

How to Order

• Plug-in manifold with power supply terminals



How to Order

• Plug-in manifold [without power supply terminals]





How to Order Manifold Assemblies (Example)

Duble solenoid (24VDC) Supply/Exhaust block (U side mounting) Single solenoid (24VDC) Single solenoid (24VDC

Example (SZ3000, positive common with power supply terminals)

- —The * symbol indicates built-in. Put the * symbol at the beginning of the part numbers for solenoid valves, etc., which are to be attached.
- Valve stations are numbered from station 1 on the D side.
 Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. When a layout becomes complicated, please indicate on a manifold specification sheet. (Manifold specification sheet on page ①1-41.)

Manifold Specifications

Madal			D-sub connector	F	lat cable type 60P				
Model			60F	60P	60PG	60PH			
Manifold type				Plug-i	n type				
P (SUP), R (EXH) syste	m			Common	SUP, EXH				
Valve stations (with po	wer	terminal)	2 to 20	stations	2 to 16 stations	2 to 8 stations			
A, B port piping		Location		Va	alve				
specifications		Direction		Lateral, Upward, Downward					
Port size	P, R	ports			C8				
FUIT SIZE	A/B	ports		C4, 0	C6, M5				
	C 4	P→A/B		3.4 (0.19)	[3.0 (0.17)]				
Note 2)	64	A/B→R	3.2 (0.18) [3.2 (0.18)]						
Valve effective ^{Note 2}	C6	P→A/B	3.7 (0.21) [3.2 (0.18)]						
(Cv factor)		A/B→R	3.9 (0.22) [3.8 (0.21)]						
	М5	P→A/B	3.4 (0.19) [3.2 (0.18)]						
		A/B→R							
Applicable connector			D-sub connector Complies with MIL-C-24308 JIS-X-5101	Flat cable connector Socket: 26 pin MIL type with strain relief Complies with MIL-C-83503	Flat cable connector Socket: 20 pin MIL type with strain relief Complies with MIL-C-83503	Flat cable connector Socket: 10 pin MIL type with strain relief Complies with MIL-C-83503			
Internal wiring			+COM, -COM						
Weight W (g) ^{Note 3)} (n1: Stations n2: Number of supply/exhaust blocks m : Weight of DIN rail			W = 3.2n1 + 53n2 + m + 126.5						

Note 1) In cases such as those where many valves are operated simultaneously, use type B (double side supply/exhaust), applying pressure to the P ports on both sides and exhausting from the R ports on both sides.

Note 2) • The value is for manifold base mounting (5 stations). 2 position type with individual operation.

• Values inside [] are for 4 position dual 3 port valves. Furthermore, when the "A" and "B" sides of a 4 position dual 3 port valve are operated simultaneously, the value for the Cv factor will be approximately 35% less than shown in the table above.

• The Cv factor for a valve with back pressure check valve will be approximately 20% less than shown in the table above.

Note 3) The weight W is the value for the D-sub connector manifold with power supply terminals only. To obtain the weight with solenoid valves attached, add the solenoid valve weights given on page ①1-9 for the appropriate number of stations. Refer to page ①1-11 for the weight of DIN rails.



Manifold Options

SUP blocking disk

By installing a SUP blocking disk in the pressure supply passage of a manifold valve, it is possible to supply two or more different high and low pressures to one manifold. (Use in combination with a pilot port blocking disk.)



EXH blocking disk

By installing an EXH blocking disk in the exhaust passage of a manifold valve, it is possible to divide the valve's exhaust so that it does not affect another valve. (Two blocking disk are needed to divide both exhausts.)



Pilot port blocking disk

By installing a pilot port blocking disk in the pilot passage of a manifold valve, it can function as an internal pilot/external pilot mixed manifold.



Indicator stickers for blocking disks

These stickers are to be put on valves in which SUP and EXH blocking disks have been installed so that confirmation is possible from the outside. (3pcs. of each are included.)

SZ3000-155-1A

Sticker for SUP/EXH blocking disk Sticker for EXH blocking disk



Sticker for SUP blocking disk

Sticker for pilot passage blocking disk



* If blocking disks are ordered on manifold specification sheets, etc., at the same time that manifolds are ordered, stickers will be attached to the valves with blocking disks installed before shipment.



■ Blanking block assembly SZ3000-55-1A

These are mounted when later addition of valves is planned, etc.



■ Silencer with One-touch fitting

This silencer can be mounted on the manifold's port R (exhaust) with a single touch.



Series	Model	Effective sectional area	Α	В	С
for SZ3000 (ø8)	AN203-KM8	14mm ²	ø16	26	51

■ Plugs (white)

These are inserted in cylinder ports or $\ensuremath{\mathsf{SUP/EXH}}$ ports which are not being used.

They can be ordered in multiples of 10 pieces.



Dimensions

Applicable fitting size ød	Model	А	L	D
4	KQ2P-04	16	32	6
6	KQ2P-06	18	35	8
8	KQ2P-08	20.5	39	10

Manifold Options

DIN rail dimensions/Weight table

VZ1000-11-1-[

• Refer to the L dimension tables

 \ast Enter a number from the DIN rail dimension table below in the $\Box.$



No.	0	1	2	3	4	5	6	7	8	9
L dimension	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5
Weight (g)	17.6	19.9	22.1	24.4	26.6	28.9	31.1	33.4	35.6	37.9

No.	10	11	12	13	14	15	16	17	18	19
L dimension	223	235.5	248	260.5	273	285.5	298	310.5	323	335.5
Weight (g)	40.1	42.4	44.6	46.9	49.1	51.4	53.6	55.9	58.1	60.4
No.	20	21	22	23	24	25	26	27	28	29

NO.	20	21	22	23	24	25	26	27	28	29
L dimension	348	360.5	373	385.5	398	410.5	423	435.5	448	460.5
Weight (g)	62.6	64.9	67.1	69.4	71.6	73.9	76.1	78.4	80.6	82.9

Flat cable type/Cable assembly

AXT100-FC



Flat cable assembly

Cable length (L)	10 pins	20 pins	26 pins
1.5m	AXT100-FC10-1	AXT100-FC20-1	AXT100-FC26-1
3m	AXT100-FC10-2	AXT100-FC20-2	AXT100-FC26-2
5m	AXT100-FC10-3	AXT100-FC20-3	AXT100-FC26-3
Connector width (W)	17.2	30	37.5

 If it is desired to use a commercially available connector, use one conforming to MIL-C-83503 with strain relief.

Sample of connector manufacturers

- HIROSE ELECTRIC COMPANY
- SUMITOMO/3-M LIMITED
- FUJITSU LTD.
- Japan Aviation Electronics Industry, Ltd.

• J.S.T. Mfg. Co., Ltd.

■ D-sub connector (25 pins)/Cable assembly AXT100-DS25-015 050



D-sub connector cable assembly wire colors by terminal number

whe colors by terminal number							
Terminal no.	Lead wire color	Dot marking					
1	Black	None					
2	Brown	None					
3	Red	None					
4	Orange	None					
5	Yellow	None					
6	Pink	None					
7	Blue	None					
8	Purple	White					
9	Gray	Black					
10	White	Black					
11	White	Red					
12	Yellow	Red					
13	Orange	Red					
14	Yellow	Black					
15	Pink	Black					
16	Blue	White					
17	Purple	None					
18	Gray	None					
19	Orange	Black					
20	Red	White					
21	Brown	White					
22	Pink	Red					
23	Gray	Red					
24	Black	White					
25	White	None					

D-sub connector cable assembly

Cable length (L)	Assembly no.	Note	
1.5m	AXT100-DS25-015		
3m	AXT100-DS25-030	Cable 25 cores x24AWG	
5m	AXT100-DS25-050		

 If it is desired to use a commercially available cable, use a 25 pin female type connector conforming to MIL-C24308.

Sample of connector manufacturers

- HIROSE ELECTRIC COMPANY
- FUJITSU LTD.
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.

Electrical characteristics

Item	Characteristic			
Conductor resistance Ω/km, 20°C	65 or less			
Withstand voltage VAC for 1min.	1000			
Insulation resistance MΩkm, 20°C	5 or less			
Nista) The main income in				

Note) The minimum inside bending radius for the D-sub connector cable is 20mm.



Manifold Electrical Wiring

60F D-sub connector type (25 pins)





• With power supply terminals

• The circuits above are for the double wiring specification with up to 10 or 12 stations. Connect to SOL.A in the case of a single solenoid. Moreover, when wiring instructions are given on a manifold specification sheet, the "A" signal for single and the "A, B" signals for double should be wired in order 1, 14, 2, 15.....etc., without skipping or leaving any connectors remaining.

• Stations are counted starting with station 1 on the D side.

60P Flat cable type (26 pins)

• Without power supply terminals



• The circuits above are for the double wiring specification with up to 11 or 12 stations. Connect to SOL.A in the case of a single solenoid. Moreover, when wiring instructions are given on a manifold specification sheet, the "A" signal for single and the "A, B" signals for double should be wired in order 1, 2, 3, 4.....etc., without skipping or leaving any connectors remaining.

• Stations are counted starting with station 1 on the D side.

• Since terminal numbers are not indicated on the flat cable, use the triangle mark as a reference when wiring.



With power supply terminals

Manifold Electrical Wiring

60PG Flat cable type (20 pins)

• Without power supply terminals



· With power supply terminals

- The circuits above are for the double wiring specification with up to 8 or 9 stations. Connect to SOL.A in the case of a single solenoid. Moreover, when wiring instructions are given on a manifold specification sheet, the "A" signal for single and the "A, B" signals for double should be wired in order 1, 2, 3, 4.....etc., without skipping or leaving any connectors remaining.
- Stations are counted starting with station 1 on the D side.
- Since terminal numbers are not indicated on the flat cable, use the triangle mark as a reference when wiring.

60PH Flat cable type (10 pins)

• Without power supply terminals





• The circuits above are for the double wiring specification with up to 4 stations. Connect to SOL.A in the case of a single solenoid. Moreover, when wiring instructions are given on a manifold specification sheet, the "A" signal for single and the "A, B" signals for double should be wired in order 1, 2, 3, 4.....etc., without skipping or leaving any connectors remaining.

· Stations are counted starting with station 1 on the D side.

Since terminal numbers are not indicated on the flat cable, use the triangle mark as a reference when wiring.



Wiring of Plug-in Type Manifold with Power Supply Terminals (Examples)

• Since the power supply to drive valves with power supply terminals can be supplied from either the control side or the manifold side, these wiring examples should be used for reference when wiring is performed.

1. Wiring example when using manifold power supply terminals



2. Wiring example when not using manifold power supply terminals (power is supplied to the control side or along the wiring, etc.)



Caution

 When connecting to a PLC (Programmable Logic Controller), etc., wiring such as the signal lines and COM position will differ with each manufacturer. Connections should be made after thoroughly reviewing the electrical circuits of both units in their catalogs or other materials. If connections are made incorrectly, failure may occur not only in the manifolds and valves but also in the PLC (control side) and power supply.

Construction



∕⁄@ SMC

Replacement parts

No	Description	Part no.
9	One-touch fitting	Refer to One-touch fitting part number information on page $①1-51$.
10	Clip	SX3000-115-2

11–15

(8)

/3 (EB)

/1 (P)

5 (EA)

JIS symbol

4 position dual 3 port valve

SZ3A60 [N.C. valve x 2pcs.]



1 (P)

SZ3B60 [N.C. valve x 2pcs.]



SZ3B60K/With back pressure check valve

4 (A)	2 (B)
	SOL.b 3 (R)
	1 (P)

SZ3C60 [N.C. valve, N.O. valve 1pc. each]





SZ3A60 [N.C. valve x 2pcs.]



SZ3B60 [N.O.valve x 2pcs.]



SZ3C60 [N.C valve, N.O. valve 1pc. each]



Parts list

No.	Description	Material	Note
1	Spool valve assembly	PA/NBR	For N.C. (normally closed)
2	Spool valve assembly	PA/NBR	For N.O. (normally open)
3	Body	Zinc die cast	_
4	Adapter plate	PBT	White
5	Pilot body	PA	White
6	Molded coil	_	Gray
7	Body cover	PA	White
8	Port block	PA	White
9	Bottom cover assembly	—	White

Replacement parts

1	No.	Description	Part no.
	10	One-touch fitting	Refer to One-touch fitting part number information on page 11-51.
_	11	Clip	SX3000-115-2

SZ3A60K/With back pressure check valve





Manifold Exploded View

60P manifold (plug-in, flat cable type)



Parts list

No.	Description	Part no.	Note
1	Supply/Exhaust block assembly	SZ3000-50-1A- C6 C8	C6: with ø6 One-touch fitting, C8: with ø8 One-touch fitting
2	End block assembly	SZ3000-53-1A	
3	Housing holder	SX3000-113-1	
4	Bushing assembly	SZ3000-114-3A	
5	Bushing assembly	SZ3000-114-1A	
6	DIN rail	VZ1000-11-1-□	Refer to page 11-11
7	Connector block assembly	SZ3000-40-□□	Refer to the connector block assembly part no. table below.

Connector block assembly part numbers

Connector on offications	Mounting	Pai	Noto				
Connector specifications	position	Without power supply terminals	With power supply terminals	Note			
For D-sub connector	D side	SZ3000-40-1A-□□D ¹ ₂	SZ3000-40-2A-□□D ₂ ¹ - ^P _N	 * 1: Perpendicular connector * 2: Lateral connector P: Positive common 			
For flat cable 26 pins	D side	SZ3000-40-3A-□□D ¹ ₂	SZ3000-40-4A-□□D ₂ ¹ - ^P _N	N: Negative common			
For flat cable 20 pins	D side	SZ3000-40-5A-□□D ¹ 2	SZ3000-40-6A-□□D ₂ ¹ - ^P _N	The assembly part numbers with power supply terminals are 24VDC specifications. If 12VDC specifications are			
For flat cable 10 pins	D side	SZ3000-40-7A-□□D ¹ ₂	SZ3000-40-8A-□□D ₂ ¹ - ^P _N	required, enter "12" at the end of the assembly part number.			

Note 1) A connector block assembly can be shipped as an assembly only in the case of double wiring. Since the possible number of stations differs depending on the connector type, refer to the valve station section on catalog page ①1-6 and enter the number of stations in the □□ section of the assembly part number. Contact SMC if a connector block assembly is required having a wiring specification other than double wiring.



Plug-in Manifold Station Expansion

- Caution In addition to solenoid valves, housing holders (SX3000-113-1) are necessary for expansion of manifold stations.
 - Double wiring specification manifolds which do not have the maximum number of stations, contain spare receptacle housings for expansion in the housing holder of the last station, or inside the supply/exhaust block assembly (for a maximum of 2 stations). When expanding stations, perform the disassembly and assembly of the manifold while referring to the expansion method shown below.





Dimensions/SZ3000: Plug-in



Note 1) Types 60PG and 60PH differ only in their connectors, and the L1 through L4 dimensions are the same as type 60P. Note 2) Refer to page ①1-23 for manifold dimensions with elbow fitting.

Inte	ernal p	ilot ma	nifold	L: Di	mensi	ons	n:		Exter	rn		
	<u>n</u> 2	3	4	5 6 7		7	89		10	L _ n		
Ľ	1 110.5	123	135.5	148	148	160.5	173	185.5	198		L1	
- L:	2 100	112.5	125	137.5	137.5	150	162.5	175	187.5		L2	
L	3 81	91.5	102	112.5	123	133.5	144	154.5	165		L3	
L	1 15	16	17	18	12.5	13.5	14.5	15.5	16.5		L4	

External pilot manifold L: Dimensions n: Stations (n1 + n2)

						, ,			
<u> </u>	n 2 3 4 5		6	7	8	9	10		
L1	123	135.5	148	148	160.5	173	185.5	198	210.5
L2	112.5	125	137.5	137.5	150	162.5	175	187.5	200
L3	91.5	102 112.5 123		123	133.5	144	154.5	165	175.5
L4	16	17	18	12.5	13.5	14.5	15.5	16.5	17.5



Dimensions/SZ3000: Plug-in



Internal pilot manifold L: Dimensions

Interna	Iternal pilot manifold L: Dimensions n: Stations (n1 + n2															(n1 + n2)			
L	<u>n</u> 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 1													19	20				
L1	123	135.5	148	160.5	173	173	185.5	198	210.5	223	235.5	248	248	260.5	273	285.5	298	310.5	310.5
L2	112.5	125	137.5	150	162.5	162.5	175	187.5	200	212.5	225	237.5	237.5	250	262.5	275	287.5	300	300
L3	97	107.5	118	128.5	139	149.5	160	170.5	181	191.5	202	212.5	223	233.5	244	254.5	265	275.5	286
L4	13	14	15	16	17	12	13	14	15	16	17	18	12.5	13.5	14.5	15.5	16.5	17.5	12.3

Extern	External pilot manifold L: Dimensions n: Stations (n1 + n2)																		
L n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	135.5	148	160.5	173	173	185.5	198	210.5	223	235.5	248	248	260.5	273	285.5	298	310.5	310.5	323
L2	125	137.5	150	162.5	162.5	175	187.5	200	212.5	225	237.5	237.5	250	262.5	275	287.5	300	300	312.5
L3	107.5	118	128.5	139	149.5	160	170.5	181	191.5	202	212.5	223	233.5	244	254.5	265	275.5	286	296.5
L4	14	15	16	17	12	13	14	15	16	17	18	12.5	13.5	14.5	15.5	16.5	17.5	12.5	13.5

