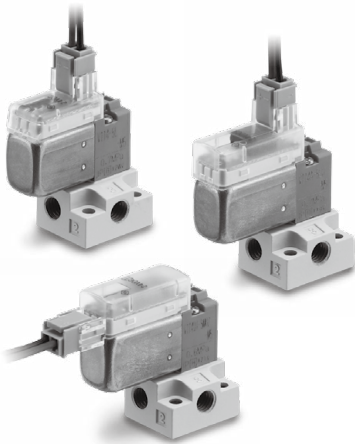
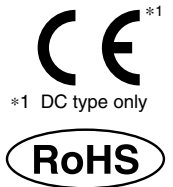


Direct Operated 3-Port Solenoid Valve

V100 Series

Rubber Seal



Specifications

Fluid	Air
Ambient and fluid temperatures [°C]	-10 to 50 (No freezing)
Response time (DC) [ms]*1	ON: 5 or less OFF: 4 or less
Max. operating frequency [Hz]	20*3
Manual override	Non-locking push, Locking slotted
Lubrication	Not required
Mounting position	Unrestricted
Impact/Vibration resistance [m/s ²]*2	150/30
Enclosure	Dustproof

*1 Based on the JIS B 8419: 2010 dynamic performance test (Standard type: Coil temperature 20°C, at rated voltage, without surge voltage suppressor)

*2 Impact resistance: No malfunction occurred when tested with a drop tester in the axial direction and at a right angle to the armature in both an energized and a de-energized state, once in each condition. (Value in the initial state)

Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz in the axial direction and at a right angle to the armature in both an energized and a de-energized state, once in each condition. (Value in the initial state)

*3 Please contact SMC for the large flow type (Type U).

Solenoid Specifications

Series		V114/V124	V114A/V124A	V114UT
Electrical entry		Grommet (G)/(H), L plug connector (L), M plug connector (M)		L plug connector (L), M plug connector (M)
Coil rated voltage [V]	DC	24, 12, 6, 5, 3		24
	AC 50/60 Hz	100, 110, 200, 220	—	—
Allowable voltage fluctuation		-10 to 10%*1		
Power consumption [W]	DC	Standard: 0.35 (With light: 0.4) With power-saving circuit: 0.1*2 [Inrush: 0.4, Holding: 0.1]	1 W (With light: 1.1)	With power-saving circuit: 0.35*2 [Inrush: 3.2, Holding: 0.35]
		AC	100 V	0.78 (With light: 0.81)
Apparent power [VA]	AC	110 V [115 V]	0.86 (With light: 0.89) [0.94 (With light: 0.97)]	—
		200 V	1.18 (With light: 1.22)	—
		220 V [230 V]	1.30 (With light: 1.34) [1.42 (With light: 1.46)]	—
		Surge voltage suppressor	Refer to page 12.	
Indicator light		LED		

* The 110 VAC and the 115 VAC are interchangeable. The 220 VAC and the 230 VAC are interchangeable as well.

*1 The allowable voltage fluctuation is -15% to +5% of the rated voltage for the 115 VAC or the 230 VAC.

*1 For the allowable voltage fluctuation for types S, Z, and T (with power-saving circuit), please observe the following ranges because they experience voltage drops due to the internal circuit.

Types S and Z 24 VDC: -7% to +10%

12 VDC: -4% to +10%

Type T 24 VDC: -8% to +10%

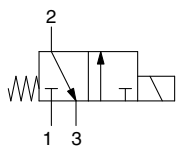
12 VDC: -6% to +10%

* Select the DC standard model or the model with power-saving circuit when the valve is to be continuously energized for long periods of time.

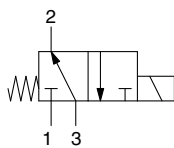
*2 Refer to page 12 for details.

Symbol

V114(A,UT)



V124(A)



Specifications

Valve model	Type of actuation	Type	Operating pressure range*4 [MPa]	Vacuum specification [MPa] ^{3,4}		Port size		Weight [g] ^{*2}	
				Port 1	Port 3	Port 1, 3	Port 2	Grommet	L plug connector M plug connector
V114	N.C.	Standard type	0 to 0.7	-100 kPa to 0.6	-100 kPa to 0	M5 x 0.8	M5 x 0.8	V1□4: 13 (27) V1□4A: 16 (30)	V1□4: 12 (26) V1□4A: 15 (29) V114UT: 15 (29)
V114A	N.C.	Large flow type (Type A)	0 to 0.7	-100 kPa to 0.6	-100 kPa to 0	M5 x 0.8	M5 x 0.8		
V114UT	N.C.	Large flow type (Type U)	0 to 0.6	-100 kPa to 0.5	-100 kPa to 0	M5 x 0.8	M5 x 0.8		
V124*1	N.O.	Standard type	0 to 0.7	-100 kPa to 0	-100 kPa to 0.6	M5 x 0.8	M5 x 0.8		
V124A*1	N.O.	Large flow type (Type A)	0 to 0.7	-100 kPa to 0	-100 kPa to 0.6	M5 x 0.8	M5 x 0.8		

Valve model	Flow rate characteristics					
	1 → 2 [3 → 2*3]			2 → 3 [2 → 1*3]		
	C [dm ³ /(s·bar)]	b	Cv	C [dm ³ /(s·bar)]	b	Cv
V114	0.037	0.11	0.008	0.054	0.35	0.015
V114A	0.076	0.07	0.016	0.099	0.23	0.024
V114UT	0.16	0.18	0.038	0.15	0.34	0.041
V124*1	0.054	0.35	0.015	0.037	0.11	0.008
V124A*1	0.099	0.23	0.024	0.076	0.07	0.016

*1 For both the V124 and the V124A, pressure from port 3 and exhaust from port 1.

*2 The values shown in () are for values with sub-plate.

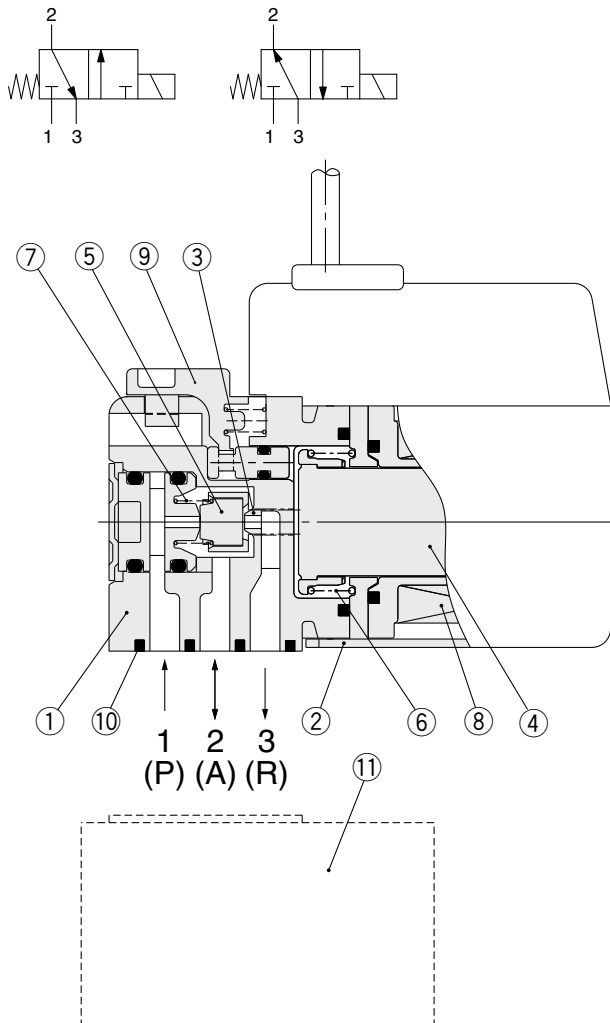
*3 For the V124(A)

*4 Please note that, if the difference between the inlet side and the outlet side is extremely low (0.001 MPa or less as a guide), air may not be output or the flow rate may deteriorate excessively due to the quality of the lubricant and air in the solenoid valve (mixing in of the drain, etc.).

Construction

V114(A, UT)

V124(A)



Component Parts

No.	Description	Material
1	Body	Resin
2	Cover	Stainless steel
3	Push rod	Resin
4	Armature assembly	Stainless steel, Resin
5	Poppet	FKM, HNBR
6	Return spring	Stainless steel
7	Poppet spring	Stainless steel
8	Coil assembly	—
9	Manual override	Resin

Replacement Parts

No.	Description	Part no.	Material	Note
10	Gasket assembly	V100-31-1A	FKM, Steel	Gasket, 2 screws
11	Sub-plate	V100-74-1	Aluminum die-cast	—

How to Order Connector Assembly

For DC: **SY100-30-4A** - []

For 100 VAC: **SY100-30-1A** - []

For 200 VAC: **SY100-30-2A** - []

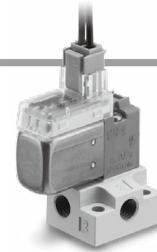
For other voltages of AC: **SY100-30-3A** - []

Without lead wire: **SY100-30-A**
(with connector and 2 sockets)

● Lead wire length

Nil	300 mm
6	600 mm
10	1000 mm
15	1500 mm
20	2000 mm
25	2500 mm
30	3000 mm
50	5000 mm

How to Order



Standard type

Base mounted

Sub-plate type,
For manifold type S41

V1 **1** 4 - **5** **M** -

Type of actuation

1	Normally closed
2	Normally open

Coil type

Nil	0.35 W
T	0.1 W (with power-saving circuit) (24 VDC, 12 VDC only)

* All the types with power-saving circuit are with light and surge voltage suppressor "Z."

Rated voltage

For DC		CE-compliant
5	24 VDC	●
6	12 VDC	●
V	6 VDC	●
S	5 VDC	●
R	3 VDC	●

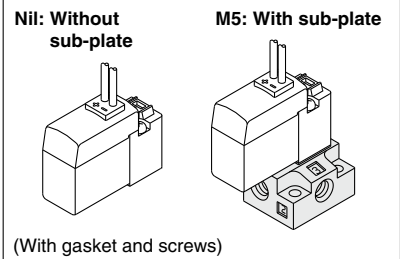
For AC (50/60 Hz)		CE-compliant
1	100 VAC	—
2	200 VAC	—
3	110 VAC [115 VAC]	—
4	220 VAC [230 VAC]	—

Electrical entry

24 V, 12 V, 6 V, 5 V, 3 VDC/100 V, 110 V, 200 V, 220 VAC			
Grommet	L plug connector	M plug connector	
G : 300 mm lead wire	L : With 300 mm lead wire	M : With 300 mm lead wire	MN : Without lead wire
H : 600 mm lead wire			
	LN : Without lead wire	LO : Without connector	MO : Without connector

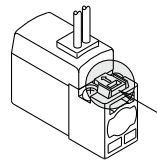
- * LN and MN types are with 2 sockets.
- * Refer to page 11 for the different lead wire lengths of L and M plug connectors.
- * Refer to page 13 for the connector assembly with a dustproof cover for L and M plug connectors.

Port size

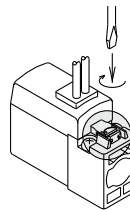


Manual override

Nil: Non-locking push



B: Locking slotted



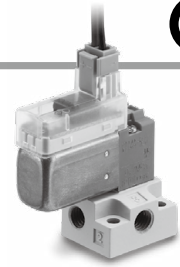
Light/surge voltage suppressor

Nil	Without light/surge voltage suppressor	For DC, AC
S	With surge voltage suppressor	For DC
Z	With light/surge voltage suppressor	For DC, AC
R	With surge voltage suppressor (Non-polar)	For DC
U	With light/surge voltage suppressor (Non-polar)	

* Only "Z" is available for the models with power-saving circuit.



How to Order



Large flow type (Type A)

Base mounted

Sub-plate type,
For manifold type S41

V1 **1** 4 A — **5** M — — —

Type of actuation

1	Normally closed
2	Normally open

Large flow type (Type A)

Rated voltage

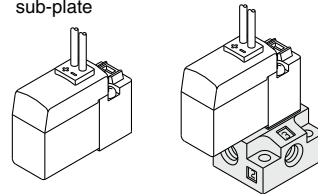
For DC		CE-compliant
5	24 VDC	●
6	12 VDC	●
V	6 VDC	●
S	5 VDC	●
R	3 VDC	●

Electrical entry

24 V, 12 V, 6 V, 5 V, 3 VDC			
Grommet	L plug connector	M plug connector	
G: 300 mm lead wire	L: With 300 mm lead wire	M: With 300 mm lead wire	MN: Without lead wire
H: 600 mm lead wire			
	LN: Without lead wire	LO: Without connector	MO: Without connector

Port size

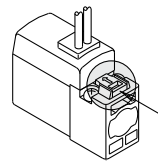
Nil: Without sub-plate M5: With sub-plate



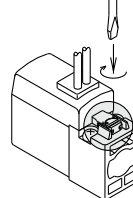
(With gasket and screws)

Manual override

Nil: Non-locking push



B: Locking slotted



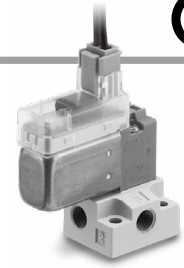
Light/surge voltage suppressor

Nil	Without light/surge voltage suppressor	For DC
R	With surge voltage suppressor	
U	With light/surge voltage suppressor	

* LN and MN types are with 2 sockets.

* Refer to page 11 for the different lead wire lengths of L and M plug connectors.

* Refer to page 13 for the connector assembly with a dustproof cover for L and M plug connectors.



Large flow type (Type U)

Base mounted

Sub-plate type,
For manifold type S41

V1 1 4 UT - 5 M Z [] - []

● **Type of actuation**

1 Normally closed

● **Large flow type (Type U)**

● **Coil type**

T 0.35 W (With power-saving circuit)

● **Rated voltage**

For DC		CE-compliant
5	24 VDC	●

● **Electrical entry**

24 VDC		
L plug connector	M plug connector	
L: With 300 mm lead wire	M: With 300 mm lead wire	MN: Without lead wire
LN: Without lead wire	LO: Without connector	MO: Without connector

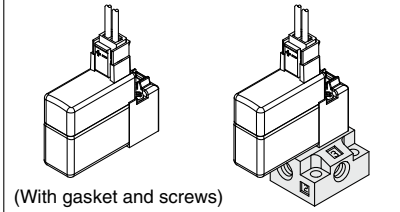
* LN and MN types are with 2 sockets.

* Refer to page 11 for the different lead wire lengths of L and M plug connectors.

* Refer to page 13 for the connector assembly with a dustproof cover for L and M plug connectors.

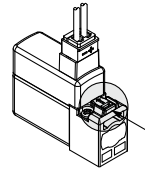
● **Port size**

Nil: Without sub-plate M5: With sub-plate

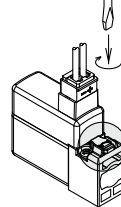


● **Manual override**

Nil: Non-locking push



B: Locking slotted



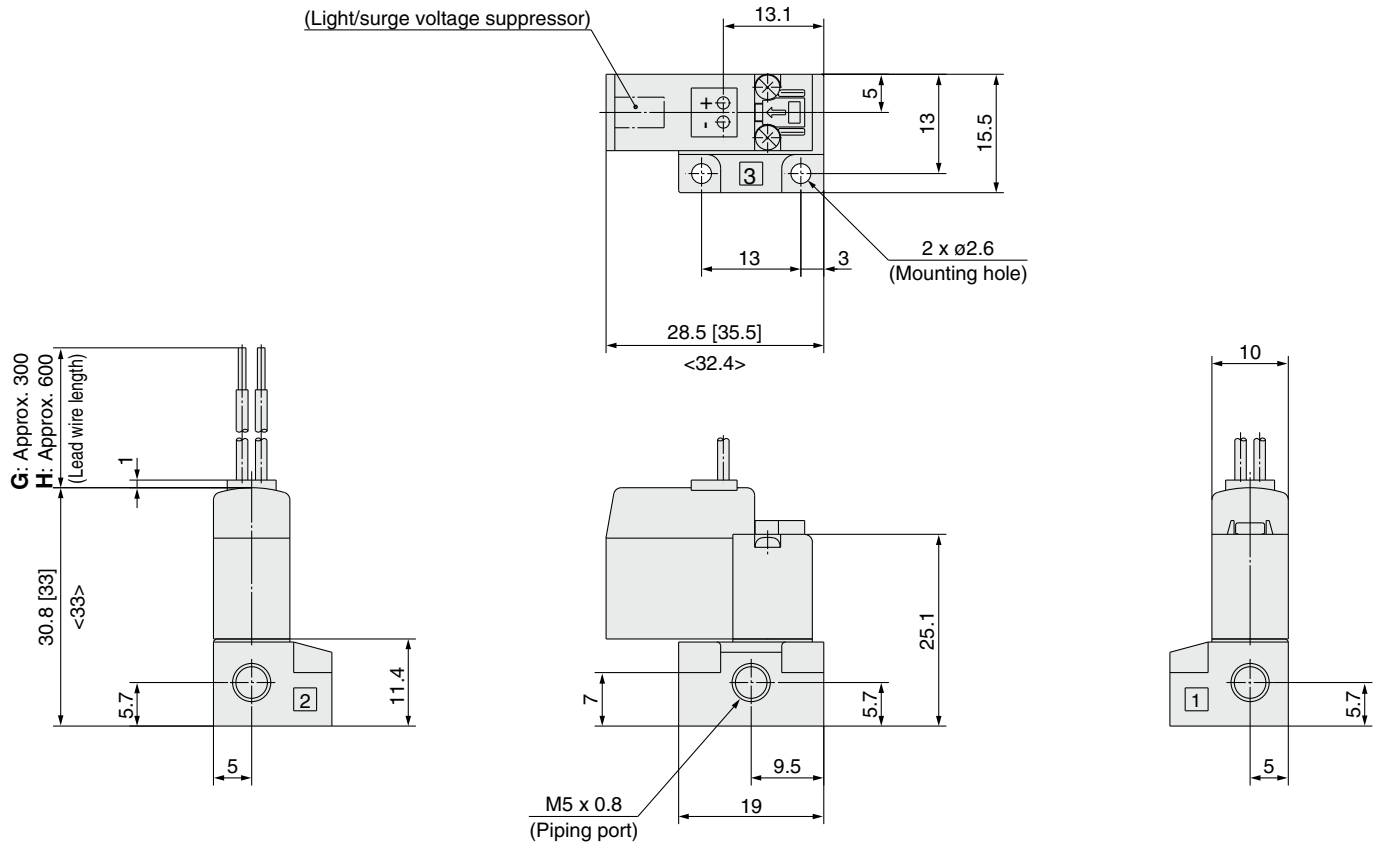
● **Light/surge voltage suppressor**

Z With light/surge voltage suppressor

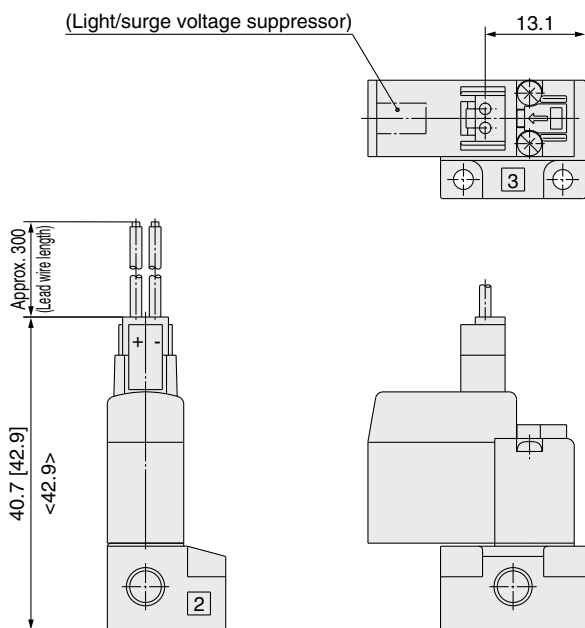
* []: AC
 < >: Values for the large flow type (Type A, UT)

Base Mounted (With sub-plate)

Grommet (G), (H): V1¹/₂4(A)-□^G/_H□□-M5

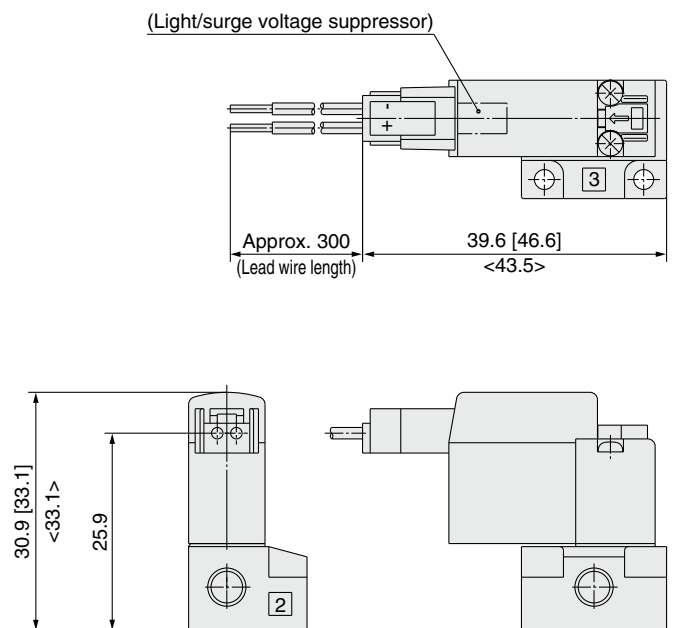


L plug connector (L): V1¹/₂4(A, UT)-□L□□-M5



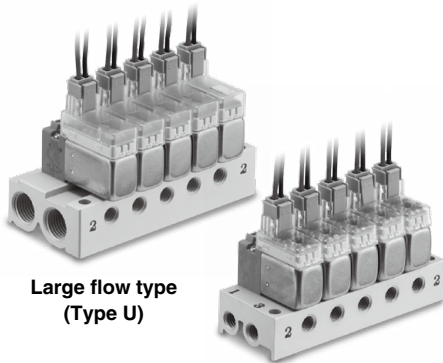
* Other dimensions are the same as those of the grommet type.

M plug connector (M): V1¹/₂4(A, UT)-□M□□-M5



* Other dimensions are the same as those of the grommet type.

3-Port Solenoid Valve/V100 Series Manifold Specifications



Large flow type
(Type U)

Standard type /
Large flow type
(Type A)

Manifold Specifications

Model		Type S41	
Manifold		Single base type/B mount	
P (SUP)/R (EXH) type		Common SUP/Common EXH	
Valve stations		2 to 20 stations	
Output port porting specifications	Location	Base	
	Direction	Side	
Port size	Type VV100-S41	Port 1, 2, 3	M5 x 0.8
	Type VV100U-S41	Port 1, 3	1/8
		Port 2	M5 x 0.8

- * The V114(A) and the V124(A) cannot be mounted to the same manifold.
- * For the V124(A), pressure from port 3 and exhaust from port 1.

Flow Rate Characteristics*1

Manifold		Port size	Flow rate characteristics					
			1 → 2 [3 → 2*1]			2 → 3 [2 → 1*1]		
		Port 1, 2, 3	C [dm ³ /(s·bar)]	b	Cv	C [dm ³ /(s·bar)]	b	Cv
Type VV100-S41	V114	M5 x 0.8	0.032	0.13	0.007	0.050	0.26	0.012
	V114A		0.070	0.10	0.016	0.085	0.16	0.020
	V124		0.050	0.26	0.012	0.032	0.13	0.007
	V124A		0.085	0.16	0.020	0.070	0.10	0.016
Type VV100U-S41	V114UT	1, 3: 1/8 2: M5 x 0.8	0.14	0.12	0.034	0.15	0.26	0.036

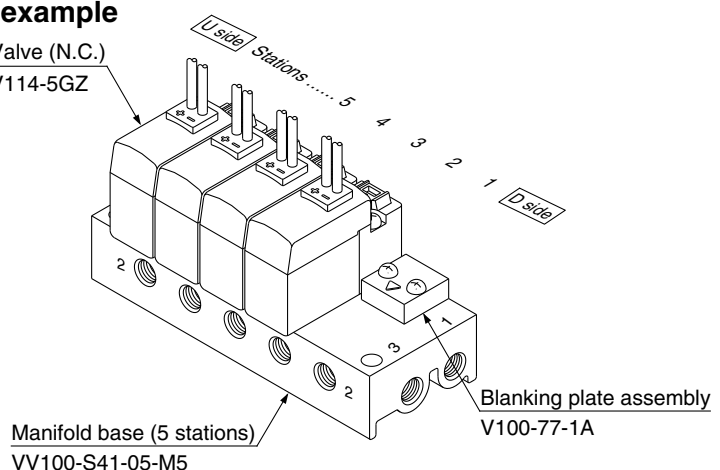
* Values when mounted on the manifold base (5 stations)

*1 For the V124(A)

How to Order Valve Manifold Assembly (Example)

Ordering example

Valve (N.C.)
V114-5GZ



VV100-S41-05-M5 1 set (Type S41, 5 station manifold base part no.)

*V100-77-1A 1 set (Blanking plate assembly part no.)

*V114-5GZ 4 sets (Valve)

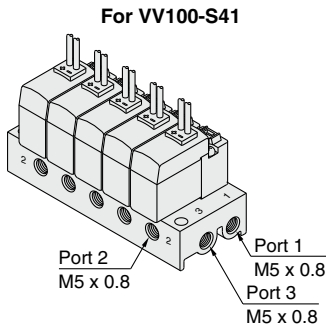
↳ The asterisk denotes the symbol for the assembly.
Prefix it to the part nos. of the solenoid valve, etc.

Beneath the manifold base part number, enter the valve and option part numbers to be mounted.



Common SUP/Common EXH

Type S41



How to Order

Standard type / Large flow type (Type A)

VV100 – S41 – 05 – M5

Stations	
02	2 stations
⋮	⋮
20	20 stations

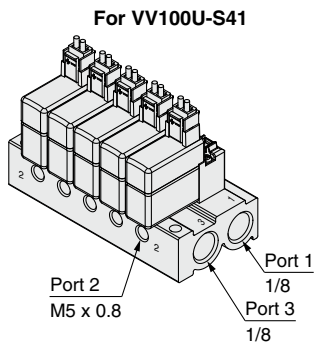
Port 2 size	
M5	M5 x 0.8

Applicable solenoid valve*1

V114-□□□□
V114A-□□□□
V124-□□□□
V124A-□□□□

Applicable blanking plate assembly
V100-77-1A

- *1 The V114(A) and the V124(A) cannot be mounted to the same manifold.
- * For 2 to 9 stations, the port 1 [for the V114(A)] or port 3 [for the V124(A)] entry is only available on the U side (a plug is mounted on the D side). For 10 to 20 stations, it is available on both sides (with no plug mounted).



Large flow type (Type U)

VV100U – S41 – 05 D – 01 □

Stations	
02	2 stations
⋮	⋮
20	20 stations

Port 1 entry	
U	U side*2
D	D side*2
B	Both sides

Port 1/3 size	
Nll	Rc1/8
F	G1/8
N	NPT1/8

Applicable solenoid valve

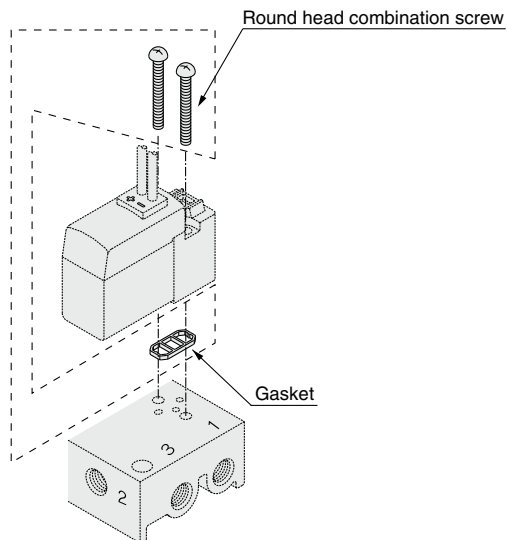
V114UT-5□Z

Applicable blanking plate assembly
V100-77-1A

- *2 Plugs are mounted on the opposite side of the selected ports.

Gasket Assembly

Part No.: V100-31-1A

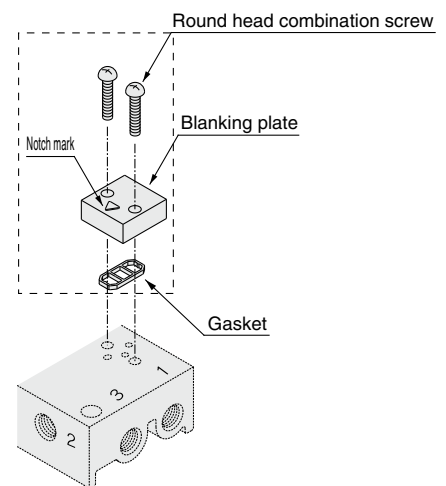


Applicable base
· Sub-plate
· Type VV100(U)-S41 manifold base

Blanking Plate Assembly

Part No.: V100-77-1A

Have the notch mark on the blanking plate face the port 2 side when assembling.



Applicable base
· Sub-plate
· Type VV100(U)-S41 manifold base

Caution

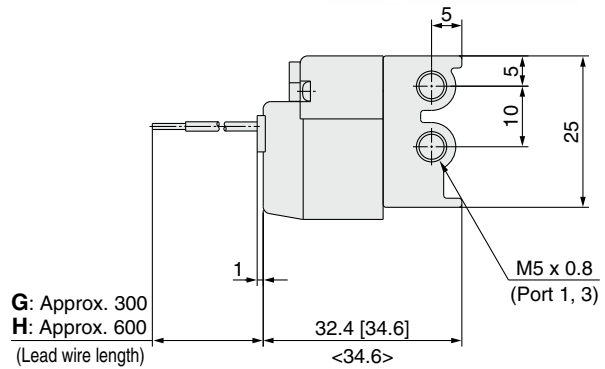
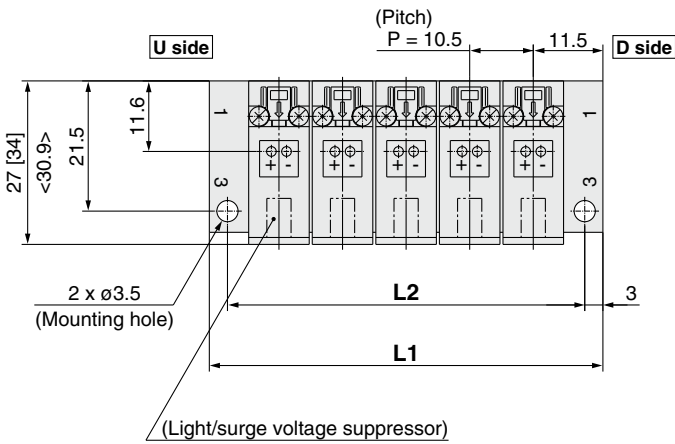
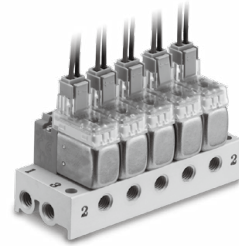
Mounting screw tightening torque **M2: 0.12 N·m**

V100 Series

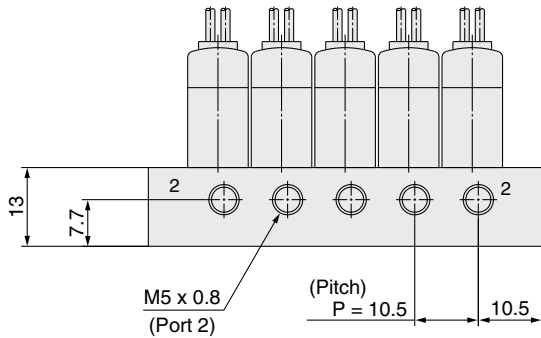
Type S41 Manifold: Side Ported/VV100-S41-Stations-M5

Grommet (G), (H)

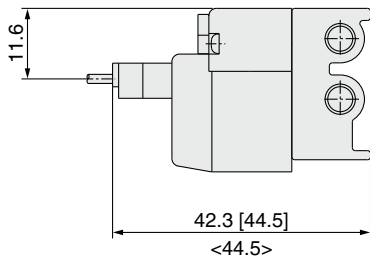
* []: AC
 < >: Values for the large flow type (Type A)



(n station) ----- (1 station)

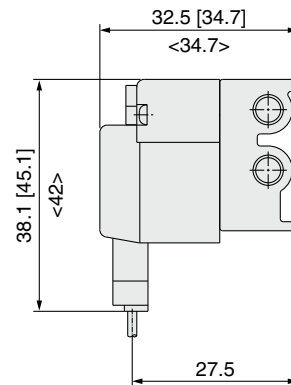


L plug connector (L)



* Other dimensions are the same as those of the grommet type.

M plug connector (M)

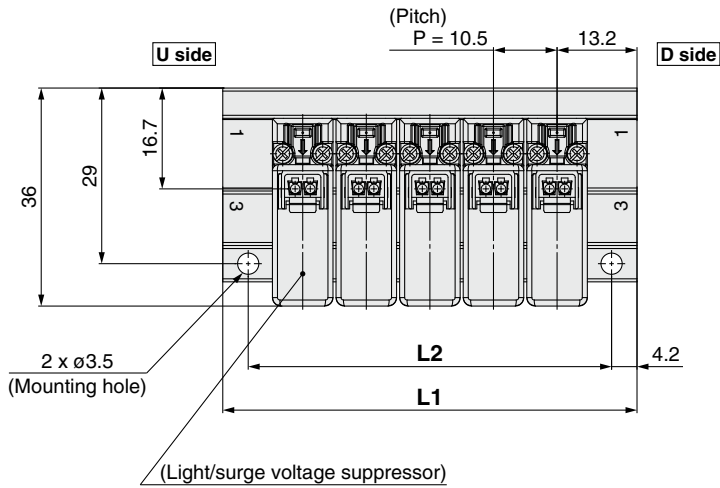
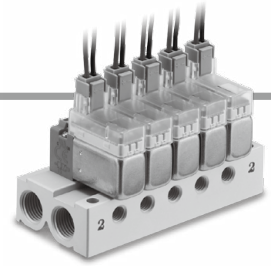


* Other dimensions are the same as those of the grommet type.

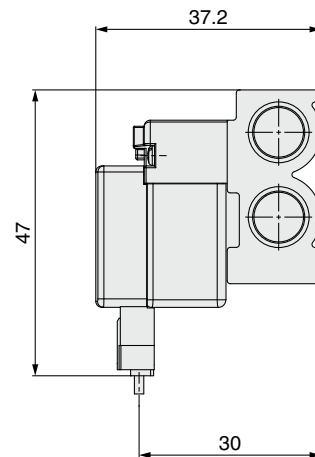
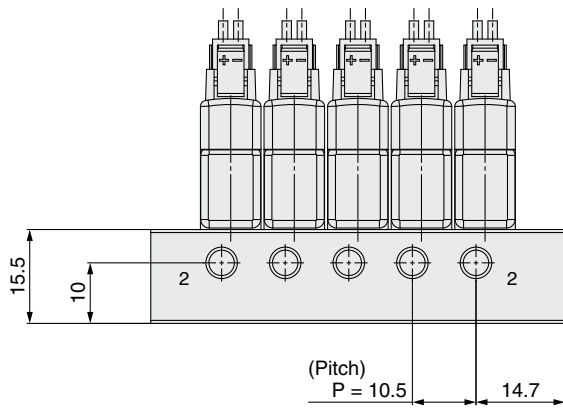
Station	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	33.5	44	54.5	65	75.5	86	96.5	107	117.5	128	138.5	149	159.5	170	180.5	191	201.5	212	222.5
L2	27.5	38	48.5	59	69.5	80	90.5	101	111.5	122	132.5	143	153.5	164	174.5	185	195.5	206	216.5

Type S41 Manifold: Side Ported/VV100U-S41- Stations -01 □

L plug connector (L)



M plug connector (M)



* Other dimensions are the same as those of the L plug connector type.

Station	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	36.9	47.4	57.9	68.4	78.9	89.4	99.9	110.4	120.9	131.4	141.9	152.4	162.9	173.4	183.9	194.4	204.9	215.4	225.9
L2	28.5	39	49.5	60	70.5	81	91.5	102	112.5	123	133.5	144	154.5	165	175.5	186	196.5	207	217.5