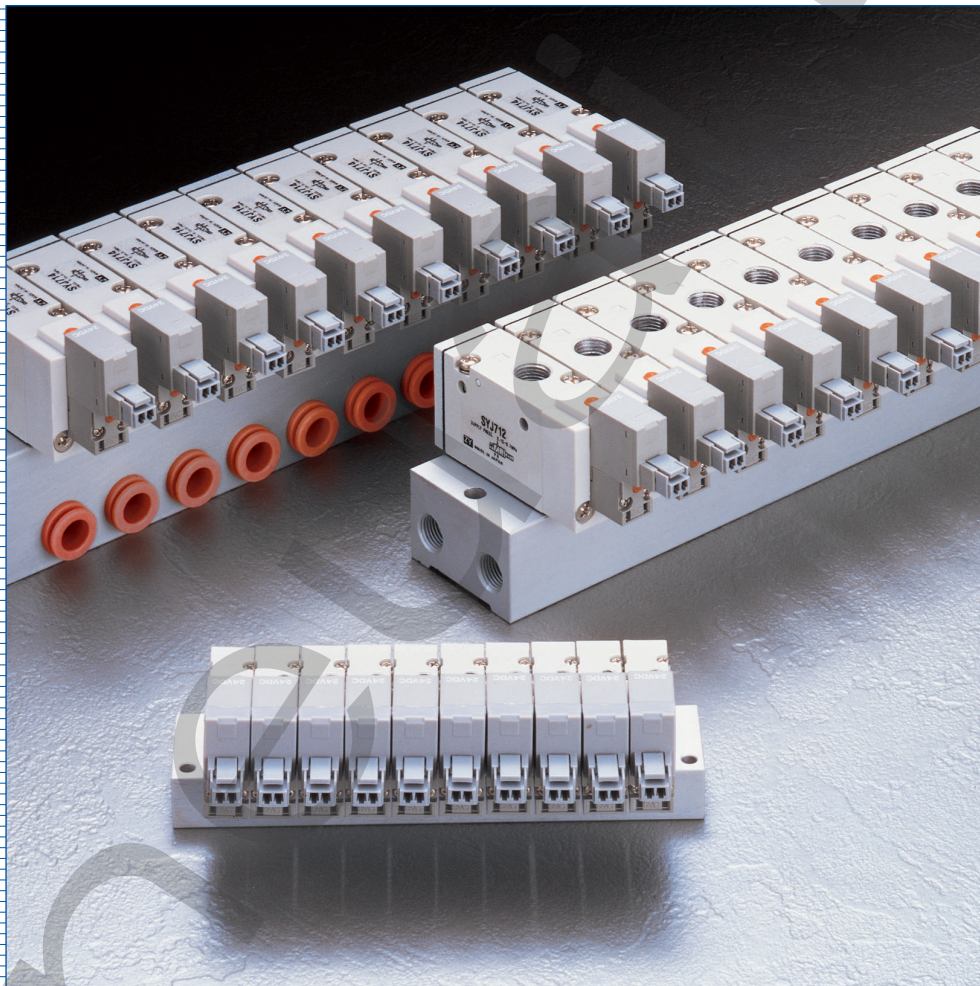


3 Port Solenoid Valve

# SYJ300/500/700 Series



PRODUCTS™

Low Power Consumption (0.5W)  
Interchangeable with the NVJ and NVZ  
Vacuum Applicable  
Base Mounted/Body Ported Configurations

# Table of Contents

**Features & Benefits** .....pages 4-5

**Preferred Option Program** .....page 7

**Specifications** .....page 9

- SYJ300 .....pages 10-12
- SYJ500 .....pages 13-15
- SYJ700 .....pages 16-18

**How To Order** .....page 19

- SYJ300 .....pages 20-21
- SYJ500 .....pages 22-23
- SYJ700 .....pages 24-25
- SYJA .....pages 26-27

**Drawings** .....page 29

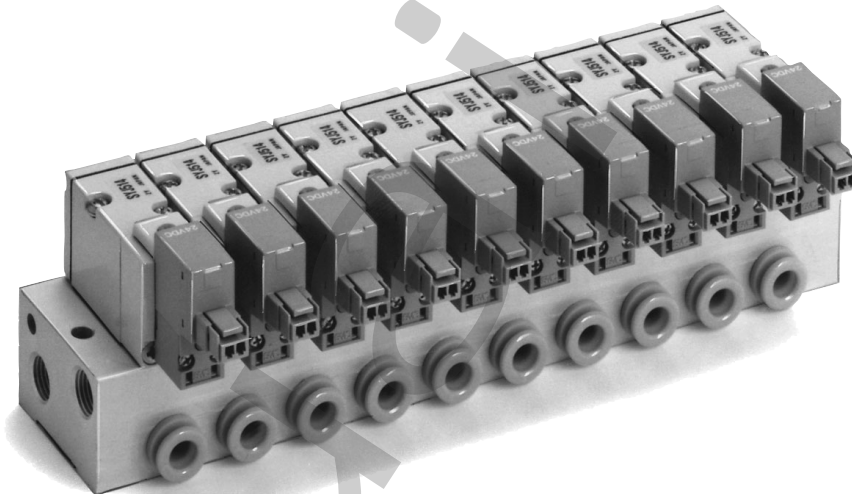
- SYJ300 .....pages 30-38
- SYJ500 .....pages 39-48
- SYJ700 .....pages 49-58

**Operations Guide** .....pages 59-63

# Series SYJ300/500/700

**Low power consumption : 0.5W**  
(Current draw : 21mA at 24VDC)

The low power consumption enables direct operation by a PLC. The need for relay cards is eliminated and less power is used to operate the valve.



**Completely interchangeable with the previous series NVJ300-500-700 and NVZ300-500.**

Mounts to the same subplates and manifolds as the NVJ300-500-700 and the NVZ300-500.

	Series NVJ	Series NVZ
<b>SYJ300</b>	NVJ300	—
<b>SYJ500</b>	NVJ500	NVZ300
<b>SYJ700</b>	NVJ700	NVZ500

**Valve may be piped for selector or diverter applications.**

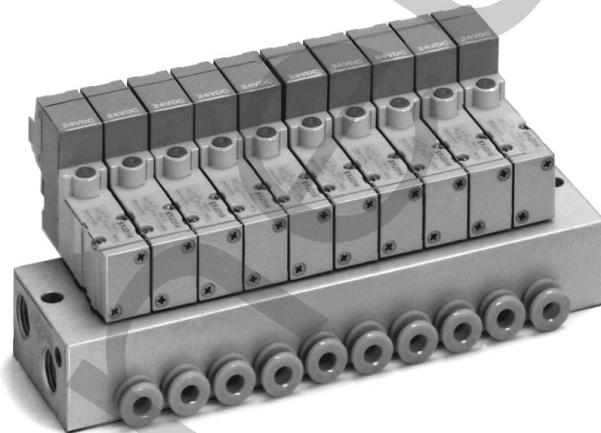
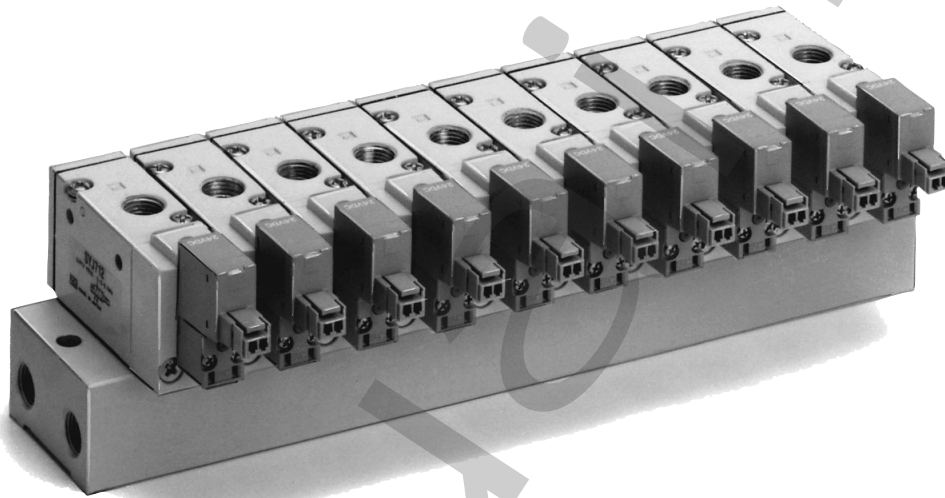
SYJ300R, 500R, 700R : External pilot type

Universal porting.

(Pressure may be applied to any port : P, R, A)

## Common Exhaust

Valves can be ordered with a common exhaust port for the pilot and main valve. The Common exhaust provides for a cleaner operating environment by exhausting the pilot air through the main valve body rather than directly to atmosphere.



## Vacuum applicable

To 29.9 Hg

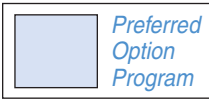
SYJ300R, 500R, 700R : External pilot type

## Copper Free

All internal surfaces in contact with the media are copper free.

## Refined appearance and state-of-the-art design

The colortone for the valves has been chosen to complement modern equipment design.


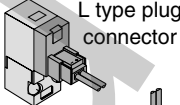

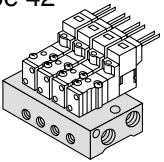

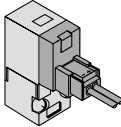
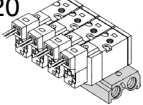
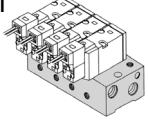

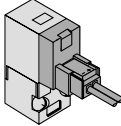
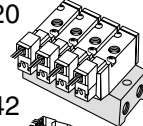
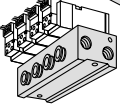


# The Preferred Option Program:

## "Quick Delivery and Service Assurance"

The product series in this catalog utilizes P/A's Preferred Option Program, a unique program intended to emphasize the model configurations that are most readily available where the catalog presents an extensive variety of choice. All other options are available, whereas they may be stocked in lesser quantities or manufactured to order. Special arrangements can be made for repeating (blanket) orders of these product models. Contact your sales representative for further details.

### SYJ300/500/700 Preferred Option Summary

Series	Type of actuation	Voltages	Electrical entry	Option	Manual override	Manifolds
				Light and surge voltage suppressor		
 <p><b>SYJ300</b></p>	<ul style="list-style-type: none"> <li>● N.C.</li> <li>● N.O.</li> </ul>	<ul style="list-style-type: none"> <li>■ 24 VDC</li> <li>■ 12 VDC</li> </ul>	 L type plug connector   M type plug connector	<ul style="list-style-type: none"> <li>■ With light and surge voltage suppressor</li> </ul>	<ul style="list-style-type: none"> <li>■ Non-locking push type</li> </ul>	 Type 42
 <p><b>SYJ500</b></p>	<ul style="list-style-type: none"> <li>● N.C.</li> <li>● N.O.</li> </ul>	<ul style="list-style-type: none"> <li>■ 24 VDC</li> <li>■ 12 VDC</li> </ul>	 L type plug connector	<ul style="list-style-type: none"> <li>■ With light and surge voltage suppressor</li> </ul>	<ul style="list-style-type: none"> <li>■ Non-locking push type</li> </ul>	 Type 20   Type 41
 <p><b>SYJ700</b></p>	<ul style="list-style-type: none"> <li>● N.C.</li> <li>● N.O.</li> </ul>	<ul style="list-style-type: none"> <li>■ 24 VDC</li> <li>■ 12 VDC</li> </ul>	 L type plug connector	<ul style="list-style-type: none"> <li>■ With light and surge voltage suppressor</li> </ul>	<ul style="list-style-type: none"> <li>■ Non-locking push type</li> </ul>	 Type 20   Type 42

**0.5**  
W

Low Power  
Consumption

# Specifications

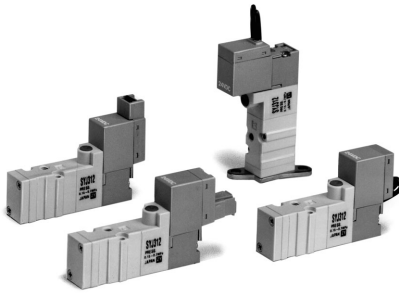
## Series SYJ300/500/700

- SYJ300.....pages 10-12
- SYJ500.....pages 13-15
- SYJ700.....pages 16-18

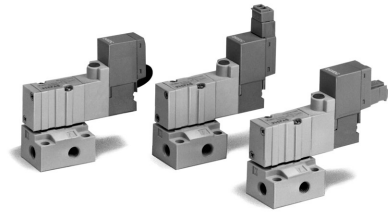
# Series SYJ300

# 3 Port Solenoid Valve

## Valve Specifications



Body ported type



Base mounted type

## Model

Valve model	Type of actuation	Port size	Effective area mm <sup>2</sup> (Cv)	Weight g		
				Grommet	L type plug connector, M type plug connector.	
Body ported type	SYJ312	N.C.	M3×0.5	0.9 (0.05)	29	31
	SYJ322	N.O.				
Base mounted type (With sub-plate)	SYJ314	N.C.	M5×0.8	1.8 (0.1)	50	52
	SYJ324	N.O.			(Without sub-plate 29)	(Without sub-plate 31)

## Specifications

Fluid	Air	
Operating pressure range PSI (MPa)	Internal pilot	22~100 (0.15 to 0.7)
Ambient and fluid temperature °F	Max. 122	
Response time ms	15 or less	
Max. operating frequency Hz	10	
Manual override	Non-locking push type, Push-locking slotted type	
Pilot exhaust	Individual pilot exhaust type. Common exhaust(pilot and main valve)type	
Lubrication	Not required	
Mounting position	Free	
Impact / Vibration resistance m/s <sup>2</sup>	150/30	
Protection structure	Dust proof	

## Solenoid Specifications

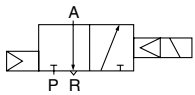
Electrical entry	Grommet (G), E(H), L type plug connector (L), M type plug connector (M)	
Coil rated voltage V	DC	24, 12, 6, 5, 3
	AC 50/60Hz	* 100, 110, 200, 220
Allowable voltage	±10% rated voltage	
Power consumption W (Note)	DC	0.5 (With light : 0.55)
	AC	100V
110V [115V]		1.0 (With light : 1.1) [1.1 (With light : 1.2)]782
200V		1.8 (With light : 1.9)
220V [230V]		1.9 (With light : 2.0) [2.2 (With light : 2.3)]
Surge voltage suppressor		Diode
Indicator light	LED	

\*Can be used for 110V and 115VAC, 220V and 230VAC in common.

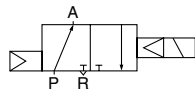
Note) At rated voltage

Internal pilot

SYJ31<sub>2</sub>

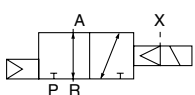


SYJ32<sub>2</sub>

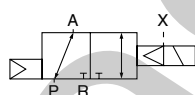


External pilot

SYJ31<sub>2</sub>R



SYJ32<sub>2</sub>R



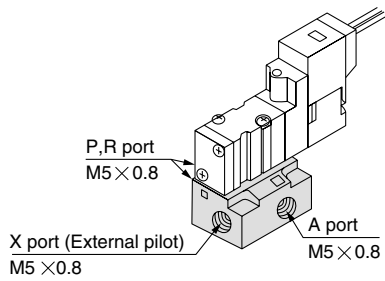
**External Pilot Type**

**SYJ300R**

Pilot valve pressure is supplied separately from the main valve pressure through the use of a separate supply port.  
This model is suitable for low pressure and vacuum applications.

**Specifications**

Applicable model	Base mounted type (SYJ314R,SYJ324R)	
Operating pressure range PSI (MPa)	Main pressure	30inHg~100 (-100kPa to 0.7)
	External pilot pressure	22~100 (0.15 to 0.7)



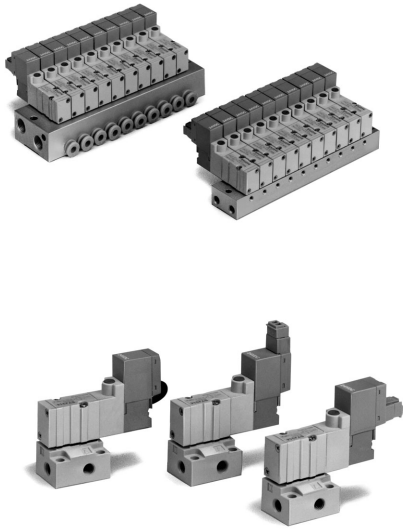
Note) Externally piloted body ported valves(SYJ3□2R) can only be used on the manifold.



# Series SYJ300

# 3 Port Solenoid Valve

## Manifold Specifications



## Manifold Specifications

Type	For internal pilot	Type 20	Type 41,S41	Type 42,S42
	For external pilot	Type 20R	—	Type 42R,S42R
Manifold type	Single base type /B mount			
P(SUP), R(EXH) type	Common SUP, Common EXH			
Valve stations	2 to 20 stations			
A port specifications	Location	Valve	Base	
	Direction	Top	Side	
Port size	P,R port	M5 × 0.8 1/8 NPTF	M5 × 0.8	1/8 NPTF
	A port	M3 × 0.5	M3 × 0.5	M5 × 0.8 N3T (5/32" one-touch fitting)
	X port <sup>Note 1)</sup>	M5 × 0.8	—	M5 × 0.8
Note 2) Valve effective area mm <sup>2</sup> (Cv)	Body ported type SYJ3□2/SYJ3□2R	0.9 (0.05)	—	
	Base mounted type SYJ3□4/SYJ3□4R	—	1.5(0.08)	

Note 1 : Only for external pilot

Note 2 : Value when used on a manifold

## Proper Combinations of Solenoid Valve, Manifold Gasket and Manifold Base

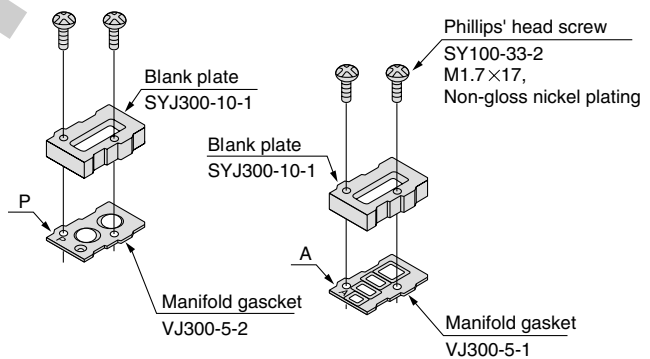
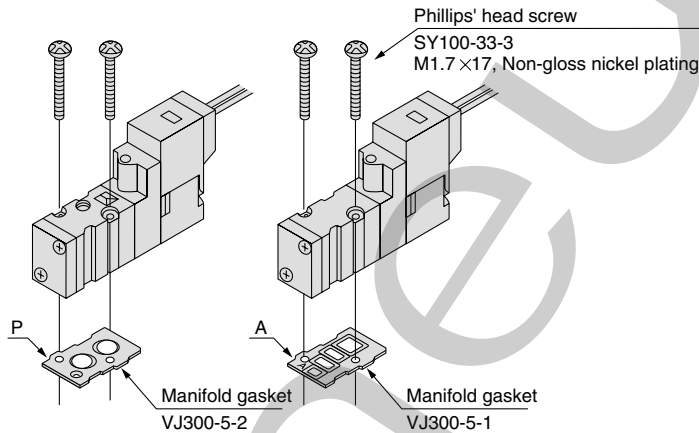
## Blank Plate Ass'y

### Body ported type (SYJ3□2)

### Base mounted (SYJ3□4)

### SYJ300-10-1A

### SYJ300-10-2A



Applicable base  
SS3YJ3-20  
SS3YJ3-20R } Manifold base

Applicable base sub-plate  
SS3YJ3-41  
SS3YJ3-S41  
SS3YJ3-42  
SS3YJ3-S42  
SS3YJ3-42R  
SS3YJ3-S42R } Manifold base

Applicable base  
SS3YJ3-20  
SS3YJ3-20R } Manifold base

Applicable base sub-plate  
SS3YJ3-41  
SS3YJ3-S41  
SS3YJ3-42  
SS3YJ3-S42  
SS3YJ3-42R  
SS3YJ3-S42R } Manifold base

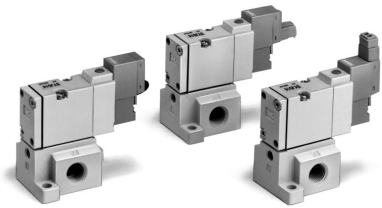
# 3 Port Solenoid Valve

# Series SYJ500

## Valve Specification



Body ported type

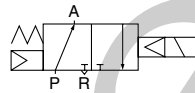
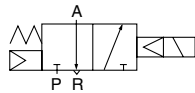


Base mounted type

Internal pilot

SYJ51 $\frac{2}{4}$

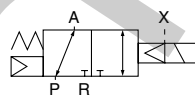
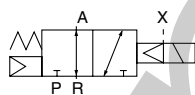
SYJ52 $\frac{2}{4}$



External pilot

SYJ51 $\frac{2}{4}$ R

SYJ52 $\frac{2}{4}$ R



## Model

Valve model	Type of actuation	Port size	Effective area mm <sup>2</sup> (Cv)	Weight g		
				Grommet	L type plug connector, M type plug connector.	
Body ported type	SYJ512	N.C.	M5×0.8	3.6 (0.2)	43	45
	SYJ522	N.O.				
Base mounted type (With sub-plate)	SYJ514	N.C.	1/8 NPTF	4.5 (0.25)	57	59
	SYJ524	N.O.			(Without sub-plate 43)	(Without sub-plate 45)

## Specifications

Fluid		Air
Operating pressure range PSI (MPa)	Internal pilot	22-100 (0.15 to 0.7)
Ambient and fluid temperature °F		Max. 122
Response time ms		25 or less
Max. operating frequency Hz		5
Manual override		Non-locking push type, Push-locking slotted type
Pilot exhaust		Individual pilot exhaust type. Common exhaust(pilot and main valve)type
Lubrication		Not required
Mounting position		Free
Impact / Vibration resistance m/s <sup>2</sup>		150/30
Protection structure		Dust proof

## Solenoid Specifications

Electrical entry	Grommet (G), (H), L type plug connector (L), M type plug connector (M)	
Coil rated voltage V	DC	24, 12, 6, 5, 3
	AC 50/60Hz	*100, 110, 200, 220
Allowable voltage	±10% rated voltage	
Power consumption W (Note)	DC	0.5 (With light : 0.55)
	AC	100V
110V [115V]		1.0 (With light : 1.1) [1.1 (With light : 1.2) ]
200V		1.8 (With light : 1.9)
220V [230V]		1.9 (With light : 2.0) [2.2 (With light : 2.3) ]
Surge voltage suppressor	Diode	
Indicator light	LED	

\* Can be used for 110V and 115VAC, 220V and 230VAC in common.

Note) At rated voltage

# Series SYJ500

## 3 Port Solenoid Valve

### Valve Specifications

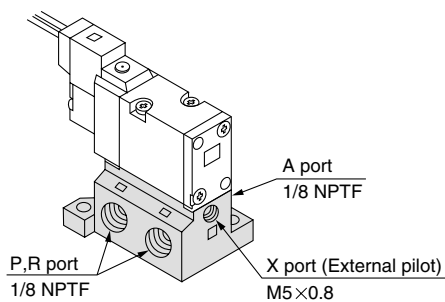
### External Pilot Type

#### SYJ500R

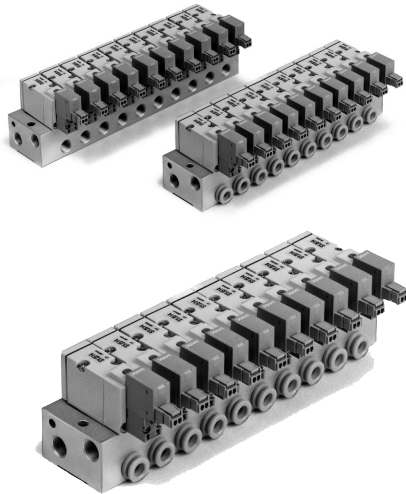
Pilot valve pressure is supplied separately from the main valve pressure through the use of a separate supply port.  
This model is suitable for low pressure and vacuum applications.

#### Specifications

Applicable model	Base mounted type (SYJ514R, SYJ524R)	
Operating pressure range PSI (MPa)	Main pressure	30inHg~100(-100kPa~0.7)
	External pilot pressure	22~100(0.15~0.7)



Note) Externally piloted body ported valves(SYJ5□2R) can only be used on the manifold.



**Manifold Specifications**

Type	For internal pilot	Type 20	Type 40	Type 41
	For external pilot	Type 21R	Type 40R	Type 41R
Manifold type	Single base type /B mount			
P(SUP), R(EXH) type	Common SUP, Common EXH			
Valve stations	2 – 20 stations			
A port specifications	Location	Valve	Base	
	Direction	Top	Bottom	Side
Port size	P,R port	1/8 NPTF	1/8 NPTF	1/8 NPTF
	A port	M5×0.8	M5×0.8 1/8 NPTF	M5×0.8, 1/8 NPTF, N3T (5/32" one-touch fitting) N7T (1/4" one-touch fitting)
	X port <sup>Note 1)</sup>	M5×0.8	M5×0.8	M5×0.8
Note 2) Valve effective area mm <sup>2</sup> (Cv)	Body ported type SYJ5□2/SYJ5□2R	3.4 (0.19)	—	
	Base mounted type SYJ5□4/SYJ5□4R	—	M5 : 3.8 (0.21) 1/8 : 4.7 (0.26)	M5 : 3.3 (0.18) 1/8 : 4.8 (0.27) N3T, N7T : 3.8 (0.21)

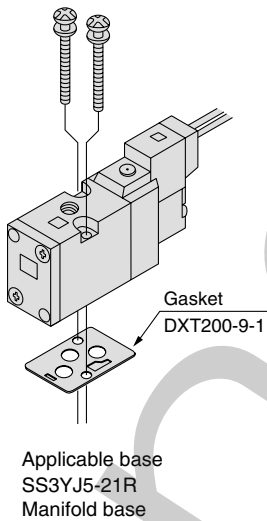
Note 1 : Only for external pilot

Note 2 : Value when used on a manifold

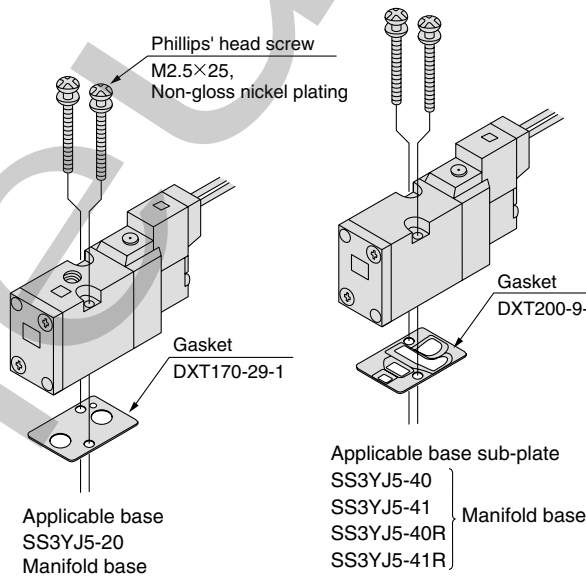
**Proper Combinations of Solenoid Valve, Manifold Gasket and Manifold Base**

**Blank Plate Ass'y**

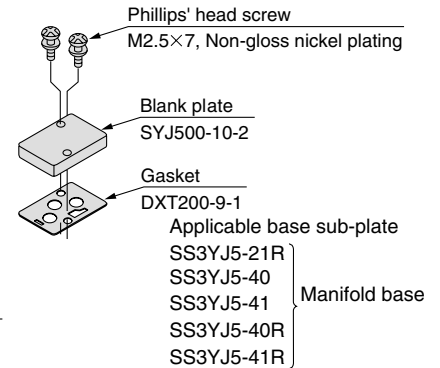
**Body ported type (SYJ5□2)**



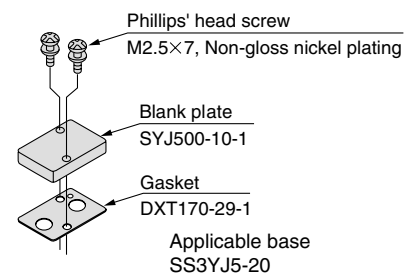
**Base mounted (SYJ5□4)**



**SYJ500-10-3A**



**SYJ500-10-1A**



# Series SYJ700

## 3 Port Solenoid Valve

### Valve Specifications



Body ported type

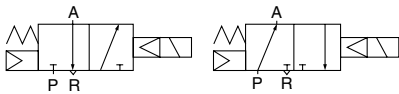


Base mounted type

#### Internal pilot

SYJ71<sup>2</sup>/<sub>4</sub>

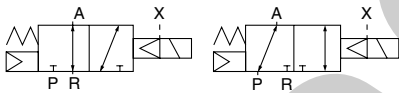
SYJ72<sup>2</sup>/<sub>4</sub>



#### External pilot

SYJ71<sup>2</sup>/<sub>4</sub>R

SYJ72<sup>2</sup>/<sub>4</sub>R



### Model

Valve model	Type of actuation	Port size	Effective area mm <sup>2</sup> (Cv)	Weight g (Note)		
				Grommet	L type plug connector, M type plug connector.	
Body ported type	SYJ712	N.C.	1/8 NPTF	9.0 (0.5)	72	74
	SYJ722	N.O.				
Base mounted type (With sub-plate)	SYJ714	N.C.	1/8 NPTF	9.0 (0.5)	132 (Without sub-plate 72)	134 (Without sub-plate 74)
	SYJ724	N.O.				

### Specifications

Fluid	Air	
Operating pressure range PSI (MPa)	Internal pilot	22~100 (0.15 to 0.7)
Ambient and fluid temperature °F	Max. 122	
Response time ms	30 or less	
Max. operating frequency Hz	5	
Manual override	Non-locking push type, Push-locking slotted type	
Pilot exhaust	Individual pilot exhaust type, Common Exhaust(pilot and main valve)type	
Lubrication	Not required	
Mounting position	Free	
Impact / Vibration resistance m/s <sup>2</sup>	150/ 30	
Protection structure	Dust proof	

### Solenoid Specifications

Electrical entry	Grommet (G), (H), L type plug connector (L), M type plug connector (M)	
Coil rated voltage V	DC	24, 12, 6, 5, 3
	AC 50/60Hz	*100, 110, 200, 220
Allowable voltage	±10% rated voltage	
Power consumption W (Note)	DC	0.5 (With light : 0.55 )
	AC	100V
110V [115V]		1.0 (With light : 1.10) [1.1 ( With light : 1.2 ) ]
200V		1.8 (With light : 1.9)
220V [230V]		1.9 (With light : 2.0) [2.2 (With light : 2.3) ]
Surge voltage suppressor	Diode	
Indicator light	LED	

\* Can be used for 110V and 115VAC, 220V and 230VAC in common.

Note) At rated voltage

**External Pilot Type**

**SYJ700R**

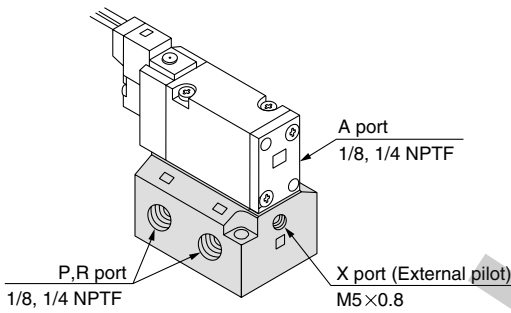
Pilot valve pressure is supplied separately from the main valve pressure through the use of a separate supply port.

This model is suitable for low pressure and vacuum applications.

**Specifications**

Applicable model	Base mounted type (SYJ714R,SYJ724R)	
Operating pressure range PSI(MPa)	Main pressure	30inHg~100(-100kPa~0.7)
	External pilot pressure	22~100(0.15~0.7)

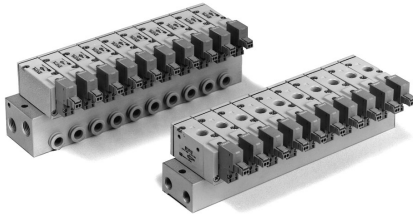
Note) Externally piloted body ported valves(SYJ7□2R) can only be used on the manifold.



# Series SYJ700

# 3 Port Solenoid Valve

## Manifold Specifications



## Manifold Specifications

Type	For internal pilot	Type 20	Type 21	Type 40	Type 41	Type 42
	For external pilot	—	Type 21R	—	Type 41R	Type 42R
Manifold type		Single base type /B mount				
P(SUP), R(EXH)Type		Common SUP, Common EXH				
Valve stations		2 to 20 stations				
A port specifications	Location	Valve	Valve	Base	Base	Base
	Direction	Top	Top	Bottom	Bottom	Side
Port size	P,R port	1/8 NPTF	1/4 NPTF	1/8 NPTF	1/4 NPTF	1/4 NPTF
	A port	1/8NPTF	1/8NPTF	1/8NPTF	1/8NPTF	1/8 NPTF N7T (1/4" one-touch fitting) N9T (5/16" one-touch fitting)
	X port <sup>Note 1)</sup>	—	M3×0.8	—	M5×0.8	M5×0.8
Note 2) Valve effective area mm <sup>2</sup> (Cv)	Body ported type SYJ7□2/SYJ7□2R	10.6 (0.59)			—	
	Base mounted type SYJ7□4/SYJ7□4R	—		10.2 (0.57)	10.2 (0.57)	1/8:9.2 (0.51) N7T:8.8 (0.49) N9T:10 (0.56)

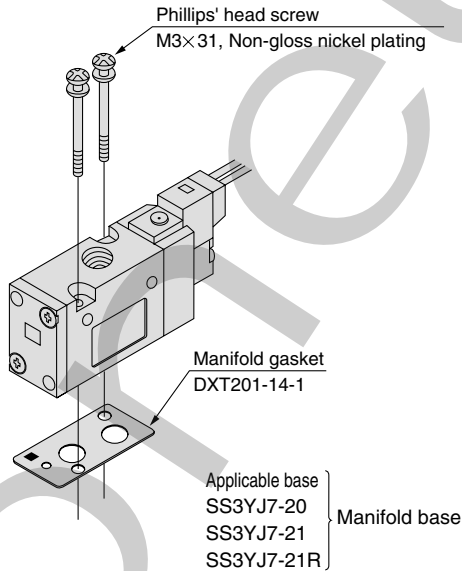
Note 1 : Only for external pilot

Note 2 : Value when used on a manifold

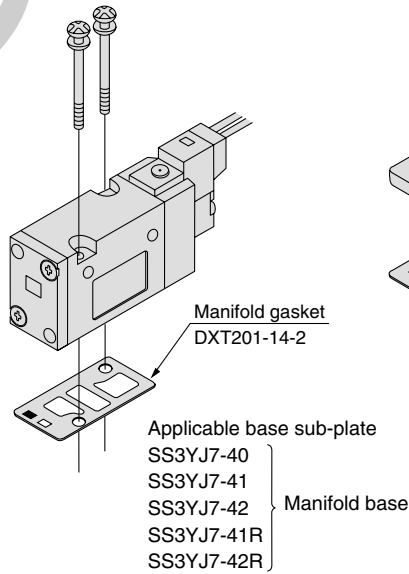
## Proper Combinations of Solenoid Valve, Manifold Gasket and Manifold Base

## Blank Plate Ass'y

### Body ported type (SYJ7□2)



### Base mounted (SYJ7□4)



### SYJ700-10-2A

