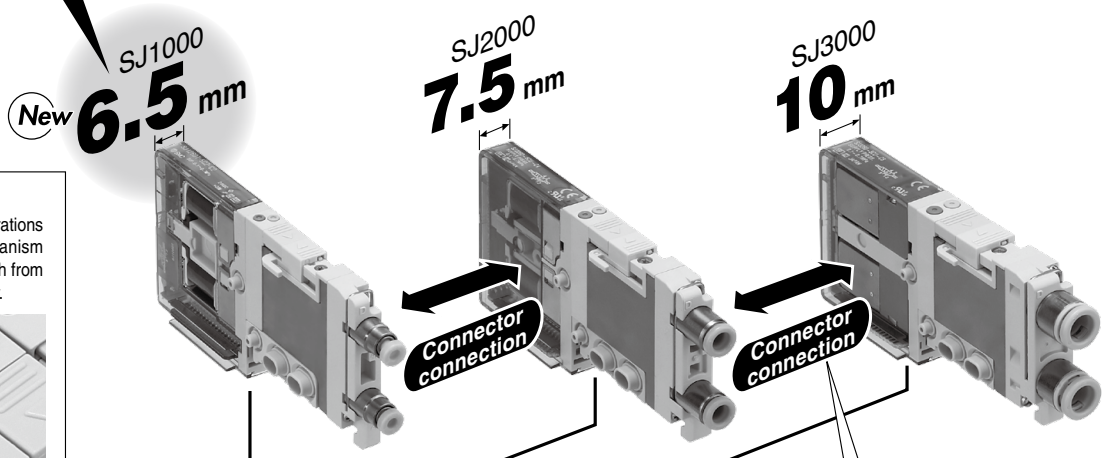
4-Port Solenoid Valve
Cassette Type Manifold

CE
RoHS

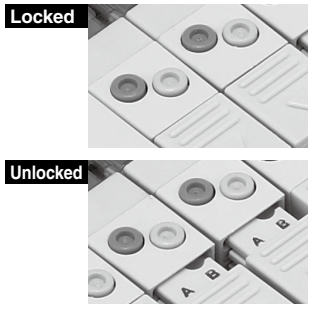
Valve width
A 6.5 mm type has been added.

The SJ3000, SJ2000 and SJ1000 can be mounted together.



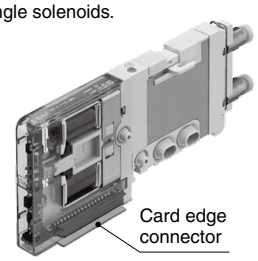
Manual locking

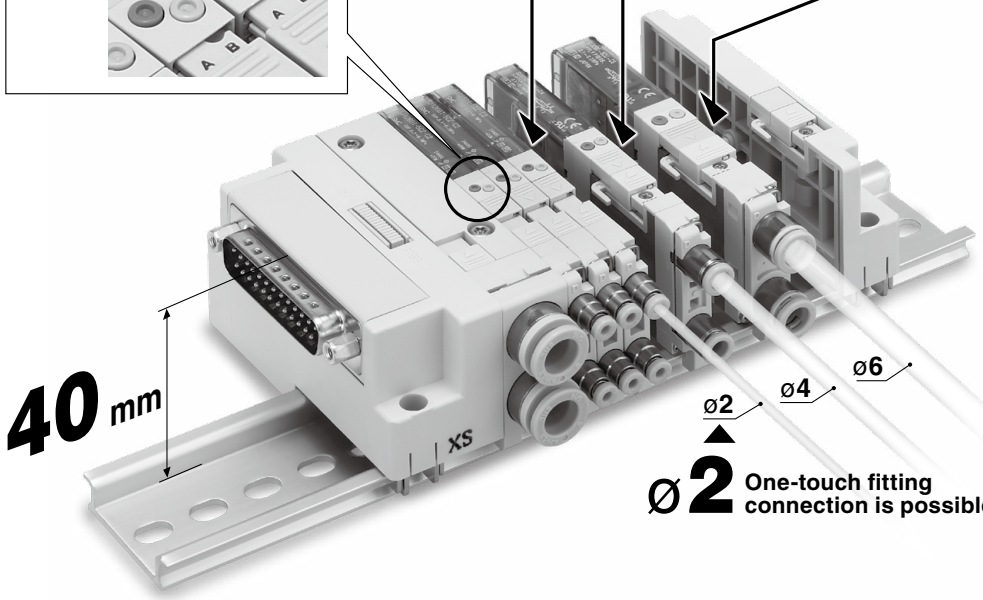
Unintentional manual override operations are prevented by a sliding mechanism which covers and prevents the switch from accidentally being pressed manually.



Connector type (Card edge type)

- It is easy to replace valves and increase or decrease the number of stations.
- The 34-pin connector allows for the connection of up to 16 stations with double solenoids, 32 stations with single solenoids.





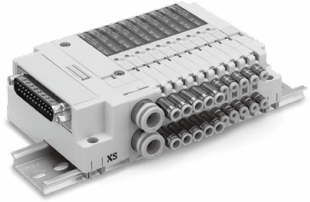
Ø2 One-touch fitting connection is possible.

Flow Rate Characteristics

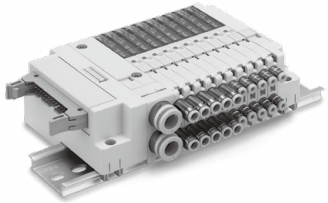
Series	C[dm³/(s·bar)]	Note
SJ1000	0.32	ø4
SJ2000	0.36	ø4
SJ3000	0.56	ø6

∗ 4/2 → 3/5 (A/B → E)

D-sub connector



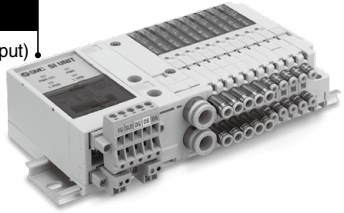
Flat ribbon cable



Mountable serial transmission system

EX180 Integrated Type (For Output)
EX510 Gateway Type

Serial transmission system



SJ1000-X1 Series

SMC®

Manifold Specifications

Model		D-sub connector	Flat ribbon cable			Serial wiring	
		Type 60F	Type 60P	Type 60PG	Type 60PH	Type 60S□ (EX180)	Type 60S6B (EX510)
Manifold type		Plug-in, Connector type					
1(P: SUP), 3/5(E: EXH)		Common SUP, EXH					
Valve stations		1 to 24 stations		1 to 18 stations	1 to 8 stations	1 to 32 stations	1 to 16 stations
Applicable connector		D-sub connector Compliant with MIL-C-24308 JIS-X-5101	Flat ribbon cable connector Socket: 26-pin MIL type with strain relief Compliant with MIL-C-83503	Flat ribbon cable connector Socket: 20-pin MIL type with strain relief Compliant with MIL-C-83503	Flat ribbon cable connector Socket: 10-pin MIL type with strain relief Compliant with MIL-C-83503	—	—
Internal wiring		Connector type: Positive common, Negative common					
4(A), 2(B) port piping specification	**Location**	Valve					
	Direction	Horizontal					
Port size	**1(P), 3/5(E) port**	C6, C8, N7, N9 (Inch size elbow fitting is not available.)					
	4(A), 2(B) port	C2, C4					
Weight W [g]∗1 **n: Number of SUP/EXH blocks m: Weight of DIN rail**		W = 51n + m + 133					

∗1 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 2 and **Web Catalog** for the appropriate number of stations. Refer to the **Web Catalog** for the weight of DIN rail. (Please contact SMC for the weight of external pilot specification, elbow fittings.)

∗ 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.

Specifications not listed are the same as those of the standard product.
For details, refer to the **Web Catalog**.

Flow Rate Characteristics

Port size		Flow rate characteristics					
1(P) 3/5(E)	4, 2 (A, B)	1 → 2/4 (P → A/B)			4/2 → 3/5 (A/B → E)		
		C[dm³/(s·bar)]	b	Cv	C[dm³/(s·bar)]	b	Cv
C8	C2	0.12	0.64	0.04	0.13	0.59	0.04
	C4	0.28	0.35	0.08	0.32	0.33	0.08

∗ The value is for manifold base with 5 stations and individually operated 2-position type.
Please contact SMC for 3-position type.

Solenoid Valve Specifications

Fluid			Air
Internal pilot operating pressure range [MPa]	**2-position single**		0.15 to 0.7
	2-position double		0.1 to 0.7
	3-position		0.2 to 0.7
External pilot operating pressure range [MPa]	**Operating pressure range**		−100 kPa to 0.7
	Pilot pressure range	**2-position single**	0.25 to 0.7
		2-position double	
		3-position	
Ambient and fluid temperatures [°C]			−10 to 50 (No freezing)
Max. operating frequency [Hz]	**2-position single, double**		10
	3-position		3
Manual override (Manual operation)			Non-locking push type
Pilot exhaust method	**Internal pilot**		Main and pilot valve common exhaust
	External pilot		Pilot valve individual exhaust
Lubrication			Not required
Mounting orientation			Unrestricted
Impact/Vibration resistance [m/s²]			150/30
Enclosure			Dustproof

∗ 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 2000 Hz in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states for each condition. (Value in the initial state)

Solenoid Specifications

Coil rated voltage		24 VDC, 12 VDC
Allowable voltage fluctuation		24 VDC: −5% to +10% 12 VDC: −6% to +10%
Power consumption [W]	**With power saving circuit (Continuous duty type)**	0.23 [Starting 0.55, Holding 0.23]
Surge voltage suppressor		Diode
Indicator light		LED

Response Time

Type of actuation	Response time [ms] (at 0.5 MPa)
2-position single	16 or less
2-position double	10 or less
3-position	34 or less

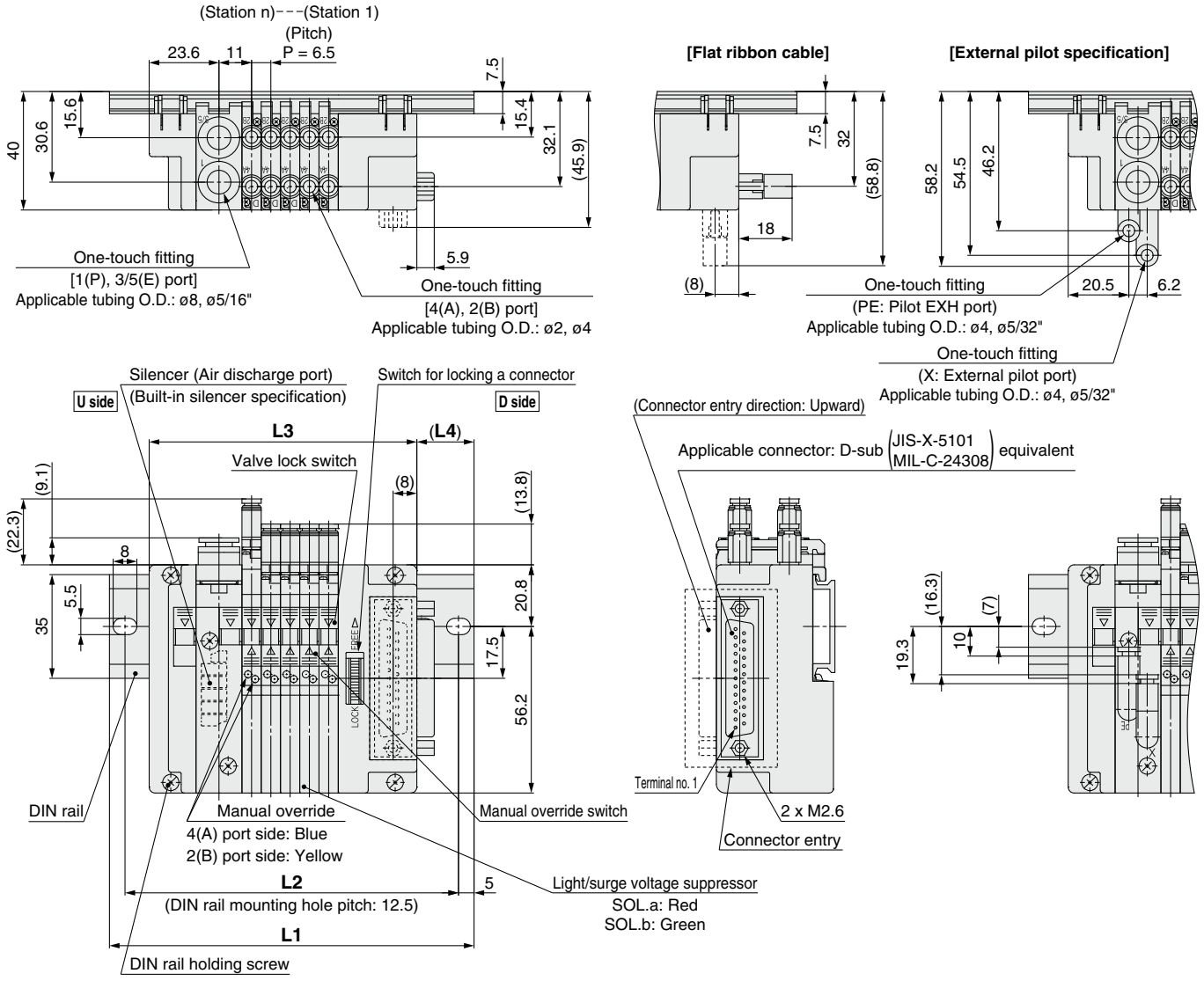
∗ JIS B8419: 2010 Based on dynamic performance test (Coil temperature: 20°C, at rated voltage)
JIS B8373: 2015

Weight

Type of actuation		Port size 4(A), 2(B)	Weight [g]
2-position	Single	C2 (ø2 One-touch fitting)	34
	Double		38
3-position	Closed center		41
	Exhaust center		
	Pressure center		
2-position	Single	C4 (ø4 One-touch fitting)	36
	Double		40
3-position	Closed center		43
	Exhaust center		
	Pressure center		

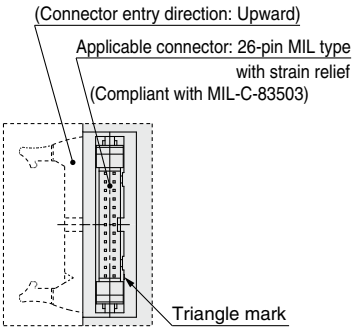
Dimensions

SUP/EXH block: U side



∗ This drawing shows the D-sub connector.

[Connector entry: Flat ribbon cable]



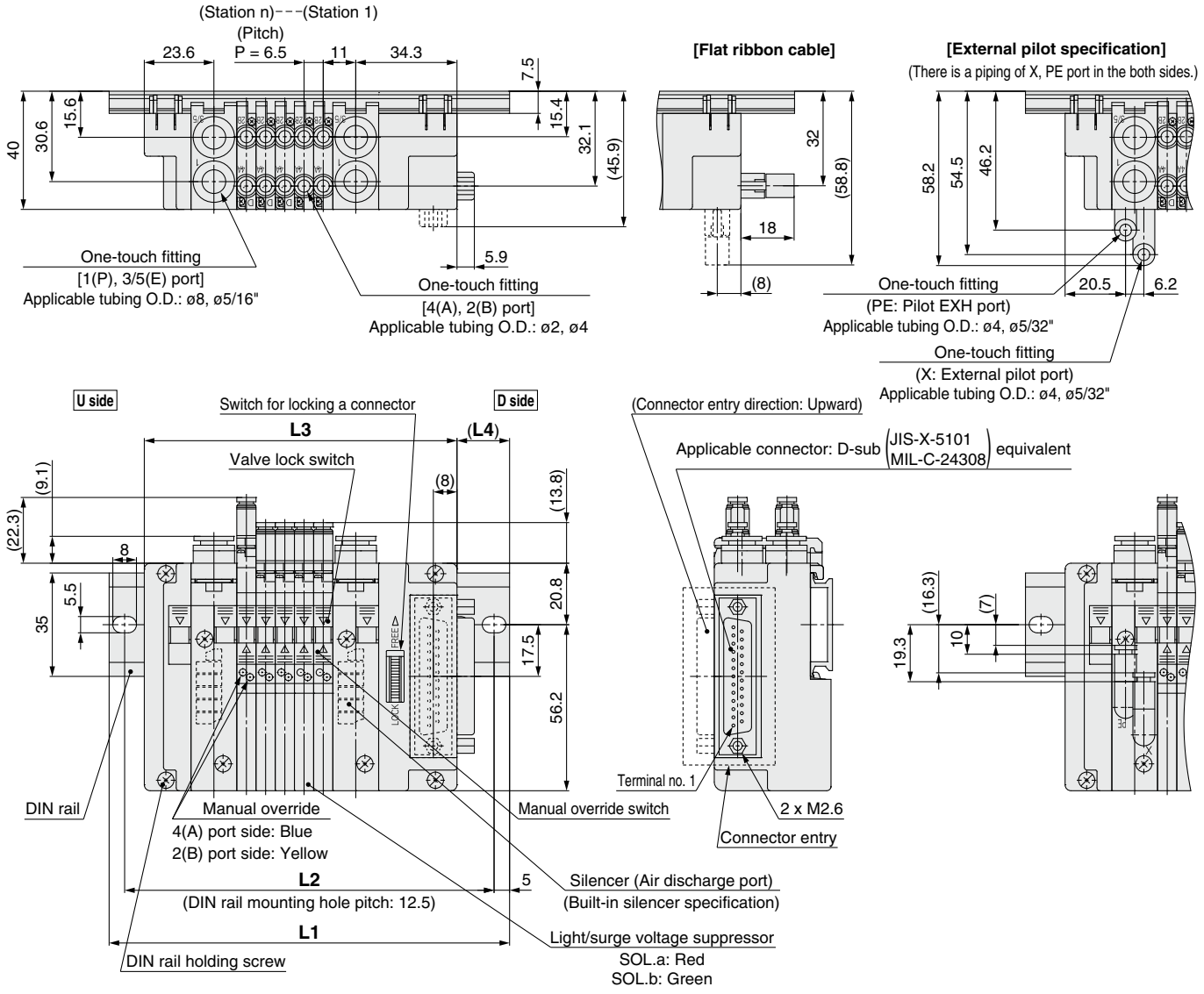
Calculation formula for dimensions

D-sub connector	**Flat ribbon cable**
L3 = 6.5 x n1 + 57.8	L3 = 6.5 x n1 + 57.8
M = (L3 + 5.9)/12.5 + 1 Decimal fractions are truncated.	M = (L3 + 6.6)/12.5 + 1 Decimal fractions are truncated.
L1 = M x 12.5 + 23	L1 = M x 12.5 + 23
L2 = L1 − 10.5	L2 = L1 − 10.5
L4 = (L1 − L3 + 5.9)/2	L4 = (L1 − L3 + 6.6)/2
EX180	**EX510**
L3 = 6.5 x n1 + 88.2	L3 = 6.5 x n1 + 105.4
M = L3/12.5 + 1 Decimal fractions are truncated.	M = L3/12.5 + 1 Decimal fractions are truncated.
L1 = M x 12.5 + 23	L1 = M x 12.5 + 23
L2 = L1 − 10.5	L2 = L1 − 10.5
L4 = (L1 − L3)/2	L4 = (L1 − L3)/2

n1 = Number of SJ1000

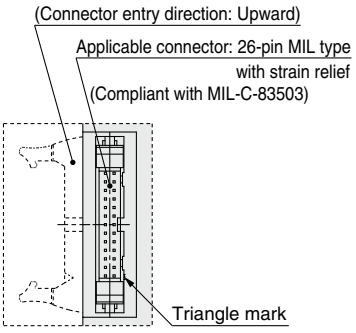
Dimensions

SUP/EXH block: Both sides



∗ This drawing shows the D-sub connector.

[Connector entry: Flat ribbon cable]



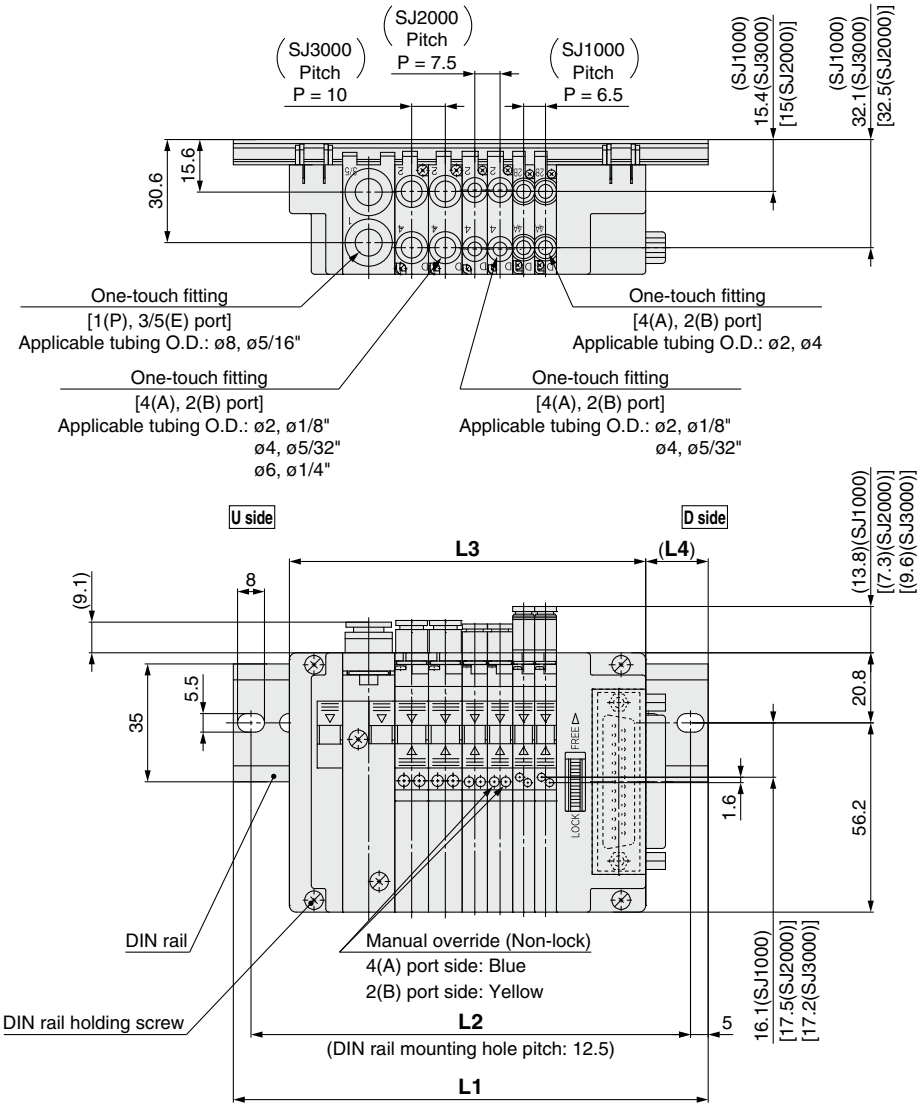
Calculation formula for dimensions

D-sub connector	**Flat ribbon cable**
L3 = 6.5 x n1 + 73.3	L3 = 6.5 x n1 + 73.3
M = (L3 + 5.9)/12.5 + 1 Decimal fractions are truncated.	M = (L3 + 6.6)/12.5 + 1 Decimal fractions are truncated.
L1 = M x 12.5 + 23	L1 = M x 12.5 + 23
L2 = L1 − 10.5	L2 = L1 − 10.5
L4 = (L1 − L3 + 5.9)/2	L4 = (L1 − L3 + 6.6)/2
EX180	**EX510**
L3 = 6.5 x n1 + 103.7	L3 = 6.5 x n1 + 120.9
M = L3/12.5 + 1 Decimal fractions are truncated.	M = L3/12.5 + 1 Decimal fractions are truncated.
L1 = M x 12.5 + 23	L1 = M x 12.5 + 23
L2 = L1 − 10.5	L2 = L1 − 10.5
L4 = (L1 − L3)/2	L4 = (L1 − L3)/2

n1 = Number of SJ1000

Dimensions: SJ1000/2000/3000 Mixed Manifold

SUP/EXH block: U side



Calculation formula for dimensions

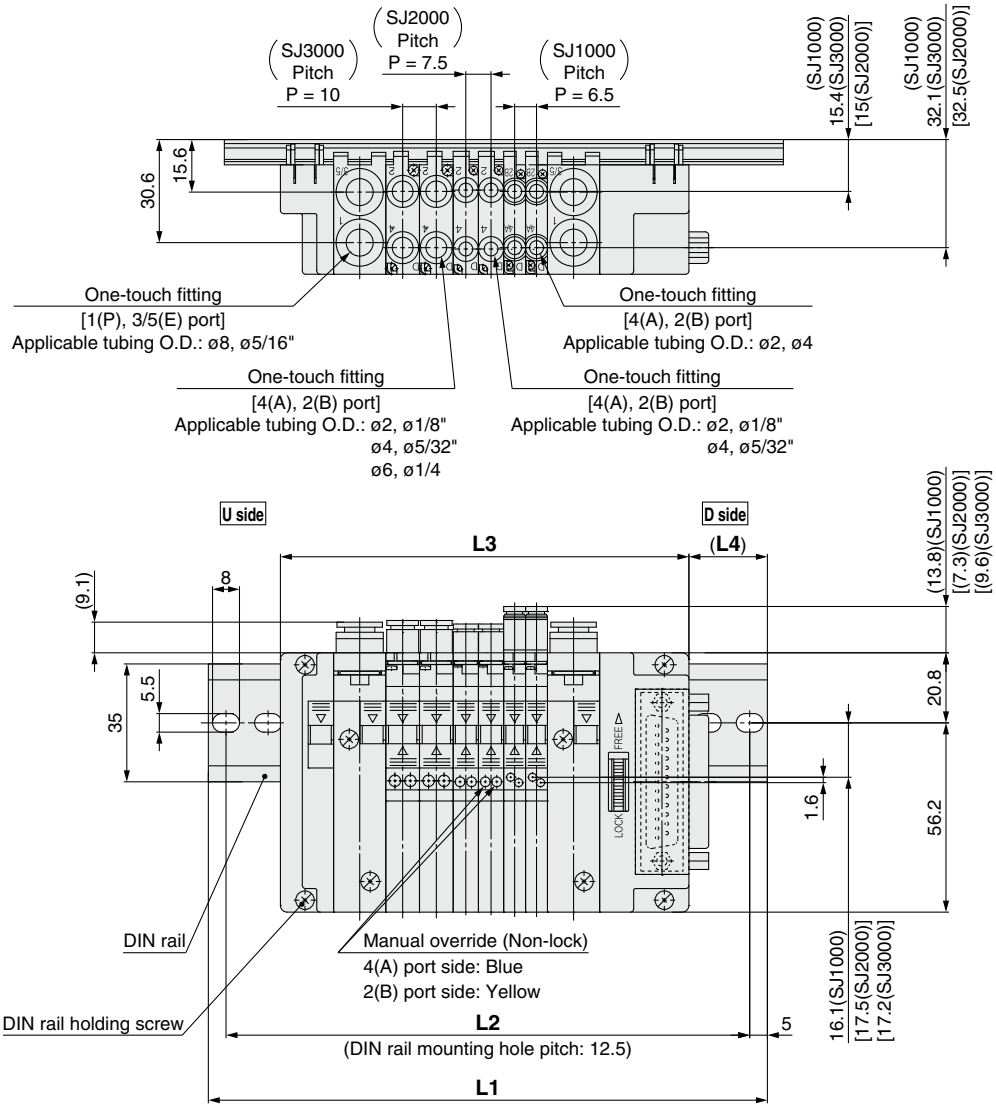
D-sub connector	**Flat ribbon cable**
L3 = 6.5 x n1 + 7.5 x n2 + 10 x n3 + 57.8	L3 = 6.5 x n1 + 7.5 x n2 + 10 x n3 + 57.8
M = (L3 + 9.9)/12.5 + 1 Decimal fractions are truncated.	M = (L3 + 10.6)/12.5 + 1 Decimal fractions are truncated.
L1 = M x 12.5 + 23	L1 = M x 12.5 + 23
L2 = L1 – 10.5	L2 = L1 – 10.5
L4 = (L1 – L3)/2 + 1	L4 = (L1 – L3)/2 + 1.3
EX180	**EX510**
L3 = 6.5 x n1 + 7.5 x n2 + 10 x n3 + 88.2	L3 = 6.5 x n1 + 7.5 x n2 + 10 x n3 + 105.4
M = (L3 + 4)/12.5 + 1 Decimal fractions are truncated.	M = (L3 + 4)/12.5 + 1 Decimal fractions are truncated.
L1 = M x 12.5 + 23	L1 = M x 12.5 + 23
L2 = L1 – 10.5	L2 = L1 – 10.5
L4 = (L1 – L3)/2 – 2	L4 = (L1 – L3)/2 – 2

n1 = Number of SJ1000
n2 = Number of SJ2000
n3 = Number of SJ3000

* The dimensions of L1 to L4 for **SS5J3-M60□D1/2-Stations D** are the same as those of **SS5J3-M60□D1/2-Stations U**.

Dimensions: SJ1000/2000/3000 Mixed Manifold

SUP/EXH block: Both sides



Calculation formula for dimensions

D-sub connector	**Flat ribbon cable**
L3 = 6.5 x n1 + 7.5 x n2 + 10 x n3 + 73.3	L3 = 6.5 x n1 + 7.5 x n2 + 10 x n3 + 73.3
M = (L3 + 9.9)/12.5 + 1 Decimal fractions are truncated.	M = (L3 + 10.6)/12.5 + 1 Decimal fractions are truncated.
L1 = M x 12.5 + 23	L1 = M x 12.5 + 23
L2 = L1 – 10.5	L2 = L1 – 10.5
L4 = (L1 – L3)/2 + 1	L4 = (L1 – L3)/2 + 1.3
EX180	**EX510**
L3 = 6.5 x n1 + 7.5 x n2 + 10 x n3 + 103.7	L3 = 6.5 x n1 + 7.5 x n2 + 10 x n3 + 120.9
M = (L3 + 4)/12.5 + 1 Decimal fractions are truncated.	M = (L3 + 4)/12.5 + 1 Decimal fractions are truncated.
L1 = M x 12.5 + 23	L1 = M x 12.5 + 23
L2 = L1 – 10.5	L2 = L1 – 10.5
L4 = (L1 – L3)/2 – 2	L4 = (L1 – L3)/2 – 2

n1 = Number of SJ1000
n2 = Number of SJ2000
n3 = Number of SJ3000

⚠ Safety Instructions | Be sure to read the “Handling Precautions for SMC Products” (M-E03-3) and “Operation Manual” before use.

SMC Corporation
Akihabara UDX 15F,
4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101-0021, JAPAN
Phone: 03-5207-8249 Fax: 03-5298-5362
https://www.smcworld.com
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