# 4 Port Solenoid Valve Common Specifications

# Series SJ2000/3000

#### Manifold Specifications

			D-sub connector		Flat ribbon cable		Serial	wiring	Individual wiring
	Model		Type 60F	Type 60P	Type 60PG Type 60J Type 60G	Type 60PH	Type 60S□ (EX180)	Type 60S6B (EX510)	Type 60
Manifold	type				Plug-in, Cor	nnector type			Non-plug-in
1(P: SUP	), 3/5(E: EX	(H)			C	ommon SUP, EX	Н		
Valve stations		2 to 24	stations	2 to 18 stations (Type PG) 2 to 16 stations (Type J, Type G)	2 to 8 stations	2 to 32 stations	2 to 16 stations	2 to 20 stations	
Applicable connector		D-sub connector Conforming to MIL-C-24308 JIS-X-5101	Flat ribbon cable connector Socket: 26 pins MIL type with strain relief Conforming to MIL-C-83503	Flat ribbon cable connector Socket: 20 pins MIL type with strain relief Conforming to MIL-C-83503	Flat ribbon cable connector Socket: 10 pins MIL type with strain relief Conforming to MIL- C-83503	_	_	_	
Internal v	viring		Non-polar, +COM						
4(A), 2(B)	port	Location	Valve						
piping sp	ec.	Direction	Horizontal, Upward, Downward (Using elbow fittings for upward or downward)						
	1(P), 3/5(E) port		C6, C8, N7, N9 (Inch size elbow fitting is not available.)						
Port size	4(A), 2(B)	SJ2000	C2, C4, N1, N3, M3						
	port	SJ3000			C2, C	C4, C6, N1, N3, N	7, M5		
Weight W (g) Note 2)  (n: Number of SUP/EXH blocks m: Weight of DIN rail		W = 51n + m + 133							

Note 1) When many valves are operated simultaneously, use B type (SUP/EXH both sides), applying pressure to the 1(P) ports on both sides and exhaust from the 3/5(E) ports on both sides.

#### Flow Characteristics

#### SJ2000

00200	502000						
Port si	ize	Flow characteristics					
1(P)	4, 2	1→2/4 (P→A/B)			4/2→3/5 (A/B→E)		
3/5(E)	(A, B)	C [dm³/(s·bar)]	b	Cv	C [dm <sup>3</sup> /(s·bar)]	b	Cv
	C2	0.13	0.55	0.04	0.13	0.50	0.04
C8	C4	0.33	0.16	0.08	0.36	0.13	0.08
	МЗ	0.18	0.52	0.06	0.20	0.29	0.06

#### SJ3000

Port si	ze	Flow characteristics					
1(P)	4, 2	1→2/4 (P→A/B)			4/2→3/5 (A/B→E)		
3/5(E)	(A, B)	C [dm <sup>3</sup> /(s·bar)]	b	Cv	C [dm <sup>3</sup> /(s·bar)]	b	Cv
	C2	0.13	0.56	0.04	0.14	0.51	0.04
C8	C4	0.42	0.17	0.11	0.45	0.16	0.11
_ Co	C6	0.55	0.10	0.12	0.56	0.11	0.12
	M5	0.40	0.28	0.11	0.45	0.15	0.11

Note) The value is for manifold base with 5 stations and individually operated 2 position type. Please contact SMC for 4 position dual 3 port valves.



Note 2) The weight W is the value for the D-sub connector manifold only with internal pilot, SUP/EXH block straight fittings specifications. To obtain the weight with solenoid valves attached, add the solenoid valve weights given on page 3 for the appropriate number of stations. Refer to page 61 for the weight of DIN rail. (Please contact SMC for the weight of external pilot specifications, elbow fittings.)

### Series **SJ2000/3000**

**D-sub connector** 



Flat ribbon cable



**PC** wiring



Serial wiring: EX180



Gateway system Serial transmission system: EX510



Individual wiring

#### **Solenoid Valve Specifications**

Fluid			Air
Internal nilet	2 positio	n single	0.15 to 0.7
Internal pilot	4 position	dual 3 port valve	0.13 to 0.7
operating pressure range (MPa)	2 positio	n double	0.1 to 0.7
range (wra)	3 positio	n	0.2 to 0.7
	Operating	g pressure range	-100 kPa to 0.7
External pilot	Pilot	2 position single	
operating pressure range (MPa)	pressure	2 position double	0.25 to 0.7
range (wra)	range	3 position	
Ambient and fluid tem	perature (	°C)	-10 to 50 (No freezing)
Maximum anauatina	2 position single, double		10
Maximum operating frequency (Hz)	4 position dual 3 port valve		10
riequericy (nz)	3 position		3
			Non-locking push type
Manual override (Man	uai operati	ion)	Push-turn locking slotted type
Dillet and another at	Internal	oilot	Main and pilot valve common exhaust
Pilot exhaust method	External	pilot	Pilot valve individual exhaust
Lubrication			Not required
Mounting orientation			Unrestricted
Shock/Vibration resistance (m/s²)			150/30
Enclosure			Dustproof

Note) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized

states every once for each condition. (Value in the initial state)

Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000Hz. Test was performed to axis and right angle directions of the main valve when pilot signal is ON and OFF. (Value in the initial state)

#### **Solenoid Specifications**

Coil rated voltage		24 VDC	12 VDC
Allowable voltage fluctuation		±10% of rat	
	Standard	SJ2000	0.55
Power consumption		SJ3000	0.4
(W)	With power saving circuit	SJ2000	0.23
(**)	(Continuous duty type)	SJ3000	0.15
Surge voltage suppressor		Dic	ode
Indicator light		LE	D

\* For the allowable voltage fluctuation for Z and T types (with power saving circuit), please observe the following range because they have voltage drop due to internal circuit.

Z type 24 VDC: -7% to +10%
12 VDC: -4% to +10%

T type

24 VDC: -5% to +10% 12 VDC: -6% to +10%

#### **Response Time**

Type of actuation	Response time ms (at 0.5 MPa)		
Type of actuation	SJ2000	SJ3000	
2 position single	16 or less	16 or less	
2 position double	10 or less	10 or less	
3 position	34 or less	22 or less	
4 position dual 3 port valve	30 or less	30 or less	

Note) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage)



# 4 Port Solenoid Valve Series SJ2000/3000

#### Weight

#### Model/SJ2000

Valve model	Type of actuation		Port size 4(A), 2(B)	Weight (g)
	2 position	Single		43
	2 position	Double	C2	46
SJ2□60-C2		Closed center	/ ø2 one-	
302-00-02	3 position	Exhaust center	touch	50
		Pressure center	fitting	
	4 position	Dual 3 port valve	, nuing	46
	2 position	Single		41
		Double	C4	44
SJ2□60-C4		Closed center	/ ø4 one-∖	48
302 - 00-04	3 position 4 position	Exhaust center	touch	
		Pressure center	fitting	
		Dual 3 port valve	, inting	44
	2 position	Single		39
	2 position	Double		42
SJ2□60-M3		Closed center	M3 x 0.5	
302 - OU-IVIS	3 position	Exhaust center	IVIO X U.S	46
		Pressure center		
	4 position	Dual 3 port valve		42

Note) Please contact SMC for the weight of elbow fittings.

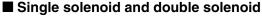
#### Model/SJ3000

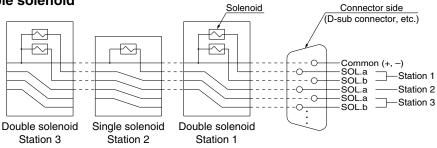
Valve model	Tyr	e of actuation	Port size	Weight (g)
valvo illodol	. 16		4(A), 2(B)	TTOIGHT (g)
	2 position	Single		63
	2 position	Double	C2	71
SJ3□60-C2		Closed center	/ ø2 one-	
SJ3□60-C2	3 position	Exhaust center	touch	75
		Pressure center	fitting	
	4 position	Dual 3 port valve	, inting	71
	Opposition	Single		65
	2 position	Double	C4	73
SJ3□60-C4		Closed center	/ ø4 one-∖	
30300-04	3 position	Exhaust center	touch fitting	77
		Pressure center		
	4 position	Dual 3 port valve		73
	O position	Single		61
	2 position	Double	C6	69
SJ3□60-C6	3 position	Closed center	/ ø6 one-∖	
30300-00		Exhaust center	touch	73
		Pressure center	fitting	
	4 position	Dual 3 port valve	\ Ittilig /	69
	O position	Single		57
	2 position	Double		65
SJ3□60-M5		Closed center	M5 x 0.8	
203 - IVIS	3 position	Exhaust center	8.0 X CIVI	69
		Pressure center		
	4 position	Dual 3 port valve		65

Note) Please contact SMC for the weight of elbow fittings.

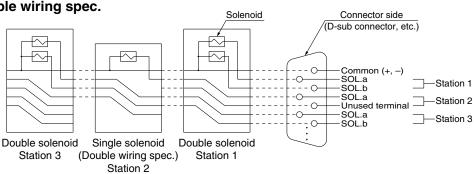
#### **Connector Wiring Diagram**

For both serial and parallel wiring, additional valves are sequentially assigned pins on the connector. This makes it completely unnecessary to disassemble the connector unit.

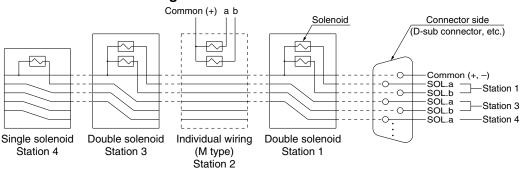




■ Single solenoid with double wiring spec.



#### ■ Mounting a valve with individual wiring





# Series **SJ2000/3000**

#### **Construction: SJ2000**

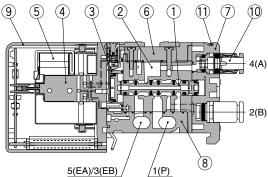
#### JIS symbol

2 position single

2 position single with back pressure check valve



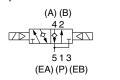
## 2 position single



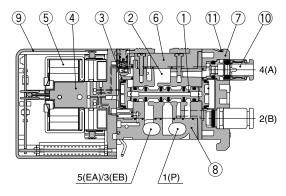
#### 2 position double

2 position double with back pressure check valve

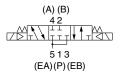




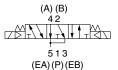
#### 2 position double



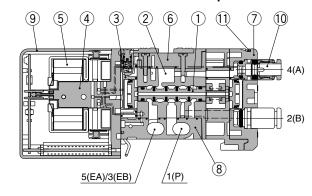
#### 3 position closed center



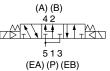




#### 3 position closed center/exhaust center/pressure center



#### 3 position pressure center



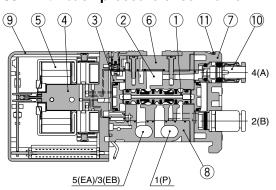
#### **Component Parts**

No.	Description	Material	Note
1	Spool valve assembly	Resin/H-NBR (3 position solenoid valve: Aluminum/H-NBR)	_
2	Body	Zinc die-cast	_
3	Adaptor plate	Resin	White
4	Pilot adaptor	Resin	White
5	Pilot valve assembly	_	_
6	Body cover	Resin	White
7	Port block	Resin	White
8	Bottom cover	Resin	White
9	Light cover	Resin	Light blue

#### **Replacement Parts**

-1			
	No.	Description	Part no.
10		One-touch fitting	Refer to the one-touch fitting part no. on back page 6
	11	Clip	SJ2000-CL-1 (10 pcs.)

#### SJ2260K with back pressure check valve

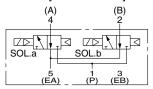


# 4 Port Solenoid Valve Series SJ2000/3000

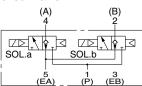
#### **Construction: SJ2000**

#### JIS symbol

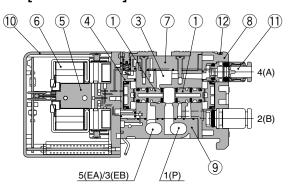
4 position dual 3 port valve SJ2A60 [N.C. valve x 2]



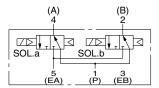
SJ2A60K with back pressure check valve



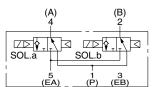
#### SJ2A60 [N.C. valve x 2]



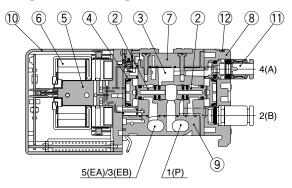
SJ2B60 [N.O. valve x 2]



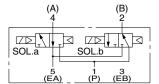
SJ2B60K with back pressure check valve



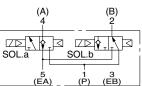
SJ2B60 [N.O. valve x 2]



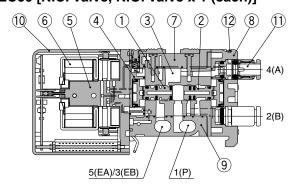
SJ2C60 [N.C., N.O. valve x 1 (each)]



SJ2C60K with back pressure check valve



SJ2C60 [N.C. valve, N.O. valve x 1 (each)]



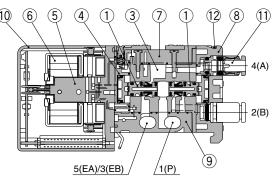
#### **Component Parts**

No.	Description	Material	Note
1	Spool valve assembly	Resin/H-NBR	N.C. (Normally closed)
2	Spool valve assembly	Resin/H-NBR	N.O. (Normally open)
3	Body	Zinc die-cast	_
4	Adaptor plate	Resin	White
5	Pilot adaptor	Resin	White
6	Pilot valve assembly		_
7	Body cover	Resin	White
8	Port block	Resin	White
9	Bottom cover	Resin	White
10	Light cover	Resin	Light blue

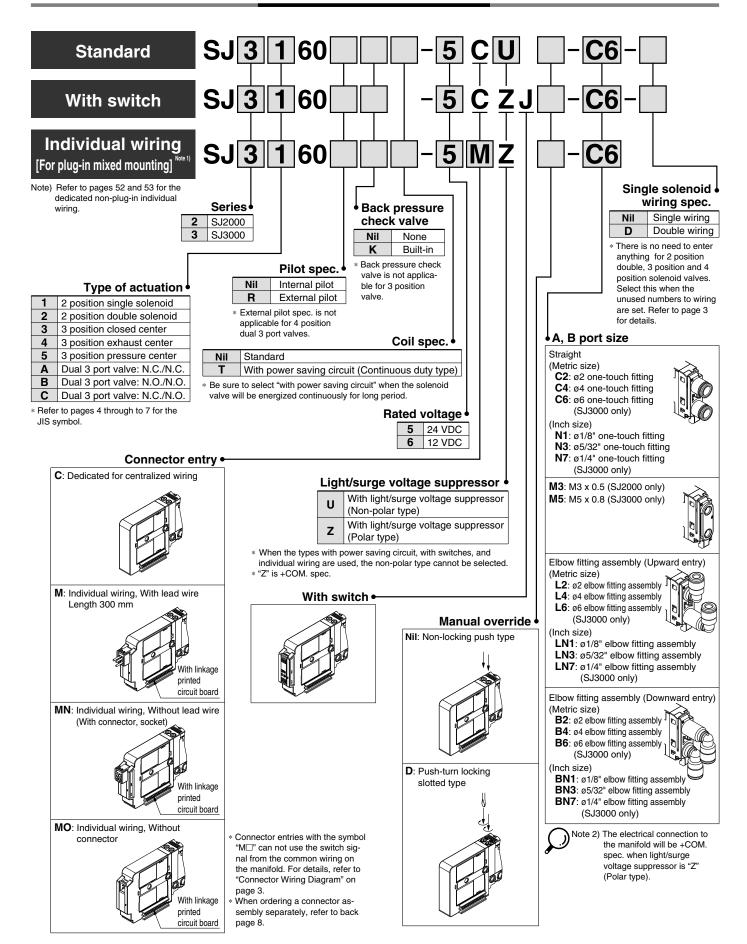
#### Replacement Parts

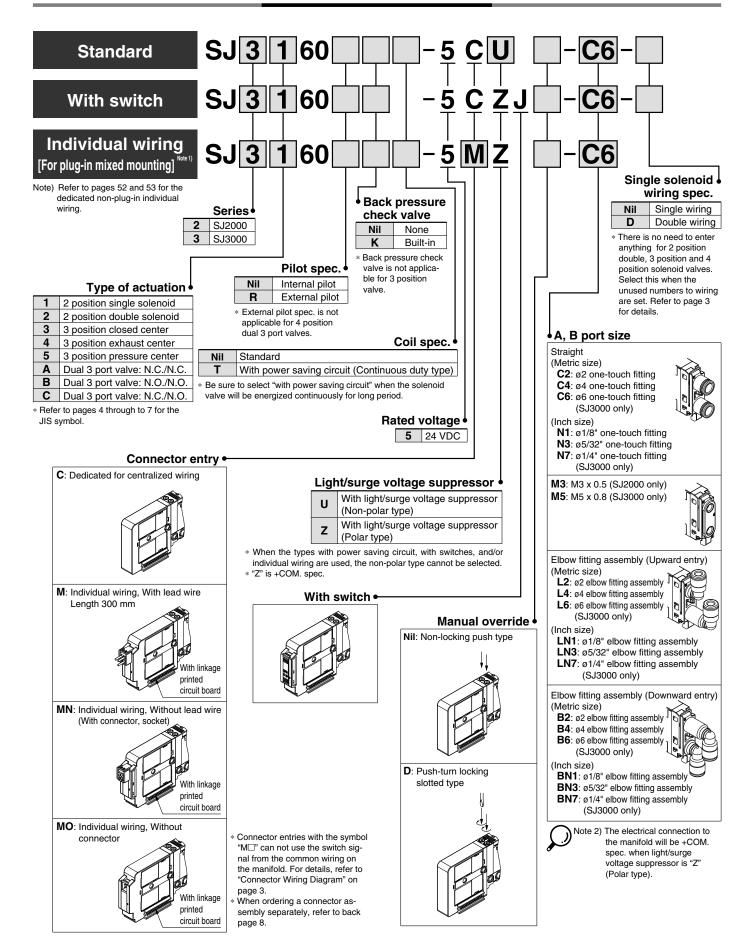
No.	Description	Part no.
11	One-touch fitting	Refer to the one-touch fitting part no. on back page 6.
12	Clip	SJ2000-CL-1 (10 pcs.)

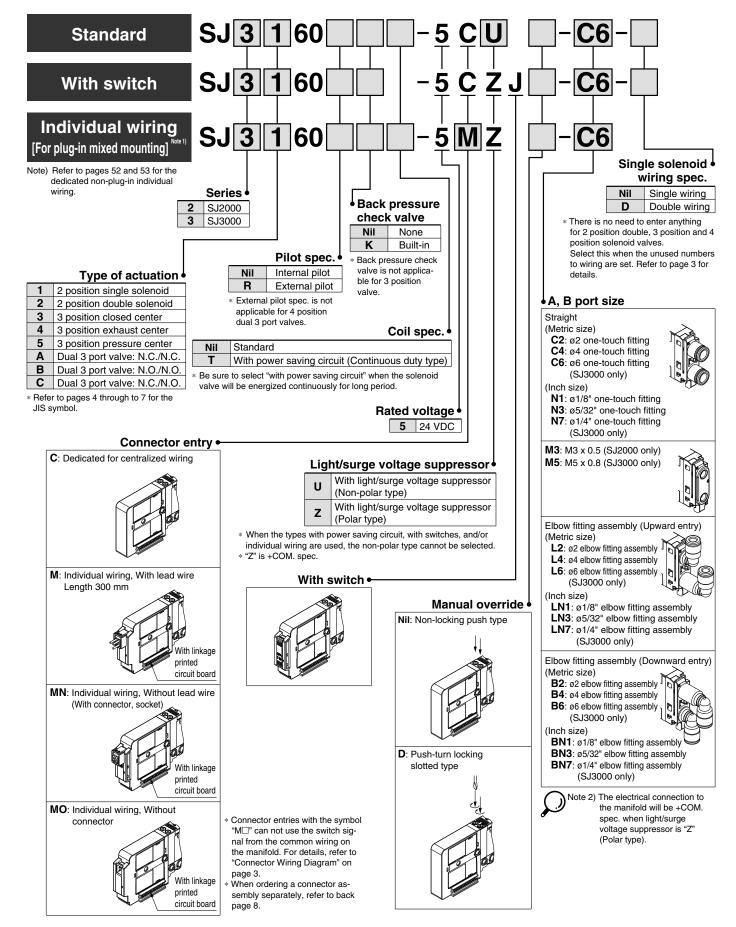
#### SJ2A60K with back pressure check valve

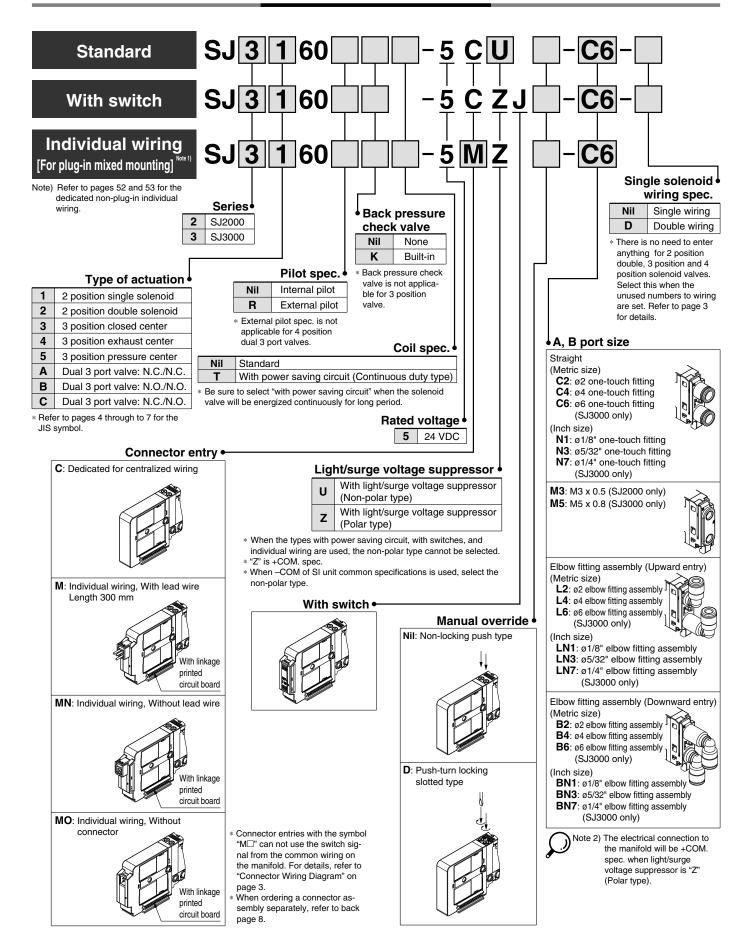


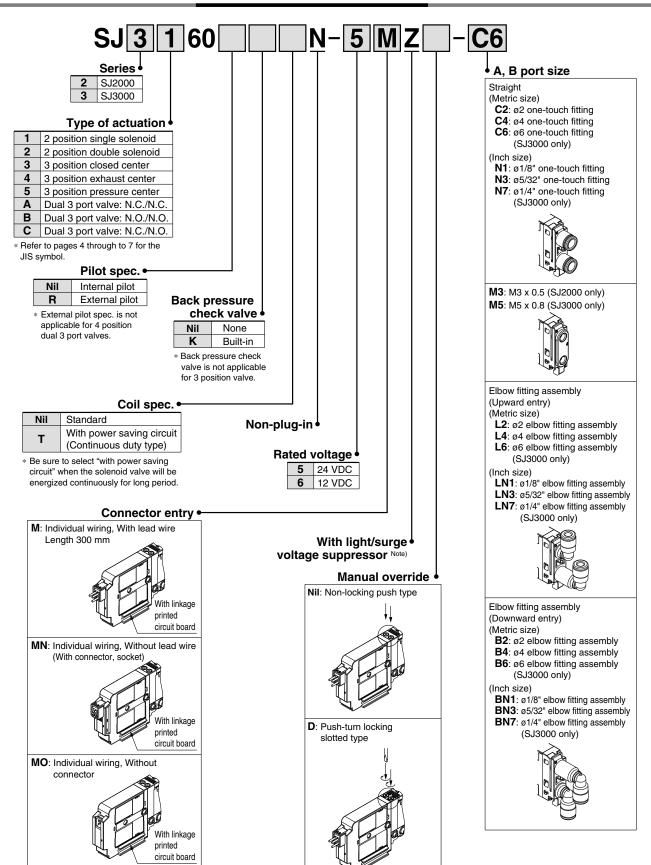














 When ordering a connector assembly separately, refer to back page 8.

