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5 Port Solenoid Valve/Direct Poppet Rubber seal

Series VK3000

Nℓ/min 147
Compact/Width 18 X Length 68 (mm)

Low power consumption
4W DC (Standard)
2W DC (Energy saver)

Standard copper free specification
All the parts in contact with fluid are non-copper materials



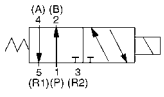
Base mounted



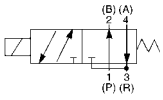
Body ported

JIS Symbol

Body ported



Base mounted

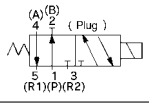
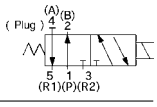


Mounting with VK300

VK300 series can to be mounted on the same manifold base VV5K3 of VK3000 series. Refer to the p.1.5-4 for the details.

Usage as 3 port vale

VK3000 series can be used as 3 port valve, as a N.C. or N.O. type, by plugging either “A” or “B” cylinder port. Make sure not to plug the exhaust port “R”.

Plug position	B port	A port
Type	N.C.	N.O.
JIS Symbol		

Model

Valve model		Operating pressure range (MPa)	Port size	Effective area (mm²) (Nℓ/min)	Weight (g)
Body ported	VK3120	0 to 0.7	M5	2.7(147)	90
			1/8	3.1(166)	
	VK3120Y (Low wattage 2W DC)		M5	1.8(98)	
			1/8	2.2(117)	
Base mounted (with sub-plate)	VK3140		1/8	2.5(137)	130
	VK3140Y (Low wattage 2W DC)			2.0(107)	

* Value for unit. In case of manifolds, it varies depending on operating conditions.

Specifications

Style	Single, 2 position, single solenoid
Fluid	Air
Ambient and operating fluid temperature	50°C max.
Response time at 0.5MPa (1)	10ms or less (Standard), 15ms or less (Low wattage)
Manual override	Non-locking push style
Lubrication	Not required (If required, use tubin oil class 1 ISO VG32)
Mounting orientation	Free
Impact/Vibration resistance (2)	300/50m/s²
Protective construction	Dust proof

Note 1) According to Dynamic performance test JIS B8375-1981.
(Coil temperature 20°C, at rated voltage, without surge suppressor)
Note 2) Impact resistance:
No malfunction from test using drop impact tester, to axis and right angle direction of main valve and armature, each one time when energized and de-energized.
Vibration resistance:
No malfunction from test with 8.3 to 2000 Hz 1 sweep, to axis and right angle direction of main valve and armature, each one time when energized and de-energized.
(Valve in the initial Stage.)

Solenoid Specifications

Electrical entry		DIN terminal (D)
Rated voltage	AC	100V, 110V, 200V, 220V, 240V, 50/60 Hz
	DC	12V, 24V
Allowable voltage		±10% of rated voltage
Phase voltage(AC)*	Inrush	9.5VA/50Hz, 8VA/60Hz
	Holding	7VA/50Hz, 5VA/60Hz
Power consumption(DC)*	W/o light	4W (Standard), 2W (Low wattage)
	W/ light	4.3W (Standard), 2.3W (Low wattage)
Surge voltage suppressor	AC	Varistor
	DC	Diode (12V DC or less: Varistor)
Indicator light	AC	Neon light
	DC	LED

* At the rated voltage

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VK3000

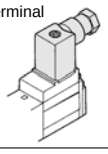
How to Order

Rated voltage

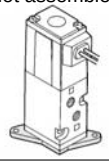
1	100V AC 50/60Hz
2	200V AC 50/60Hz
3	110V AC 50/60Hz
4	220V AC 50/60Hz
5	24V DC
6	12V DC
7	240V AC 50/60Hz
9	Others,less than 250VCA, and 50 VDC

Order Made Contact SMC for other voltages (9)

Electrical entry

D-DIN terminal	DO-DIN terminal Without connector
	

Option

—	None
F	With bracket (Not assembled) 

Port size (P, A and B ports)

M5	M5
01	1/8

∗ R1, R2: M5

Option Part No.

Description	Part No.	Note
Bracket	VK300-43-2A	With screw
Manifold gasket	VK3000-6-1A	With screw for body ported
	VK3000-6-2A	With screw for base mounted



Ordering source area code

Code	areas
—	Japan, Asia Australia
E	Europe

Body ported — VK3120 □ — 1 D □ — M5 □ — □ — Q

Base mounted — VK3140 □ — 1 D □ — 01 □ — Q



Valve option

—	Standard
Y*	Low wattage (2W DC)

∗ Option

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

Thread

—	Rc (PT)
F	G (PF)
N	NPT
T	NPTF

Port size

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

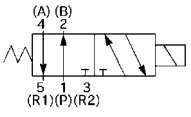
Light and surge voltage suppressor

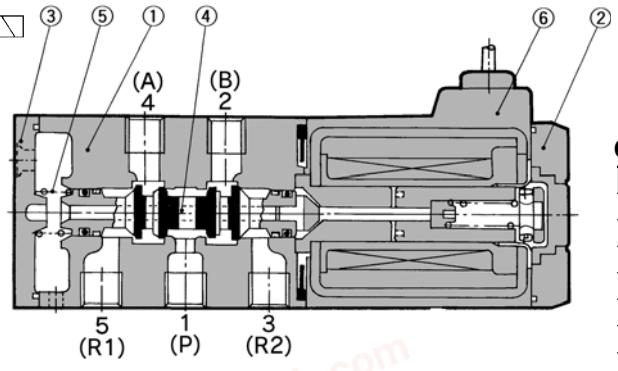
—	None
S	With surge voltage suppressor
Z*	With light and surge voltage suppressor (Available only for "D" type.)

∗ Light is built in the connector, thus is not available for "DO" type.

Construction

JIS Symbol





Component Parts

No.	Description	Material	Note
①	Body	Aluminium die cast	Platinum silver paint
②	Cover	Resin	Black
③	End cover	Resin	Black
④	Spool valve ass'y	Alluminium, NBR	
⑤	Return spring	Stainless steel	
⑥	Molded coil	Resin	Black

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Series VK3000
Manifold



VV5K3-20-06



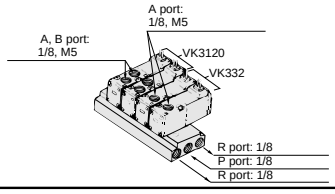
VV5K3-40-06-M5

Specifications

Number of valve stations		1 to 20
Piping method	Common SUP, Common EXH	Body ported, Base mounted
	Common SUP, Individual EXH	Body ported

Common SUP/Common EXH

20 Type/Body Ported
(A, B port top piping)



How to Order

□ VV5K3 − 20 − 05 − □ − Q

Ordering source area code

Code	areas
–	Japan, Asia Australia
E	Europe

Stations

01	1 station
⋮	⋮
20	20 stations

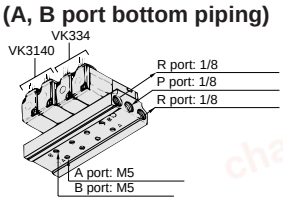
Thread (P, R port)

–	Rc (PT)
00F	G (PF)
00N	NPT
00T	NPTF

Applicable solenoid valve
VK3120□-□□□-M5-Q
VK3120□-□□□-01-Q
VK332□-□□□-M5-Q
VK332□-□□□-01-Q

Applicable blank plate ass'y
VK3000-7-1A

40 Type/Base Mounted
(A, B port bottom piping)



How to Order

□ VV5K3 − 40 − 05 − M5 − □ − Q

Ordering source area code

Code	areas
–	Japan, Asia Australia
E	Europe

Stations

01	1 station
⋮	⋮
20	20 stations

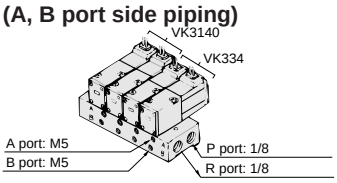
Thread

–	Rc (PT)
F	G (PF)
N	NPT
T	NPTF

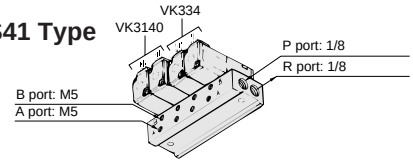
Applicable solenoid valve
VK3140□-□□□-Q
VK334□-□□□-Q

Applicable blank plate ass'y
VK3000-7-1A

41 Type/Base mounted
(A, B port side piping)



S41 Type



How to Order

□ VV5K3 − □ − 41 − 05 − M5 − □ − Q

Solenoid position

—	Solenoid on opposite side of A and B port
S	Solenoid on same side of A and B port

Ordering source area code

Code	areas
–	Japan, Asia Australia
E	Europe

Stations

01	1 station
⋮	⋮
20	20 stations

Port size

M5	M5
C4	ø4 cassette

Thread

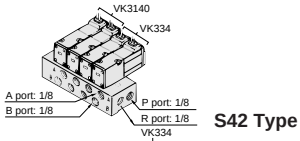
–	Rc (PT)
F	G (PF)
N	NPT
T	NPTF

Applicable solenoid valve
VK3140□-□□□-Q
VK334□-□□□-Q

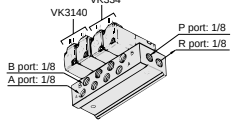
Applicable blank plate ass'y
VK3000-7-1A

Common SUP/Common EXH

42 Type/Base mounted
(A, B port side piping)



S42 Type



How to Order

□ VV5K3 − □ − 42 − 05 − 01 − □ − Q

Solenoid position

—	Solenoid on opposite side of A and B port
S	Solenoid on same side of A and B port

Ordering source area code

Code	areas
–	Japan, Asia Australia
E	Europe

Stations

01	1 station
⋮	⋮
20	20 stations

Port size

01	1/8
C6	ø6 cassette

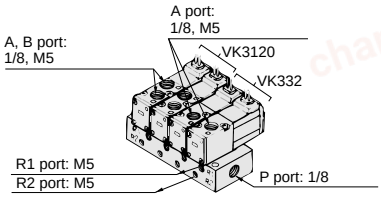
Thread

–	Rc (PT)
F	G (PF)
N	NPT
T	NPTF

Applicable solenoid valve
VK3140□-□□□-Q
VK334□-□□□-Q
Applicable blank plate ass'y
VK3000-7-1A

Common SUP/Individual EXH

21 Type/Body ported style
(A, B port top piping)



How to Order

□ VV5K3 − 21 − 05 − □ − Q

Ordering source area code

Code	areas
–	Japan, Asia Australia
E	Europe

Stations

01	1 station
⋮	⋮
20	20 stations

Thread(P port)

–	Rc (PT)
00F	G (PF)
00N	NPT
00T	NPTF

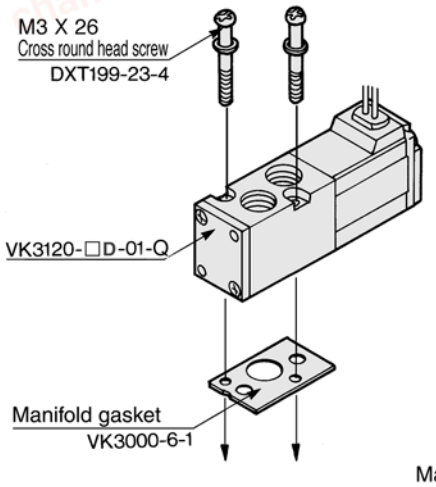
Applicable solenoid valve
VK3120□-□□□-M5-Q
VK3120□-□□□-01-Q
VK332□-□□□-M5-Q
VK332□-□□□-01-Q

Applicable blank plate ass'y
VK3000-7-1A

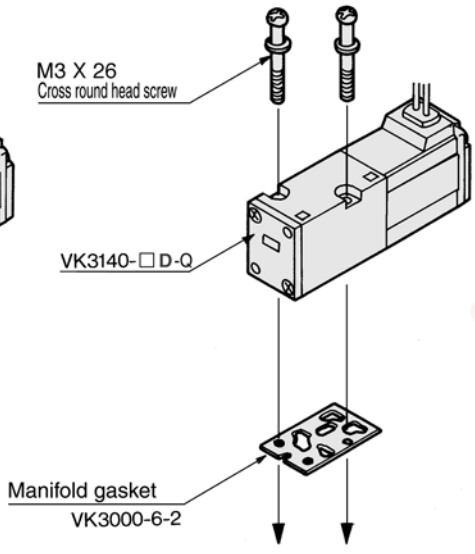
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VK3000

Combination of Solenoid Valve, Manifold Gasket and Manifold Base



Applicable base
VV5K3-20 } Manifold base
VV5K3-21 }

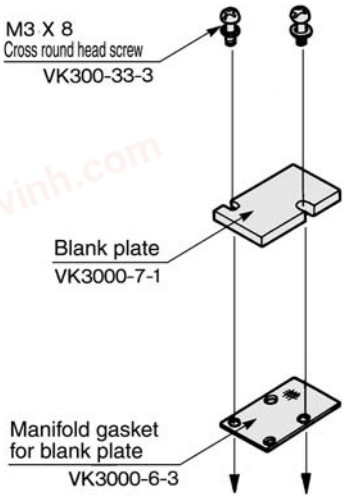


Applicable base
VK3000-9-1 Sub-plate
VV5K3-40 }
VV5K3-(S)41 } Manifold base
VV5K3-(S)42 }

Note) Mounting direction is not flexible. Make sure to mount them in the right direction.

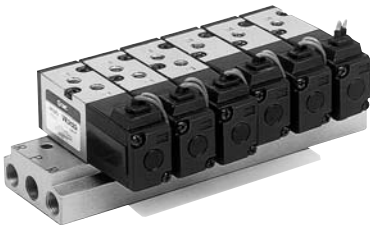
Combination of Blank Plate Ass'y and Manifold Base

Blank plate ass'y:
VK3000-7-1A



Applicable base:
Common to all VV5K3 models

Mixed Mounting of VK300 and Manifold Base of Series VK3000

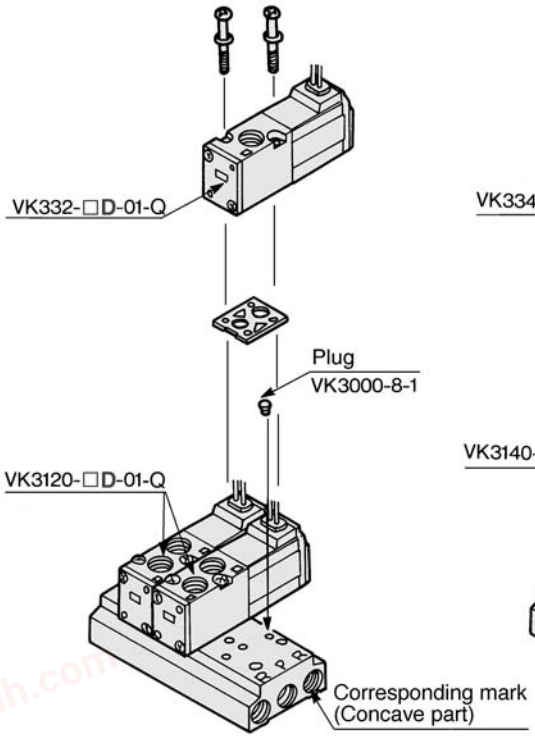


①In case of VV5K3-20/40
When installing the 3 port valve on the manifold base, plug the "R" port at the corresponding mark side with the rubber plug (VK3000-8-1) as shown in the figures on the right.

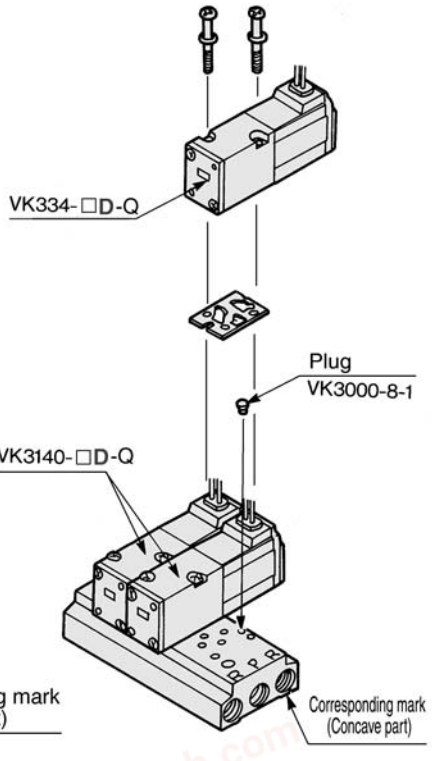
②Other manifolds
3 port valve except VV5K3-20 and 40 types can be mounted without any work.

Note 1) Remove the plug If changing the 3 port valve to a 5 port valve.
Note 2) In case a 3 port valve VK300 is mounted on the manifold base for a 5 port valve VK3000, switching type is normally closed (N.C.). If requiring a normally open type (N.O.), plug the "A" port on the 5 port valve.
Note 3) "A" port of a 3 port valve for base mounted type becomes "A" port of a 5 port valve. Plug that "A" port to avoid mistaking "B" port for the "A" port.

VV5K3-20



VV5K3-40

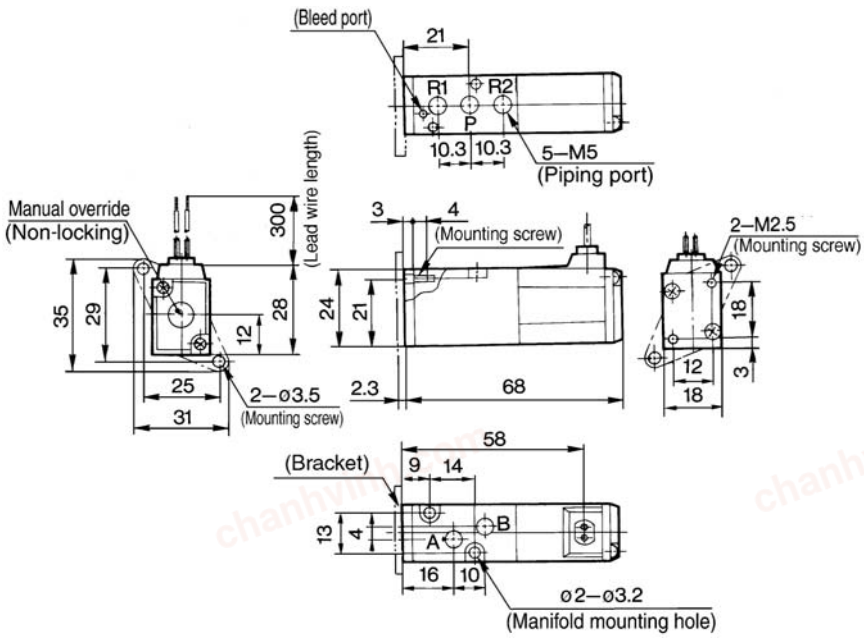


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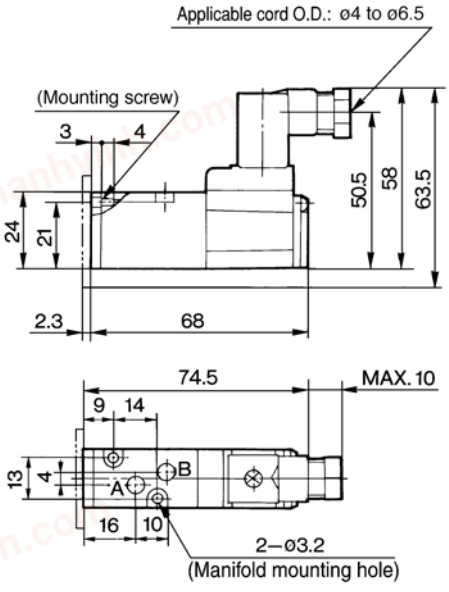
Body Ported

Grommet: VK3120-□G-M5
Port size: M5

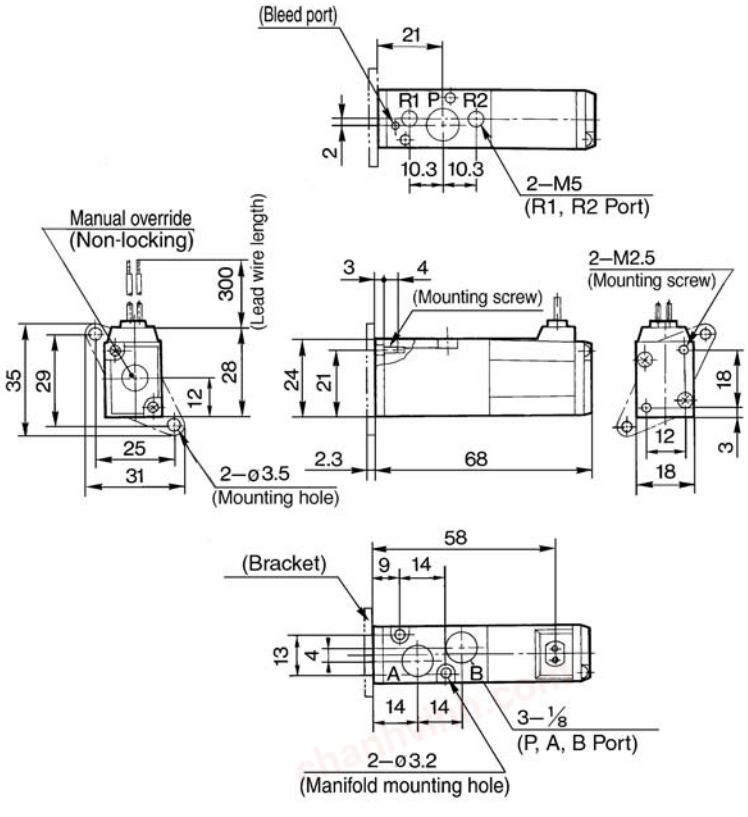
Note: This valve series is now only available with DIN connector.



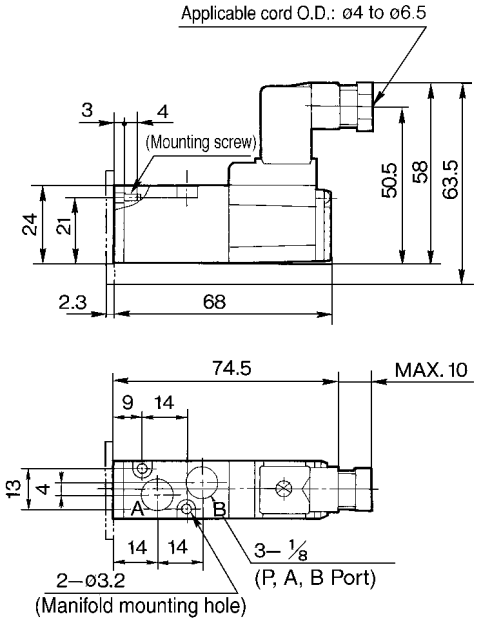
DIN terminal: VK3120-□D-M5-Q



Grommet: VK3120-□G-01
Port size: 1/8



DIN terminal: VK3120-□D-01F-Q



SMC

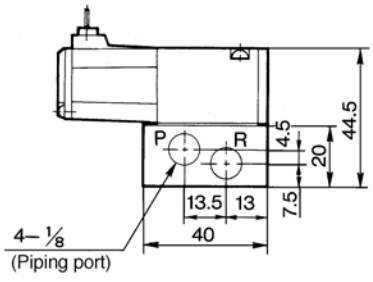
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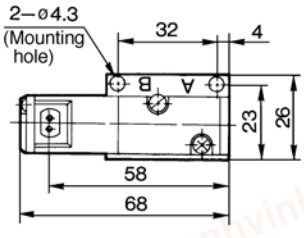
VK3000

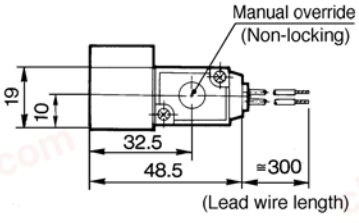
Base Mounted

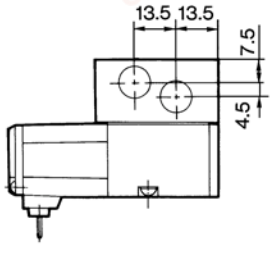
Grommet: VK3140-□G-01

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

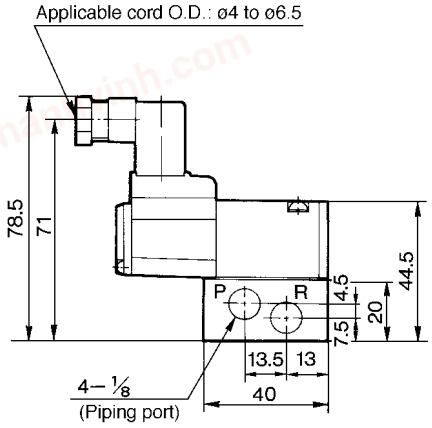


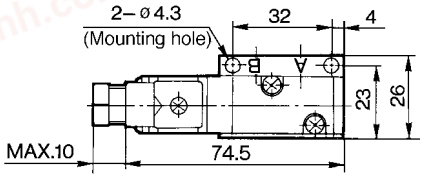






DIN terminal: VK3140-□D-01-Q





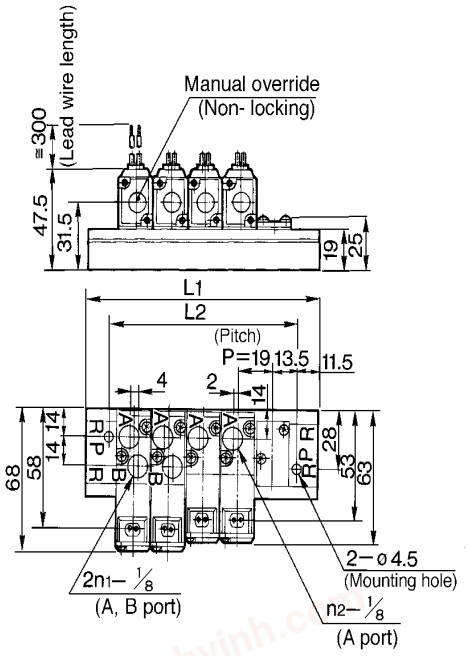
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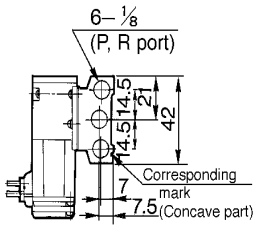
20 Type Manifold — Body ported (Top piping)

VV5K3 - 20 - Station -Q

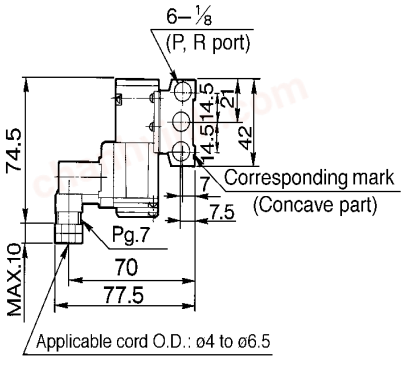
n1= Number of VK3000
n2= Number of VK300

Grommet: G





DIN terminal: D



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

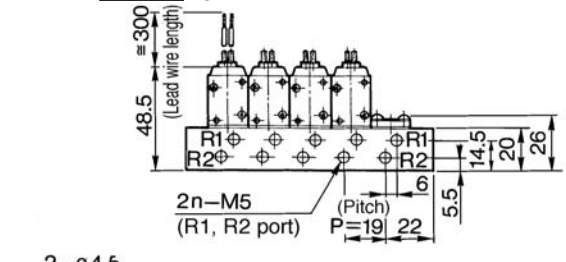
L: Dimensions Table — n: Number of stations

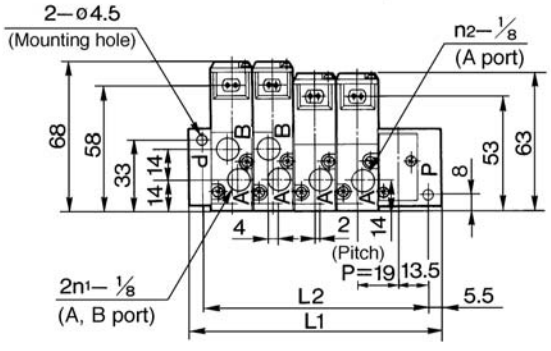
L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	50	69	88	107	126	145	164	183	202	221	240	259	278	297	316	335	354	373	392	411
L2	27	46	65	84	103	122	141	160	179	198	217	236	255	274	293	312	331	350	369	388

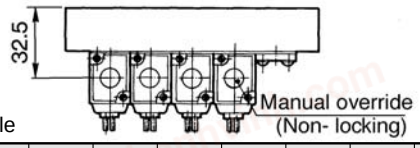
21 Type Manifold — Body ported (Top piping)

VV5K3 - 21 - Station -Q

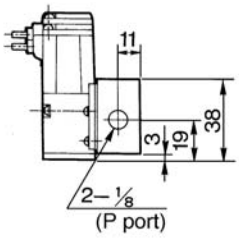
Grommet: G

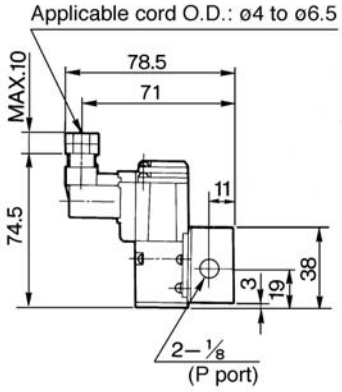






DIN terminal: D





n1= Number of VK3000
n2= Number of VK300

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

L: Dimensions Table — n: Number of stations

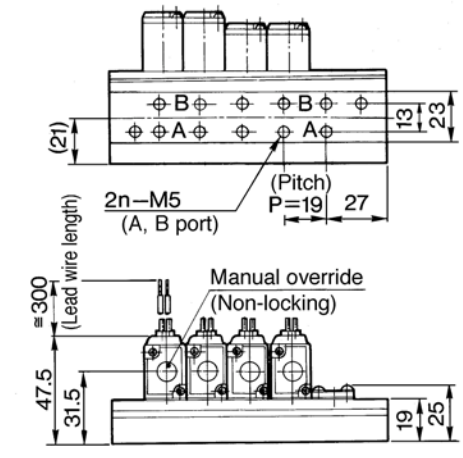
L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	38	57	76	95	114	133	152	171	190	209	228	247	266	285	304	323	342	361	380	399
L2	27	46	65	84	103	122	141	160	179	198	217	236	255	274	293	312	331	350	369	388

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VK3000

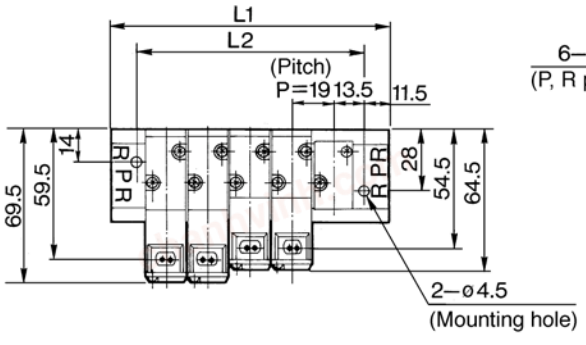
40 Type Manifold — Base mounted (Bottom piping)

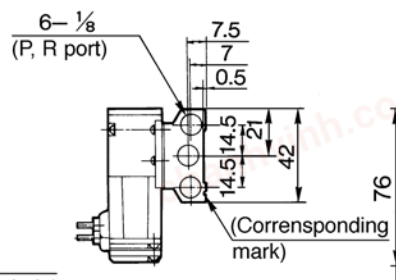
VV5K3-40-Station-M5 -Q



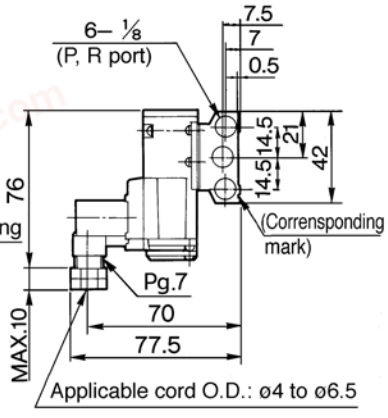
Note: This valve series is now only available with DIN connector.

Grommet: G





DIN Terminal: D



L: Dimensions Table

n: Number of 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	50	69	88	107	126	145	164	183	202	221	240	259	278	297	316	335	354	373	392	411
L_2	27	46	65	84	103	122	141	160	179	198	217	236	255	274	293	312	331	350	369	388

⚠ Precautions

Be sure to read before handling. Refer to p.0-33 to 0-36 for Safety Instructions and common precautions for the products mentioned in this catalogue.

⚠ Caution

1. How to use DIN type connector

Refer to the p.2.3-10.

2. Light and surge voltage suppressor

Refer to the p.2.3-10.

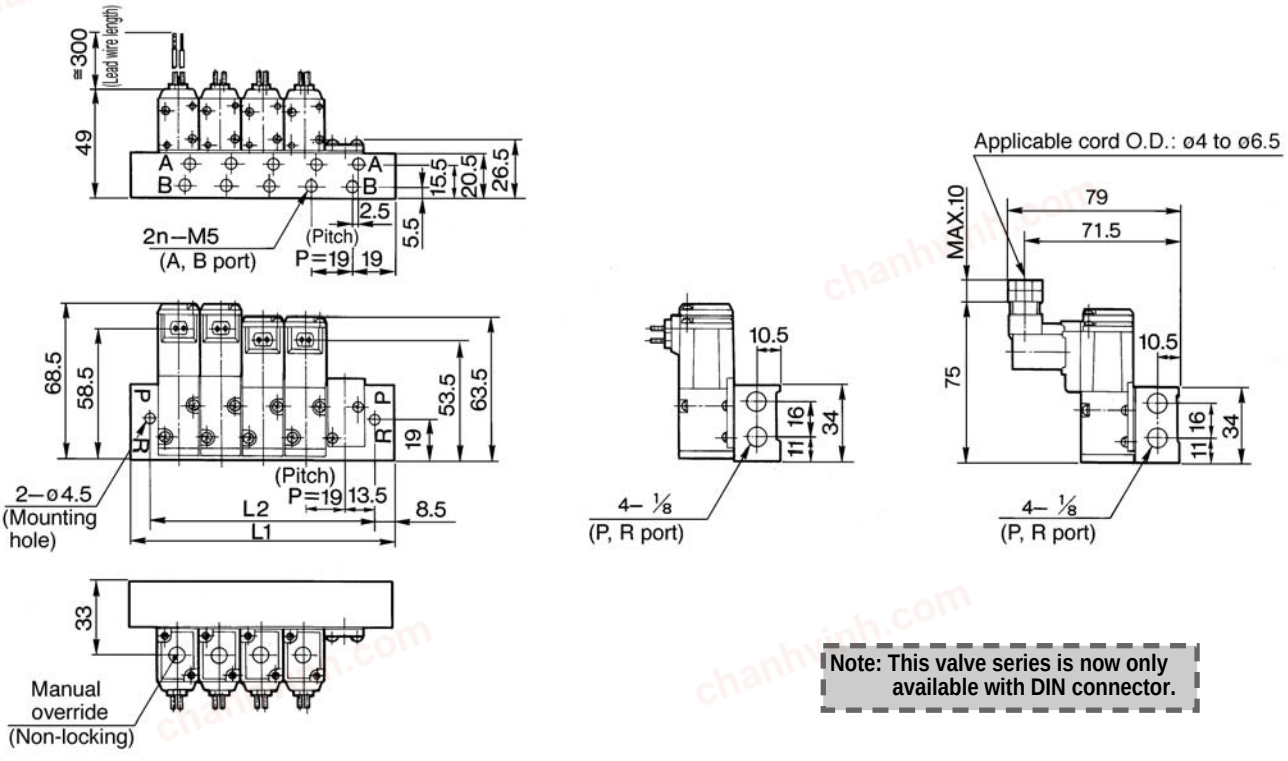
How to calculate flow rate

Refer to the p.0-36.

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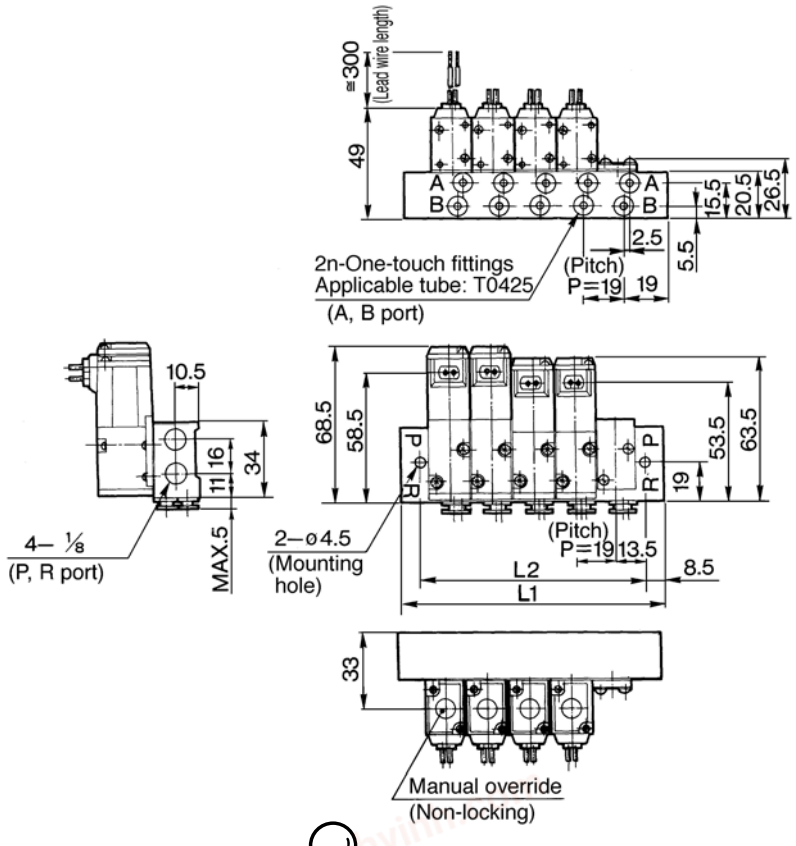
41 Type Manifold — Base mounted (Side piping)

VV5K3-41-Station-M5-Q **Grommet: G** **DIN Terminal: D**



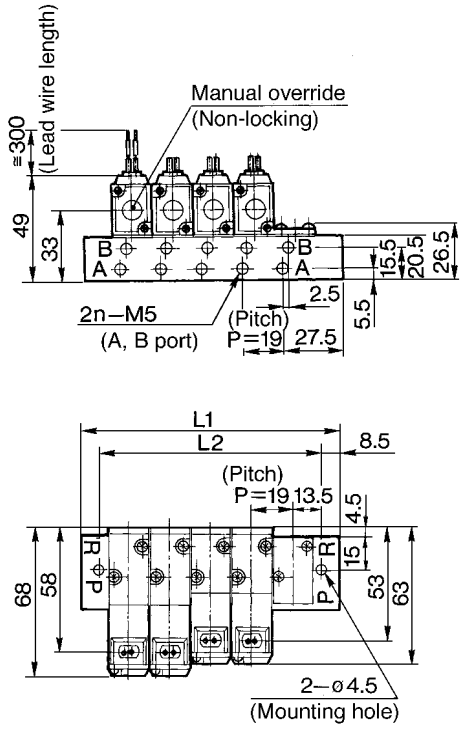
Note: This valve series is now only available with DIN connector.

With built-in One-touch fitting: VV5K3-41-Station-C4-Q



Refer to the above drawings for the dimensions of DIN terminal style.

Solenoid is at the same side as A port: VV5K3-S41-Station- □-Q



Refer to the above drawings for other dimensions.

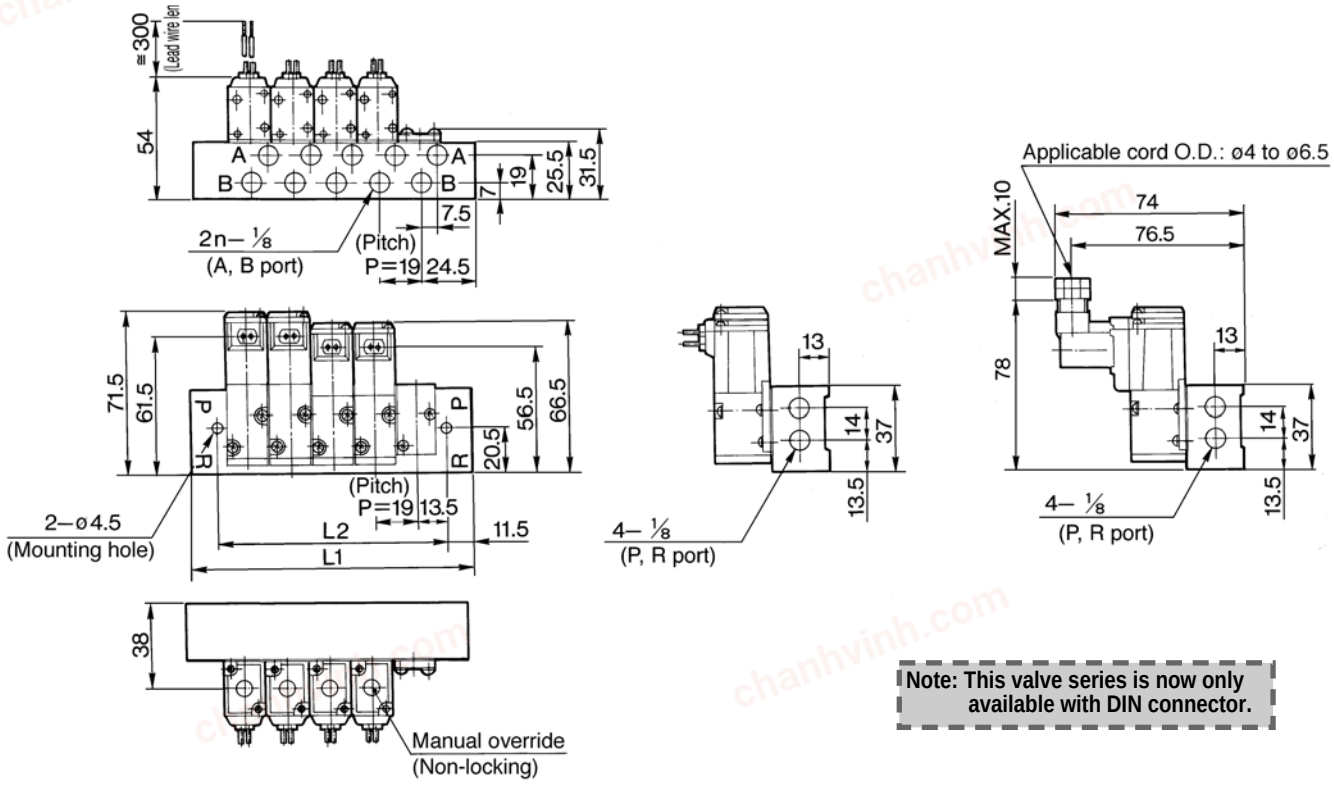
L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L_1	44	63	82	101	120	139	158	177	196	215	234	253	272	291	310	329	348	367	386	405
L_2	27	46	65	84	103	122	141	160	179	198	217	236	255	274	293	312	331	350	369	388

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VK3000

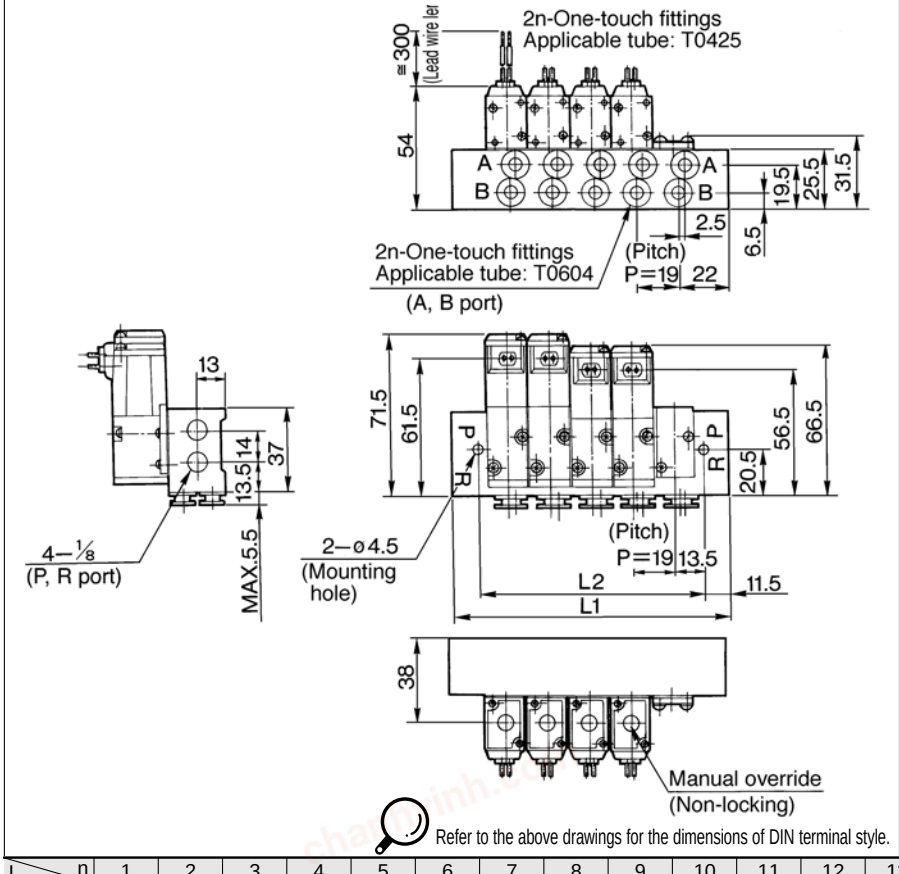
42 Type Manifold — Base mounted (Side piping)

VV5K3-42-Station-01 -Q **Grommet: G** **DIN Terminal: D**



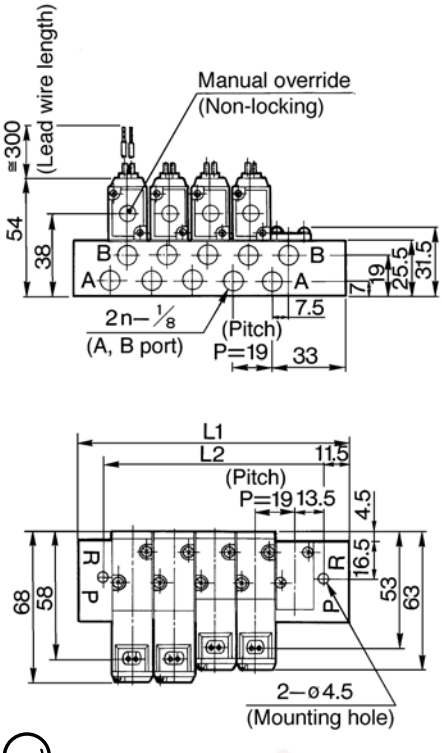
Note: This valve series is now only available with DIN connector.

With built-in One-touch fitting: VV5K3-42-Station-C6 -Q



Refer to the above drawings for the dimensions of DIN terminal style.

Solenoid is at the same side as A port: VV5K3-S42-Station-☐ -Q



Refer to the above drawings 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	50	69	88	107	126	145	164	183	202	221	240	259	278	297	316	335	354	373	392	411
L2	27	46	65	84	103	122	141	160	179	198	217	236	255	274	293	312	331	350	369	388