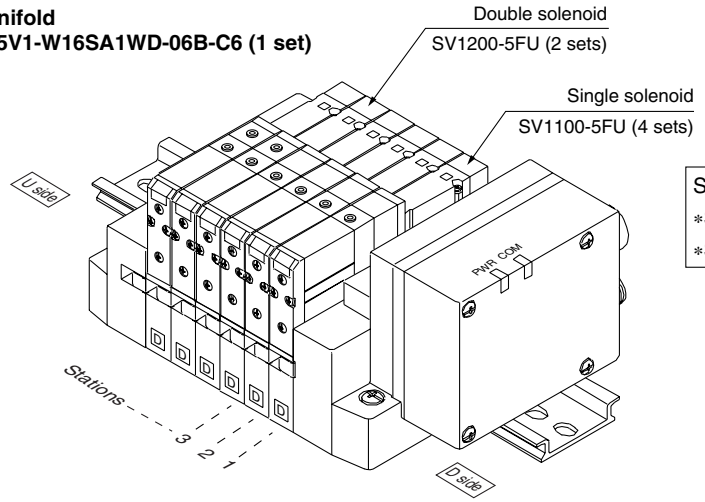
How to Order Valve Manifold Assembly

Ordering example (SV1000)

Manifold
SS5V1-W16SA1WD-06B-C6 (1 set)



SS5V1-W16SA1WD-06B-C6·····1 set (Manifold part no.)
∗SV1100-5FU·····4 sets (Single solenoid part no.)
∗SV1200-5FU·····2 sets (Double solenoid part no.)

How to Order Solenoid Valves

SV 1 1 0 0 □ □ — 5 F □ □ — □ Note)

Note) Available with manifold block for station additions. Refer to pages 1-2-89 and 1-2-93.

Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

Type of actuation

1	2 position single solenoid
2	2 position double solenoid
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
A	4 position dual 3 port valve: N.C./N.C.
B	4 position dual 3 port valve: N.O./N.O.
C	4 position dual 3 port valve: N.C./N.O.

∗ 4 position dual 3 port valves are applicable to Series SV1000 and SV2000 only.

Pilot type

Nil	Internal pilot
R	External pilot

∗ External pilot specifications is not available for 4 position dual 3 port valves.

Back pressure check valve

Nil	None
K	Built-in

∗ Built-in back pressure check valve type is applicable to series SV1000 only.
∗ Back pressure check valve is not available for 3 position closed center and 3 position pressure

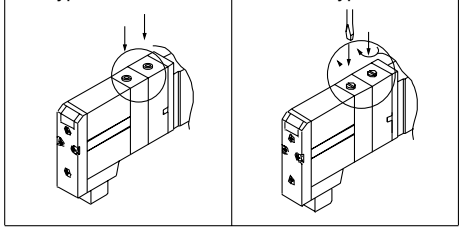
Refer to Precautions 2 on page 1-2-9.

Rated voltage

5	24 VDC

Manual override

Nil: Non-locking push type	**D**: Push-turn locking slotted type



Light/Surge voltage suppressor

U	With light/surge voltage suppressor
R	With surge voltage suppressor

Gateway (GW) unit

Specifications

Model	EX500-GAB1-X1	EX500-GDN1	EX500-GPR1
Applicable PLC/Communication protocol	Rockwell Automation, Inc. PLC	DeviceNet Release 2.0	PROFIBUS-DP
Communication speed	57.6 Kbit/sec, 115.2 Kbit/sec 230.4 Kbit/sec	125 Kbit/sec, 250 Kbit/sec 500 Kbit/sec	9.6/19.2/93.75/187.5/500 kbit/sec 1.5/3/6/12 Mbit/sec
Rated voltage	24 VDC		
Power supply voltage range	Input and control unit power supply: 24 VDC ±10% Solenoid valve power supply: 24 VDC +10%/–5% (Power drop warning at approx. 20 V)		
Current consumption	200 mA or less		
No. of input/output points	Maximum 64 inputs/64 outputs		
No. of input/output branches	4 branches (16 inputs/16 outputs per branch)		
Branch cable	8 core heavy duty cable		
Branch cable length	5 m or less (total extension 10 m or less)		
Communication connector	M12 connector (8 pins, Socket)		
Power connector	M12 connector (5 pins, Plug)		
Ambient operating temperature/humidity	+5 to +45°C/35 to 85% RH (No condensation)		
Enclosure	IP65		
Applicable standard	UL, CSA, CE		
Weight (g)	470		

* Communication cables and connectors are sold separately.
Refer to options on page 1-2-27.

How to Order

EX500 – G DN 1 [ ]

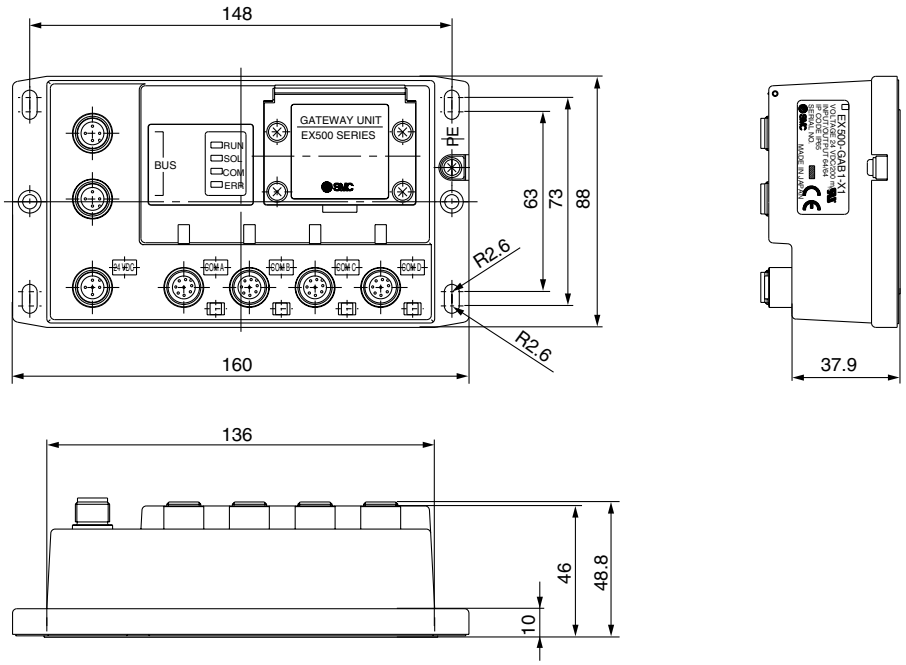
Communication protocol

DN	DeviceNet
PR	PROFIBUS-DP
AB	Remote I/O (RIO)

Applicable GW unit

Nil	DeviceNet PROFIBUS-DP
-X1	Remote I/O (RIO)

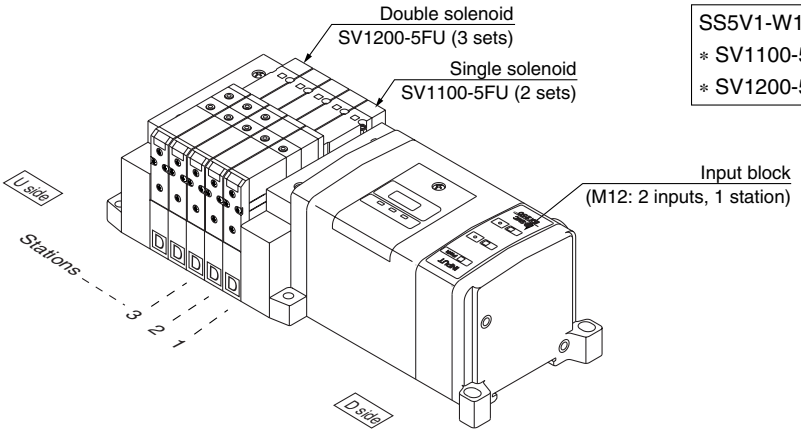
Dimensions



How to Order Valve Manifold Assembly

Ordering example (SV1000)

Manifold
SS5V1-W10S1QW11ND-05B-C6 (1 set)



SS5V1-W10S1QW11ND-05B-C6····1 set (manifold part no.)
∗ SV1100-5FU·····2 sets (Single solenoid part no.)
∗ SV1200-5FU·····3 sets (Double solenoid part no.)

How to Order Solenoid Valves

SV 1 1 00 □□ — 5 F □□ — □ Note)

Note) Available with manifold block for station additions. Refer to page 1-2-93.

Series

1	SV1000
2	SV2000
3	SV3000

Type of actuation

1	2 position single solenoid
2	2 position double solenoid
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
A	4 position dual 3 port valve: N.C./N.C.
B	4 position dual 3 port valve: N.O./N.O.
C	4 position dual 3 port valve: N.C./N.O.

∗ 4 position dual 3 port valves are applicable to Series SV1000 and SV2000 only.

Pilot type

Nil	Internal pilot
R	External pilot

∗ External pilot specifications is not available for 4 position dual 3 port valves.

Back pressure check valve

Nil	None
K	Built-in

∗ Built-in back pressure check valve type is applicable to series SV1000 only.
∗ Back pressure check valve is not available for 3 position closed center and 3 position pressure center.

Refer to Precautions 2 on page 1-2-9.

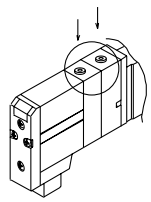
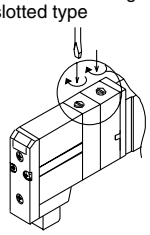
Rated voltage

5	24 VDC

Light/Surge voltage suppressor

U	With light/surge voltage suppressor
R	With surge voltage suppressor

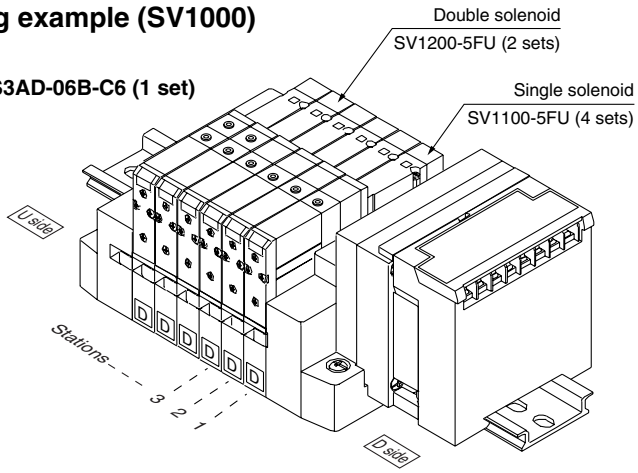
Manual override

Nil: Non-locking push type	D: Push-turn locking slotted type
	

How to Order Valve Manifold Assembly

Ordering example (SV1000)

Manifold
SS5V1-16S3AD-06B-C6 (1 set)



SS5V1-16S3AD-06B-C6·····1 set (manifold part no.)
∗SV1100-5FU·····4 sets (Single solenoid part no.)
∗SV1200-5FU·····2 sets (Double solenoid part no.)

How to Order Solenoid Valves

SV 1 1 0 0 ☐ ☐ — 5 F ☐ ☐ — ☐ Note)

Note) Available with manifold block for station additions. Refer to pages 1-2-89 and 1-2-93.

Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

Type of actuation

1	2 position single solenoid
2	2 position double solenoid
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
A	4 position dual 3 port valve: N.C./N.C.
B	4 position dual 3 port valve: N.O./N.O.
C	4 position dual 3 port valve: N.C./N.O.

∗4 position dual 3 port valves are applicable to Series SV1000 and SV2000 only.

Pilot type

Nil	Internal pilot
R	External pilot

∗External pilot specifications is not available for 4 position dual 3 port valves.

Back pressure check valve

Nil	None
K	Built-in

∗Built-in back pressure check valve type is applicable to Series SV1000 only.
∗Back pressure check valve is not available for 3 position closed center and 3 position pressure center.

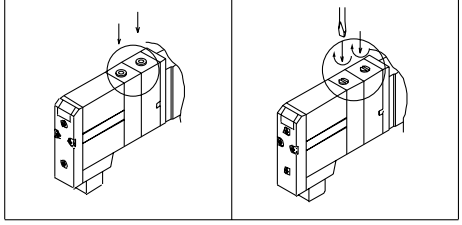
Refer to Precautions 2 on page 1-2-9.

Rated voltage

5	24 VDC

Manual override

Nil: Non-locking push type	D: Push-turn locking slotted type



Light/Surge voltage suppressor

U	With light/surge voltage suppressor
R	With surge voltage suppressor

A, B port size (Metric)

Symbol	A, B port	P, E port	Applicable series
C3	One-touch fitting for ø3.2	One-touch fitting for ø8	SV1000
C4	One-touch fitting for ø4		
C6	One-touch fitting for ø6		
C4	One-touch fitting for ø4	One-touch fitting for ø10	SV2000
C6	One-touch fitting for ø6		
C8	One-touch fitting for ø8		
C6	One-touch fitting for ø6	One-touch fitting for ø12	SV3000
C8	One-touch fitting for ø8		
C10	One-touch fitting for ø10		
C8	One-touch fitting for ø8	One-touch fitting for ø12	SV4000
C10	One-touch fitting for ø10		
C12	One-touch fitting for ø12		
02	Rc 1/4	Rc 3/8	
03	Rc 3/8		
02F	G 1/4	G 3/8	
03F	G 3/8		
M	A, B ports mixed		

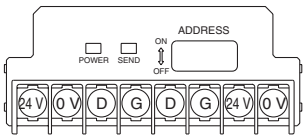
A, B port size (Inch)

Symbol	A, B port	P, E port	Applicable series
N1	One-touch fitting for ø1/8"	One-touch fitting for ø5/16"	SV1000
N3	One-touch fitting for ø5/32"		
N7	One-touch fitting for ø1/4"		
N3	One-touch fitting for ø5/32"	One-touch fitting for ø3/8"	SV2000
N7	One-touch fitting for ø1/4"		
N9	One-touch fitting for ø5/16"		
N7	One-touch fitting for ø1/4"	One-touch fitting for ø3/8"	SV3000
N9	One-touch fitting for ø5/16"		
N11	One-touch fitting for ø3/8"		
N9	One-touch fitting for ø5/16"	One-touch fitting for ø3/8"	SV4000
N11	One-touch fitting for ø3/8"		
02N	NPT 1/4	NPT 3/8	
03N	NPT 3/8		
02T	NPTF 1/4	NPTF 3/8	
03T	NPTF 3/8		
M	A, B ports mixed		

∗In the case of mixed specifications (M), indicate separately on the manifold specification sheet.
∗Port sizes of X, PE port for external pilot specification (R, RS) are ø4 (metric), ø5/32" (inch) for SV1000/2000 and ø6 (metric) and ø1/4" (inch) for SV3000/4000.

Type F1 — NKE Corporation Uni-wire System

Name of terminal block, LED

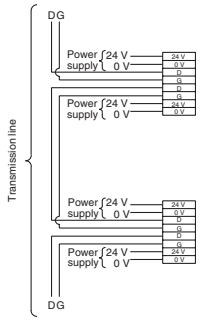


LED	Description
POWER	ON for power supply input (ON when normal, flickers when voltage drops)
SEND	Transmission indication: Blinks when normal, OFF or ON when abnormal

Note

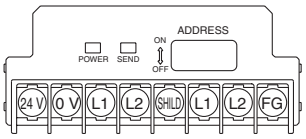
- Uni-wire System
  Send unit : SD-120
- No. of output points, 16 points

Cable wiring



Type G — Rockwell Automation, Inc. Allen Bradley Remote I/O (RIO) System

Name of terminal block, LED

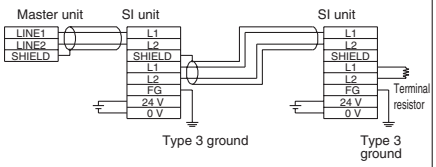


LED	Description
POWER	ON when power supply is ON
COM	ON when communication is normal Blinks when communication is initialized OFF for abnormal communication
ERROR	ON for abnormal communication

Note

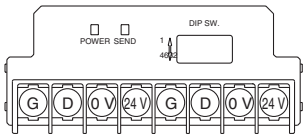
- Remote I/O (RIO) System
- No. of output points, 16 points

Cable wiring



Type J1, J2 — SUNX Corporation S-LINK System

Name of terminal block, LED



LED	Description
POWER	ON for power supply input
SEND	Transmission indication: Blinks when normal, Blinks slowly when abnormal

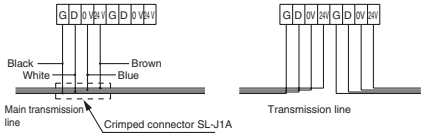
Note

- S-LINK System
  S-LINK controller: SL-CU1A
- No. of output points, 16 points (Type J1)
  No. of output points, 8 points (Type J2)

Cable wiring

a) Type T branching multi-drop wiring (S-LINK System)

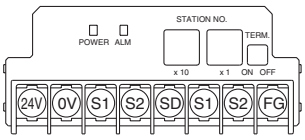
b) Crossover wiring (Sensor Link System)



The above is the example of using dedicated S-LINK flat ribbon cable SL-RCMI00.

Type K — Fuji Electric Co., Ltd. T-LINK Mini System

Name of terminal block, LED



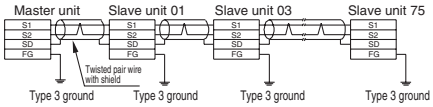
LED

LED	Description
POWER	ON for power supply input
ALM	ON for abnormal transmission or processor side power supply cut

Note

- T-LINK Mini System
  Master unit : FTM100B
  Converter : FRC100A-G02
  Repeater : FRC200A-C10
- No. of output points, 16 points

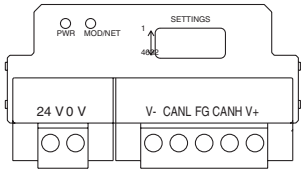
Cable wiring



Connect the shielding wire to the SD terminal. If the shielding wire is not connected to the SD terminal, normal transmission will be impossible even for short distances. Furthermore, do not ground the shielding wire (SD).

Type Q — DeviceNet

Name of terminal block, LED

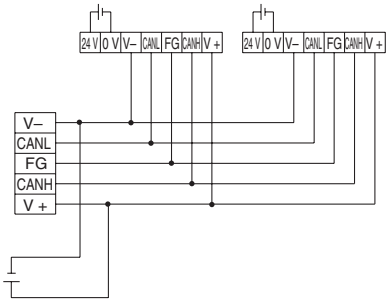


LED		Description
PWR		Green light ON for DeviceNet circuit power input
MOD/NET	OFF	When this unit is off line or circuit power is OFF
	Green blinks	When waiting for connection (On line)
	Green ON	When connection is established (On line)
	Red blinks	When connection time out occurs (recoverable communication abnormality)
	Red ON	For MAC ID duplication error, or BUSOFF error (major communication abnormality)

Note

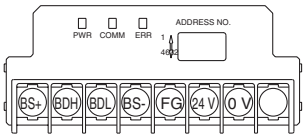
- DeviceNet
- OMRON Corporation: CompoBus/D System
  Master unit : Type C200HW-DRM21-V1
  Master unit : Type CS1W-DRM21
- No. of output points, 16 points

Cable wiring



Type R1, R2 — OMRON Corporation CompoBus/S

Name of terminal block, LED

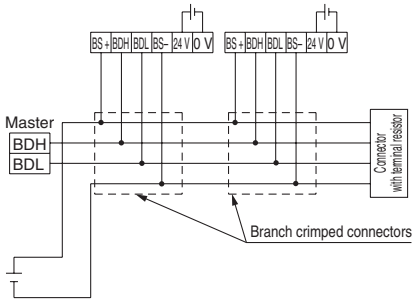


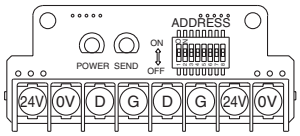
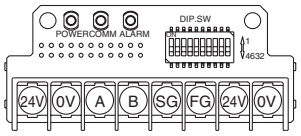
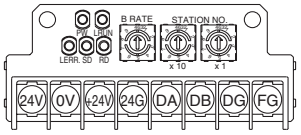
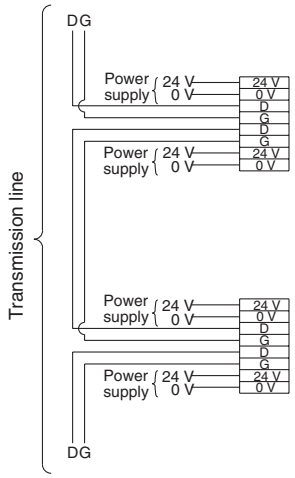
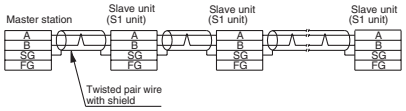
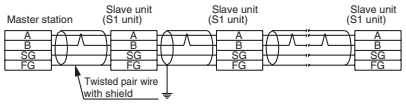
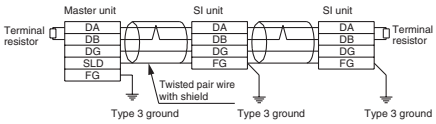
LED	Description
PWR	ON when communication power is supplied, OFF when power is OFF
COMM	ON for normal communication, OFF for abnormal communication or waiting
ERR	ON for abnormal communication, OFF for normal communication or waiting

Note

- CompoBus/S System
  Master unit : Type C200HW-SRM21-V1
  Master unit : Type CQM1-SRM21-V1
  No. of output points, 16 points (Type SR1)
- No. of output points, 8 points (Type SR2)

Cable wiring

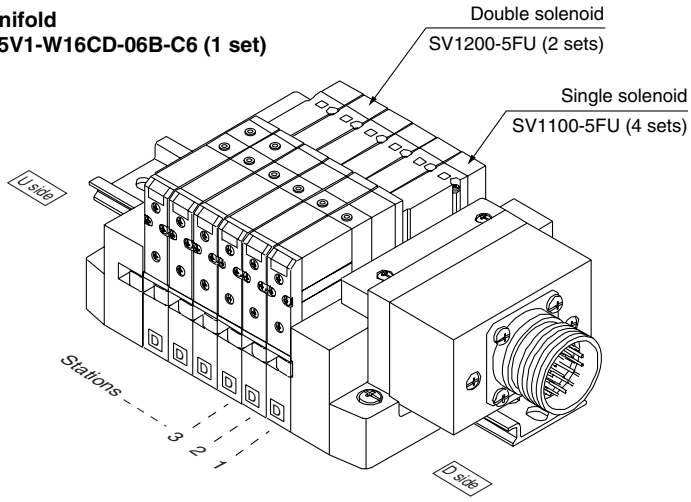


	Type H NKE Corporation Uni-wire H System	Type U JEMANET (JPCN-1)	Type V Mitsubishi Electric Corporation CC-LINK System
Name of terminal block, LED	 LED / Description POWER: ON for power supply input (ON when normal, flickers when voltage drops) SEND: Transmission indication: Blinks when normal, OFF or ON when abnormal	 LED / Description POWER: ON for SI unit power supply input COMM: On for normal communication ALARM: ON for abnormal communication	 LED / Description PW: ON when communication power is supplied, OFF when power is OFF L RUN: ON when normal data is being received SD: ON when data is transmitted RD: ON when data is received L ERR.: ON for transmission error/wrong setting, Blinks when station or transmission speed setting changes during operation
Note	• Uni-wire H System Send unit: SD-H2 • No. of output points, 16 points	• JEMANET (JPCN-1) (Reference) AJ71J92-S3 (Mitsubishi Electric Corporation) A1SJ71J92-S3 (Mitsubishi Electric Corporation) Type C200HW-JRM21 (OMRON Corporation) NJ-JPCN-1 (Fuji Electric Co., Ltd.) NP1L-JP1 (Fuji Electric Co., Ltd.) No. of output points, 16 points	• CC-Link System Master unit : AJ61BT11 Master unit : A1SJ61BT11 Master unit : AJ61QBT11 Master unit : A1SJ61QBT11 • No. of output points, 16 points
Cable wiring		a) 2-wire type  b) 3-wire type 	

How to Order Valve Manifold Assembly

Ordering example (SV1000)

Manifold
SS5V1-W16CD-06B-C6 (1 set)



SS5V1-W16CD-06B-C6·····1 set (manifold part no.)
∗ SV1100-5FU·····4 sets (Single solenoid part no.)
∗ SV1200-5FU·····2 sets (Double solenoid part no.)

How to Order Solenoid Valves

SV 1 1 0 0 ☐ ☐ — 5 F ☐ ☐ — ☐ Note)

Note) Available with manifold block for station additions. Refer to pages 1-2-89 and 1-2-93.

Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

Type of actuation

1	2 position single solenoid
2	2 position double solenoid
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
A	4 position dual 3 port valve: N.C./N.C.
B	4 position dual 3 port valve: N.O./N.O.
C	4 position dual 3 port valve: N.C./N.O.

∗ 4 position dual 3 port valves are applicable to Series SV1000 and SV2000 only.

Pilot type

Nil	Internal pilot
R	External pilot

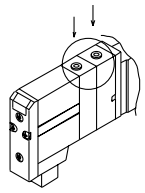
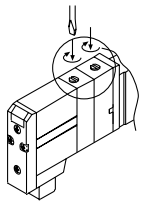
∗ External pilot specifications is not available for 4 position dual 3 port valves.

Back pressure check valve

Nil	None
K	Built-in

∗ Built-in back pressure check valve type is applicable to series SV1000 only.
∗ Back pressure check valve is not available for 3 position closed center and 3 position pressure center.

Manual override

Nil: Non-locking push type	**D**: Push-turn locking slotted type
	

Light/Surge voltage suppressor

U	With light/surge voltage suppressor
R	With surge voltage suppressor

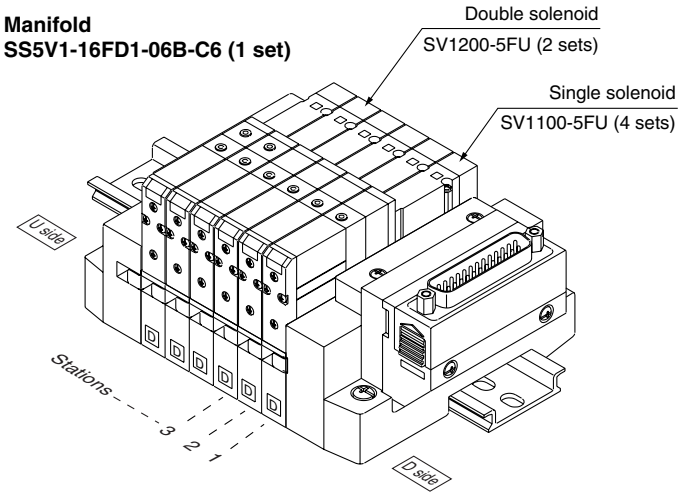
Rated voltage

5	24 VDC
6	12 VDC

Refer to Precautions 2 on page 1-2-9.

How to Order Valve Manifold Assembly

Ordering example (SV1000)



SS5V1-16FD1-06B-C6·····1 set (manifold part no.)
∗SV1100-5FU·····4 sets (Single solenoid part no.)
∗SV1200-5FU·····2 sets (Double solenoid part no.)

How to Order Solenoid Valves

SV 1 1 0 0 ☐ ☐ — 5 F ☐ ☐ — ☐ Note)

Note) Available with manifold block for station additions. Refer to pages 1-2-89 and 1-2-93.

Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

Type of actuation

1	2 position single solenoid
2	2 position double solenoid
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
A	4 position dual 3 port valve: N.C./N.C.
B	4 position dual 3 port valve: N.O./N.O.
C	4 position dual 3 port valve: N.C./N.O.

∗ 4 position dual 3 port valves are applicable to Series SV1000 and SV2000 only.

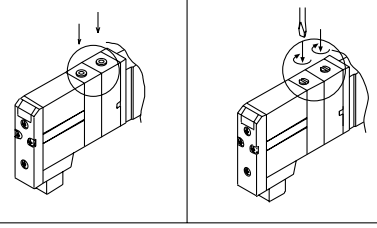
Pilot type

Nil	Internal pilot
R	External pilot

∗ External pilot specifications is not available for 4 position dual 3 port valves.

Manual override

Nil: Non-locking push type	**D**: Push-turn locking slotted type



Light/Surge voltage suppressor

U	With light/surge voltage suppressor
R	With surge voltage suppressor

Rated voltage

5	24 VDC
6	12 VDC

Back pressure check valve

Nil	None
K	Built-in

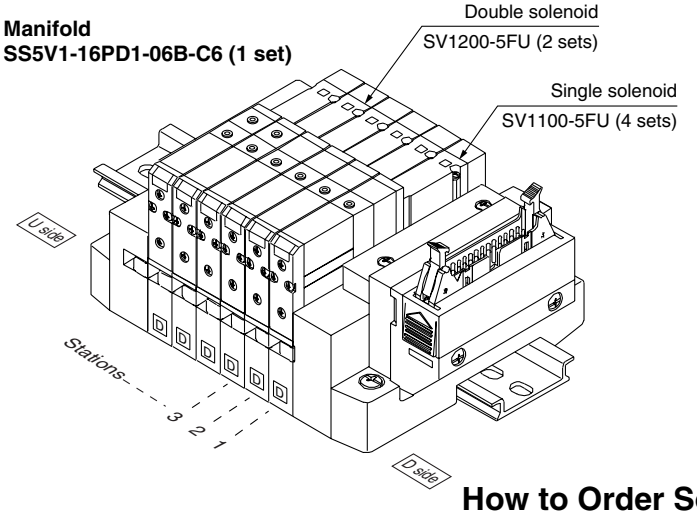
∗ Built-in back pressure check valve type is applicable to series SV1000 only.
∗ Back pressure check valve is not available for 3 position closed center and 3 position pressure center.

Refer to Precautions 2 on page 1-2-9.

How to Order Valve Manifold Assembly

Ordering example (SV1000)

Manifold
SS5V1-16PD1-06B-C6 (1 set)



SS5V1-16PD1-06B-C6·····1 set (manifold part no.)
∗SV1100-5FU·····4 sets (Single solenoid part no.)
∗SV1200-5FU·····2 sets (Double solenoid part no.)

How to Order Solenoid Valves

SV 1 1 0 0 □ □ — 5 F □ □ — □ Note)

Note) Available with manifold block for station additions. Refer to pages 1-2-89 and 1-2-93.

Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

Type of actuation

1	2 position single solenoid
2	2 position double solenoid
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
A	4 position dual 3 port valve: N.C./N.C.
B	4 position dual 3 port valve: N.O./N.O.
C	4 position dual 3 port valve: N.C./N.O.

∗ 4 position dual 3 port valves are applicable to Series SV1000 and SV2000 only.

Pilot type

Nil	Internal pilot
R	External pilot

∗ External pilot specifications is not available for 4 position dual 3 port valves.

Back pressure check valve

Nil	None
K	Built-in

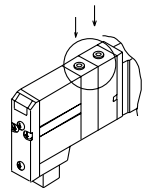
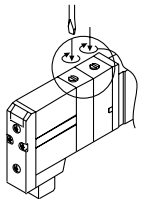
∗ Built-in back pressure check valve type is applicable to series SV1000 only.
∗ Back pressure check valve is not available for 3 position closed center and 3 position pressure center.

Refer to Precautions 2 on page 1-2-9.

Rated voltage

5	24 VDC
6	12 VDC

Manual override

Nil: Non-locking push type	D: Push-turn locking slotted type
	

Light/Surge voltage suppressor

U	With light/surge voltage suppressor
R	With surge voltage suppressor

A, B port size (Metric)

Symbol	A, B port	P, E port	Applicable series
C3	One-touch fitting for ø3.2	One-touch fitting for ø8	SV1000
C4	One-touch fitting for ø4		
C6	One-touch fitting for ø6		
C4	One-touch fitting for ø4	One-touch fitting for ø10	SV2000
C6	One-touch fitting for ø6		
C8	One-touch fitting for ø8		
C6	One-touch fitting for ø6	One-touch fitting for ø12	SV3000
C8	One-touch fitting for ø8		
C10	One-touch fitting for ø10		
C8	One-touch fitting for ø8	One-touch fitting for ø12	SV4000
C10	One-touch fitting for ø10		
C12	One-touch fitting for ø12		
02	Rc 1/4	Rc 3/8	
03	Rc 3/8		
02F	G 1/4	G 3/8	
03F	G 3/8		
M	A, B ports mixed		

A, B port size (Inch)

Symbol	A, B port	P, E port	Applicable series
N1	One-touch fitting for ø1/8"	One-touch fitting for ø5/16"	SV1000
N3	One-touch fitting for ø5/32"		
N7	One-touch fitting for ø1/4"		
N3	One-touch fitting for ø5/32"	One-touch fitting for ø3/8"	SV2000
N7	One-touch fitting for ø1/4"		
N9	One-touch fitting for ø5/16"		
N7	One-touch fitting for ø1/4"	One-touch fitting for ø3/8"	SV3000
N9	One-touch fitting for ø5/16"		
N11	One-touch fitting for ø3/8"		
N9	One-touch fitting for ø5/16"	One-touch fitting for ø3/8"	SV4000
N11	One-touch fitting for ø3/8"		
02N	NPT 1/4	NPT 3/8	
03N	NPT 3/8		
02T	NPTF 1/4	NPTF 3/8	
03T	NPTF 3/8		
M	A, B ports mixed		

∗ In the case of mixed specifications (M), indicate separately on the manifold specification sheet.
∗ Port sizes of X, PE port for external pilot specification (R, RS) are ø4 (metric), ø5/32" (inch) for SV1000/2000 and ø6(metric) and ø1/4" (inch) for SV3000/4000.

■ How to order cassette base type 16 solenoid valves with manifold block

[Series SV1000/SV2000]

• Type with manifold block is used when adding stations, etc.

SV 1 1 00 □□ – 5 F □□ — □□ — □

Series

1	SV1000
2	SV2000

Type of actuation

1	2 position single solenoid
2	2 position double solenoid
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
A	4 position dual 3 port valve: N.C./N.C.
B	4 position dual 3 port valve: N.O./N.O.
C	4 position dual 3 port valve: N.C./N.O.

Pilot type

Nil	Internal pilot
R	External pilot

∗ External pilot specifications is not available for 4 position dual 3 port valves.

Back pressure check valve

Nil	None
K	Built-in

∗ Back pressure check valve is not available for 3 position closed center and 3 position pressure center.

∗ Built-in back pressure check valve type is applicable to series SV1000 only.

Refer to Precautions 2 on page 1-2-9.

Rated voltage

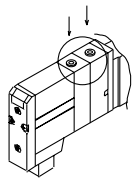
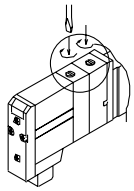
5	24 VDC
6	12 VDC

∗ Note that serial wiring manifolds (EX500, EX120) are only available with 24 VDC.

Light/Surge voltage suppressor

U	With light/surge voltage suppressor
R	With surge voltage suppressor

Manual override

Nil: Non-locking push type	**D**: Push-turn locking slotted type
	

Manifold block type

C	Cassette base type 16 with manifold block

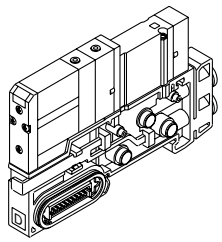
Manifold wiring specifications

Nil	Double wiring
S	Single wiring

A, B port size

Refer to A, B ports size tables on pages 1-2-20, 44, 46, and 76.

Example (SV1000)
SV1200-5FU-C-C6



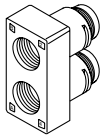
■ 1/4, 3/8 thread type port block assembly

For A, B port

SY9000 – 58A – 02/03 □

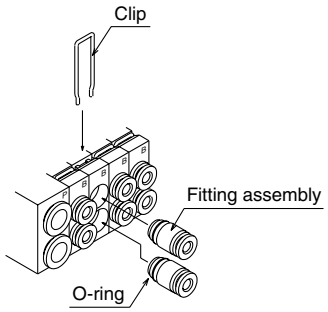
For P, E port

SY9000 – 58B – 03 □



Thread type

Nil	Rc
F	G
N	NPT
T	NPTF



Note 1) Be careful to avoid damage or contamination of O-rings, as this can cause air leakage.
Note 2) When removing a fitting assembly from a valve, after removing the clip, attach tubing or a plug (KQP-□□) to the One-touch fitting, and pull it out while holding the tubing (or plug). If it is pulled out while holding the release button of the fitting assembly (resin part), the release button may be damaged.
However, 02 and 03 port block assemblies should be pulled out as they are.
Note 3) Be sure to shut off the power and air supplies before disassembly. Furthermore, since air may remain inside the actuator, piping and manifold, confirm that the air is completely exhausted before performing any work.

■ How to order tie-rod type 10 solenoid valves with manifold block

[Series SV1000 to SV4000]

• Type with manifold block is used when adding stations, etc.

SV 1 1 0 0 □ □ – 5 F □ □ – □ □ – □

Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

Type of actuation

1	2 position single solenoid
2	2 position double solenoid
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
A	4 position dual 3 port valve: N.C./N.C.
B	4 position dual 3 port valve: N.O./N.O.
C	4 position dual 3 port valve: N.C./N.O.

∗ 4 position dual 3 port valves are applicable to Series SV1000 and SV2000 only.

Pilot type

Nil	Internal pilot
R	External pilot

∗ External pilot specifications is not available for 4 position dual 3 port valves.

Back pressure check valve

Nil	None
K	Built-in

∗ Built-in back pressure check valve type is applicable to series SV1000 only.
∗ Back pressure check valve is not available for 3 position closed center and 3 position pressure center.

Refer to Precautions 2 on page 1-2-9.

Rated voltage

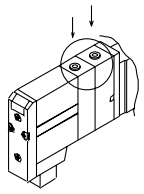
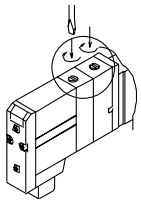
5	24 VDC
6	12 VDC

∗ Note that serial wiring (EX500, EX250 and EX120) are only available with 24 VDC.

Light/Surge voltage suppressor

U	With light/surge voltage suppressor
R	With surge voltage suppressor

Manual override

Nil: Non-locking push type	D: Push-turn locking slotted type
	

Manifold block type

T	For Tie-rod base type 10 with manifold block

Note) Tie-rod type 10 includes tie-rods for station additions.

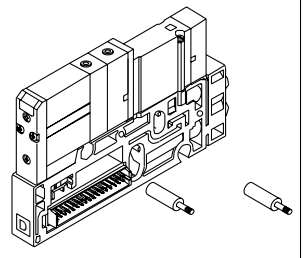
Manifold wiring specifications

Nil	Double wiring
S	Single wiring

A, B port size

Refer to A, B port size table on pages 1-2-20, 36, 44, and 76.

Example (SV1000)
SV1200-5FU-T-C6



Series ***SV1000/2000/3000/4000***

Single Valve/Sub-plate Type IP67 Compliant

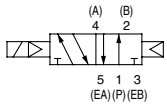
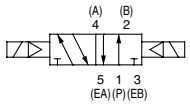
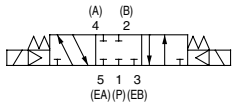
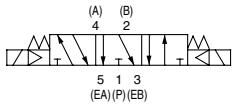
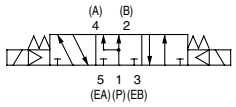
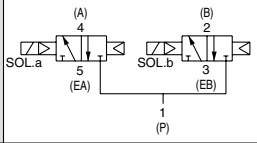
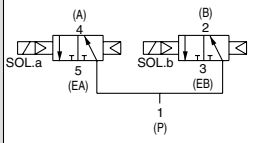
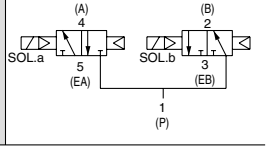
How to Order

SV 1 1 00 □ — 5 W1 U D — □ □

Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

Type of actuation

1	2 position single solenoid 
2	2 position double solenoid 
3	3 position closed center 
4	3 position exhaust center 
5	3 position pressure center 
A	4 position dual 3 port valve: N.C./N.C. 
B	4 position dual 3 port valve: N.O./N.O. 
C	4 position dual 3 port valve: N.C./N.O. 

SV3000 and 4000 are not available with dual 3 port valve.

Pilot type

Nil	Internal pilot
R	External pilot

* External pilot specifications is not available for 4 position dual 3 port valves.

Rated voltage

5	24 VDC
6	12 VDC

M12 waterproof connector

Symbol	Cable length (mm)
W1	300
W2	500
W3	1000
W4	2000
W7	5000

Light/Surge voltage suppressor

U	With light/surge voltage suppressor
R	With surge voltage suppressor

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type

Port size

Symbol	Port size	Applicable series
Nil	Without sub-plate	
01	1/8	SV1000
02	1/4	SV2000 SV3000
03	3/8	SV3000 SV4000
04	1/2	SV4000

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Series SV Solenoid Valve Specifications

Fluid		Air
Internal pilot operating pressure range (MPa)	2 position single 4 position dual 3 port valve	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
	2 position single, double 3 position	0.25 to 0.7
Ambient and fluid temperature (°C)		–10 to 50 (No freezing. Refer to page 1-7-4.)
Max. operating frequency (Hz)	2 position single, double 4 position dual 3 port valve	5
	3 position	3
Manual override		Non-locking push type
		Push-turn locking slotted type
Pilot exhaust method	Internal pilot	Common exhaust type for main and pilot valve
	External pilot	Pilot valve individual exhaust
Lubrication		Not required
Mounting orientation		Unrestricted
Impact/Vibration resistance (ms^2)		150/30 (8.3 to 2000 Hz)
Enclosure		IP67 (Based on IEC529)
Electrical entry		M12 waterproof connector
Coil rated voltage		24 VDC, 12 VDC
Allowable voltage fluctuation		±10% of rated voltage
Power consumption (W)		0.6 (With indicator light: 0.65)
Surge voltage suppressor		Zener diode
Indicator light		LED

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.
(Values at the initial period)
Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2000 Hz.
Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature.
(Values at the initial period)

Response Time

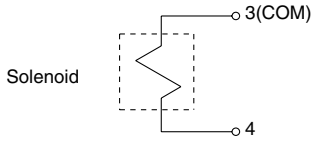
Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)			
	SV1000	**SV2000**	**SV3000**	**SV4000**
2 position single	11 or less	25 or less	28 or less	40 or less
2 position double	10 or less	17 or less	26 or less	40 or less
3 position	18 or less	29 or less	32 or less	82 or less
4 position dual 3 port valve	15 or less	33 or less	—	—

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

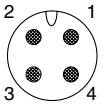
M12 Waterproof Connector Wiring Specifications

Single solenoid

4 pins connector (M12) plug



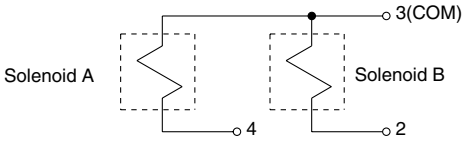
Circuit diagram



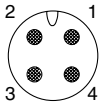
Solenoid valve side pin wiring diagram

Double solenoid

4 pins connector (M12) plug



Circuit diagram



Solenoid valve side pin wiring diagram

Note) Solenoid valves have no polarity.

Flow Characteristics/Weight

Series SV1000

Valve model	Type of actuation		Port size	Flow characteristics (1)						Weight (g) (2)
				1 → 4/2 (P → A/B)			4/2 → 5/3(A/B → EA/EB)			M12 waterproof connector (Cable length 300 mm)
				C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv	
SV1□00-□-01	2 position	Single	Rc 1/8	1.0	0.30	0.24	1.1	0.30	0.26	123 (88)
		Double								128 (93)
	3 position	Closed center		0.77	0.28	0.18	0.85	0.30	0.19	130 (95)
		Exhaust center		0.73	0.31	0.18	1.1 [0.55]	0.26 [0.52]	0.24 [0.16]	
		Pressure center		1.2 [0.51]	0.24 [0.45]	0.29 [0.14]	0.89	0.47	0.24	
	4 position dual	N.C./N.C.		0.68	0.35	0.18	1.1	0.39	0.29	128 (93)
		N.O./N.O.		0.87	0.31	0.23	0.77	0.44	0.21	

Note 1) [ ]: Denotes the normal position. Note 2) ( ): Denotes without sub-plate.

Series SV2000

Valve model	Type of actuation		Port size	Flow characteristics (1)						Weight (g) (2)
				1 → 4/2 (P → A/B)			4/2 → 5/3(A/B → EA/EB)			M12 waterproof connector (Cable length 300 mm)
				C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv	
SV2□00-□-02	2 position	Single	Rc 1/4	2.4	0.41	0.64	2.8	0.29	0.66	159 (96)
		Double								163 (100)
	3 position	Closed center		1.8	0.47	0.50	1.8	0.40	0.47	168 (105)
		Exhaust center		1.4	0.55	0.44	3.0 [1.2]	0.33 [0.48]	0.72 [0.37]	
		Pressure center		3.3 [0.84]	0.36 [0.60]	0.85 [0.28]	1.8	0.40	0.48	
	4 position dual	N.C./N.C.		2.2	0.40	0.55	2.6	0.31	0.60	163 (100)
		N.O./N.O.		2.7	0.24	0.57	2.3	0.36	0.54	

Note 1) [ ]: Denotes the normal position. Note 2) ( ): Denotes without sub-plate.

Series SV3000

Valve model	Type of actuation		Port size	Flow characteristics (1)						Weight (g) (2)
				1 → 4/2 (P → A/B)			4/2 → 5/3(A/B → EA/EB)			M12 waterproof connector (Cable length 300 mm)
				C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv	
SV3□00-□-02	2 position	Single	Rc 1/4	4.1	0.41	1.1	4.1	0.29	1.0	250 (121)
		Double								253 (124)
	3 position	Closed center		3.0	0.43	0.80	2.6	0.41	0.72	26 (132)
		Exhaust center		2.6	0.42	0.71	4.7 [1.7]	0.35 [0.48]	1.1 [0.49]	
		Pressure center		5.3 [2.3]	0.39 [0.49]	1.3 [0.65]	2.2	0.49	0.63	
SV3□00-□-03	2 position	Single	Rc 3/8	4.9	0.29	1.2	4.5	0.27	1.1	235
		Double								238
	3 position	Closed center		3.0	0.40	0.80	2.6	0.45	0.73	246
		Exhaust center		2.6	0.42	0.71	4.8 [1.7]	0.35 [0.48]	1.1 [0.34]	
		Pressure center		5.3 [2.3]	0.31 [0.51]	1.3 [0.64]	2.3	0.45	0.66	

Note 1) [ ]: Denotes the normal position. Note 2) ( ): Denotes without sub-plate.

Series SV4000

Valve model	Type of actuation		Port size	Flow characteristics (1)						Weight (g) (2)
				1 → 4/2 (P → A/B)			4/2 → 5/3(A/B → EA/EB)			M12 waterproof connector (Cable length 300 mm)
				C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv	
SV4□00-□-03	2 position	Single	Rc 3/8	7.9	0.34	2.0	9.6	0.43	2.5	505 (208)
		Double								509 (212)
	3 position	Closed center		7.5	0.33	1.8	7.3	0.30	1.7	530 (233)
		Exhaust center		7.2	0.34	1.7	13 [4.0]	0.23 [0.41]	2.8 [0.95]	
		Pressure center		12 [3.3]	0.26 [0.41]	2.8 [0.84]	6.7	0.40	1.9	
SV4□00-□-04	2 position	Single	Rc 1/2	8.0	0.48	2.2	10	0.29	2.5	484
		Double								488
	3 position	Closed center		7.6	0.32	1.8	7.3	0.32	1.8	509
		Exhaust center		7.3	0.42	2.0	13 [4.7]	0.32 [0.54]	3.6 [1.5]	
		Pressure center		12 [3.3]	0.33 [0.51]	3.3 [0.94]	7.4	0.33	1.9	

Note 1) [ ]: Denotes the normal position. Note 2) ( ): Denotes without sub-plate.