIT: TAIWAN STD.(Rc/PT) 90: NORTH AMERICA STD.(NPT)

※GRAPHIC SYMBOL



※DIMENSIONS



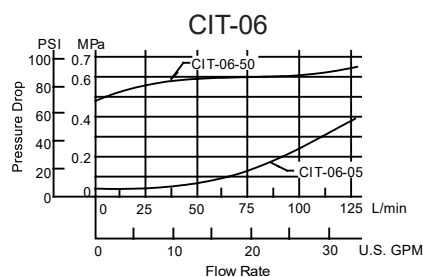
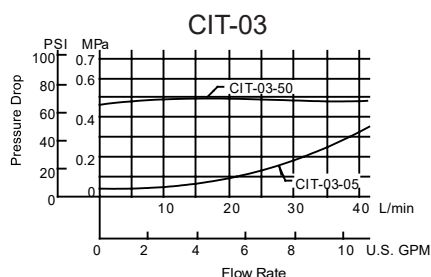
※SPECIFICATION

UNIT: M.M.(INCHES)

Model	A (Rc/PT)	B	C	Max. Flow (ℓ/min)/(U.S.GPM)	Max. Oper. Pres. (MPa)/(PSI)	Weight (kg)
CV-03	3/8"	70(2.76)	23(0.91)	40(10.6)	21(3000)	0.18
CV-04	1/2"	80(3.15)	29(1.14)	60(15.9)		0.31
CV-06	3/4"	90(3.54)	35(1.38)	100(26.4)		0.48
CV-08	1"	113(4.45)	46(1.81)	150(39.6)		1.07
CV-10	1-1/4"	133(5.24)	53(2.09)	200(52.8)		1.75
CV-12	1-1/2"	133(5.24)	65(2.56)	280(74.0)		2.60
CV-16	2"	154(6.06)	71(2.80)	400(105.7)		3.12

Model	A (Rc/PT)	B	C	D	E	O-Ring	Max. Flow (ℓ/min)/(U.S.GPM)	Max. Oper. Pres. (MPa)/(PSI)	Weight (kg)
CIT-02	1/4"	75(2.95)	29(1.14)	27(1.06)	14(0.55)	P-16	30(7.93)	35(5075)	0.30
CIT-03	3/8"	75(2.95)	32(1.26)	30(1.18)	14(0.55)	P-16	40(10.57)		0.36
CIT-04	1/2"	104(4.09)	35(1.38)	34(1.34)	25(0.98)	P-20	60(15.86)		0.62
CIT-06	3/4"	120(4.72)	41(1.61)	40(1.57)	27(1.06)	G-30	100(37.83)		1.00
CIT-08	1"	139(5.47)	51(2.24)	56(2.20)	32(1.26)	G-45	150(39.65)		2.20

※PERFORMANCE CURVE





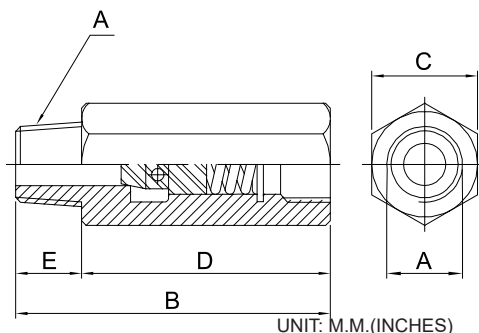
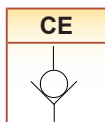
SOLTECH

DIRECTIONAL CONTROLS

INLINE CHECK VALVES

A

※GRAPHIC SYMBOL



UNIT: M.M.(INCHES)

【CE】



※MODEL NUMBER DESIGNATION

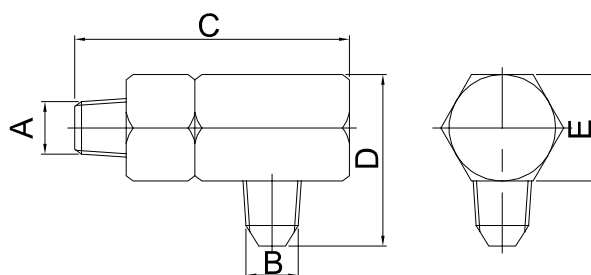
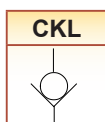
CE	03	05
SERIES NO.	VALVE SIZE 03: 3/8" 04: 1/2"	CRACKING PRESSURE MPa(PSI) 05: 0.05(6) 50: 0.5(70)

※SPECIFICATION

Model	A (Rc/PT)	B	C	D	E	Max. Flow (ℓ/min)/(U.S.GPM)	Max. Pres. MPa(Psi)	Weight (Kg)
CE-03	3/8"	66(2.60)	23(0.91)	53(2.09)	13(0.51)	40(10.6)	21(3045)	0.14
CE-04	1/2"	70(2.76)	29(1.14)	55(2.17)	15(0.59)	60(15.9)		0.24

90° TYPE 【CKL】

※GRAPHIC SYMBOL



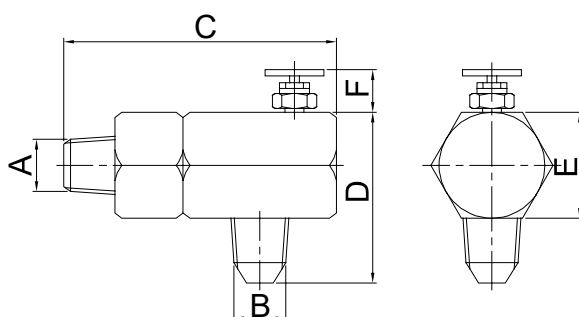
UNIT: M.M.(INCHES)



※SPECIFICATION

Model	A (Rc/PT)	B (PS)	C	D	E	Max. Flow (ℓ/min)/(U.S.GPM)	Max. Pres. MPa(Psi)	Cracking Pres. MPa(Psi)	Weight (Kg)
CKL-03	3/8"	3/8"	72(2.83)	46(1.81)	26(1.02)	40(10.6)	21(3045)	0.05(6)	0.22
CKL-04	1/2"	1/2"	73(2.87)	53(2.09)	32(1.26)	60(15.9)			0.32
CKL-04A	3/8"	1/2"	73(2.87)	53(2.09)	32(1.26)	60(15.9)			0.32

WITH STOP VALVE 【CKLG】



UNIT: M.M.(INCHES)



Not includes Gauge

※SPECIFICATION

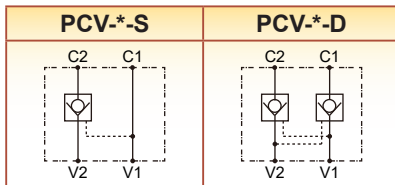
Model	A (PT)	B (PS)	C (PT)	D	E	F	L	Max. Flow (ℓ/min)/(U.S.GPM)	Max. Pres. MPa(Psi)	Cracking Pres. MPa(Psi)	Weight (Kg)
CKLG-03	3/8"	3/8"	1/4"	46(1.81)	26(1.02)	23(0.91)	90(3.54)	40(10.6)	21(3045)	0.05(6)	0.32
CKLG-04	1/2"	1/2"	1/4"	53(2.09)	32(1.26)	23(0.91)	92(3.62)	60(15.9)			0.48
CKLG-04A	3/8"	1/2"	1/4"	53(2.09)	32(1.26)	23(0.91)	92(3.62)	60(15.9)			0.48

[PCV]

※MODEL NUMBER DESIGNATION

PCV	ZL	02	D	(90)
Series No.	Zero Leakage: Pressure Locking for 30 Days	Valve Size 1/4"	S: Single Pilot Operation D: Dual Pilot Operation	Design No. Omit: Rc/PT Thread 80: PF Thread 90: NPT Thread

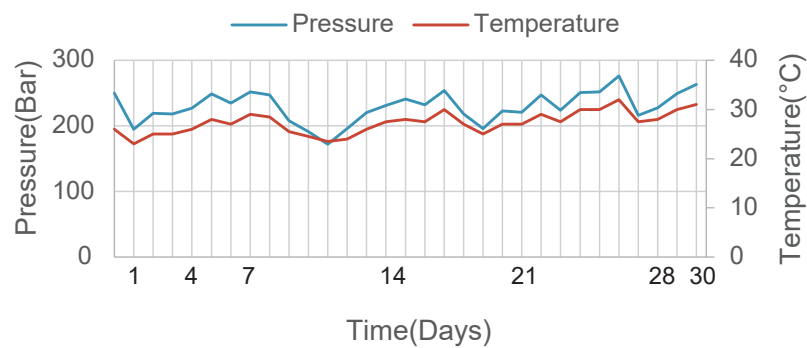
※GRAPHIC SYMBOL



※SPECIFICATION

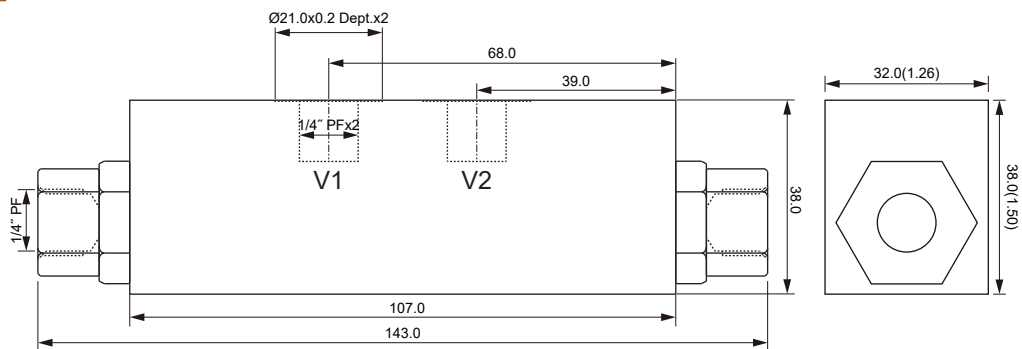
Model	Max. Flow (ℓ/min)/(U.S.GPM)	Max. Oper. Pres. (MPa)/(PSI)	Pilot Ratio	Weight (kg)
PCV-ZL-02	20(5.28)	25(3625)	2.17:1	1.0

※30 DAYS PRESSURE LOCKING DIAGRAM

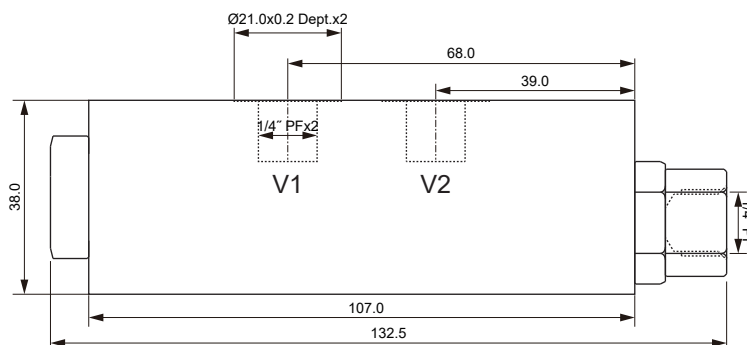


※DIMENSIONS

PCV*-D
Dual Pilot Operation



PCV*-S
Single Pilot Operation



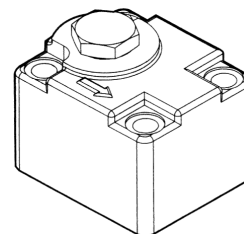
UNIT: M.M.(INCHES)



【CRG-03, 06, 10-(ISO)】

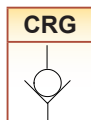
※SPECIFICATION

Model	Max. Oper. Pres. (MPa)/(PSI)	Max. Flow (ℓ/min)/(U.S.GPM)	Cracking Pres. MPa/(PSI)	Weight (kg)	
				CRG	CRG-ISO
CRG-03-(ISO)	25(3630)	30(7.9)	0.05(7.25)	2	2.2
CRG-06-(ISO)		80(21.1)	0.3(43.5)	4	3.2
CRG-10-(ISO)		200(52.9)	0.5(72.5)	8	6.5



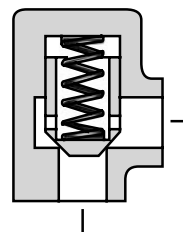
CRG-03

※GRAPHIC SYMBOL



※ACCESSORIES

Model	Socket Head Screw Cap		O Ring
	European Design Std.	North America Design Std.	
CRG-03-ISO	M10 × 45 Lg.	3/8-16 UNC × 1-3/4 Lg.	4 Pcs P22A 2 Pcs
CRG-06-ISO	M10 × 50 Lg.	3/8-16 UNC × 2 Lg.	4 Pcs P29 2 Pcs
CRG-10-ISO	M10 × 55 Lg.	3/8-16 UNC × 2-1/4 Lg.	6 Pcs P36 2 Pcs
CRG-03	M10 × 60 Lg.	---	Pcs P22A 2 Pcs
CRG-06	M16 × 55 Lg.	---	Pcs P29 2 Pcs
CRG-10	M20 × 70 Lg.	---	Pcs P36 2 Pcs

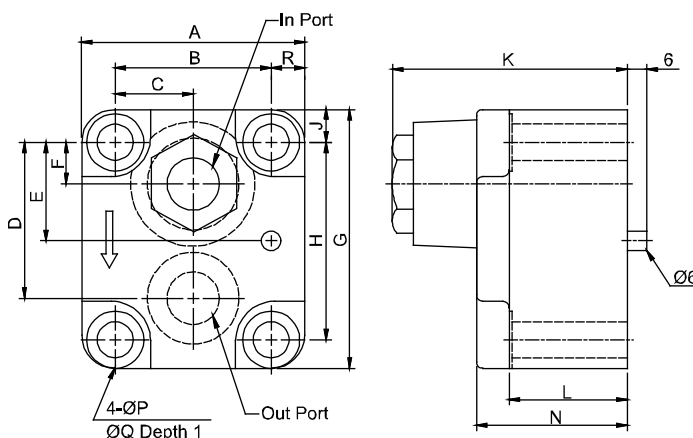


※MODEL NUMBER DESIGNATION

CR	G	03	05	ISO	(90)
SERIES NO.	CONNECTION TYPE G: SUBPLATE TYPE T: THREADED TYPE	PORT SIZE 03: 3/8", ISO 5781-AG-06-2-A 06: 3/4", ISO 5781-AH-08-2-A 10: 1-1/4", ISO 5781-AJ-10-2-A	CRACKING PRESSURE MPa(PSI) 05: 0.05(6) 30: 0.3(50) 50: 0.5(70)	MOUNTING INTERFACE OMIT: NONE ISO STD. ISO: ISO STANDARD	DESIGN NO. OMIT: DIN 912 BOLTS 90: UNC BOLTS (NORTH AMERICA)

※DIMENSIONS

CRG SERIES



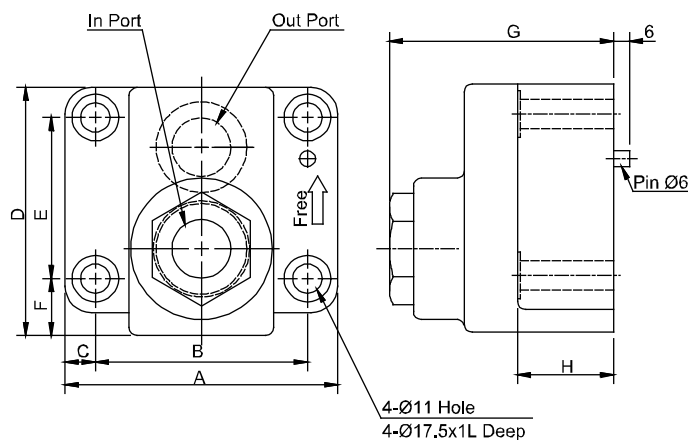
UNIT: M.M.(INCHES)

Model No.	A	B	C	D	E	F	G	H	J	K	L	N	P	Q	R
CRG-03	68(2.68)	47.6(1.87)	23.8(0.94)	47.6(1.87)	30.1(1.19)	12.7(0.50)	80(3.15)	60.3(2.37)	10(0.39)	70(2.76)	36(1.42)	46(1.81)	11(0.43)	17.5(0.69)	10.2(0.40)
CRG-06	101(3.98)	65.2(2.57)	32.6(1.28)	68.2(2.69)	40.5(1.59)	22.2(0.87)	114(4.49)	80.9(3.19)	16.5(0.65)	81(3.19)	38(1.50)	54(2.13)	17.5(0.69)	26(1.02)	16.45(0.65)
CRG-10	130(5.11)	65.2(2.57)	32.6(1.28)	68.2(2.69)	40.5(1.59)	20.6(0.81)	130(5.11)	92.1(3.63)	19(0.75)	100(3.94)	50(1.97)	67(2.63)	21.5(0.85)	30(1.18)	18.95(0.75)

A

DIMENSIONS

CRG-ISO

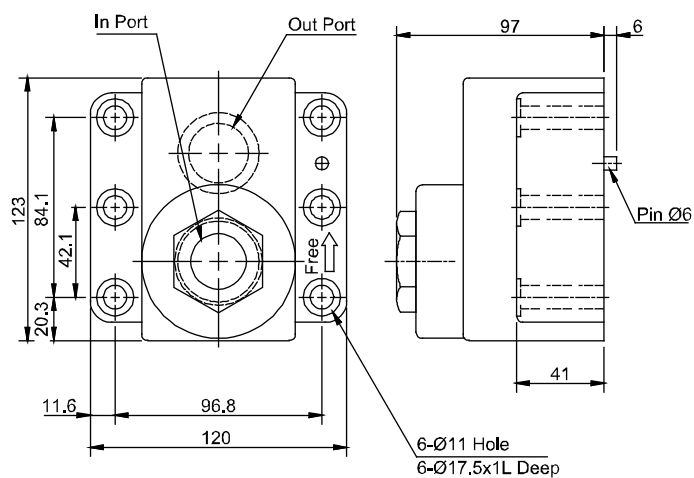


MODEL	A	B	C	D	E	F	G	H
CRG-03-ISO	90(3.54)	66.7(2.62)	11.7(0.46)	72(2.83)	42.9(1.69)	17.5(0.69)	72.5(2.85)	31(1.22)
CRG-06-ISO	102(4.01)	79.4(3.12)	11.3(0.44)	93(3.66)	60.3(2.37)	21.4(0.84)	84(3.31)	36(1.42)

UNIT: M.M.(INCHES)

DIMENSIONS

CRG-10-ISO



UNIT: M.M.(INCHES)



SOLTECH

DIRECTIONAL CONTROLS

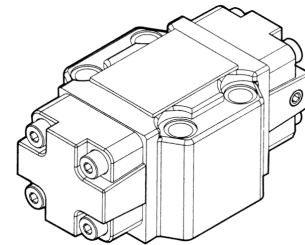
PILOT CONTROLLED CHECK VALVES

[CPDG, CPDT, CPDF]

A

※SPECIFICATION

Model	Max. Oper. Pres. (MPa)/(PSI)	Max. Flow (ℓ/min)/(U.S.GPM)	Cracking Pres. (MPa)/(PSI)	Weight (kg)		
				CPDG	CPDT	CPDF
CPD※-03	25(3630)	50(13.2)	0.05(7.25) 0.5(72.5)	5	3	---
CPD※-06		125(33)		6.5	5.8	---
CPD※-10		315(83.2)		12	11.4	11.4
CPD※-16		500(132)		---	---	30



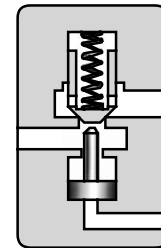
CPDG-03

※GRAPHIC SYMBOL

INTERNAL DRAIN TYPE	EXTERNAL DRAIN TYPE

※ACCESSORIES

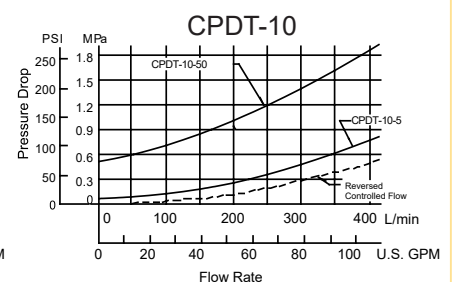
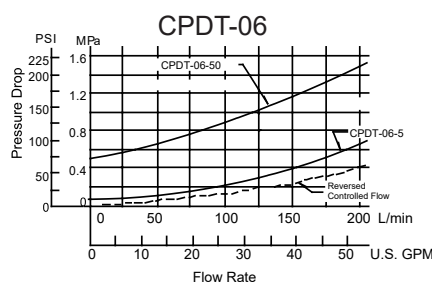
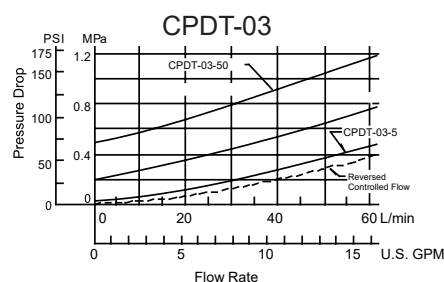
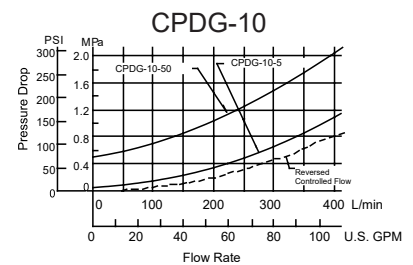
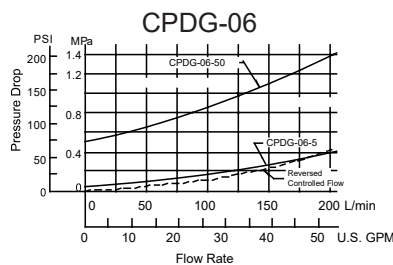
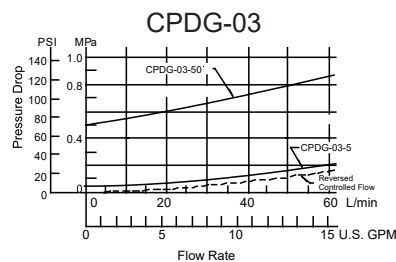
Model	Socket Head Screw Cap		O Ring (Flange)					
	European Design Std.	North America Design Std.						
CPDG-03	M10 × 45 Lg.	3/8-16 UNC × 1-3/4 Lg.	4 Pcs	P9	2 Pcs	P18	2	Pcs
CPDG-06	M10 × 50 Lg.	3/8-16 UNC × 2 Lg.	4 Pcs	P9	2 Pcs	P25	2	Pcs
CPDG-10	M10 × 55 Lg.	3/8-16 UNC × 2-1/4 Lg.	6 Pcs	P9	2 Pcs	P38	2	Pcs
CPDF-16	M16 × 50 Lg.	---	8 Pcs	(2")	2 Pcs	G65	2	Pcs



※MODEL NUMBER DESIGNATION

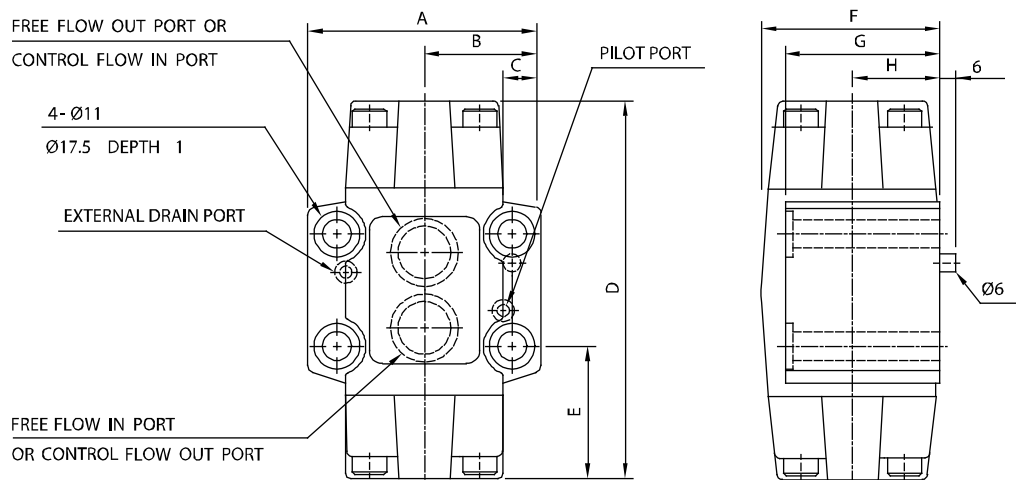
CPD	G	03	(E)	05	(90)
SERIES NO. CP: PILOT CONTROLLED CHECK VALVE CPD: DECOMPRESSION TYPE PILOT CONTROLLED CHECK VALVE	CONNECTION TYPE G: SUBPLATE TYPE T: THREADED TYPE F: FLANGE TYPE	PORT SIZE 03: 3/8", ISO 06: 3/4", ISO 10: 1-1/4", ISO 16: 2"	OMIT: INTERNAL DRAIN E: EXTERNAL DRAIN	CRACKING PRESSURE MPa(PSI) 05: 0.05(6) 50: 0.5(70)	DESIGN NO. OMIT: DIN 912 BOLTS 90: UNC BOLTS (NORTH AMERICA)

※PERFORMANCE CURVE



DIMENSIONS

CPDG-03, 06

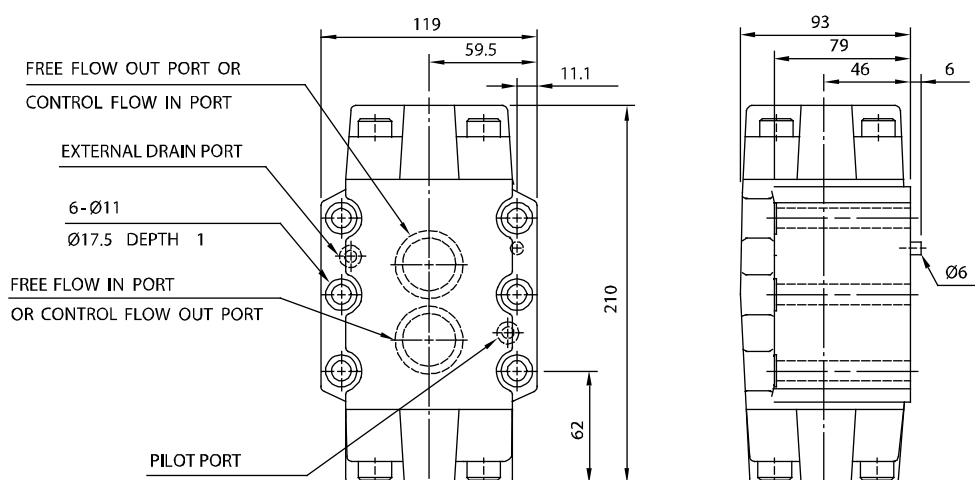


MODEL	A	B	C	D	E	F	G	H
CPDG-03	87.5(3.44)	44.5(1.75)	10(.39)	144(5.67)	50.6(1.99)	68(2.68)	60(2.36)	35(1.38)
CPDG-06	102(4.02)	51(2.01)	11.3(.044)	174(6.85)	57(2.24)	80(3.14)	70.5(2.78)	40(1.57)

UNIT: M.M.(INCHES)

DIMENSIONS

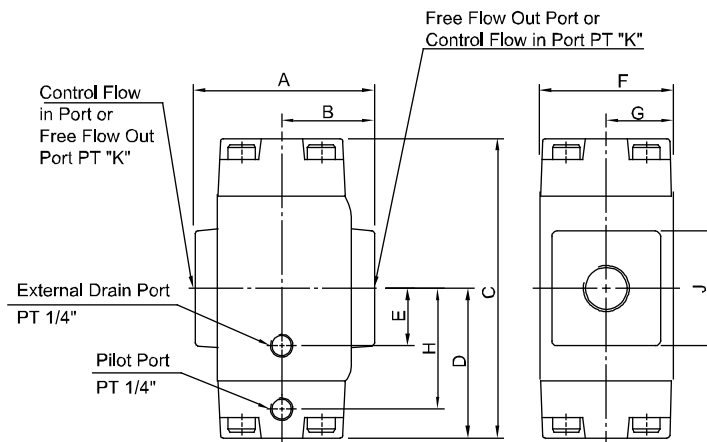
CPDG-10



UNIT: M.M.(INCHES)

DIMENSIONS

CPDT-SERIES

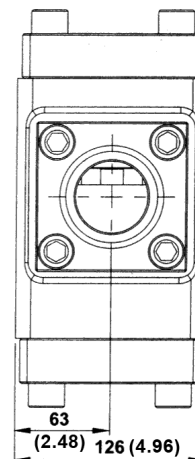
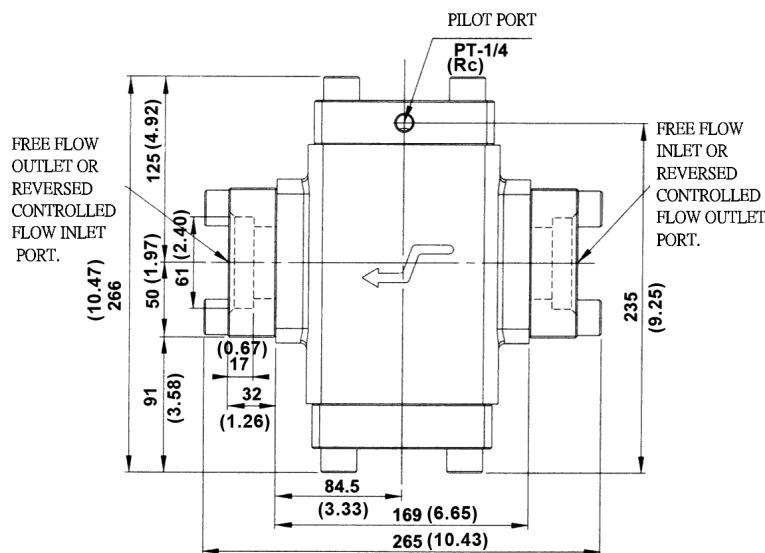
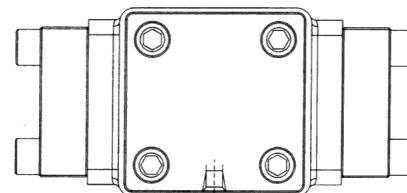


MODEL	A	B	C	D	E	F	G	H	J	K
CPDT-03	80(3.15)	40(1.57)	150.5(5.93)	75(2.95)	21(0.82)	64(2.52)	35.5(1.40)	58(2.28)	41(1.61)	3/8"
CPDT-06	99.6(3.92)	49.8(1.96)	174(6.85)	84(3.31)	26(1.02)	73(2.87)	38(1.50)	68(2.68)	65(2.56)	3/4"
CPDT-10	140(5.51)	70(2.76)	208(8.19)	104(4.09)	35(1.38)	92(3.62)	45(1.77)	84(3.31)	79(3.11)	1-1/4"

UNIT: M.M.(INCHES)

DIMENSIONS

CPDF-16



UNIT: M.M.(INCHES)

A

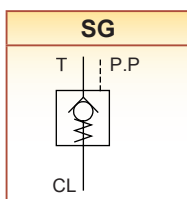
【SG-16, 24, 32】

A

※MODEL NUMBER DESIGNATION

SG	24	R	(90)
SERIES NO.	VALVE SIZE 16: 2" 24: 3" 32: 4"	MOUNTING ANGLE NONE: 180° R: ANGLE(90°) L: MOUNTING 270°	DESIGN NO. OMIT: DIN 912 BOLTS 90: UNC BOLTS (NORTH AMERICA)

※GRAPHIC SYMBOL



※SPECIFICATION

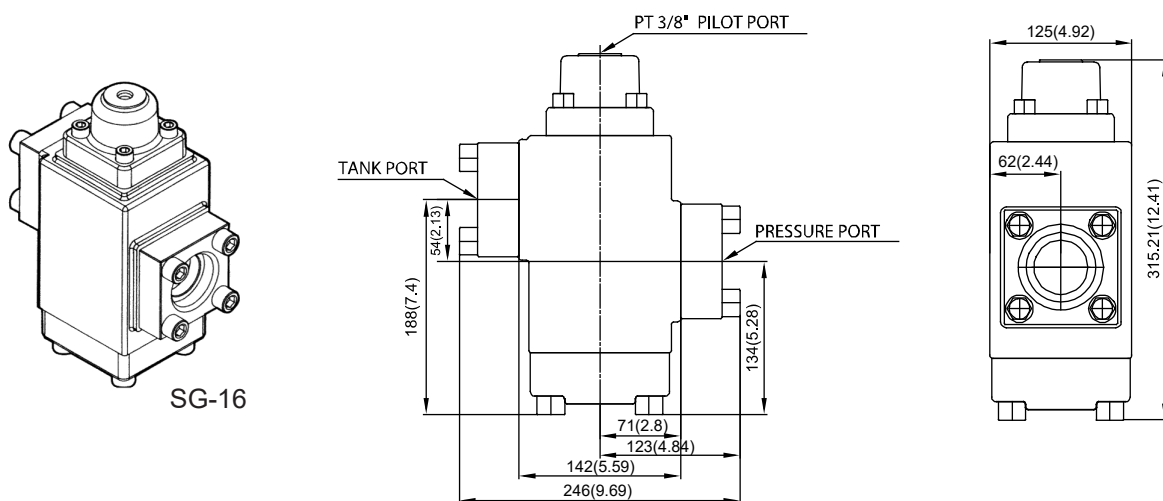
Model	Max. Oper. Pres. (MPa)/(PSI)	Rated. Flow (ℓ/min)/(U.S.GPM)		Oper. Pres. (MPa)/(PSI)		Cracking Pres. (MPa)/(PSI)	Weight (kg)
SG-16	25(3630)	260(6.9)	400(105.7)	260±100m(6.9±26.4)	400±100m(105.7±26.4)	0.12	30
SG-24		600(158.5)	900(237.8)	600±150m(158.5±39.6)	900±150m(237.8±39.6)	0.14	54
SG-32		1100(290.6)	1600(422.7)	1100±300m(290.6±79.2)	1600±300m(422.7±79.2)	0.16	100
SG-32-R							108

※ACCESSORIES

Model	Socket Head Screw Cap			Flange			O Ring		
	European Design Std.	North America Design Std.							
SG-16	M16 × 50 Lg.	10-24 UNC × 1-3/4 Lg.	8 Pcs	2"	2	Pcs	G65	2	Pcs
SG-24	M16 × 60 Lg.		4 Pcs	2-1/2"	1	Pcs	G85	2	Pcs
	M20 × 60 Lg.		4 Pcs	3"		Pcs			Pcs
SG-32	M16 × 50 Lg.		6 Pcs	3-1/2"		Pcs	G120	2	Pcs
	M20 × 60 Lg.		8 Pcs	4"		Pcs			Pcs
	M10 × 35 Lg.		4 Pcs	3/4"		Pcs	G30	1	Pcs

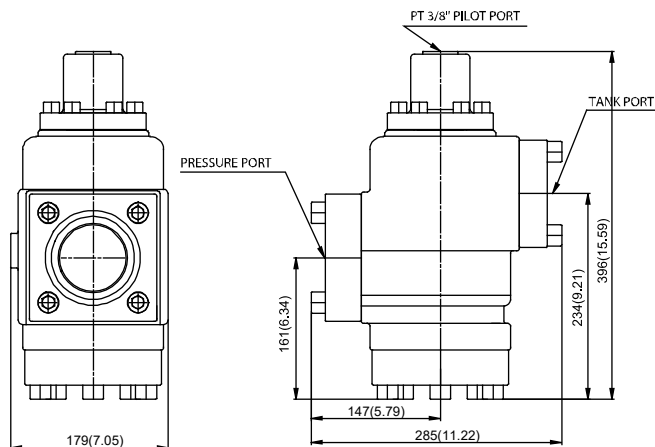
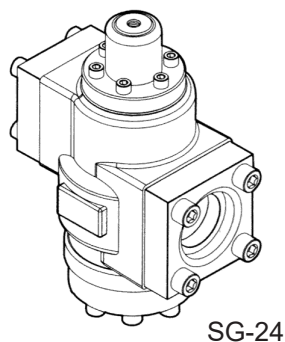
※DIMENSIONS

SG-16



DIMENSIONS

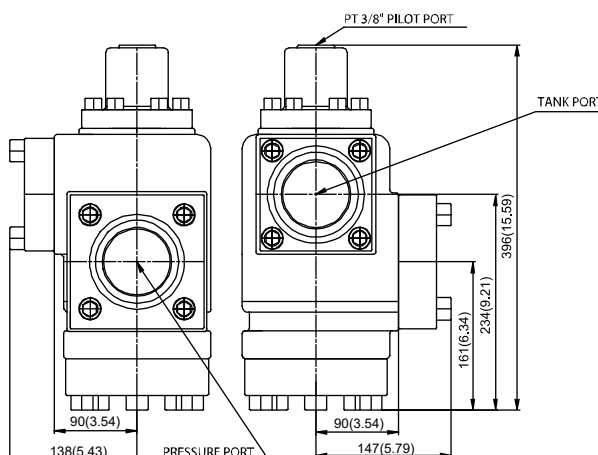
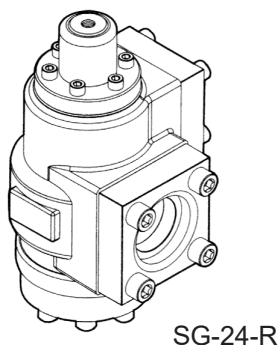
SG-24



UNIT: M.M.(INCHES)

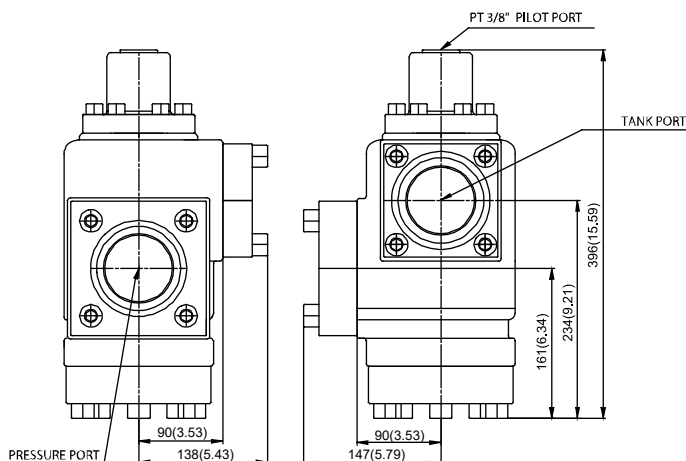
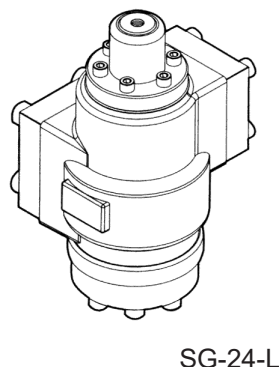
DIMENSIONS

SG-24-R



DIMENSIONS

SG-24-L

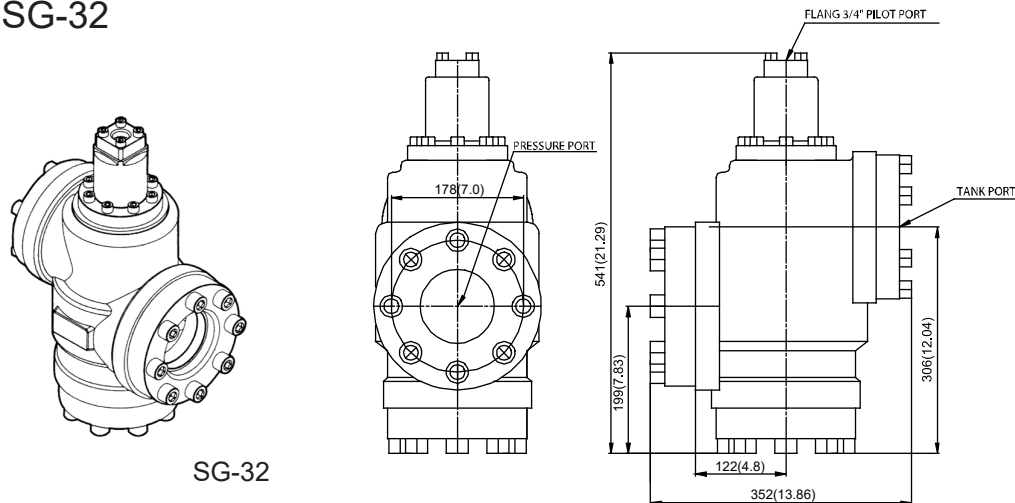


UNIT: M.M.(INCHES)

A

DIMENSIONS

SG-32

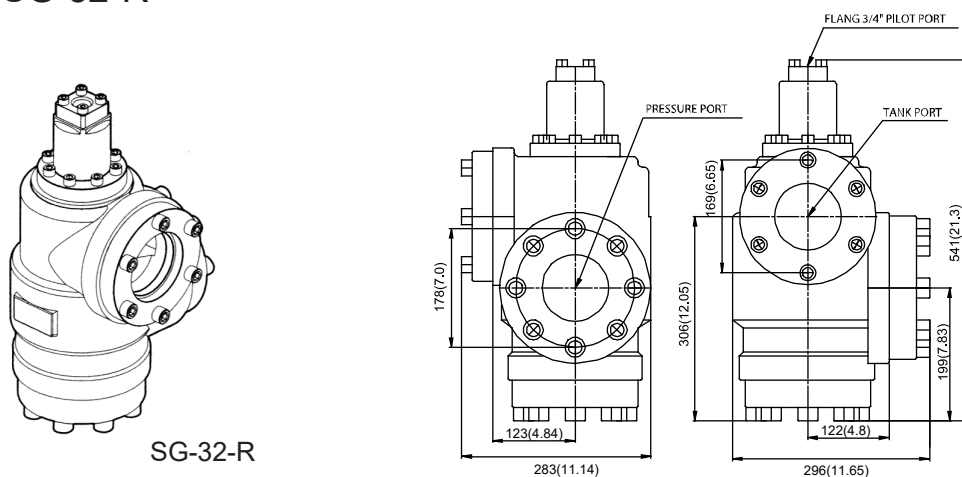


SG-32

UNIT: M.M.(INCHES)

DIMENSIONS

SG-32-R

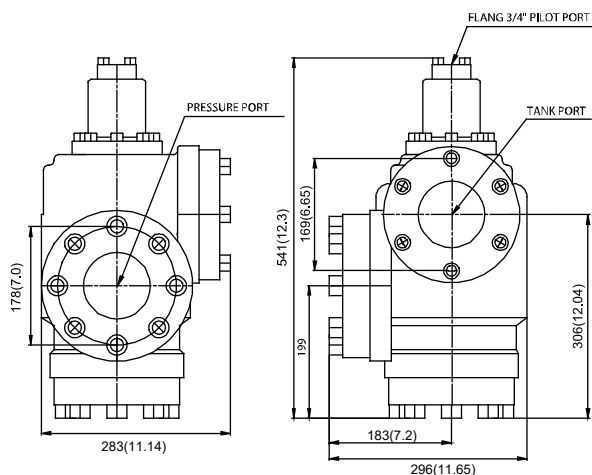


SG-32-R

UNIT: M.M.(INCHES)

DIMENSIONS

SG-32-L



UNIT: M.M.(INCHES)



SOLTECH

DIRECTIONAL CONTROLS

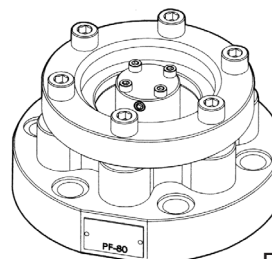
PREFILL VALVES

[PF/PDF/PRF/PHF]

A

※MODEL NUMBER DESIGNATION

PF	80	FT	(90)
SERIES NO. PF: NORMAL TYPE PRF: RETANGLE FLANGE PDF: DECOMPRESSION TYPE PHF: HIGH FLOW RATE TYPE	VALVE SIZE 50: 2" 80: 3" 90: 3-1/2" 100: 4" 125: 5" 150: 6"	FLANGE KITS FPT: WITH P,T PORT FLANGE FP: WITH P PORT FLANGE FT: WITH T PORT FLANGE	DESIGN NO. OMIT: DIN 912 BOLTS 90: UNC BOLTS (NORTH AMERICA)



PF-80

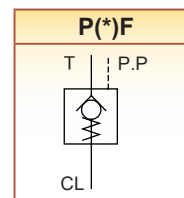
※SPECIFICATION

Model	Max. Oper. Pres. (MPa)/(PSI)	Max. Flow (ℓ/min)/(U.S.GPM)		Cracking Pres. (MPa)/(PSI)	Pilot Pressure (MPa)/(PSI)	Weight (kg)
		PF/PDF Normal Type	PHF High Flow Rate	PF/PHF	PDF ONLY	
P(*)F-50	25(3630)	250(66.0)	400(105.7)	0.012(17)	4.76(689.7)	3.4
P(*)F-80		400(105.7)	600(158.5)	0.012(17)	4.15(601.5)	8.7
P(*)F-90		650(171.7)	900(237.8)	0.012(17)	3.11(486.2)	14.5
P(*)F-100		1000(264.2)	1400(369.9)	0.012(17)	3.87(561.0)	16.5
P(*)F-125		1600(422.7)	2100(554.8)	0.012(17)	3.27(473.5)	27.1
P(*)F-150		2500(660.5)	3000(792.5)	0.012(17)	2.89(419.5)	39.6

※ACCESSORIES

Model	Socket Head Screw Cap						
	FP Flange Mounting			Weight (kg)	FT Flange Mounting		Weight (kg)
	PF/PHF	PDF	Q'ty		PF/PHF/PDF	Q'ty	
P(*)F-50	M16 × 45 Lg.	M16 × 45 Lg.	4 PCs	---	M10 × 35 Lg.	4 Pcs	---
P(*)F-80	M16 × 55 Lg.	M16 × 55 Lg.	6 PCs	6.5	M12 × 40 Lg.	6 Pcs	2.3
P(*)F-90	M18 × 65 Lg.	M18 × 60 Lg.	6 Pcs	9	M12 × 40 Lg.	6 Pcs	2.8
P(*)F-100	M20 × 70 Lg.	M20 × 65 Lg.	6 Pcs	14.5	M12 × 40 Lg.	6 Pcs	2.8
P(*)F-125	M20 × 80 Lg.	M20 × 75 Lg.	12 Pcs	25.2	M12 × 50 Lg.	6 Pcs	4
P(*)F-150	M20 × 95 Lg.	M20 × 90 Lg.	16 Pcs	28	M16 × 50 Lg.	8 Pcs	8

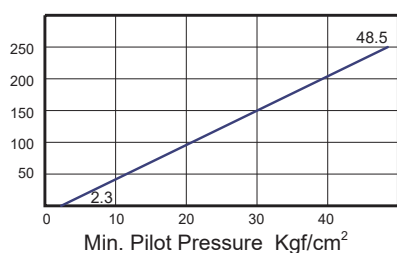
※GRAPHIC SYMBOL



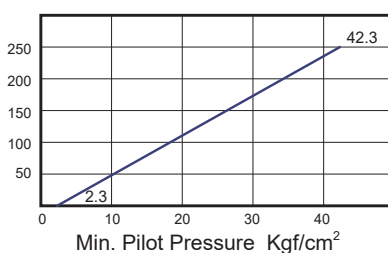
※PERFORMANCE CURVES

The characteristic curve chart of Flow vs. Pressure

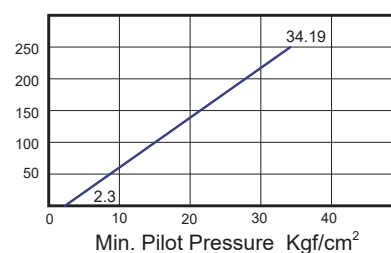
PDF-50



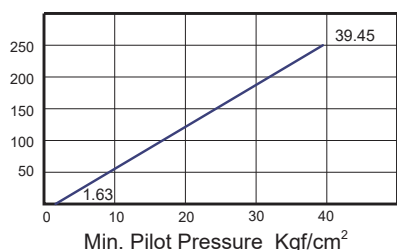
PDF-80



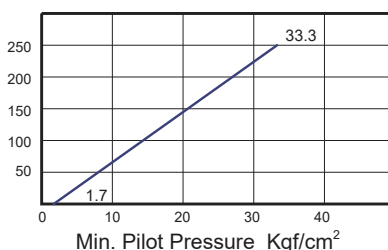
PDF-90



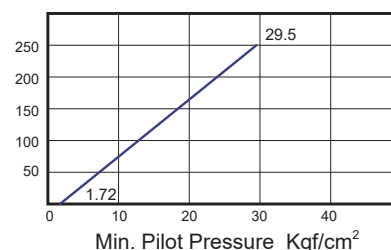
PDF-100



PDF-125

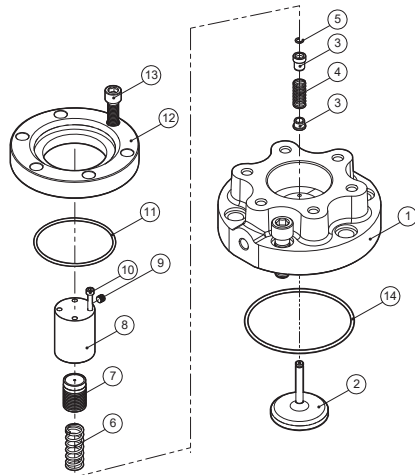


PDF-150

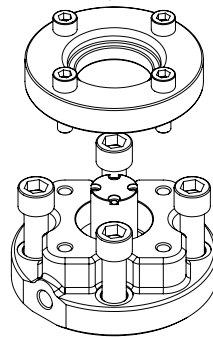


A

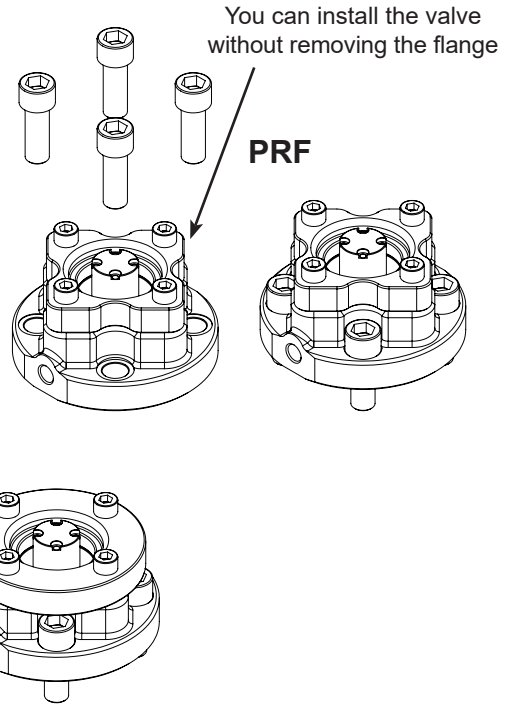
※ASSEMBLY



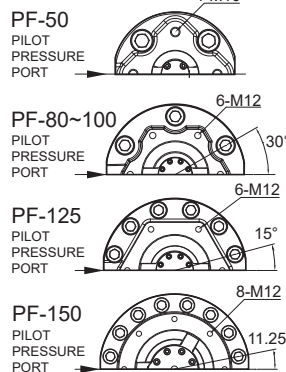
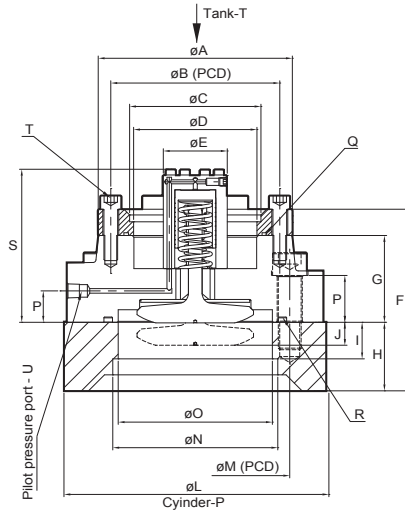
Remove the Flange
before installing the valve



※PF/PRF DIFFERENCE EXPLANATION



※DIMENSIONS



UNIT: M.M.(INCHES)

MODEL	A	B	C	D	E	F	G	H	I	J	K
PF-50	118(4.63)	---	61.5(2.42)	51(2.00)	31(1.22)	101(3.97)	48(1.88)	35(1.37)	18(0.71)	8(0.31)	15(0.59)
PF-80	142(5.58)	120(4.71)	90(3.53)	71.5(2.81)	44(1.73)	134(5.26)	66(2.59)	45(1.77)	22(0.86)	11.5(0.45)	22.5(0.88)
PF-90	160(6.28)	135(5.30)	102(4.01)	89(3.50)	50(1.96)	147(5.77)	74(2.91)	50(1.96)	30(1.18)	13(0.51)	27.5(1.08)
PF-100	170(6.68)	148(5.81)	115(4.52)	108(4.24)	56(2.20)	159(6.24)	76(2.98)	60(2.36)	32(1.26)	18(0.71)	27.5(1.08)
PF-125	200(7.85)	175(6.87)	141.2(5.54)	130.5(5.12)	69(2.71)	196(7.70)	85(3.34)	80(3.14)	50(1.96)	23.5(0.92)	43(1.69)
PF-150	225(8.84)	200(7.85)	167(6.56)	155(6.09)	95.5(3.75)	216(8.48)	105(4.12)	80(3.14)	40(1.57)	25(0.98)	44.5(1.75)

MODEL	L	M	N		O		P	Q	R		S	T	U
			PF	PF-H	PF	PF-H			PF	PF-H			
PF-50	133(5.22)	---	61.5(2.42)	77.5(3.04)	48(1.88)	67(2.63)	22.5(0.88)	G-60-90	G-60-90	G-75-90	73.5(2.89)	4-M10x35	PT 1/4
PF-80	180(7.07)	146(5.73)	90(3.53)	108.5(4.26)	71(2.79)	90(3.53)	30(1.18)	G-85-90	G-80-90	G-105-90	95.5(3.75)	6-M12x40	PT 1/4
PF-90	200(7.85)	165(6.48)	102(4.01)	119(4.67)	88(3.46)	106(4.16)	39(1.53)	G-105-90	G-100-90	G-115-90	120.5(4.73)	6-M12x40	PT 1/4
PF-100	230(9.03)	191(7.50)	115(4.52)	142(5.58)	106(4.16)	135(5.30)	41(1.61)	G-120-90	G-115-90	G-150-90	134(5.26)	6-M12x40	PT 1/4
PF-125	265(10.41)	230(9.03)	141.2(5.54)	180.7(7.10)	130(5.11)	170(6.68)	51(2.00)	G-145-90	P-140-90	G-185-90	164(6.44)	6-M12x50	PT 1/4
PF-150	300(11.78)	260(10.21)	167(6.56)	207(8.13)	168(6.60)	195(7.66)	64(2.51)	G-170-90	G-180-90	G-215-90	201(7.89)	8-M12x50	PT 3/8

Item No.	Part Name	Q'ty	Item No.	Part Name	Q'ty	
1	Body	1	PF-90	JIS B 2401-1B-G105	1	
2	Push rod	1	PF-100	JIS B 2401-1B-G120	1	
3	Spring retainer	1	PF-125	JIS B 2401-1B-G145	1	
4	Spring (L)	1	PF-150	JIS B 2401-1B-G170	1	
5	Spring ring	1	12	Flange	1	
6	Spring (R)	1	PF-50	M10 x 35L	4	
7	Piston	1	PF-80	M12 x 40L	6	
8	Piston seat	1	PF-90	M12 x 40L	6	
9	PT 1/16	1	PF-100	M12 x 40L	6	
10	PF-50	M4 x 50L	4	PF-125	M12 x 45L	6
	PF-80	M5 x 65L	4	PF-150	M12 x 45L	8
	PF-90	M5 x 80L	4	PF-50	JIS B 2401-1B-G60	1
	PF-100	M5 x 90L	8	PF-H-50	JIS B 2401-1B-G75	1
	PF-125	M6 x 110L	8	PF-80	JIS B 2401-1B-G80	1
11	PF-150	M8 x 140L	8	PF-H-80	JIS B 2401-1B-G105	1
	PF-50	JIS B 2401-1B-G60	1	PF-90	JIS B 2401-1B-G100	1
	PF-80	JIS B 2401-1B-G85	1	PF-H-90	JIS B 2401-1B-G115	1
14			PF-100	JIS B 2401-1B-G115	1	
			PF-H-100	JIS B 2401-1B-G150	1	
			PF-125	JIS B 2401-1B-P140	1	
			PF-H-125	JIS B 2401-1B-G185	1	
			PF-150	JIS B 2401-1B-G180	1	
			PF-H-150	JIS B 2401-1B-G215	1	
S	T	U				