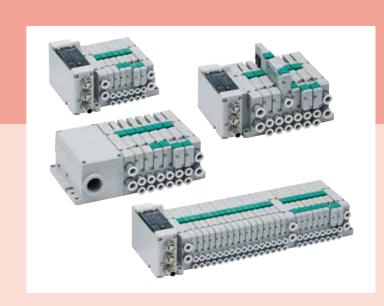
# **TVG**

# 3, 5-port pilot operated valve, plug-in block manifold



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#### The following 3 ordering methods are available.

	Ordering method	Manifold specifications sheet	Customer assembly processes	Product delivery date
Α	Manifold assembly	Required	☆	0
В	Easy assembly	Not required	0	0
С	Discrete block	Not required	0	$\Rightarrow$
		☆: Excellent	, ⊚: Very go	od, 🗀: Good

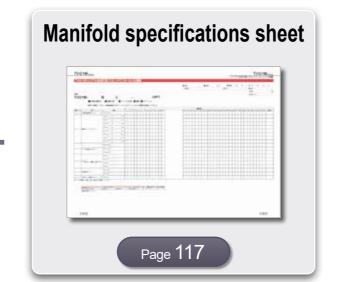
# Applicable solenoid valve



Manifold assembly The units will be delivered with the specifications specified in the manifold specifications sheet.

Can be ordered with model No. starting with TVG□M and a manifold specifications sheet.

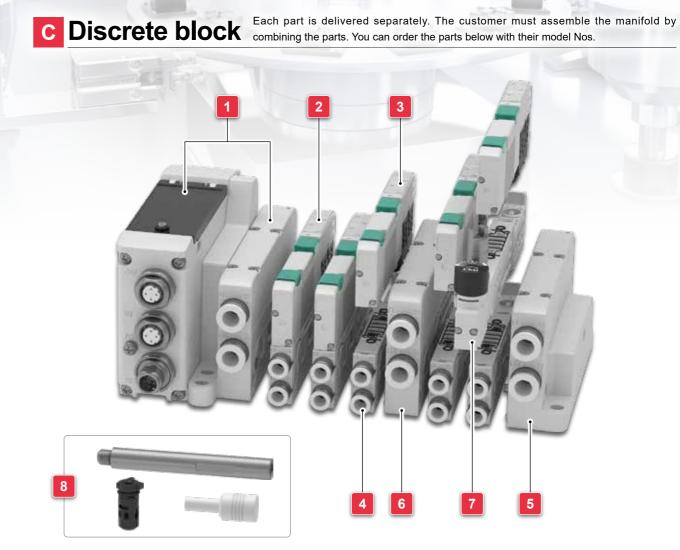




Easy assembly The single solenoid valve and assembled manifold base will be delivered separately. The following parts model No. can be ordered. The customer is required to assemble a single solenoid valve and a manifold base.



\*1. The manifold base is limited to options that can be manufactured without the need for specifications, such as double wiring and no malfunction prevention valve assembly.



No.	Name	Head model No.	Listed page
1	Wiring supply and exhaust block		Р. 39
2	Valve block with solenoid valve		P. <b>41</b>
3	Solenoid valve discrete (for base mounting)		P. <b>17</b>
4	Valve block		P. <b>45</b>
5	End supply and exhaust block	TVG P-	P. <b>50</b>
6	Intermediate supply and exhaust block	vaivo 0i20	P. 51
7	Spacer		P. <b>19</b>
8	Tie rod, silencer, exhaust check valve		Р. 49, 54
	Other related parts		P. <b>53</b>



Plug-in Block Manifold Pilot Operated 3, 5-Port Valve

# TVG1 / TVG2 Series

UK (€ ®

#### Manifold common specifications

Item			Content			
Manifold			Block manifolds			
Mounting Metho	d		Direct mounting			
Air supply and ex	vhaust matha	٨	Common supply/common exhaust			
All Supply and e.	st metho	u	(With internal exhaust check valve)			
Pilot exhaust me	thod		Main valve/pilot valve common exhaust			
Internal pilot		(*5)	(Pilot exhaust check valve built-in)			
Piping direction			Side direction of base			
Valve Type and 0	Operation Met	thod	Pilot operated soft spool valve			
Operating Fluid		Compressed Air				
Max. working pre	essure M	0.7				
Internal pilot	2-position do	uble	0.1 (*7)			
Internal pilot Min. working	2-position sin	ngle	0.2			
pressure	3-position		U.Z			
MPa	3-port valve		0.2			
	Two valves integra		<del></del>			
Min. working pre						
pilot			(Pilot pressure at 0.2MPa or more)			
Proof Pressure		ИРа	1.05			
Ambient Temper	ature	°C	-5 to 55 (no freezing)			
Fluid temperatur	е	°C	5 to 55			
Manual Override			Non-locking/locking common			
			(standard)			
Lubrication		(*1)	Not required			
Degree of protect		(*8)	IP65, IP67			
Vibration resistar			50 or less			
Shoo	k resistance ı	m/s <sup>2</sup>	≤ 300			
Atmosphere			Cannot be used in corrosive gas environments			

#### Electrical specifications

Item		Reduced wiring connection EA1□, FA1□, GA1□	Serial transmission JA□□, JB□□					
Rated Vol	tage (V)	24 VDC	24 VDC					
Voltage fluc	tuation range (*3)	±10%	+10%, -5%					
Holding	Standard	0.017						
current A	With low exoergic/ With low exoergic	0.005						
Power	Standard	0.4						
	With low exoergic/ With low exoergic	0.1						
Thermal c	lass	В						
Surge sup	pressor (*4)	Zener	diode					
Indicator		LE	D					

- \*1: Use turbine oil Class 1 ISO VG32 for lubrication. Excessive or intermittent lubrication results in unstable operation.
- \*2: Tested according to the test method for IP65 and IP67 (IEC 60529: 2001) standards. Refer to page 160 for details.
- \*3: As the voltage drop occurs depending on the internal circuit of theserial transmission, be careful of the voltage fluctuation range.
- \*4: If low exoergic/energy circuit or surgeless types are selected then there will
- \*5:The pilot exhaust method differs with the supply and exhaust block specification. Refer to page 52 for details.
- \*6: When using at low vacuum, select the external pilot. Refer to page 162 for details.
- \*7: 0.2MPa for low exoergic/energy circuit.
- \*8: The degree of protection of the D-sub-connector (GA1 ) is dust-proof IP40 or equivalent. Avoid water drops or oil, etc., during use.
- \*9: For DIN rail mount vibration resistance, keep the vibration applied to the manifold to 20m/s<sup>2</sup> or less for 2 to 12 stations, and to 10m/s<sup>2</sup> or less for 13

#### Individual specifications

				TV	G1			TV	G2		
Item		Common terminal block EA1	Multi- connector FA1⊟		Serial transmission JA□□, JB□□	hlock	Multi- connector FA1⊟		Serial transmission JA□□, JB□□		
Max.	Standard v (double wi	J	10 stations	8 stations	12 stations	16 stations	10 stations	8 stations	12 stations	16 stations	
station No.	Single sole Double sol layout spec (Single wir	enoid cification	20 stations	16 stations	24 stations	24 stations	20 stations	16 stations	24 stations	24 stations	
Max. nur	nber of sole	noids	20 points	16 points	24 points	32 points	20 points	16 points	24 points	32 points	
	Metric	Port A/B		Push-in fitting	g ø1.8, ø4, ø6		F	ush-in fitting of	ø4, ø6, ø8, ø1	0	
Connection	fitting	P/R Port		Push-in fit	ting ø6, ø8		Push-in fitting ø8, ø10				
Port Size	Inch fitting	Port A/B		Push-in fitting	ø1/8", ø5/32'	'	Push-in fitting ø1/4", ø5/16"				
	Inch litting P			Push-in fit	ting ø5/16"		Push-in fitting ø3/8"				



#### Performance/characteristics by model

Item	Switching		TV	G1	TVG2		
item	position	class	at ON	at OFF	at ON	at OFF	
	Two 3-por integrated		15	25	20	37	
Response time ms	2-position	Single	15	20	22	24	
		Double	15	15	26	26	
	3-position		20	30	25	35	

The response times are values with supply pressure of 0.5 MPa at 20°C and without lubrication. They depend on the pressure and the lubricant quality.

#### Flow Characteristics

Madal				P → A/E		A/B ⇒ R						
Model No.	Switc	hing position class	C [dm³/ b Q[L/ (s·bar)] b min(ANR)]		C [dm³/(s·bar)] b			Q[L/ min(ANR)]				
	Two 3-	port valves integrated	0.77	0.37	205	1.1	(0.56)	0.34	(0.37)	287	(149)	
	2-posit	ion	1.0	0.29	253	1.2	(0.59)	0.36	(0.41)	317	(162)	
TVG1		Closed center	0.96	0.33	249	1.0	-	0.35	-	263	-	
	3-position	3-position	Exhaust center	0.96	0.32	247	1.3	(0.60)	0.38	(0.40)	349	(163)
		Pressure center	1.1	0.35	289	1.0	-	0.36	-	265	-	
	Two 3-	port valves integrated	1.7	0.44	476	2.2	(1.8)	0.43	(0.20)	612	(431)	
	2-positi	ion	2.4	0.32	618	2.8	(2.0)	0.34	(0.19)	731	(476)	
TVG2	- I	Closed center	2.2	0.35	578	2.5	-	0.38	-	670	-	
		Exhaust center	2.2	0.32	567	2.9	(2.1)	0.40	(0.21)	789	(506)	
		Pressure center	2.6	0.34	678	2.5	-	0.37	_	666	_	

<sup>\*1:</sup> Effective cross-sectional area S and sonic conductance C are converted as S ≈ 5.0 × C.

#### Reduced wiring specifications

Item	EA1A	EA1B	FA1A	FA1B	GA1A	GA1B	
Туре		rminal block hread	Multi-co	onnector	D-sub Connector		
Connection Connector		-		TRIC CO. LTD. /TP-20S ·pin		ector (female) -pin	
Output Format	NPN:	PNP:	NPN:	PNP:	NPN:	PNP:	
Output Format	(Plus common)	(Minus common)	(Plus common)	(Minus common)	(Plus common)	(Minus commor	

#### Serial Transmission Device Unit specifications (Refer to page 152 for the PLC compatibility table.)

Item		JA1C	JA1D	JA2C	JA2D	JA3C	JA3D	JA4C	JA4D	JA5C	JA5D	JA6C	JA6D
Communic	ation protocol	Devi	ceNet	CC-Link Ver.1.10 EtherCAT		EtherNet/IP		CC-Link IEF Basic		PROFINET			
Power Supply	Unit side	11 to 2	5 VDC*	DC* 24 VDC ±10%									
Voltage	Valve side			24 VDC +10%, -5%									
Current	Unit side	50 mA or	50 mA or less (all points ON: 24 VDC) 90 mA or less (all points ON: 24 VDC)										
Consumption	Valve side		15 mA or less (excluding load current)										
Number of	Output Points						32 p	oints					
Occupied	number	4by	ytes					1 sta	ation				
Operation	Indicator				LEI	D (power s	supply and	communi	ication sta	itus)			
Output Format		NPN: (Plus common)	PNP: (Minus common)	NPN: (Plus common)	PNP: (Minus common)	NPN: (Plus common)	PNP: (Minus common)	NPN: (Plus common)	PNP: (Minus common)	NPN: (Plus common)	PNP: (Minus common)	NPN: (Plus common)	PNP: (Minus common)
* Indicates t	the range of vo	ltage comp	nunication n	nower sunni									

Item		JA7C	JA7D	JA8C	JA8D	JA9C	JA9D	JA9G	JA9H	H JB1C JB1D			
Communic	ation protocol	CC-Link	IE Field	CC-Link	(IE TSN		10-1	Link		IO-Link Wireless			
Power Supply	Unit side		24 VDC ±10% 18 to 30 VDC							24 VD0	2 ±10%		
Voltage	Valve side		24VDC +10%, -5%										
Current Unit side		100 mA o	100 mA or less (all points ON: 24 VDC) 50 mA or less (all points ON: 24 VDC)					35 mA or less (All points ON: 24 VDC)					
Consumption	Valve side		15 mA or less (excluding load current)										
Number of	Output Points					32 p	oints						
Occupied	number					1 sta	ation						
Operation	Indicator	LED (power supply and communication status)											
Output Fo	rmat	NPN: (Plus common)	PNP: (Minus common)	NPN: (Plus common)	PNP: (Minus common)	NPN: (Plus common)	PNP: (Minus common)	NPN: (Plus common)	PNP: (Minus common)	NPN: (Plus common)	PNP: (Minus common)		

<sup>\*2:</sup> Values in ( ) are with the exhaust check valve.

8 Base internal wiring system\*1

layout specification

\*1: Blank = Double solenoid wiring regardless of the type of valve used. If a single solenoid is

mounted, an empty number for one solenoid

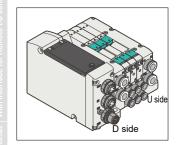
will be generated. Refer to page 157 for

Content

Single solenoid, Double solenoid

model No. Notation Method Manifold with solenoid valve

Option 10 mm width (valve width) (TVG1M)-(1 / B /06CS/ 3 /JA4C)-( 6 \ U 4 Voltage 6 Station 8 Base internal 10 Electric circuit 12 Ozone With/Without 16 Port A/B Model No. specifications Coolant proof direction No. 11 Manual 13 Residual 15 Exhaust 17 Mount 1 Switching 3 Connection 5 Electrical 7 Port P/R 9 Pilot pressure check position Port Size connections position operated Override



# 1 Switching position class

Code	Content							
1	2-position single							
2	2-position double							
3	3-position closed center							
4	3-position exhaust center							
5	3-position pressure center							
Χ	Mix manifold							
Α	3-port valve A valve side: Normally closed/B valve side: Normally Closed							
В	Two valves A valve side: Normally open/B valve side: Normally Open							
С	integrated *1 A valve side: Normally closed/B valve side: Normally Open							
1: Only co	mnatible with internal pilot. Dimensions is the same as the 2 position double							

\*1: Only compatible with internal pilot. Dimensions is the same as the 2-position double.

# 3 Port size (port A/B)

Metric fitting

fitting			
Port	: A/B	Code	l
ø1.8		0ACS	*4
ø4		04CS	1
ø6	06CS	l	
ø1.8		0ACU	*4
ø4		04CU	ı
ø6		06CU	l
ø1.8		0ACD	*4
ø4		04CD	ĺ
ø6		06CD	ĺ
Mix		99CX	*:
Single side plug	specifications *1	0	ĺ
Port A	Port B	Code	İ
ø1.8		0ACA	*4
ø4	Plug	04CA	ĺ
ø6	1	06CA	1
	ø1.8	0ACF	*4
Plug	ø4	04CF	l
	ø6	06CF	l
ø1.8		0ACB	*4
ø4	Plug	04CB	l
ø6	1	06CB	1
	ø1.8	0ACG	*4
Plug	ø4	04CG	l
_	ø6	06CG	ĺ
ø1.8		0ACC	*4
ø4	Plug	04CC	ĺ
ø6		06CC	ĺ
	ø1.8	0ACH	*4
Plug	ø4	04CH	ĺ
	ø6	06CH	
	## Port ## ## ## ## ## ## ## ## ## ## ## ## ##	Port A/B  ø1.8  ø4  ø6  ø1.8  ø4  ø6  ø1.8  ø4  ø6  Ø1.8  ø4  ø6  Mix  Single side plug specifications *1  Port A Port B  ø1.8  ø4  ø6  ø1.8  ø4  ø6  ø1.8  Plug  ø6  ø1.8  ø4  ø6  ø1.8  ø4  ø6  ø1.8  Plug   Port A/B  Ø1.8  Ø4  Ø6  Ø1.8  Ø6  Ø1.8  Ø4  Ø6  Ø1.8  Ø4  Ø6  Ø1.8  Ø4  Ø6  Ø6  Ø1.8  Ø4  Ø6  Ø6  Ø1  Port A  Port B  Ø1.8  Ø4  Ø6  Ø6  Ø6  Ø6  Ø1.8  Ø4  Ø6  Ø6  Ø6  Ø6  Ø6  Ø1.8  Ø4  Ø6  Ø6  Ø6  Ø6  Ø6  Ø6  Ø6  Ø6  Ø6	

• Inch fit	tting			
Fitting	Por	t A/B	Code	ı
Push-in	ø1/8"		03LS	l
Pusn-in	ø5/32"		04LS	l
Push-in L-type upward	ø1/8"		C3LU	*5
t-type upward *2	ø5/32"		04LU	*5
Push-in	Mix		99LX	*3
Fisting.	Single side plug specifications *1		Code	l
Fitting	Port A	Port B	Code	l
	ø1/8"	Dlug	03LA	l
Push-in	ø5/32"	Plug	04LA	l
Pusn-in	Dive	ø1/8"	03LF	l
	Plug	ø5/32"	04LF	l
D 1 :	ø1/8"	Diver	03LB	*5
Push-in	ø5/32"	Plug	04LB	*5
L-type upward		ø1/8"	03LG	*5
4	Plug	ø5/32"	04LG	*5

**CKD** 

#### 4 Voltage

Code Content

24 VDC

#### 5 Electrical connections

exhaust

2 Piping direction

Code Content

B Side piping

#### Reduced wiring connection

reduced withing confidence			
Content	Output Format	Code	
Common terminal	NPN	EA1A	
block (M3 thread)	PNP	EA1B	
NA. Iti	NPN	FA1A	
Multi-connector	PNP	FA1B	
D-sub Connector	NPN	GA1A	
D-sub Connector	PNP	GA1B	

#### Sorial transmission

• Ser	<ul> <li>Serial transmission</li> </ul>				
Communicat	ion protocol	Output Format	# of Output Points	Code	
Device	lat	NPN		JA1C	
Devicer	Net	PNP		JA1D	
CC-LIN	V	NPN		JA2C	
ICC-LIN	N.	PNP		JA2D	
EtherC/	\T	NPN		JA3C	
	11	PNP		JA3D	
EtherNe	st/ID	NPN		JA4C	
EUIEINE	evir-	PNP		JA4D	
CC-Link	(IEF	NPN		JA5C	
Basic		PNP		JA5D	
PROFI	IET	NPN	32	JA6C	
PROFII	NE I	PNP	points	JA6D	
CC-Link	ίE	NPN		JA7C	
Field		PNP		JA7D	
CC-Link	ίE	NPN		JA8C	
TSN		PNP		JA8D	
	Class	NPN		JA9C	
10-	Α	PNP		JA9D	
Link	Class	NPN		JA9G	
	В	PNP		JA9H	
IO-Link		NPN		JB1C	
Wireless		PNP		JB1D	

\*1: Ports A and B are available with one-sided plug specifications for 2-position single only.

\*2: 3-position is not available for L-type upward push-in fittings. \*3: Port size mixtures of ports 4(A) and 2(B) are not available.

\*4: The compatible ø for tube 1.8 push-in fitting is "UP-9402- \* \*". \*5: Custom Product.

Rechargeable Battery Compatible Specification For details, please refer to P. 90.

• For use in the rechargeable battery manufacturing process, materials used for air path and sliding section are limited

Code

Blank (double wiring)

\*\*-\*\*-

#### 6 Station No.

	Code	Content
	02	2 stations
	L	L
*1, *2	24	24 stations

- \*1: Differs depending on the reduced wiring specifications. Refer to the individual specifications (on page 7).
- \*2: **T**For mount "R" (DIN rail), the max. station No. is 16.

Content

#### Port P/R position

Multiple selection is not possible

manipro concentration not poccibio.			
Code	Content		
U	U side		
D	D side		
В	U side, D side		
т	U side, D side, With intermediate supply and exhaust block		
.4 0 '.			

\*1: Specify the specifications of the intermediate supply and exhaust block in the manifold specifications sheet.

#### 10 Electrical circuit specification **11** Multiple manual override

^ Multiple selection is not possible.		
Code	Content	
Blank	With surge suppressor and indicator lamp	
E1	Low exoergic/energy saving circuit (surgeless specifications)	
E2	Surgeless	

\*1:Combination of "E2" and PNP specifications is Custom Product.

### cannot be selected.

Code	Content	
Blank	With locking, non-locking common, misoperation prevention cover	
M1	Non-locking, with misoperation prevention cover	
M2	Locking/non-locking common, tool operation, without cover	
M3	Non-locking, tool operation, without cover	

#### (A) Ozono/Coolont proof

9 Pilot operated

Blank Internal pilot

External pilot

Code

Uzone/Coolant proof	
Code Content	
Blank	Standard specifications
	Ozone/Coolant proof
Α	(Main valve fluorine
	specification)

15 Exhaust check valve

With exhaust check

install in the manifold specifications sheet.

Refer to page 163 for details on the type with ex-

haust check valve. Specify the number of stations to

Blank None

valve

Residual pressure exhaust valve

Mesidual pressure extraust valve			
	Code	Content	
	Blank	Without residual press	sure
	DIAIIK	exhaust valve	
*1, *2	Y1	With non-locking	
1, 2	11	residual pressure exhaust valve	COLUMN TO SERVICE
*1. *2	V2	With locking residual	
-1, ^2	Y2	pressure exhaust valve	

- \*1: Solenoid position "3" and "4" only are supported.
- \*2: @Only the manual override "M2" and "M3" are supported.

Port A/B filter			
	Code	Content	
	Blank	None	
See See	F	Port A/B filter built in	

\*1: 1 Solenoid positions "3" and "5" cannot be selected. \*1: A filter is built into port P.

### With/Without spacer

<b>D</b> With	With Without Space		
Code	Content		
Blank	Without spacer		
	With spacer		
Z	(Type and location are specified		
	in the MF specifications sheet)		

\*1: Specify the spacer type and mounting position in the manifold specifications sheet. Stacking of spacers is not possible. Combination with the blanking plate is not supported. Cannot be selected together with L-type push-in fitting

#### **M**ount type

W mount typo		
Code	Content	
Blank	Direct mount	
P	DIN rail mount	

widdin type			
Code	Content		
Blank	Direct mount		
R	DIN rail mount		

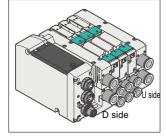
• For use in the rechargeable battery manufacturing process, materials used for air path and sliding section are limited

\*\*-\*\*-

Content

model No. Notation Method Manifold with solenoid valve

Option 15 mm width (valve width) (TVG2M)-(2) B)06CS(3) JA4C)-(05) B 2 Piping Model No. 1 Switching 3 Conn position



#### Switching position class

Code	Content						
1	2-position s	2-position single					
2	2-position of	2-position double					
3	3-position of	3-position closed center					
4	3-position exhaust center						
5	3-position pressure center						
Х	Mix manifold						
Α	3-port valve	A valve side: Normally closed/B valve side: Normally Closed					
В	Two valves	A valve side: Normally open/B valve side: Normally Open					
С	integrated *1	A valve side: Normally closed/B valve side: Normally Open					
1: Only co	mpatible with	internal pilot. Dimensions is the same as the 2-position					

double.

Code Content

3 24 VDC

4 Voltage

### 3 Port size (port A/B)

### Metric fitting

· INICLI IC	nung					
Fitting	Port	A/B	Code			
	ø4	04CS				
Push-in	ø6	06CS				
Pusn-in	ø8	08CS				
	ø10		10CS			
Push-in L-type upward	ø6		06CU			
*2	ø8	08CU				
Push-in	ø6	ø6				
L type downward	ø8		08CD			
Push-in	Mix		99CX			
Eitting	Single side plug	Code				
Fitting	Port A	Port B	Code			
	ø4		04CA			
	ø6	06CA				
	ø8	08CA				
Push-in	ø10		10CA			
rusii-iii		ø4	04CF			
	Dive	ø6	06CF			
	Plug	ø8	08CF			
		ø10	10CF			
Push-in	ø6	Dive	06CB			
L-type	ø8	Plug	08CB			
upward	Dlug	ø6	06CG			
*2	Plug	ø8	08CG			
December in	ø6	Dive	06CC			
Push-in	ø8	Plug	08CC			
L type downward	Dive	ø6	06CH			
uowiiwaru	Plug	ø8	08CH			

Inch fitting						
Fitting	Port	A/B	Code			
Push-in	ø1/4"		06LS			
Pusn-in	ø5/16"		08LS			
Push-in L-type upward	ø1/4"	ø1/4"		*4		
t-type upwaid*2	ø5/16"		08LU	*4		
Push-in	Mix	99LX	*3			
Fittin a	Single side plug	Code				
Fitting	Port A	Port B	Code			
	ø1/4"	Dlug	06LA			
Duch in	ø5/16"	Plug				
Push-in	טו וטשן	-	08LA			
1 4011 111		ø1/4"	08LA 06LF			
l don in	Plug	ø1/4" ø5/16"				
Push-in		ø5/16"	06LF	*4		
	Plug		06LF 08LF	*4 *4		
Push-in	Plug ø1/4"	ø5/16"	06LF 08LF 06LB			

#### \*1: Ports A and B are available with one-sided plug specifications for 2-position single only.

- \*2: 3-position is not available for L-type upward push-in fittings. \*3: Port size mixtures of ports 4(A) and 2(B) are not available.
- \*4: Custom Product.

4	Voltage	6	Station No.	8 Base interwiring sys		Electric circuit specifications		Ozone/ Coolant proof		Valve mounting screw	16 Exhaust check va		Mount	type
nnection t Size	5 Electri		<b>7</b> Port positi	_	Pilot operat	•	Manu Overr		sidual ssure aust valv	15 With	/Without <b>1</b> cer	Port A/I	3 filter	
1	1 Sw	itch	ing posi	tion cla	SS						2	Piping	directi	ion

#### Code Content Side piping

# 5 Electrical connections

• Reduced wiring connection						
Content	Output Format	Code				
Common terminal	NPN	EA1A				
block (M3 thread)	PNP	EA1B	10 8			
Multi-connector	NPN	FA1A				
Multi-connector	PNP	FA1B				
D aub Cannastar	NPN	GA1A				
D-sub Connector	PNP	GA1B	\$			

#### Serial transmission

Communicat	tion protocol	Output Format	Number of Output Points	Code	
DeviceNet		NPN	NPN PNP		
		PNP		JA1D	
CC-LINK		NPN		JA2C	
CC-LIN		PNP		JA2D	
EtherC/	ΔT	NPN		JA3C	
Lileio	٦١	PNP		JA3D	
EtherNe	at/ID	NPN		JA4C	
LUICITA		PNP		JA4D	
CC-Link	(IEF	NPN		JA5C	
Basic		PNP		JA5D	
PROFIN	JET	NPN	32 points	JA6C	
1 101 11	NL.I	PNP		JA6D	
CC-Link	ΚIE	NPN		JA7C	
Field		PNP		JA7D	
CC-Link	ΚIE	NPN		JA8C	
TSN		PNP		JA8D	
	Class	NPN		JA9C	
10-	Α	PNP		JA9D	
Link	Class	NPN		JA9G	
	В	PNP		JA9H	
IO-Link		NPN		JB1C	
Wireles	s	PNP		JB1D	

# Reduced wiring connection

rtoudood minig comiconon					
Content	Output Format	Code			
Common terminal	NPN	EA1A			
block (M3 thread)	PNP	EA1B	0.5		
Multi-connector	NPN	FA1A			
	PNP	FA1B	<b>1 1 1 1 1 1 1 1 1 1</b>		
D-sub Connector	NPN	GA1A			
D-sub Connector	PNP	GA1B			

Communicat	tion protocol	Output Format	Number of Output Points	Code		
DeviceNet		NPN		JA1C		
		PNP		JA1D		
CC-LINK		NPN		JA2C		
JO-LIIN		PNP		JA2D		
EtherC/	۸т	NPN		JA3C		
Linero	٦١	PNP		JA3D		
EtherNe	st/ID	NPN		JA4C		
LUICIING	5VIF	PNP		JA4D		
CC-Link IEF		NPN		JA5C		
Basic		PNP		JA5D		
PROFIN	JET	NPN	32	JA6C		
KOFII	NE I	PNP	points	JA6D		
CC-Link	ίE	NPN		JA7C		
ield		PNP		JA7D		
CC-Link	ίE	NPN		JA8C		
SN		PNP		JA8D		
	Class	NPN		JA9C		
0-	Α	PNP	JA	JA9D		
ink	Class	NPN		JA9G		
	В	PNP			JA9H	
O-Link		NPN		JB1C		
Vireles	S	PNP		JB1D		

#### and exhaust block \*1: Specify the specifications of the intermediate supply and exhaust block in the manifold

specifications sheet.

U side, D side

Port P/R position

U side

D side

Code

D

\* Multiple selection is not possible

#### 10 Electrical circuit specification

U side, D side, With intermediate supply

* Multiple selection is not possible.					
Code	Content				
Blank	With surge suppressor and indicator lamp				
E1	Low exoergic/energy saving circuit (surgeless specifications)				
E2	Surgeless				

<sup>\*1:</sup>Combination of "E2" and PNP specifications is Custom Product.

	② Ozone/Coolant proof			Residual pressure		
	Code	Content		Code	Content	
	Blank	Standard specifications		Blank	Without residual pres	sur
	Α	Ozone/Coolant proof (main valve		DIAIIK	exhaust valve	
		fluorine specification)	*1. *2	Y1	With non-locking residual	
			1, 2		pressure exhaust valve	
			*1 *2	٧2	With locking residual	

#### pressure exhaust valve \*1: OSolenoid position "3" and "4" only are supported.

#### A Exhaust check valve

Y2

Exhaust check valve			
Code	Content		
Blank	None		
н	With exhaust check valve		

- \*1: **1** Solenoid positions "3" and "5" cannot be selected. Refer to page 163 for details on the type with exhaust check valve.
- \*2: Specify the number of stations to install in the manifold specifications sheet.

# Base internal wiring system\*1

Dasc internal wiring system		
Code	Content	
Blank	(double wiring)	
Single solenoid, Double solenoid layout specification		
*1.Dlank = Dauble calencid wiring regardless of		

1:Blank = Double solenoid wiring regardless of the type of valve used. If a single solenoid is mounted, an empty number for one solenoid

#### Manual device

#### \* Multiple selections are not possible.

Code	Content		
Blank	With locking, non-locking common, misoperation prevention cover		
M1	Non-locking, with misoperation prevention cover		
M2	Locking/non-locking common, tool operation, without cover		
М3	Non-locking, tool operation, without cover		

#### 13 Residual pressure exhaust valve 14 Valve mounting screw

Code	Content		
Blank	Pan head machine screw with Phillips head/flathead		
J	Hexagon Socket Head Cap Screw		

with ".J"

Port A/B filter			
Code	Content		
Blank	None		
F	Port A/B filter built in		

\*1: A filter is built into port P.

#### 13 Mount type

	<b>7</b> 1
Code	Content
Blank	Direct mount
R	DIN rail mount

15 With/Without spacer

Blank Without spacer With spacer

Content

(Type and location are specified in the MF specifications sheet) \*1: Specify the spacer type and mounting position

in the manifold specifications sheet. Stacking

of spacers is not possible. Combination with

the blanking plate is not supported. Cannot

be selected together with L-type push-in fitting

6 Station No.

\*1, \*2 **24** 24 stations

tion No. is 16.

9 Pilot operated

Blank Internal pilot

External pilot

Code

Code

02 2 stations to to

Content

\*1: Differs depending on the reduced wiring

specifications. Refer to the individual

\*2: @For mount "R" (DIN rail), the max. sta-

Content

specifications (on page 7).

Code

<sup>\*2:</sup> Only the @manual override "M2" and "M3" are supported.

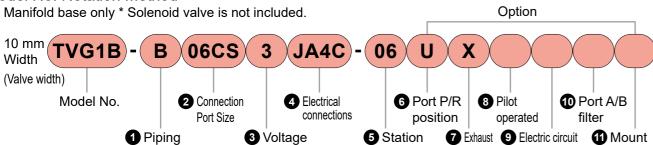
used for air path and sliding section are limited

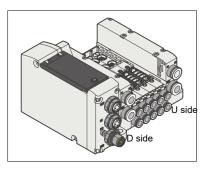
\*\*-\*\*- P4

• If an exhaust check valve is necessary, refer to page 54.

• For use in the rechargeable battery manufacturing process, materials

model No. Notation Method





### 2 Port size (port A/B)

#### Metric fitting

Fitting	Port A/B	Code	
	ø1.8	0ACS	*2
Push-in	ø4	04CS	ĺ
	ø6	06CS	1
Push-in	ø1.8	0ACU	*2
L-type	ø4	04CU	1
upward *1	ø6	06CU	1
Push-in	ø1.8	0ACD	*2
L type	ø4	04CD	1
downward	ø6	06CD	1

direction

#### Inch fitting

Fitting	Port A/B	Code	
Push-in	ø1/8"	03LS	l
Pusii-iii	ø5/32"	04LS	
Push-in	ø1/8"	C3LU	*3
L-type upward *1	ø5/32"	04LU	*3

- \*1: 3-position is not available for L-type upward push-in fittings.
- \*2: The compatible tubing for ø1.8 One-touch Fitting is "UP-9402-\*\*".
- \*3: Custom Product.

Pi	nina	direction
FI	pilig	unection

• i iping un coucii			
Code	Content		
В	Side piping		

#### 3 Voltage

No.

Code	Content
3	24 VDC

#### 4 Electrical connections Reduced wiring connection

* Neduced withing confidention				
Content	Output Format	Code		
Common terminal block	NPN	EA1A		
(M3 thread)	PNP	EA1B	0	
Multi-connector	NPN	FA1A		
Multi-connector	PNP	FA1B		
D-sub Connector	NPN	GA1A		
D-Sub Connector	PNP	GA1B		

specifications

#### Serial transmission

Commu prot	nication ocol	Output Format	Number of points	Code		
DeviceNet		NPN		JA1C		
Deviceme	:L	PNP		JA1D		
CC-LINK		NPN		JA2C		
CC-LINK		PNP		JA2D		
EtherCAT		NPN		JA3C		
EtherCAT		PNP		JA3D		
□4la a ::N   a 4/	ID.	NPN		JA4C		
EtherNet/	IP	PNP		JA4D		
00 1:-1:1	TT Dasia	NPN		JA5C		
CC-Link I	EF Basic	PNP	,,	JA5D		
PROFINET		NPN	32 points Output	JA6C		
		PNP		JA6D		
00 1 : 1- 1		NPN	8	JA7C		
CC-Link I	E FIEIG	PNP		JA7D		
CC-Link I	E TON	NPN		JA8C		
CC-LINK I	EISN	PNP		JA8D		
	ClassA	NPN		JA9C		
IO-Link		PNP	JA9D			
	ClassB	NPN		JA9G		
		PNP		JA9H		
IO-Link Wireless		NPN		JB1C		
		PNP		JB1D		

#### Station No.

	<b>O O I I I I</b>		
	Code	Content	
	02	2 stations	
	to	to	
*2	16	16 stations	

- \*1: The wiring inside the base is all for double solenoid regardless of the type of valve used. The blank number for one solenoid is generated in the section where a single solenoid is mounted.
- \*2: Differs depending on the reduced wiring specifications. Refer to the individual specifications (on page 7).

#### **7** Exhaust method

	Code	Content	
	Blank	Centralized Exhaust (port R is a push-in fitting)	
*1	х	Silencer integrated (port R is a plug, exhaust is released to atmosphere)	

\*1: 6A silencer is integrated at the position selected with port P/ R position.

### 9 Electrical circuit specification

* Multiple selection is not possible.		
Content		
With surge suppressor and indicator lamp		
Low exoergic/energy saving circuit (surge-		
less specifications)		
Surgeless		

\*1: The combination of "E2" and PNP specifications is Custom Product.

	W MIOL	would type	
	Code	Content	
	Blank	Direct mount	
*1	R	DIN rail mount	

\*1: A DIN rail with standard length is attached. For how to calculate the standard length, refer to page 118.

6 Port P/R position (TVG1B: ø 8)

	Multiple colocien is not possible.				
Code	Content				
U	U side				
D	D side				
В	U, D both sides				

- \*1: The port P/R tube has the same direction as the port A/B
- \*2: A filter is built into port P.

#### 8 Pilot operated

Code	Content	
Blank	Internal pilot	
К	External pilot	

#### Port A/B filter

O I OIL A/D III.CI				
Code	Content			
Blank	None			
F	Port A/B filter built in			

\*1: A filter is built into port P.

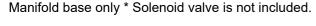
• If an exhaust check valve is necessary, refer to page 54.

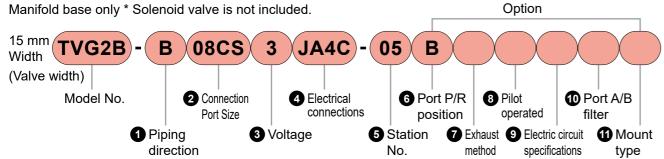
used for air path and sliding section are limited

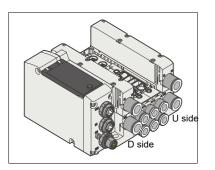
\*\*-\*\*-

• For use in the rechargeable battery manufacturing process, materials

model No. Notation Method







### 2 Port size (port A/B)

#### Metric fitting

Fitting	Port A/B	Code
	ø4	04CS
Dunk in	ø6	06CS
Push-in	ø8	08CS
	ø10	10CS
Push-in	ø6	06CU
L-type upward *1	ø8	08CU
Push-in	ø6	06CD
L type downward	ø8	08CD

#### Inch fitting

Fitting	Port A/B	Code	
Durah in	ø1/4"	06LS	
Push-in	ø5/16"	08LS	
	ø1/4"	06LU	*2
L-type upward *1	ø5/16"	08LU	*2

<sup>\*1: 3-</sup>position is not available for L-type upward push-in fittings.

Piping direction

T iping an obtion		
Code	Content	
В	Side piping	

Voltage

Code	Content
3	24 VDC

# 4 Electrical connections

Reduced wiring connection			
Content	Output Format	Code	
Common terminal block	NPN	EA1A	8

Content	Output Format	Code	
Common terminal block	NPN	EA1A	
(M3 thread)	PNP	EA1B	0
Multi-connector	NPN	FA1A	
Multi-connector	PNP	FA1B	8
D-sub Connector	NPN	GA1A	
D-SUD CONNECTOR	PNP	GA1B	

Serial	transmission

Communication protocol		Output Format	Number of points	Code			
DavidanNat		DeviceNet		NPN		JA1C	
Deviceive	:L	PNP		JA1D			
CC-LINK		NPN		JA2C			
CC-LINK		PNP		JA2D			
EtherCAT		NPN		JA3C			
Lileicki		PNP		JA3D			
EtherNet/	ID	NPN		JA4C			
Ellielivel/	IF	PNP		JA4D			
CC-Link I	EE Booio	NPN	<b>.</b>	JA5C			
ICC-LIIK I	ET PNP HIGH		tpu	JA5D			
PROFINET		NPN	l ou	JA6C			
PROFINE	-1	PNP	oin	JA6D			
CC Link I	E Eiold	NPN	32 p	JA7C			
CC-LIIK I	C-Link IE Field		ິ	JA7D			
CC-Link I	E TQN	NPN		JA8C			
CC-LIIK I	LION	PNP		JA8D			
ClassA		NPN		JA9C			
IO-Link	ClassA	PNP		JA9D			
	ClassB	NPN		JA9G			
Classb		PNP		JA9H			
IO-Link Wireless		NPN		JB1C			
		PNP		JB1D			

### Station No.

	O ctation ito:		
Ī	Code	Content	
	02	2 stations	
	to	to	
*2	16	16 stations	

- \*1: The wiring inside the base is all for double solenoid regardless of the type of valve used. The blank number for one solenoid is generated in the section where a single solenoid is mounted.
- \*2: Differs depending on the reduced wiring specifications. Refer to the individual specifications (on page 7).

#### ♠ Exhaust method

	LAHaust Hiethou			
	Code	Content		
	Blank	Centralized Exhaust (port R is a push-in fitting)		
*1	х	Silencer integrated (port R is a plug, exhaust is released to atmosphere)	•	

\*1: 6The silencer is built into the unit at the location selected with port P/R position.

#### 9 Electrical circuit specification

* M	* Multiple selection is not possible.		
	Code	Content	
E	Blank	With surge suppressor and indicator lamp	
	E1	Low exoergic/energy saving circuit	
	E1	(surgeless specifications)	
	E2	Surgeless	

<sup>\*1:</sup> The combination of "E2" and PNP specifications is Custom Product.

#### **M** Mount type

	Code	Content
-	Blank	Direct mount
1	R	DIN rail mount

<sup>\*1:</sup> A DIN rail with standard length is attached. For how to calculate the standard length, refer to page 118.

# 6 Port P/R position

(TVG2B: ø 10)

\* Multiple selection is not possible.

Code	Content	
U	U side	
D	D side	
В	U, D both sides	
	. = . =	

<sup>\*1:</sup> The Port P/R tube has the same direction as the Port A/B

#### 8 Pilot operated

Code	Content	
Blank	Internal pilot	
к	External pilot	

#### 10 Port A/B filter

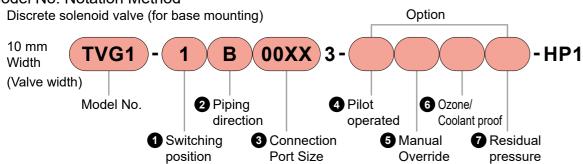
• • • •	• 1 5167 H = 11165				
Code	Content				
Blank	None				
F	Port A/B filter built in	## : W			

<sup>\*1:</sup> A filter is built into port P.

<sup>\*2:</sup> Custom Product.

<sup>\*2:</sup> A filter is built into port P.

### model No. Notation Method



#### **Attached Parts**

class

- · The valve mounting screws are included.
- · The gasket is attached to the manifold base.

#### 1 Switching position class

	Code	Content		
	1	2-position single		
	2	2-position double		
	3	3-position closed center		
	4	3-position exhaust center		
	5	3-position pressure center		
*1	Α		A valve side: Normally Closed	
'	A		B valve side: Normally Closed	
*1	В	3-port valve Two valves	A valve side: Normally Open	
'	В	integrated	B valve side: Normally Open	
*1	_	lincgrated	A valve side: Normally Closed	
'	•		B valve side: Normally Open	

exhaust valve

\*1: Only compatible with internal pilot. Dimensions of the Dimensions diagram are the same as those of 2-position

#### 2 Piping direction

	<u> </u>
Code	Content
В	Side piping

#### 4 Pilot operated

Code	Content
Blank	Internal pilot
K	External pilot

# **3** Connection Port Size

Code	Content
00XX	Discrete solenoid valve for base

**7** Residual pressure exhaust valve

\*1: 1 Solenoid position "3" and "4" only are supported.

\*2: **5**Only the manual override "M2" and "M3" are supported.

exhaust valve

Without residual pressure exhaust valve With non-locking residual pressure

With locking residual pressure exhaust

Code

Y1

Y2

\*1, \*2

\*1, \*2

#### 5 Manual device \* Multiple selections are not possible.

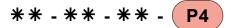
Code	Content	
Blank	With locking, non-locking common, misoperation prevention cover	
M1	Non-locking, with misoperation prevention cover	
M2	Locking/non-locking common, tool operation, Without cover	
М3	Non-locking, tool operation, without cover	

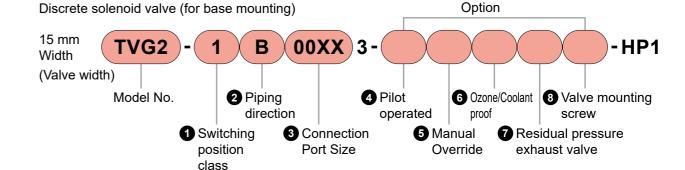
#### 6 Ozone/Coolant proof

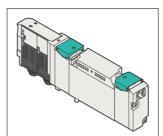
Code Content		Content	
	Blank	Standard specifications	
		Ozone/Coolant proof (main valve fluorine	
	Α	specification)	

### Rechargeable Battery Compatible Specification For details, please refer to P. 90.

• For use in the rechargeable battery manufacturing process, materials used for air path and sliding section are limited







model No. Notation Method

#### **Attached Parts**

- The valve mounting screws are included.
- The gasket is attached to the manifold base.

#### 1 Switching position class

	Code		Content	
	1	2-position sir	ngle	
	2	2-position do	ouble	
	3	3-position cl	osed center	
	4	3-position e	xhaust center	
	5	3-position p	ressure center	
*1	Α	3-port	A valve side: Normally Closed B valve side: Normally Closed	
*1	В	valve Two valves	A valve side: Normally Open B valve side: Normally Open	
*1	С	integrated	A valve side: Normally Closed B valve side: Normally Open	
	*1. Only a	*4. Only annually with internal pilet Disconsions of the		

\*1: Only compatible with internal pilot. Dimensions of the Dimensions diagram are the same as those of 2-position double.

#### 2 Piping direction

	Code	Content
ı	В	Side piping

#### Pilot operated

• not operation	
Code	Content
Blank	Internal pilot
K	External pilot

6 Ozone/Coolant proof	

		<b>-</b>
	Code	Content
	Blank	Standard specifications
	Α	Ozone/Coolant proof (main valve fluorine specification)

Code	Content
Blank	Standard specifications
A	Ozone/Coolant proof (main valve fluorine specification)

#### Valve mounting screw

Valve inculting screw		
Code	Content	
Blank	Pan head machine screw with Phillips head/flathead	
J	Hexagon Socket Head Cap Screw	

Attached Parts

### **3** Connection Port Size

Code	Content
00XX	Discrete solenoid valve for base

#### Manual device \* Multiple selections are not possible.

Code	Content	
Blank	With locking, non-locking common, misoperation prevention cover	
M1	Non-locking, with misoperation prevention cover	
M2	Locking/non-locking common, tool operation, without cover	
М3	Non-locking, tool operation, without cover	

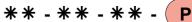
#### **7** Residual pressure exhaust valve

	Code Content			
	Blank	Without residual pressure exhaust valve		
1, *2	Y1	With non-locking residual pressure exhaust valve		
*1, *2	Y2	With locking residual pressure exhaust valve		

- \*1: OSolenoid position "3" and "4" only are supported.
- \*2: **5**Only the manual override "M2" and "M3" are supported.

Rechargeable Battery Compatible Specification For details, please refer to P. 90.

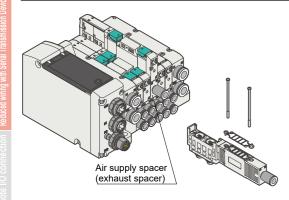
• For use in the rechargeable battery manufacturing process, materials used for air path and sliding section are limited





• If an exhaust check valve is necessary, refer to page 54.

### Air supply spacer/exhaust spacer



#### **Specifications**

Air supply spacer

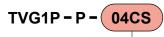
Model No.	Weight g	
TVG1P-P-□	31	

Exhaust spacer

Model No.	Weight g
TVG1P-R-□	31

#### Discrete model No.

Air supply spacer



1 Connection Port Size

#### **1** Connection Port Size

Code	Bore size	Content
04CS	ø4	ø4 Push-in fitting
06CS	ø6	ø6 Push-in fitting

Exhaust spacer



1 Connection Port Size

#### 1 Connection Port Size

Code	Bore size	Content
04CS	ø4	ø4 Push-in fitting
06CS	ø6	ø6 Push-in fitting

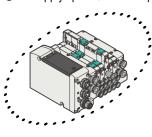


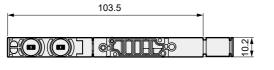
Notes for model No. Selection

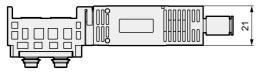
- \*1: Specify the positions and quantity of spacers for manifold in the manifold specifications sheet (Refer to pages 119 to 126 Please provide instructions.
- \*2: Stacking of spacers is not possible.
- \*3: A spacer cannot be combined with a blanking plate.
- \*4: A spacer mounting screw and gasket are included.
- \*5: If the port A/B Fittings is elbow (upward), a spacer cannot be selected.

#### **External Dimension Drawings**

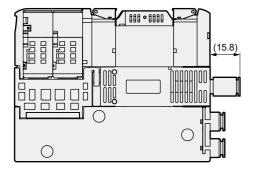
Air supply spacer/exhaust spacer

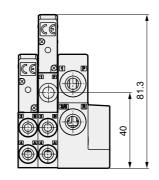




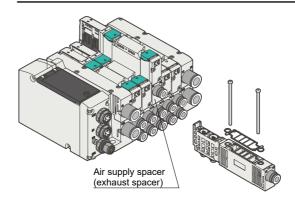








#### Air supply spacer/exhaust spacer



#### **Specifications**

Air supply spacer

Model No.	Weight g	
TVG2P-P-□	56	

Exhaust spacer

<u> </u>	
Model No.	Weight g
TVG2P-R-□	56

#### Discrete model No.

Air supply spacer



1 Connection Port Size

#### 1 Connection Port Size

Code	Bore size	Content
06CS	ø6	ø6 Push-in fitting
08CS	ø8	ø8 Push-in fitting
10CS	ø10	ø10 Push-in fitting

Exhaust spacer



1 Connection Port Size

#### **1** Connection Port Size

Code	Bore size	Content	
06CS	ø6	ø6 Push-in fitting	
08CS	ø8	ø8 Push-in fitting	
10CS	ø10 ø10 Push-in fitting		

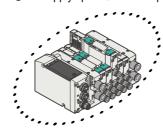


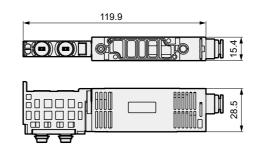
Notes for model No. Selection

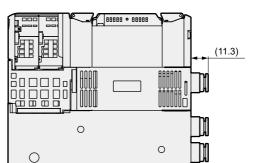
- \*1: Specify the positions and quantity of spacers for manifold in the manifold specifications sheet (Refer to pages 119 to 126.
  \*2: Stacking of spacers is not possible.
- \*3: A spacer cannot be combined with a blanking plate
- \*4: A spacer mounting screw and gasket are included.
- \*5: If the port A/B Fittings is elbow (upward), a spacer cannot be selected.

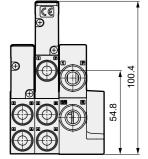
#### **External Dimension Drawings**

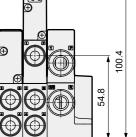
Air supply spacer/exhaust spacer



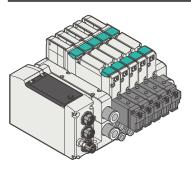








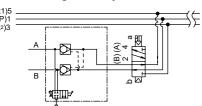
### Spacer Pilot Check Valve (spacer pilot check valve)



#### **Specifications**

Item		TVG1P-PC-	TVG2P-PC-□
Operating Fluid		Compressed Air	
Maximum Operating Pressure MPa		0.7	
Min. working pressure N		0.2	
Proof Pressure	MPa	1.05	
Ambient Temperature	°C	-5 to 55 (no freezing)	
Working fluid temperature		5 to 55	
Atmosphere		Cannot be used enviro	in corrosive gas nment.
Weight g		34	73

#### Circuit Diagram Symbol



\*: Please note that if you use cylinders with a large bore (guideline ø50 or more) in a state with almost no throttling on the exhaust side (e.g., without a speed controller or silencer), this may lead to a decrease in intermediate stop accuracy and intermediate stop failure.

# Discrete model No.



2 Residual pressure exhaust function

### Model No.

TVG1 10 mm width (valve width	1)
TVG2 15 mm width (valve width	1)

Code	Content		
M	Manual override of non-locking		
M1	Locking manual device		
Blank	Without residual pressure		
DIAIIK	exhaust function		

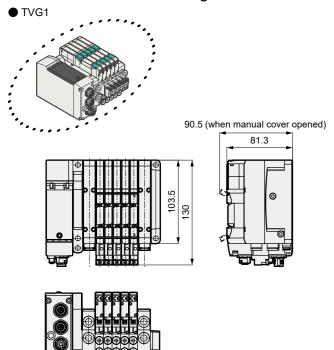
2 Residual pressure exhaust function

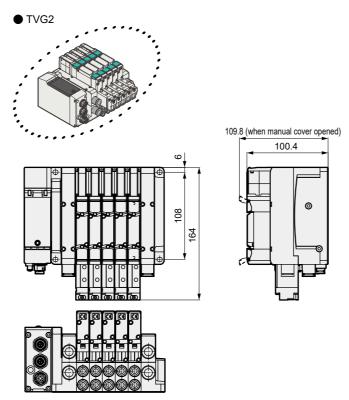


Notes for model No. Selection

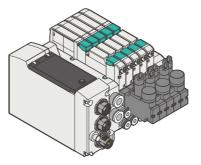
- \*1: Specify the spacer mounting position and residual pressure exhaust function selection in manifold specifications sheet.
- \*2: If the port A/B Fittings is elbow (upward), a spacer cannot be selected.
- \*3: Stacking of spacers is not possible.
- \*4: A spacer cannot be combined with a blanking plate.
- \*5: A spacer mounting screw and gasket are included.

#### **External Dimension Drawings**



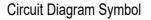


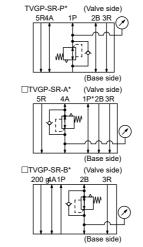
#### Spacer regulator



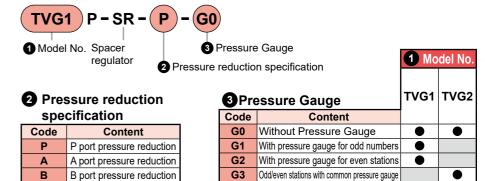
#### **Specifications**

Item		TVG1P-SR-□	TVG2P-SR-□
Pressure reduction port		P/ <i>F</i>	A / B
Operating Fluid		Compre	ssed Air
Maximum Operating Pressure	MPa	0.	.7
Min. working pressure	MPa	0.	.1
Proof Pressure	MPa	1.0	05
Ambient Temperature	°C	−5 to 55 (n	o freezing)
Working fluid temperature	°C	5 to	55
Atmosphere		Cannot be used enviror	in corrosive gas nment.
Weight	g	48	110





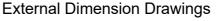
#### Discrete model No.

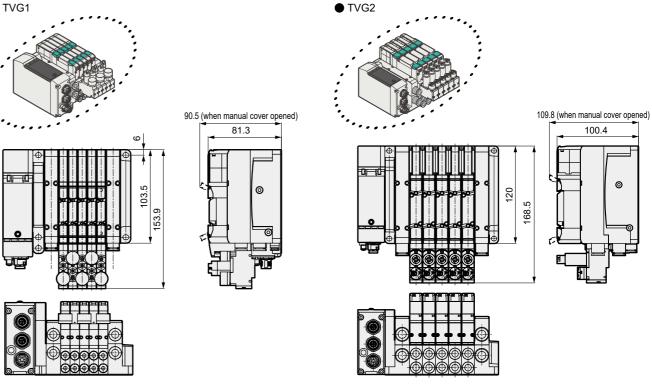




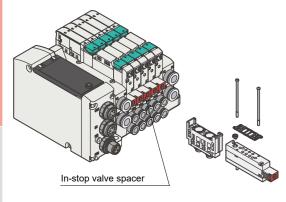
Notes for model No. Selection

- \*1: Specify the spacer positions in the manifold specifications sheet.
- \*2: If the port A/B Fittings is elbow (upward), a spacer cannot be selected.
- \*3: Stacking of spacers is not possible.
- \*4: A spacer cannot be combined with a blanking plate.
- \*5: A spacer mounting screw and gasket are included.





### In-stop valve spacer

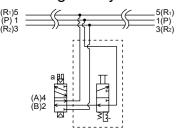


# Specifications

Item		TVG1P-IS	TVG2P-IS	
Operating Fluid		Compressed Air		
Maximum Operating Pressure	MPa	0.	7	
Min. working pressure	MPa	0.	1	
Proof Pressure	MPa	1.0	05	
Ambient Temperature	°C	−5 to 55 (n	o freezing)	
Working fluid temperature	°C	5 to	55	
Atmosphere		Cannot be used enviror		
Weight	g	35	71	

MEMO

#### Circuit Diagram Symbol



#### Discrete model No.



#### 1 Model No.

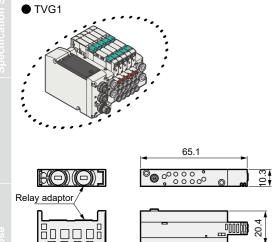
	Code	Content
TVG1 10 mm wid		10 mm width (valve width)
	TVG2	15 mm width (valve width)

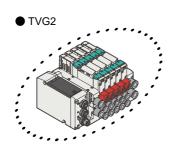
Notes for model No. Selection

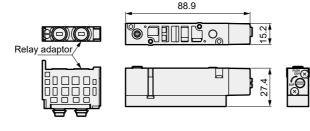
- \*1: Specify the spacer positions in the manifold specifications sheet.
- \*2: If the A/B port fitting is elbow type facing upward, a spacer cannot be selected.
  \*3: Stacking of spacers is not possible.
  \*4: A spacer cannot be combined with a blanking plate.

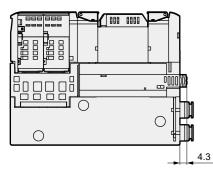
- \*5: Not compatible in combination with external pilot (K).

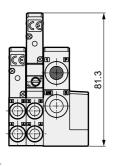
# **External Dimension Drawings**



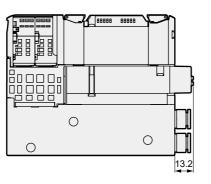


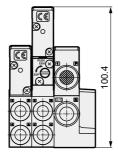






**.** 





**CKD** 

23

Dimensions diagram (Serial Transmission Device Unit JA JB JB)

12.5 33.2 28.410.50.5 16

 $L_5 = L_4 + (40 \text{ and up})$ 

 $L_6 = L_5 - 12.5$ 

 $L_4 = L_1 + 58.4$ 

 $L_3 = L_1 + 33.2$ 

 $L_1 = (10.5 \times n) + (16 \times m) + 55.9$ 

 $L_2 = L_1 - 11.7$ 

23456

U side

5-6.5

5-M5 mounting hole

143.4 (when switch cover opened) 9.1

69.5 (when manual cover opened)

1 Wiring block

2 Blanking plate

D side

TVG1M

Part Name







1 Wiring block 2 Blanking plate

Part Name

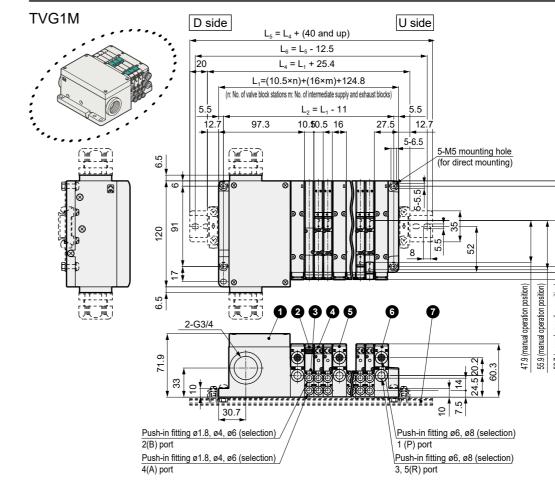
81.3 (when manual cover opened) 9.1

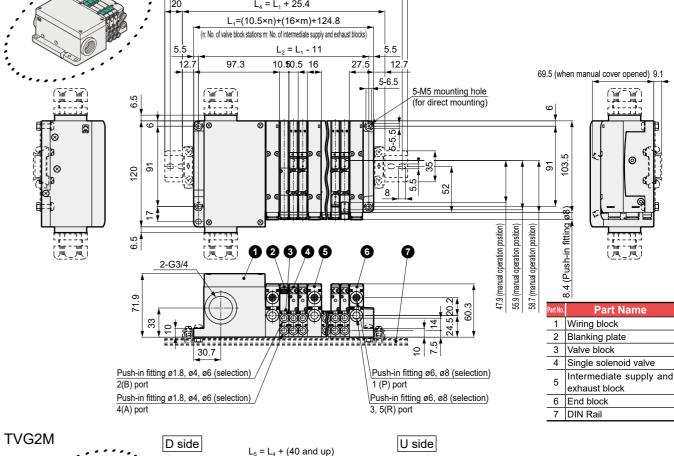
3 Valve block

4 Single solenoid valve mediate supply and exhaust block

6 End block







L<sub>6</sub> = L<sub>5</sub> - 12.5

 $L_4 = L_1 + 25.4$ 

L<sub>1</sub>=(16×n)+(18×m)+128.8

(n: No. of valve block stations m: No. of intermediate supply and exhaust blocks)

 $L_0 = L_1 - 11$ 

16 16

99.3

8 8

2(B) port

Push-in fitting ø4, ø6, ø8, ø10 (selection)

Push-in fitting ø4, ø6, ø8, ø10 (selection

29.5 12.7

5-M5 mounting hole

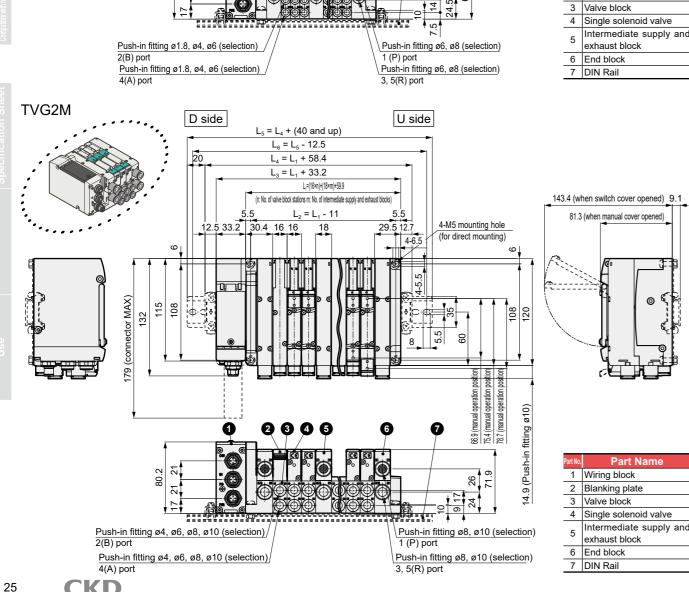
Push-in fitting ø8, ø10 (selectio

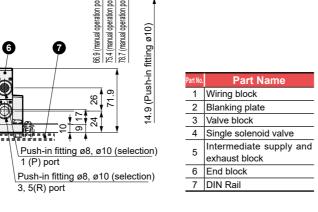
Push-in fitting ø8, ø10 (selection

1 (P) port

3, 5(R) port







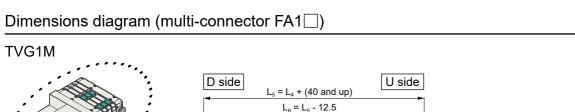
Push-in fitting ø1.8, ø4, ø6 (selection)

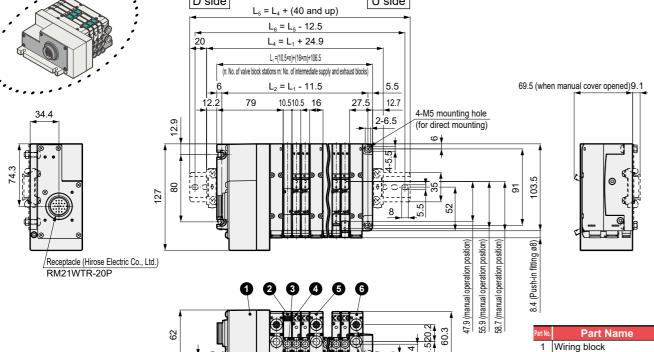
Push-in fitting ø1.8, ø4, ø6 (selection

2(B) port

Intermediate supply and exhaust block

6 End block 7 DIN Rail





2 Blanking plate

4 Single solenoid valve

exhaust block

Intermediate supply and

3 Valve block

6 End block

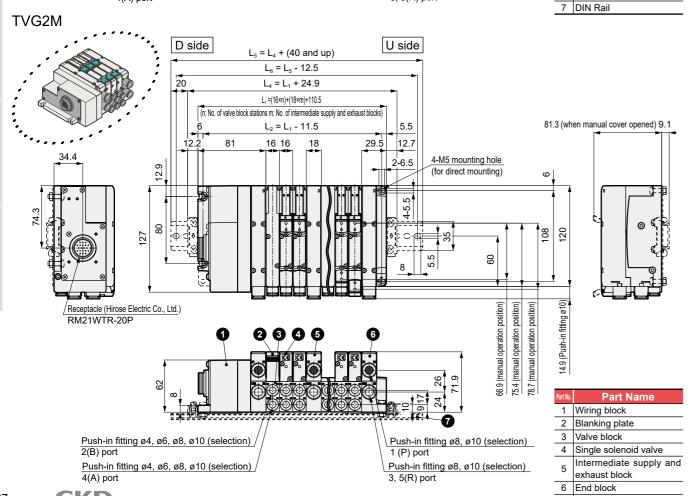
7 DIN Rail

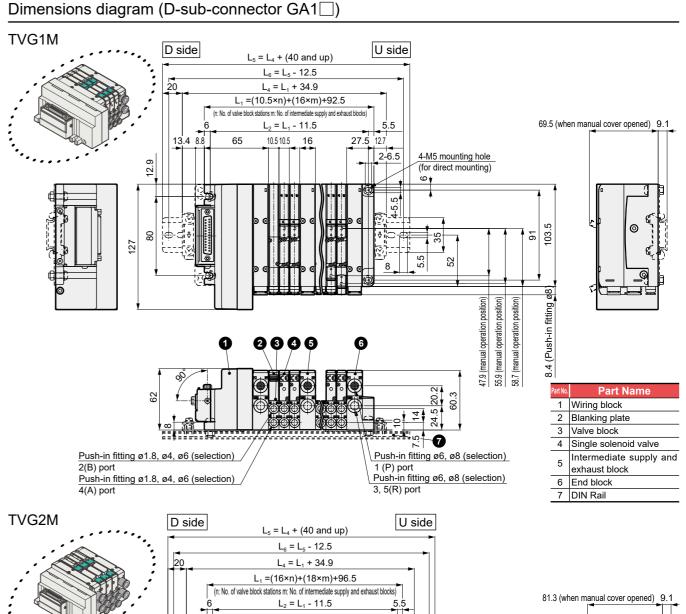
Push-in fitting ø6, ø8 (selection)

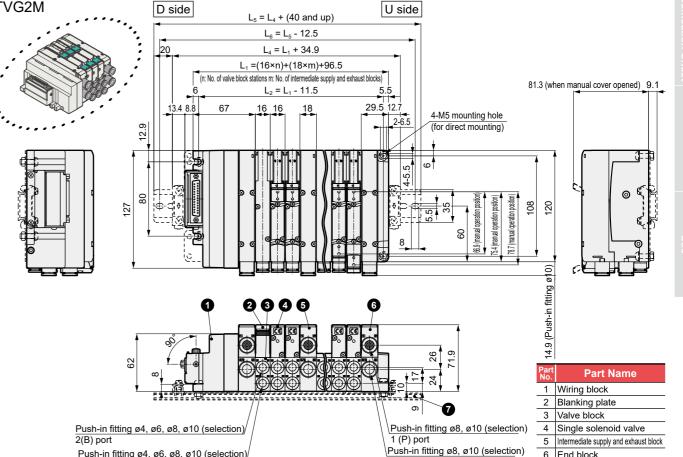
Push-in fitting ø6, ø8 (selection)

1 (P) port

3, 5(R) port





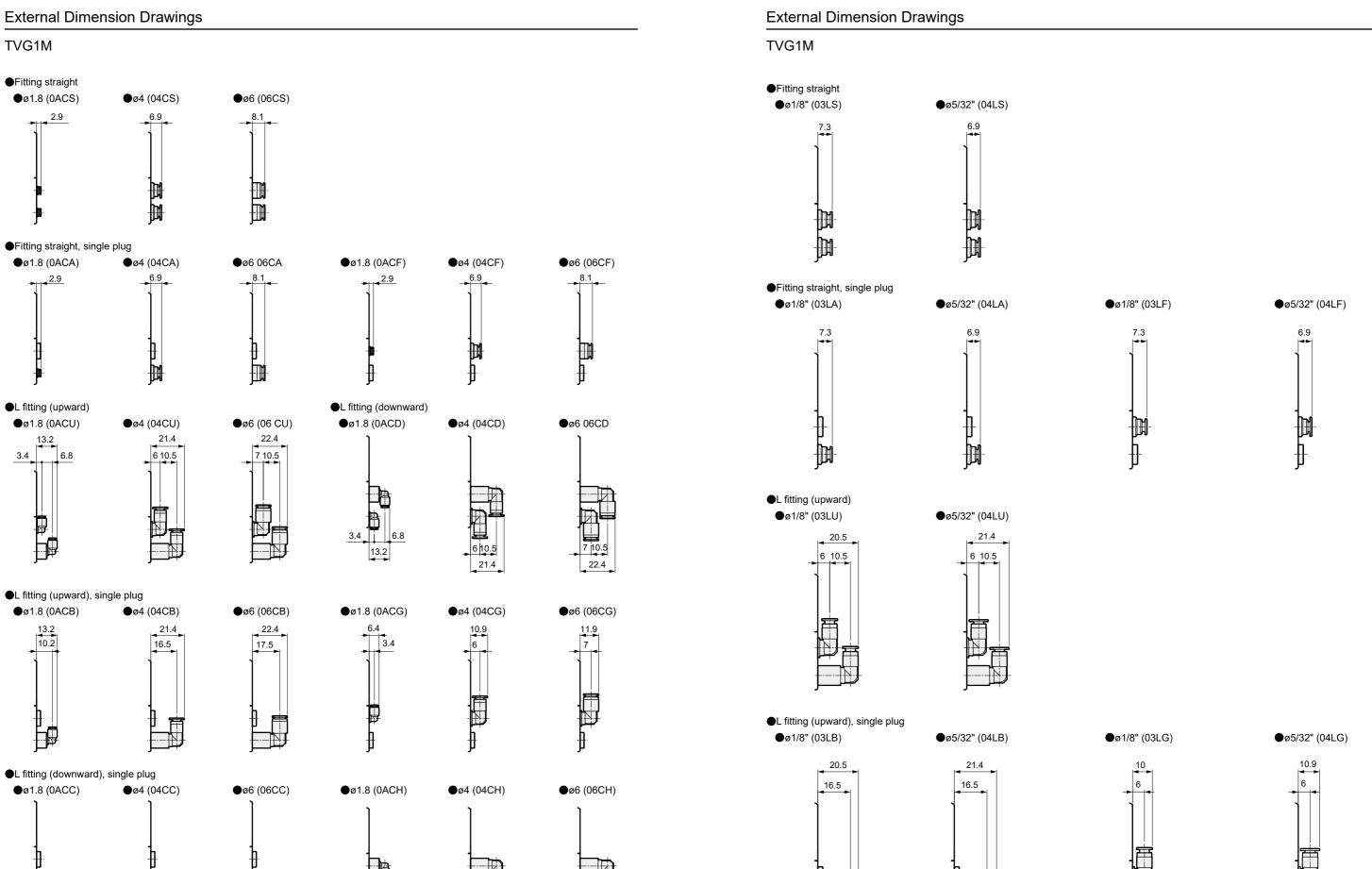


3, 5(R) port

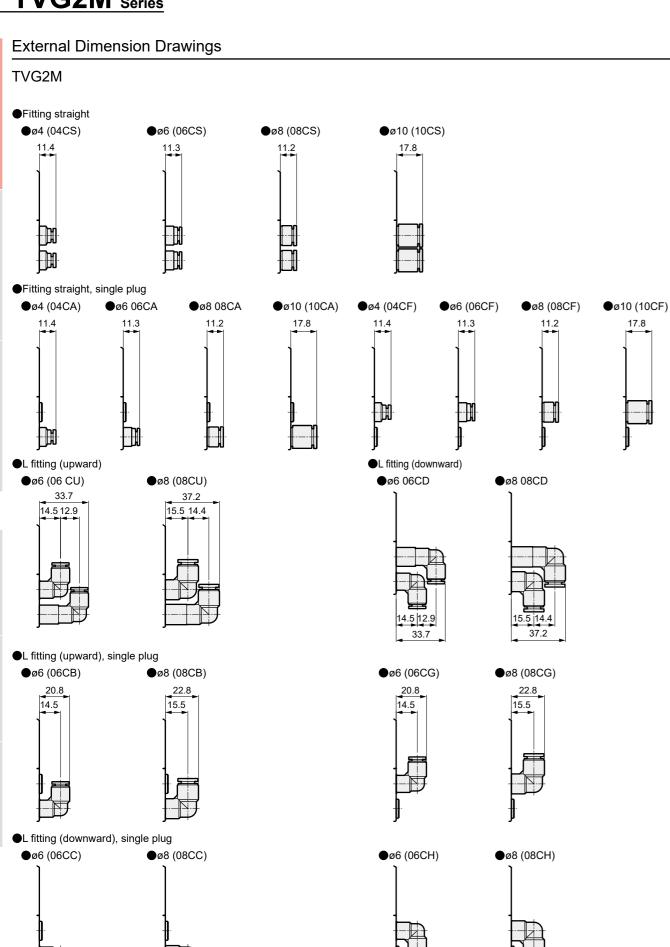
Push-in fitting ø4, ø6, ø8, ø10 (selection

4(A) port

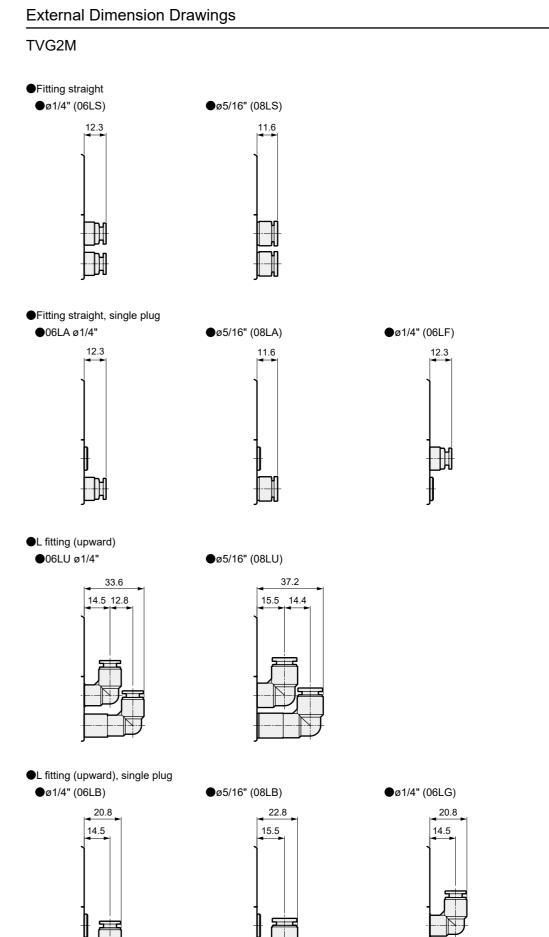
27



●ø5/16" (08LF)



15.5

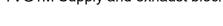


●ø5/16" (08LG)

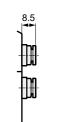
15.5

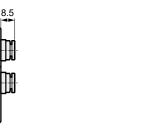
### **External Dimension Drawings**

#### TVG1M Supply and exhaust block



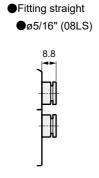


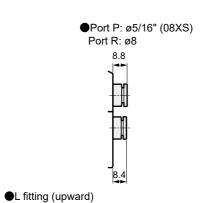


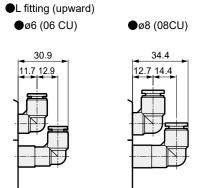


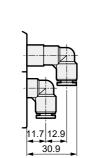


●ø8 (08CS)



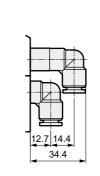






L fitting (downward)

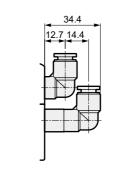
●ø6 06CD



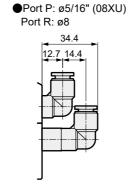
●Fitting straight

●ø3/8" (10LS)

●ø8 08CD

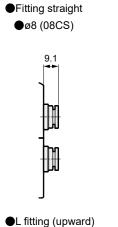


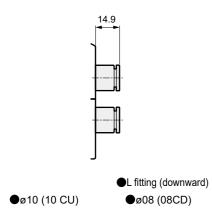
●ø5/16" (08LU)



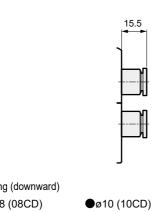
●Port P: ø3/8" (10XS)

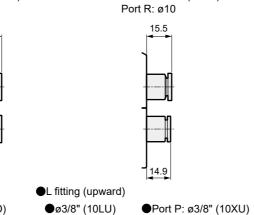
### TVG2M Supply and exhaust block

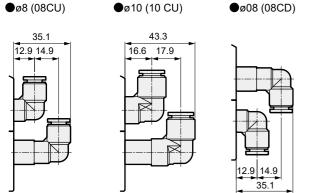


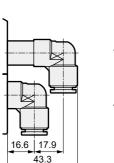


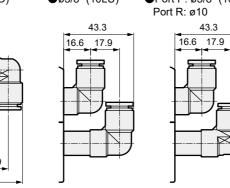
●ø10 (10CS)







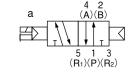


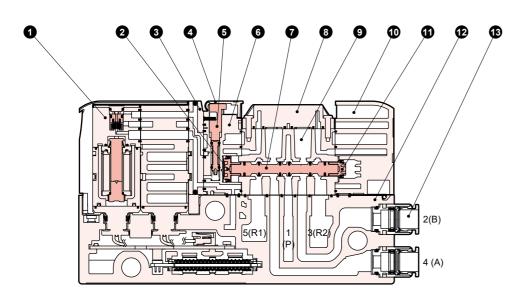


MEMO

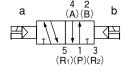
# Internal Structure Diagram/Materials

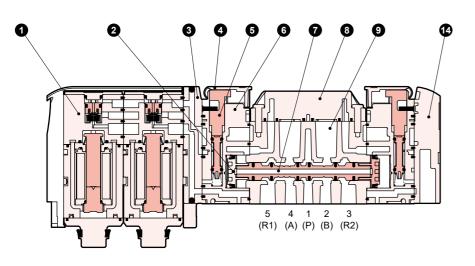
#### 2-position single





# 2-position double





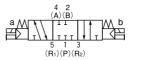
#### Main parts list

Part No.	Part Name	Material	Part No.	Part Name	Material
1	Coil assembly	-	8	Plate	Resin
2	Piston D assembly	-	9	Body	Aluminum alloy die-cast
3	Pilot plate	Resin	10	Piston chamber S	Resin
4	Manual protection cover	Resin	11	Piston S assembly	_
5	Manual Override	Resin	12	Valve block	Resin
6	Piston chamber	Resin	13	Cartridge push-in fitting	_
7	Spool assembly	-	14	Сар	Resin

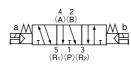
# Internal Structure Diagram/Materials

#### 3-position

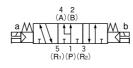
#### Closed center

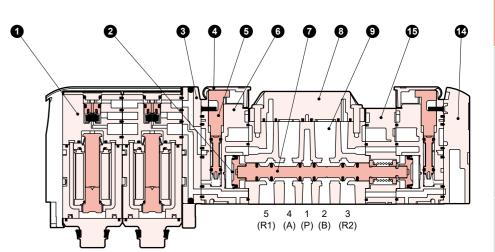


#### Exhaust center



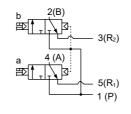
#### Pressure center

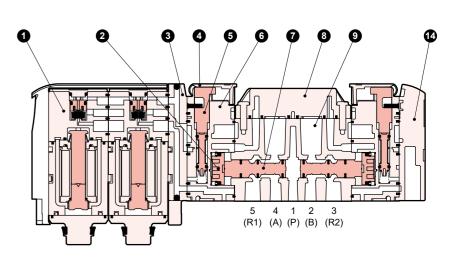




#### ■ Two 3-port valves integrated

#### A side valve: NC type B side valve: NC type



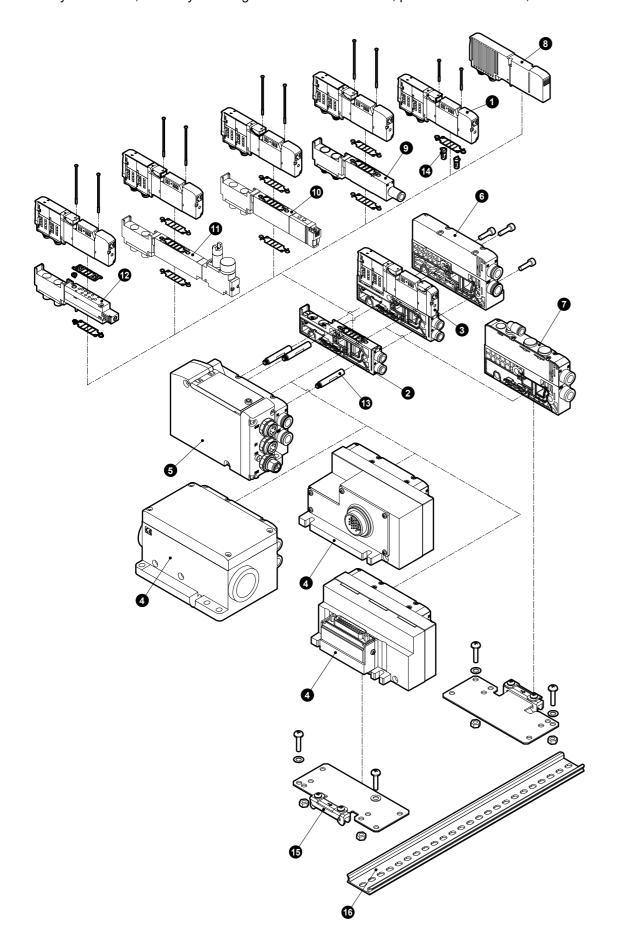


#### Main parts list

Main parte not					
Part No.	Part Name	Material	Part No.	Part Name	Material
1	Coil assembly	-	9	Body	Aluminum alloy die-cast
2	Piston D assembly	-	10	Piston chamber S	Resin
3	Pilot plate	Resin	11	Piston S assembly	-
4	Manual protection cover	Resin	12	Valve block	Resin
5	Manual Override	Resin	13	Cartridge push-in fitting	-
6	Piston chamber	Resin	14	Сар	Resin
7	Spool assembly	-	15	Body block	Resin
8	Plate	Resin			

# Block manifolds Configurations

As it can be freely assembled, it is easy to change the number of stations, perform maintenance, etc.



Part No.	Part Name	Model No. (Example)	Remarks	Page Listed
0	Discrete solenoid valve (for base mounting)	TVG1-1B00XX3-HP1	A wide range of solenoid valves is available. It is also possible to have solenoid valves of different solenoid positions mixed in the same manifold.	P. 17
2	Valve block	TVG1P-VB-06CS3	The block on which the solenoid valve is based. Mount according to the required number of stations of solenoid valves. However, the number of stations depends on the wiring method. (Refer to pages 7 and 63.) As option is selected, it is also possible to partition the flow path in the manifold.	P. 45
3	Valve block with solenoid valve	TVG1P-1B06CS3-HP1	_	P. 41
4	Wiring block (common terminal block) Multi-connector D-sub Connector	TVG1P-TB-08CS-EA1	These blocks provide electrical wiring to the manifold and provide the air and exhaust functions.	P. 39
6	Wiring block (serial transmission)	TVG1P-TB-08CS-JA1C		P. 39
6	End block	TVG1P-EB-08CS	Block that provides air supply and exhaust to the manifold. Mount the block on the opposite side of the wiring block.	P. 50
0	Intermediate supply and exhaust block	TVG1P-QB-08CS	Block that provides air supply and exhaust to the manifold. Use this when the number of valve stations increases, or when the supply flow rate shortage is a concern.	P. 51
8	Blanking plate	TVG1P-BP	Assembled with a spare valve block for use if a sole- noid valve will be added later.	P. 54
	Air supply spacer	TVG1P-P-06CS	Use this when supplying different pressures for each station.	P. 19
9	(exhaust spacer)	TVG1P-R-06CS	Used for individual exhaust. Use this product to prevent misoperation due to increased exhaust capacity and exhaust lead-in.	P. 19
•	Spacer Pilot Check Valve	TVG1P-PC-	Use this to stop the cylinder midway and to prevent it from falling.	P. 21
0	Spacer regulator	TVG1P-SR-P-G1	Pressure can be adjusted individually for each station. Port P, A and B pressure reduction types are available.	P. 22
Ø	In-stop valve spacer	TVG1P-IS	The air supply can be shut off individually for each station.	P. 23
<b>1</b> 3	Tie rod	TVG1P-TR-05	TVG1 is available in sets of 3, and TVG2 is available in sets of 2.	P. 49
4	Check valve	TVG1P-CHECK-VALVE	Prevents cylinder malfunction (popping out phenomenon) caused by exhaust air lead-in.	P. 54
<b>1</b>	DIN rail mounting bracket kit	TVG1P-D	A direct mount manifold can be modified to DIN rail mount manifold.	P. 53
<b>@</b>	DIN Rail	N4GR-BAA200	For how to calculate the standard length, refer to page 118.	P. 53

### Weight

#### TVG1

Part Name	Model No.	Weight (g)
	TVG1-1B00XX3-HP1	55
Discrete solenoid valve	TVG1-2B00XX3-HP1	62
(for base mounting)	TVG1-3/4/5B00XX3-HP1	65
	TVG1-A/B/CB00XX3-HP1	63
Blanking plate	TVG1P-BP	40
End block	TVG1P-EB-08CS	159
Valve block	TVG1P-VB-06CS3	31
	TVG1P-TB-08CS-E *	518
	TVG1P-TB-08CS-F *	850
Wiring block	TVG1P-TB-08CS-G *	707
	TVG1P-TB-08CS-J *	456
	TVG1P-TB-08CS-K *	280

#### Parts list

#### TVG1

Part Name	Model No.
ø1.8 Push-in fitting	4G1R-JOINT-C18
ø4 Push-in fitting	4G1R-JOINT-C4
ø6 Push-in fitting	4G1R-JOINT-C6
ø1.8 push-in L-fitting	4G1R-JOINT-CL18,CLL18
ø4push-in L fitting	4G1R-JOINT-CL4,CLL4
ø6 push-in L-fitting	4G1R-JOINT-CL6,CLL6
ø1/8" push-in fitting	4G1R-JOINT-C3N
ø5/32" push-in fitting	4G1R-JOINT-C4N
ø1/8" push-in L-fitting	*1 4G1R-JOINT-CL3N,CLL3N
ø5/32" L type push-in fitting	*1 4G1R-JOINT-CL4N,CLL4N
Plug Cartridge	4G1R-JOINT-CPG

<sup>\*1:</sup> Custom Product.

#### TVG2

Part Name	Model No.	Weight (g)
	TVG2-1B00XX3-HP1	94
Discrete solenoid valve	TVG2-2B00XX3-HP1	101
(for base mounting)	TVG2-3/4/5B00XX3-HP1	110
	TVG2-A/B/CB00XX3-HP1	101
Blanking plate	TVG2P-BP	68
End block	TVG2P-EB-10CS	224
Valve block	TVG2P-VB-08CS3	66
	TVG2P-TB-10CS-E *	580
	TVG2P-TB-10CS-F *	912
Wiring block	TVG2P-TB-10CS-G *	769
	TVG2P-TB-10CS-J *	529
	TVG2P-TB-10CS-K *	356

#### TVG2

1 V G Z	
Part Name	Model No.
ø4 Push-in fitting	4G2R-JOINT-C4
ø6 Push-in fitting	4G2R-JOINT-C6
ø8 Push-in fitting	4G2R-JOINT-C8
ø10 Push-in fitting	TVG2P-JOINT-C10
ø6 push-in L-fitting	4G2R-JOINT-CL6,CLL6
ø8 push-in L fitting	4G2R-JOINT-CL8,CLL8
ø1/4" push-in fitting	4G2R-JOINT-C6N
ø5/16" push-in fitting	4G2R-JOINT-C8N
ø1/4" L type push-in fitting *1	4G2R-JOINT-CL6N,CLL6N
ø5/16" push-in L-fitting *1	4G2R-JOINT-CL8N,CLL8N
Plug Cartridge	4G2R-JOINT-CPG
Ø8 push-in L fitting         Ø1/4" push-in fitting         Ø5/16" push-in fitting         Ø1/4" L type push-in fitting       *1         Ø5/16" push-in L-fitting       *1	4G2R-JOINT-CL8,CLL8 4G2R-JOINT-C6N 4G2R-JOINT-C8N 4G2R-JOINT-CL6N,CLL6N 4G2R-JOINT-CL8N,CLL8N

Code

2D

2D-P

2G

2G-P

2EC

2EC-P

2EN

2EN-P

2EB

2EB-P

2EP-P

2EF-P 2TG

2TG-P

2KC-A

2KC-PA

2KC-B

2KC-PB

2WK

2WK-P

Model No. Notation Method

Serial transmission

protocol

DeviceNet

CC-LINK

EtherCAT

EtherNet/IP

PROFINET

CC-Link IEF Basic

CC-Link IE Field

CC-Link IE TSN

Communication Output Number

Serial transmission device unit

Model No. 1 Serial transmission

Format of points

NPN

PNP

NPN

PNP

NPN

PNP

NPN

PNP

NPN

PNP

NPN

PNP

NPN

**PNP** 

**PNP** 

NPN

PNP

NPN

PNP

NPN

PNP

#### Model No. Notation Method Wiring block

10 mm В 08CS TVG1P JA4C Width 15 mm В **10CS** TVG2P Width (Valve 1 Model 2 Piping 4 Exhaust 6 Electrical width) direction 3 Connection No. method connections **5** Pilot operated

Rechargeable Battery Compatible Specification

 For use in the rechargeable battery manufacturing process, materials used for air path and sliding section are limited

\*\*-\*\*- P4

For details, please refer to P. 90.

#### **Attached Parts**

The tie rod fixing nut is built into the wiring block.

				1 Mod	del No.
3 Connec	ction Port Size	Standard o     Custom Pr	compliance	TVG1P	TVG2P
Metric fitting					
Fitting	Port P/F	₹	Code		

3 Conne	3 Connection Port Size O: Custom Product							
<b>Metric fitting</b>	Metric fitting							
Fitting	Port	P/R	Code					
	ø6		06CS	•				
Push-in	ø8		08CS	•				
	ø10		10CS		•			
Push-in	ø6		06CU	•				
L-type	ø8		08CU	•	•			
upward	ø10		10CU		•			
Push-in	Push-in Ø6		06CD	•				
L type	ø8		08CD	•	•			
downward	ø10		10CD		•			
*1 Inch fitting								
Fitting	Port	P/R	Code					
Push-in	ø5/16"		08LS	•				
Fusii-iii	ø3/8"		10LS					
Push-in	ø5/16"		08LU	0				
L-type upward	ø3/8"		10LU		0			
*3 Port P: Fitting	gs Inch, port R:							
Fitting	P Port	Code						
Push-in	ø5/16"	ø8	08XS	•				
usii-iii	ø3/8"	ø10	10XS		•			

#### 2 Piping direction

-	-
Code	Content
В	Side piping

#### 4 Exhaust method

	Code	Content
	No	Centralized Exhaust
	Symbol	(port R is a push-in fitting)
*1	x	Exhaust is open to atmosphere, with built-in silencer (Port R is sealed.)

- \*1: **③**X is not available for port size "00XX", "□□
- \*2: X is not available for pilot KZ.

#### 5 Pilot operated

		<u> </u>
	Code	Content
	No Code	Internal pilot
*1, *2	K	External pilot
*1, *2	KZ	External pilot (PA/PR separated)

- \*1: Cannot be selected for 3 port size "00XX".
- \*2: The external pilot port is an ø6 One-touch Fitting, and in the case of  $\square \square \square \square \square$ , it will be an ø5/32 inch fitting.

### 6 Electrical connections

Content	Code
Common terminal block (M3 thread)	EA1
Multi-connector	FA1
D-sub Connector	GA1

- Serial transmission

	inication tocol	Output Format	Number of points	Code
DeviceNe	Nacida a Nick			JA1C
Deviceive	ðl.	PNP	]	JA1D
CC-Link	/or 1 10	NPN	]	JA2C
JU-LINK	ver. i. iu	PNP		JA2D
EtherCA	- -	NPN	]	JA3C
EllierCA	l	PNP	]	JA3D
EtherNet	/ID	NPN	]	JA4C
Ellielinel	/IP	PNP	]	JA4D
CC-Link IEF Basic		NPN	ا ــ بع	JA5C
		PNP		JA5D
PROFINI		NPN	32 points Output	JA6C
PROFINI	=1	PNP		JA6D
CC-Link	ור ריבול	NPN		JA7C
CC-LINK	IE FIEIU	PNP		JA7D
CC-Link	IT TON	NPN		JA8C
CC-LINK	IE I SIN	PNP		JA8D
	ClassA	NPN		JA9C
O Link	ClassA	PNP		JA9D
IO-Link	ClassB	NPN	]	JA9G
	ClassB	PNP	İ	JA9H
IO Link V	Virologo	NPN	]	JB1C
IO-Link Wireless		PNP		JB1D

Commu prot	nication ocol	Output Format	Number of points	Code
DeviceNet		NPN		JA1C
Deviceive	L	PNP		JA1D
CC-Link \	/or 1 10	NPN		JA2C
CC-LINK V	/el.1.10	PNP		JA2D
FtherCAT		NPN		JA3C
EllierCAT		PNP		JA3D
EtherNet/	ID	NPN		JA4C
Ellelivel	IF	PNP		JA4D
CC-Link I	EE Booio	NPN	32 points Output	JA5C
CC-LIIK II	EF Dasic	PNP		JA5D
PROFINE	т	NPN		JA6C
PROFINE	. 1	PNP		JA6D
CC-Link I	T Field	NPN	0 32	JA7C
CC-LINK II	E Fleiu	PNP		JA7D
CC-Link I	T TON	NPN		JA8C
CC-LINK II	EISN	PNP		JA8D
	ClassA	NPN		JA9C
IO-Link	ClassA	PNP		JA9D
IO-LIIK	ClassB	NPN		JA9G
	Classb	PNP		JA9H
IO-Link Wireless		NPN	]	JB1C
		PNP		JB1D

#### Attached Parts

IO-Link

• OPP fixing bolts 2pcs.

IO-Link Wireless

· Drip-proof gasket 1pc.

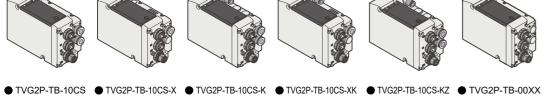
ClassA

ClassB

# Reduced wiring connection

*1:NPN	or PNI	can b	oe used.

p. o.	.0001	1 Ollinat	Polito	
DeviceNe		NPN		JA10
Deviceine	et.	PNP		JA1D
CC Link \	/or 1 10	NPN		JA2C
CC-Link \	ver. 1. 10	PNP		JA2D
EtherCAT		NPN		JA3C
EllielCAI		PNP		JA3D
EtherNet/	/ID	NPN		JA4C
Ellielivel	IF	PNP		JA4D
CC Link I	EF Basic	NPN	32 points Output	JA5C
CC-LIIK I	EF Dasic	PNP		JA5D
DDOEINIE	т	NPN		JA60
PROFINET		PNP	Z T	JA6D
CC-Link I	E Eiold	NPN	32	JA70
CC-LIIIK I	E FIEIU	PNP		JA7D
CC-Link I	E TON	NPN		JA8C
CC-LINK I	E I SIN	PNP		JA8D
	ClassA	NPN		JA90
IO-Link	ClassA	PNP		JA9D
IO-LITIK	ClassP	NPN		JA9G
	ClassB	PNP		JA9H
IO Link M	liralaaa	NPN		JB10
IO-Link Wireless		PNP		JB1D





ø5/16"

ø3/8"



Port P/R

\*3: Cannot be selected together with exhaust method X.

specifications. Fittings Port R and PR (for KZ) are metric. \*2: 5Pilot, K, KZ and 00XX cannot be selected together.



ø8

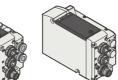
ø10













Push-in

L-type

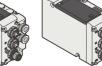
upward Plug

Plug





\*1: Select 08XS, 10XS, 08XU or 10XU when using a silencer with inch Fittings



● TVG1P-TB-08CS ● TVG1P-TB-08CS-X ● TVG1P-TB-08CS-K ● TVG1P-TB-08CS-K ● TVG1P-TB-08CS-KZ ● TVG1P-TB-00XX

08XU

10XU

Code

00XX



0

0























39

Model No. Notation Method

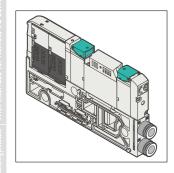
Rechargeable Battery Compatible Specification For details, please refer to P. 90.

• For use in the rechargeable battery manufacturing process, materials used for air path and sliding section are limited

\*\*-\*\*-

• Tie rod is not included, so order separately. Refer to page 49 for details. The gasket between blocks is included.

#### Option Valve block with solenoid valve 10 mm TVG1P- 1 B 06CS 3 Width (Valve Model 2 Piping 4 Voltage 6 Pilot 8 Common 10 Ozone/ 12 Exhaust 14 Air flow path width) No. Coolant proof check valve specifications partition direction operated **1** Switching **3** Connection **5** Base internal **7** Electric circuit **9** Manual 11 Residual position Port Size specifications pressure filter exhaust class



#### 1 Switching position class

ı	Code		Content				
1	1	2-position s	ingle				
1	2	2-position of	louble				
1	3	3-position of	3-position closed center				
1	4	3-position exhaust center					
1	5	3-position pressure center					
1	Α	3-port valve	A valve side: Normally closed/B valve side: Normally Closed				
1	В	Two valves	A valve side: Normally open/B valve side: Normally Open				
1	С	integrated A valve side: Normally closed/B valve side: Normally Open					
2	Z	With blanking plate					
	*1: Only compatible with internal pilot. Dimensions of the Dimensions diagram						

- are the same as those of 2-position double.
- \*2: "-HP1" is not included in the model No. when Z is selected.

### 3 Port size (port A/B)

<ul> <li>Metric fi</li> </ul>	itting			
Fitting	Port	Code	]	
	ø1.8	0ACS	*3	
Push-in	ø4	04CS	1	
	ø6		06CS	
Push-in	ø1.8		0ACU	*3
L-type	ø4		04CU	
upward *2	ø6		06CU	
Push-in	ø1.8		0ACD	*3
L type	ø4		04CD	
downward	ø6		06CD	
Fitting	Single side plug	specifications *1	Code	
ritting	Port A	Port B	Code	
	ø1.8		0ACA	*3
	ø4	Plug	04CA	
Push-in	ø6		06CA	]
i usii-iii		ø1.8	0ACF	*3
	Plug	ø4	04CF	ļ
		ø6	06CF	ļ
	ø1.8		0ACB	*3
Push-in	ø4	Plug	04CB	ļ
L-type	ø6		06CB	
upward		ø1.8	0ACG	*3
*2	Plug	ø4	04CG	
		ø6	06CG	
	ø1.8		0ACC	*3
Push-in	ø4	Plug	04CC	ļ
L type	ø6		06CC	[
downward		ø1.8	0ACH	*3
GOWIIWaiu	Plug	ø4	04CH	[
		ø6	06CH	

#### Inch fitting

Fitting	Por	t A/B	Code	l
Duah in	ø1/8"		03LS	l
Push-in	ø5/32"		04LS	1
Push-in	ø1/8"		C3LU	*.
L-type upward *2	E /0.011		04LU	*
Fitting	Single side plug	specifications *1	Code	
Fitting	Port A	Port B	Code	l
	ø1/8"	Dive	03LA	1
Push-in	ø5/32"	Plug	04LA	1
Pusn-in	Diva	ø1/8"	03LF	ĺ
	Plug	ø5/32"	04LF	ĺ
Push-in	ø1/8"	Dive	03LB	*.
L-type upward *2	ø5/32"	Plug	04LB	*.
	Dive	ø1/8"	03LG	*.
	Plug	ø5/32"	04LG	*.

valve

2 Piping direction

Code Content B Side piping

- \*1: Ports A and B are available with one-sided plug specifications for 2-position single only.
- \*2: 3-position is not available for L-type upward push-in fittings.
- \*3: The compatible tubing for ø1.8 One-touch Fitting is "UP-9402-\*\*".
- \*4: Custom Product.

# A Valtage

voltage		
Code Content		
3	24 VDC	

# 5 Base internal wiring system

	1		
Code	Content		
Blank	(double wiring)		
S	Single solenoid, Dedicated		
3	wiring		

\*1:Blank = Double solenoid wiring regardless of the type of valve used. If a single solenoid is mounted, an empty number for one solenoid will be generated. S = Dedicated for single solenoid. Cannot be selected with 2-position double solenoid, two 3-port valves integrated type and 3-position.

#### 8 Common specifications

Code	Content	
Blank	NPN/plus common	
Dialik	specifications	
P	PNP/minus common	
F	specifications	

- the wiring block.

#### 6 Pilot operated

Code	Content	
Blank	Internal pilot	
K External pilot		
*1. ACalanaid position "7" connet be calcuted		

#### Telectrical circuit specification

\* Multiple selection is not possible.

Code	Content
Blank With surge suppressor and indicato	
Dialik	lamp
E1	Low exoergic/energy saving circuit (surgeless specifications)
E1	(surgeless specifications)
E2	Surgeless

\*1: The combination of "E2" and PNP specifications is Custom Product.

- \*1: Multiple selection is not possible.
- \*2: Select the same polarity as that of

¥	Man	iual	Override

Code	Content	
Blank	Locking/non-locking common, With misoperation prevention cover	
M1	Non-locking, with misoperation prevention cover	
M2	Locking/non-locking common, Tool operated, without cover	
М3	Non-locking, tool operation	

\*1: Solenoid position "Z" cannot be selected.

# 10 Ozone/Coolant proof \*1

Code	Content	
Blank	Standard	
Dialik	specifications	
	Ozone/Coolant proof	
Α	(Main valve fluorine	
	specification)	
*1: A Solonoid position "7" cannot be		

selected.

# 11 Residual pressure exhaust valve

	<u> </u>	
Code	Content	
Blank	Without residual pressure exhaust valve	
Y1	Non-locking With residual pressure exhaust valve	
Y2	Locking With residual pressure exhaust valve	
	Blank Y1	Blank Without residual pressure Non-locking With residual pressure exhaust valve Locking With residual pressure

- \*1: ①Solenoid position "3" and "4" only are sup-
- \*2: Only the manual override "M2" and "M3" are supported.

#### Air flow path partition

See P. 46 for details.

Code	Content	
Blank	None	
Т	P/R/PA/PR blocked	
U	P/R blocked, PA/PR through	
V	P blocked, R/PA/PR through	
W	R blocked, P/PA/PR through	

\*1: The right flow path is cut off when port A/B is facing forward.

#### Exhaust check valve

	Exilaust check valve		
	Code	Content	
	Blank	None	
1	н	Exhaust malfunction With prevention valve	

\*1: ①Solenoid positions "3" and "5" cannot be selected. Refer to page 163 for details on the type with exhaust check valve.

#### 13 Port A/B filter

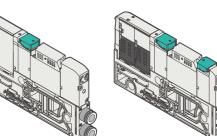
<b>O</b> 1 011712 111101			
Code	Content		
Blank	None		
F	Port A/B Filter integrated	33:8	

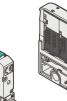
\*1: A filter is built into port P.

#### 2-position single

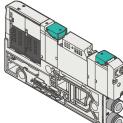
2-position double Two 3-port valves integrated

 3-position exhaust center 3-position pressure center 3-position closed center









Refer to page 49 for details. The gasket between blocks is included.

air path and sliding section are limited

· Tie rod is not included, so order separately.

\*\*-\*\*-\*\*

• For use in the rechargeable battery manufacturing process, materials used for

Code

 3-position exhaust center 3-position pressure center

Model No. Notation Method Valve block with solenoid valve

class

Option B 08CS 3 TVG2P -Width (Valve 4 Voltage 6 Pilot 8 Common 10 Ozone/ 12 Valve mounting 14 Port A/B Model No. 2 Piping width) specifications Coolant proof 3 Connection 5 Base internal 7 Electric circuit 9 Manual 11 Residual 13 Exhaust 15 Air flow path position specifications Equipment pressure check valve partition wiring

1 Switching position class

system

Code	Content			
1	2-position	single		
2	2-position	double		
3	3-position closed center			
4	3-position exhaust center			
5	3-position	3-position pressure center		
Α	3-port valve	3-port valve   A valve side: Normally closed/B valve side: Normally Closed		
В	Two valves A valve side: Normally open/B valve side: Normally Open			
С	integrated A valve side: Normally closed/B valve side: Normally Open			
Z	With blanking plate			
*1: Only compatible with internal pilot. Dimensions of the Dimensions diagram				

- are the same as those of 2-position double.
- \*2: "-HP1" is not included in the model No. when Z is selected.

### 3 Port size (port A/B)

#### Metric fitting

Metric fitting					
Fitting	Port A/B		Code		
	ø4		04CS		
Push-in	ø6		06CS		
Pusri-iri	ø8	08CS			
	ø10		10CS		
Push-in type up-	ø6		06CU		
vard *2	ø8		08CU		
Push-in	ø6		06CD		
type down- vard	ø8		08CD		
Fitting	Single side plug	g specifications	0-4-		
ritting	Port A	Port B	Code		
	ø4	Dive	04CA		
	ø6		06CA		
	ø8	Plug	08CA		
Duch in	ø10		10CA		
Push-in		ø4	04CF		
	Plug	ø6	06CF		
	Flug	ø8	08CF		
		ø10	10CF		
Push-in	ø6	Diva	06CB		
-type up-	ø8	Plug	08CB		
vard	Dlug	ø6	06CG		
*2	Plug	ø8	08CG		
S I I	ø6	Divis	06CC		
Push-in	ø8	Plug	08CC		
type down- vard	Diva	ø6	06CH		
vaiu	Plug	ø8	08CH		

#### ♠ Voltage

Voit	aye
Code	Content
3	24 VDC

#### Inch fitting

				_
Fitting	Por	rt A/B	Code	l
Push-in	ø1/4"		06LS	
Pusn-in	ø5/16"		08LS	Ì
Push-in L-type	ø1/4"		06LU	*
upward *2	ø5/16"		08LU	*;
Fitting	Single side plu	Single side plug specifications		l
ritting	Port A	Port B	Code	l
	ø1/4"	Diva	06LA	Ì
Duals in	ø5/16"	Plug	08LA	Ì
Push-in	Dive	ø1/4"	06LF	ĺ
	Plug	ø5/16"	08LF	ĺ
Push-in	ø1/4"	Division	06LB	*:
L-type	ø5/16"	Plug	08LB	*;
upward	Division	ø1/4"	06LG	*:
**	Plug	ø5/16"	08LG	*;

exhaust

2 Piping direction

Code Content

B Side piping

valve

- \*1: Ports A and B are available with one-sided plug specifications for 2-position single only
- \*2: 3-position is not available for L-type upward push-in fittings.
- \*3: Custom Product.

#### 5 Base internal wiring system Code Content No Code (double wiring) S Single solenoid dedicated wiring

\*1: Blank = Double solenoid wiring regardless of the type of valve used. If a single solenoid is mounted, an empty number for one solenoid will be generated. S = Dedicated for single solenoid. Cannot be selected with 2-position double solenoid, two 3-port valves integrated type and 3-position.

### 6 Pilot operated

9 Manual Override

cover

Code

Code Content		
Blank	Internal pilot	
K	External pilot	

\*1: ①Solenoid position "Z" cannot be selected.

Locking/non-locking

prevention cover

Non-locking, With

common, With misoperation

misoperation prevention

common, Tool operated,

Non-locking, tool operation,

Locking/non-locking

without cover

Without cover

Content

#### Telectrical circuit specification \*

Multiple selection is not possible

Code	Content	
	With surge suppressor and indicator lamp	
E1	Low exoergic/energy saving circuit (surgeless specifications)	
E2	Surgeless	

Custom Product.

	•
Code	Content
Blank	With surge suppressor and indic

Code	Content	
Blank	Blank With surge suppressor and indicator lam	
E1	Low exoergic/energy saving circuit (surgeless specifications)	
E2 Surgeless		
4. The combination of #FO# and DND and iffertions		

Blank With surge suppressor and indicator lan		
	Low exoergic/energy saving circuit (surgeless specifications)	
E2 Surgeless		
*1: The combination of "E2" and DND enecifications is		

10 Ozone/Coolant proof

			*1
		Code	Content
		Blank	Standard specifica-
		Dialik	tions
			Ozone/Coolant proof
		Α	(Main valve fluorine
			specification)
	*-	1: <b>1</b> Solen	oid position "Z" cannot be
		selected	
V			

# 11 Residual pressure exhaust

tions

\*1: Multiple selection is not possible.

8 Common specifications

Content

Blank NPN/plus common specifications PNP/minus common specifica-

\*2: Select the same polarity as that of the wiring

	vaive		
	Code	Content	
	Blank	Without residual press	sure ex-
	DIAIIK	haust valve	
*1, *2	Y1	Non-locking With residual pressure exhaust valve	
*1, *2	Y2	Locking With residual pres- sure exhaust valve	

- \*1: 1 Solenoid position "3" and "4" only are supported.
- \*2:90nly the manual override "M2" and "M3" are supported.

#### 12 Valve mounting screw

\*1: Solenoid position "Z" cannot be selected.

	J
Code	Content
	With plus/minus
Blank	Pan head machine
	screw
	Hexagon Socket Head
J	Cap Screw

#### 13 Exhaust check valve

ſ	Code	Content	
	Blank	None	
	н	With exhaust check valve	

\*1: OSolenoid positions "3" and "5" cannot be selected. Refer to page 163 for details on the type with exhaust check valve.

### Port A/B filter

Code	Content	
Blank	None	
F	Port A/B filter built in	#: W

\*1: A filter is built into port P.

# (15) Air flow path partition

For details P. 48 details

Code	Content
Blank	None
Т	P/R/PA/PR blocked
U	P/R blocked, PA/PR through
٧	P blocked, R/PA/PR through
W	R blocked, P/PA/PR through

\*1: The right flow path is cut off when port A/B is facing forward.

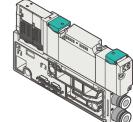
#### 2-position single

2-position double

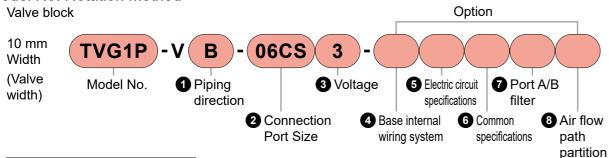
Two 3-port valves integrated

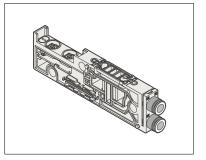


3-position closed center



Model No. Notation Method





1 Piping direction

ı	Code	Content
ı	В	Side piping

#### 2 Port size (port A/B)

<ul> <li>Metric fi</li> </ul>	itting			
Fitting	Port	A/B	Code	l
	ø1.8		0ACS	*3
Push-in	ø4		04CS	
	ø6		06CS	
Push-in	ø1.8		0ACU	*3
L-type	ø4		04CU	
upward *2	ø6		06CU	
Push-in	ø1.8		0ACD	*3
L type	ø4		04CD	
downward	ø6		06CD	
Fitting	Single side plu	g specifications	Code	
Fitting	Port A	Port B	Code	
	ø1.8		0ACA	*3
	ø4	Plug	04CA	
Push-in	ø6		06CA	
i usii-iii		ø1.8	0ACF	*3
	Plug	ø4	04CF	l
		ø6	06CF	l
	ø1.8	Plug	0ACB	*3
Push-in	ø4		04CB	Į
L-type	ø6		06CB	l
upward		ø1.8	0ACG	*3
*2	Plug	ø4	04CG	
		ø6	06CG	
	ø1.8		0ACC	*3
Push-in L type	ø4	Plug	04CC	
	ø6		06CC	l
downward		ø1.8	0ACH	*3
	Plug	ø4	04CH	ļ
		ø6	06CH	

Inch fitting

	ntting			_
Fitting	Por	t A/B	Code	1
Push-in	ø1/8"		03LS	1
Push-in	ø5/32"		04LS	1
Push-in	ø1/8"		C3LU	*4
L-type upward *2	ø5/32"		04LU	*4
Fitting	Single side plu	Single side plug specifications		ı
Fitting	Port A	Port B	Code	ı
	ø1/8"	Diva	03LA	1
Duah in	ø5/32"	Plug	04LA	1
Push-in	Dive	ø1/8"	03LF	1
	Plug	ø5/32"	04LF	1
Push-in	ø1/8"	Diva	03LB	*4
L-type	ø5/32"	Plug	04LB	*4
upward	Diva	ø1/8"	03LG	*4
*2	Plug	ø5/32"	04LG	*4

#### \*1: Ports A and B are available with one-sided plug specifications for 2-position single only.

- \*2: 3-position is not available for L-type upward push-in fittings.
- \*3: The compatible tubing for ø1.8 One-touch Fitting is "UP-9402-\*\*".
- \*4: Custom Product.

Voltage

<u> </u>	<u> </u>	
Code	Content	
3	24 VDC	

# A Rase internal wiring system

Base internal wiring system	
Code	Content
Blank	(double wiring)
S	Single solenoid dedicated wiring

<sup>\*1:</sup>Blank = Double solenoid wiring regardless of the type of valve used. If a single solenoid is mounted, an empty number for one solenoid will be generated.

Rechargeable Battery Compatible Specification For details, please refer to P. 90.

• For use in the rechargeable battery manufacturing process, materials used for air path and sliding section are limited

\*\*-\*\*

• Tie rod is not included, so order separately. Refer to page 49 for details. The gasket between blocks is included.

#### 5 Electrical circuit specification

\*Multiple selection is not possible.

Code	Content
Blank	With surge suppressor and indicator
	lamp
E1	Low exoergic/energy saving circuit
E1	(surgeless specifications)
E2	Surgeless

\*1: The combination of "E2" and PNP specifications is Custom Product.

#### Port A/B filter

Code	Content	
Blank	None	
F	Port A/B filter built in	13

\*1: A filter is built into port P.

#### 6 Common specifications

ı	Code	Content
	Blank	NPN/plus common specifications
	Р	PNP/minus common specifications

- \*1: Multiple selection is not possible.
- \*2: Select the same polarity as that of the wiring block.

#### 8 Air flow path partition

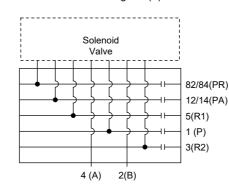
Refer to the following for details.

Code	Content
Blank None	
T P/R/PA/PR blocked	
U	P/R blocked, PA/PR through
V P blocked, R/PA/PR through	
W	R blocked, P/PA/PR through

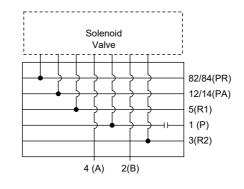
\*1: The right flow path is cut off when port A/B is facing forward.

#### Air flow path partition

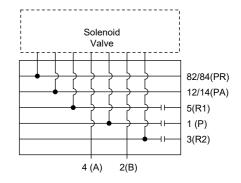
Discrete valve block circuit diagram (T)



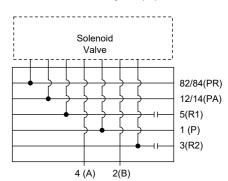
Discrete valve block circuit diagram (V)



Discrete valve block circuit diagram (U)



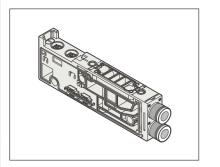
Discrete valve block circuit diagram (W)



S = Dedicated for single solenoid. Cannot be selected with 2-position double solenoid, two 3-port valves integrated type and 3-posi-

### Model No. Notation Method

Option Valve block 15 mm 06CS TVG2P 3 Width (Valve 5 Electric circuit 7 Port A/B Model No. 1 Piping 3 Voltage width) direction specifications filter 6 Common 2 Connection 4 Base internal 8 Air flow Port Size wiring system specifications path partition



#### 1 Piping direction Code Content Side piping

### 2 Port size (port A/B)

Metric fitting						
Fitting	Port	A/B	Code			
	ø4	04CS				
Push-in	ø6		06CS			
r usii-iii	ø8	08CS				
	ø10		10CS			
Push-in	ø6		06CU			
L-type upward *2	ø8		08CU			
Push-in	ø6		06CD			
L type downward	ø8		08CD			
Fi44in a	Single side plug	g specifications	Code			
Fitting	Port A	Port B	Code			
	ø4		04CA			
	ø6	Plug	06CA			
	ø8	Flug	08CA			
Push-in	ø10		10CA			
li usii-iii		ø4	04CF			
	Plug	ø6	06CF			
	liug	ø8	08CF			
		ø10	10CF			
Push-in	ø6	Plug	06CB			
L-type	ø8	i iug	08CB			
upward	Plug	ø6	06CG			
*2	i iug	ø8	08CG			
Push-in	ø6	Plug	06CC			
L type	ø8	i iug	08CC			
downward	Plug	ø6	06CH			
	i iug	ø8	08CH			

# Inch fitting

Fitting	Por	t A/B	Code	
Push-in	ø1/4"		06LS	
Pusn-in	ø5/16"		08LS	1
Push-in	ø1/4"		06LU	*3
L-type upward *2	ø5/16"		08LU	*3
Fitting	Single side plug specification		Code	
Fitting	Port A	Port B	Code	İ
	ø1/4"	Diva	06LA	ĺ
Durah in	ø5/16"	Plug	08LA	1
Push-in	Diva	ø1/4"	06LF	1
	Plug	ø5/16"	08LF	ĺ
	ø1/4"	Diva	06LB	*3
Push-in	ø5/16"	Plug	08LB	*3
L-type upward *2	Plug	ø1/4"	06LG	*3
Jupwaiu 2	Flug	ø5/16"	08LG	*3

#### \*1: Ports A and B are available with one-sided plug specifications for 2-position single only.

3-position.

# Voltage

<u> </u>	-9-
Code	Content
3	24 VDC

# 4 Base internal wiring system

Code	Content
No Code	(double wiring)
S	Single solenoid dedicated wiring

<sup>\*1:</sup> Blank = Double solenoid wiring regardless of the type of valve used. If a single solenoid is mounted, an empty number for one solenoid will be generated. S = Dedicated for single solenoid. Cannot be selected with 2-position double solenoid, two 3-port valves integrated type and

### Rechargeable Battery Compatible Specification For details, please refer to P. 90.

• For use in the rechargeable battery manufacturing process, materials used for air path and sliding section are limited

• Tie rod is not included, so order separately. Refer to page 49 for details. The gasket between blocks is included.

#### 5 Electrical circuit specification \*

Multiple selection is not possible.

Code	Content
Blank	With surge suppressor and indicator
Dialik	lamp
E1	Low exoergic/energy saving circuit
E1	(surgeless specifications)
E2	Surgeless

\*1: The combination of "E2" and PNP specifications is Custom Product.

#### Port A/B filter

Code	Content	
Blank	None	
F	Port A/B filter built in	<b>13</b>

\*1: A filter is built into port P.

#### 6 Common specifications

ı	Code	Content
	Blank	NPN/plus common specifications
	Р	PNP/minus common specifications

\*1: Multiple selection is not possible.

\*2: Select the same polarity as that of the wiring block.

#### 8 Air flow path partition

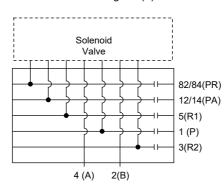
Refer to the bottom for details.

Code	ode Content	
Blank	None	
T P/R/PA/PR blocked		
U	P/R blocked, PA/PR through	
V P blocked, R/PA/PR through		
W	R blocked, P/PA/PR through	

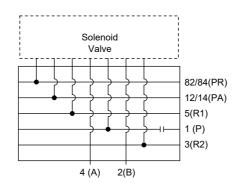
\*1: The right flow path is cut off when port A/B is facing

#### Air flow path partition

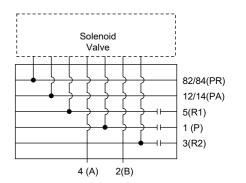
Discrete valve block circuit diagram (T)



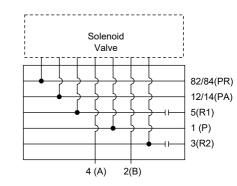
Discrete valve block circuit diagram (V)



#### Discrete valve block circuit diagram (U)



Discrete valve block circuit diagram (W)



<sup>\*2: 3-</sup>position is not available for L-type upward push-in fittings.

<sup>\*3:</sup> Custom Product.

For details, please refer to P. 90.

2 Piping direction

Code Content

Code

be selected.

Code

K \*1, \*2 **KZ** 

\*2: X is not available for pilot KZ.

6 Pilot operated

Blank Internal pilot

External pilot

: 3Cannot be selected for port size "00XX". \*2: The external pilot port is an ø6 One-touch Fitting, and in the case of  $\square\square L\square$ , it will be an  $\emptyset 5/32$ 

Side piping

For use in the rechargeable battery

path and sliding section are limited

Rechargeable Battery Compatible Specification

manufacturing process, materials used for air

\*\*-\*\*-P4

Content

External pilot (PA/PR separated)

\*1: For  $\P$  port size "00XX" and " $\square\square X\square$ ", X cannot

Tie rod

For valve block

10 mm TVG1P width 15 mm TVG2P width

1 Model No.

2 Station No.

2 Station No.

Code	Content		Code	Content
02	For 2 stations		14	For 14 stations
03	For 3 stations		15	For 15 stations
04	For 4 stations	l	16	For 16 stations
05	For 5 stations	l	17	For 17 stations
06	For 6 stations		18	For 18 stations
07	For 7 stations		19	For 19 stations
08	For 8 stations		20	For 20 stations
09	For 9 stations		21	For 21 stations
10	For 10 stations		22	For 22 stations
11	For 11 stations		23	For 23 stations
12	For 12 stations		24	For 24 stations
13	For 13 stations	ľ		

●For intermediate supply and exhaust block

10 mm width TVG1P-TR-Q

15 mm width TVG2P-TR-Q

●For valve block expansion

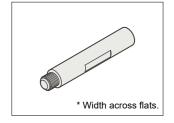
10 mm width TVG1P-TR-01

15 mm width TVG2P-TR-01

\*1: TVG1P is a 3-piece set and TVG2P is a 2-piece set.

#### Regarding expansion

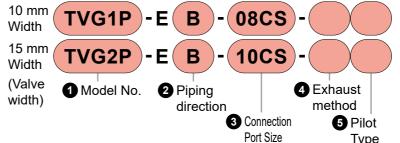
- · Manifold can expand by 3 stations with 2 to 17 stations. Up to three stations can be expanded in total: valve block and intermediate supply and exhaust block. When increasing 18 or more stations of manifolds, use a tie rod that matches the station No. after the increase.
- · Fix the tie rod for station expansion/tie rod for intermediate supply and exhaust onto the wiring block. If installed on the end block side, it may not be able to be assembled correctly.



#### Model No. Notation Method

End block (U side)

A hexagon socket head cap screw for tie rod tightening and a gasket between the block are included.



Type 1 Model No TVG1P TVG2P

: Standard compliance **3 Connection Port Size** O: Custom Product Metric fitting

Fitting	Port P/R	Code		
	ø6	06CS	•	
Push-in	ø8	08CS	•	•
	ø10	10CS		•
Push-in	ø6	06CU	•	
L-type	ø8	08CU	•	•
upward	ø10	10CU		•
Push-in	ø6	06CD	•	
L type	ø8	08CD	•	•
downward	ø10	10CD		•

	uowiiwaiu	Ø10	1000		
*1	Inch fitting				
	Fitting	Port P/R	Code		
	Push-in	ø5/16"	08LS	•	
		ø3/8"	10LS		•
	Push-in	ø5/16"	08LU	0	
	L-type	ø3/8"	10LU		
	upward	93/6	IULU		
*2	Dort D. Fitting	as Inch part P: Matric fitting			

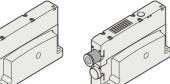
Port P: Fittings Inch, port R: Metric fitting						
Fitting	P Port	R Port	Code			
Push-in	ø5/16"	ø8	08XS	•		
Pusn-in	ø3/8"	ø10	10XS		•	
Push-in	ø5/16"	ø8	UX80	0		
L-type upward	ø3/8"	ø10	10XU		0	
Plug						
Port P/R Code						
Plug			00XX	•	•	

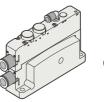
\*1: Select 08XS, 10XS, 08XU or 10XU when using a silencer with inch Fittings specifications. Fittings Port R and PR (for KZ) are metric.

\*2: SPilot, K, KZ and 00XX cannot be selected together

\*3: Cannot be selected together with exhaust method X.

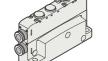
● TVG1P-EB-08CS ● TVG1P-EB-08CS-X ■ TVG1P-EB-08CS-K ● TVG2P-EB-10CS ● TVG2P-EB-10CS-X ● TVG2P-EB-10CS-K







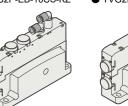
● TVG2P-EB-10CS-XK

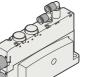




● TVG1P-EB-00XX









#### Model No. Notation Method

#### Intermediate supply and exhaust block

The intermediate supply and exhaust block can be installed between the valve block and the valve block. These blocks cannot be adjacent to each other. In addition, this block cannot be adjacent to an end block or wiring block. The electrical internal wiring and the P.R.PA.PR port connect to the adjacent blocks.

10 mm Width	IP-QB-08	BCS-
	2P-QB-10	OCS-
(Valve width) 1 Mo	del 2 Piping direction	4 Exhaust
		ort Size 5 Pilot operated

		INIO	iei no.
3 Connection Port Size	<ul><li>Standard compliance</li></ul>	TVG1P	TVG2P
Matria fitting			

Metric fitting							
Fitting	Port P/R	Code					
	ø6	06CS					
Push-in	ø8	08CS	•	•			
	ø10	10CS		•			
Push-in	ø6	06CU	•				
L-type	ø8	08CU	•	•			
upward	ø10	10CU		•			
Push-in	ø6	06CD	•				
L type	ø8	08CD					
downward	ø10	10CD		•			
Inch fitting							

	Push-in	ø5/16"		08LS	•	
	rusii-iii	ø3/8"		10LS		
	Push-in	ø5/16"		08LU	0	
	L-type upward	ø3/8"		10LU		0
*3	Port P: Fitting	gs Inch, port R:	Metric fitting			
	Fitting	P Port	R Port	Code		
	Push-in	ø5/16"	ø8	08XS		
Fusii-	rusii-iii	ø3/8"	ø10	10XS		•
	Push-in	ø5/16"	ø8	08XU	0	
	L-type	ø3/8"	ø10	10XU		0

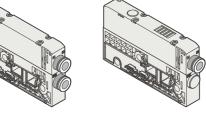
Port P/R

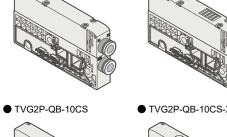
# \*1: Select 08XS, 10XS, 08XU or 10XU when using a silencer with the inch Fittings speci-

lications. Fittings Fort K and FK (for KZ) are metric.	
: Port P has a filter built in to prevent foreign matter from entering.	
: Cannot be selected together with exhaust method X.	

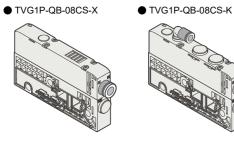
● TVG1P-QB-08CS	● TVG1P-

Fitting

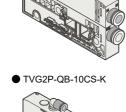


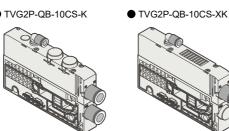






Code





# Rechargeable Battery Compatible Specification

For details, please refer to P. 90.

• For use in the rechargeable battery manufacturing process, materials used for air path and sliding section are limited

*	*	-	*	*	-	*	*	-		P4	
---	---	---	---	---	---	---	---	---	--	----	--

### 2 Piping direction

Code	Content
В	Side piping

#### 4 Exhaust method

	Code	Content		
	Blank	Centralized Exhaust		
	Dialik	(port R is a push-in fitting)		
		Exhaust is open to atmosphere,		
*1, *2	X	with built-in silencer		
		(Port R is sealed.)		

\*1: **③**X is not available for port size "□□X□".

#### **5** Pilot operated

	Code	Content		
	Blank	Internal pilot		
*1	K	External pilot		
*1	Z	Multi-pressure circuit		
*1	KZ	External pilot (PA/PR separated)		

<sup>\*1:</sup>If the ø6 push-in fitting and the \* \* L \* are used for the external pilot port, the øFittings is 5/32". Z cannot be used independently. Be sure to use with another type, blank, K or KZ.

#### **Attached Parts**

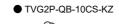
● TVG1P-QB-08CS-XK

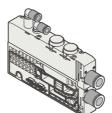
#### Manifold gasket: 1 pcs

Tie rod is not included, so order separately. Refer to page 49 for details. The gasket between blocks is included.

● TVG1P-QB-08C	S-KZ







#### Specification list of supply and exhaust block

Exhaust method	Pilot operated	D side Wiring/supply and ex- haust block	Intermediate supply and exhaust block	U side End supply and exhaust block
Blank Centralized Exhaust	Blank Internal pilot	PR PA P	PR PP PA R P P	PR PA R P
Blank Centralized Exhaust	K External pilot	PA PR PA PA R PA R P	PA PR PA PA PA PA PA PA R P PA R P	PA PR PA R P
Blank Centralized Exhaust	Z Multi-pressure circuit		PR PA PA R P P	
Blank Centralized Exhaust	KZ External pilot (PA/PR separated)	PR PA PA PA R P R P	PR PA PR PA PA PA R PA R P R P	PR PA PA PA R P
X Atmospheric Release (Silencer integrated)	Blank Internal pilot	PR P	PR PP PP PP PP PP PP PP PP PP PP PP PP P	PR PA
X Atmospheric Release (Silencer integrated)	K External pilot	PA PA PA PA R P	PA PR PA PA R P PA R P	PA PR PA PA PA PA PA PA PA PA PA PA PA PA PA

<sup>\*</sup> The check valve between PR and R is for malfunction prevention. This product cannot be used for other applications.

<sup>\*2:</sup> X is not available for pilot Z and KZ.

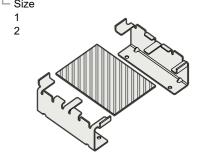
Related products Tag plate (tag holder, tag plate), DIN rail, DIN rail mounting bracket kit

Tag plate Included with manifold with solenoid valve at shipment.

When necessary, indicate a O mark in the tag plate field on the manifold specifications sheet on pages 119 to 138.

Tag holder

# TVG P-TAG-HOLDER



#### Tag plate

#### TVGP-TAG-PLATE-B-

- Length (mm) 200 300 400

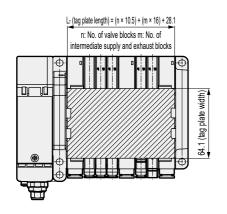
- \*1: Tag plate cannot be attached for the exhaust method "X".
- \*2: Tag plates cannot be attached for the pilot operated K and KZ types.
- \*3: Tag plate cannot be attached for the combination of spacer and residual pressure exhaust
- \*4: When purchasing the plate as a single unit, cut it to the product length.

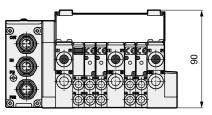
 $L_7$  (tag plate length) = (n×16) + (m×18) + 32

n: No. of valve blocks m: No. of intermediate

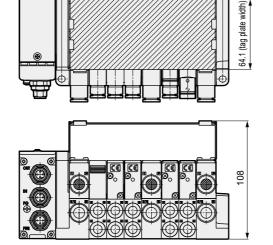
### **External Dimension Drawings**

● TVG1



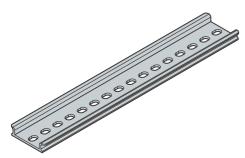


# TVG2



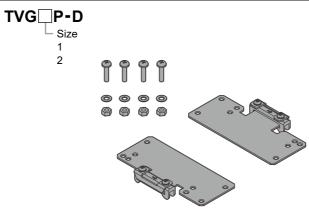
#### DIN Rail





\*1: Set the DIN rail length by referring to the formula on page 118.

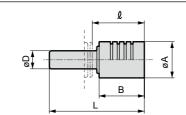
#### DIN rail mounting bracket kit



\*Kit Contents: 2 mounting brackets and 4 mounting screws.

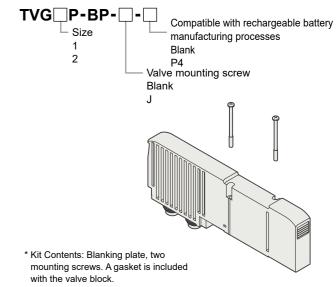
#### Related products Silencer, blanking plate kit, exhaust check valve, cable clamp, waterproof cap, waterproof plug

Silencer



Model No.	D	В	L	ę	Α
SLW-H6	ø6	20	41	23.5	16
SLW-H8	ø8	20	42	23	16
SLW-H10	ø10	27	53	31.5	20

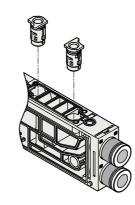
#### Blanking plate kit



#### Exhaust check valve

#### **TVG1P-CHECK-VALVE** TVG2P-CHECK-VALVE

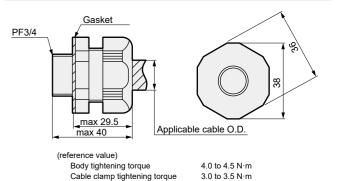
2 pieces/set



#### Parts kit for EA1 wiring block

#### Cable clamp

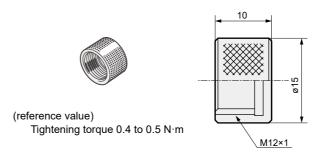
Model No.	Applicable cable O.D.	Content
TVGP-SCL-18A	ø14.5 to 16.5	Used to protect cables from dust
TVGP-SCL-18B	ø16.5 to 18.5	and jetting water.



#### Parts for serial transmission device unit

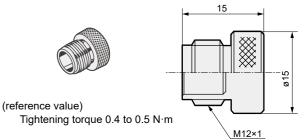
#### Water-proof cap

Model No.	Content
TVGP-XSZ-11	Provides water jet proof protection of unused signal
1VGF-A3Z-11	connectors.



#### Water-proof plug

Model No.	Content	
TVGP-XSZ-12	Provides water jet proof protection of unused signal	
170F-X32-12	connectors.	



53

Serial Transmission Device Unit cable

 Communication cable For CC-Link

[Cable with two-sided connector (M12 socket - M12 plug, 1 m)]

#### TVGP - CABLE - G - M12M12 - 1

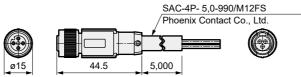
Signal	Functions	Connector 1 M12, 4 poles Socket, A-cord	Connector 2 M12, 4 poles Plug, A cord	
name			· · · · · · · · · · · · · · · · · · ·	
		Pin No.	Pin No.	
SLD	Ground wire (shield)	1	1	
DB Differential signal B (reversal)		2	2	
DG Signal ground		3	3	
DA	Differential signal A (non-reversed)	4	4	

SAC-4P-M12MS/ 1,0-990/M12FS Phoenix Contact Co., Ltd. 1,000 47.3 ø14.8

[IN cable with one-sided connector (M12 socket - loose wire, 5 m)]

#### TVGP-CABLE-G-M12FS-5

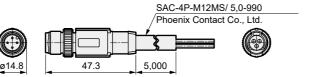
Signal Functions		Connector 1 M12, 4 poles Socket, A-cord	Cable 5 m	
		Pin No.	Insulator color	
SLD	Ground wire (shield)	1	-	
DB	Differential signal B (reversal)	2	White	
DG	Signal ground	3	Yellow	
DA	Differential signal A (non-reversed)	4	Blue	



[For cable with one-sided connector OUT (M12 plug - loose wire, 5 m)]

#### TVGP-CABLE-G-M12MS-5

Signal name	Functions	Connector 1 M12, 4 poles Plug, A cord Pin No.	Cable 5 m
SLD	Ground wire (shield)	1	-
DB	Differential signal B (reversal)	2	White
DG Signal ground		3	Yellow
DA Differential signal A (non-reversed)		4	Blue

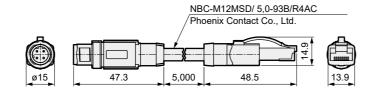


#### For EtherCAT, EtherNet/IP, PROFINET, CC-Link IEF Basic

[Cable with two-sided connector (M12 plug - RJ45 plug, 5 m)]

#### TVGP - CABLE - M12R4 - 5

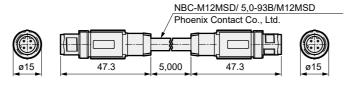
Signal name	Functions	Connector 1 M12, 4 poles Plug, D cord Pin No.	Connector 2 RJ45 Plug Pin No.
TD+	Transmitted data, positive	1	1
RD+	Received data, positive	2	3
TD-	Transmitted data, negative	3	2
RD-	Received data, negative	4	6



[Cable with two-sided connector (M12 plug - M12 plug, 5 m)]

#### TVGP - CABLE - M12M12 - 5

Signal name	Functions	Connector 1 M12, 4 poles Plug, D cord Pin No.	Connector 2 M12, 4 poles Plug, D cord Pin No.
TD+	Transmitted data, positive	1	1
RD+	Received data, positive	2	2
TD-	Transmitted data, negative	3	3
RD-	Received data, negative	4	4

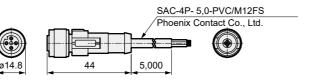


#### Power supply cable

[Cable with one-sided connector (M12 socket - loose wire, 5 m)]

#### TVGP - CABLE - M12SAC - 5

IVOF	JADLL IV	IIZOAC J	'	
Signal name	Functions	Connector 1 M12, 4 poles Socket, A-cord		
		Pin No.	Insulator color	
Unit power	+ side: 24 V	1	Brown	
Valve power supply	+ side: 24 V	2	White	
Unit power	-side: 0 V	3	Blue	
Valve power supply	-side: 0 V	4	Black	



#### Parts for multi-connector

Multi-connector (wiring method FA1) cable

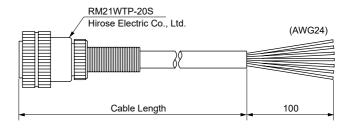
[Cable with connector]

TVGP-RMC-(3)

1 Cable Length

# 1 Cable Length

_		
	Code	Content
I	1	1 m
ſ	3	3 m
	5	5 m



#### Terminal No. and cores

Term	inal No.	1	2	3	4	5	6	7	8	9	10
Core	Wire color	White	Brown	Green	Yellow	Gray	Pink	Blue	Red	Black	Purple
identification	Mark tube No.	1	2	3	4	5	6	7	8	9	10
Term	inal No.	11	12	13	14	15	16	17	18	19	20
Core	Wire color	Gray/pink	Red/blue	White/green	Brown/green	White/yellow	Yellow/brown	White/gray	Gray/brown	(None)	(None)
	Mark tube No.	11	12	13	14	15	16	17	18	(None)	(None)

#### [Connector only]

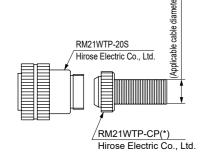


Applicable cable diameter

#### Applicable cable diameter

Applicable cable dialii									
Code	Content								
8	ø8								
10	ø10								
12	ø12								

<sup>\*:</sup> Clamping force and waterproof performance of applicable cables may differ depending on their types. Therefore, check before use.



\* For details on the Serial Transmission Device Unit and the I/O block connector, Refer to pages 153 to 156.

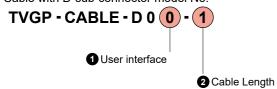
# TVG Series Block manifold; related products

Part for D-sub-connector

Cable with D-sub-connector

Model No. Notation Method

Cable with D-sub-connector model No.

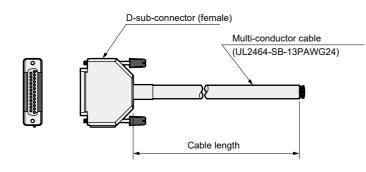


		Model No.
<b>1</b> Us	TVGP	
Code	Content	
0	Cut only	•
1	With round terminal for M3.5 screw	•

		Model No.
<b>2</b> Ca	able Length	TVGP
Code	Content	
1	1 m	•
3	3 m	•
5	5 m	•

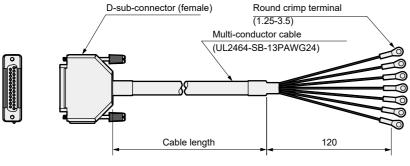
### D-sub-connector terminal No. and conductor

#### TVGP-CABLE-D00-2



D-sub-connect	or terminal No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Core identification	Insulator color	Black	Yellow/ green	Brown	Brown/black	Red	Red/black	Orange	Orange/ black	Yellow	Yellow/ black	Green	Green/black	Blue
D-sub-connect	or terminal No.	14	15	16	17	18	19	20	21	22	23	24	25	-
Core identification	Insulator color	Blue/black	Purple	Purple/ black	Gray	Gray/black	White	White/black	Pink	Pink/black	Yellow- green	Yellow- green/ black	Water	Water/ black

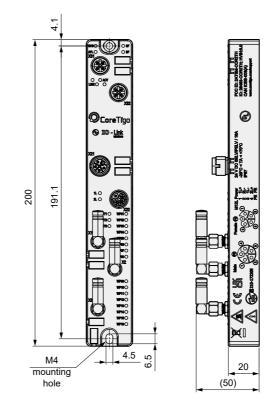
#### TVGP-CABLE-D01-2



D-sub-connect	or terminal No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Core identification	Insulator color	Black	Yellow/green	Brown	Brown/black	Red	Red/black	Orange	Orange/black	Yellow	Yellow/black	Green	Green/black	Blue
Mark tube No.		1	2	3	4	5	6	7	8	9	10	11	12	13
D-sub-connect	or terminal No.	14	15	16	17	18	19	20	21	22	23	24	25	-
Core identification	Insulator color	Blue/ black	Purple	Purple/ black	Gray	Gray/ black	White	White/ black	Pink	Pink/ black	Yellow- green	Yellow- green/black	Water	Water/ black
Mark tube No.		14	15	16	17	18	19	20	21	22	23	24	25	-

#### IO-Link master

#### TIGOMASTER2TH-EIP



### Specifications

Item	Content
Frequency	2401 MHz to 2480 MHz(80ch)
Transmission output	10 dBm MAX
Modulation method	GFSK
	FCC,CE
Compliant standards	Ordinance for Enforcement of the Radio Act,
	Article 2, Item 19
Cycle time	Min. 5 ms
Communication distance	Max. 20 m
Power Supply Voltage	18 to 31.2 VDC
Current Consumption	0.2 A
Mounting Method	Screw nominal M4 (torque 1.2 N·m)
Power cable specifications	M12 L code
Communication cable	M12 D code
specifications	M12 D code
Communication I/ F *1	EtherNet/IP
Operating Temperature Range	−25 to 55 °C
Protection Structure	IP67
*1: EthorCAT and DBOE	INET are Special Specification Braduate

<sup>\*1:</sup> EtherCAT and PROFINET are Special Specification Products.

# Cable specifications

Supply source: Toho Technology Co., Ltd.

Content	Model No.	Specifications
Power supply cable	TIGOCABLEPOW-15	Length 1.5 m, one side M12 female, L-cord, one side rose
Communication cable	TIGOCABLENET-1	Length 1.0 m, one side M12, D cord, one side RJ45

# **TVG**

# 3, 5-port pilot operated valve, plug-in block manifold

connection



\*Remote I/O requires separate ordering.

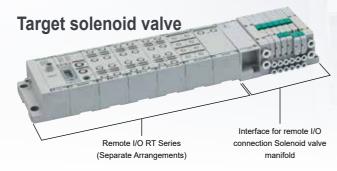
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Product Introduction	Intro
Series variation	1
How to order	61
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Specifications  Madel No. Netrice Mathed	03
Model No. Notation Method	0.5
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Technical Data	
①Pneumatic system selection guide	139
②Notes on wiring	143
③Check valve	163
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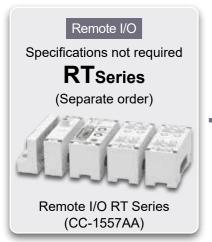
# Remote I/O (RT Series) and solenoid valve (TVG Series) must be ordered separately. The customer is asked to assemble the RT and TVG.

The following 3 types of ordering methods are available.

THE	ioliowing o types of	ordering inc	lilous arc a	valiable.
	Ordering method	Manifold specifications sheet	Customer assembly processes	Product delivery date
Α	Manifold assembly	Required	☆	0
В	Easy assembly	Not required	0	0
С	Discrete block	Not required	0	☆
		☆: Excellent	, ⊚: Very go	od, (): Good
	_			



A Manifold assembly The units will be delivered with the specifications specified in the manifold specifications sheet. Can be ordered with model No. starting with TVG□M and a manifold specifications sheet.







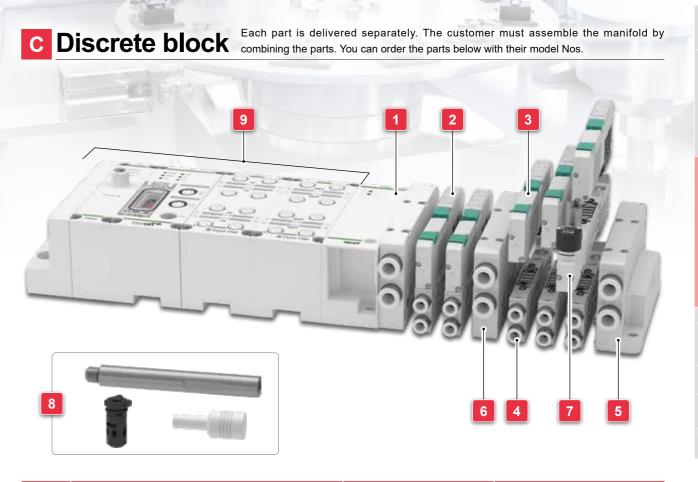
- \*1. The manifold base is only available with a valve interface.
- \*2. The device unit is a remote I/O (RT Series) device unit.
- \*3. Select the remote I/O in a separate catalog (RT Series).
- \*4. The remote I/O and manifold with solenoid valve must be assembled by the customer. Refer to "Remote I/O RT Series (CC-1557AA)" for how to assemble.

# Easy assembly

The single solenoid valve and assembled manifold base will be delivered separately. The following parts can be ordered with their model Nos. The customer is required to assemble the single solenoid valve and manifold base.



\*1. The manifold is limited to options that can be manufactured without a specification sheet, such as double wiring and no malfunction prevention valve assembly Note: This catalog lists TVGs. Alone, the solenoid valve section does not work, so please assemble the remote I/O and solenoid valve.



No.	Name	Head model No.	Listed page
1	Valve interface (supply and exhaust air)		P. 88
2	Valve block with solenoid valve		P. <b>41</b>
3	Discrete solenoid valve (for base mounting)		P. <b>73</b>
4	Valve block		P. <b>45</b>
5	End supply and exhaust block	TVG_P-	P. <b>50</b>
6	Intermediate supply and exhaust block	_	P. <b>51</b>
7	Spacer		P. <b>75</b>
8	Tie rod, silencer, exhaust check valve		Р. 49, 54
	Other related parts		P. <b>53</b>
	Device unit		
9	Power supply unit	RT	Remote I/O RT Series
9	I/O unit	KI	(CC-1557AA)
	End unit (without supply and exhaust)		



\* Remote I/O requires separate ordering.

# Plug-in Block Manifolds (for connection) Pilot Operated 3, 5-Port Valve

# TVG1 / TVG2 Series

UK ( E Refis

### Manifold common specifications

Widi iliola oo	minon spec	modilono		
Item		Content		
Manifold		Block manifolds		
Mounting Method	d	Direct mounting		
Air supply and ex	chaust method	Common supply/common exhaust (With internal exhaust check valve)		
Pilot exhaust me Internal pilot	thod (*5)	Main valve/pilot valve common exhaust (Pilot exhaust check valve built-ir		
Piping direction		Side direction of base		
Valve Type and C	Operation Method	Pilot operated soft spool valve		
Operating Fluid		Compressed Air		
Max. working pre	ssure MPa	0.7		
Internal nilet	2-position double	0.1 (*6)		
Internal pilot min. working	2-position single / 3-position	0.2		
pressure MPa	3-port valve Two valves integrated	0.2		
Min. working pres	ssure of external	-100		
pilot	kPa	(Pilot pressure at 0.2 MPa or more)		
Proof Pressure	MPa	1.05		
Ambient Tempera		−5 to 55 (no freezing)		
Fluid temperature	e °C	5 to 55		
Manual Override		Non-locking/locking common (standard)		
Lubrication	(*1)	Not required		
Degree of protec		IP65, IP67		
Vibration resistar	nce m/s <sup>2</sup>	50 or less		
Shock resistance	m/s <sup>2</sup>	≤ 300		
Atmosphere		Cannot be used in corrosive gas environments		

#### Electrical specifications

Item			KA1C	KA1D
	Output F	ormat	NPN	PNP
cation	Number Output F		32 points	(4 bytes)
pecific	Respons	se time ms	typ. ON delay 0.5 or or le	•
Output Specification	Forced of setting	output	Output settable reg	•
ō	Supply p	ower V	24 \	/DC
suc	Internal	For unit/input	≤ ′	15
Electrical specifications	consumption Current mA	For output	≤ 7	75
Spe Spe	Operation	Indicator	LED (for components	status display, 2 pcs)

- \*1: Use turbine oil Class 1 ISOVG32 for lubrication. Note that excessive or intermittent lubrication results in unstable operation.
- \*2: Tested according to the test method for IP65 (IEC 60529: 2001) standards. Refer to page 160 for details.
- \*3: If low exoergic/energy circuit or surgeless types are selected then there will be a diode
- \*4: The pilot exhaust method differs with the supply and exhaust block used. Refer to page 52 for details.
- \*5: When using at low vacuum, select the external pilot. Refer to page 162 for details.
- \*6: 0.2 MPa for low exoergic/energy circuit.

#### Individual specifications

Item			TVG1	TVG2		
item			KA1□	KA1□		
Max. station No.	Standard wiring (Double wiring)		16 stations	16 stations		
	(Double wiring) Single solenoid, double solenoid layout specification (Single wiring)		24 stations	24 stations		
Max. number	of solenoids		32 points	32 points		
	Metric fitting	Port A/B	Push-in fitting ø1.8, ø4, ø6	Push-in fitting ø4, ø6, ø8, ø10		
Connection	ivietric fitting	P/R Port	Push-in fitting ø6, ø8	Push-in fitting ø8, ø10		
Port Size	Inch fitting	Port A/B	Push-in fitting ø1/8", ø5/32"	Push-in fitting ø1/4", ø5/16"		
	incrinding	P/R Port	Push-in fitting ø5/16"	Push-in fitting ø3/8"		

# TVG Series

Specifications (for connection)

### Performance/characteristics by model

Item	Sv	vitching	TV	G1	TV	G2
item	posi	tion class	at ON	at OFF	at ON	at OFF
	Two 3-port valves integrated		15	25	20	37
Response time ms	2-position	Single	15	20	22	24
		Double	15	15	26	26
	3-position		20	30	25	35

The response times are values with supply pressure of 0.5 MPa at 20°C and without lubrication. They depend on the pressure and the lubricant quality.

#### Flow Characteristics

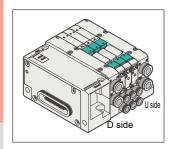
Model	Switching position class		P ⇒ A/B			A/B ⇒ R										
No.			C [dm³/ (s·bar)]	b	Q [L/min (ANR)]	C [dm	/(s·bar)]		b		./min NR)]					
	Two 3-	port valves integrated	0.77	0.37	205	1.0	(0.56)	0.34	(0.37)	287	(149)					
	2-posit	tion	1.0	0.29	253	1.1	(0.59)	0.36	(0.41)	317	(162)					
TVG1	L C	Closed center	0.96	0.33	249	1.0	-	0.35	-	263	-					
	3-position	Exhaust center	0.96	0.32	247	1.2	(0.60)	0.38	(0.40)	349	(163)					
		3-pc	3-p	3-pc	3-pc	3-pc	3-pc	Pressure center	1.1	0.35	289	1.0	-	0.36	-	265
	Two 3-port valves integrated		1.7	0.44	476	2.2	(1.8)	0.43	(0.20)	612	(431)					
	2-posit	tion	2.4	0.32	618	2.5	(2.0)	0.34	(0.19)	731	(476)					
TVG2	5	Closed center	2.2	0.35	578	2.3	-	0.38	-	670	-					
	3-position	Exhaust center	2.2	0.32	567	2.5	(2.1)	0.40	(0.21)	789	(506)					
	3-pc	Pressure center	2.6	0.34	678	2.3	-	0.37	-	666	-					

<sup>\*1:</sup> Effective cross-sectional area S and sonic conductance C are converted as S  $\approx$  5.0  $\times$  C.

<sup>\*2:</sup> Values in ( ) are with the exhaust check valve.

Model No. Notation Method Manifold with solenoid valve (for connection)

Option 10 mm width (valve width) B 06CS 3 KA1C-06 U (TVG1M)-( 1 ) 6 Station 8 Base internal 10 Electric circuit 12 Ozone/ 14 With/Without 16 Port A/B Model 2 Piping 4 Voltage specifications Coolant proof No. direction No. 3 Connection 5 Electrical 7 Port P/R 9 Pilot 11 Manual 13 Residual 15 Exhaust check pressure Port Size position operated Equipment valve



Switching position class							
Code		Content					
1	2-position s	single					
2	2-position double						
3	3-position closed center						
4	3-position	3-position exhaust center					
5	3-position	3-position pressure center					
Х	Mix manifo	ld					
Α	3-port valve	A valve side: Normally closed/B valve side: Normally Closed					

*1: Only compatible	with	internal	pilot.	Dimensions	is	the	same	as	the	2-positi
double.										

# 3 Port size (port A/B)

<ul> <li>Metric</li> </ul>	fitting		
Fitting	Port	A/B	Code
	ø1.8		0ACS
Push-in	ø4		04CS
	ø6		06CS
Push-in	ø1.8		0ACU
L-type	ø4		04CU
upward *2	ø6		06CU
Push-in	ø1.8		0ACD
L type	ø4		04CD
downward	ø6		06CD
Push-in	Mix		99CX
Fitting	Single side plug	specifications *1	Code
Fitting	Port A	Port B	Code
	ø1.8		0ACA
	ø4	Plug	04CA
Push-in	ø6		06CA
r usii-iii		ø1.8	0ACF
	Plug	ø4	04CF
		ø6	06CF
	ø1.8		0ACB
Push-in	ø4	Plug	04CB
L-type	ø6		06CB
upward		ø1.8	0ACG
*2	Plug	ø4	04CG
		ø6	06CG
	ø1.8		0ACC
Decade in	ø4	Plug	04CC
Push-in L type	ø6		06CC
L type downward		ø1.8	0ACH
	Plug	ø4	04CH

#### Inch fitting

Two valves A valve side: Normally open/B valve side: Normally Open integrated \*1 A valve side: Normally closed/B valve side: Normally Open

Fitting	Port	A/B	Code	
Push-in	ø1/8"		03LS	
Pusii-iii	ø5/32"		04LS	
Push-in L-type upward	ø1/8"	C3LU	*5	
t-type upwalu *2	ø5/32"		04LU	*5
Push-in	Mix		99LX	*3
Fitting	Single side plug	specifications *1	Codo	
Fitting	Port A	Port B	99LX Code 03LA 04LA 03LF	l
	ø1/8"	Dlug	03LA	ĺ
Push-in	ø5/32"	Plug	04LA	ĺ
Pusn-in	Diva	ø1/8"	03LF	ĺ
	Plug	ø5/32"	04LF	1
Push-in	ø1/8"	Dive	03LB	*5
L-type	ø5/32"	Plug	04LB	*5
upward		ø1/8"	03LG	*5
*2	Fluy	ø5/32"	04LG	*5

2 Piping direction Code Content

B Side piping

- \*1: Ports A and B are available with one-sided plug specifications for 2-position single only.
- \*2: 3-position is not available for L-type upward push-in fittings.
- \*3: Port size mixtures of ports 4(A) and 2(B) are not available. \*4: The compatible ø for tube 1.8 push-in fitting is "UP-9402- \* \*".
- \*5: Custom Product.

# 4 Voltage

	9
Code	Content
3	24 VDC

### **5** Electrical connections

06CH

Content	Output Format	Number of points	Code
RT Series	NPN	32	KA1C
connection Interface	PNP	points Output	KA1D

# Station No.

Otation No.				
Code	Content			
02	2 stations			
to	to			
24	24 stations			

# Port P/R position \* Multiple selection is not possible.

Ī	Code	Content					
	U	U side					
	D	D side					
	В	U side, D side					
<b>*</b> 1	т	With U side, D side, intermediate supply and exhaust block					

\*1: Specify the specifications of the intermediate supply and exhaust block in the manifold specifications sheet.

#### Pilot operated

Code	Content	
No Code	Internal pilot	
К	External pilot	

#### 11 Manual device

Code	Code Content	
No Code	With locking, non-locking common, misoperation prevention cover	
M1	Non-locking, with misoperation prevention cover	
M2	Locking/non-locking common, Tool operated, without cover	
М3	Non-locking, tool operation, without cover	

#### Residual pressure exhaust valve

	<b>W</b> 1103	iddai pressare extidust vaive	
	Code	Content	
	No Code	Without residual pressure exhaust valve	
*1, *2	Y1	With non-locking residual pressure exhaust valve	
*1, *2	Y2	With locking residual pressure exhaust valve	

- \*1: 1 Solenoid position "3" and "4" only are supported.
- \*2: **1**Only the manual override "M2" and "M3" are supported.

#### (B) Exhaust check valve

E LVII	aust check valve	
Code	Content	
No Code	None	
Н	With exhaust check valve	

\*1: 

Solenoid positions "3" and "5" cannot be selected. Refer to page 163 for details on the type with exhaust check valve. Specify the number of stations to install in the manifold specifications sheet.

# Doos internal wiring aveter

· If an exhaust check valve is necessary, refer to page 54.

Bas	e internai wiring system
Code	Content
No Code	(Double wiring)
U	Single solenoid, double solenoid layout specification

· What Refer to Series (Catalog No.CC-1557A) for the RT Series ().

\*1: Blank = Double solenoid wiring regardless of the type of valve used. If a single solenoid is mounted, an empty number for one solenoid will

#### Electrical circuit specification

\* Multiple selection is not possible.

Code	Content
No Code	With surge suppressor and indicator lamp
E1	Low exoergic/energy saving circuit (surgeless specifications)
E2	Surgeless

\*1: The combination of "E2" and PNP specifications is Custom Product.

#### 2 Ozone/Coolant proof

Code	Content	
No Code	Standard specifications Ozone/Coolant proof (main valve fluorine specification)	
Α		

#### With/Without spacer

	The state of the s		
Code Content			
No Code	Without spacer		
7	With spacer (type and location specified in MF speci-		
_	fications sheet)		

\*1: Specify the spacer type and mounting position in the manifold specifications sheet. Stacking of spacers is not possible. Combination with the blanking plate is not supported. Cannot be selected together with L-type push-in fitting (upward).

#### Port A/B filter

U FOII	A/D IIILEI	
Code	Content	
No Code	None	
F	Port A/B filter built in	

\*1: A filter is built into port P.

15 mm width (valve width)

position

class

Model No.

Model No. Notation Method

Manifold with solenoid valve (for connection)

TVG2M-(2) B X06CSX 3 XKA1C)-(05) B

1 Switching 3 Connection 5 Electrical

Port Size

4 Voltage

connections

No.CC-1557AA).

· If an exhaust check valve is necessary, refer to page 54.

8 Bas	e internal wiring system
Code	Content
Blank	(double wiring)

\*1: Blank = Double solenoid wiring regardless of the type of valve used. If a single solenoid is mounted, an empty number for one solenoid will

Single solenoid, double solenoid layout specification

# 7 Port P/R position \* Multiple selection is not possible.

Ī	Code	Content	
	U	U side	
	D	D side	
	В	U side, D side	
1	т	With U side, D side, intermediate supply and exhaust block	

<sup>\*1:</sup> Specify the specifications of the intermediate supply and exhaust block in the manifold specifications sheet.

#### Pilot operated

0 1 110	i operateu	
Code	Content	
Blank	Internal pilot	
К	External pilot	

#### Manual device \* Multiple selections are not possible.

Code	Content	
Blank	With locking, non-locking common, misoperation prevention cover	
M1	Non-locking, with misoperation prevention cover	
M2	Locking/non-locking common, Tool operated, without cover	
М3	Non-locking, tool operation, without cover	

#### Residual pressure exhaust valve

		· · · · · · · · · · · · · · · · · · ·	
	Code	Content	
	Blank	Without residual pressure exhaust valve	
*1, *2	Y1	With non-locking residual pressure exhaust valve	
*1, *2	Y2	With locking residual pressure exhaust valve	

- \*1: 1 Solenoid position "3" and "4" only are supported.
- \*2: **(1)**Only the manual override "M2" and "M3" are supported.

# (B) With/Without spacer

Code	Content	
Blank	Without spacer	
Z	With spacer (type and location specified in MF specifications sheet)	

<sup>\*1:</sup> Specify the spacer type and mounting position in the manifold specifications sheet. Stacking of spacers is not possible. Combination with the blanking plate is not supported. Cannot be selected together with L-type push-in fitting (upward).

#### Port A/B filter

<b>W</b> 1 011	A/D IIItel	
Code	Content	
Blank	None	
F	Port A/B filter built in	

<sup>\*1:</sup> A filter is built into port P.

Code	Content			
1	2-position single			
2	2-position of	2-position double		
3	3-position	closed center		
4	3-position exhaust center			
5	3-position pressure center			
Х	Mix manifo	Mix manifold		
Α	3-port valve Two valves A valve side: Normally closed/B valve side: Normally Closed A valve side: Normally open/B valve side: Normally Oper			
В				
С	integrated *1	A valve side: Normally closed/B valve side: Normally Open		

6 Station 8 Base internal 10 Electric circuit 12 Ozone/

operated

9 Pilot

7 P/R Port

1 Switching position class

Position

#### 3 Port size (port A/B)

<ul> <li>Metric</li> </ul>	fitting		
Fitting	Port	A/B	Code
	ø4	04CS	
Push-in	ø6	06CS	
Pusn-in	ø8		08CS
	ø10		10CS
Push-in L-type	ø6		06CU
upward *2	ø8		08CU
Push-in	ø6		06CD
L type downward	ø8		08CD
Push-in	Mix		99CX
Fitting	Single side plug	specifications *1	Code
Fitting	Port A	Port B	Code
	ø4		04CA
	ø6	Plug	06CA
	ø8	Flug	08CA
Push-in	ø10		10CA
Pusn-in		ø4	04CF
	Diva	ø6	06CF
	Plug	ø8	08CF
		ø10	10CF
Push-in	ø6	Plug	06CB
L-type	ø8	Flug	08CB
upward	Diva	ø6	06CG
*2	Plug	ø8	08CG
	ø6	Dive	06CC
Push-in	ø8	Plug	08CC
L type downward	Diva	ø6	06CH
acminala	Plug	ø8	08CH

#### Inch fitting

• inch hung					
Fitting	Port	A/B	Code	ĺ	
Push-in	ø1/4"		06LS	ĺ	
Pusn-In	ø5/16"		08LS	ĺ	
Push-in L-type	ø1/4"		06LU	*4	
upward *2	ø5/16"		08LU	*4	
Push-in	Mix		99LX	*3	
Fitting	Single side plug	Code	l		
Fitting	Port A	Port B	Code	l	
	ø1/4"	Diva	06LA	ĺ	
Push-in	ø5/16"	Plug	08LA	ĺ	
Pusn-in	Dlug	ø1/4"	06LF	ĺ	
	Plug	ø5/16"	08LF		
Push-in	ø1/4"	Dlug	06LB	*4	
L-type	ø5/16"	Plug	08LB	*4	
upward	Dlug	ø1/4"	06LG	*4	
*2	Plug	ø5/16"	08LG	*4	
		<u> </u>		-	

Option

Override

Coolant proof

11 Manual 13 Residual 15 With/

pressure

exhaust

valve

14 Valve mounting 16 Exhaust

Without

spacer

Port A/B

2 Piping direction Code Content

B Side piping

# \*1: Ports A and B are available with one-sided plug specifications for 2-position single

- \*2: 3-position is not available for L-type upward push-in fittings.
- \*3: Port size mixtures of ports 4(A) and 2(B) are not available.

# A Voltage

Tollago		
Code	Content	
3	24 VDC	

#### 6 Electrical connections

\*3

Liccii icai co	Liectifical confidentions			
Content	Output Format	# of points	Code	
T Series interface	NPN	32	KA1C	
i Selles Illellace	PNP	Output	KA1D	

# Station No.

otation ito.		
Code	Content	
02	2 stations	
to	to	
24	24 stations	

# 10 Electrical circuit specification

Malapie delegaen le net pedelele.		
Code	Content	
Blank	With surge suppressor and indicator lamp	
E1	Low exoergic/energy saving circuit (surgeless specifications)	
E2	Surgeless	

<sup>\*1:</sup> The combination of "E2" and PNP specifications is Custom Product.

#### 2 Ozone/Coolant proof

	•		
Code	Content		
Blank	Standard specifications		
Α	Ozone/Coolant proof (main valve fluorine specification)		

### **14** Valve mounting screw

Code	Content	
Blank	Pan head machine screw with Phillips head/flathead	
J	Hexagon Socket Head Cap Screw	

#### 16 Exhaust check valve

<b>y</b> —				
Code	Content			
Blank	None			
н	With exhaust check valve			

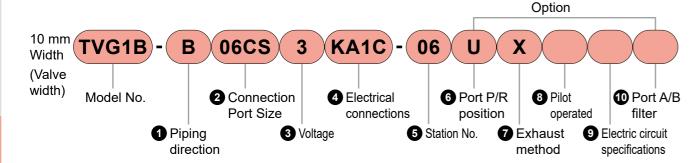
<sup>\*1:</sup> ①Solenoid positions "3" and "5" cannot be selected. Refer to page 163 for details on the type with exhaust check valve. Specify the number of stations to install in the manifold specifications sheet.

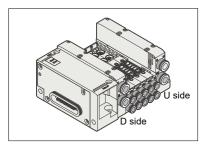
<sup>\*1:</sup> Only compatible with internal pilot. Dimensions is the same as the 2-position double

• For the RT Series, please refer to the Remote I/O RT Series

#### Model No. Notation Method

Manifold base for connection only. \* Solenoid valve is not included.





### 2 Port size (port A/B)

#### Metric fitting

Fitting	Port A/B	Code	
	ø1.8	0ACS	*2
Push-in	ø4	04CS	l
	ø6	06CS	l
Push-in	ø1.8	0ACU	*2
L-type	ø4	04CU	l
upward *1	ø6	06CU	
Push-in	ø1.8	0ACD	*2
L type	ø4	04CD	l
downward	ø6	06CD	

#### 3 Voltage

Code	Content
3	24 VDC

#### **5** Station No.

Code	Content	
02	2 stations	
to	to	
16	16 stations	

<sup>\*1:</sup> The wiring inside the base is all for double solenoid regardless of the type of valve used. The blank number for one solenoid is generated in the section where a single solenoid is mounted.

#### 1 Piping direction

	Code	Content
١	В	Side piping

Inch fitting

			_
Fitting	Port A/B	Code	1
Push-in	ø1/8"	03LS	
FuSII-III	ø5/32"	04LS	
Push-in	ø1/8"	C3LU	*3
L-type upward *1	ø5/32"	04LU	*3

<sup>\*1: 3-</sup>position is not available for L-type upward push-in fittings.

#### **4** Electrical connections

Content	Output Format	Number of points	Code
RT Series interface	NPN	32	KA1C
RT Series interface	PNP	point output	KA1D

#### **6** Port P/R position

#### (TVG1B: ø 8)

\* Multiple selection is not possible.

Matapie Selection is not possible.				
Code	Content			
U	U side			
D	D side			
В	U, D both sides			

<sup>\*1:</sup> The Port P/R tube has the same direction as the Port A/B tube.

#### **1** Exhaust method

	Code	Content			
	Blank	Centralized Exhaust (port R is a push-in fitting)			
*1	х	Silencer integrated (port R is a plug, exhaust is released to atmosphere)			

	Dialik	(port R is a push-in fitting)		
*1	х	Silencer integrated (port R is a plug, exhaust is released to atmosphere)		
*1: 6A silencer is integrated at the position selected with port P/R				

position.

#### Electrical circuit specification \* Multiple

_			
selection	is	not	possible

Code	1 11 1	
Blank		
Low dust generation/energy saving circuit (surgeless specifications)		
E2	Surgeless	

<sup>\*1:</sup> The combination of "E2" and PNP specifications is Custom Product.

### 8 Pilot operated

(Catalog No.CC-1557AA).

Code	Content	
Blank	Internal pilot	
К	External pilot	

#### 10 Port A/B filter

Code	Content	
Blank	None	
F	Port A/B filter built in	3:3

<sup>\*1:</sup> A filter is built into port P.

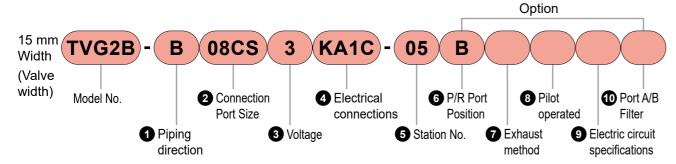
<sup>\*2:</sup> Custom Product.

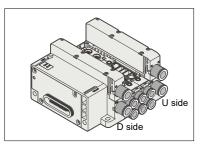
<sup>\*2:</sup> A port P filter is integrated.

• For the RT Series, please refer to the Remote I/O RT Series

#### Model No. Notation Method

Manifold base for connection only. \* Solenoid valve is not included.





# 2 Port size (port A/B)

#### Metric fitting

• Metric fitting		
Fitting	Port A/B	Code
	ø4	04CS
Push-in	ø6	06CS
Pusn-in	ø8	08CS
	ø10	10CS
Push-in	ø6	06CU
L-type upward *1	ø8	08CU
Push-in	ø6	06CD
L type downward	ø8	08CD

3	Vo	lta	ige	
		$\overline{}$		•

ı	Code	Content
	3	24 VDC
	J	Z4 VDC

#### **5** Station No.

Code	Content	
02	2 stations	
to	to	
16	16 stations	

<sup>\*1:</sup> The wiring inside the base is all for double solenoid regardless of the type of valve used. The blank number for one solenoid is generated in the section where a single solenoid is mounted.

#### 1 Piping direction

<u> </u>	<u> </u>
Code	Content
В	Side piping

#### Inch fitting

Fitting	Port A/B	Code	]
Push-in	ø1/4"	06LS	
Pusn-in	ø5/16"	08LS	
Push-in	ø1/4"	06LU	,
L-type upward *1	ø5/16"	08LU	,

<sup>\*1: 3-</sup>position is not available for L-type upward push-in fittings.

#### **4** Electrical connections

Content	Output Format		Code
DT Control interfere	NPN	32	KA1C
RT Series interface	PNP	points Output	KA1D

#### **6** Port P/R position

(TVG2B: ø10)

* Mul	* Multiple selection is not possible.		
Code	Content		
U	U side		
D	D side		
В	U, D both sides		

<sup>\*1:</sup> The port P/R tube has the same direction as the port A/B

#### Exhaust method

	2 Extradot motriou		
	Code	Content	
	Blank	Centralized Exhaust (port R is a push-in fitting)	
1	х	Silencer integrated (port R is a plug, exhaust is released to atmosphere)	

<sup>\*1: 6</sup>A silencer is integrated at the position selected with port P/R

#### 8 Pilot operated

(Catalog No.CC-1557AA).

Code	Content	
Blank	Internal pilot	
К	External pilot	

#### 9 Electrical circuit specification

" IVIU	Multiple selection is not possible.	
C	ode	Content
BI	ank	With surge suppressor and indicator lamp
ı	E1	Low dust generation/energy saving circuit (surgeless specifications)
ı	E2	Surgeless

<sup>\*1:</sup> The combination of "E2" and PNP specifications is Custom Product.

#### 10 Port A/B filter

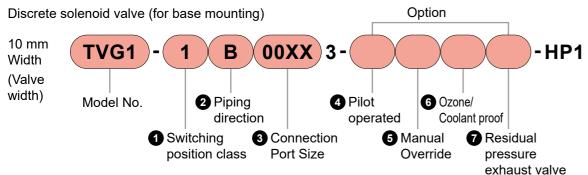
Code	Content	
Blank	None	
F	Port A/B filter built in	18

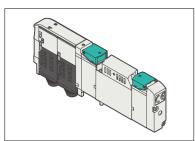
<sup>\*1:</sup> A filter is built into port P.

<sup>\*2:</sup> Custom Product.

<sup>\*2:</sup> A port P filter is integrated.

#### Model No. Notation Method





#### **Attached Parts**

- The valve mounting screws are included.
- •The gasket is attached to the manifold base.

### 1 Switching position class

	_	• •	
	Code		Content
	1	2-position sir	ngle
	2	2-position do	uble
	3	3-position clo	osed center
	4	3-position ex	haust center
	5	3-position pressure center	
*1	Α		A valve side: Normally Closed
'	_ ^	3-port valve	B valve side: Normally Closed
*1	В		A valve side: Normally Open
'		integrated	B valve side: Normally Open
*1		integrated	A valve side: Normally Closed
'	C		B valve side: Normally Open

\*1: Only compatible with internal pilot. Dimensions of the Dimensions diagram are the same as those of 2-position double

#### 2 Piping direction

Code	Content
В	Side piping

#### 4 Pilot operated

Code	Content
Blank	Internal pilot
K	External pilot

# 3 Connection Port Size

Code	Content
00XX	Discrete solenoid valve for base

#### **5** Manual device \* Multiple selections are not possible.

Code	Content	
Blank	With locking, non-locking common, misoperation prevention cover	
M1	Non-locking, with misoperation prevention cover	
M2	Locking/non-locking common, tool operation, Without cover	
М3	Non-locking, tool operation, without cover	

#### 6 Ozone/Coolant proof

	<b>-</b>
Code	Content
Blank	Standard specifications
Α	Ozone/Coolant proof (main valve fluorine
	specification)

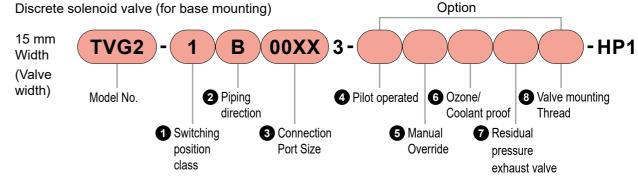
#### Residual pressure exhaust valve

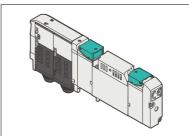
	Code	Content	
	Blank	Without residual pressure exhaust valve	
*1, *2	Y1	With non-locking residual pressure exhaust valve	
*1, *2	Y2	With locking residual pressure exhaust valve	

- \*1: **①**Solenoid position "3" and "4" only are supported.
- \*2: **6**Only the manual override "M2" and "M3" are supported.

#### · Refer to Series (Catalog No.CC-1557AA) for the RT Series ().

#### Model No. Notation Method





#### Attached Parts

- The valve mounting screws are included.
- •The gasket is attached to the manifold base.

#### 1 Switching position class

	<del></del>	cilling pos	ition oldoo
	Code		Content
	1	2-position sir	ngle
	2	2-position do	uble
	3	3-position cl	osed center
	4	3-position ex	xhaust center
	5	3-position pressure center	
*1	Α	2 mantivalua	A valve side: Normally Closed B valve side: Normally Closed
*1	В	3-port valve Two valves integrated	A valve side: Normally Open B valve side: Normally Open
*1	С		A valve side: Normally Closed B valve side: Normally Open
*1. Only competible with internal pilet. Dimensions of the			

\*1: Only compatible with internal pilot. Dimensions of the Dimensions diagram are the same as those of 2-position double.

**6** Manual device \* Multiple selections are not possible.

With locking, non-locking common,

Locking/non-locking common, tool

Non-locking, with misoperation prevention

misoperation prevention cover

Content

#### 3 Connection Port Size

cover

operation,

Code

Blank

Code	Content
00XX	Discrete solenoid valve for base

#### 4 Pilot operated

Code

2 Piping direction

B Side piping

Co	ode	Content
Bla	ank	Internal pilot
I	K	External pilot

Content

#### • • • • •

	•
Code	Content
Blank	Standard specifications
Α	Ozone/Coolant proof (main valve fluorine specification)

# 6 Ozone/Coolant proof

_			
ß	Valve	mounting	SCrew

Valve induffing screw		
Code	Content	
Blank	Pan head machine screw with Phillips	
DIAIIK	head/flathead	
J	Hexagon Socket Head Cap Screw	

- · Refer to Series (Catalog No.CC-1557AA) for the RT Series ().
- · If an exhaust check valve is necessary, refer to page 54.

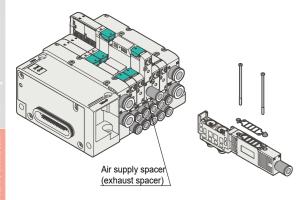
	Without cover
M3	Non-locking, tool operation, without cover

	Residual pressure exhaust valve			
	Code	Content		
	Blank	Without residual pressure exhaust valve		
*1, *2	Y1	With non-locking residual pressure exhaust valve		
*1, *2	Y2	With locking residual pressure exhaust valve		

- \*1: **O**Solenoid position "3" and "4" only are supported.
- \*1: ①Solenoid position "3" and "4" only are supported.\*2: ⑤Only the manual override "M2" and "M3" are supported.

<sup>•</sup> If an exhaust check valve is necessary, refer to page 54.

# Air supply spacer/exhaust spacer



# **Specifications**

Air supply spacer

Model No.	Weight g
TVG1P-P-□	31

Exhaust spacer

Model No.	Weight g
TVG1P-R-□	31

# Discrete model No.

Air supply spacer

TVG1P-P-(04CS

1 Connection Port Size

# **1** Connection Port Size

Code	Bore size	Content
04CS	ø4	ø4 Push-in fitting
06CS	ø6	ø6 Push-in fitting

1171	
Model No.	Weight g
TVG1P-P-□	31

Model No.	Weight g
TVG1P-R-□	31

# Exhaust spacer

TVG1P-R-(04CS

1 Connection Port Size

# 1 Connection Port Size

Code	Bore size	Content
04CS	ø4	ø4 Push-in fitting
06CS	ø6	ø6 Push-in fitting

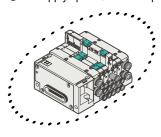


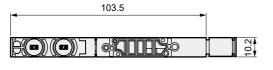
Notes for model No. Selection

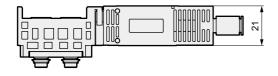
- \*1: Specify the positions and quantity of spacers for manifold in the manifold specifications sheet (Refer to pages 127 to 130. Please provide instructions.
- \*2: Stacking of spacers is not possible.
- \*3: A spacer cannot be combined with a blanking plate.
- \*4: A spacer mounting screw and gasket are included.
- \*5: If the port A/B Fittings is elbow (upward), a spacer cannot be selected.

# **External Dimension Drawings**

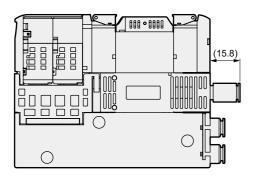
Air supply spacer/exhaust spacer

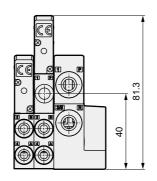




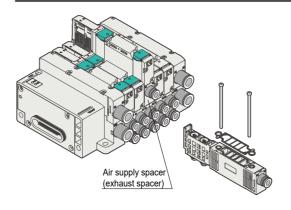








# Air supply spacer/exhaust spacer



# **Specifications**

Air supply spacer

Model No.	Weight g
TVG2P-P-□	56

Exhaust spacer

<u> </u>	
Model No.	Weight g
TVG2P-R-□	56

# Discrete model No.

Air supply spacer

TVG2P-P- 06CS

1 Connection Port Size

# 1 Connection Port Size

Code Bore size		Content
06CS	ø6	ø6 Push-in fitting
08CS	ø8	ø8 Push-in fitting
10CS	ø10	ø10 Push-in fitting

Exhaust spacer

TVG2P - R - (06CS

1 Connection Port Size

# **1** Connection Port Size

Code	Bore size	Content
06CS	ø6	ø6 Push-in fitting
<b>08CS</b> Ø8		ø8 Push-in fitting
10CS	ø10	ø10 Push-in fitting

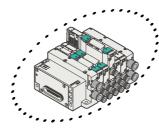


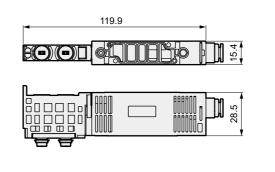
Notes for model No. Selection

- \*1: Specify the positions and quantity of spacers for manifold in the manifold specifications sheet (Refer to pages 127 to 130. Please provide instructions.
- \*2: Stacking of spacers is not possible.
- \*3: A spacer cannot be combined with a blanking plate.
- \*4: A spacer mounting screw and gasket are included.
- \*5: If the port A/B Fittings is elbow (upward), a spacer cannot be selected.

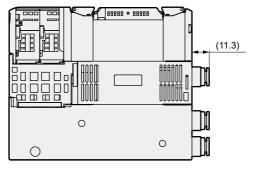
# **External Dimension Drawings**

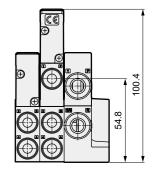
Air supply spacer/exhaust spacer





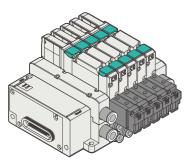






1 Model No.

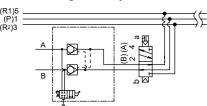
# Perfect spacer (spacer pilot check valve)



# **Specifications**

Item		TVG1P-PC-□	TVG2P-PC-□
Operating Fluid		Compre	ssed Air
Maximum Operating Pressure	MPa	0.7	
Min. working pressure	MPa	0.	2
Proof Pressure	MPa	1.05	
Ambient Temperature	°C	-5 to 55 (no freezing)	
Working fluid temperature	°C	5 to 55	
Atmosphere		Cannot be used in corrosive gas environment.	
Weight	g	34 73	

# Circuit Diagram Symbol



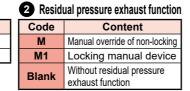
Note: Please note that if you use cylinders with a large bore (guideline ø50 or more) in a state with almost no throttling on the exhaust side (e.g., without a speed controller or silencer), this may lead to a decrease in intermediate stop accuracy and intermediate stop failure.

Discrete model No.



2 Residual pressure exhaust function

	1 Model No.		<b>2</b> R
İ	Code	Content	Cod
	TVG1	10 mm width (valve width)	M
ı	TVG2	15 mm width (valve width)	M.
			Bla





Note 1: Please specify the spacer mounting position and the selection of the residual pressure release function in the manifold specifications.

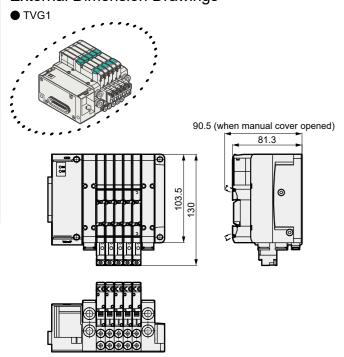
Note 2: If the A/B port fittings are the upward-facing elbow type, a spacer cannot be selected.

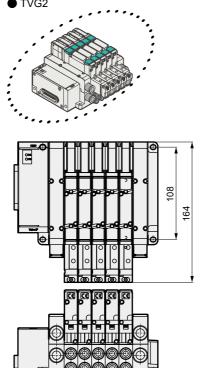
Note 3: Stacking multiple spacers is not supported.

Note 4: A spacer and a blanking plate cannot be combined.

Note 5: Spacer mounting screws and a gasket are included.

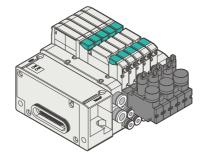
# **External Dimension Drawings**





109.8 (when manual cover opened)
100.4
(e)
ليطيا

# Spacer regulator

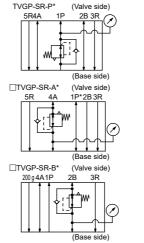


# **Specifications**

Item		TVG1P-SR-□	TVG2P-SR-□
Pressure reduction port		P/A/B	
Operating Fluid		Compressed Air	
Maximum Operating Pressure	MPa	0.	.7
Min. working pressure	MPa	0.1	
Proof Pressure	MPa	1.05	
Ambient Temperature	°C	−5 to 55 (no freezing)	
Working fluid temperature	°C	5 to 55	
Atmosphere Cannot be used in corr environment.			
Weight	g	g 48 110	

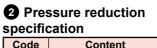
2 Pressure reduction specification







Regulator



Specific	specification			
Code	Content			
Р	P port pressure reduction			
Α	A port pressure reduction			
В	B port pressure reduction			

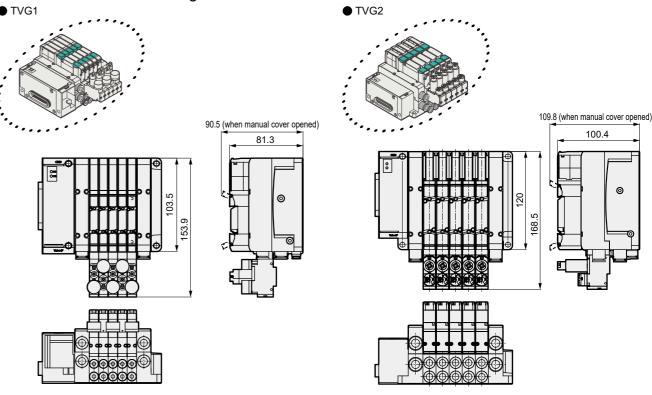
<b>3</b> Pre	essure Gauge	TVG1	TVG2
Code	Content		
G0	Without Pressure Gauge	•	•
G1	With pressure gauge for odd numbers	•	
G2	With pressure gauge for even stations	•	
G3	Odd/even stations with common pressure gauge		•



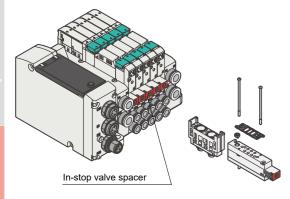
# Notes for model No. Selection

- \*1: Specify the spacer positions in the manifold specifications sheet.
- \*2: If the port A/B Fittings is elbow (upward), a spacer cannot be selected. \*3: Stacking of spacers is not possible.
- \*4: A spacer cannot be combined with a blanking plate.
- \*5: A spacer mounting screw and gasket are included.

# **External Dimension Drawings**



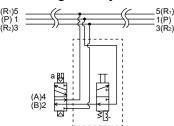
# In-stop valve spacer



# Specifications

Item		TVG1P-IS	TVG2P-IS
Operating Fluid		Compre	ssed Air
Maximum Operating Pressure	MPa	0.	.7
Min. working pressure	MPa	0.1	
Proof Pressure	MPa	1.05	
Ambient Temperature	°C	-5 to 55 (no freezing)	
Working fluid temperature	°C	5 to	55
Atmosphere		Cannot be used in corrosive gas environment.	
Weight         g         35         71		71	

# Circuit Diagram Symbol



# Discrete model No.



# 1 Model No.

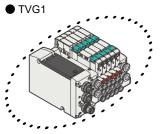
Code	Content
TVG1	10 mm width (valve width)
TVG2	15 mm width (valve width)

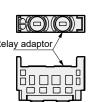
# Notes for model No. Selection

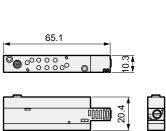
- \*1: Specify the spacer positions in the manifold specifications sheet.
- \*2: If the A/B port fitting is elbow type facing upward, a spacer cannot be selected.
  \*3: Stacking of spacers is not possible.
  \*4: A spacer cannot be combined with a blanking plate.

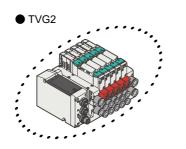
# \*5: Not compatible in combination with external pilot (K).

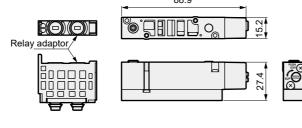
# **External Dimension Drawings**

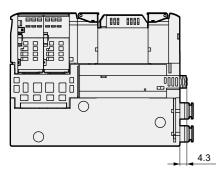


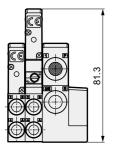


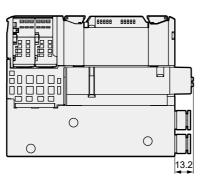


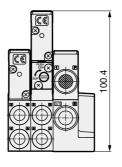












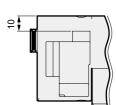
MEMO

**External Dimension Drawings** 

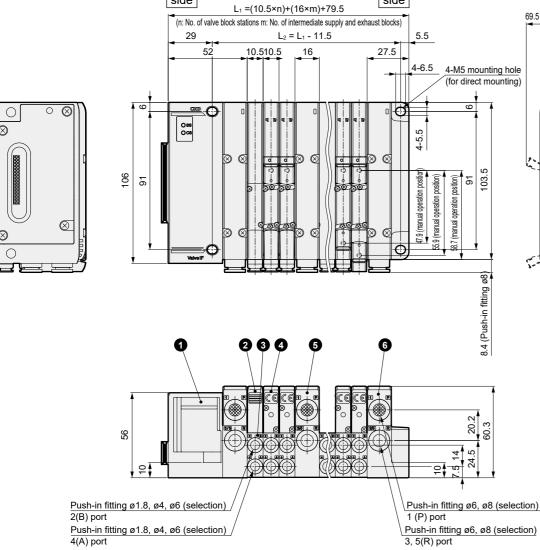
cover opened)

0

TVG1M for connection



D side



U side

3, 5(R) port

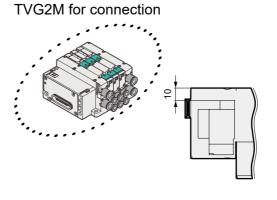
Part No.	Part Name
1	Valve interface
2	Blanking plate
3	Valve block
4	Single solenoid valve
5	Intermediate supply and exhaust block
6	End block

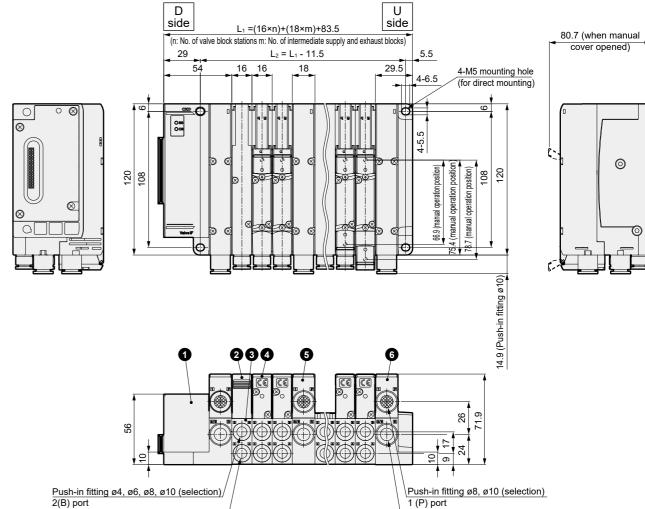
69.5 (when manual cover opened)

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# **External Dimension Drawings**





Push-in fitting ø4, ø6, ø8, ø10 (selection 2(B) port  Push-in fitting ø4, ø6, ø8, ø10 (selection 4(A) port	tion	Push-in fitting ø8, ø1  3. 5/R) port	,
4(A) port		3, 5(R) port	

Part No.	Part Name
1	Valve interface
2	Blanking plate
3	Valve block
4	Single solenoid valve
5	Intermediate supply and exhaust block
6	End block

<sup>\*</sup>Two tie rods to connect the valve interface to the RT Series are included.

<sup>\*</sup>Two tie rods to connect the valve interface to the RT Series are included.

**External Dimension Drawings External Dimension Drawings** TVG1M TVG1M ●Fitting straight Fitting straight ●ø1.8 (0ACS) ●ø4 (04CS) ●ø6 (06CS) ●ø1/8" (03LS) ●ø5/32" (04LS) ●Fitting straight, single plug ●ø1.8 (0ACA) ●ø4 (04CA) ●ø6 06CA ●ø1.8 (0ACF) ●ø4 (04CF) ●ø6 (06CF) ●Fitting straight, single plug ●ø1/8" (03LA) ●ø5/32" (04LA) ●ø1/8" (03LF) ●ø5/32" (04LF) ●L fitting (downward) ●L fitting (upward) ●ø1.8 (0ACU) ●ø4 (04CU) ●ø6 (06 CU) ●ø1.8 (0ACD) ●ø4 (04CD) ●ø6 06CD 22.4 7 10.5 ●L fitting (upward) ●ø1/8" (03LU) ●ø5/32" (04LU) 13.2 6 10.5 21.4 ●L fitting (upward), single plug ●ø1.8 (0ACB) ●ø6 (06CB) ●ø1.8 (0ACG) ●ø4 (04CG) ●ø6 (06CG) ●ø4 (04CB) ●L fitting (upward), single plug ●ø1/8" (03LB) ●ø5/32" (04LB) ●ø1/8" (03LG) ●ø5/32" (04LG) 21.4 ●L fitting (downward), single plug 16.5 16.5 ●ø1.8 (0ACC) ●ø4 (04CC) ●ø6 (06CC) ●ø1.8 (0ACH) ●ø4 (04CH) ●ø6 (06CH)

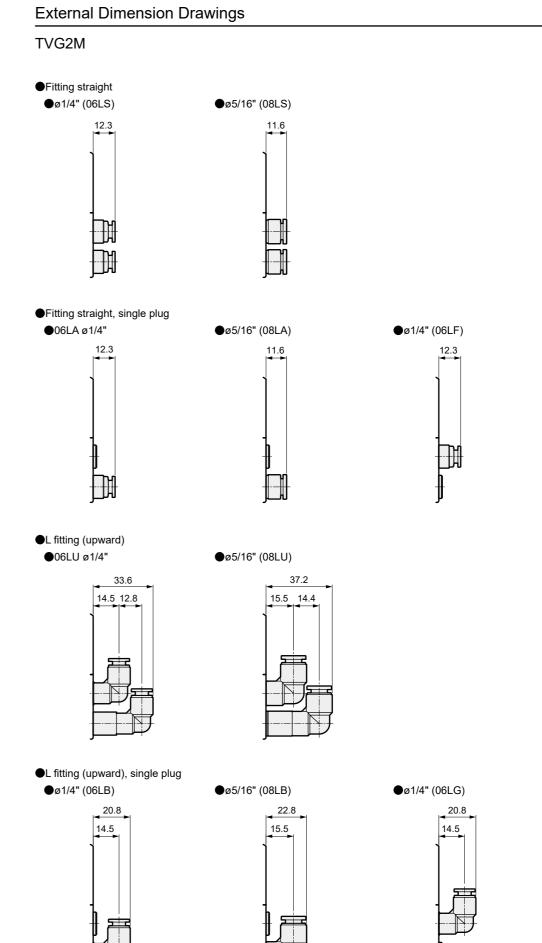
**CKD** 

**CKD** 

●ø5/16" (08LF)

# **External Dimension Drawings** TVG2M Fitting straight ●ø4 (04CS) ●ø6 (06CS) ●ø8 (08CS) ●ø10 (10CS) ●Fitting straight, single plug ●ø6 06CA ●ø4 (04CA) ●ø8 08CA ●ø10 (10CA) ●ø4 (04CF) ●ø6 (06CF) ●ø8 (08CF) ●ø10 (10CF) 17.8 ●L fitting (upward) L fitting (downward) ●ø6 (06 CU) ●ø6 06CD ●ø8 (08CU) ●ø8 08CD 33.7 14.5 12.9 15.5 14.4 ●L fitting (upward), single plug ●ø6 (06CB) ●ø8 (08CB) ●ø6 (06CG) ●ø8 (08CG) 14.5 14.5 15.5 15.5 ●L fitting (downward), single plug ●ø6 (06CC) ●ø6 (06CH) ●ø8 (08CH) ●ø8 (08CC)

15.5



●ø5/16" (08LG)

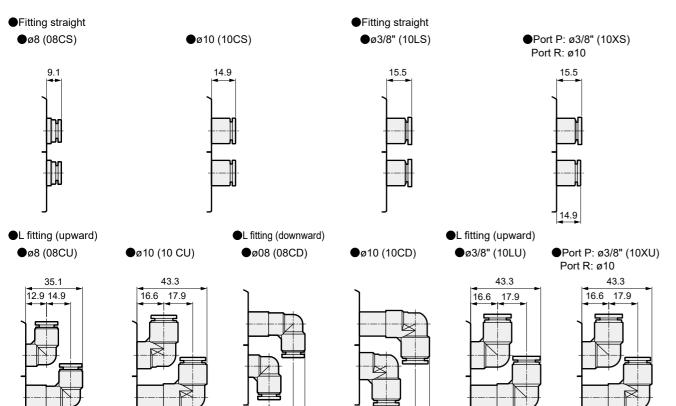
15.5

# **External Dimension Drawings** TVG1M Supply and exhaust block Fitting straight Fitting straight ●ø6 (06CS) ●ø8 (08CS) ●ø5/16" (08LS) ●Port P: ø5/16" (08XS) Port R: ø8 L fitting (upward) ●L fitting (downward) L fitting (upward) ●ø6 (06 CU) ●ø8 (08CU) ●ø6 06CD ●ø8 08CD ●ø5/16" (08LU) ●Port P: ø5/16" (08XU) Port R: ø8 34.4 11.7 12.9 12.7 14.4 12.7 14.4

=

12.7 14.4 34.4

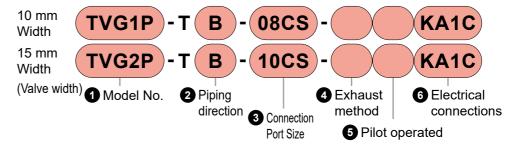
# TVG2M Supply and exhaust block



16.6 | 17.9

# Model No. Notation Method

Valve interface (supply and exhaust air)



1 Model No.

### **Attached Parts**

- The nut for fixing tie rod is built into the valve interface.
- · Comes with two tie rods that fasten the valve interface to the RT Series.

3 Conne	ction Port Siz	Standard      O: Custom P		TVG1P	TVG2P	
Metric fitting				ļ		
Fitting		t P/R	Code			
	ø6		06CS	•		
Push-in	ø8		08CS	•	•	
	ø10		10CS		•	
Push-in	ø6		06CU	•		
L-type	ø8		08CU	•	•	
upward	ø10		10CU		•	
Push-in	ø6		06CD	•		
L type	ø8		08CD	•	•	
downward	ø10	ø10 <b>1</b> 0			•	
*1 Inch fitting						
Fitting	Por	t P/R	Code			
Push-in	ø5/16"		08LS	•		
Fusii-iii	ø3/8"		10LS		•	
Push-in	ø5/16"		08LU	0		
L-type upward	ø3/8"		10LU		0	
*3 Port P: Fittin	Port P: Fittings Inch, port R: Metric fitting					
Fitting	P Port	R Port	Code			
Push-in	ø5/16"	ø8	08XS	•		
uon-in	ø3/8"	ø10	10XS		•	
Push-in	ø5/16"	ø8	UX80	0		
L-type upward	ø3/8"	ø10	10XU		0	

# Code Content Side piping

2 Piping direction

# 4 Exhaust method

Code	Content
Blank	Centralized Exhaust
	(port R is a push-in fitting)
v	Exhaust is open to atmosphere, with
Х	built-in silencer (Port R is sealed.)

- \*1: 3X is not available for port size "00XX".
- \*2: X is not available for pilot KZ.

# **5** Pilot operated

	Code	Content
	Blank	Internal pilot
*1, *2	K	External pilot
*1, *2	KZ	External pilot (PA/PR separated)

- \*1: 3 Cannot be selected for port size "00XX" and "□□X□".
- \*2: The external pilot port is an ø6 One-touch Fitting, and in the case of □□L□, it will be an ø5/32 inch fitting.

# **6** Electrical connections

Content		Code
/alve interface	NPN	KA1C
valve interrace	PNP	KA1D

\*1: Select 08XS, 10XS, 08XU or 10XU when using a silencer with inch Fittings specifications. Fittings Port R and PR (for KZ) are metric.

Code

00XX

\*2: 6Pilot, K, KZ and 00XX cannot be selected together.

Port P/R

\*3: Cannot be selected together with exhaust method X.

Plug

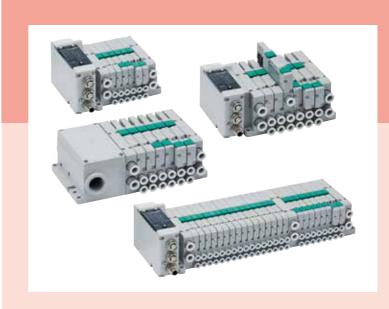
Plug

● TVG1P-TB-08CS	● TVG1P-TB-08CS-X	● TVG1P-TB-08CS-K	● TVG1P-TB-08CS-XK	● TVG1P-TB-08CS-KZ	● TVG1P-TB-00XX
● TVG2P-TB-10CS	● TVG2P-TB-10CS-X	● TVG2P-TB-10CS-K	● TVG2P-TB-10CS-XK	● TVG2P-TB-10CS-KZ	● TVG2P-TB-00XX

# **TVG**

# 3, 5-port pilot operated valve, plug-in block manifold

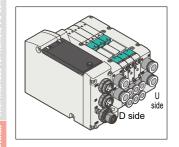
Specifications for rechargeable battery manufacturing processes



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Product Introduction	Intro
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Manifold \* with solenoid valve P4 Series has limited materials for air flow path/sliding part.

10 mm width (valve width) B 06CS 3 JA4C-(06) U P4-HP1 (TVG1M)-( 1 ) 6 Station 8 Base internal 10 Electric circuit 12 Ozone 4 Voltage 14 Exhaust 16 Mount Model No. 2 Piping direction No. wiring system specifications Coolant proof check valve 1 Switching 3 Connection 5 Electrical 7 Port P/R 9 Pilot 15 Port A/B 11 Manual 13 Spacer position Port Size connections position



# 1 Switching position class

	<u> </u>			
Code	Content			
1	2-position single			
2	2-position of	2-position double		
3	3-position	closed center		
4	3-position	3-position exhaust center		
5	3-position pressure center			
Х	Mix manifold			
Α	3-port valve	A valve side: Normally closed/B valve side: Normally Closed		
В	Two valves A valve side: Normally open/B valve side: Normally Open			
С	integrated *1	A valve side: Normally closed/B valve side: Normally Open		
*1: Only co	1: Only compatible with internal pilot. Dimensions is the same as the 2-position			

double.

# 3 Port size (port A/B) Metric fitting

· Metric ritting			
Fitting	Port	A/B	Code
	ø4		04CS
Push-in fitting	ø6		06CS
	Mix		99CX
Fitting	Single side plug specifications		Code
riung	Port A	Port B	Code
	ø4	Dlug	04CA
Push-in fitting	ø6	Plug	06CA
Push-in illing	Dlug	ø4	04CF
	Plug	ø6	06CF

\*1: Port size mixtures of ports 4(A) and 2(B) are not available.

# **5** Electrical connections

# Reduced wiring connection

rtoudoud willing commodition			
Communication protocol	Output Format	Code	
Common	NPN	EA1A	
terminal block (M3 thread)	PNP	EA1B	
Multi-	NPN	FA1A	
connector	PNP	FA1B	
D-sub	NPN	GA1A	
Connector	PNP	GA1B	

# Serial transmission

\*1

	nunication otocol	Output Format	Number of Output Points	Code	
Device	Not	NPN		JA1C	
Devicei	vet	PNP		JA1D	
CC-LIN	V	NPN		JA2C	
CC-LIN	N.	PNP		JA2D	
EtherC/	Λ <b>.</b> Τ	NPN		JA3C	
Luiei C/	٦,١	PNP		JA3D	
EtherNe	5+/ID	NPN		JA4C	
Ellelive	EVIP	PNP		JA4D	
CC-Linl	( IEF	NPN		JA5C	
Basic		PNP		JA5D	
PROFINET		NPN	32	JA6C	
PROFINET		PNP	points	JA6D	
CC-Link IE Field		NPN		JA7C	
CC-LIII	CIL Fleiu	PNP		JA7D	
CC Link	LE TON	NPN		JA8C	
CC-Link IE TSN		PNP		JA8D	
	Class A	NPN		JA9C	
10-	Class A	PNP		JA9D	
Link	Class B	NPN		JA9G	
	Class B	PNP		JA9H	
IO-Link Wireless		NPN		JB1C	
IO-LIIK	VVII CIESS	PNP		JB1D	

# 6 Station No.

4 Voltage

24 VDC

Code

-	<u> </u>		
	Code	Content	
	02 2 stations		
	to	to	
2	24	24 stations	

2 Piping direction

Code Content B Side piping

Content

\*1: Differs depending on the reduced wiring specifications. Refer to the individual specifications (on page 7).

\*2: **6**For mount "R" (DIN rail), the max. station No. is 16.

# Port P/R position

\* Multiple selection is not possible

Code	Content	
U	U side	1
D	D side	
В	U side, D side	
Т	U side, D side, With intermediate supply and exhaust block	

- \*1: Specify the specifications of the intermediate supply and exhaust block in the manifold specifications sheet.
- \*2: The atmosphere release (internal silencer) type does not support P4 specifications.

# 10 Electrical circuit specification

Manapic 3	Multiple selection is not possible.		
Code	Content		
Blank	With surge suppressor and indicator lamp		
E1	Low exoergic/energy saving circuit (surgeless specifications		
E2	Surgeless		

\*1:Combination of "E2" and PNP specifications is Custom Product.

Code	Content	
Blank (Double wiring)		
Single solenoid, Double solenoid layout specification		
1: Blank = Double solenoid wiring regardless of the type of valve used. If a single solenoid is mounted, an empty number for one solenoid will be generated.		

8 Base internal wiring system\*1

# 9 Pilot operated

• If an exhaust check valve is necessary, refer to page 54.

I	Code	Content	
١	Blank	Internal pilot	
١	K	External pilot	

11 Manual device \* Multiple

selections are not possible.			
Code	Content		
Blank	Locking/non-locking common, With misoperation prevention cover		
M1	Non-locking, With misoperation prevention cover		
M2	Locking/non-locking common, Tool operated, without cover		
М3	Non-locking, Tool operated, without cover		

# Ozone/Coolant proof

Code	Content	
Blank	Standard specifications	
A	Ozone/Coolant proof (Main valve fluorine specification)	

# (B) With/Without spacer

Code	Content
Blank	Without spacer
	With spacer
	(Type and location are specified
	in the MF specifications sheet)

\*1: Specify the spacer type and mounting position in the manifold specifications sheet. Stacking of spacers is not possible. Combination with the blanking plate is not supported. The spacer Regulators does not support P4 specifications.

# 12 Exhaust check valve

	Code	Content	
	Blank	None	
*1	H	With exhaust check valve	

: 1 Solenoid positions "3" and "5" cannot be selected. Refer to page 163 for details on the type with exhaust check valve. Specify the number of stations to install in the manifold specifications sheet.

# 1 Port A/B filter

Code	Content		
Blank	None		
F	Port A/B filter built in	Si Si Si Si Si Si Si Si Si Si Si Si Si S	

\*1: A filter is built into port P.

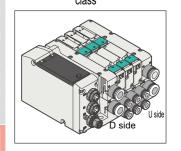
# (A) Mount type

wount type			
Code	Content		
Blank	Direct mount		
R	DIN rail mount		

<sup>\*2:</sup> Ports A and B are available with one-sided plug specifications for 2-position single only.

Manifold \* with solenoid valve P4 Series has limited materials for air flow path/sliding part.

15 mm width (valve width) (TVG2M)-(2 | B (06CS) 3 (JA4C)-(05 | B 4 Voltage 6 Station 8 Base internal 10 Electric circuit 12 Ozone/ 14 Spacer 16 Port A/B Model No. 2 Piping wiring system direction 1 Switching 3 Connection 5 Electrical 7 Port P/R 9 Pilot 11 Manual 13 Valve 15 Exhaust 17 Mount Port Size connections Override position position operated mounting check Thread



U	Switch	ing po	sition	class

	<u> </u>		
Code		Content	
1	2-position s	single	
2	2-position of	louble	
3	3-position	closed center	
4	3-position	exhaust center	
5	3-position pressure center		
X	Mix manifo	d	
Α	3-port valve	A valve side: Normally closed/B valve side: Normally Closed	
В	Two valves	A valve side: Normally open/B valve side: Normally Open	
С	integrated *1	A valve side: Normally closed/B valve side: Normally Open	
1: Only co	mpatible with	internal pilot. Dimensions is the same as the 2-position	

# 3 Port size (port A/B) Metric fitting

· Metric ritting				
Fitting	Port	A/B	Code	
	ø4	04CS		
Push-in fitting	ø6		06CS	
Fusii-iii iilliiig	ø8		08CS	
	Mix		99CX	
Fitting	Single side plu	g specifications	Code	
ritting	Port A	Port B		
	ø4	Plug	04CA	
	ø6		06CA	
Push-in fitting	ø8		08CA	
Fusii-iii iilliiig		ø4	04CF	
	Plug	ø6	06CF	
		ø8	08CF	

# 4 Voltage

_	
Code	Content
3	24 VDC

2 Piping direction

Code Content B Side piping

\*1: Port size mixtures of ports 4(A) and 2(B) are not available.

\*2: Ports A and B are available with one-sided plug specifications for 2-position single only.

# **5** Electrical connections

# Reduced wiring connection

Reduced wiring connection					
Communication protocol	Output Format	Code			
Common	NPN	EA1A			
terminal			6		
block	PNP	EA1B	400		
(M3 thread)					
Multi-	NPN	FA1A			
connector	PNP	FA1B			
D-sub	NPN	GA1A			
Connector	PNP	GA1B			

# Serial transmission

Wireless

OCI	iai tia	11311113	31011		
	nication ocol	Output Format	Number of Output Points	Code	
DeviceNet		NPN		JA1C	
Devicei	vet	PNP		JA1D	
CC-LIN	V	NPN		JA2C	
CC-LIN	r.	PNP		JA2D	
EtherC/	^_	NPN		JA3C	
EllierC	-11	PNP		JA3D	
<b>□</b> 415 = = <b>N</b> 1.	-+/ID	NPN		JA4C	
EtherNe	eviP	PNP		JA4D	
CC-Linl	( IEF	NPN		JA5C	
Basic		PNP	က္က	JA5D	- Ja
PROFI		NPN	32 points	JA6C	
PROFII	NEI	PNP	2 pc	JA6D	
CC-Linl	κ IE	NPN	8	JA7C	
Field		PNP		JA7D	
CC-Linl	κ IE	NPN		JA8C	
TSN		PNP		JA8D	
IO-Link	Class	NPN		JA9C	
	Α	PNP		JA9D	<b>1</b>
	Class	NPN		JA9G	
	В	PNP		JA9H	
IO-Link		NPN		JB1C	

PNP

# 6 Station No.

	Code	Content
	02	2 stations
	to	to
*1 *2	24	24 stations

\*1: Differs depending on the reduced wiring specifications. Refer to the individual specifications (on page 7).

\*2: **T**For mount "R" (DIN rail), the max. station No. is 16.

# Port P/R position

"Multiple selection is not possible.		
Code	Content	
U	U side	
D	D side	
В	U side, D side	
т	U side, D side, With intermediate supply and exhaust block	

- \*1: Specify the specifications of the intermediate supply and exhaust block in the manifold specifications sheet.
- \*2: The atmosphere release (internal silencer) type does not support P4 specifications.

# 10 Electrical circuit specification \* Multiple selection is not possible

	manapis seresaeri is not possible.		
	Code Content		
Blank With surge suppress indicator lamp		With surge suppressor and indicator lamp	
	E1	Low exoergic/energy saving circuit (surgeless specifications	
E2 Surgeless		Surgeless	

\*1: Combination of "E2" and PNP specifications is Custom Product.

# 13 Valve mounting screw

	· · · · · · · · · · · · · · · · · · ·
Code	Content
Blank	Pan head machine screw with Phillips head/flathead
J	Hexagon Socket Head Cap Screw
	Į

with "J".

# 8 Base internal wiring system\*1

Code Content		
Blank	Blank (Double wiring)	
Single solenoid, Double solenoid layout specification		
*1: Blank = Double solenoid wiring regardless of the type of valve used. If a single solenoid is mounted, an empty number for one solenoid		

will be generated.

# 9 Pilot operated

Code	de Content	
Blank	Internal pilot	
K External pilot		

• If an exhaust check valve is necessary, refer to page 54.

ı	Code	Content	
Blank Internal pilot		Internal pilot	
K External pilot		External pilot	
•			

# Manual device \* Multiple

selections are not possible.		
Code	Content	
Blank	With locking, non-locking common, misoperation prevention cover	
M1	Non-locking, with misoperation prevention cover	
M2	M2 Locking/non-locking common, tool operation, without cover	
М3	Non-locking, tool operation, without cover	

	Code	Content	
rew with	Blank	Without spacer	
		With spacer	
d Cap	Z (Type and location are spec		
		in the MF specifications sheet)	

\*1: Specify the spacer type and mounting position in the manifold specifications sheet. Stacking of spacers is not possible. Combination with the blanking plate is not supported. Cannot be selected together with L-type push-in fitting (upward). The spacer Regulators does not

# 2 Ozone/Coolant proof

Code Content  Blank Standard specifications
<u> </u>
A Ozone/Coolant proof (Main valve fluorine specification)

# With/Without spacer

Code Content		Content
	Blank	Without spacer
		With spacer
	Z	(Type and location are specified
		in the MF specifications sheet)

support P4 specifications.

# 15 Exhaust check valve

	Code	Content		
	Blank	None		
*1	Ħ	With exhaust check valve		
	• .			

\*1: **1** Solenoid positions "3" and "5" cannot be selected. Refer to page 163 for details on the type with exhaust check valve. Specify the number of stations to install in the manifold specifications sheet.

# 16 Port A/B filter

Code	Content	
Blank	None	
F	Port A/B filter built in	

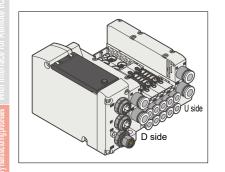
\*1: A filter is built into port P.

# 16 Mount type

Code	Content	
Blank	Direct mount	
R	DIN rail mount	

\* The P4 Series has limited materials for the air flow paths and sliding parts. Manifold base only \* Solenoid valve is not included. Option 10 mm TVG1B 06CS -P4 JA4C Width (Valve 2 Connection 4 Electrical 8 Electric circuit 10 Mount type Model No. 6 Port P/R width) specifications Port Size connections position

3 Voltage



# 2 Port size (port A/B) Metric fitting

wethe hung			
Fitting	Port	A/B	Code
Dunk in filling	ø4	04CS	
Push-in fitting	ø6		06CS
Fitting	Single side plug specifications		Code
Fitting	Port A	Port B	Code
	ø4	Diva	04CA
Push-in fitting	ø6	Plug	06CA
	Diva	ø4	04CF
	Plug	ø6	06CF

1 Piping

direction

# 4 Voltage

U TOTAL GO		
Code	Content	
3	24 VDC	

# 1 Piping direction

Code	Content
В	Side piping

# 3 Electrical connections

**5** Station **7** Pilot

9 Port A/B Filter

# Reduced wiring connection

reduced willing confidence			
Communication protocol	Output Format	Code	
Common terminal block	NPN	EA1A	
(M3 thread)	PNP	EA1B	0
Multi-connector	NPN	FA1A	
INIUILI-COTTIECTOT	PNP	FA1B	
D-sub Connector	NPN	GA1A	
D-Sub Connector	PNP	GA1B	

# Serial transmission

Communication protocol		Output Format	Number of points	Code		
		NPN		JA1C		
DeviceNe	et.	PNP		JA1D		
CC-LINK		NPN		JA2C		
CC-LINK		PNP	]	JA2D		
EtherCAT	-	NPN		JA3C		
EllielCAI		PNP		JA3D		
EtherNet/	'ID	NPN		JA4C		
Ellelivel	IF	PNP		JA4D		
CC-Link I	EE Pasia	NPN		JA5C		
CC-LIIK I	EF Dasic	PNP	32 points Output	JA5D		
PROFINE	т	NPN		JA6C		
FROFINE	-1	PNP		JA6D		
CC-Link I	E Eiold	NPN	, ω .	JA7C		
CC-LIIK I	⊏ Fleiu	PNP		JA7D		
CC Link I	E TON	NPN		JA8C		
CC-Link IE TSN		PNP		JA8D		
	ClassA  ClassB	NPN	]	JA9C		
IO-Link		PNP		JA9D		
		NPN	]	JA9G		
		PNP		JA9H		
IO Link Windo		NPN	]	JB1C		
IO-Link Wireless		PNP		JB1D		

# **6** Station No.

•	
Code	Content
02	2 stations
to	to
16	16 stations

\*1: The wiring inside the base is all for double solenoid regardless of the type of valve used. The blank number for one solenoid is generated in the section where a single solenoid is mounted.

# 6 Port P/R position (TVG1B: Ø8)

Code	Content	
U	U side	
D	D side	
В	U, D both sides	

\*1: The Port P/R tube has the same direction as the Port

A/B tube.

# **7** Pilot operated

Code	Content	
Blank	Internal pilot	
К	External pilot	

# Port A/R filtor

Por	t A/B filter	
Code	Content	
Blank	None	
F	Port A/B filter built in	

<sup>\*1:</sup> A filter is built into port P.

# 8 Electrical circuit specification \*

viditiple selection is not possible.		
Code	Content	
Blank	With surge suppressor and indicator	
DIAIIK	lamp	
E1	Low exoergic/energy saving circuit	
E1	(surgeless specifications)	
E2	Surgeless	

<sup>\*1:</sup> The combination of "E2" and PNP specifications is Custom Product.

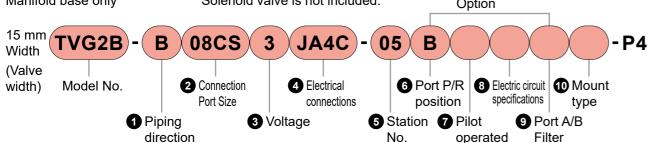
# **Mount type**

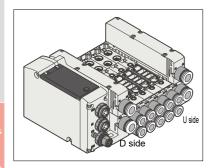
Code Content	
Blank	Direct mount
R	DIN rail mount

\*1: A DIN rail with standard length is attached. For how to calculate the standard length, refer to page 118.

<sup>\*1:</sup> Ports A and B are available with one-sided plug specifications for 2-position single only.

\* The P4 Series has limited materials for the air flow paths and sliding parts. Manifold base only \* Solenoid valve is not included. Option





# 2 Port size (port A/B) Metric fitting

mourio name				
Fitting	Port A/B		Code	
	ø4		04CS	
Push-in fitting	ø6		06CS	
	ø8		08CS	
Eitting	Single side plu	Code		
Fitting	Port A	Port B	Code	
	ø4		04CA	
	ø6	Plug	06CA	
Duck in fixing	ø8		08CA	
Push-in fitting		ø4	04CF	
	Plug	ø6	06CF	
		ø8	08CF	

\*1: Ports A and B are available with one-sided plug specifications for 2-position single only.

# 4 Voltage

VOIL	aye
Code	Content
3	24 VDC

# 1 Piping direction

Code	Content
В	Side piping

# 3 Electrical connections Reduced wiring connection

Communication protocol	Output Format	Code	
Common terminal block	NPN	EA1A	
(M3 thread)	PNP	EA1B	08
Multi-connector	NPN	FA1A	
INIUILI-CONNECTOR	PNP	FA1B	
D-sub Connector	NPN	GA1A	
D-sub Connector	PNP	GA1B	

# Serial transmission

	nication ocol	Output Format	Number of points	Code		
DeviceNe		NPN		JA1C		
Deviceine	eL .	PNP		JA1D		
CC-LINK		NPN		JA2C		
CC-LINK		PNP		JA2D		
EtherCAT		NPN		JA3C		
EllierCAI		PNP		JA3D		
EtherNet/	'ID	NPN		JA4C		
Euleline!/	IF	PNP		JA4D		
CC-Link I	TT Dasia	NPN		JA5C		
CC-LINK I	EF Dasic	PNP	s l	JA5D		
PROFINE		NPN	32 points Output	JA6C		
PROFINE	-1	PNP	2 pc	JA6D		
CC-Link I	E Eiold	NPN	, ω .	JA7C		
CC-LIIK I	⊏ Fleiu	PNP		JA7D		
CC-Link I	E TON	NPN		JA8C		
CC-LIIK I	E I SIN	PNP		JA8D		
	ClassA	NPN		JA9C		
IO-Link	CiassA	PNP	]	JA9D		
	ClassB	NPN		JA9G		
		PNP	]	JA9H		
IO-Link Wireless		NPN	]	JB1C		
		PNP		JB1D		

# **6** Station No.

Code	le Content	
02	2 stations	
to	to	
16	16 stations	

\*1: The wiring inside the base is all for double solenoid regardless of the type of valve used. The blank number for one solenoid is generated in the section where a single solenoid is mounted.

# 6 Port P/R position (TVG2B ø10)

wulliple selection is not possible.				
Code	Content			
U	U side			
D	D side			
В	U, D both sides			

- \*1: The Port P/R tube has the same direction as the Port A/B tube.
- \*2: A filter is built into port P.

# Pilot operated

U i not operated		
Code	Content	
Blank	Internal pilot	
К	External pilot	THE STATE OF

# Port A/B filter

0 1 011		
Code	Content	
Blank	None	
F	Port A/B filter built in	

\*1: A filter is built into port P.

# B Electrical circuit specification \* Multiple selection is not possible.

Code	Content	
Blank	With surge suppressor and indicator	
Dialik	lamp	
E1	Low exoergic/energy saving circuit	
E1	(surgeless specifications)	
E2	Surgeless	

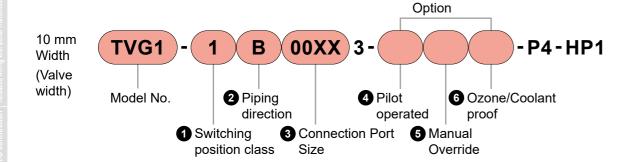
\*1: The combination of "E2" and PNP specifications is Custom Product.

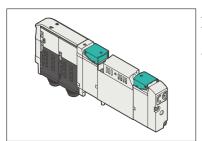
# Mount type

_	W mount typo				
I	Code Content				
ſ	Blank Direct mount				
1	R	DIN rail mount			

\*1: A DIN rail with standard length is attached. For how to calculate the standard length, refer to page 118.

Discrete solenoid valve (for base mounting) The P4 Series \* has limited materials for the air flow path and sliding part.





- **Attached Parts** · The valve mounting screws are included.
- The gasket is attached to the manifold base.

0	Switching	position	class

	Code	Content	
	1	2-position single	
	2	2-position double	
	3	3-position closed center	
	4	3-position exhaust center	
	5	3-position pressure center	
*1			A valve side: Normally Closed
'		2 port valva	B valve side: Normally Closed
*1	В	3-port valve Two valves	A valve side: Normally Open
'		integrated B valve side: Normally C	
*1	C	Integrated	A valve side: Normally Closed
'			B valve side: Normally Open

<sup>\*1:</sup> Only compatible with internal pilot. Dimensions of the Dimensions diagram are the same as those of 2-position

# 2 Piping direction

Code	Content
В	Side piping

# 4 Pilot operated

Code	Content
Blank	Internal pilot
K	External pilot

# **3** Connection Port Size

Code	Content
00XX	Discrete solenoid valve for base

# 5 Manual device \* Multiple selections are not possible.

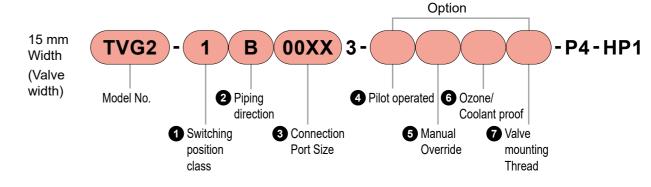
Code	Content	
Blank	With locking, non-locking common, misoperation prevention cover	
M1	Non-locking, with misoperation prevention cover	
M2	Locking/non-locking common, tool operation, Without cover	
М3	Non-locking, tool operation, without cover	

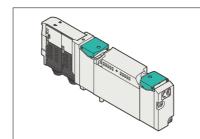
# 6 Ozone/Coolant proof

Code	Content	
Blank	Standard specifications	
Α	Ozone/Coolant proof (main valve fluorine	
_ ^	specification)	

# Model No. Notation Method

Discrete solenoid valve (for base mounting) \* The P4 Series has limited materials for the air flow path and sliding part.





# **Attached Parts**

- The valve mounting screws are included.
- The gasket is attached to the manifold base.

	Switching position class		
	Code	Content	
	1	2-position single	
	2	2-position double	
	3	3-position closed center	
	4	3-position exhaust center	
	5	3-position pressure center	
*1	Α	2 nort valve	A valve side: Normally Closed
'			B valve side: Normally Closed
*1	В	3-port valve Two valves integrated  A valve side: Normally Op B valve side: Normally Op A valve side: Normally Clo	
'			
*1	_		
'	,		B valve side: Normally Open

<sup>\*1:</sup> Only compatible with internal pilot. Dimensions of the Dimensions diagram are the same as those of 2-position

# 2 Piping direction

Code	Content
В	Side piping

# Pilot operated

Code	Content	
Blank	Internal pilot	
K	External pilot	
- 11		-

Code	Content
Blank	Internal pilot
K	External pilot

# 6 Ozone/Coolant proof

<u> </u>		
Code	Content	
Blank	Standard specifications	
Α	Ozone/Coolant proof (main valve fluorine specification)	

# **3** Connection Port Size

Code	Content	
00XX	Discrete solenoid valve for base	

# 6 Manual device \* Multiple selections are not possible

Maridal device Multiple selections are not possible.		
Code	Content	
Blank	With locking, non-locking common, misoperation prevention cover	
M1	Non-locking, with misoperation prevention cover	
M2	Locking/non-locking common, tool operation, Without cover	
М3	Non-locking, tool operation, without cover	

# **⚠** Valve mounting screw

Valve infounding screw	
Code	Content
	Pan head machine screw with Phillips
DIAIIK	head/flathead
.l	Hexagon Socket Head Can Screw

# Air supply spacer/exhaust spacer Air supply spacer/exhaust spacer

# (exhaust spacer)

# **Specifications**

•	Air	supply	y spacer	
---	-----	--------	----------	--

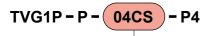
Model No.	Weight g
TVG1P-P-□	33

## Exhaust spacer

Model No.	Weight g
TVG1P-R-□	33

# Discrete model No.

Air supply spacer



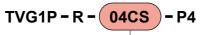
1 Connection Port Size

# **1** Connection Port Size

Code	Bore size	Content
04CS	ø4	ø4 Push-in fitting



Exhaust spacer



1 Connection Port Size

# 1 Connection Port Size

Γ	Code	Bore size	Content
	04CS	ø4	ø4 Push-in fitting

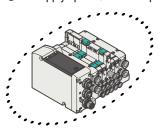


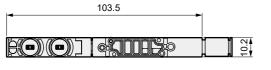
Notes for model No. Selection

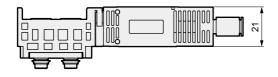
- \*1: Specify the positions and quantity of spacers for manifold in the manifold specifications sheet (Refer to pages 131 to 138. Please provide instructions.
- \*2: Stacking of spacers is not possible.
- \*3: A spacer cannot be combined with a blanking plate.
- \*4: A spacer mounting screw and gasket are included.
- \*5: If the port A/B Fittings is elbow (upward), a spacer cannot be selected.

# **External Dimension Drawings**

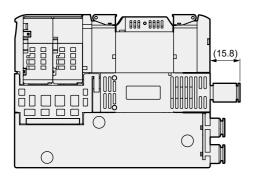
Air supply spacer/exhaust spacer

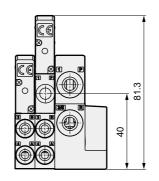












# (exhaust spacer)

# **Specifications**

Air supply spacer

Model No.	Weight g
TVG2P-P-□	66

Exhaust spacer

<u> — </u>	
Model No.	Weight g
TVG2P-R-□	66

# Discrete model No.

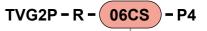
Air supply spacer

1 Connection Port Size

# 1 Connection Port Size

Code	Bore size	Content
06CS	ø6	ø6 Push-in fitting
08CS	ø8	ø8 Push-in fitting

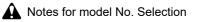
Exhaust spacer



1 Connection Port Size

# **1** Connection Port Size

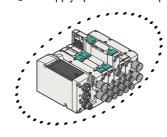
Code	Bore size	Content
06CS	ø6	ø6 Push-in fitting
08CS	ø8	ø8 Push-in fitting

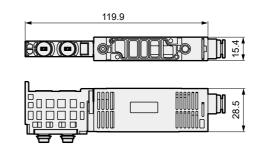


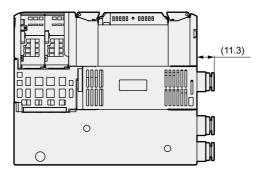
- \*1: Specify the positions and quantity of spacers for manifold in the manifold specifications sheet (Refer to pages 131 to 138. Please provide instructions.
- \*2: Stacking of spacers is not possible.
- \*3: A spacer cannot be combined with a blanking plate.
- \*4: A spacer mounting screw and gasket are included.
- \*5: If the port A/B Fittings is elbow (upward), a spacer cannot be selected.

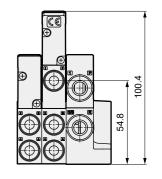
# **External Dimension Drawings**

Air supply spacer/exhaust spacer

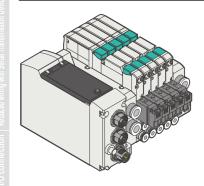








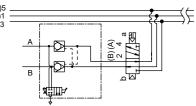
# Spacer Pilot Check Valve



# **Specifications**

Item		TVG1P-PC-P4
Operating Fluid		Compressed Air
Maximum Operating Pressure	MPa	0.7
Min. working pressure	MPa	0.2
Proof Pressure	MPa	1.05
Ambient Temperature	°C	-5 to 55 (no freezing)
Working fluid temperature	°C	5 to 55
Atmosphere		Cannot be used in corrosive gas environment.
Weight	g	34

# Circuit Diagram Symbol



Note) Please note that if you use cylinders with a large bore (guideline ø50 or more) in a state with almost no throttling on the exhaust side (e.g., without a speed controller or silencer), this may lead to a decrease in intermediate stop accuracy and intermediate stop failure.

# Discrete model No.



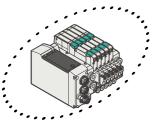
Spacer Pilot Check Valve

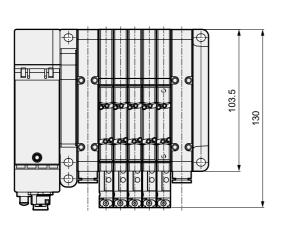
\* Residual pressure release function is not available.

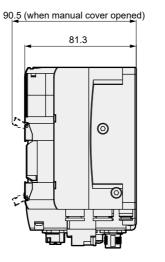
Notes for model No. Selection

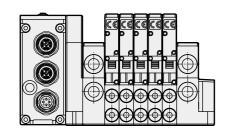
- \*1: Specify the spacer positions in the manifold specifications sheet.
- \*2: If the port A/B Fittings is elbow (upward), a spacer cannot be selected.
- \*3: Stacking of spacers is not possible.
- \*4: A spacer cannot be combined with a blanking plate.
- \*5: A spacer mounting screw and gasket are included.

# **External Dimension Drawings**

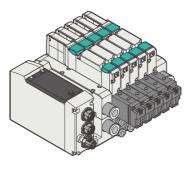








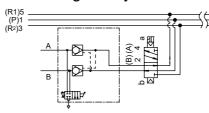
# Spacer Pilot Check Valve



# **Specifications**

Item		TVG2P-PC-P4
Operating Fluid		Compressed Air
Maximum Operating Pressure	MPa	0.7
Min. working pressure	MPa	0.2
Proof Pressure	MPa	1.05
Ambient Temperature	°C	−5 to 55 (no freezing)
Working fluid temperature	°C	5 to 55
Atmosphere	·	Cannot be used in corrosive gas environment.
Weight	g	73

# Circuit Diagram Symbol



Note) Please note that if you use cylinders with a large bore (guideline ø50 or more) in a state with almost no throttling on the exhaust side (e.g., without a speed controller or silencer), this may lead to a decrease in intermediate stop accuracy and intermediate stop failure.

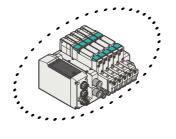
# Discrete model No.

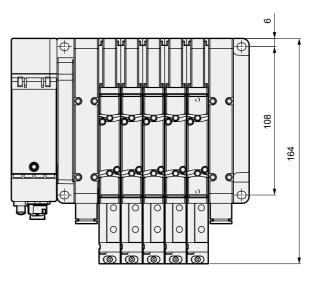


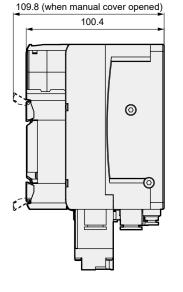
Notes for model No. Selection

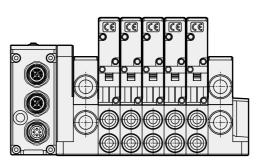
- \*1: Specify the spacer positions in the manifold specifications sheet.
- \*2: If the port A/B Fittings is elbow (upward), a spacer cannot be selected.
- \*3: Stacking of spacers is not possible.
- \*4: A spacer cannot be combined with a blanking plate.
- \*5: A spacer mounting screw and gasket are included.

# **External Dimension Drawings**



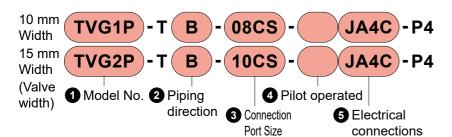






Model No. Notation Method (Wiring block/Serial Transmission Device Unit)

Model No. Notation Method Wiring block



2 Piping direction		
Code Content		
В	Side piping	

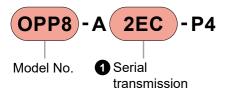
		1 Mc	del No
3 Con	nection Port Size	TVG1P	TVG2P
Metric fi	tting		
06CS	ø6 Push-in fitting	•	
06CS 08CS	ø6 Push-in fitting ø8 Push-in fitting	•	•
	J	•	•
08CS	ø8 Push-in fitting	•	•

# 4 Pilot operated

	Code	Content	
	Blank	Internal pilot	
*1, *2	K	External pilot	
*1, *2	KZ	External pilot (PA/PR separated)	

<sup>\*1: 3</sup>Cannot be selected for port size "00XX".

# Model No. Notation Method Serial transmission device unit



# 1 Serial transmission

**5** Electrical connections

Reduced wiring connection

Code

EA1

FA1

GA1

Content

\* Both NPN and PNP can be used.

Common terminal

block (M3 thread)

Multi-connector D-sub Connector

Communication protocol		Output Format	Number of points	Code	
DeviceNet		NPN		2D	
Deviceine	;L	PNP		2D-P	
CC-LINK		NPN		2G	
CC-LINK		PNP		2G-P	
EtherCAT		NPN		2EC	
LillerCAT		PNP		2EC-P	
EtherNet/	'ID	NPN		2EN	
Luienneu	II	PNP		2EN-P	
CC-Link I	EE Basis	NPN		2EB	
CC-LIIK I	LI Dasic	PNP	ر س	2EB-P	
PROFINE	т	NPN	32 points Output	2EP	
PROFINE	-1	PNP		2EP-P	
CC-Link I	E Eiold	NPN		2EF	
ICC-LIIK I	⊑ Fleiu	PNP		2EF-P	
CC Link I	C-Link IE TSN			2TG	
ICC-LIIK I	E I SIN	PNP		2TG-P	
	ClassA	NPN		2KC-A	
IO Link	ClassA	PNP		2KC-PA	
IO-Link	ClassB	NPN	2KC-B		
	ClassB	PNP		2KC-PB	
IO-Link W	lirologo	NPN		2WK	
IIO-LINK W	rireless	PNP		2WK-P	

DeviceNet		NPN		2D	
		PNP		2D-P	
00 1 10117		NPN		2G	
CC-LINK		PNP		2G-P	
EtherCAT		NPN		2EC	
EllierCAI		PNP		2EC-P	
EtherNet/	'ID	NPN		2EN	
Ellielivel/	IP	PNP		2EN-P	
CC Link I	EF Basic	NPN		2EB	
CC-LIIK I	EF Dasic	PNP	တ	2EB-P	
PROFINE	:т	NPN	32 points Output	2EP	
FROFINE	-1	PNP	2 pc	2EP-P	
CC-Link I	E Eiold	NPN	· π	2EF	
CC-LIIK I	⊏ Fleiu	PNP		2EF-P	
CC-Link IE TSN		NPN		2TG	
CC-LINK IE TSN		PNP		2TG-P	
ClassA		NPN		2KC-A	
IO-Link	ClassA	PNP		2KC-PA	
IO-LITIK	ClassB	NPN		2KC-B	
	CIASSD	PNP		2KC-PB	
·		NIDNI		2////	

# **Attached Parts**

- · OPP fixing bolts 2pcs.
- · Drip-proof gasket 1pc.

MEMO

**Attached Parts** 

The tie rod fixing nut is built into the wiring block.

# Serial transmission

Commu prot	nication ocol	Output Format	Number of points	Code
DeviceNe	ıt	NPN		JA1C
Devicerve	, L	PNP		JA1D
CC-LINK		NPN		JA2C
CC-LINK		PNP		JA2D
EtherCAT		NPN		JA3C
LillerCAI		PNP		JA3D
EtherNet/	ID	NPN		JA4C
Luienveu	IIF	PNP		JA4D
CC Link I	EF Basic	NPN		JA5C
CC-LIIIK I	LI Dasic	PNP	32 points Output	JA5D
PROFINE	т	NPN		JA6C
PROFINE	: 1	PNP		JA6D
CC-Link I	E Eiold	NPN		JA7C
CC-LIIIK I	E FIEIU	PNP		JA7D
CC-Link I	E TON	NPN		JA8C
CC-LIIIK I	E I SIN	PNP		JA8D
	ClassA	NPN		JA9C
IO-Link	ClassA	PNP		JA9D
IO-LITIK	ClassB	NPN		JA9G
	ClassB	PNP		JA9H
IO-Link W	lirologo	NPN		JB1C
IO-LINK W	rireiess	PNP		JB1D

105

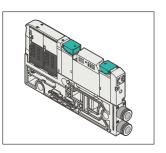
<sup>\*2:</sup> The external pilot port is a ø6-push-in fitting.

108

Model No. Notation Method Valve block with solenoid valve

TVG1P Series

Option TVG1P)-B (06CS) 3 -P4-HP1 Width (Valve Model No. 8 Common Ozone/ Port A/B 2 Piping 4 Voltage 6 Pilot width) specifications Coolant proof direction operated 3 Connection 5 Base internal 7 Electric circuit 9 Manual 11 Exhaust 13 Air flow path position Port Size specifications Override check Partition



# 1 Switching position class

	Code	Content				
	1	2-position	2-position single			
	2	2-position	2-position double			
	3	3-position	3-position closed center			
	4	3-position exhaust center				
	5	3-position	pressure center			
1	Α	3-port valve   A valve side: Normally closed/B valve side: Normally Closed				
1	В	Two valves	A valve side: Normally open/B valve side: Normally Open			
1	С	integrated A valve side: Normally closed/B valve side: Normally Open				
	Z	With blanking plate				
	th. Only a secretable with internal cited Discouries of the Discouries discours					

<sup>\*1:</sup> Only compatible with internal pilot. Dimensions of the Dimensions diagram are the same as those of 2-position double.

# 3 Port size (port A/B)

# • Metric fitting

- Metric ritting				
Fitting	Port	Port A/B		
Duch in fitting	ø4	ø4		
Push-in fitting	ø6		06CS	
Fitting	Single side plug specifi- cations *1		Code	
	Port A	Port B		
	ø4	Dlug	04CA	
Duch in fitting	ø6	Plug	06CA	
Push-in fitting	Dlug	ø4	04CF	
	Plug	ø6	06CF	

class

# 5 Base internal wiring system

	3 - 7
Code	Content
Blank	(double wiring)
S	Single solenoid dedicated wiring

<sup>\*1:</sup> Blank = Double solenoid wiring regardless of the type of valve used. If a single solenoid is mounted, an empty number for one solenoid will be generated.

# 7 Electrical circuit specification

1	* Multiple selection is not possible.				
ı	Code Content				
Blank With surge suppressor and indicator la		With surge suppressor and indicator lamp			
		Low exoergic/energy saving circuit (surgeless specifications)			
İ	E2	Surgeless			

<sup>\*1:</sup> The combination of "E2" and PNP specifications is Custom Product.

# 4 Voltage

	•
Code	Content
3	24 VDC

2 Piping direction Code Content B Side piping

# 6 Pilot operated

	•
Code	Content
Blank	Internal pilot
K	External pilot

<sup>\*1: 1</sup> Solenoid position "Z" cannot be selected.

# Common specifications

	Common specifications		
Code Content		Content	
	Blank	NPN/plus common specifications	
	D	DND/minus common enecifications	

# Manual Override

Code	Content	
Blank	Locking/non-locking common, With misoperation prevention cover	
M1	Non-locking, with misoperation prevention cover	
M2	Locking/non-locking common, Tool operated, without cover	
М3	Non-locking, tool operation, without cover	

<sup>\*1:</sup> ①Solenoid position "Z" cannot be selected.

# Exhaust check valve

	2 Extrador officer vario		
	Code	Content	
	Blank	None	
*1	н	With exhaust check valve	

<sup>\*1:</sup> ①Solenoid positions "3" and "5" cannot be selected. Refer to page 163 for details on the type with exhaust check valve.

# (B) Air flow path partition

See P. 46 for details.

Code	Content
Blank	None
Т	P/R/PA/PR blocked
U	P/R blocked, PA/PR through
٧	P blocked, R/PA/PR through
W	R blocked, P/PA/PR through

<sup>\*1:</sup>A/B port faces forward and cuts off the right flow path.

# ① Ozone/Coolant proof

Code	Content
Blank	Standard specifications
A	Ozone/Coolant proof (main valve fluorine specification)

<sup>\*1:</sup> OSolenoid position "Z" cannot be selected.

# Port A/B filter

Code	Content	
Blank	None	
F	Port A/B filter built in	

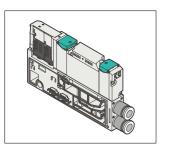
<sup>\*1:</sup> A filter is built into port P.

<sup>\*1:</sup> Ports A and B are available with one-sided plug specifications for 2-position single only.

S = Dedicated for single solenoid. Cannot be selected with 2-position double solenoid, two 3-port valves integrated type and 3-position.

<sup>\*1:</sup> Multiple selection is not possible. \*2: Select the same polarity as that of the wiring block.

Model No. Notation Method Valve block with solenoid valve Option B (08CS)(3)-( Width (Valve 10 Ozone/ 14 Air flow path 2 Piping 4 Voltage 6 Pilot 8 Common 12 Exhaust Model No. width) specifications Coolant proof check valve Partition 3 Connection 5 Base internal 7 Electric circuit 9 Manual 11 Valve wiring system specifications Override position mounting



# 1 Switching position class

	<u> </u>			
	Code	Content		
	1	2-position s	single	
	2	2-position of	louble	
	3	3-position of	closed center	
	4	3-position e	3-position exhaust center	
	5	3-position pressure center		
1	Α	3-port valve	A valve side: Normally closed/B valve side: Normally Closed	
1	В	Two valves	A valve side: Normally open/B valve side: Normally Open	
1	С	integrated A valve side: Normally closed/B valve side: Normally Open		
	Z	With blanki	ng plate	
	*1. Only compatible with internal pilot. Dimensions of the Dimensions diagram			

are the same as those of 2-position double.

Į	Code	Content		
I	1	2-position s	2-position single	
I	2	2-position of	louble	
I	3	3-position of	closed center	
ĺ	4	3-position 6	3-position exhaust center	
ĺ	5	3-position p	3-position pressure center	
ĺ	Α	3-port valve	A valve side: Normally closed/B valve side: Normally Closed	
ĺ	В	Two valves	A valve side: Normally open/B valve side: Normally Open	
Ì	С	integrated	A valve side: Normally closed/B valve side: Normally Open	
I	Z	With blanking plate		
	Z With blanking plate  *1: Only compatible with internal pilot. Dimensions of the Dimensions diagram			

# 3 Port size (port A/B)

# Metric fitting

• Wetric fitting			
Fitting	Port	A/B	Code
	ø4		04CS
Push-in fitting	ø6		06CS
	ø8		08CS
Cittin a	Single side plug specifications *1		Cada
Fitting	Port A	Port B	Code
	ø4	Plug	04CA
	ø6		06CA
Push-in fitting	ø8		08CA
Push-in illing		ø4	04CF
	Plug	ø6	06CF
		ø8	08CF

class

# **5** Base internal wiring system

	<u> </u>
Code	Content
Blank (double wiring)	
S	Single solenoid, Dedicated wiring

<sup>\*1:</sup> Blank = Double solenoid wiring regardless of the type of valve used. If a single solenoid is mounted, an empty number for one solenoid will be generated.

# 7 Electrical circuit specification

Multiple selection is not possible.		
Code Content		
Blank	With surge suppressor and indicator lamp	
E1	Low exoergic/energy saving circuit (surgeless specifications)	
E2	Surgeless	

<sup>\*1:</sup> The combination of "E2" and PNP specifications is Custom Product.

# 4 Voltage

Code	Content
3	24 VDC

Thread

2 Piping direction Code Content B Side piping

# 6 Pilot operated

o i not operated		
Code	Content	
Blank	Internal pilot	
K	External pilot	

<sup>\*1: 1</sup> Solenoid position "Z" cannot be selected.

# **8** Common specifications

		•
	Code	Content
Blank NPN/plus common specifications		NPN/plus common specifications
	Р	PNP/minus common specifications

<sup>\*1:</sup> Multiple selection is not possible.

# Manual Override

Code	Content	
Blank	Locking/non-locking common, With misoperation prevention cover	
M1	Non-locking, with misoperation prevention cover	
M2	Locking/non-locking common, Tool operated, without cover	
М3	Non-locking, tool operation, without cover	

<sup>\*1:</sup> ①Solenoid position "Z" cannot be selected.

# 11 Valve mounting screw

<u> </u>		
Code	Content	
Blank	Pan head machine screw with Phillips head/flathead	
J	Hexagon Socket Head Cap Screw	

# Port A/B filter

Γ	Code	Content	
Г	Blank	None	
	F	Port A/B filter built in	

<sup>\*1:</sup> A filter is built into port P.

# 10 Ozone/Coolant proof

9 Ozono/Ooolant proof		
Code	Content	
Blank	Standard specifications	
Δ	Ozone/Coolant proof (main valve fluorine specification)	

<sup>\*1:</sup> OSolenoid position "Z" cannot be selected.

# **12** Exhaust check valve

Code	Content	
Blank	None	
н	With exhaust check valve	

<sup>\*1:</sup> ①Solenoid positions "3" and "5" cannot be selected. Refer to page 163 for details on the type with exhaust check valve.

# **4** Air flow path partition

For details P. 48 details.

Code	Content	
Blank	None	
Т	P/R/PA/PR blocked	
U	P/R blocked, PA/PR through	
٧	P blocked, R/PA/PR through	
W	R blocked, P/PA/PR through	

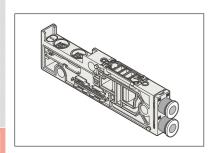
<sup>\*1:</sup> A/B port faces forward and cuts off the right flow path.

<sup>\*1:</sup> Ports A and B are available with one-sided plug specifications for 2-position single only.

S = Dedicated for single solenoid. Cannot be selected with 2-position double solenoid, two 3-port valves integrated type and 3-position.

<sup>\*2:</sup> Select the same polarity as that of the wiring block.

Option Valve block 10 mm TVG1P 06CS 3 Width (Valve 5 Electric circuit 7 Port A/B Model No. 1 Piping 3 Voltage width) direction 2 Connection 6 Common specifications Port Size



• Tie rod is not included, so order separately. Refer to page 49 for details. The gasket between blocks is included.

Partition

06CF

# 1 Piping direction Code Content

B Side piping

# 2 Port size (port A/B) Metric fitting

- WIGHT	iittiiig		
Fitting	Poi	Port A/B	
Push-in fitting	ø4		04CS
Fusii-iii iilliiig	ø6	ø6	
Fitting	Single side plu	g specifications *1	Code
Fitting	Port A	Port B	Code
	ø4	Diva	04CA
Duch in fitting	ø6	Plug	06CA
Push-in fitting		ø4	04CF

\*1: Ports A and B are available with one-sided plug specifications for 2-position single only.

# 3 Voltage

<u> </u>		
Code	Content	
3	24 VDC	

# **5** Electrical circuit specification

١.	Multiple selection is not possible.		
	Code	Content	
	Blank	With surge suppressor and indicator lamp	
	E1	Low exoergic/energy saving circuit (surgeless specifications)	
	F2	Surgeless	

\*1: The combination of "E2" and PNP specifications is Custom Product.

# Port A/B filter

Code	Э		Content	
Blan	k	None		
F		Port A/B filter built in		

\*1: A filter is built into port P.

4 Base internal wiring system *		
Code Content		
Blank	(double wiring)	
S	Single solenoid dedicated wiring	

\*1: Blank = Double solenoid wiring regardless of the type of valve used. If a single solenoid is mounted, an empty number for one solenoid will be generated.

S = Dedicated for single solenoid. Cannot be selected with 2-position double solenoid, two 3-port valves integrated type and 3-position.

# 6 Common specifications

Code	Content
Blank	NPN/plus common specifications
Р	PNP/minus common specifications

\*1: Multiple selection is not possible.

\*2: Select the same polarity as that of the wiring block.

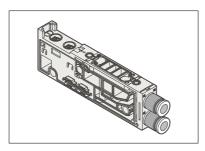
# 8 Air flow path partition

See P 46 for details

OCC 1 : 40 101 UCIGIIO.		
Code	Content	
Blank	Blank None	
Т	P/R/PA/PR blocked	
U	P/R blocked, PA/PR through	
V	P blocked, R/PA/PR through	
W	R blocked, P/PA/PR through	

# Model No. Notation Method

Valve bloo	ck			Optio	n	_
15 mm Width	TVG2P	-VB-06	CS 3 -			-P4
(Valve width)	Model No.	1 Piping direction	3 Voltage	5 Electric circuit specifications	Port A/B filter	
		•	nnection 4 Base rt Size wiring		ecifications pa	



• Tie rod is not included, so order separately. Refer to page 49 for details. The gasket between blocks is included.

# 1 Piping direction

Code	Content
В	Side piping

# 2 Port size (port A/B)

# Metric fitting

wer is name				
Fitting	Poi	Port A/B		
Push-in fitting	ø6		06CS	
rusii-iii iilliiig	ø8	ø8		
F1441	Single side plu	Single side plug specifications *1		
Fitting	Port A	Port B	Code	
	ø6	Dive	06CA	
Duch in fitting	ø8	Plug	08CA	
Push-in fitting	Diva	ø6	06CF	
	Plug	ø8	08CF	
*1: Ports A and B are available with one-sided plug specifications				

Ports A and B are available with one-sided plug specifications for 2-position single only.

# 3 Voltage

	- 0 -
Code	Content
3	24 VDC

# **5** Electrical circuit specification

\* Multiple selection is not possible.

Code	Content
Blank	With surge suppressor and indicator lamp
E1	Low exoergic/energy saving circuit (surgeless specifications)
E2	Surgeless

\*1: The combination of "E2" and PNP specifications is Custom Product.

# Port A/B filter

 O 1 OIC/UB IIICOI		
Code	Content	
Blank	None	
F	Port A/B filter built in	<b>13:8</b>

\*1: A filter is built into port P.

# 4 Base internal wiring system

	<b>0</b>
Code	Content
Blank	(double wiring)
S	Single solenoid dedicated wiring

\*1: Blank = Double solenoid wiring regardless of the type of valve used. If a single solenoid is mounted, an empty number for one solenoid will be generated.

S = Dedicated for single solenoid. Cannot be selected with 2-position double solenoid, two

3-port valves integrated type and 3-position.

# 6 Common specifications

o common operations			
Code	Content		
Blank	NPN/plus common specifications		
Р	PNP/minus common specifications		

\*1: Multiple selection is not possible.

\*2: Select the same polarity as that of the wiring block.

# 8 Air flow path partition

	<u> </u>
Code	Content
Blank	None
Т	P/R/PA/PR blocked
U	P/R blocked, PA/PR through
٧	P blocked, R/PA/PR through
W	R blocked, P/PA/PR through

Tie rod

For valve block 10 mm width TVG1P

TVG2P 15 mm width 2 Station

No.

1 Model No.

●For intermediate supply and exhaust block

10 mm width TVG1P-TR-Q

15 mm width TVG2P-TR-Q

●For valve block expansion

10 mm width TVG1P-TR-01

15 mm width TVG2P-TR-01

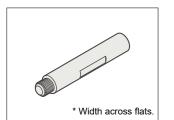
2 Station No.

Code	Content	ı	Code	Content
02	For 2 stations		14	For 14 stations
03	For 3 stations	I	15	For 15 stations
04	For 4 stations	I	16	For 16 stations
05	For 5 stations	I	17	For 17 stations
06	For 6 stations	ı	18	For 18 stations
07	For 7 stations	ı	19	For 19 stations
08	For 8 stations	ı	20	For 20 stations
09	For 9 stations	I	21	For 21 stations
10	For 10 stations	I	22	For 22 stations
11	For 11 stations	I	23	For 23 stations
12	For 12 stations		24	For 24 stations
13	For 13 stations	Ī		

1: TVG1P is a 3-piece set and TVG2P is a 2-piece set.

### Regarding expansion

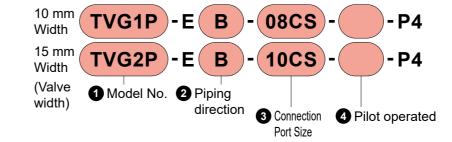
- · Manifold can expand by 3 stations with 2 to 17 stations. Up to three stations can be expanded in total: valve block and intermediate supply and exhaust block. When increasing 18 or more stations of manifolds, use a tie rod that matches the station No. after the increase.
- · Fix the tie rod for station expansion/tie rod for intermediate supply and exhaust onto the wiring block. If installed on the end block side, it may not be able to be assembled correctly.

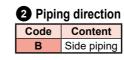


# Model No. Notation Method

End block (U side)

A hexagon socket head cap screw for tie rod tightening and a gasket between the block are included.





# 4 Pilot operated

	Code	Content		
	Blank	Internal pilot		
*1, *2	K	External pilot		
*1, *2	KZ	External pilot (PA/PR separated)		

- \*1: 3 Cannot be selected for port size "00XX".
- $^{\star}2$ : The external pilot port is a ø6-push-in fitting.

3 Connection Port Size		VG1P	VG2P
Code	Content		
Metric fi	tting		
06CS	ø6 Push-in fitting	•	
08CS	ø8 Push-in fitting	•	•
10CS	ø10 Push-in fitting		•
Plug			
00XX	Port P, R plug	•	•

● TVG1P-EB-08CS-P4 ● TVG1P-EB-08CS-KZ-P4

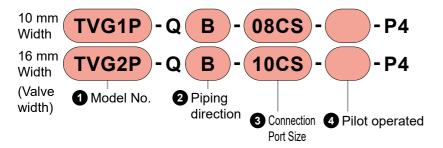
**CKD** 

# Intermediate supply and exhaust block

The intermediate supply and exhaust block can be installed between the valve block and the valve block.

These blocks cannot be adjacent to each other. In addition, this block cannot be adjacent to an end block or wiring block.

The electrical internal wiring and the P.R.PA.PR port connect to the adjacent blocks.



2 Piping direction				
Code	Content			
В	Side nining			

# 4 Pilot operated

		•
	Code	Content
	Blank	Internal pilot
*1, *2	K	External pilot
	Z	Multi-pressure circuit
*1, *2	KZ	External pilot (PA/PR separated)

- \*1: **3**Cannot be selected for port size "00XX".
- \*2: The external pilot port is a ø6-push-in fitting.
- \*3: Z cannot be used independently. Be sure to use with another type, blank, K and KZ.

3 Coi	nnection Port Size	TVG1P	TVG2P	
Code	Content			ı
letric fit	tting			ı
06CS	ø6 Push-in fitting	•		ı
08CS	ø8 Push-in fitting	•	•	ı
10CS	ø10 Push-in fitting			ı

1 Model No.

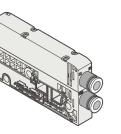
MEMO

\*1: A filter is built into port P to prevent foreign matter from entering.

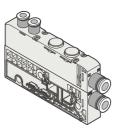
# **Attached Parts**

Manifold gasket: 1 pcs Tie rod is not included, so order separately. Refer to page 113 for details. The gasket between blocks is included.

● TVG1P-QB-08CS-P4



● TVG1P-QB-08CS-KZ-P4



**CKD**