

Series *DS2000*

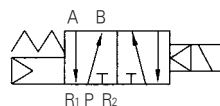
Elastic Seal 5 Port Pilot Type Solenoid Valve



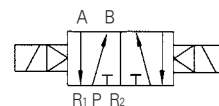
- COMPACT SIZE AND LIGHT WEIGHT - 18mm WIDTH
- LARGE FLOW CAPACITY - Cv 0.53
EFFECTIVE ORIFICE 9.5mm²
- LOW POWER CONSUMPTION - 1.7W(DC)

Symbol

Single
DS 2120



Double
DS 2220



How To Order

 DS 2 1 2 0 — 1 G — 01

1 Series

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

2 Series

DS2000 Series

3 Type of Actuation

1 : 2 Position Single
2 : 2 Position Double

4 Body Type

2 : Body Ported Type

5 Body Option

O : Standard

6 Voltage

1 : AC 110V(50/60Hz)
2 : AC 220V(50/60Hz)
5 : DC 24V
6 : DC 12V

7 Electrical Entry/Indicator Light and Surge Suppression

G : Grommet

HZ: Plug connector type(With indicator Light and surge voltage suppressor)

※ Plug connector type of DC has only HZ type

8 Blank : Rc(PT)

G : Rc(PF)

9 Port Size

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

Manifold

 DSM2 — 2 0 — 05 1

1 Series

Blank : Rc(PT)Port

U : NPT Manifold For Series DS2000

2 Manifold Specifications

20 : Manifold Specifications

3 Blank : Rc(PT)

G : Rc(PF)

4 Stations

2~20Stations

5 Component Symbol

Code : 1

Passage

P(SUP) : Common

R(EXH) : common

Piping

A, B(CYL) : Top

Applicable Manifold type : 20

⚠ Precautions.

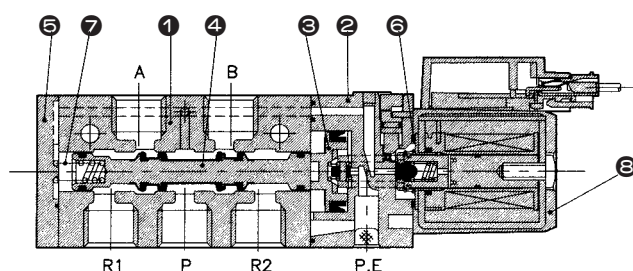
Be sure to read before handling. Refer to(B-68) for safety Instruction and common precautions.

Specifications

		DS2120	DS2220
Fluid		Air	
Operating Pressure Range(KPa)(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℃(122°F)	
Response Time(5kgf/cm ²)		20ms or less	
Max. Operating frequency		10c/s	
Lubrication		Not required	
Manual Override		Non-locking Push Type	
Impact/Vibration Resistance		30G/5G(8.3~2000HZ)	
Enclosure		Dust Proof	
Coil Voltage		120V, 220V, AC 50/60HZ 110V, DC12V, 24V, 240V	
Allowable Voltage		-15%~+10% of Rated Voltage	
Coil Insulation		Class B or equivalent(130℃)(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	

Construction/Parts List

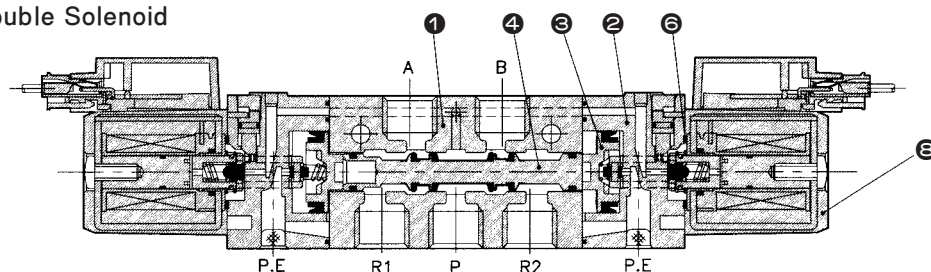
Single Solenoid



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	SMS
⑧	Coil Ass'y	

Double Solenoid



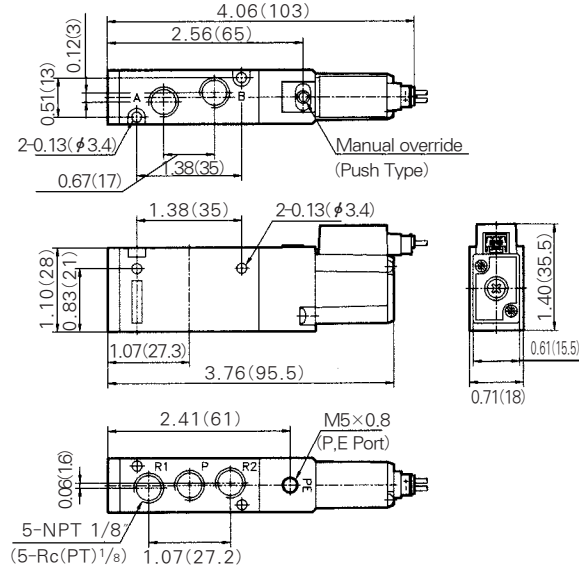
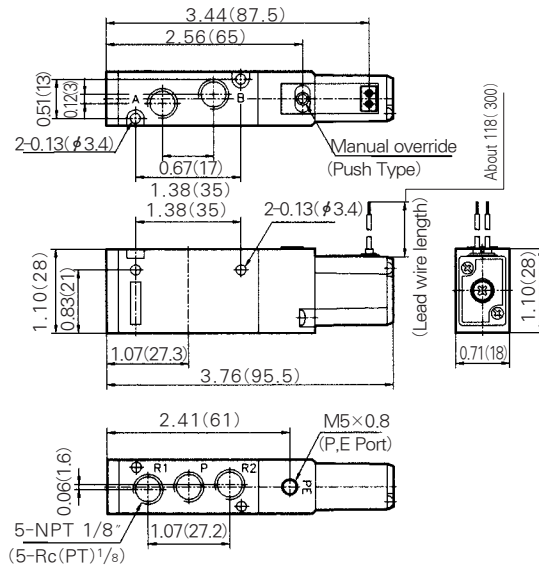
Body Ported/2 Position Single Solenoid

inch(mm)

Grommet(G)

DS 2120 - ○G

Plug Connector Type(H, HZ) DS2120 - ○^H/_{HZ}



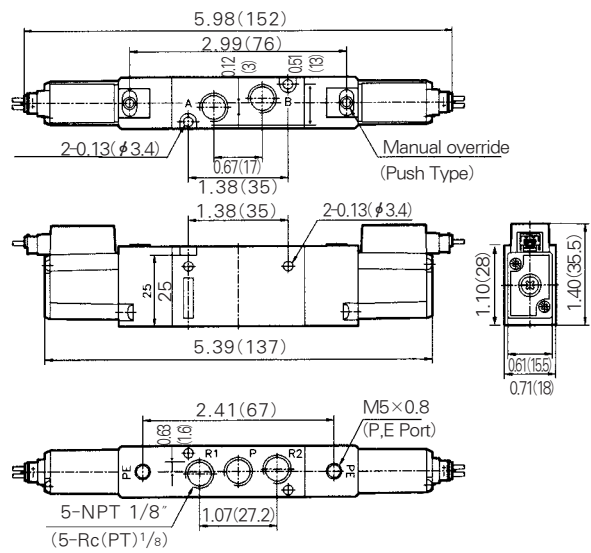
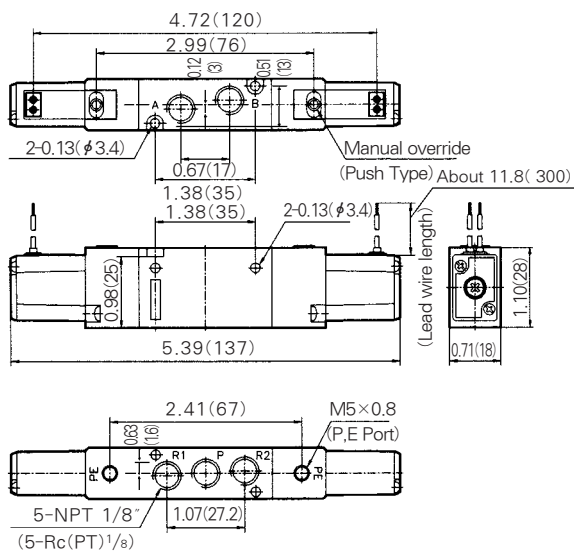
Body Ported/2 Position Double Solenoid

inch(mm)

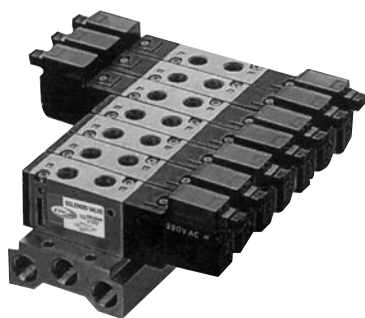
Grommet(G)

DS 2220 - ○G

Plug Connector Type(H, HZ) DS2220 - ○^H/_{HZ}



Manifold



Manifold Specifications

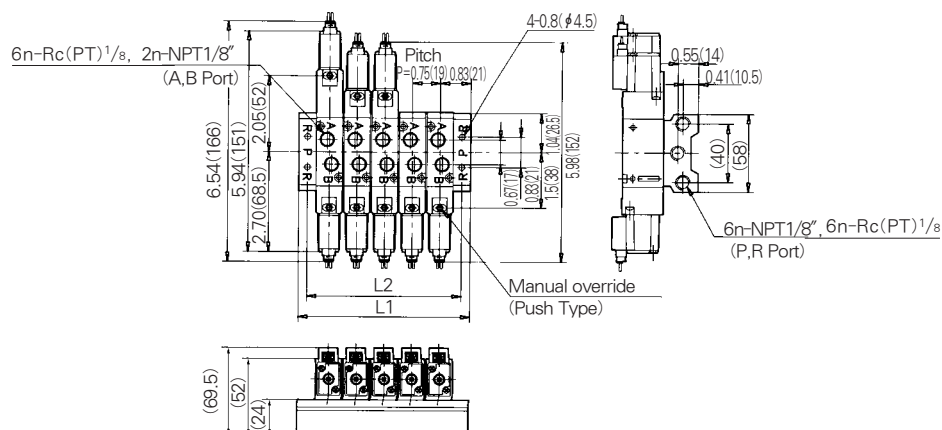
Manifold Type	B Mount
P(SUP) · R(EXH)Exhaust	Common Exhaust SUP · EXH
Maximum Stations	20 Stations

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"	DS2〇20
		Base	Base	Valve		

DSM-20

inch(mm)



L:Size

L-Size		inch(mm)																		
L \ N	N	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L ₁		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 ₂		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)

DW

DV100

DV1000 ·
3000 · 4000

DS300

DS3000

DS5000

DS2000

DX2R

**DP300 ·
3000 · 5000**

DS6000

DX2

DM

DH

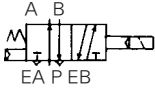
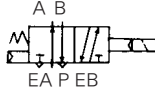
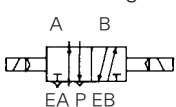
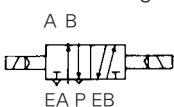
DT220

DC

Precautions

Use as a 3 Port Valve

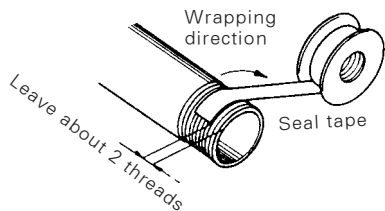
Plugging one of the Cylinder Ports (A or B) enables use as a 3 Port Valve. It should not be used in special applications such as a Non-leakage Valve. Make sure the Exhaust port is open if used as a 3 Port Valve.

Plug		A Port (CYL.1 Port)	B Port (CYL.2 Port)
Function		N.C	N.O
Sole-noid	Single	(X)Plug 	(X)Plug 
	Double	(X)Plug 	(X)Plug 

Mounting

- 1. Make sure that Chips, Cutting Oil, Dust, etc. are cleaned up before mounting.
- 2. When screwing the pipe or fitting into a port, ensure that Chips or Sealing material will not get in.
- 3. A Filter has already been installed to the Pilot Exhaust(P.E.) Port, so if a Silencer is to be added, 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

Available for use under -10℃, however care should be taken to protect against freezing moisture.

Quality Of Fluid

- 1. Filtration to 10 Microns is sufficient.

Lubricant

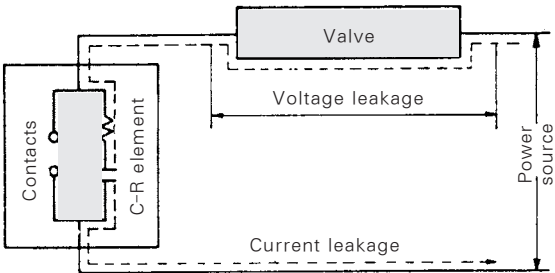
- 1. Valves are pre-lubricated – no further lubrication is necessary.
- 2. If a lubricant is used, please use Turbine Oil (ISO VG32).

Momentary Energizing

When using a Double Solenoid type with momentary energizing, make sure the energizing time is more than 0.05 seconds.

Leakage Voltage

- 1. For the leakage current, residual leakage voltage of AC coil must be less than 20% of the rated voltage, and leakage voltage of DC coil must be less than 3% of the rated voltage when the switch is off.
- 2. When using a C-R element, it will increase the leakage voltage.



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 