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3 Port Direct Operated Poppet Solenoid Valve
Rubber Seal
VK300 Series

Universal porting
Available for N.C. valve, N.O. valve, divider valve, selector valve, etc.

N*l*/min: 196

Compact/Width 18 X Length 63 (mm)

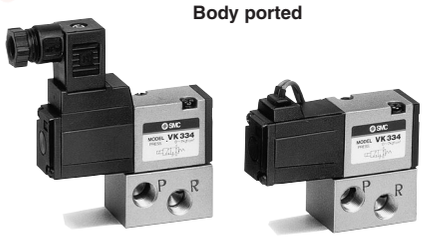
Low consumption
4 W DC (Standard)
2 W DC (Low wattage style)

Applicable for vacuum use -101.2 kPa

Copper-free specifications standard
The portions that come in contact with fluids do not contain copper, thus enabling the standard product to be used as is.



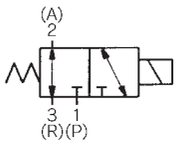
Body ported



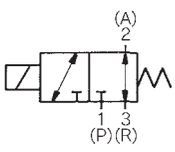
Base mounted

JIS symbol

Body ported



Base mounted



Regarding mixed installations

Series VK300 can be mounted on manifold base (VV5K3) of series VK3000.
Refer to p.1.4-4 for detailed information.

Model

Valve Model		Operating pressure range (MPa)	Port size	Effective area* (N*l*/min)	Weight (g)
Body ported	**VK332**	0 to 0.7	M5	3.6 (196)	80
	VK332Y (Low wattage, DC 2W)			2.7 (147)	
	VK332E (Long loading time)			2.7 (147)	
	VK332V (Vacuum)	–101.2 kPa to 0.1		3.6 (196)	
	VK332W (Low wattage, vacuum)			2.7 (147)	
Base mounted (With sub-plate)	**VK334**	0 to 0.7	1/8	4.2 (225)	120
	VK334Y (Low wattage, DC 2W)			2.7 (147)	
	VK334E (Long loading time)			2.7 (147)	
	VK334V (Vacuum)	–101.2 kPa to 0.1		4.2 (225)	
	VK334W (Low wattage, vacuum)			2.7 (147)	

* Value at single style. In case of manifold, it depends on operating conditions.

Specifications

Actuation	Direct operated style 3 port single solenoid
Fluid	Air
Ambient and fluid temperature	-5 to 50 °C (No freezing)
Response time (0.5 MPa) (1)	10 ms or less (standard), 15ms or less (low wattage)
Manual override	Non-locking push style
Lubrication	Non-lube (Use turbine oil # 1 ISO VG32, if lubrication is required)
Mounting position	Free
Impact/vibration resistance (2)	300/50m/s^2
Protection structure	Dust proof

Note 1) According to dynamic performance test of JIS B8374- 1981. (Coil temperature 20 °C, rated voltage, without surge voltage suppressor)
Note 2) Impact resistance: No malfunction from test using drop impact tester, to axis and right angle directions of main valve and armature, each one time when energized and de-energized. (Value in the initial stage.)
Vibration resistance: No malfunction from test with 8.3 to 2000 Hz 1 sweep, to axis and right angle directions of main valve and armature, each one time when energized and de-energised. (Value in the initial stage.)

Solenoid specifications

Electrical entry			DIN terminal (D)
Rated voltage		AC	100 V, 110 V, 200 V, 220 V, 240 V
		DC	6 V, 12 V, 24 V, 48 V
Allowable voltage			±10 % of rated voltage
Apparent power (AC)*	Standard	Inrush	9.5 VA/50 Hz, 8 VA/60 Hz
		Holding	7 VA/50 Hz, 5 VA/60 Hz
	Long loading time	Inrush	3.5 VA/50 Hz, 3.3 VA/60 Hz
		Holding	3 VA/50 Hz, 2.8 VA/60 Hz
Power consumption (DC)*		Without light	4 W (Standard), 2 W (Low wattage)
		With light	4.3 W (Standard), 2.3 W (Low wattage)
Surge voltage suppressor		AC	Varistor
		DC	Diode (12 VDC or less: varistor)
Indicator light		AC	Neon lamp
		DC	LED

* At rated voltage

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VK300

How to Order

Rated voltage

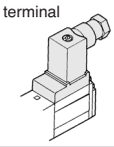
	Rated voltage \ Valve option	—	V	Y	W	E
1	100 VAC, 50/60 Hz	●	●	–	–	●
2	200 VAC, 50/60 Hz	●	●	–	–	●
3	110 VAC, 50/60 Hz	●	●	–	–	●
4	220 VAC, 50/60 Hz	●	●	–	–	●
5	24 VDC	●	●	●	●	●
6	12 VDC	●	●	●	●	●
7	240 VAC, 50/60 Hz	●	●	–	–	●

Note 1) Applicable only for DIN terminal type.
Note 2) For other rated voltages, please consult with SMC.



Electrical Entry

D: DIN terminal



DO: DIN terminal * (Without connector)



* Refer to the p.2.3-10 for connector part No.

Option Part No.

Description	Part No.	Note
Bracket	VK300-43-2A	With screw
Manifold gasket	VK300-41-1A	With screw for body ported
	VK300-41-2A	With screw for base mounted

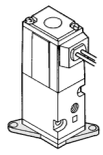
Port size (A port)

M5	M5
01	1/8

* P, R port: M5

Option

–	None
F	With bracket (Not mounted)



Body Ported	VK332	□	1	D	□	M5	□	□	Q	
Base Mounted	VK334	□	1	D	□	01	□		Q	



Thread

–	Rc (PT)
F	G (PF)
N	NPT
T	NPTF

Port size

–	Without sub-plate
01	1/8 (With sub-plate)

Valve option

–	Standard
V	Vacuum
Y	Low wattage
W	Vacuum/low wattage
E	Long loading time

Indicator light and surge voltage suppressor

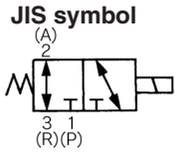
–	None
S	With surge voltage suppressor
Z	With indicator light and surge voltage suppressor (Only D type)

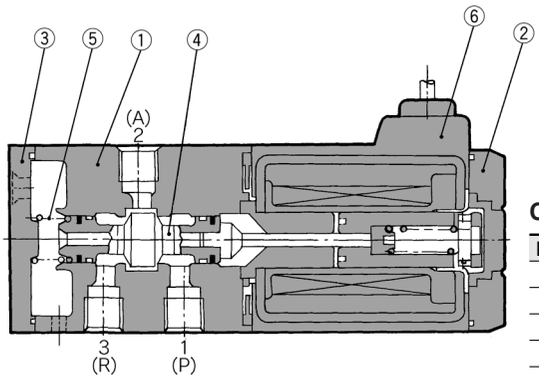
⚠ Protective class
class I (Mark:⏚)..... DIN terminal type

Note) Since the indicator light is bulit in connector, thus, "DOZ" is not available.
* The continuous duty AC type is equipped with a rectifier,

Construction

JIS symbol



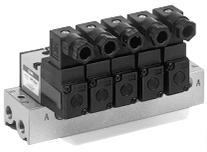


Component Parts

No.	Description	Material	Note
①	Body	Die cast aluminium	Platinum silver
②	Cover	Resin	Black
③	End cover	Resin	Black
④	Spool valve ass'y	Aluminium/NBR	
⑤	Return spring	Stainless steel	
⑥	Mold coil	Resin	Black

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VK300 Series
Manifold


VV3K3-S42-05-01


VV3K3-20-04

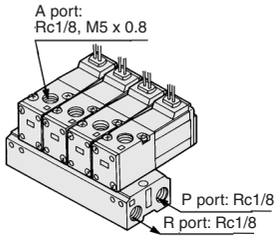
Specifications

Stations		1 to 20 stations
Piping system	Common SUP/Common EXH	Body ported, Base mounted
	Common SUP/Individual EXH	Body ported

Note) For 9 stations or more, supply air both sides of P port.
The common exhaust type should exhaust from both of the R port.

Common SUP/Common EXH

20 Type/Body Ported
(A port top ported)



How to Order

VV3K3 − 20 − 05 − □ − □ − Q

Stations

01	1 station
⋮	⋮
20	20 stations

Option

—	None
F	With bracket (Not mounted)

Thread(P, R port)

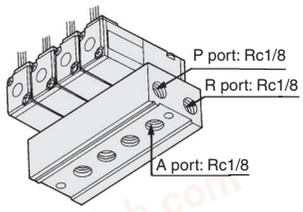
—	Rc (PT)
00F	G (PF)
00N	NPT
00T	NPTF

Applicable solenoid valve
VK332□-□□□-M5-Q
VK332□-□□□-01-Q

Applicable blank plate ass'y
VK300-42-1A

Bracket
VK300-43-1A

40 Type/Base Mounted
(A port bottom ported)



How to Order

VV3K3 − 40 − 05 − 01 − □ − □ − Q

Stations

01	1 station
⋮	⋮
20	20 stations

Port size

01	Rc1/8

Thread(P, R port)

—	Rc (PT)
F	G (PF)
N	NPT
T	NPTF

Option

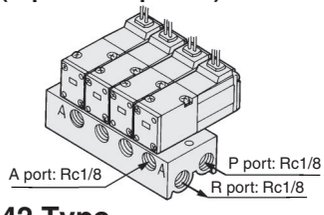
—	None
F	With bracket (Not mounted)

Applicable solenoid valve
VK334□-□□□-Q

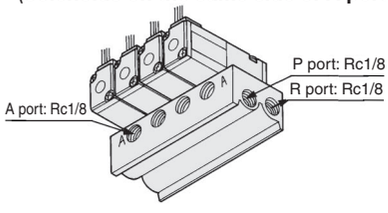
Applicable blank plate ass'y
VK300-42-1A

Bracket
VK300-43-1A

42 Type/Base Mounted
(A port side ported)



S42 Type
(Solenoids on the same side of A ports)



How to Order

VV3K3 − □ − 42 − 05 − 01 − □ − Q

Direction of solenoid

—	Opposite side of A port
S	Same side of A port

Stations

01	1 station
⋮	⋮
20	20 stations

Port size

01	1/8
C4	Ø 4 cassette
C6	Ø 6 cassette

Thread(P, R port)

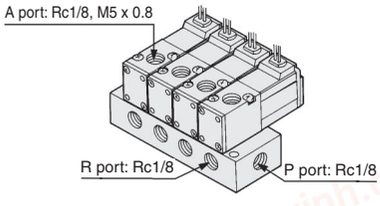
—	Rc (PT)
F	G (PF)
N	NPT
T	NPTF

Applicable solenoid valve
VK334□-□□□-Q

Applicable blank plate ass'y
VK300-42-1A

Common SUP/Individual EXH

21 Type/Body Ported
(A port top ported)



How to Order

VV3K3 − 21 − 05 − □ − Q

Stations

01	1 station
⋮	⋮
20	20 stations

Thread(P, R port)

—	Rc (PT)
00F	G (PF)
00N	NPT
00T	NPTF

Applicable solenoid valve
VK332□-□□□-M5-Q
VK332□-□□□-01-Q

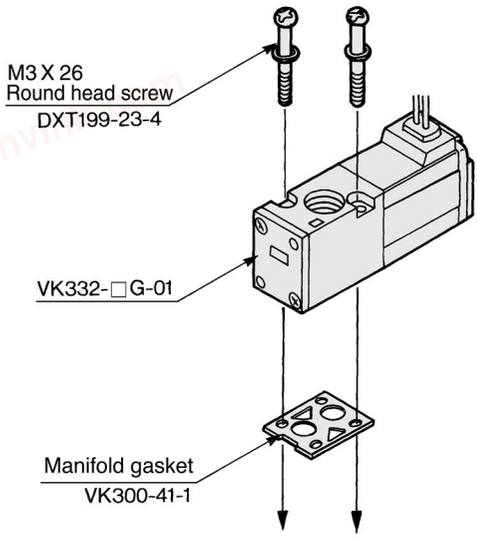
Applicable blank plate ass'y
VK300-42-1A

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VK300

Combinations of Solenoid Valve, Manifold Gasket and Manifold Base

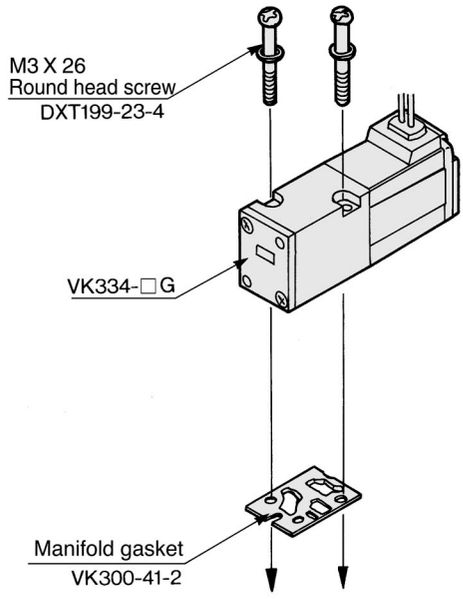
3 Port body ported: VK332



Applicable base

VV3K3-20
21
VV5K3-20
21
} Manifold base

3 Port base mounted: VK334



Applicable base

VK300-45-1 Sub-plate
VV3K3-40
(S) 42
VV5K3-40
(S) 41
(S) 42
} Manifold base

	Body ported	Base mounted
Manifold gasket and screw assembly	VK300-41-1A	VK300-41-2A

Note 1) Mounting direction is fixed, so do not mount on opposite side.
Note 2) Series VK300 can be mounted on manifold base (VV5K3) of series VK3000.

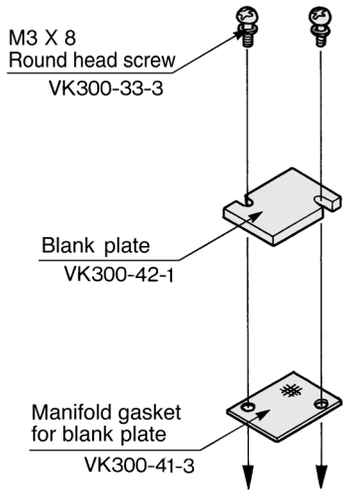
⚠ Caution

Mounting Screw Tightening Torques

M3: 0.6 N·m

Combinations of Blank Plate Ass'y and Manifold Base

Blanking plate assembly: VK300-42-1A



Applicable base: VV3K3 type

⚠ Caution

Mounting Screw Tightening Torques

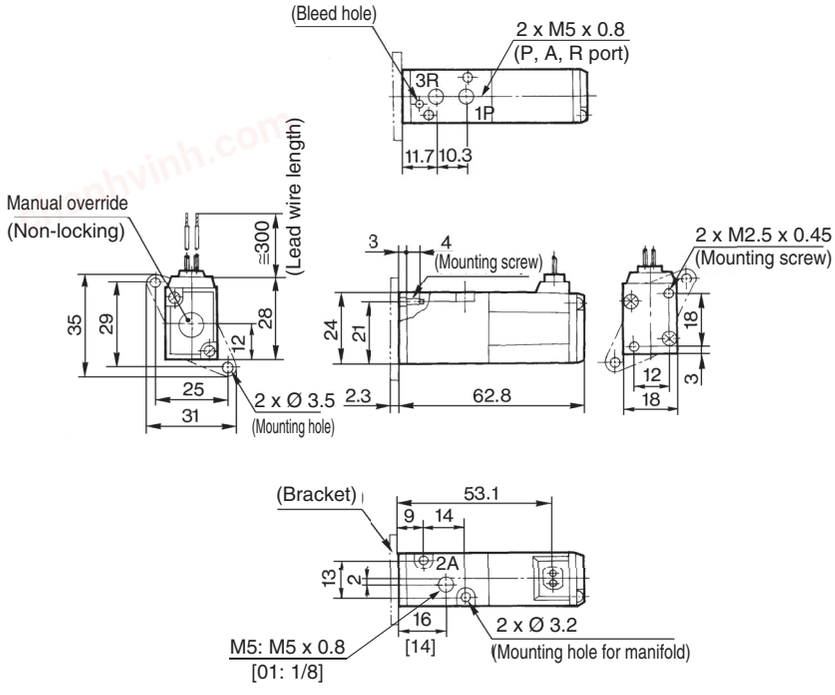
M3: 0.6 N·m

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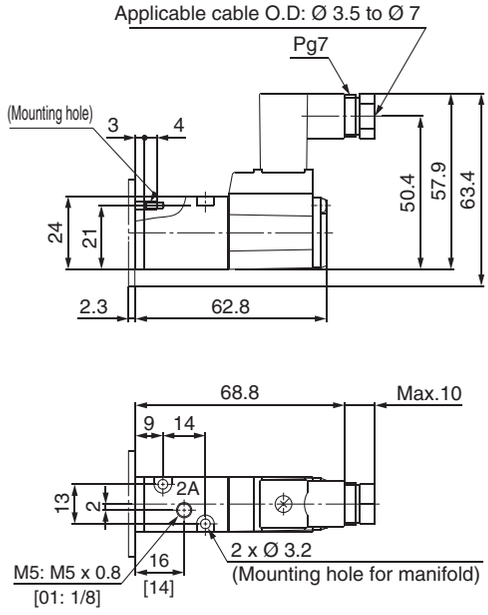
Dimensions: Body Ported

Grommet: VK332-□G-$^{M5}_{01}$

Note: This valve series is now only available with DIN connector.



DIN terminal: VK332-□D-$^{M5}_{01}$-Q

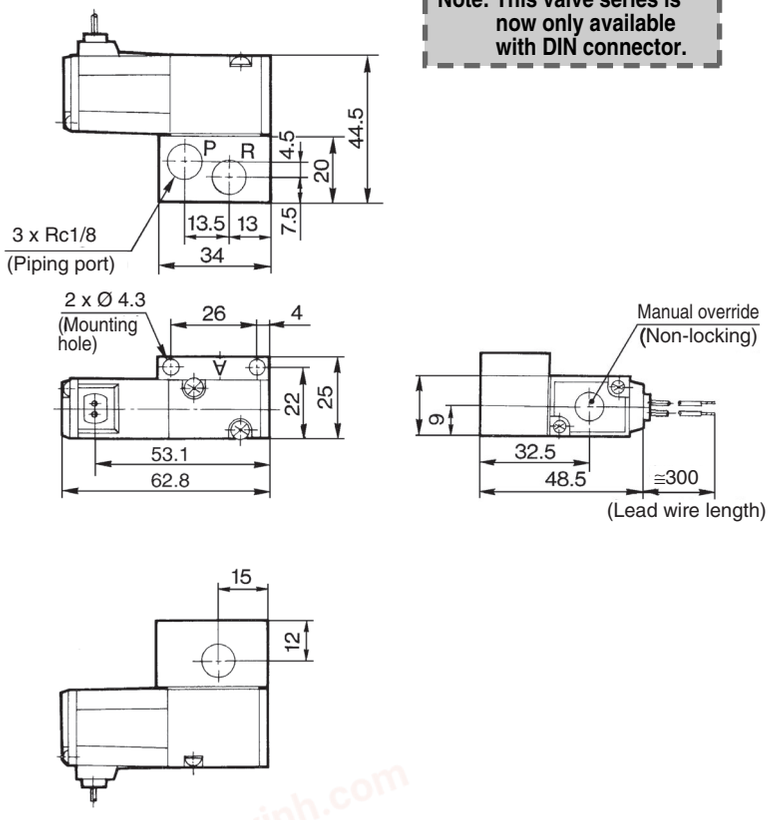


Refer to grommet type for other dimensions.
[ ]: For port size 01

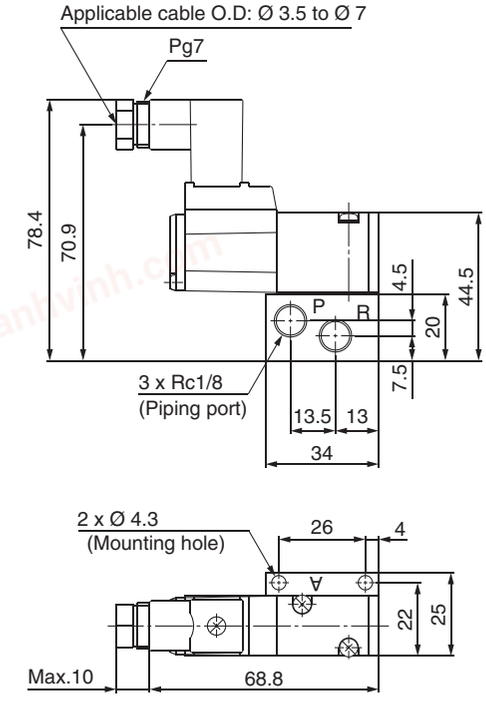
Dimensions: Base Mounted

Grommet: VK334-□G-01

Note: This valve series is now only available with DIN connector.



DIN terminal: VK334-□D-01-Q



Refer to grommet type for other dimensions.

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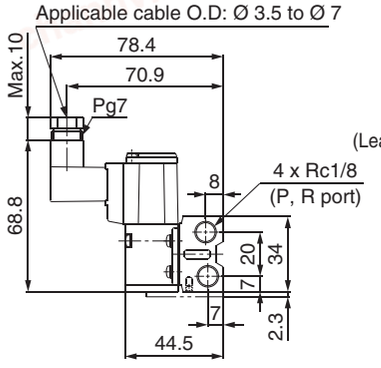
VK300

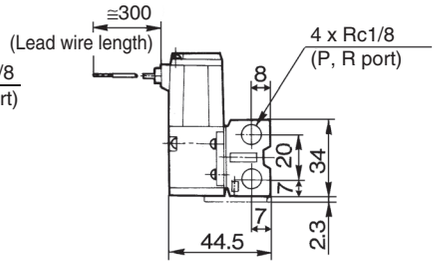
Type 20 Manifold/Body Ported (Top ported)

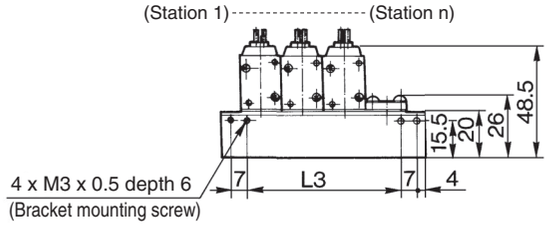
VV3K3-20- Stations -Q

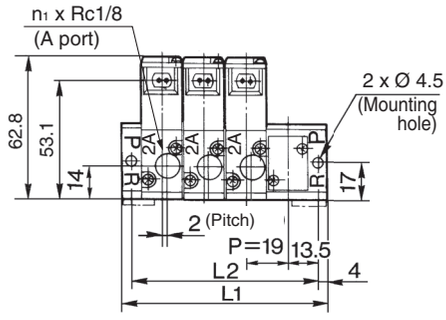
n1 = Number of VK300

DIN terminal: D **Grommet: G**

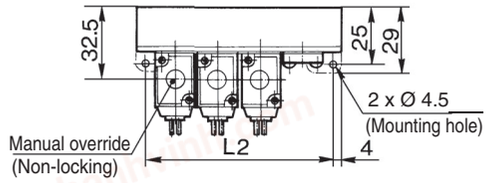








Note: This valve series is now only available with DIN connector.



L Dimension

n: Stations

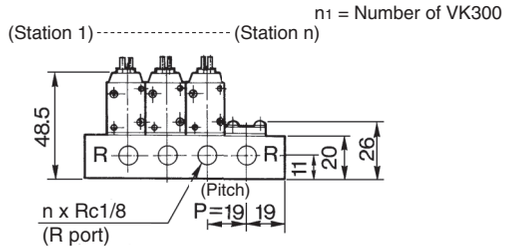
L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	35	54	73	92	111	130	149	168	187	206	225	244	263	282	301	320	339	358	377	396
L2	27	46	65	84	103	122	141	160	179	198	217	236	255	274	293	312	331	350	369	388
L3	13	32	51	70	89	108	127	146	165	184	203	222	241	260	279	298	317	336	355	374

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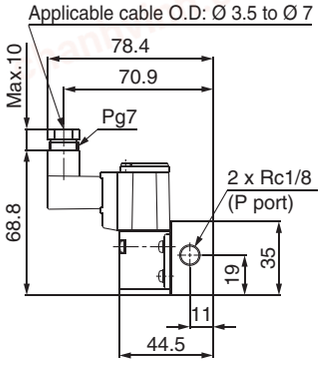
Type 21 Manifold/Body Ported (Top ported)

VV3K3-21- Stations -Q

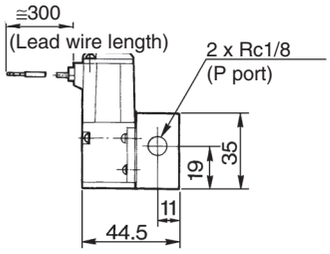
n1 = Number of VK300

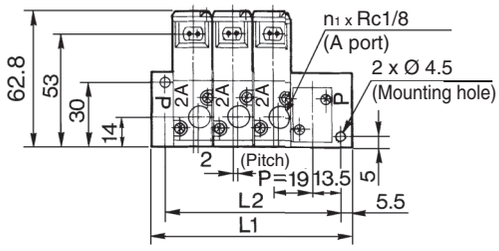


DIN terminal: D

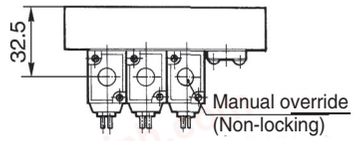


Grommet: G





Note: This valve series is now only available with DIN connector.



L Dimension

n: Stations

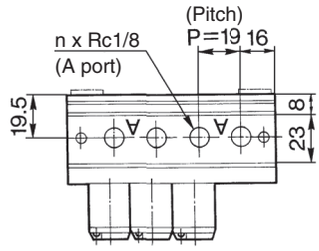
L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L_1	38	57	76	95	114	133	152	171	190	209	228	247	266	285	304	323	342	361	380	399
L_2	27	46	65	84	103	122	141	160	179	198	217	236	255	274	293	312	331	350	369	388

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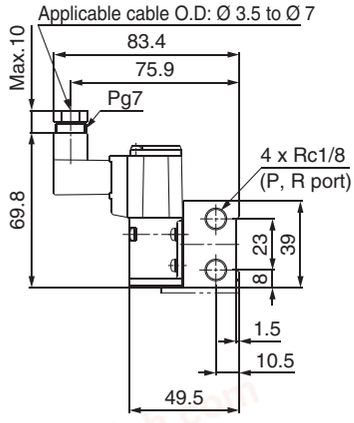
VK300

Type 40 Manifold/Base Mounted (Bottom ported)

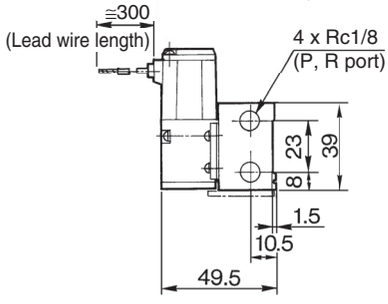
VV3K3-40- Stations -01-Q

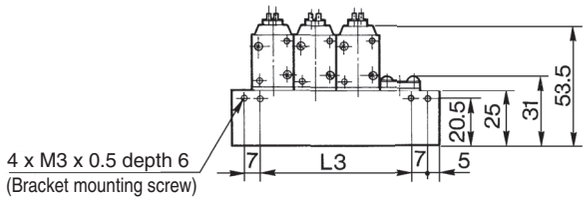


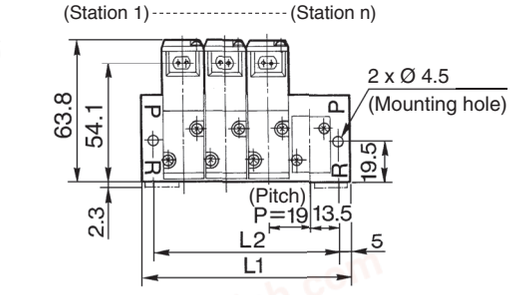
DIN terminal: D

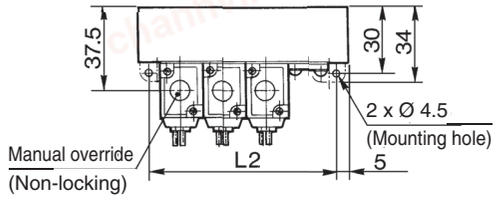


Grommet: G









Note: This valve series is now only available with DIN connector.

L Dimension

n: Stations

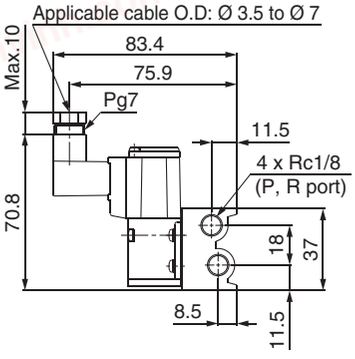
L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	37	56	75	94	113	132	151	170	189	208	227	246	265	284	303	322	341	360	379	398
L2	27	46	65	84	103	122	141	160	179	198	217	236	255	274	293	312	331	350	369	388
L3	13	32	51	70	89	108	127	146	165	184	203	222	241	260	279	298	317	336	355	374

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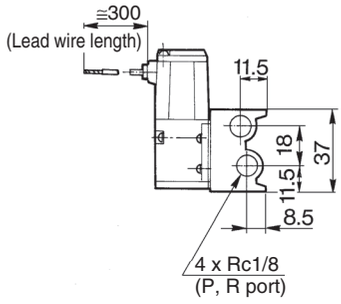
Type 42 Manifold/Base Mounted (Side ported)

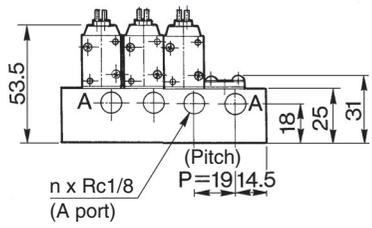
VV3K3-42-Stations-01-Q

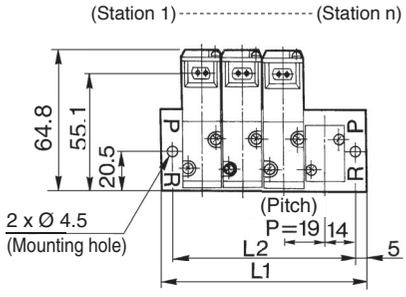
DIN terminal: D



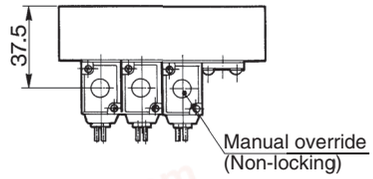
Grommet: G





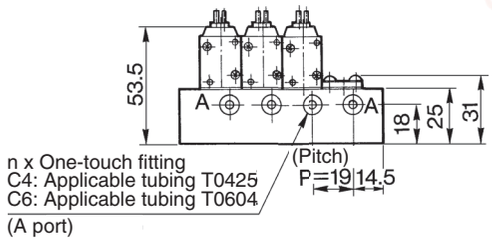


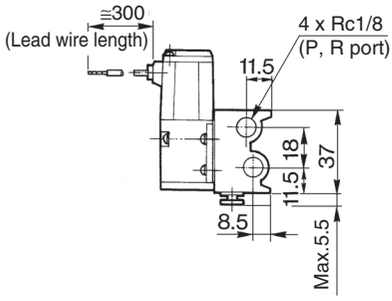
Note: This valve series is now only available with DIN connector.

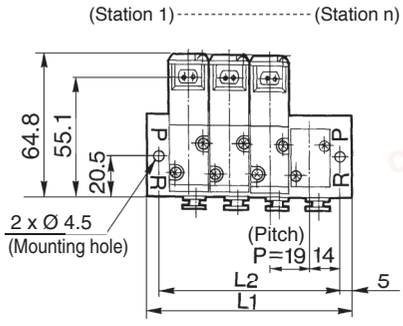


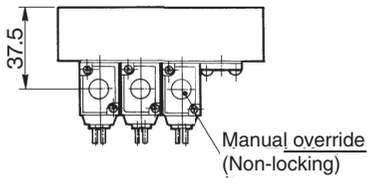
Built-in One-touch fitting: VV3K3-42-Stations-C4, C6-Q

Note: This valve series is now only available with DIN connector.



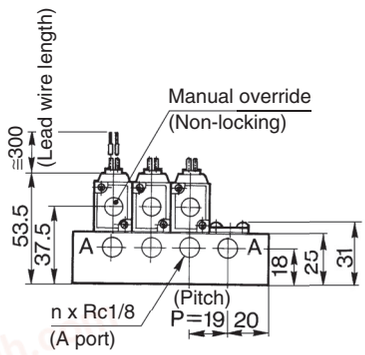


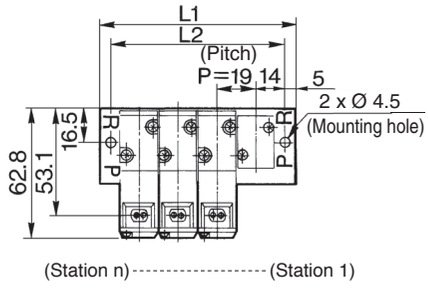




Refer to the above drawing for DIN terminal dimensions.

Solenoid at A port side: VV3K3-S42-Stations-□-Q





Refer to the above drawing for other dimensions.

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	38	57	76	95	114	133	152	171	190	209	228	247	266	285	304	323	342	361	380	399
L2	28	47	66	85	104	123	142	161	180	199	218	237	256	275	294	313	332	351	370	389

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VK300

⚠ Precautions

Be sure to read before handling. Refer to p.0-33 to 0-36 for Safety Instructions and common precautions.

⚠ Caution

How to Use DIN Connector

Cut off the power and air supply before mounting/demounting the connector. Firmly execute lead wire and socket press-contacting and connector mounting.

① Loosen set screw and pull out connector from the terminal block of solenoid.
② Remove screw and insert screwdriver into the slit area near the bottom of terminal block to separate block and housing.
③ Loosen terminal screw of terminal block, place bare end of lead wire into terminal in accordance with wiring methods, and affix it securely with the terminal screw.
④ Tighten ground nut to secure the wire.

⚠ Caution

Use the cabtire cable (Ø 3.5 to Ø 7) for wiring to meet IP65 standards (protective construction). Tighten the ground nut and set screw with the specified range of torque.

•Change of electrical entry. (Orientation)

After separating terminal block and housing, mount housing at any position (total 4 directions, 90° degrees), therefore, changing electrical entry.

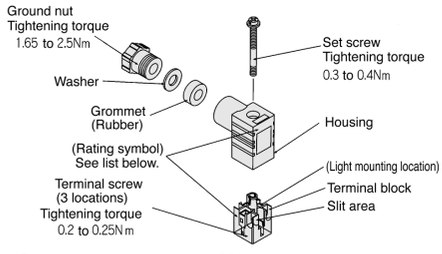
* In the case of indicator light, avoid damaging the light with the lead wire.
(In the case of a manifold, change in the direction of electrical entry is limited depending on the mounting position.)

•Precautions

Plug connector in or out vertically, never at an angle.

•Applicable cable

Cable O. D.: Ø 3.5 to Ø 7
(Reference) 0.5mm² 2 core and 3 core wires equivalent to JISC3306.

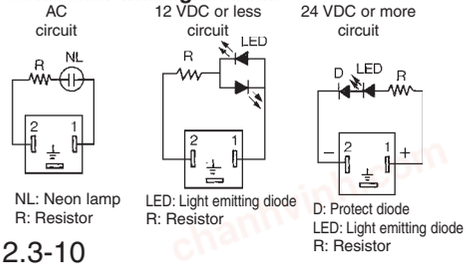


•Connector part no.: K31

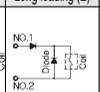
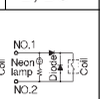
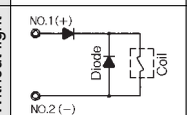
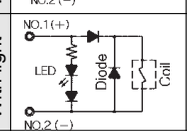
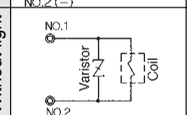
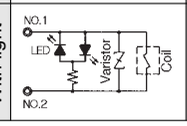
•Connector with light part No.

Rated voltage	Voltage symbol	Part no.
100 VAC	100 V	VK300-82-2-01
110 VAC	110 V	VK300-82-2-03
200 VAC	200 V	VK300-82-2-02
220 VAC	220 V	VK300-82-2-04
240 VAC	240 V	VK300-82-2-07
6 VDC	6 V	VK300-82-2-51
12 VDC	12 V	VK300-82-2-06
24 VDC	24 VD	VK300-82-2-05
48 VDC	48 VD	VK300-82-2-53

•Connector with light circuit



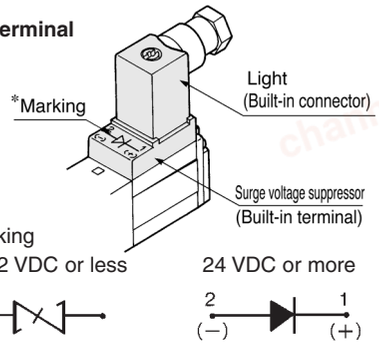
Indicator light and surge voltage suppressor

Rated voltage		DIN terminal (D) Standard, Y, V, W	DIN terminal (D) Long loading (E)	Symbol
AC	Without light			S
	With light			Z
DC 24V 48V	Without light			S
	With light			Z
DC 6V 12V	Without light			S
	With light			Z

Precautions for wiring when using 24 VDC or higher: With the grommet style, connect the positive (+) side to the red lead wire and the negative (–) side to the black lead wire. With the DIN terminal, connect the positive (+) side to the connector's No. 1 terminal, and the negative (–) side to the No. 2 terminal. [Refer to the marks on the terminal board.]

* For 12 VDC or below, there is no positive (+) or negative (–) directionality.

•DIN terminal



Vacuum Use: VK33□V (VK33□W)

When mounting a valve on the manifold base or sub-plate, etc., the mounting orientation is already decided. If mounted in a wrong direction, the equipment to be connected may result in malfunction.
Refer to pages 2.3-5 to 2.3-9 for external dimensions in mounting.

⚠ Caution

1. Because this valve leaks, it cannot be used for maintaining a vacuum (or pressure) in a pressure vessel.

Long Loading Style: VK33□E

This product is to be used for long time energisation.

⚠ Caution

1. Because this is to be used for long loading, it is not for highly frequency use. Contact SMC if it is to be operated in excess of once a day, including low frequency operations.
2. Make sure to switch it at least once every 30 days.

Flow Rate

Refer to the p.0-36 for flow rate.