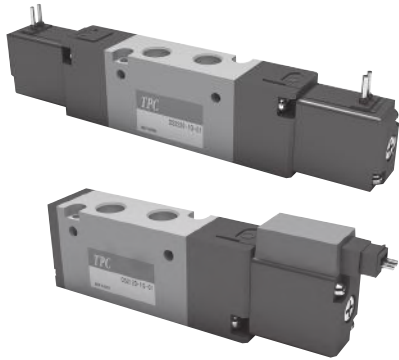


# Series DS2000

## Elastic Seal 5 Port Pilot Type Solenoid Valve



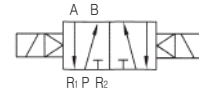
- COMPACT SIZE AND LIGHT WEIGHT - 18mm WIDTH
- LARGE FLOW CAPACITY - Cv 0.53  
EFFECTIVE ORIFICE 9.5mm<sup>2</sup>
- LOW POWER CONSUMPTION - 1.7W(DC)

### Symbol

Single  
DS 2120



Double  
DS 2220



## How To Order

  **DS 2 1 2 0** — **1 G** — **01** —    
 **1**      **2**      **3**     —      **4**      **5**     —      **6**     —      **7**

#### 1 Series

Blank : Rc(PT)Port Directional Control Valve  
U : NPT Port Directional Control Valve

#### 2 Configuration

1 : 2 Position Single  
2 : 2 Position Double

#### 3 Body Type

20 : Body Ported Type

#### 4 Voltage

1 : AC 110V(50/60Hz)  
2 : AC 220V(50/60Hz)  
3 : AC 120V(50/60Hz)  
4 : AC 240V(50/60Hz)  
5 : DC 24V  
6 : DC 12V  
※ 3, 4 are non-standard

#### 5 Electrical Entry

G : Grommet  
H : Plug Connector Type  
HZ : Plug Connector Type(With indicator Light and surge voltage suppressor)

※ Plug connector type of DC has only HZ type

#### 6 Port Size

01 : Rc(PT)1/8  
NPT1/8

#### 7 Length of Lead Wire

Blank : 300mm(standard)  
XWL01 : 100mm  
XWL02 : 200mm

∴  
XWL20 : 2000mm

※ Contact us for specification beyond standard length.

### Manifold

  **DSM2** — 20 — 05 **1**  
 **1**      **2**      **3**

#### 1 Series

Blank : Rc(PT)Port  
U : NPT Manifold For Series  
DS2000

#### 2 Manifold Specifications

20 : Manifold Specifications

#### 3 Stations

2~20Stations

# Series DS2000

## ⚠ Precautions.

Be sure to read before handling. Refer to(B-68) for safety Instruction and common precautions.

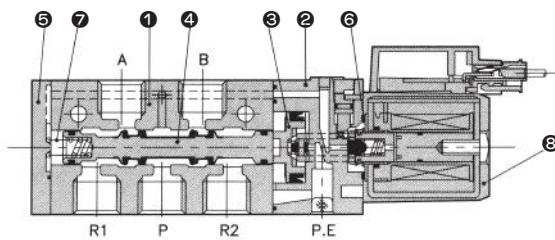
## Specifications

Item	DS2120	DS2220	
Fluid	Air		
Operating Pressure Range(MPa) (psi)	0.15~0.7MPa(21~100psi)	0.1~0.7MPa(14~100psi)	
Effective Orifice mm(Cv)	9.5(0.53)		
Ambient and Fluid Temperature	Max. 50°C (122°F)		
Response Time(0.5MPa)	≤20ms		
Max. Operating frequency	10c/s		
Lubrication	Unnecessary		
Manual Override	Non-locking Push type		
Impact/Vibration Resistance	30G/5G(8.3~2000HZ)		
Enclosure	Dust Proof		
Coil Voltage	AC 50/60HZ 110V, 220V, DC12V, 24V		
Allowable Voltage	-15%~+10% of Rated Voltage		
Coil Insulation	Class B or equivalent(130°C)(266°F)		
Apparent Power	AC	Inrush	4.5VA(50HZ), 4.2VA(60HZ)
		Holding	3.0VA(50HZ), 2.6VA(60HZ)
Power Consumption	DC	1.7W	
Weight g(ozs)	100(3.53)	150(5.3)	
Surge suppressor circuit	AC:Varistor , DC:Diode		
Indicator Light	LED		

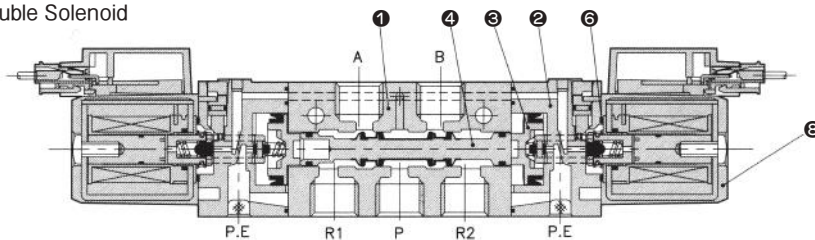
- DW
- DR100
- DR200
- RS1000, 2000
- RS4000
- SI UNIT
- DV1000, DV3000, DV4000
- DS300
- DS3000
- DS5000
- DS2000**
- DS6000

## Construction/Parts List

Single Solenoid



Double Solenoid



### Main Parts

No.	Description	Material
①	Body	Aluminum
②	Adapter Plate	Polyacetal
③	Piston	Polyacetal
④	Spool	Aluminum · NBR
⑤	End Cover	Polyacetal
⑥	O-Ring	NBR
⑦	Spring	STS
⑧	Coil Ass'y	

- DX1,DX2
- DX1(2)R
- DH
- DP300, DP3000, DP5000
- DM
- DT220

# Series DS2000

**Body Ported/2 Position Single Solenoid** inch(mm)

<p>Grommet(G) <span style="margin-left: 100px;">DS 2120 - ○G</span></p>	<p>Plug Connector Type(H, HZ) <span style="margin-left: 100px;">DS2120 - ○ H HZ</span></p>
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**Body Ported/2 Position Double Solenoid** inch(mm)

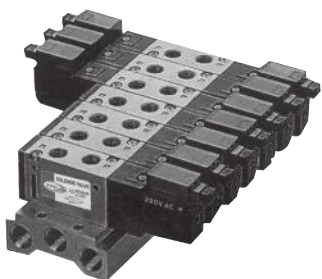
<p>Grommet(G) <span style="margin-left: 100px;">DS 2220 - ○G</span></p>	<p>Plug Connector Type(H, HZ) <span style="margin-left: 100px;">DS2220 - ○ H HZ</span></p>
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# Series DS2000

## Manifold

### Manifold Specifications

Manifold Type	B Mount
P(SUP) · R(EXH)Exhaust	Common Exhaust SUP · EXH
Maximum Stations	20 Stations



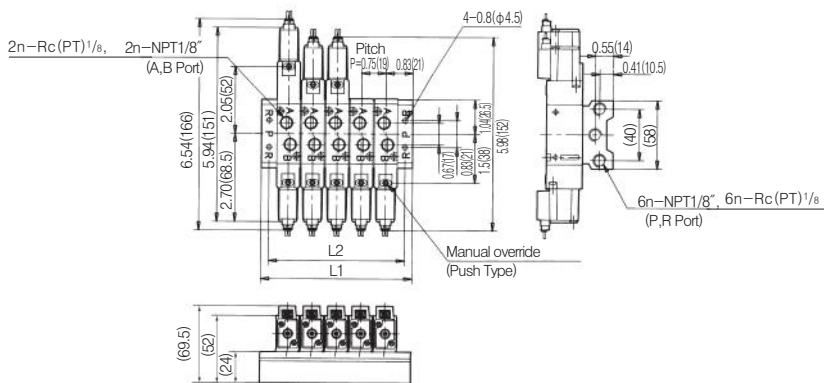
### Manifold Specifications

Model	Exhaust	Piping/Port Location			Port Size NPT/Pc(PT)	Applicable Valve
		P(SUP)	R(EXH)	A.B(CYL)		
B	Common	Side	Side	Top	1/8"	DS2020
		Base	Base	Valve		

- DW
- DR100
- DR200
- RS1000, 2000
- RS4000
- SI UNIT
- DV1000, DV3000, DV4000
- DS300
- DS3000
- DS5000
- DS2000**
- DS6000
- DX1,DX2
- DX1(2)R
- DH
- DP300, DP3000, DP5000
- DM
- DT220

## DSM2-20

inch(mm)



### L : Size



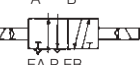
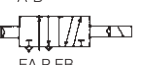
		inch(mm)																		
L	N	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L <sub>1</sub>		2.32 (59)	3.07 (78)	3.82 (97)	4.57 (116)	5.31 (135)	6.06 (154)	6.81 (173)	7.56 (192)	8.31 (211)	9.06 (230)	9.80 (249)	10.55 (268)	11.30 (287)	12.05 (306)	12.8 (325)	13.54 (344)	14.29 (363)	15.04 (382)	15.79 (401)
L <sub>2</sub>		1.93 (49)	2.68 (68)	3.43 (87)	4.17 (106)	4.92 (125)	5.67 (144)	6.42 (163)	7.17 (182)	7.91 (201)	8.66 (220)	9.41 (239)	10.16 (258)	10.91 (277)	11.65 (296)	12.40 (315)	13.15 (334)	13.90 (353)	14.65 (372)	15.39 (391)

# Series DS2000

## ⚠ Precautions

### Use as a 3 Port Valve

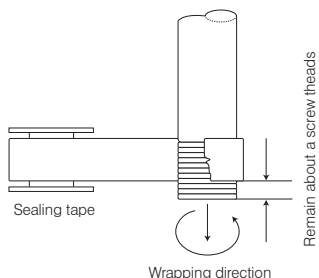
The use as a 3 port Valve may be enabled by Plugging one of the Cylinder Ports (A or B). Special applications such as a Non-leakage Valve should be avoided. Be sure to check the Exhaust port is open if used as a 3 Port Valve.

Plug		A Port (CYL.1 Port)	B Port (CYL.2 Port)
Function		N.C	N.O
Sole-noid	Single	(■)Plug A B  EA P EB	(■)Plug A B  EA P EB
	Double	(■)Plug A B  EA P EB	(■)Plug A B  EA P EB

### Mounting

1. Be sure to check that chips, cutting oil, dust, etc. are cleaned up prior to mounting
2. Be sure to check that chips or sealing material will not get in when screwing the pipe or fitting into a port.
3. In event that a filter has already been installed to the pilot exhaust(P.E.) Port, and a silencer is to be added, it is needed to first remove the filter.

Thread	Appropriate Clamping Torque kgf · cm(N · m)
1/8"	70~90(7~9)
1/4"	120~140(12~14)



### Use at Low Temperature

It could be used under -10C, however a careful protection against fleering moisture is needed.

### Quality Of Fluid

1. Filtration to 10 microns is enough.

### Lubricant

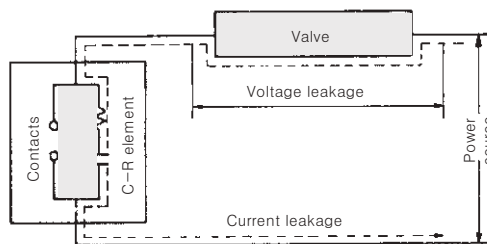
1. Pre-lubrication is needed for valves - further lubrication is not needed.
2. In event that lubricant is used, it is preferred to use Turbine Oil (ISO VG32).

### Momentary Energizing

It is preferred to make sure the energizing time is more than 0.05 seconds when using a double Solenoid type with momentary energizing.

### Leakage Voltage

1. Residual leakage voltage of AC coil must be less than 20% of the rated voltage for the leakage current, and when the switch is off, it is preferred to check that leakage voltage of DC coil must be less than 3% of the rated voltage.
2. It will increase the leakage voltage when using a C-R element.



### Remarks

Port	DS2000
Supply	P(SUP)
Cylinder	A(CYL.2), B(CYL.1)
Exhaust	R1(EXH2), R2(EXH1)
Symbol (Single solenoid)	P : SUP. B : CYL.1 A : CYL.2 R1 : EXH.1 R2 : EXH.2 