

ISO Standard Solenoid Valve (ISO #1, #2)

DX1, DX2 SeriesThe First Protection Structure IP66 Response in Korea
(Vibration-Resistance/Water-Proof Type)

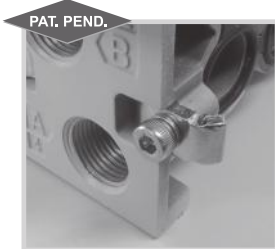
PAT. PEND.

Easy disassembly of coil after removing a cover



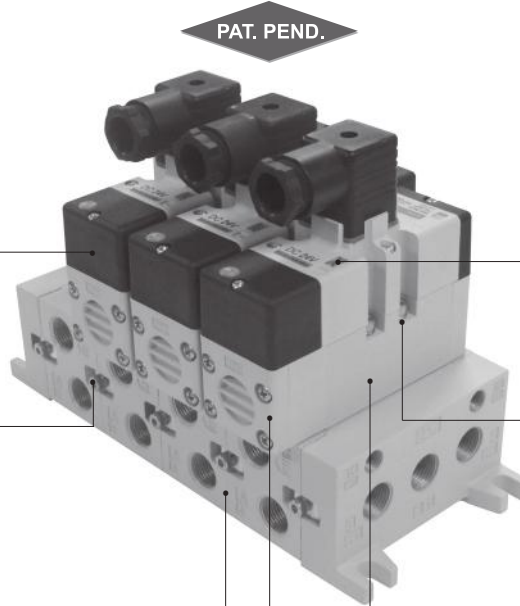
PAT. PEND.

Enhanced visibility in application of high brightness LED

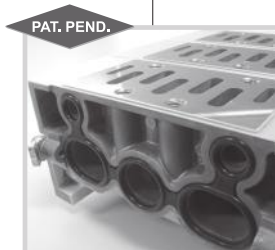


PAT. PEND.

Enhanced assembly performance in accordance with all-in-one clamp without Tap plate

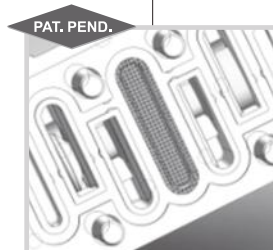


Deviation prevention of attached bolt (all-in-one)



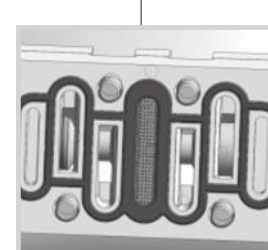
PAT. PEND.

Convenient maintenance and prevention of gasket loss in application of all-in-one manifold gasket



PAT. PEND.

Protection of spool from foreign materials with installation of P port-mesh



Convenient maintenance in application of all-in-one body gasket

DW

DR100

DR200

RS1000,
2000

RS4000

SI UNIT

DV1000
DV3000
DV5000

DS300

DS3000

DS5000

DS2000

DS6000

DX1,DX2

DX1(2)R

DH

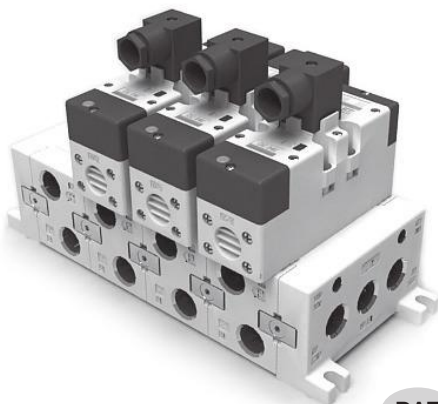
DP300
DP3000
DP5000

DM

DT220

Series ***DX1, DX2***

Elastic Body Seal 5-Port Pilot Type



PAT

- CONVENIENT SOL V/V REPLACEMENT IN ACCORDANCE WITH SIMPLE COIL COVER DISASSEMBLY
- ENHANCED USER CONVENIENCE IN APPLICATION OF DEVIATION PREVENTION BOLT AT VALVE BODY
- PROTECTION OF PRODUCT FROM FOREIGN MATERIALS IN APPLICATION OF MESH APPLICATION AT P PORT
- ENHANCED USER CONVENIENCE IN APPLICATION OF ALL-IN-ONE GASKET EMBEDDED IN VALVE BODY
- COMFORTABLE ASSEMBLY/DISASSEMBLY IN APPLICATION OF ALL-IN-ONE GASKET AT MANIFOLD CONNECTION PART
- ALL-IN-ONE TAP STRUCTURE WHICH INCREMENT/DECREMENT OF MANIFOLD SOFTNESS IS COMFORTABLE
- SMALL/LIGHT/COMPACT STRUCTURE
- APPLICATION OF BASE PIPING TYPE VALVE

Symbols

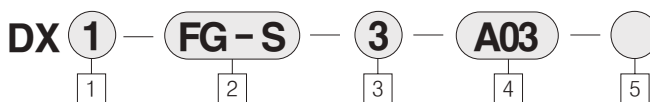
2-Location

DX1 (2)-FG-S	DX1 (2)-FG-D
Single	Double

3-Location

DX1 (2)-FHG-D	DX1 (2)-FJG-D	DX1 (2)-FIG-D
Closed center	Exhaust center	Pressure center

How to Order-Valve Indication Method



- ① 1 : DX1 (ISO Size1)
2 : DX2 (ISO Size2)

② Configuration

FG-S : 2-position Single
FG-D : 2-position Double
FHG-D : 3-position Closed Center
FJG-D : 3-position Exhaust Center
FIG-D : 3-position Pressure Center

③ Voltage

1 : AC110V, 50/60Hz
2 : AC220V, 50/60Hz
3 : DC24V
※ Surge voltage protection circuit equipped

④ Port Size

DX1
Blank : Valve less base
A02 : Horizontal pipe 1/4 (DX1)
A03 : Horizontal pipe 3/8 (DX1)
B02 : Sub pipe 1/4 (DX1)
B03 : Sub pipe 3/8 (DX1)
Note1) Refer to SUB Plate detailed drawing p.822

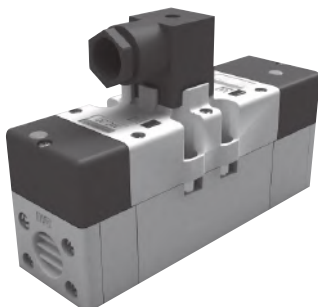
DX2

Blank : Valve less base
A03 : Horizontal pipe 1/8 (DX2)
A04 : Horizontal pipe 1/2 (DX2)
B03 : Sub pipe 3/8 (DX2)
B04 : Sub pipe 1/2 (DX2)
Note2) Refer to p.826 for sub plate detailed dimension drawing

⑤ Thread

Blank : Rc(PT)
U : NPT

Series DX1, DX2



Specifications (DX1, DX2 Series)

Applied fluid	Air	
Applied Pressure Range MPa(kgf/cm ²)	2 Position Single	0.15~1.0 (1.5~10)
	2 Position Double	0.1~1.0 (1~10)
	3 Position	0.2~1.0 (2~10)
Ambient Temperature and Applied Fluid Temperature (°C)	-5 ~ 60 (But, No Freezing)	
Manual Override	Non Lock Push Type	
Lubrication	Non-Lube	
Mounting	Free	
Impact-Resistance/Vibration-Resistance m/s ²	150/30(8.3~2000Hz)	
Maximum operating frequency (Hz)	2 Position	5
	3 Position	3
Enclosure	IP66	
Rated Voltage (V)	DC 24, AC 110V, AC 220V(50/60Hz)	
Voltage Consumption (%)	-10 ~ +10 of Rated Voltage	
Polarity	Non-Polarity Base	
Response Time (ms), 0.5MPa {5kgf/cm ² }	Refer to Performance Sheet Below	
Power consumption	DC (W)	1.8
Wave electricity	AC (VA)	3.5
Effective Sectional Area mm ² (Cv)	Refer to Performance Sheet Below	

Weight sheet

(Unit : g)

Item		DX1	DX2
VALVE	SINGLE	432	618
	DOUBLE	494	678
	3-POSITION	526	716
Manifold	BASE 1 Single Product	292	734
	SIDE COVER	L Side :150	L Side : 346
		R Side :142	R Side : 356
	BASE 1 Single Product Base		
Sub Plate		325	655

※ Weight of manifold and sub-plate are changeable without pre-notice.

Performance (DX1 Series)

Type	Switching Method	Pipe Contacting Diameter	Effective Section Diameter mm ² (Cv)	Response Time (ms)
2 position	DX1-FG-S Single solenoid	Rc(PT)3/8	27 (1.5)	ON(30 or less), OFF(40 or less) 30 or less
	DX1-FG-D Double solenoid	Rc(PT)3/8		
3 position	DX1-FHG-D Closed center	Rc(PT)3/8	25.2 (1.4)	50 or less
	DX1-FJG-D Exhaust center	Rc(PT)3/8		
	DX1-FIG-D Pressure center	Rc(PT)3/8		

Performance (DX2 Series)

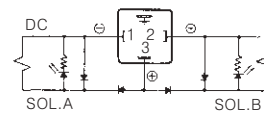
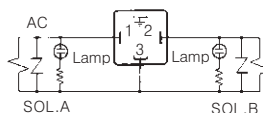
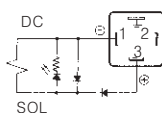
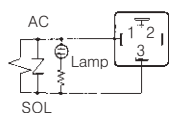
Type	Switching Method	Pipe Contacting Diameter	Effective Section Diameter mm ² (Cv)	Response Time (ms)
2 position	DX2-FG-S Single solenoid	Rc(PT)1/2	54 (3.0)	45 or less
	DX2-FG-D Double solenoid			30 or less
3 position	DX2-FHG-D Closed center		50 (2.8)	50 or less
	DX2-FJG-D Exhaust center			
	DX2-FIG-D Pressure center		54 (3.0)	

Indicator Light / Surge Volta Suppressor

- Lamp and surge voltage protecting circuit equipped circuit drawing

Double & 3Position

Single



DW

DR100

DR200

RS1000,
2000

RS4000

SI UNIT

DV1000
DV3000
DV5000

DS300

DS3000

DS5000

DS2000

DS6000

DX1,DX2

DX1(2)R

DH

DP300
DP3000
DP5000

DM

DT220

Series DX1, DX2

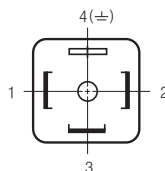
■ Notices Along Products

Must check prior to utilization, and refer to Appendix for safety notices or common notices.

Lead Track Connection Method

● DIN Type Terminal Board Type

- Since solenoid is connected in DIN type terminal board type pin terminal board, please connect to correct connector terminal to terminal number.
- Connector utilizing cable external diameter : $\varnothing 6.8 \sim \varnothing 11.5 \text{ mm}$
- Proper torque for connector part screw connection
Connector fixing screw : 5kgf.cm
Terminal screw : 5kgf.cm



Terminal Number	Internal connection
1	SOL.A Side -
2	SOL.B Side -
3	COM+
4	Grounding(±)

* Notice

If changing DIN terminal No.3 (COM terminal), it possibly causes damage on power-side circuit.

Attachment

Although attachment posture is free, please horizontally attach spool part for double solenoid and s-Position valve. Moreover, in case of attaching at vibrating place, attach spool part vertically to vibrating direction.

(Do not use in a place with more than 5G vibration.)

pipes by rod part. Make dust permeation preventing measures such as attaching silencer at EXH rod part, or elbow connecting tube to make inlet of connecting tube downward.

- 2) Please contact manufacturer if utilizing in corrosive gas, chemicals and its liquid, moisture or sea water existing place, or over 60°C place.

Piping

- 1) Conduct piping with over the same level pipes.
- 2) Make full flushing for the 1st (supply) port and 2nd (operating equipment side) port, and completely remove foreign materials such as dust, scale, other materials generated from piping works in pipes.
- 3) Check leakage at pipes and connection parts between valve and cylinder and fully remove leakage for manifold which has 3-Position closed center valve attached. Moreover, check leakage for packing of cylinder rod part and piston packing part.

If there is leakage, it may cause movement of cylinder which is supposed to be stopped in neutral position, so that fully prevent leakage at pipes connecting part when off the valve.

In case of rolling over Teflon table thread around screw, leave 1~2 round for the end of screw and roll tape thread over 1~2 layer with pressing by hand to fully attach it to the screw.

When applying liquid seal material, leave 1~2 round for the end of screw and coat moderately without coating at female screw-side of equipment.

In consideration of possible trouble, conduct pipe system design and installation to allow comfortable assembly and disassembly.

Environmental Conditions

- 1) In case of heavy dust circumstance, protect rod part of cylinder, and prevent permeation of dust into the secondary

Lubricant

It is fully applicable without lubricant. Install lubricator at the first side pipe for utilization of lubricant (in case lubricant is needed for cylinder), and fill with spray. Moreover, use ISO VG32 for lubricant (Spindle and machine lubricant are prohibited), and use lubricant for low temperature in case of utilizing in low temperature environment. Utilization of turbine lubricant under 0°C may cause high viscosity or valve trouble.

Repair

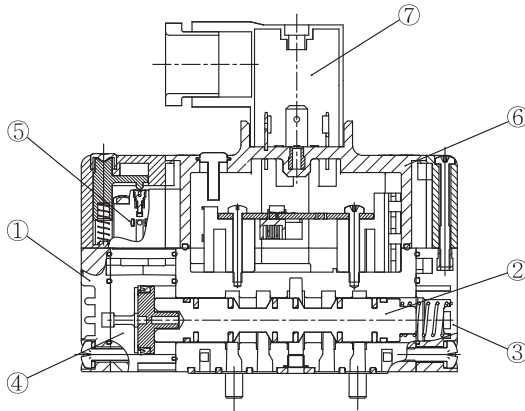
If carbon or oil by-product is attached at spool of air source (mostly compressor), it may cause increment of sliding resistance for spool switching, which causes operation error of valve. In severe case, spool is completely fixed, so that air quality should be cautiously considered. Moreover, if left for a long term with SUB pressured condition in bad air quality circumstance, carbon or oil by-product included in compressed air is attached at spool and sleeve clearance, which causes spool fixing.

In these cases, check the type of compressor lubricant, and use high quality compressor lubricant not to cause oxidation product. Moreover, install PFH/PFU filter behind TAF series filter which shows high filtering resolution to prevent permeation of foreign material into valve.

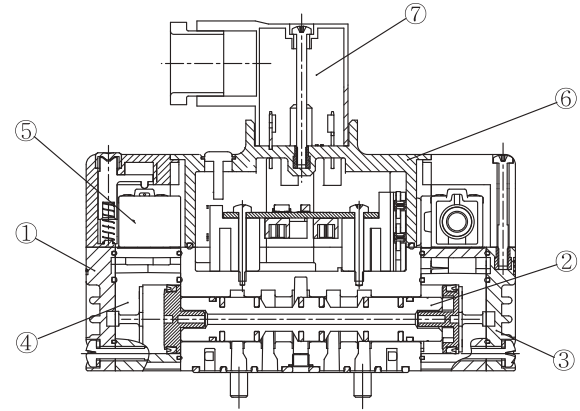
Series DX1, DX2

Structural Drawing/Component List (DX1 and DX2 Series)

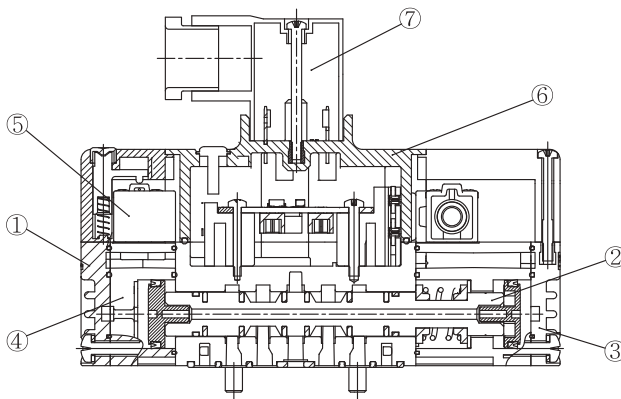
(SINGLE)



(DOUBLE)



(3 POSITION)



Major Components

No.	Name of Components	Material	Remark
①	Body	Aluminum Die Cast	White Coating
②	Spool	Aluminum + NBR	
③	End Cover	Resin	
④	Adapter Plate	Resin	
⑤	Pilot Valve Ass'y	—	DR200- *N
⑥	Lamp Case	Resin	
⑦	Connector	Resin	

DW

DR100

DR200

RS1000,
2000

RS4000

SI UNIT

DV1000
DV3000
DV5000

DS300

DS3000

DS5000

DS2000

DS6000

DX1,DX2

DX1(2)R

DH

DP300
DP3000
DP5000

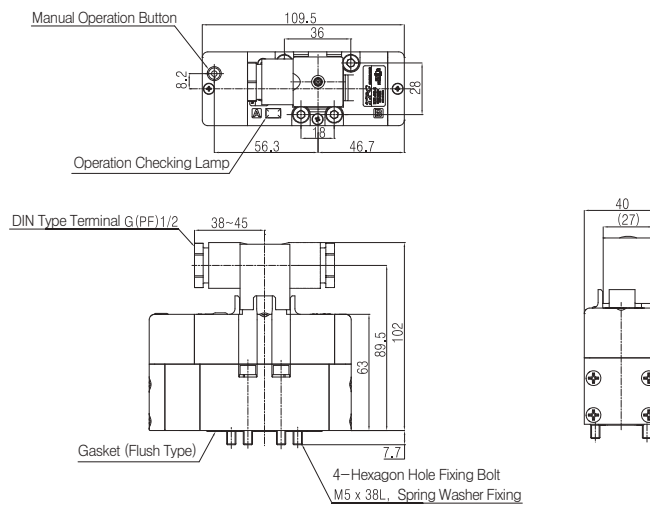
DM

DT220

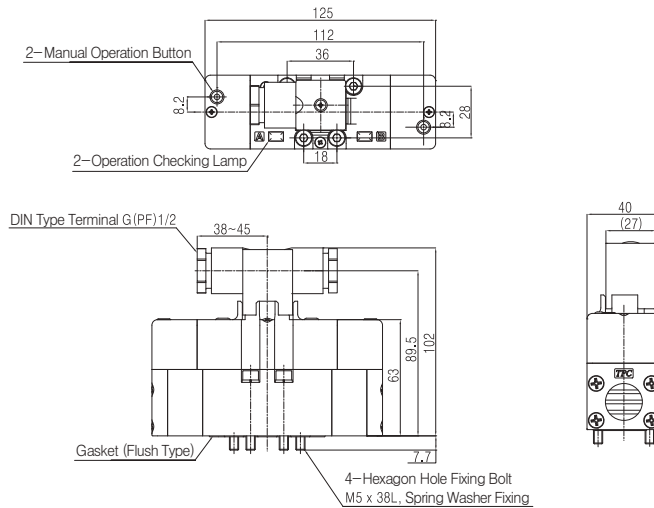
Series DX1, DX2

Solenoid Valve/Exterior Dimension Drawing (DX1 Series)

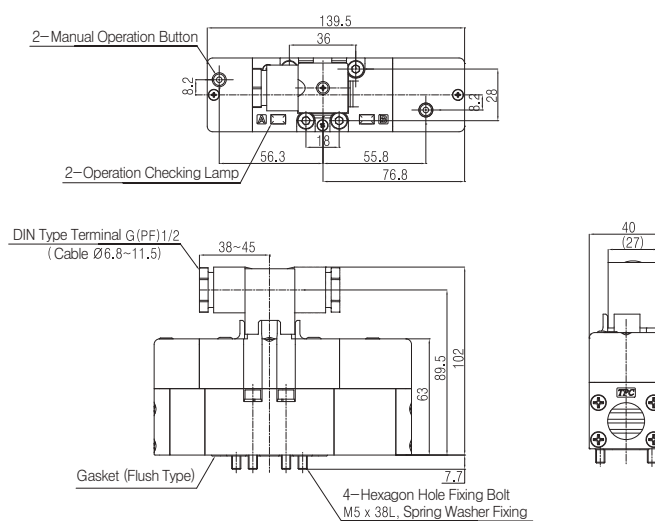
(SINGLE)



(DOUBLE)



(3 POSITION)



Series DX1, DX2

Manifold



Basic Specification

Sub Plate Size		ISO Size
Applicable Solenoid Valve		DX1 / DX2
Connection Number		1~10 Stations
Pipe Contact	A, B Port	Rc(PT)1/4, 3/8
	P, R ₁ , R ₂ Port	Rc(PT)1/4, 3/8

How to Order

DXM **1** — **06** — **03R** — **03B**

1 2 3 4

- 1 : DXM1 (ISO Size 1)
2 : DXM2 (ISO Size 2)

2 Manifold Stations

01 : 1 Stations
02 : 2 Stations
:
10 : 10 Stations

3 Porting A, B

DX1 Series

02R : (Right) Rc(PT) 1/4 A,B Port
02L : (Left) Rc(PT) 1/4 A,B Port
03R : (Right) Rc(PT) 3/8 A,B Port
03L : (Left) Rc(PT) 3/8 A,B Port
02RU : (Right) NPT 1/4 A,B Port
02LU : (Left) NPT 1/4 A,B Port
03RU : (Right) NPT 3/8 A,B Port
03LU : (Left) NPT 3/8 A,B Port

DX2 Series

03R : (Right) Rc(PT) 3/8 A,B Port
03L : (Left) Rc(PT) 3/8 A,B Port
04R : (Right) Rc(PT) 1/2 A,B Port
04L : (Left) Rc(PT) 1/2 A,B Port
03RU : (Right) NPT 3/8 A,B Port
03LU : (Left) NPT 3/8 A,B Port
04RU : (Right) NPT 1/2 A,B Port
04LU : (Left) NPT 1/2 A,B Port

4 Size Cover Port Pipe Contact Specification

DX1 Series

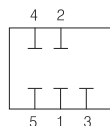
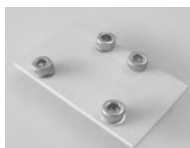
02B : Rc(PT) 1/4 P, R₁, R₂
 Rc(PT) 1/8 PB, PA
03B : Rc(PT) 3/8 P, R₁, R₂
 Rc(PT) 1/8 PB, PA
02BU : NPT 1/4 P, R₁, R₂
 NPT 1/8 PB, PA
03BU : NPT 3/8 P, R₁, R₂
 NPT 1/8 PB, PA

DX2 Series

04 : Rc(PT) 1/2 P, R₁, R₂
 Rc(PT) 1/8 PB, PA
04BU : NPT 1/4 P, R₁, R₂
 NPT 1/8 PB, PA

Manifold Accessory/Order Type

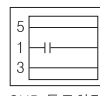
● Blanking plate ASS' Y



Utilization with attaching on block instead of valve in consideration of extension of valve at manifold

DXM1-B

● Block Disk (for P-Port)

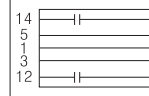


SUP. 통과 차단

Utilization with attaching in the middle of P-port of base in case of supplying over high pressure 2-type pressure into one manifold

DXM1-BD-1

● Block Dist (for PE-Port)



Utilization to block PE-port when pilot exhaust of valve affects to other valves.

DXM1-BD-2

DXM1-*for ISO #1, DXM2-*for ISO #2

DW

DR100

DR200

RS1000,
2000

RS4000

SI UNIT

DV1000
DV3000
DV5000

DS300

DS3000

DS5000

DS2000

DS6000

DX1,DX2

DX1(2)R

DH

DP300
DP3000
DP5000

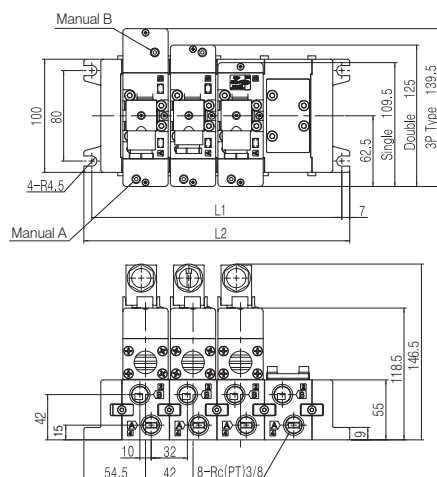
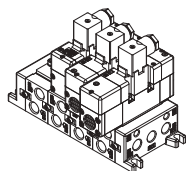
DM

DT220

Series DX1, DX2

Exterior Dimension Drawing/Manifold DXM1 Series

Exterior Dimension drawing



Dimension Sheet

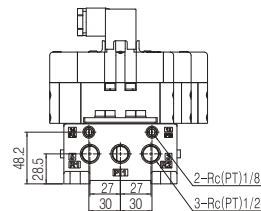
(Unit : mm)

L	n	1	2	3	4	5
L1		95	137	179	221	263
L2		109	151	193	235	277

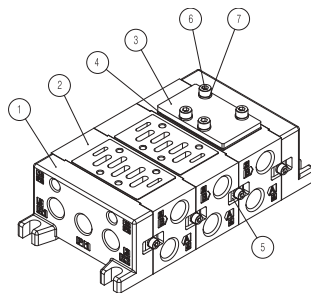
L	n	6	7	8	9	10
L1		305	347	389	431	473
L2		319	361	403	445	487

Note 1) Formula L1=42n+53

Note 2) Formula L2=42n+67



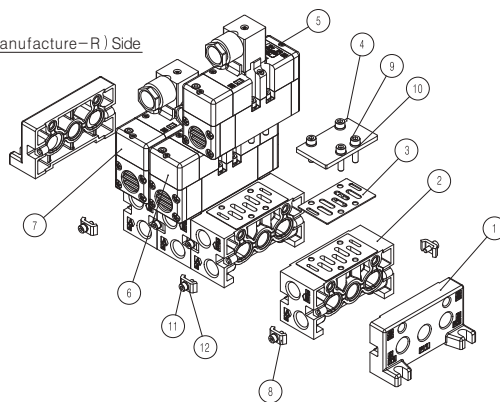
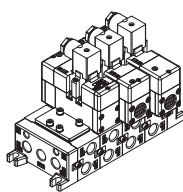
Manifold Components List



NO	Component Name	Quantity	Material	Remark	NO	Component Name	Quantity	Material	Remark
①	Side Cover Ass'y	2	—		⑤	Connector Clamp Ass'y	(Connection Number)	—	STS
②	Base Ass'y	(Connection Number)	—		⑥	Hexagon Hole Fixing Bolt	4	STS	M5X0.8X15
③	Blank Plate	1	AL		⑦	Spring Washer	4	STS	
④	Blank Plate Gasket	1	NBR						

Overall Drawing

SIDE COVER (Manufacture-R) Side



SIDE COVER (Manufacture-L) Side

NO	Component Name	Quantity	Material	Remark	NO	Component Name	Quantity	Material	Remark
①	Side Cover Ass'y	2	—		⑦	Valve Ass'y(Close-Certer)	1	—	
②	Base Ass'y	(Connection Number)	—		⑧	Connector Clampe	(Connection Number)	STEEL	Nickel Plating
③	Blank Plate Gasket	1	NBR		⑨	Hexagon Hole Fixing Bolt	4	STS	M5X0.8X15
④	Blank Plate	1	AL	Granular Painting	⑩	Spring Washer	4	STS	
⑤	Valve Ass'y(Single)	1	—		⑪	Hexagon Hole Fixing Bolt	(Connection Number)	STS	M4X0.7X10
⑥	Valve Ass'y(Double)	1	—		⑫	Spring Washer	(Connection Number)	STS	

Series DX1, DX2

BASE ASS'Y (Used for draw extension)



BASE ASS'Y

1 Series

- 1 : DXM1B (ISO Size 1)
2 : DXM2B (ISO Size 2)

2 Base Porting A, B

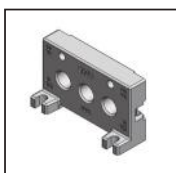
DX1 Series

- 02R : (Right) Rc(PT) 1/4 A,B Port
02L : (Left) Rc(PT) 1/4 A,B Port
03R : (Right) Rc(PT) 3/8 A,B Port
03L : (Left) Rc(PT) 3/8 A,B Port
02RU : (Right) NPT 1/4 A,B Port
02LU : (Left) NPT 1/4 A,B Port
03RU : (Right) NPT 3/8 A,B Port
03LU : (Left) NPT 3/8 A,B Port

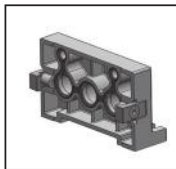
DX2 Series

- 03R : (Right) Rc(PT) 3/8 A,B Port
03L : (Left) Rc(PT) 3/8 A,B Port
04R : (Right) Rc(PT) 1/2 A,B Port
04L : (Left) Rc(PT) 1/2 A,B Port
03RU : (Right) NPT 3/8 A,B Port
03LU : (Left) NPT 3/8 A,B Port
04RU : (Left) NPT 1/2 A,B Port
04LU : (Left) NPT 1/2 A,B Port

SIDE COVER ASS'Y (Used for draw separation)



SIDE COVER



SIDE COVER R ASS'Y

1 Series

- 1 : DXM1S (ISO Size 1)
2 : DXM2S (ISO Size 2)

3 Side Cover

- Blank : SIDE COVER R
L : SIDE COVER L

2 Side Cover Port Pipe Specification

DX1 Series

- 02B : Rc(PT) 1/4 P, R1, R2
: Rc(PT) 1/4 PB, PA
03B : Rc(PT) 3/8 P, R1, R2
: Rc(PT) 1/8 PB, PA
02BU : NPT 1/4 P, R1, R2
: NPT 1/8 PB, PA
03BU : NPT 3/8 P, R1, R2
: NPT 1/8 PB, PA

DX2 Series

- 04 : Rc(PT) 1/2 P, R1, R2
: Rc(PT) 1/8 PB, PA
04U : NPT 1/2 P, R1, R2
: NPT 1/8 PB, PA

DW

DR100

DR200

RS1000,
2000

RS4000

SI UNIT

DV1000
DV3000
DV5000

DS300

DS3000

DS5000

DS2000

DS6000

DX1,DX2

DX1(2)R

DH

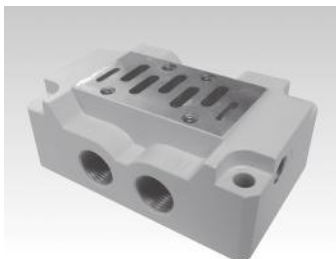
DP300
DP3000
DP5000

DM

DT220

Series DX1, DX2

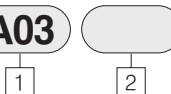
Sub-Plate(DXS1-1 Series)



Specification

Applicable Solenoid Valve	ISO Size ①
Sub-Plate Size	ISO Size ①
Pipe Contact Method	Horizontal Piping : Rc(PT)3/8, 1/2
Weight(g)	320(Rc(PT)3/8, 1/2)

How to Order (SUB PLATE Indicating Method)

DXS 1 - 1 - A03 

① Pipe specification and interactive contact diameter

A02	Horizontal Piping	: 1/4	P, A, B
		: 3/8	R1, R2
		: 1/8	X, Y
A03		: 3/8	P, A, B, R1, R2
		: 1/8	X, Y
B02	Beneath Piping	: 1/4	P, A, B
		: 3/8	R1, R2
		: 1/8	X, Y
B03		: 3/8	P, A, B, R1, R2
		: 1/8	X, Y

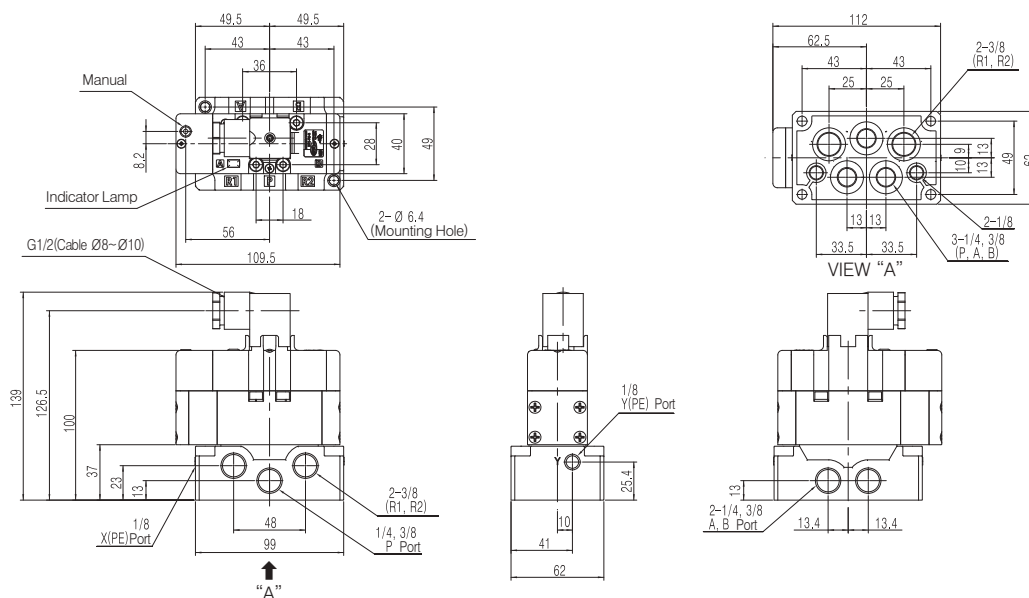
② Thread

Blank : Rc(PT)
U : NPT

※ DXS1-1-B02
DXS1-1-B03
Beneath pipe sub plate type
(Customized production)

Solenoid Valve(DX1)+Sub-Plate(DXS1-1)

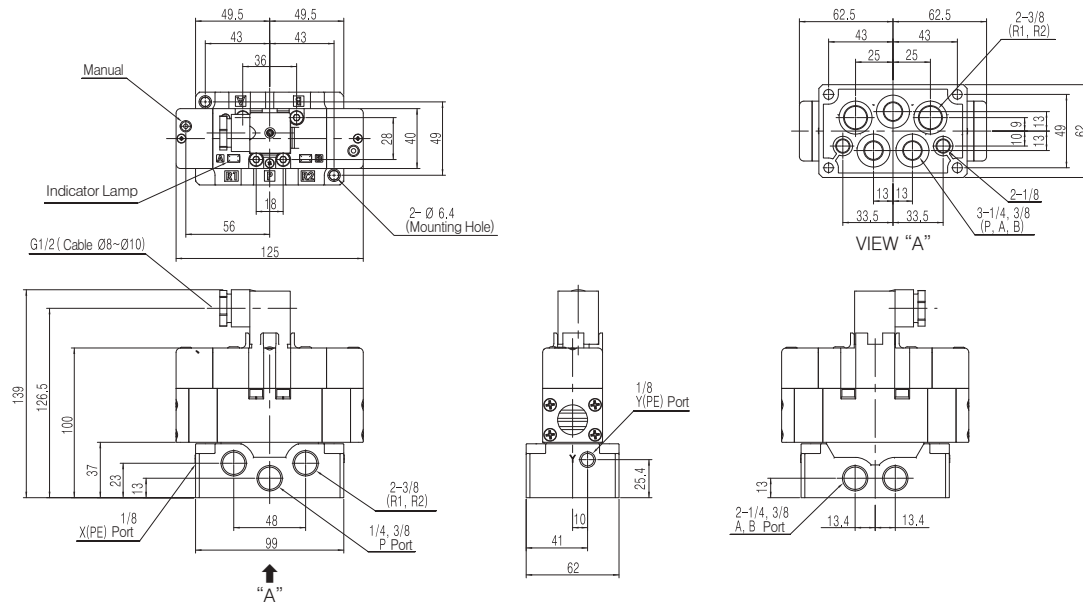
(In case of Single valve mount - Dimension drawing)



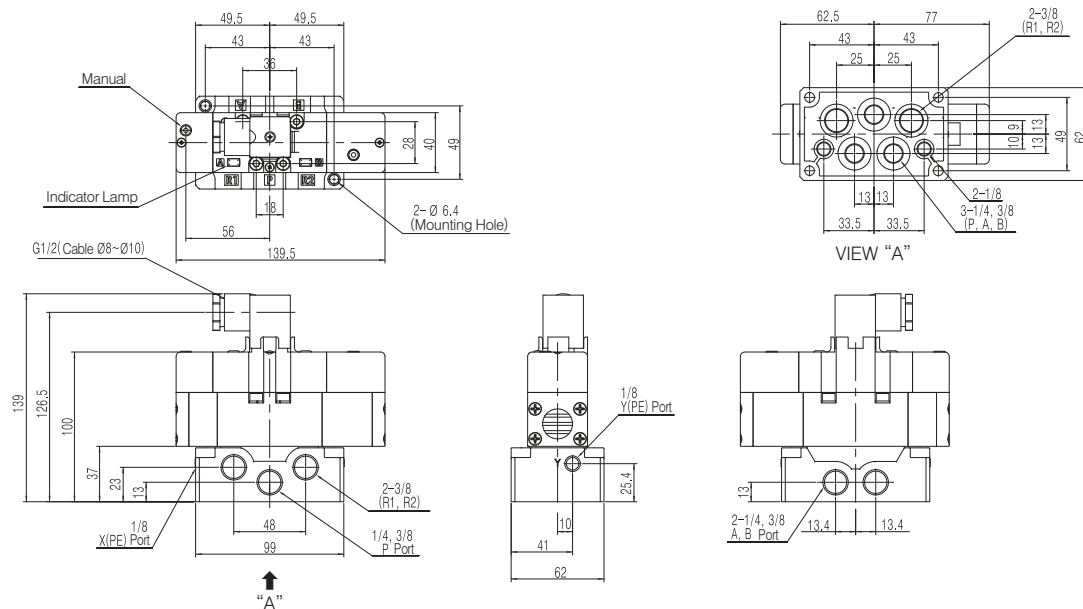
Series DX1, DX2

Solenoid Valve(DX1)+Sub-Plate(DXS1-1)

(In case of Double valve mount - Dimension drawing)



(In case of 3-position valve mount - Dimension drawing)



DW

DR100

DR200

RS1000,
2000

RS4000

SI UNIT

DV1000
DV3000
DV5000

DS300

DS3000

DS5000

DS2000

DS6000

DX1,DX2

DX1(2)R

DH

DP300
DP3000
DP5000

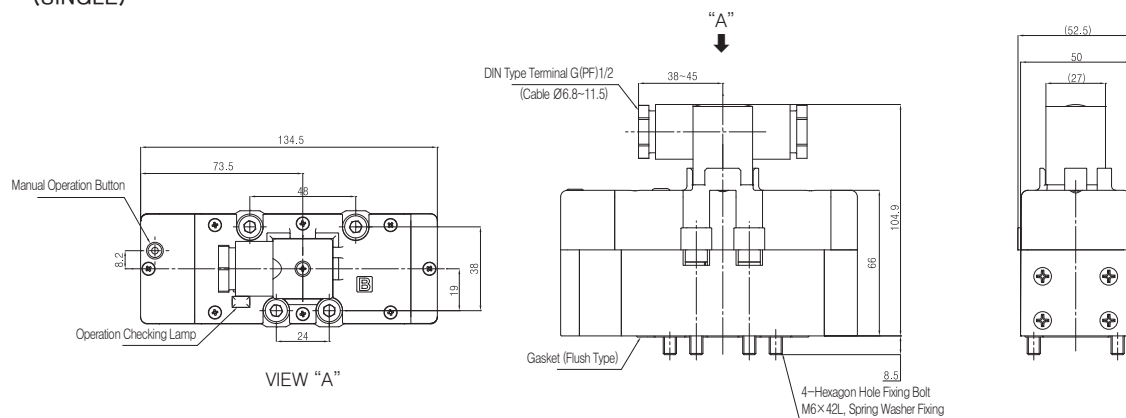
DM

DT220

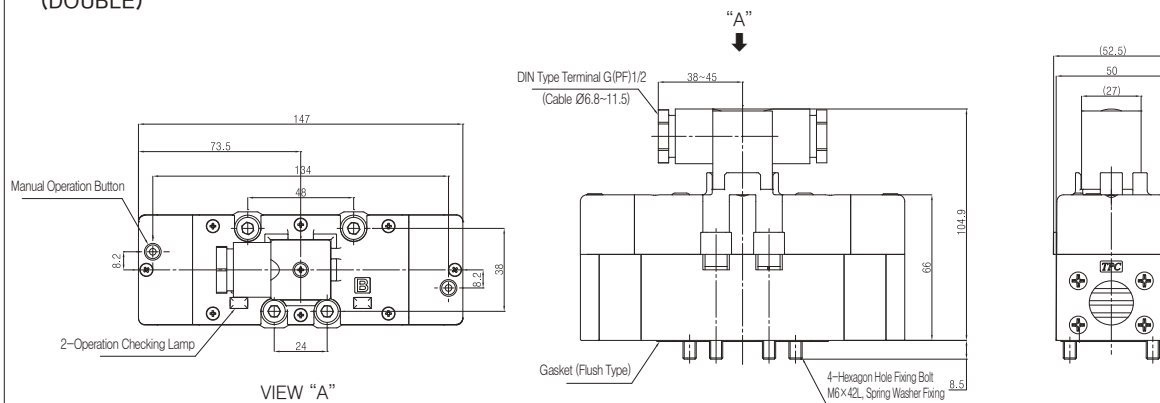
Series DX1, DX2

Solenoid Valve/Exterior Dimension Drawing (DX2 Series)

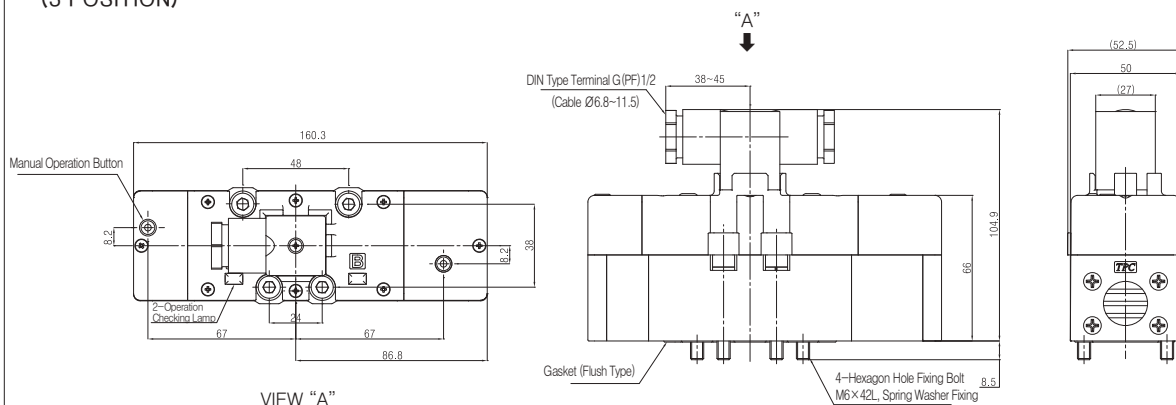
(SINGLE)



(DOUBLE)

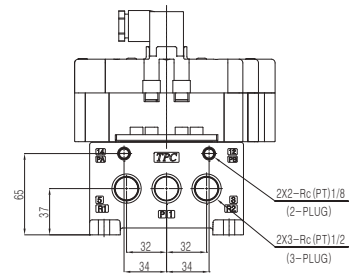
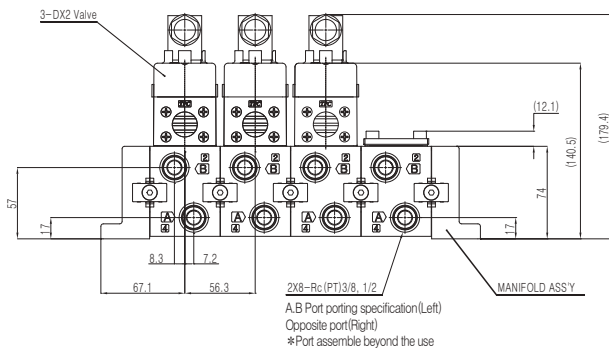
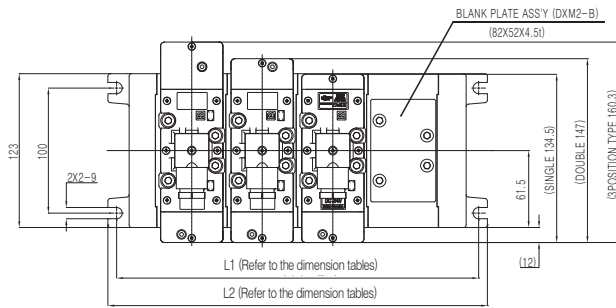


(3 POSITION)



Series DX1, DX2

Solenoid Valve/Exterior Dimension Drawing (DX2 Series)



Stations(n)	2	3	4	5	6	7	8	9	10
L1	177	233	290	346	420	458	515	571	627
L2	191	247	304	360	416	472	529	585	641

DW

DR100

DR200

RS1000,
2000

RS4000

SI UNIT

DV1000
DV3000
DV5000

DS300

DS3000

DS5000

DS2000

DS6000

DX1,DX2

DX1(2)R

DH

DP300
DP3000
DP5000

DM

DT220

Series DX1, DX2

Sub-Plate (DXS2-2 Series)



Specification

Applicable Solenoid Valve	ISO Size ②
Sub Plate Size	ISO Size ②
Pipe Contact Method	Horizontal piping : Rc(PT)3/8, 1/2
Weight(g)	655(Rc(PT)3/8, 1/2)

How to Order

DXS2 — 2 — A03 —

1

2

① Pipe specification and interact contact diameter

A03 Horizontal Piping : 3/8 P, A, B, R1, R2
: 1/8 X, Y

A04 Horizontal Piping : 1/2 P, A, B, R1, R2
: 1/8 X, Y

B03 Beneath Piping : 3/8 P, A, B, R1, R2
: 1/8 X, Y

B04 Beneath Piping : 1/2 P, A, B, R1, R2
: 1/8 X, Y

② Thread

Blank : Rc(PT)

U : NPT

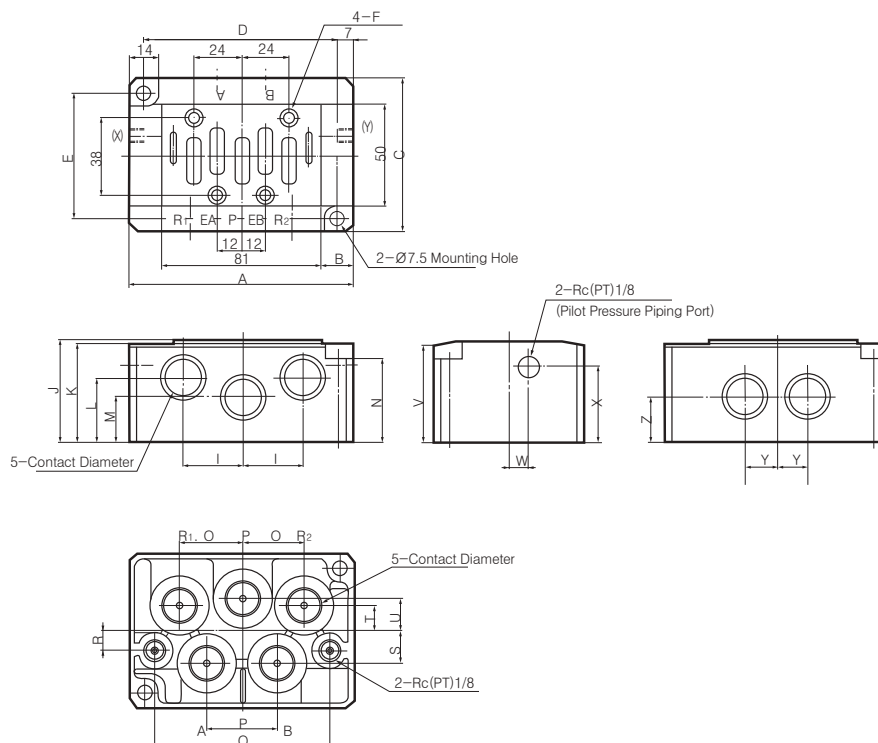
※ DXS2-2-B03

DXS2-2-B04

Beneath pipe sub-plate type

(Order Made Customized Production)

Exterior Dimension Drawing / DXS2-2



Type No.	Piping Specification	Contact Diameter	A	B	C	D	E	F	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
DXS2-2 A03, A04	Horizontal Piping	Rc(PT) 3/8 · 1/2	112	15.5	75	98	62	4-M6 Depth10	30	50	49	32	23	42	31	36	88	10	16	12	16	47.5	10	38	16	23