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



Product introduction

- Series variation
- Ordering meth Specifications
- How to order
- Manifold with Manifold base
- Discrete soler
- Option
- Air supply spa Spacer pilot cl
- Spacer regula Dimension diag
- Internal structure

Block configuration Related Components (Manifold and wirin Technical data

- 1Pneumatic sys ②Notes on wirin
- ③Check valve
- ④How to expand
- Safety precaution



СОNTENTS	
on	Intro
	1
od	5
	7
solenoid valve	9
e only	13
noid valve	17
acer/exhaust spacer	10
theck valve	21
ator	22
gram	23
ure, material	31
20	22
is silencer/blanking plate kit/exhaust check valve, etc.)	49
g specifications sheet	103
stem selection guide	125
g	129
	147
d reduced wiring manifold	142
ons	143



How to order solenoid valve manifold with reduced wiring/serial transmission device unit

The following 3 ordering methods are available.

	Ordering method	Manifold specifications sheet	Customer assembly processes	Product delivery date
Α	Manifold assembly	Required		\bigcirc
В	Easy assembly	Not required	O	\bigcirc
С	Discrete block	Not required	\bigcirc	\$
		☆: Excellent	, ©: Very good,	: Good

A Manifold assembly



B Easy assembly The single solenoid value 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 value 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.

Applicable solenoid valve erial transmissior Reduced wiring (output only)

The units will be delivered with the specifications specified in the manifold specifications sheet. Can be ordered with model No. starting with TVG IM and a manifold specifications sheet.



C Discrete block Each part is delivered separately. The customer must assemble the manifold by combining the parts. You can order the parts below with their model Nos.







Head model No. TVG P-: Valve size

TVG -: Valve size



Listed page
Page 35
Page 37
Page 17

Page 41

Page 46

Page 47

Page 19

Page 45, 49

Page 49

TVG





Plug-in-type block manifolds Pilot operated 3, 5-port valve

TVG1/TVG2 Series

CE	RoHS
----	------

Manifold common specifications

Item Description Manifold Block manifold Mounting method Direct mounting Air supply and exhaust method Common supply/Common exhausi (With internal exhaust check valve) Pilot exhaust method Main valve/pilot valve common exhausi (With internal exhaust check valve) Pilot exhaust method Main valve/pilot valve common exhausi (With internal exhaust check valve) Pilot exhaust method Side direction of base Valve and operation Pilot operated soft spool valve Working fluid Compressed air Max. working pressure MPa And the method 0.1 (*7) 2-position double 0.1 (*7) 2-position single, 3-position 0.2 3-port valve 0.2 Two valves integrated 0.2 Proof pressure MPa Proof pressure MPa Ambient temperature °C °C 5 to 55 Manual override Non-locking/Locking common (standard) Lubrication (*1) Not required So or less Shock resistance m/s² <th></th> <th></th> <th></th> <th></th>							
ManifoldBlock manifoldMounting methodDirect mountingAir supply and exhaust methodCommon supply/Common exhaust (With internal exhaust check valve)Pilot exhaust methodMain valve/pilot valve common exhaust (Pilot exhaust check valve built-in)Pilot exhaust methodMain valve/pilot valve common exhaust (Pilot exhaust check valve built-in)Piping directionSide direction of baseValve and operationPilot operated soft spool valve Working fluidWorking fluidCompressed airMax. working pressureMPa0.1 (*7)2-position double2-position double0.1 (*7)2-position single, 3-position0.23-port valve0.2Two valves integrated0.2Proof pressureMPaProof pressureMPaAmbient temperature°C-5 to 55 (no freezing)Fluid temperature°C-5 to 55 (no freezing)Fluid temperature°C05 to 55Manual overrideNon-locking/Locking common (standard)Lubrication(*1)Not requiredDegree of protection(*2)Vibration resistancem/s²Shock resistancem/s²AtmosphereCannot be used in corrosive gas environments	ltem		Description				
Mounting method Direct mounting Air supply and exhaust method Common supply/Common exhaust (With internal exhaust check valve) Pilot exhaust method Main valve/pilot valve common exhaust (With internal exhaust check valve) Pilot exhaust method Main valve/pilot valve common exhaust (Pilot exhaust check valve built-in) Pilot exhaust method Main valve/pilot valve common exhaust (Pilot exhaust check valve built-in) Piping direction Side direction of base Valve and operation Pilot operated soft spool valve Working fluid Compressed air Max. working pressure MPa O.7 2-position double Air valve 0.1 (*7) 2-position single, 3-position 0.2 3-port valve 0.2 Two valves integrated 0.2 Proof pressure MPa Proof pressure MPa Ambient temperature °C °C -5 to 55 (no freezing) Fluid temperature °C °C 5 to 55 Manual override Non-locking/Locking common (standard) Lubrication (*1) Vibration resistance m/s² 50	Manifold			Block manifold			
Air supply and exhaust method Common supply/Common exhaust (With internal exhaust check valve) Pilot exhaust method Main valve/pilot valve common exhaust (Pilot exhaust check valve) Pilot exhaust method Main valve/pilot valve common exhaust (Pilot exhaust check valve built-in) Piping direction Side direction of base Valve and operation Pilot operated soft spool valve Working fluid Compressed air Max. working pressure MPa Valve and operation Question double Max. working pressure MPa Valve and operation Question double Max. working pressure MPa Valve and operation Question double Max. working pressure MPa Valve and operation 0.7 Internal pilot 2-position double Vinimum working 2-position single, 3-position O.2 3-port valve 0.2 Sport valve 0.2 Two valves integrated 0.2 Proof pressure MPa 1.05 Armbient temperature °C -5 to 55 (no freezing) Fluid temperature °C 5 to 55	Mounting methe	bc		Direct mounting			
Pilot exhaust method Main valve/pilot valve common exhausi Internal pilot (*5) Piping direction Side direction of base Valve and operation Pilot operated soft spool valve Working fluid Compressed air Max. working pressure MPa Internal pilot 2-position double Valve and operation 0.7 Max. working pressure MPa Operation 0.1 (*7) 2-position double 0.1 (*7) 2-position single, 3-position 0.2 3-port valve 0.2 Two valves integrated 0.2 Proof pressure KPa Proof pressure MPa Ambient temperature °C °C -5 to 55 (no freezing) Fluid temperature °C °C 5 to 55 Manual override Non-locking/Locking common (standard) Lubrication (*1) Vibration resistance m/s² Shock resistance m/s² Shock resistance m/s² Shock resistance m/s² Shock resistance	Air supply and	exhaust method		Common supply/Common exhaust (With internal exhaust check valve)			
Internal pilot(*5)(Pilot exhaust check valve built-in)Piping directionSide direction of baseValve and operationPilot operated soft spool valveWorking fluidCompressed airMax. working pressureMPa0.7Internal pilot2-position double0.1 (*7)Vinimum working2-position double0.2JoressureMPa0.2MPaTwo valves integrated0.2External pilot min. working-100pressureKPa1.05Ambient temperature°C-5 to 55 (no freezing)Fluid temperature°C5 to 55Manual overrideNon-locking/Locking common (standard)Lubrication(*1)Not requiredDegree of protection(*2)IP65, IP67Vibration resistancem/s²50 or lessShock resistancem/s²300 or lessAtmosphereCannot be used in corrosive gas environments	Pilot exhaust m	ethod		Main valve/pilot valve common exhaust			
Piping direction Side direction of base Valve and operation Pilot operated soft spool valve Working fluid Compressed air Max. working pressure MPa Internal pilot 2-position double Vinimum working 2-position double Oressure 3-port valve MPa 0.2 Two valves integrated 0.2 External pilot min. working -100 pressure KPa Proof pressure MPa Ambient temperature °C Proof pressure MPa Ambient temperature °C Sto 55 Sto 55 Manual override Non-locking/Locking common (standard) Lubrication (*1) Vibration resistance m/s² Shock resistance m/s² Shock resistance m/s² Atmosphere Cannot be used in corrosive gas environments	Internal pilot	(*5)	(Pilot exhaust check valve built-in)			
Valve and operation Pilot operated soft spool valve Working fluid Compressed air Max. working pressure MPa Internal pilot 2-position double Vinimum working 2-position double Oressure 3-port valve MPa 0.2 Two valves integrated 0.2 External pilot min. working -100 pressure KPa Proof pressure KPa Proof pressure MPa Ambient temperature °C Proof pressure Non-locking/Locking common (standard) Lubrication (*1) Not required Degree of protection (*2) Vibration resistance m/s² Shock resistance m/s² Atmosphere Cannot be used in corrosive gas environments	Piping direction			Side direction of base			
Working fluid Compressed air Max. working pressure MPa 0.7 Internal pilot 2-position double 0.1 (*7) Vinimum working 2-position single, 3-position 0.2 orressure 3-port valve 0.2 MPa 7wo valves integrated 0.2 External pilot min. working -100 pressure KPa (Pilot pressure at 0.2MPa or more) Proof pressure MPa 1.05 Ambient temperature °C -5 to 55 (no freezing) Fluid temperature °C 5 to 55 Manual override Non-locking/Locking common (standard) Lubrication (*1) Not required Degree of protection (*2) IP65, IP67 Vibration resistance m/s² 50 or less Shock resistance m/s² 300 or less Atmosphere Cannot be used in corrosive gas environments	Valve and operation	ation		Pilot operated soft spool valve			
Max. working pressure MPa 0.7 Internal pilot 2-position double 0.1 (*7) Vinimum working 2-position single, 3-position 0.2 oressure 3-port valve 0.2 MPa Two valves integrated 0.2 External pilot min. working -100 pressure KPa (Pilot pressure at 0.2MPa or more) Proof pressure MPa 1.05 Ambient temperature °C -5 to 55 (no freezing) Fluid temperature °C 5 to 55 Manual override Non-locking/Locking common (standard) Lubrication (*1) Not required Degree of protection (*2) IP65, IP67 Vibration resistance m/s² 50 or less Shock resistance m/s² 300 or less Atmosphere Cannot be used in corrosive gas environments	Working fluid			Compressed air			
Internal pilot 2-position double 0.1 (*7) Minimum working 2-position single, 3-position 0.2 Seport valve 0.2 MPa Two valves integrated 0.2 External pilot min. working -100 pressure KPa (Pilot pressure at 0.2MPa or more) Proof pressure MPa 1.05 Ambient temperature °C -5 to 55 (no freezing) Fluid temperature °C 5 to 55 Manual override Non-locking/Locking common (standard) Lubrication (*1) Not required Degree of protection (*2) IP65, IP67 Vibration resistance m/s² 50 or less Shock resistance m/s² 300 or less Atmosphere Cannot be used in corrosive gas environments	Max. working p	ressure M	Pa	0.7			
Minimum working pressure 2-position single, 3-position 0.2 3-port valve Two valves integrated 0.2 External pilot min. working pressure -100 Proof pressure KPa Proof pressure MPa Ambient temperature °C -5 to 55 (no freezing) Fluid temperature °C Shock registance Msi Ubrication (*1) Not required Degree of protection (*2) Vibration resistance m/s² Shock resistance m/s² Atmosphere Cannot be used in corrosive gas environments	Internal pilot	2-position doub	le	0.1 (*7)			
Barbon Stressure 3-port valve Two valves integrated 0.2 External pilot min. working pressure -100 Proof pressure kPa Proof pressure MPa Ambient temperature °C -5 to 55 (no freezing) Fluid temperature °C Should temperature °C -5 to 55 (no freezing) Fluid temperature °C Shock registance (*1) Non-locking/Locking common (standard) Lubrication (*1) Not required Degree of protection (*2) Vibration resistance m/s² Shock resistance m/s² Atmosphere Cannot be used in corrosive gas environments	Vinimum working	2-position single, 3-posi	ition	0.2			
External pilot min. working pressure -100 Proof pressure KPa (Pilot pressure at 0.2MPa or more) Proof pressure MPa 1.05 Ambient temperature °C -5 to 55 (no freezing) Fluid temperature °C Sto 55 Manual override Lubrication (*1) Not required Degree of protection (*2) Vibration resistance m/s² Shock resistance m/s² Atmosphere Cannot be used in corrosive gas environments	oressure MPa	3-port valve	ited	0.2			
Ambient ar pressure KPa (Pilot pressure at 0.2MPa or more) Proof pressure MPa 1.05 Ambient temperature °C -5 to 55 (no freezing) Fluid temperature °C 5 to 55 Manual override Non-locking/Locking common (standard) Lubrication (*1) Not required Degree of protection (*2) IP65, IP67 Vibration resistance m/s² 50 or less Shock resistance m/s² 300 or less Atmosphere Cannot be used in corrosive gas environments	External pilot m	in working		-100			
Proof pressure MPa 1.05 Ambient temperature °C -5 to 55 (no freezing) Fluid temperature °C 5 to 55 Manual override Non-locking/Locking common (standard) Lubrication (*1) Not required Degree of protection (*2) IP65, IP67 Vibration resistance m/s² 50 or less Shock resistance m/s² 300 or less Atmosphere Cannot be used in corrosive gas environments	pressure	k	Pa	(Pilot pressure at 0.2MPa or more)			
Ambient temperature °C -5 to 55 (no freezing) Fluid temperature °C 5 to 55 Manual override Non-locking/Locking common (standard) Lubrication (*1) Not required Degree of protection (*2) IP65, IP67 Vibration resistance m/s² 50 or less Shock resistance m/s² 300 or less Atmosphere Cannot be used in corrosive gas environments	Proof pressure	Μ	Pa	1.05			
Fluid temperature °C 5 to 55 Manual override Non-locking/Locking common (standard) Lubrication (*1) Not required Degree of protection (*2) IP65, IP67 Vibration resistance m/s² 50 or less Shock resistance m/s² 300 or less Atmosphere Cannot be used in corrosive gas environments	Ambient tempe	rature	°C	-5 to 55 (no freezing)			
Manual override Non-locking/Locking common (standard) Lubrication (*1) Not required Degree of protection (*2) IP65, IP67 Vibration resistance m/s² 50 or less Shock resistance m/s² 300 or less Atmosphere Cannot be used in corrosive gas environments	Fluid temperatu	ire	°C	5 to 55			
Lubrication (*1) Not required Degree of protection (*2) IP65, IP67 Vibration resistance m/s² 50 or less Shock resistance m/s² 300 or less Atmosphere Cannot be used in corrosive gas environments	Manual override	e		Non-locking/Locking common (standard)			
Degree of protection (*2) IP65, IP67 Vibration resistance m/s ² 50 or less Shock resistance m/s ² 300 or less Atmosphere Cannot be used in corrosive gas environments	Lubrication	(*	*1)	Not required			
Vibration resistance m/s ² 50 or less Shock resistance m/s ² 300 or less Atmosphere Cannot be used in corrosive gas environments	Degree of prote	ection (*2)	IP65, IP67			
Shock resistance m/s ² 300 or less Atmosphere Cannot be used in corrosive gas environments	Vibration resista	ance m	/s ²	50 or less			
Atmosphere Cannot be used in corrosive gas environments	Shock resistand	ce m	/s²	300 or less			
· · · · · · · · · · · · · · · · · · ·	Atmosphere			Cannot be used in corrosive gas environments			

Electrical specifications

	•					
ltem		Common terminal block EA1	Serial transmission			
Rated volt	tage V	24 DC	24 DC			
Voltage flu	uctuation range (*3)	±10%	+10%, -5%			
Holding	Standard	0.0)17			
current A	With low exoergic/ energy circuit	0.0	005			
Power	Standard	0.	.4			
consumption W	With low exoergic/ energy circuit	0.	.1			
Thermal c	lass	В				
Surge sup	pressor (*4)	Zener diode				
Indicator		LED				

*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 144 for details.

*3: As the voltage drop occurs depending on the internal circuit of the serial transmission, pay attention to the voltage fluctuation range.

*4: If low exoergic/energy circuit or surgeless types are selected, then it will be a diode.

*5: The pilot exhaust method differs with the supply and exhaust block specification. Refer to page 48 for details.

*6: Select the external pilot when using at low vacuum. Refer to page 146 for details

*7: At 0.2MPa with low exoergic/energy circuit.

Individual specifications

			TV	G1	TV	G2
Item			Common terminal block EA1	Serial transmission	Common terminal block EA1	Serial transmission
Mox	Standard wirin (double wiring	ng])	10 stations	16 stations	10 stations	16 stations
Max. station No.	Single soleno solenoid layou (Single wiring	id, double ut specification)	20 stations	24 stations	20 stations	24 stations
Max. numb	per of solenoids	S	20 points	32 points	20 points	32 points
	Matria fitting	Port A/B	Push-in fitting	j ø1.8, ø4, ø6	Push-in fittin	g ø4, ø6, ø8
Dort oizo		Port P/R	Push-in	fitting ø8	Push-in f	itting ø10
Port size	Inch fitting	Port A/B	Push-in fitting	ø1/8", ø5/32"	Push-in fitting	ø1/4", ø5/16"
		Port P/R	Push-in fit	ting ø5/16"	Push-in fitting ø3/8"	

T V G

Performance/characteristics by model

ltom	Solenoid position		TV	'G1	TVG2		
item			at ON	at OFF	at ON	at OFF	
	Two 3-po	rt valves integrated	15	25	20	37	
Decrease time me	2 position	Single	15	20	22	24	
Response une ms	2-position	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 No.			P 🔿	A/B		A/B ⇒ R				
wodel No.	5	bienola position	C [dm³/(s·bar)]	b	C [dm ³	/(s·bar)]		b		
	Two 3-	port valves integrated	0.77	0.37	1.1	(0.56)	0.34	(0.37)		
	2-posit	ion	1.0	0.29	1.2	(0.59)	0.36	(0.41)		
TVG1		All ports closed	0.96	0.33	1.0	-	0.35	_		
	3-position	ABR connection	0.96	0.32	1.3	(0.60)	0.38	(0.40)		
		PAB connection	1.1	0.35	1.0	_	0.36	-		
	Two 3-	port valves integrated	1.7	0.44	2.2	(1.8)	0.43	(0.20)		
	2-position		2.4	0.32	2.8	(2.0)	0.34	(0.19)		
TVG2		All ports closed	2.2	0.35	2.5	-	0.38	-		
	3-position	ABR connection	2.2	0.32	2.9	(2.1)	0.40	(0.21)		
		PAB connection	2.6	0.34	2.5	-	0.37	_		

*1: Effective cross-sectional area S and sonic conductance C are converted as S \approx 5.0 × C. *2: Values in () are with the exhaust check valve.

Reduced wiring specifications * PNP specifications are Special-order product

PNP specifications are special-order product.									
ltem	EA1A	EA1B							
Туре	Common terminal block M3 thread	Common terminal I M3 thread							
Output	NPN (plus common)	PNP (minus comn							

Specifications of serial transmission device units (Refer to page 136 for the PLC compatibility table.) * DND analifications are Special order produc

PNP	FINE specifications are special-order product.												
ltem		JA1C	JA1D	JA2C	JA2D	JA3C	JA3D	JA4C	JA4D	JA5C	JA5D	JA6C	JA6D
Communi protocol	cation	Devi	ceNet	CC-Link	Ver.1.10	Ethe	rCAT	Ether	Net/IP	CC-Link	IEF Basic	PROF	INET
Power supply	Unit side	11 to 2	5 VDC*					24 VD0	C ±10%				
voltage	Valve side						24 VDC±	10%, -5%					
Current	Unit side	50 mA or	less (all po	oints ON: a	at 24 VDC)			90 mA or l	ess (all po	oints ON: a	at 24 VDC)	
consumption	Valve side					15 mA or	less (exc	luding load	d current)				
No. of out	put points						32 p	oints					
Occupied	number	4 b	ytes					1 sta	ation				
Operation	display				LED	D (power s	supply and	l communi	ication sta	tus)			
Output		NPN	PNP										
		(Plus common)	(Minus common)										

* Indicates the voltage range of the communication power supply.

Item		JA7C	JA7D	JA8C	JA8D	D JA9C JA9D JA9G JA9H JB1C					JB1D
Communication protocol		CC-Link IE Field CC-Link IE TSN				IO-L	_ink		IO-Link	Wireless	
Power supply	Unit side		24 VDC	C ±10%			18 to 3	0 VDC		24 VD0	C ±10%
voltage	Valve side					24 VDC±	10%, -5%				
Current Consumption	Unit side	100 mA c	or less (all po	oints ON: at	24 VDC)	50 mA o	r less (all po	ints ON: at	24 VDC)	35 mA (All points ON	or less I: at 24 VDC)
consumption	Valve side				15 mA or	less (excl	luding load	l current)			
No. of out	put points					32 p	oints				
Occupied	number					1 sta	ation				
Operation	display			LEI	D (power s	upply and	communi	cation stat	tus)		
Output		NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP
Output		(Plus common)	(Minus common)	(Plus common)	(Minus common)	(Plus common)	(Minus common)	(Plus common)	(Minus common)	(Plus common)	(Minus common)

7





non)



TVG1M Series





*1: A filter is built into port P.

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

TVG1M Series How to order (manifold with solenoid valve)

Specifications for rechargeable battery (Refer to page 80 for details.)



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

side	
side, mediate d exhaust	

*1: Fittings of port P/R are for the same direction

*2. Specify the specifications of the intermediate supply and exhaust block in the manifold

10 Electric circuit specifications

e suppressor and
lamp
ergic/energy circuit
s specifications)
2

pacer
cer
d location are specified
specifications sheet)

in manifold specifications sheet. Stacking of spacers is not possible. Combination with the blanking plate is not supported. Cannot be selected

8 Wiring method inside the base *1

<u> </u>	0
Blank	Double wiring
S Single solenoid, layout specificat	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. Refer to page 141 for details

1 Manual override

* Multiple selection is not possible.		
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	
M3	Non-locking, tool operated, without cover	

1 Exhaust check valve

	Blank	None	
1	H	With exhaust check valve	
	*1. • • •	noid positions "2" and "	E" connot

- t he selected. Refer to page 147 for details on the type with exhaust check valve.
- *2: Specify the number of stations to install in the manifold specifications sheet.



TVG2M Series





	В	U side, D side	
*2	т	U side, D side, With intermediate supply and exhaust block	
1	*1: Fittings as those *2: Specify supply specific D Elec * Multiple s	of port P/R are for the s e of port A/B. the specifications of the and exhaust block in ations sheet. Ctric circuit speci election is not possible.	ame direction intermedia the manifo fication
	Blank	With surge suppresso indicator lamp	or and
	E1	Low exoergic/energy (surgeless specification	circuit ons)
	E2	Surgeless	
	*1: E1 is no	ot compatible with PNP sp	ecifications.

D side

D

Ozone/Coolant proof		
Blank	Standard specifications	
А	Ozone/Coolant proof (main valve fluorine specification)	

6 Station No.

to

24

02 2 stations

to

9 Pilot operated

Blank Internal pilot

κ

External pilot

24 stations

*1: EA1 has up to 20 solenoid points.

(Max. 20 stations for EA1)

🕑 Туре	e of valve m	
Blank	Pan head mad Phillips head/f	
J	Hexagon sock	
Spacer: J cannot be selecte		

Blank None

F.

🚯 Exh	aust check valve)
Blank	None	
н	With exhaust check valve	

*1: OSolenoid positions "3" and "5" cannot be selected. Refer to page 147 for details on the type with exhaust check valve.

*2: Specify the number of stations to install in the manifold specifications sheet.

CKD

TVG2M Series How to order (manifold with solenoid valve)

Specifications for rechargeable battery (Refer to page 80 for details.)

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

side	
side, With ate supply ust block	

e mounting screw

I machine screw with
ead/flathead
socket head cap screw
elected when 7 is selected

8	Wiring	method	inside	the	base	*1

Blank	Double wiring				
S	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.

1 Manual override * Multiple selection is not possible.

-		
Blank	Locking/Non-locking common/with 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	

With/Without spacer

Blank	Without spacer
	With spacer (type and location
Z	are specified on the MF
	specifications sheet)
	· · ·

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

Port A/B filter







TVG1 Series

L-type

03LS ø1/8" push-in fitting 04LS ø5/32" push-in fitting

upward

*2: Special-order product.

Inch fitting

04CD 06CD

03LU

04LU

*2

*2

downward ø6 push-in fitting

L-type ø1/8" push-in fitting

*1 ø5/32" push-in fitting

*1: 3-position is not available for L-type upward push-in fittings.



Jerrie Je				
Common terminal block	NPN	EA1A		
(M3 thread)	PNP	EA1B	0	

Serial transmission

Commu prot	nication ocol	Output	Number of points	Code		
DoviceNo	+	NPN		JA1C		
Deviceive	et.	PNP		JA1D		
		NPN		JA2C		
CC-LINK		PNP		JA2D		
		NPN		JA3C		
EtherCAI		PNP		JA3D		
		NPN		JA4C		
Etherivet/	IP	PNP		JA4D		
		NPN		JA5C		
CC-LINK I	EF Basic	PNP		JA5D		
	-	NPN	32	JA6C		
PROFINE	. 1	PNP	output	JA6D		
		NPN		JA7C		
CC-LINK I	EFIEID	PNP		JA7D		
		NPN		JA8C		
CC-LINK I	EISN	PNP		JA8D		
	ClassA	NPN		JA9C		
IO-Link	ClassA	PNP		JA9D		
	Class	NPN		JA9G		
	Classb	PNP		JA9H		
IQ Link Windows		NPN		JB1C		
IO-LINK WIREIESS		PNP		JB1D		

5 Station No.

-	
02	2 stations
to	to
16	16 stations (EA1A, EA1B: 10 stations)

*1: All the wiring inside the base is for double solenoid regardless of the type of valve mounted. The part with the single solenoid mounted will generate an empty number for one solenoid.

7 Exhaust method

Blank	Common exhaust (port R is a push-in fitting)	
x	Silencer integrated (port R is a plug, exhaust is released to atmosphere)	A REAL PROPERTY OF

* 6A silencer is built into the unit at the position selected with port P/R position.

9 Electric circuit specifications * Multiple selection is not possible.

-	1
Blank	With surge suppressor and indicator lamp
E1	Low exoergic/energy circuit (surgeless specifications)
E2	Surgeless

*1: E1 is not compatible with PNP specifications.

TVG1 Series How to order (manifold base only)

Specifications for rechargeable battery (Refer to page 80 for details.)

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

P4 ** = ** = ** =

• If an exhaust check valve is required, refer to page 49.



* Multiple selection is not possible

U	U side	
D	D side	
В	U, D both sides	

*1: Fittings of port P/R are for the same as those of port A/B. *2: A filter is built into port P.

8 Pilot operated

Blank	Internal pilot	
к	External pilot	A CONTRACTOR OF THE OWNER

1 Port A/B filter

-		
Blank	None	
F	Port A/B filter built in	



TVG2 Series





2 Port size (port A/B) Matria fitti

	IC III	ing
04CS	ø4 pus	h-in fitting
06CS	ø6 pus	h-in fitting
08CS	ø8 pus	h-in fitting
06CU	L-type	ø6 push-in fitting
08CU	opwaru *1	ø8 push-in fitting
06CD	L-type	ø6 push-in fitting
08CD	Downward	ø8 push-in fitting

Inch fitting

		<u>-</u>
06LS	ø1/4" p	oush-in fitting
08LS	ø5/16" push-in fitting	
06LU	L-type	φ1/4" push-in fitting
08LU	Upward *1	ø5/16" push-in fitting

*1: 3-position is not available for L-type upward push-in fittings. *2: Special-order product.

1 Pipi	ng direction
В	Side piping

3 Voltage



4 Electrical connections

* PNP specifications are Special-order product.

Reduced wiring connection

Common terminal block	NPN	EA1A	
(M3 thread)	PNP	EA1B	0

Serial transmission

Commu prot	inication tocol	Output	Number of points	Code	
DovideNa	. +	NPN		JA1C	
Deviceine	÷L	PNP		JA1D	
		NPN		JA2C	
CC-LINK		PNP		JA2D	
Cthor C AT	-	NPN		JA3C	
EllierCAI		PNP		JA3D	
EthorNot		NPN		JA4C	
Ellenner	IP	PNP		JA4D	
				JA5C	
CC-LINK I	EF DASIC	PNP		JA5D	
		NPN	32	JA6C	
FROFINE	- 1	PNP	output	JA6D	
C Link IE Field		NPN		JA7C	
CC-LINK I				JA7D	
CC Link I		NPN		JA8C	
CC-LINK I		PNP		JA8D	
	ClassA	NPN		JA9C	
IO Link		PNP		JA9D	
IO-LINK	ClassB	NPN		JA9G	
		PNP		JA9H	
IQ Link Wireless		NPN		JB1C	
IO-LINK WIReless		PNP		JB1D	

6 Station No.

-	
02	2 stations
to	to
16	16 stations (EA1A, EA1B: 10 stations)

*1: All the wiring inside the base is for double solenoid regardless of the type of valve mounted. The part with the single solenoid mounted will generate an empty number for one solenoid.

7 Exhaust method



*1: 6A silencer is built into the position selected with port P/R position.

9 Electric circuit specifications

- manapio o		
Blank	With surge suppressor and indicator lamp	
E1	Low exoergic/energy circuit (surgeless specifications)	
E2	Surgeless	

*1: E1 is not compatible with PNP specifications.

*2

*2

TVG2 Series How to order (manifold base only)

Specifications for rechargeable battery (Refer to page 80 for details.)

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

P4 ** = ** = ** =

· If an exhaust check valve is required, refer to page 49.



6 Port P/R position (TVG2B: ø10)

* Multiple selection is not possible

U	U side	
D	D side	
в	U, D both sides	

*1: Fittings of port P/R are for the same direction as those of port A/B.

*2: A filter is built into port P.

8 Pilot operated

Blank	Internal pilot	
к	External pilot	A CONTRACTOR

1 Port A/B filter

Blank	None	
F	Port A/B filter built in	



TVG1 Series



How to order Discrete solenoid valve (for base mounting) 15 mm TVG2 В width





2 Piping direction	
В	Side piping
5	olde pipilig

4 Pilot operated

· .

Blank	Internal pilot
K	External pilot

6 Ozo	ne/Coolant proof
Dlank	Ctandard ana aifiantiana





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



· If an exhaust check valve is required, refer to page 49.

Blank	lank Standard specifications	
Α	Ozone/Coolant proof	
	(main valve fluorine specification)	
Solenoid valve mounting screws are included. The gasket is		

attached to the manifold base.

Specifications for rechargeable battery (Refer to page 80 for details.)

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



TVG

3 Port	siz	е		
001/14	— ·			

00XX Discrete solenoid valve for base mounting

5	Manual	override	* Multiple	selection is	not possible.
---	--------	----------	------------	--------------	---------------

-		
Blank	Locking/Non-locking common/with misoperation prevention cover	
M1	Non-locking, with misoperation prevention cover	
M2	Locking/Non-locking common, tool operation type, Without cover	
М3	Non-locking, tool operation, without cover	

(Type of valve mounting screw			
Ī	Blank	Pan head machine screw with Phillips head/flathead		
	J	Hexagon socket head cap screw		
*1: Valve mounting screws are included. The gasket				

attached to the manifold base



TVG1 Series

Air supply spacer/exhaust spacer









ø6

0	Port size
Э	Description
	ø4 push-in fitting
	ø6 push-in fitting

Exhaust s	Exhaust spacer			
TVG1P - R - 04CS				
1 Port size				
1 Port	size			
Code	Bore size	Description		
04CS	ø4	ø4 push-in fitting		
06CS	ø6	ø6 push-in fitting		

Specifications

Air supply spacer Model No.

Exhaust spacer Model No.

TVG1P-P-

TVG1P-R-

Precautions for model No. selection

*1: Specify the positions and quantity of spacers for manifold in the manifold specifications sheet (Pages 105 to 112).

Weight g

31

Weight g

31

*2: Stacking of spacers is not possible.

10.2

*3: A spacer cannot be combined with a blanking plate.

*4: A spacer mounting screw and gasket are included.



Air supply spacer/exhaust spacer

Air supply spacer (exhaust spacer)





on
ting
ting

Dimensions

Air supply spacer/exhaust spacer







Dimensions

Air supply spacer/exhaust spacer

06CS











TVG2 Series Air supply spacer/exhaust spacer

Specifications

Exhaust spacer

Air supply spacer	
Model No.	Weight g
TVG2P-P-	56
Exhaust spacer	
Model No.	Weight g
TVG2P-R-	56



TYG

TVG2P - R - 06CS				
1 Port size				
Code	Bore size	Description		
06CS	ø6	ø6 push-in fitting		
08CS	ø8	ø8 push-in fitting		

A Precautions for model No. selection

*1: Specify the positions and quantity of spacers for manifold in the manifold specifications sheet (Pages 105 to 112).

*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.









TVG1/ TVG2_{Series}

Spacer pilot check valve



JIS symbol



Note: Using a cylinder with a large bore size (more than ø50 as a guide) with little exhaust restriction (eg, no speed controller, no silencer) may lead to a decrease in intermediate stop accuracy and stopping error. Please be careful.







CKD









Specifications

Max. working pressure

Ambient temperature

Working fluid temperature

Working fluid

pressure

Minimum working

Proof pressure

Atmosphere

Weight

Item



MPa

MPa

MPa

°C

°C

1 Residual pressure exhaust function

-	-
Code	Description
М	Manual override of non-locking
M1	Locking manual override
Blank	No residual pressure exhaust function

Precautions for model No. selection

*1: Specify the spacer mounting position and residual pressure exhaust function selection in manifold specifications sheet.

TVG1P-PC-

34

TVG2P-PC-[

73

Compressed air

0.7

0.2

1.05

-5 to 55 (no freezing)

5 to 55

Cannot be used in corrosive gas

environment.

*2: Spacer pilot check valve is not available when the fitting for port A/B is elbow.

*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.





Press Work Max. Minim Proof Ambi Work

Atmos Weigl

JIS symbol TVG1P-SR-P* (Valve side TVG1P-SR-A* (Valve side) 4A 2B 3R TVG1P-SR-B* (Valve side) 5R 4A1P

Dimensions













TVG1 Series

Spacer regulator

Specifications

ltem		TVG1P-SR-
sure reduction port		P/A/B
ing fluid		Compressed air
working pressure	MPa	0.7
num working pressure	MPa	0.2
pressure	MPa	1.05
ent temperature	°C	−5 to 55 (no freezing)
ing fluid temperature	°C	5 to 55
sphere		Cannot be used in corrosive gas environment.
ht	g	48



Precautions for model No. selection

*1: Specify the spacer positions in the manifold specifications sheet.

*2: Spacer regulator is not available when the fitting for port A/B is elbow.

*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.



ົດ



TVG1M/TVG2M Series





23

TVG1M/TVG2M Series

Dimensions

TVG1M Series

2 S





TVG



26

TVG2M Series







TVG1M/TVG2M Series



MEMO







R

CKD





TVG Series

2-position Single

а

Æ

Internal structure/material

4 2 (A)(B)

5 1 3 (R₁)(P)(R₂)



6

8

5 4 1 2 3 (R1) (A) (P) (B) (R2)

5

A

2

6

9

10

1

12

13

Main parts list

CKD

Part No.	Part name	Material	Part No.	Part name	Material
1	Coil assembly	-	8	Plate	Resin
2	Piston D assembly	-		Body	Aluminum alloy die-casting
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/material





Two 3-port valves integrated







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-casting	
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	

TVG Series Internal structure/material



TVG

CKD

TVG1P/TVG2P Series

Block manifolds: Configurations

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



Part No.	Part name	Example of model No.	Note	Listed page
0	Discrete solenoid valve (for base mounting)	TVG1-1B00XX3-HP1	A wide variety of solenoid valves are available. Solenoid valves of different solenoid positions can be mixed within the same manifold.	Page 17
2	Valve block	TVG1P-VB-06CS-3	The block on which the solenoid valve is based. Mount the desired number of stations of solenoid valves. However, the number of stations depends on the wiring method. (Refer to pages 7 and 55.) It is also possible to partition the flow path in the manifold with optional selection.	Page 41
3	Valve block with solenoid valve	TVG1P-1B06CS3-HP1	-	Page 37
4	Wiring block (common terminal block)	TVG1P-TB-08CS-EA1	These blocks provide electrical wiring to the manifold	Page 35
5	Wiring block (serial transmission)	TVG1P-TB-08CS-JA1C	and perform air supply and exhaust.	Page 35
6	End block	TVG1P-EB-08CS	A block that provides air supply and exhaust to the manifold. Mount the block on the opposite side of the wiring block.	Page 46
7	Intermediate supply and exhaust block	TVG1P-QB-08CS	A 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 problem.	Page 47
8	Blanking plate	TVG1P-BP	Assemble the block to a spare valve block for use if you add the solenoid valve later.	Page 49
	Air supply spacer	TVG1P-P-06CS	Use this when supplying different pressures per station.	Page 19
9	Exhaust spacer	TVG1P-R-06CS	Can be used for individual exhaust. Use this product to prevent malfunction due to increased exhaust performance or exhaust led in.	Page 19
10	Spacer pilot check valve	TVG1P-PC	Use the cylinder to prevent intermediate stop and position locking.	Page 21
1	Spacer regulator	TVG1P-SR-PG1	Pressure can be adjusted individually for each station. Port P, A and B pressure reduction types are available.	Page 22
12	Tie rod	TVG1P-TR-05	TVG1 comes in a set of 3, and TVG2 comes in a set of 2.	Page 45
13	Check valve	TVG1P-CHECK-VALVE	Prevents cylinder malfunction (popping out phenomenon) caused by exhaust air lead-in.	Page 49

Weight

TVG1 TVG2 Veigh [g] Part name Model No. TVG1P-1B06CS3-HP1 86 TVG1P-2B06CS3-HP1 93 Valve block with solenoid valve TVG1P-3/4/5B06CS3-HP1 96 TVG1P-A/B/CB06CS3-HP1 94 Valve block with blanking plate TVG1P-ZB06CS3 71 End block TVG1P-EB-08CS 159 TVG1P-VB-06CS3 31 Valve block TVG1P-TB-08CS-E* 518 Wiring block TVG1P-TB-08CS-J* 456

TVG1P-TB-08CS-K*

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
ø4 push-in L-fitting	4G1R-JOINT-CL4, CLL4
ø6 push-in L-fitting	4G1R-JOINT-CL6, CLL6
ø1/8" push-in fitting	4G1R-JOINT-CL6, CLL6
ø5/32" push-in fitting	4G1R-JOINT-C4N
ø1/8" push-in L-fitting *1	4G1R-JOINT-CL3N
ø5/32" push-in L-fitting *1	4G1R-JOINT-CL4N
Plug cartridge	4G1R-JOINT-CPG

*1: Special-order product.

TVG1P/TVG2P Series Block manifolds: Configurations

TVG TVG -P4 and the state of th

Part name	Model No.	Weight [g]
	TVG2P-1B08CS3-HP1	160
Part name Valve block with solenoid valve TVC Valve block with blanking plate TVC Valve block with blanking plate TVC Valve block TVC Wiring block TVC	TVG2P-2B08CS3-HP1	167
	TVG2P-3/4/5B08CS3-HP1	176
	TVG2P-A/B/CB08CS3-HP1	167
Valve block with blanking plate	TVG2P-ZB06CS3	134
End block	TVG2P-EB-10CS	224
Valve block	TVG2P-VB-08CS3	66
	TVG2P-TB-10CS-E*	580
Wiring block	TVG2P-TB-10CS-J*	529
	TVG2P-TB-10CS-K*	356

TVG2

280

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
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" push-in L-fitting *1	4G2R-JOINT-CL6N
ø5/16" push-in L-fitting *1	4G2R-JOINT-CL8N
Plug cartridge	4G2R-JOINT-CPG

*1: Special-order product.



TVG1P/TVG2P Series

OW to o Wiring	block									
10 mm Width	TVG1P	-T B - 08	cs).	\cdot	JA4C		Specificatio	ns for rec	chargea	able battery
15 mm Width (Valve widt	th) Model No.	- T B - 10 Piping direction 3 Pol	CS ·	Exhaust method	JA4C	ns	For us battery materia sliding s ** - ** (Refer to	e in th manufa Is used section a - ** -	e recl acturin for ai re limi P4 for det	hargeable g process ir path and ited ails.)
	Included The tie rod fixing r	nut is built into the wiring	block.	••••••						
				1 Model No.	2	Pipin	g directio	on		
						В	Side pipin	g		
		●: Standard comp	oliance	VG1F	4	Exha	aust me	thod		
3 Por	rt size	O: Special-order	product		E	Blank	Common	exhaust	itting)	
Metric fit	ting						Exhaust is	s release	nung) od to	
08CS	ø8 push-in fitting				*1	x	atmosphe	re. with	built-in	silencer
10CS	ø10 push-in fitting						(Port R is s	ealed.)		
08CU	ø8 push-in fitting L	-type upward			*1:	3X is not	available for	port sizes '	'00XX" a	ind "X_
10CU	ø10 push-in fitting	L-type upward			*2:	X is not	available fo	r pilot ope	erated k	<z.< td=""></z.<>
08CD	ø8 push-in fitting L	-type downward								
10CD	ø10 push-in fitting	L-type downward			5	Pilot	operat	ed		
1 Inch fittir	ng				E	Blank	Internal pi	lot		
08LS	ø5/16" push-in fittir	ng			*1,*2	К	External p	oilot		
10LS	ø3/8" push-in fitting	g			*1,*2	KZ	External p	oilot (PA/	PR se	parated)
08LU	ø5/16 push-in fittin	g L-type upward		0	*1:	3Canno	ot be selecte	ed for por	t size "(00XX".
10LU	ø3/8 push-in fitting	L-type upward		0	*2:	When th	e external	pilot port	is ø6 p	oush-in fittin
Port P: I	nch fitting, port R: M	etric fitting				or **L*, i	t is ø5/32" f	itting.		
0885	Port P: ø5/16" pus	h-in fitting			G	Elec	trical of		liono	
	Port R: ø8 push-in	fitting		-	•				10115	
10XS	Port P: ø3/8" push	-in fitting				PNP	specification	ns are Sp	ecial-or	der product.
	Port R: Ø10 push-li	n fitting				Red	uced wi	ring c	onne	ection
08XU	Port R: ø8 push-in	fitting L-type upward		0			Descript	ion		Code
	Port P: ø3/8" push	-in I -upward			Co	ommon t	erminal blo	ock (M3 t	hread)	EA1
10XU	Port R: ø10 push-i	n fitting L-type upward		0	* C	an be us	ed with eith	er NPN o	r PNP.	
Plug	•	<u> </u>				• Sori	al trana	miaaid		
00XX	Port P, R plug					• Sen		0	JII	Carla
*1: Select	08XS, 10XS, 08XI	J or 10XU when using a	silencer	with inch fitting	00	mmunica	lion protocol		NO. OI POINIS	
specific	cations. Port R and PR	(for KZ) are metric fittings.			De	eviceNe	t			JAIC
*2: 5 Pilot	t operated K, KZ and 0	0XX cannot be selected toge	ther.							JAID
*3: Canno	t be selected together	with exhaust method X.			C	C-Link V	/er.1.10			JAZC
										JA2D
					Et	herCAT				JASC
TVG1P-TB	TVG1P-T	B-08CS-X • TVG1P-TB-08	CS-K	TVG1P-TB-08CS-X	KK –					JAJD
\sim			-		Et	herNet/	IP			
A REAL			ſ							JA4D
			20	- Martin		C-Link II	EF Basic			
				b.A.					32	
			Sõ l) PF	ROFINE	Т		point	IACD
					' -				output	JAC
~	State of the second sec		94 BY		C	C-Link II	E Field			JA7C
										JAID
IVG2P-TB	TVG2P-T	B-10CS-X • TVG2P-TB-10	CS-K	TVG2P-TB-10CS-X	KK C	C-Link II	E TSN			JASC
-		-		-						JASD
1 Ch			, f	A 40			ClassA			JASC
						-link		FINP		JA9D

silencer nd "___X_". Ζ. parated) 00XX". oush-in fitting der product. ction Code EA1 Code JA1C JA1D JA2C JA2D JA3C JA3D JA4C JA4D JA5C JA5D JA6C JA6D

JA9G

JA9H

JB1C

JB1D

NPN

PNP

NPN

PNP

ClassB

IO-Link Wireless

How to order Serial transmission device unit



transmission

1 Serial transmission

Communica	tion protocol	Output	No. of points	Code	
DeviceNet		NPN		2D	
		PNP		2D-P	
		NPN		2G	
CC-LINK		PNP		2G-P	
Ether OAT		NPN		2EC	
EtherCAI		PNP		2EC-P	
Eth and lat		NPN		2EN	
Etherivet	IP	PNP		2EN-P	
		NPN		2EB	
CC-LINK I	EF Basic	PNP]	2EB-P	
			32	2EP	
PROFINE	1	PNP	output	2EP-P	
		NPN		2EF	
	EFIEID	PNP		2EF-P	
		NPN		2TG	
	EISN	PNP		2TG-P	
	Olassa	NPN		2KC-A	
	ClassA	PNP		2KC-PA	
IO-Link	Class	NPN		2KC-B	
	ClassB	PNP		2KC-PB	
IO Link M	liveless	NPN		2WK	
IO-Link Wireless		PNP		2WK-P	

*1: PNP specifications are Special-order products.

CKD

TVG1P/TVG2P Series How to order (serial transmission device unit)

Included

- 2 pcs. OPP fixing bolts
- 1 pc. drip-proof gasket

CKD

TVG1P Series



*1: Only compatible with internal pilot. Dimensions is the same as the 2-position double. *2: "-HP1" is not included in the model No. when Z is selected.

3 Port size (port A/B)

Metric fitting

		-						
0ACS	ø1.8 push-in fitting (compatible tube UP-9402-**)							
04CS	ø4 push-in fitting							
06CS	ø6 push-in fitting							
0ACU	L-type ø1.8 push-in fitting (compatible tube UP-9402-**)							
04CU	Upward Ø4 push-in fitting							
06CU	*2 ø6 push-in fitting							
0ACD	Litimo	ø1.8 push-in fitting (c	ompati	ble tube UP-9402-**)				
04CD	Downward	ø4 push-in fitting						
06CD	Downwalu	ø6 push-in fitting						
ngle side plug		Port A		Port B				
pooliioduorio	ø1.8 n	ush-in fitting						
0ACA	(compa	tible tube UP-9402-**)						
04CA	ø4 pus	h-in fitting	Plug					
06CA	ø6 pus	h-in fitting						
			ø1.8 push-in fitting					
UACE	Dive		(compatible tube UP-9402-**)					
04CF	Plug		ø4 push-in fitting					
06CF			ø6 push-in fitting					
MACR	I_tvne	ø1.8 push-in fitting						
UACE	Linward	(compatible tube UP-9402-**)	Plug					
04CB	spwaid *2	ø4 push-in fitting	Fiug					
06CB	2	ø6 push-in fitting						
ACG			I-type	ø1.8 push-in fitting				
	Plua		Unward	(compatible tube UP-9402-**)				
04CG	, iag		*2	ø4 push-in fitting				
06CG			2	ø6 push-in fitting				
DACC		ø1.8 push-in fitting						
	L-type	(compatible tube UP-9402-**)	Plua					
04CC	Downward	ø4 push-in fitting						
06CC		ø6 push-in fitting						
0ACH			1.4	Ø1.8 push-in fitting				
0.4011	Plug		L-куре	(compatible tube UP-9402-**)				
04CH	Ŭ		Downward	Ø4 push-in fitting				
U6CH				øb push-in fitting				

Inch fitting

			'9			
	03LS	ø1/8" p	oush-in fitting			
	04LS	ø5/32"	push-in fitting			
3	03LU	L-type	ø1/8" push-in fitting			
3	04LU	*2	ø5/32" push-in fitting			
1	Single side plug specifications		Port A		Port B	
	03LA	ø1/8" p	oush-in fitting	Dlug		
	04LA	ø5/32"	push-in fitting	Flug		
	03LF	Dlug		ø1/8"	oush-in fitting	
	04LF	Flug		ø5/32"	push-in fitting	
3	03LB	L-type	ø1/8" push-in fitting	Plug		
3	04LB	*2	ø5/32" push-in fitting	i iug		
3	03LG	Dlug		L-type	ø1/8" push-in fitting	
3	04LG	Flug		opward *2	ø5/32" push-in fitting	

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

- *2: 3-position is not available for push-in L-fittings upward.
- *3: Special-order product.



8 Common specifications

specifications

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

*3: The PNP specifications are Special-order products

Blank

Ρ

the wiring block

NPN/plus common

PNP/minus common

5 Wiring method inside the base *1

Blank Double wiring

9 Manual override *1

6 Pilot operated

Blank Internal pilot

K External pilot

Blank	Locking/Non-locking common, With misoperation prevention cover						
M1	Non-locking, with misoperation prevention cover						
M2	2 Locking/Non-locking common, Tool operated, without cover						
M3	Non-locking, tool operation						
*1: Solenoid position "Z" cannot be selected.							



type with exhaust check valve.



selected. Refer to page 147 for details on the

• 2-position Single

• 2-position Double Two 3-port valves integrated





4 Voltage

3	24 VDC

TVG1P Series How to order (valve block with solenoid valve)

Specifications for rechargeable battery (Refer to page 80 for details.)

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



· Tie rod is not included, and so order separately.

Refer to page 45 for details. The gasket between blocks is included.

*	1		

7 Electric circuit specifications * Multiple selection is not possib

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

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

*1: E1 is not compatible with PNP specifications

10 Ozone/Coolant proof *1

Blank	Standard specifications
А	Ozone/Coolant proof (Main valve fluorine specification)

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

Air flow path partition

Refer to page 42 for details.

Blank	No	
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		
The right flow noth is shut off with nort A/D fasing		

The right flow path is shut off with port A/B facing forward.

 3-position ABR connection 3-position PAB connection 3-position all ports closed





TVG2P Series



3 Port size (port A/B)

• wetr	ric fitting				
04CS	ø4 push-in fitting				
06CS	ø6 pus	ø6 push-in fitting			
08CS	ø8 pus	h-in fitting			
06CU	L type	ø6 push-in fitting			
08CU	upward*2	ø8 push-in fitting			
06CD	L-type	ø6 push-in fitting			
08CD	Downward	ø8 push-in fitting			
ingle side plug specifications		Port A		Port B	
04CA	ø4 pus	sh-in fitting			
06CA	ø6 push-in fitting		Plug		
08CA	ø8 push-in fitting				
04CF			ø4 push-in fitting		
06CF	Plug		ø6 push-in fitting		
08CF			ø8 push-in fitting		
06CB	L-type	ø6 push-in fitting	Dua		
08CB	upwaru *2	ø8 push-in fitting	Plug		
06CG	Plug		L-type	ø6 push-in fitting	
08CG			*2	ø8 push-in fitting	
06CC	L-type	ø6 push-in fitting	Dlug		
08CC	Downward	ø8 push-in fitting	liuy		
06CH	Plug		L-type	ø6 push-in fitting	
08CH	i iug		Downward	ø8 push-in fitting	

Inch fitting

	11101	lion name			
	06LS	ø1/4" push-in fitting			
	08LS	ø5/16"	push-in fitting		
*3	06LU	L-type	ø1/4" push-in fitting		
*3	08LU	upwaiu *2	ø5/16" push-in fitting		
*1	Single side plug specifications	Port A			Port B
	06LA	ø1/4" push-in fitting		Plug	
	08LA	ø5/16" push-in fitting		Flug	
	06LF	Plug		ø1/4" r	oush-in fitting
	08LF			ø5/16"	push-in fitting
*3	06LB	L-type	ø1/4" push-in fitting	Plug	
*3	08LB	upwaiu *2	ø5/16" push-in fitting	Flug	
*3	06LG	Plug		L-type	ø1/4" push-in fitting
*3	08LG	Flug		upwaiu *2	ø5/16" push-in fitting

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

- *2: 3-position is not available for L-type upward push-in fittings.
- *3: Special-order product.

5 Wiring method inside the base	
Blank	Double wiring

S	Single solenoid dedicated wiring
I. Diamic -	Double colonoid wiring regardless of the type of value

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

*1

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







*1: OSlenoid position "Z" cannot be selected.

Exhaust check valve		
Blank	None	
н	With exhaust check valve	
*1: Solenoid positions "3" and "5" cannot be		

B Port A/B filter

Blank None

selected. Refer to page 147 for details on the type with exhaust check valve.

*1: A filter is built into port P.

• 2-position Single







TVG2P Series How to order (valve block with solenoid valve)

Specifications for rechargeable battery (Refer to page 80 for details.)

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



· Tie rod is not included, and so order separately. Refer to page 45 for details. The gasket between blocks is included.

8 Common specifications

Blank NPN/plus common specifications P PNP/minus common specifications *1: Multiple selection is not possible

- *2: Select the same polarity as that of the wiring block. *3: The PNP specifications are Special-order products.
- Ozone/Coolant proof *1

Blank	Standard
DIANK	specifications
	Ozone/Coolant proof
Α	(Main valve fluorine
	specification)

*1: OSlenoid position "Z" cannot be selected

Type of valve mounting screw

Blank	Pan head machine screw
ыапк	with Phillips head/flathead
	Hexagon socket head
J	cap screw



Air flow path partition

Refer to page 44 for details.				
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			

The right flow path is shut off with port A/B facing forward.

 3-position ABR connection 3-position PAB connection 3-position all ports closed





TVG1P Series



a1.8 push-in fitting (compatible tube LIP-9402-**)				0020	Unword	puoli n
ø4 push-in fitting				04LU	Upwaiu *2	ø5/32" push-i
ø6 push-in fitting ø1.8 push-in fitting (compatible tube UP-9402-**) ø4 push in fitting				Single side plug specifications		Port A
ø6 push-in fitting			1	03LA	ø1/8"	oush-in fitting
Port A		Port B		04LA 03LF 04LF	ø5/32" Plug	' push-in fitting
ush-in fitting			*3	03LB	L-type	ø1/8" push-in
sh-in fitting	Plug		*3	04LB	Upward *2	ø5/32" push-i
sh-in fitting	ø1 8 n	ush-in fitting	*3	03LG	Dlug	
	(compa	atible tube UP-9402-**)	*3	04LG	Flug	
	ø4 pus ø6 pus	sh-in fitting	-			
ø1.8 push-in fitting (compatible tube UP-9402-**) ø4 push-in fitting ø6 push-in fitting	Plug	······································				
	L-type Upward *2	Ø1.8 push-in fitting (compatible tube UP-9402-** Ø4 push-in fitting Ø6 push-in fitting	-			
Ø1.8 pusn-in fitting						

	Dlua		llloword	leenipaansie tanse en e iez
04CG	Flug		opwaiu *2	ø4 push-in fitting
06CG			2	ø6 push-in fitting
0400	L-type Ø1.8 push-in fitting (compatible tube UP-9402-**)			
UALL			Dlug	
04CC	Downward	ø4 push-in fitting	Flug	
06CC		ø6 push-in fitting		
				ø1.8 push-in fitting
UACH	Plug		L-type	(compatible tube UP-9402-**
04CH			Downward	ø4 push-in fitting
06CH				ø6 push-in fitting

^{*2} ø6 push-in fitting

3 Voltage

0ACF

04CF

06CF

0ACB

04CB

06CB

0ACG

Plug

L-type

Upward

3 24 VDC

* 11101	chinting					
03LS	ø1/8" push-in fitting					
04LS	ø5/32"	ø5/32" push-in fitting				
03LU	L-type	ø1/8" push-in fitting				
04LU	opwaru *2	ø5/32" push-in fitting				
Single side plug specifications		Port A		Port B		
03LA	ø1/8" p	oush-in fitting	Plug			
04LA	ø5/32"	push-in fitting	Flug			
03LF	Dlug		ø1/8"	oush-in fitting		
04LF	Flug		ø5/32"	push-in fitting		
03LB	L-type	ø1/8" push-in fitting	Dlug			
04LB	°2	ø5/32" push-in fitting	Flug			
03LG	Dlug		L-type	ø1/8" push-in fitting		
04LG	Flug		vpwalu *2	ø5/32" push-in fitting		

path

partition

*1: Ports A and B with one side plug specifications are available for 2-position Single only.

*2: 3-position is not available for L-type upward push-in fittings.

*3: Special-order product.

4 Wiring method inside the base *1

		ing meaned mende are bace			
	Blank	Double wiring			
S Single solenoid dedicated wiring					
	*1: Blank = Double solenoid wiring regardless of the type				

ss 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 type.



6 Electric circuit specifications

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

*1: E1 is not compatible with PNP specifications.

Port A/B filter



Air flow path partition

Discrete valve block circuit diagram (T)



Discrete valve block circuit diagram (V)



TVG1P Series How to order (valve block)



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



· Tie rod is not included, and so order separately.

Refer to page 45 for details. The gasket between blocks is included.

6 Common specifications

Blank NPN/plus common specifications P PNP/minus common specifications

*1: Multiple selection is not possible

*2: Select the same polarity as that of the wiring block. *3: The PNP specifications are Special-order products.

8 Air flow path partition

Refer to the following for details. Blank No P/R/PA/PR blocked Т P/R blocked, PA/PR through U P blocked, R/PA/PR through V W R blocked, P/PA/PR through





TVG2P Series



	04CS	ø4 push-in fitting					
	06CS	ø6 pus	sh-in fitting				
	08CS	ø8 pus	sh-in fitting				
	06CU	L-type	ø6 push-in fitting				
	08CU	upward *2	ø8 push-in fitting				
	06CD	L-type	ø6 push-in fitting				
	08CD	downward	ø8 push-in fitting				
*1	Single side plug specifications	e ug Port A P tions		Port B			
	04CA	ø4 pus	sh-in fitting				
	06CA	ø6 pus	ø6 push-in fitting		Plug		
	08CA	ø8 pus	sh-in fitting				
	04CF			ø4 pus	sh-in fitting		
	06CF	Plug	Plug		ø6 push-in fitting		
	08CF			ø8 push-in fitting			
	06CB	L-type	ø6 push-in fitting	Dlug			
	08CB	upwaiu *2	ø8 push-in fitting	Flug			
	06CG	Dive	Plug		ø6 push-in fitting		
	08CG	Plug			ø8 push-in fitting		
	06CC	L-type	ø6 push-in fitting	Diug			
	08CC	downward	downward ø8 push-in fitting				
	06CH	Dlug			ø6 push-in fitting		
	08CH	Flug		downward	ø8 push-in fitting		

	- men mung						
	06LS	ø1/4" p	ø1/4" push-in fitting				
	08LS	ø5/16"	ø5/16" push-in fitting				
*3	06LU	L-type ø1/4" push-in fitting					
*3	08LU	upwaiu *2	ø5/16" push-in fitting				
*1	Single side plug specifications		Port A		Port B		
	06LA	ø1/4" push-in fitting		Dlug			
	08LA	ø5/16" push-in fitting		Flug			
	06LF	Dlug		ø1/4" p	oush-in fitting		
	08LF	Plug		ø5/16"	push-in fitting		
*3	06LB	L-type ø1/4" push-in fitting		Dlug			
*3	08LB	upwaiu *2	ø5/16" push-in fitting	Flug			
*3	06LG	Plug		L-type	ø1/4" push-in fitting		
*3	08LG	uy		upwalu *2	ø5/16" push-in fitting		

*1: Ports A and B with one side plug specifications are available for 2-position Single only.

*2: 3-position is not available for L-type upward push-in fittings.

*3: Special-order product.

4 Wiring method inside the base *1

Blank	Double wiring			
S	Single solenoid dedicated wiring			
1: Blank = Double solenoid wiring regardless of the type of value use				

enoid wiring regardless of the type of valve used. If 1: Blank = Double 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 type.



5 Electric circuit specifications

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

*1: E1 is not compatible with PNP specifications.

Port A/B filter



Air flow path partition

Discrete valve block circuit diagram (T)



Discrete valve block circuit diagram (V)



3 Voltage

3

24 VDC

TVG2P Series How to order (valve block)

Specifications for rechargeable battery (Refer to page 80 for details.)

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



· Tie rod is not included, and so order separately.

Refer to page 45 for details. The gasket between blocks is included.

6 Common specifications

Blank NPN/plus common specifications P PNP/minus common specifications

*1: Multiple selection is not possible.

*2: Select the same polarity as that of the wiring block. *3: The PNP specifications are Special-order products.

8 Air flow path partition

Refer to the following for details. Blank No P/R/PA/PR blocked Т P/R blocked, PA/PR through U P blocked, R/PA/PR through ۷ W R blocked, P/PA/PR through



4 (A) 2 (B)

J S J



44

TVG1P/TVG2P Series



02	For 2 stationss	14	For 14 stations
03	For 3 stationss	15	For 15 stations
04	For 4 stationss	16	For 16 stations
05	For 5 stationss	17	For 17 stations
06	For 6 stationss	18	For 18 stations
07	For 7 stationss	19	For 19 stations
08	For 8 stationss	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		

•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 available in sets of 3 and TVG2P in sets of 2.

Regarding expansion of stations

- With 2 to 17 stations, the manifold can be expanded by 3 stations. Up to a total of 3 stations can be expanded with valve blocks and intermediate supply and exhaust blocks. When expanding 18 or more stations of manifolds, use a tie rod that matches the station No. after expansion
- Fix the tie rod for station expansion/tie rod for intermediate supply and exhaust to the wiring block. If installed on the end block side, it may not be possible to assemble correctly.





TVG1P/TVG2P Series How to order (end block)



• TVG2P-EB-10CS-K





• TVG2P-EB-10CS-XK



CKD

TVG1P/TVG2P Series



List of supply and exhaust block specifications

Exhaust method	Pilot operated	D side Wiring/Supply exhaust blo
Blank Common exhaust	Blank Internal pilot	PR PA R P R P R P
Blank Common exhaust	K External pilot	PA PR PA PA R P R P
Blank Common exhaust	Z Multi-pressure circuit	
Blank Common exhaust	KZ External pilot (PA/PR separated)	PR PA PR PA PA R P R R P
X Atmospheric release (Silencer integrated)	Blank Internal pilot	PR PA P R R P
X Atmospheric release (Silencer integrated)	K External pilot	PA PA PA PA PA R P

* Check valve between PR and R is for malfunction prevention. This product cannot be used for other applications.

TVG1P Series List of supply and exhaust block specifications



CKD

TVG1/TVG2 Series

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

MEMO



Model No.	D	В	L	e	Α
SLW-H8	ø8	20	42	23	16
SLW-H10	ø10	27	53	31.5	20



* Kit contents: Blanking plate, 2 mounting screws. The gasket is included with the valve block.

Applicable

cable O.D.

Description

Parts kit for EA1 wiring block

Cable clamp

Model No.

Exhaust check valve

TVG1P-CHECK-VALVE TVG2P-CHECK-VALVE 2 pcs. per set.



TVGP-SCL-18A Ø14.5 to 16.5 Used to protect cables from dust and water jets. TVGP-SCL-18B Ø16.5 to 18.5 Used to protect cables from dust and water jets. PF3/4 Gasket max29.5 Applicable cable 0.D.

(reference value) Body tightening torque 4.0 to 4.5 N·m Cable clamp tightening torque 3.0 to 3.5 N·m

Parts for serial transmission device unit



M12 x 1



Waterproof plug

Model No.	Description
TVGP-XSZ-12	Provides water-jet protection of unused signal connectors







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



.

Product introduction

- Order methodSpecifications
- How to order
- Manifold with
 Manifold base
- Discrete sole
 Option
- Air supply spa
- Spacer pilot
- Spacer regul
- Dimension diag
- Internal structure
- Valve interface

Block configuration Related Components (s Manifold and wiring Technical data

①Pneumatic sys ②Notes on wiring

- 3 Check valve
- ④How to expand
- Safety precaution



For remote I/O connection

* Remote I/O must be prepared separately.

CONTENTS	
on	Intro
	1
	53
	55
n solenoid valve	57
e only	61
enoid valve	65
acer/exhaust spacer	67
check valve	69
ator	70
Igram	71
ure, material	31
e	78
ns	33
silencer, blanking plate kit, exhaust check valve, etc.)	49
g specifications sheet	103
stem selection quide	125
la	129
.	147
d reduced wiring manifold	142
ons	143



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.

1111

	Ordering method	Manifold specifications sheet	Customer assembly processes	Product delivery date
Α	Manifold assembly	Required	Δ	\bigcirc
В	Easy assembly	Not required	\bigcirc	\bigcirc
С	Discrete block	Not required	\bigcirc	\overleftrightarrow
			O. Very good	O: Good

Remote I/O RT Series connection Solenoid valve (Separate Arrangements manifold

Target solenoid valve

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 TVGDM 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-1557A)" for how to assemble.









No.	Name					
1	Valve interface (supply and exhaust air)					
2	Valve block with solenoid valve					
3	Discrete solenoid valve (for base mounting)					
4	Valve block					
5	End supply and exhaust block					
6	Intermediate supply and exhaust block					
7	Spacer					
8	Tie rod, silencer, exhaust check valve					
	Other related parts					
	Device unit					
	Power supply unit					
9	I/O unit					
	End unit (without supply and exhaust)					

C Discrete block Each part is delivered separately. The customer must assemble the manifold by combining the parts. You can order the parts below with their model Nos.



RT

Page 78

Listed page

Page 65

Page 37

Page 41

Page 46

Page 47

Page 67

Page 45, 49

Page 49

Remote I/O RT Series (CC-1557A)

20





Plug-in block manifold (for remote I/O connection) Pilot operated 3, 5-port valve

TVG1/TVG2 Series



Item		Description	
Manifold		Block manifold	
Mounting method	d	Direct mounting	
Air supply and ex	xhaust method	Common supply/common exhaust (With internal exhaust check valve)	
Pilot exhaust me	thod	Main valve/pilot valve common exhaust	
Internal pilot	(*4)	(Pilot exhaust check valve built-in)	
Piping direction		Side direction of base	
Valve and operat	tion	Pilot operated soft spool valve	
Working fluid		Compressed air	
Max. working pre	essure MPa	0.7	
Internal pilot	2-position double	0.1 (*6)	
min. working	2-position single / 3-position	0.2	
pressure ivira	Two 3-port valves integrated	0.2	
External pilot min.	working pressure	-100	
	kPa	(Pilot pressure is 0.2MPa or more)	
Proof pressure	MPa	1.05	
Ambient tempera	ature °C	-5 to 55 (no freezing)	
Fluid temperatur	e °C	5 to 55	
Manual override		Non-locking/locking common (standard)	
Lubrication	(*1)	Not required	
Degree of protect	tion (*2)	IP65, IP67	
Vibration resistar	nce m/s ²	50 or less	
Shock resistance	e m/s ²	294 or less	
Atmosphere		Cannot be used in corrosive gas environments	

Electrical specifications

ltem			KA1C	KA1D	
	Output		NPN PNP		
0.4.4	No. of output points		32 points (4 bytes)		
Oulpul	Response time ms		typ. ON delay 0.5 or less / OFF delay 1.0 or less		
specifications	Forced output setting		Output settable regardless of process data.		
	Supply power V		24 DC		
	Internal For unit/input		15 or less		
Electrical specifications	consumption Current mA For output		75 or less		
	Operatio	n display	LED (for Component status display, 2 pcs)		

*1: Use turbine oil Class 1 ISOVG32 for lubrication. Excessive or intermittent lubrication results in unstable operation.

- *2: Tested according to the test method for IP65 (IEC 60529: 2001) standards. Refer to page 144 for details.
- *3: If low excergic/energy circuit or surgeless types are selected then it will be a diode.
- *4: Pilot exhaust method differs with each supply and exhaust block used. Refer to page 48 for details.
- *5: Select external pilot when using at low vacuum. Refer to page 146 for details. *6: 0.2 MPa with low exoergic/energy circuit.

Performance/characteristics by model

Itom	Solenoid position		TVG1		TVG2	
item			at ON	at OFF	at ON	at OFF
	Two 3-p integrat	oort valves ed	15	25	20	37
Pooponoo timo ma	ns 2-position Single 2-position ABR connection	Single	15	20	22	24
Response ume me		Double	15	15	26	26
		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

Mode			P 🔿	A/B		A/B ⇒ R			
No.	50	bienola position	C [dm³/(s•bar)]	b	C [dm ³	C [dm³/(s•bar)]		b	
TVG1	Two 3-p	port valves integrated	0.77	0.37	1.0	(0.56)	0.34	(0.37)	
	2-positi	on	1.0	0.29	1.1	(0.59)	0.36	(0.41)	
		All ports closed	0.96	0.33	1.0	-	0.35	-	
	3-posi-	ABR connection	0.96	0.32	1.2	(0.60)	0.38	(0.40)	
		PAB connection	1.1	0.35	1.0	-	0.36	-	
	Two 3-port valves integrated		1.7	0.44	2.2	(1.8)	0.43	(0.20)	
	2-positi	on	2.4	0.32	2.5	(2.0)	0.34	(0.19)	
TVG2	3-positi	on all ports closed	2.2	0.35	2.3	-	0.38	-	
	ABR co	onnection	2.2	0.32	2.5	(2.1)	0.40	(0.21)	
	PAB co	nnection	2.6	0.34	2.3	-	0.37	-	

*1: Effective cross-sectional area S and sonic conductance C are converted as $S \approx 5.0 \times C$. *2: Values in () are with the exhaust check valve.

Т М

lt			TVG1	TVG2
item			KA1	KA1
Max station	Aax. station lo. Single solenoid, double solenoid layout specification Single wiring		16 stations	16 stations
No.			24 stations	24 stations
Max. num	ber of solenoi	ds	32 points	32 points
	Matuia fittina	Port A/B	Push-in fitting ø1.8, ø4, ø6	Push-in fitting ø4, ø6, ø8
Port size	Metric fitting	Port P/R	Push-in fitting ø8	Push-in fitting ø10
	In ab fitting	Port A/B	Push-in fitting φ1/8", ø5/32"	Push-in fitting ø1/4", ø5/16"
	inch inting	Port P/R	Push-in fitting ø5/16"	Push-in fitting ø3/8"



Specifications (for remote I/O connection)

TVG



TVG1M Series



3 Port size (port A/B) Motrio fitting

• wetr	• Metric fitting							
0ACS	ø1.8 p	ush-in fitting (compat	ible tub	e UP-9402-**)				
04CS	ø4 pus	sh-in fitting						
06CS	ø6 push-in fitting							
0ACU	L-type	ø1.8 push-in fitting (c	ompati	ble tube UP-9402-**)				
04CU	Upward	ø4 push-in fitting						
06CU	*2	ø6 push-in fitting						
0ACD	l_tvno	ø1.8 push-in fitting (c	ompati	ble tube UP-9402-**)				
04CD	L-type Downword	ø4 push-in fitting	ø4 push-in fitting					
06CD	DOWIIWalu	ø6 push-in fitting						
99CX	Push-i	n fitting mix						
Single side plug pecifications		Port A		Port B				
0.0.0.0	ø1.8 p	ush-in fitting						
UACA	(compa	tible tube UP-9402-**)	Dlug					
04CA	ø4 pus	sh-in fitting	- Tug					
06CA	ø6 pus	sh-in fitting						
0ACE			ø1.8 push-in fitting					
	Plua		(compatible tube UP-9402-**)					
04CF	riug		ø4 push-in fitting					
06CF			ø6 push-in fitting					
MACR	I-type	ø1.8 push-in fitting						
	Unward	(compatible tube UP-9402-**)	Plua					
04CB	opwaru *2	ø4 push-in fitting	Flug					
06CB	2	ø6 push-in fitting						
0ACG			L-type	ø1.8 push-in fitting (compatible tube UP-9402-**)				
04CG	Plug		Upwaru *0	ø4 push-in fitting				
06CG			~2	ø6 push-in fitting				
0ACC	l kan	ø1.8 push-in fitting		· · ·				
	L-type	(compatible tube UP-9402-**)	Plug					
0400	Downward	ø4 push-in fitting						
0600		øb pusn-in fitting		ad O much in fitting				
0ACH				Ø1.8 pusn-in fitting				
0.4011	Plug		L-type	(compatible tube UP-9402-**)				
04CH	Ŭ		Downward	ø4 push-in fitting				
U6CH				ø6 push-in fitting				

. Inch fitting

	03LS	ø1/8" p	1/8" push-in fitting					
	04LS	ø5/32"	v5/32" push-in fitting					
*4	03LU	L-type	ø1/8" push-in fitting					
*4	04LU	Upward *2	ø5/32" push-in fitting	l				
*3	99LX	Push-i	n fitting mix					
*1	Single side plug specifications		Port A		Port B			
	03LA	ø1/8" p	oush-in fitting	Dlug				
	04LA	ø5/32"	push-in fitting	Flug				
	03LF	Dlug		ø1/8"	oush-in fitting			
	04LF	Flug		ø5/32" push-in fitting				
*4	03LB	L-type	ø1/8" push-in fitting	Dlug				
*4	04LB	°2	ø5/32" push-in fitting	Flug				
*4	03LG	Dlug		L-type	ø1/8" push-in fitting			
*4	04LG	Flug		*2	ø5/32" push-in fitting			

*1: Ports A and B with one side plug specifications are available for 2-position Single only. *2: 3-position is not available for push-in L-fittings upward.

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

*4: Special-order product.

4 Voltage



5 Electrical connections				
Descriptions	Output	No. of points	Code	
RT Series connection	NPN	32 points	KA1C	
Interface	Output	KA1D		
*1: PNP specifications are Special-order products.				

Station No.					
02	2 stations				
to	to				
24	24 stations				

02	2 stations			
to	to			
24	24 stations			

Pilot operated	9 Pilo
ank Internal pilot	Blank

U

D

в

т

U side

D side

U side, D side

and exhaust block

block in the manifold specifications sheet.



With U side, D side, intermediate supply

*1: Fittings of port P/R are for the same direction as those of port A/B. *2: Specify the specifications of the intermediate supply and exhaust

1 Manual override * Multiple selection is not possible.

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

-		
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	

With/Without spacer

-	
Blank	Without spacer
z	With spacer (type and location are specified on the MF specifications sheet)

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

Port A/B filter



*1: A filter is built into port P.

Î

Ô

How to order (manifold with solenoid valve for remote I/O connection)

TVG1M Series

- Refer to Remote I/O RT Series
- (Catalog No.CC-1557A) for the RT Series (remote I/O).
- · If an exhaust check valve is required, refer to page 49.

8 Wiri	ng method inside the base
Blank	Double wiring
S	Single solenoid, double solenoid layout specification
*1: Blank =	Double solenoid wiring regardless of the type of valve use
	8 Wiri Blank S *1: Blank =

If a single solenoid is mounted, an empty number for one solenoid will be generated.

D Electric circuit specifications

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

*1: E1 is not compatible with PNP specifications.

Ozone/Coolant proof

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

Exhaust check valve

Blank	None	
н	With exhaust check valve	

*1: OSolenoid positions "3" and "5" cannot be selected. Refer to page 147 for details on the type with exhaust check valve. Specify the number of stations to install in the manifold specifications sheet.

TVG2M Series



3 Port size (port A/B)

· Weti		ing				
04CS	ø4 push-in fitting					
06CS	ø6 pus	ø6 push-in fitting				
08CS	ø8 pus	sh-in fitting				
06CU	L-type	ø6 push-in fitting				
08CU	upward *2	ø8 push-in fitting				
06CD	L-type	ø6 push-in fitting				
08CD	downward	ø8 push-in fitting				
99CX	Push-i	n fitting mix				
Single side plug becifications		Port A	Port B			
04CA	ø4 pus	sh-in fitting				
06CA	ø6 pus	sh-in fitting	Plug			
08CA	ø8 pus	sh-in fitting				
04CF			ø4 push-in fitting			
06CF	Plug		ø6 push-in fitting			
08CF			ø8 push-in fitting			
06CB	L-type	ø6 push-in fitting	Dlug			
08CB	*2	ø8 push-in fitting				
06CG	Plug		L-type upward *2	ø6 push-in fitting		
08CG				ø8 push-in fitting		
06CC	L-type ø6 push-in fitting Plug ø8 push-in fitting		Blug			
08CC						
06CH	Plug		L-type	ø6 push-in fitting		
08CH	ling		downward	ø8 push-in fitting		

	• mon mung					
	06LS	ø1/4" push-in fitting				
	08LS	ø5/16" push-in fitting				
*4	06LU	L-type	ø1/4" push-in fitting			
*4	08LU	upwaru *2	ø5/16" push-in fitting			
*3	99LX	Push-i	n fitting mix			
*1	Single side plug specifications	Port A		Port B		
	06LA	ø1/4" push-in fitting		Blug		
	08LA	ø5/16" push-in fitting		Flug		
	06LF	Rhur		ø1/4"	oush-in fitting	
	08LF	Flug		ø5/16" push-in fitting		
*4	06LB	L-type	ø1/4" push-in fitting	Plug		
*4	08LB	upwaiu *2	ø5/16" push-in fitting	Flug		
*4	06LG	Dlug		L-type	ø1/4" push-in fitting	
*4	08LG	i iug		*2	ø5/16" push-in fitting	

- *1: Ports A and B with one side plug specifications are available for 2-position single only.
- *2: 3-position is not available for push-in L-fittings upward.
- *3: Port size mixtures of ports 4(A) and 2(B) are not available.

*4: Special-order product.

5 Electrical connections Descriptions Output No.of points Code

terface for RT	NPN	32	KA1C
eries	PNP	Output	KA1D
	_		

6 Station No.		
02	2 stations	
to	to	
24	24 stations	

*1: PNP specifications are Special-order products.

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

-		
U	U side	
D	D side	
в	U side, D side	
т	With U side, D side, intermediate supply and exhaust block	

*1: Fittings of port P/R are for the same direction as those of port A/B. *2: Specify the specifications of the intermediate supply and exhaust block in the manifold specifications sheet.

9 Pilot operated

В	lank	Internal pilot	
	к	External pilot	

1 Manual override * Multiple selection is not possible.

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	
M3	Non-locking, tool operation, without cover	

Type of valve mounting screw

J P	jeeren j
Blank	Pan head machine screw with Phillips head/flathead
J	Hexagon socket head cap screw

J cannot be selected when spacer Z is selected.

Exhaust check valve

Blank	None	
н	With exhaust check valve	

*1: OSolenoid positions "3" and "5" cannot be selected. Refer to page 147 for details on the type with exhaust check valve. Specify the number of stations to install in the manifold specifications sheet.

59



4 Voltage

3 24 VDC

How to order (manifold with solenoid valve for remote I/O connection)

TVG2M Series

- Refer to Remote I/O RT Series
- (Catalog No.CC-1557A) for the RT Series (remote I/O).
- · If an exhaust check valve is required, refer to page 49.

8	Wiring method inside the base *1
Blank	Double wiring
S	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.

Electric circuit specifications

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

*1: E1 is not compatible with PNP specifications.

1 Ozone/Coolant proof

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

With/Without spacer

Blank	Without spacer
z	With spacer (type and location are specified on the MF specifications sheet)

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

16 Port A/B filter

Blank	None	
F	Port A/B filter built in	



TVG1B Series



2 Port size (port A/B)

• Metr	Metric fitting			
0ACS	ø1.8 push-in fitting (compatible tube UP-9402-**)			
04CS	ø4 push-in fitting			
06CS	ø6 push-in fitting			
0ACU	L-type	ø1.8 push-in fitting (compatible tube UP-9402-**)		
04CU	upward	ø4 push-in fitting		
06CU	*1	ø6 push-in fitting		
0ACD	1 time	ø1.8 push-in fitting (compatible tube UP-9402-**)		
04CD	L-type	ø4 push-in fitting		
06CD	uownWalu	ø6 push-in fitting		

3 Voltage

3 24 VDC

5 Station No.

02	2 stations	
to	to	
16	16 stations	

*1: All the wiring inside the base is for double solenoid regardless of the type of valve mounted. The part with the single solenoid mounted will generate an empty number for one solenoid.

Inch fitting

	litering			
	03LS	ø1/8" push-in fitting		
	04LS	ø5/32"	push-in fitting	
2	03LU	L-type upward *1	ø1/8" push-in fitting	
2	04LU		ø5/32" push-in fitting	

*1: 3-position is not available for push-in fitting L-type upward.

*2: Special-order product.

4 Electrical connections

Descriptions	Output	No. of points	Code
Interface for DT Series	NPN	32 points	KA1C
	PNP	Output	KA1D

6 Port P/R position

(TVG1B: ø8) * Multiple selection is not possible

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
U	U side	
D	D side	
в	U, D both sides	

*1: Fittings of port P/R are for the same direction as those of port A/B.

*2: A port P filter is integrated.

2 Exhaust method

Blank	(port R is a push-in fitting)	
X (Silencer integrated (port R is a plug, exhaust is released to atmosphere)	

* 6 A silencer is built into the unit at the position selected with port P/R position.

9 Electric circuit specifications * Multiple selection is not possible.

Blank	Blank With surge suppressor and indicator lamp	
E1	Low dust generation/energy saving circuit (surgeless specifications)	
E2	Surgeless	

*1:E1 is not compatible with PNP specifications.

TVG1B Series How to order (manifold base only for remote I/O connection)

• Refer to Remote I/O RT Series (Catalog No.CC-1557A) for the RT Series (remote I/O).

8 Pilot operated				
Blank	Internal pilot			
к	External pilot			

Dort A/B filter

-		
Blank	None	
F	Port A/B filter built in	



TVG2B Series

How to order



2 Port size (port A/B)

3 Voltage 3 24 VDC

5 Station No. 02 2 stations

> to 16 16 stations

*1: All the wiring inside the base is for double solenoid regardless of the type of valve mounted. The part with the single solenoid mounted will generate an empty number for one

to

solenoid.

• Meti	Metric fitting			
04CS	ø4 pus	ø4 push-in fitting		
06CS	ø6 pus	6 push-in fitting		
08CS	ø8 pus	ø8 push-in fitting		
06CU	L-type	ø6 push-in fitting		
08CU	upwaru *1	ø8 push-in fitting		
06CD	L-type	ø6 push-in fitting		
08CD	downward	ø8 push-in fitting		

D side

Inch fitting

B Side piping

	inen namg				
	06LS	ø1/4" p	ø1/4" push-in fitting		
	08LS	ø5/16"	push-in fitting		
2	06LU	L-type	ø1/4" push-in fitting		
2	08LU	upwaiu *1	ø5/16" push-in fitting		

*1: 3-position is not available for push-in fitting L-type upward. *2: Special-order product.

4 Electrical connections

Descriptions	Output	No. of points	Code
Interface for DT Series	NPN	32	KA1C
Interface for RT Series	PNP	output	KA1D

6 Port P/R position

(10020.010)		
* Multiple selection is not possible.		
U	U side	
D	D side	
в	U, D both sides	

*1: Fittings of port P/R are for the same direction as those of

port A/B. *2: A port P filter is integrated.

2 Exhaust method

Blank	Common exhaust (port R is a push-in fitting)	
x	Silencer integrated (port R is a plug, exhaust is released to atmosphere)	

*1: 6 A silencer is built into the position selected with port P/R position.

9 Electric circuit specifications * Multiple selection is not possible.

Blank	With surge suppressor and indicator lamp	
E1	Low dust generation/energy saving circuit	
F2	(surgeless specifications)	
	e al golo de	

*1: E1 is not compatible with PNP specifications.

How to order (manifold base only for remote I/O connection)

TVG2B Series

• Refer to Remote I/O RT Series (Catalog No.CC-1557A) for the RT Series (remote I/O).

8 Pilot operated		
Blank	Internal pilot	
к	External pilot	

10 Port A/B filter

Blank	None	
F	Port A/B filter built in	8



TVG1 Series



How to order





2 Piping direction		
	В	Side piping

4 Pilot operated

-	
Blank	Internal pilot
K	External pilot

6 Ozo	ne/Coolant proof
D1	01 1 1 10 11



65

<u>С</u>

Blank	Standard specifications	
A	Ozone/Coolant proof	
	(main valve fluorine specification)	
Selencid value mounting corows are included. The generation		

attached to the manifold base

• Refer to Remote I/O RT Series (Catalog No.CC-1557A) for the RT Series (remote I/O). · If an exhaust check valve is required, refer to page 49.



_						
A	Manual	ovorrido	Multiplo	coloction	is not nossi	blo

Multiple selection is not possible.		
Blank	Locking/Non-locking common with misoperation prevention cover	
M1	Non-locking with misoperation prevention cover	
M2	Locking/Non-locking common, tool operation type, Without cover	
М3	Non-locking, tool operation without cover	

Type of valve mounting screw		
Blank	Pan head machine screw with Phillips head/flathead	
J	Hexagon socket head cap screw	
*1: Valve mounting scrows are included. The gasket		

1: Valve mounting screws are included. The ga et is attached to the manifold base.



TVG1B Series

Air supply spacer/exhaust spacer





Discrete model No. • Air supply spacer



Port size					
Code	Bore size	Description			
04CS	ø4	ø4 push-in fitting			
06CS	ø6	ø6 push-in fitting			

OperationPort sizeCodeBore sizeDescription04CSØ4Ø4 push-in fitting06CSØ6Ø6 push-in fitting	• Exhaust spacer TVG1P - R - 04CS • Port size					
Code Bore size Description 04CS ø4 ø4 push-in fitting 06CS ø6 ø6 push-in fitting	1 Port size					
04CS Ø4 Ø4 push-in fitting	Code Bore size Description					
06CS Ø6 Ø6 push-in fitting	04CS	ø4	ø4 push-in fitting			
	06CS Ø6 Ø6 push-in fitting					

Precautions for model No. selection

*1: Specify the positions and quantity of spacers for manifold in the manifold specifications sheet (Pages 113 to 116).

*2: Stacking of spacers is not possible.

10.2

*3: A spacer cannot be combined with a blanking plate.

*4: A spacer mounting screw and gasket are included.

Air supply spacer/exhaust spacer







POIL SIZE				
Bore size	Description			
ø6	ø6 push-in fitting			
ø8	ø8 push-in fitting			
	Bore size Ø6 Ø8			

Dimensions

Air supply spacer/exhaust spacer









Dimensions

• Air supply spacer/exhaust spacer



T V G









TVG2B Series Air supply spacer/exhaust spacer

Specifications

Exhaust spacer

TVG2P-R-

Air supply spacer		
Model No.	Weight g	
TVG2P-P-	56	
Exhaust spacer		
Model No.	Weight g	
TVG2P-R-	56	
	50	

Port size Port size				
Code	Bore size	Description		
06CS	ø6	ø6 push-in fitting		
08CS ø8 ø8 push-in fitting				
Broccutions for model No. selection				

06CS

*1: Specify the positions and quantity of spacers for manifold in the manifold specifications sheet (Pages 113 to 116).

*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.











TVG1B Series

Spacer pilot check valve



JIS symbol



Note: Using a cylinder with a large bore size (more than ø50 as a guide) with little exhaust restriction (eg, no speed controller, no silencer) may lead to a decrease in intermediate stop accuracy and stopping error. Please be careful.













Specifications

Max. working pressure

Ambient temperature

Minimum working pressure

Working fluid temperature

Discrete model No.

Code

Μ

M1

TVG1)P-PC-(M

valve

1 Residual pressure exhaust function

Locking manual override

Blank No residual pressure exhaust function

Precautions for model No. selection

*4: A spacer cannot be combined with a blanking plate.

*5: A spacer mounting screw and gasket are included.

selection in manifold specifications sheet.

*3: Stacking of spacers is not possible.

• TVG2

Description

*1: Specify the spacer mounting position and residual pressure exhaust function

*2: Spacer pilot check valve is not available when the fitting for port A/B is elbow.

Manual override of non-locking

Model No. Pilot check

Working fluid

Proof pressure

Atmosphere

Weight

Item

TVG1P-PC-

34

Residual pressure exhaust function

MPa

MPa

MPa

°C

°C

TVG2P-PC-[

73

Compressed air

0.7

0.2

1.05

-5 to 55 (no freezing)

5 to 55

Cannot be used in corrosive gas

environment.







Dimensions







Spacer regulator







Specifications

Discrete model No.

Model No. Spacer

TVG1)P-SR-(P)

1 Pressure reduction

B Port B regulator

specification

Code

Р

Α

Regulator

Description

Port P regulator

Port A regulator

Item		TVG1P-SR-
Pressure reduction port		P/A/B
Working fluid		Compressed air
Max. working pressure	MPa	0.7
Minimum 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	48

G0

G0



Precautions for model No. selection

*1: Specify the spacer positions in the manifold specifications sheet.

*2: Spacer regulator is not available when the fitting for port A/B is elbow.

*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.





<u>الم</u>



70

TVG1M Series

T V G



TVG2M for remote I/O connection

Dimensions



Part No.	Part name			
1	Valve interface			
2	Blanking plate			
3	Valve block			
4	Single solenoid valve			
5	Intermediate supply and			
J				

⁵ exhaust block
6 End block

* Tie rods (2 pcs.) for connecting the valve interface and RT Series are attached.

TVG2M series Dimensions (for remote I/O connection)

Part No.	Part name		
1	Valve interface		
2 Blanking plate			
3	3 Valve block		
4	4 Single solenoid valve		
5	Intermediate supply and		
5	exhaust block		
6 End block			
* Tie rods (2 pcs.) for connecting			

* Tie rods (2 pcs.) for connecting the valve interface and RT Series are attached.



TVG1M Series







CKD

ø5/32 inch (04LG)



●ø1/8" (03LF)



●ø5/32" (04LF)

TVG1M Series

Dimensions

TVG

TVG2M Series



75







●ø5/16" (08LG)



●ø1/4" (06LF)





TVG1M/TVG2M Series



	Valve interface (supply and exhaust air)					
	10 mm width	TVG1P-T B-08CS				
	15 mm width	TVG2P - T B - 10CS				
	(Valve wi	dth) 1 Model 2 Piping No. direction 3 Port size				
	 Included The nut for fixing the tie rod is built into the valve int Two tie rods to connect the valve interface and RT \$ 					
	8 Por	•: Standard compliance				
	Metric fitt	ting				
	08CS	ø8 push-in fitting				
	10CS	ø10 push-in fitting				
	08CU	ø8 push-in fitting L-type upward				
	10CU	ø10 push-in fitting L-type upward				
	08CD	ø8 push-in fitting L-type downward				
	10CD	ø10 push-in fitting L-type downward				
*1	Inch fittin	a				
	08LS	ø5/16" push-in fitting				
	10LS	ø3/8" push-in fitting				
	08LU	ø5/16 push-in fitting L-type upward				
	10LU	ø3/8 push-in fitting L-type upward				
*3	Port P: Ir	ich fitting, port R: Metric fitting				
	08XS	Port P: ø5/16" push-in fitting				
	Port R: ø8 push-in fitting					
	10XS	Port P: Ø3/8" push-in fitting				
		Port P: ø5/16" push-in fitting L-type upward				
	08XU	Port R: ø8 push-in fitting L-type upward				
	10XU	Port P: ø3/8" push-in fitting L-type upward Port R: ø10 push-in fitting L-type upward				
	Plug	<u> </u>				
	00XX	Port P, R plug				
	*1: Select	08XS, 10XS, 08XU or 10XU when using a silencer w				
	specific *2:	ations. Port R and PR (for KZ) are metric fittings. operated K, KZ and 00XX cannot be selected together. be selected together with exhaust method X.				

How to order



77

Ъ.

TVG1P/TVG2P Series How to order (valve interface (supply and exhaust))



rface. eries are included.





4 Exhaust method

-	
Blank	Common exhaust (port R is a push-in fitting)
x	Exhaust is released to atmosphere, with built-in silencer (Port R is sealed.)
l: ③ X is n	not available for port size "00XX".

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

5 Pilot operated

Blank Internal pilot		Internal pilot	
*1,*2	K	External pilot	
*1,*2 KZ External pilot (PA/PR separated		External pilot (PA/PR separated)	
*1. Connet be calested for part size "OOVV" and			

1: **③**Cannot be ted for port size "00XX" and *2: When the external pilot port is ø6 push-in fitting

or **L*, it is ø5/32" fitting.

6 Electrical connections

* PNP specifications are Special-order product.

Description		Code
Valva interface	NPN	KA1C
	PNP	KA1D

• TVG1P-TB-08CS-K



• TVG2P-TB-10CS-K



● TVG1P-TB-08CS-XK



• TVG2P-TB-10CS-XK



TVG



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



Product introduction

- Series variation
- Ordering meth Specifications
- How to order
- Manifold with Manifold bas
- Discrete sole Option
- Air supply spa Spacer pilot
- Dimension dia
- Internal structure

Block configuration Related Components Manifold and wiring Technical data

- 1 Pneumatic sys
- 2Notes on wirin
- ③Check valve
- ④How to expand ASafety precaution

TVG

Specifications for rechargeable battery manufacturing process

CONTENTS	
on	Intro
	1
nod	5
	7
solenoid valve	81
e only	85
enoid valve	87
acer/exhaust spacer	89
check valve	91
ıgram	23
ure, material	31
ns	33
(silencer, blanking plate kit, exhaust check valve, etc.	.) 49
g specifications sheet	103
atom aplantian quida	105
a	120
'ð	147
d reduced wiring manifold	142
ons	143



TVG1M Series



Port P/R position Multiple selection is not possible Blank Double w U side D D side В U side, D side With U side, D side, intermediate supply т

*1: Port P/R fittings are fittings of the same direction as port A/B.

and exhaust block

*2: Specify the specifications of the intermediate supply and exhaust block in the manifold specifications sheet

*3: The atmosphere release (internal silencer) type does not support P4 specifications.

1 Electric circuit specifications

ultiple selection is not possible.	
Blank	With surge suppressor and indi-
	cator lamp
E1	Low exoergic/energy circuit
	(surgeless specifications)
E2	Surgeless

*1: E1 is not compatible with PNP specifications.

¹³ With/Without spacer

With spacer

(Type and location are specified

in the MF specifications sheet)

*1: Specify the spacer type and mounting position

in manifold specifications sheet. Stacking of

spacers is not possible. Combination with the

blanking plate is not supported. The spacer

regulator does not support P4 specifications.

Blank Without spacer

z

Locking/Nor M2 common, to without cove Non-locking M3 operation, v eck valve

🕑 Exh	aust ch
Blank	None

With exha н valve

specifications sheet.

Multiple selection is not possible.

S

will be generated.

CKD 81

TVG1M Series How to order (manifold with solenoid valve)

· If an exhaust check valve is required, refer to page 49.

8 Wiring method inside the base

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

9 Pilot operated	
Blank	Internal pilot
K	External pilot

1 Manual override

l-locking h misoperation over	
ı, with n prevention	
n-locking ol operation, er	
ı, tool vithout cover	

aust check	

*1: OSolenoid positions "3" and "5" cannot be selected. Refer to page 147 for details on the type with exhaust check valve. Specify the number of stations to install in the manifold

Ozone/Coolant proof

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

Port A/B filter





TVG2M Series



Port P/R position Multiple selection is not possible



8 Wiring method inside the base

- Blank Double w Single sol S layout spe
- will be generated.

*1: Port P/R fittings are fittings of the same

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

1 Electric circuit specifications

ultiple selection is not possible.	
Blank	With surge suppressor a
	indicator lamp
E1	Low exoergic/energy cire
	(surgeless specifications
E2	Surgeless

1 Manual override Multiple selection is not possible. Locking/Non Blank common/with prevention co Non-locking w M1 prevention co Locking/Nor M2 common, too without cove Non-lockin

M3

y with/without spacer	
Blank	Without spacer
	With spacer
Z	(Type and location are specified
	in the MF specifications sheet)

P4 specifications.

Port A/B filter

Blank



*1: A filter is built into port P.

direction as port A/B.

- specifications sheet

ink	With surge suppressor and
	indicator lamp
1	Low exoergic/energy circu
	(surgeless specifications)
2	Surgeless

13 Type of valve mounting screw

Phillips head/flathead

Spacer: J cannot be selected when Z is selected.

Pan head machine screw with

Hexagon socket head cap screw

83

TVG2M Series How to order (manifold with solenoid valve)

· If an exhaust check valve is required, refer to page 49.

iring
enoid, Double solenoid
ecification

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

9 Pilot operated		
Blank	Internal pilot	
K	External pilot	

Locking/Non-locking common/with misoperation prevention cover	
Non-locking with misoperation prevention cover	
Locking/Non-locking common, tool operation without cover	
Non-locking, tool operation without cover	

With/Without spacer

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

Ozone/Coolant proof

-	•
Blank	Standard specifications
	Ozone/Coolant proof (main valve
A	fluorine specification)

Exhaust check valve



*1: (Solenoid positions "3" and "5" cannot be selected. Refer to page 147 for details on the type with exhaust check valve. Specify the number of stations to install in the manifold specifications sheet





TVG1B Series



U	U side	
D	D side	
в	U, D both sides	

P4

Port B

*1: Fittings of port P/R are for the same direction as those of port A/B.

Pilot operated

Blank	Internal pilot	
к	External pilot	A REAL O OF

8 Electric circuit specifications * Multiple selection is not possible

Blank	With surge suppressor and indicator lamp
E1	Low exoergic/energy circuit (surgeless specifications)
E2	Surgeless
1: E1 is not compatible with PNP specifications.	

9 Port A/B filter



*1: A filter is built into port P.

How to order





3 Voltage 3 24 VDC

4 Electrical connections

* PNP specifications are Special-order product.

Reduced wiring connection

_			
Common terminal block	NPN	EA1A	
(M3 thread)	PNP	EA1B	0

Serial transmission

Commu prot	nication ocol	Output	No. of points	Code		
DeviceNie		NPN		JA1C		
Deviceine	÷[PNP		JA1D		
		NPN		JA2C		
CC-LINK		PNP		JA2D		
		NPN		JA3C		
EtherCAT		PNP		JA3D		
		NPN		JA4C		
Ethernet/	IP	PNP		JA4D		
		NPN		JA5C		
	EF Basic	PNP		JA5D		
		NPN	32	JA6C		
PROFINE	- 1	PNP	output	JA6D		
	Link IE Field		output	JA7C		
	EFIEID	PNP		JA7D		
		NPN		JA8C		
CC-LINK IE TSN		PNP		JA8D		
	Class	NPN		JA9C		
IO-Link	ClassA	ClassA	PNP		JA9D	
	Class	NPN		JA9G		
	ClassB	PNP		JA9H		
		NPN		JB1C		
IO-LINK WIREless		PNP		JB1D		

CC-LINK

EtherCAT

EtherNet/IP

PROFINET

CC-Link IEF Basic

CC-Link IE Field

CC-Link IE TSN

IO-Link Wireless

IO-Link

ClassA

ClassB

PNP

NPN

PNP

32

point

output

JA2D

JA3C

JA3D

JA4C

JA4D

JA5C

JA5D

JA6C

JA6D

JA7C

JA7D

JA8C

JA8D

JA9C

JA9D

JA9G

JA9H

JB1C

JB1D

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

5 Station No.

-	
02	2 stations
to	to
16	16 stations
1. All the wiring incide the base is far double colonaid regardless	

: All the wiring inside the base is for double of the type of valve mounted. The part with the single solenoid mounted will generate an empty number for one solenoid.

6 Port P/R position (TVG2Bø10)

* Multiple selection is not possible.

U	U side	
D	D side	
в	U, D both sides	

*1: Fittings of port P/R are for the same direction as those of port A/B. *2: A filter is built into port P.

Pilot operated

Blank	Internal pilot	
к	External pilot	A CONTRACTOR

8 Electric circuit specifications * Multiple selection is not possible

iniaiapie e	
Blank	With surge suppressor and indicator lamp
E1	Low exoergic/energy circuit (surgeless specifications)
E2	Surgeless

*1: E1 is not compatible with PNP specifications.

Port A/B filter

Blank	None	
F	Port A/B filter built in	

*1: A filter is built into port P.

CKD

TVG1 Series



How to order Discrete solenoid valve (for base mounting) 15 mm width (Valve width) M o d e I No. 1 Solenoid 3 Port size

position



2 Piping direction	
В	Side piping

4 Pilot operated

-	•
Blank	Internal pilot
K	External pilot

6	Dzo	ne/Coolant proof
DI	and a	Other devidence of the stress





3 Port size

00XX Discrete solenoid valve for base mounting

5	Manual	override	* Multiple	selection	is not possib	ole
---	--------	----------	------------	-----------	---------------	-----

Blank	Locking/Non-locking common/with 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	

Type of valve mounting screw		
Blank	Pan head machine screw with plus/minus	
J	Hexagon socket head cap screw	

*1: Valve mounting screws are included. The gasket is attached to the manifold base.

TVG -P4



TVG1 Series

Air supply spacer/exhaust spacer





Air supply spacer	
Medel Ne	
woder No.	Weight g
TVG1P-P-	33
Exhaust spacer	
Model No.	Weight g
TVG1P-R-	33
Exhaust spacer Model No. TVG1P-R-	Weight 33



Precautions for model No. selection

*1: Specify the positions and quantity of spacers for manifold in the manifold specifications sheet (Pages 117 to 124).

*2: Stacking of spacers is not possible.

*3: A spacer cannot be combined with a blanking plate.

(15.8)

 \bigcirc

Air supply spacer/exhaust spacer







Code	Bore size	Description
06CS	ø6	ø6 push-in fitting
08CS	ø8	ø8 push-in fitting

Dimensions

Air supply spacer/exhaust spacer









Dimensions

Air supply spacer/exhaust spacer



 \bigcirc

103.5



TVG2 Series Air supply spacer/exhaust spacer

Specifications

Air supply spacer	
Model No.	Weight g
TVG2P-P-	66
Exhaust spacer	
Model No.	Weight g
TVG2P-R-	66



Precautions for model No. selection

*1: Specify the positions and quantity of spacers for manifold in the manifold specifications sheet (Pages 117 to 124). *2: Stacking of spacers is not possible.

*3: A spacer cannot be combined with a blanking plate.









TVG1P/TVG2P Series

Spacer pilot check valve



۲ ۵

JIS symbol (R1)5 (P)1 (R2)3

Note: Using a cylinder with a large bore size (more than ø50 as a guide) with little exhaust restriction (eg, no speed controller, no silencer) may lead to a decrease in intermediate stop accuracy and stopping error. Please be careful.











90.5 (when manual cover opened

81.3



Specifications

ltem		TVG1P-PC-P4	TVG2P-PC-P4
Working fluid		Compressed air	
Max. working pressure MPa		0.7	
Minimum 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 enviror	in corrosive gas nment.
Weight g		34	73

Discrete model No.



Check valve

* Residual pressure release function is not available.

Precautions for model No. selection

*1: Specify the spacer positions in the manifold specifications sheet.

- *2: Spacer pilot check valve is not available when the fitting for port A/B is elbow.
- *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.









109.8 (when manual cover opened)



15 mm В TVG2P **10CS** width (Valve width) 1 Model 2 Piping direction 3 Port size No. **2** Piping direction B Side piping 1 Model No

В

08CS

TVG1P

How to order

10 mm

width

 Red D Comm block (N





*2: The external pilot port is a ø6 push-in fitting.

How to order

Serial transmission device unit



Included

• 2 OPP fixing bolts

1 drip-proof gasket





EtherCAT

CC-Link IE

TVG1P/TVG2P Series

How to order (Wiring supply and exhaust block/serial transmission device unit)

Wiring block (wiring and supply/exhaust blocks and wiring block)



4 Pilot operated

5 Electrical connections **5** Electrical connections

* PNP specifications are Special-order product.

uced	wiring	connection

escription	Code
on terminal	EA4
/I3 thread)	EAT

* Can be used with either NPN or PNP.

Included

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

Serial transmission

Communica	tion protocol	Output	No. of points	Code
DoviceNet		NPN		JA1C
Deviceine	÷L	PNP		JA1D
		NPN		JA2C
CC-LINK		PNP		JA2D
Lthor OAT		NPN		JA3C
EllerCAI		PNP		JA3D
EthorNot	סוי	NPN		JA4C
	IP	PNP		JA4D
		NPN		JA5C
	EF Dasic	PNP	32 points Output	JA5D
	·т	NPN		JA6C
	- 1	PNP		JA6D
		NPN		JA7C
	EFIEIO	PNP		JA7D
		NPN		JA8C
	EISN	PNP		JA8D
	Class	NPN		JA9C
		PNP		JA9D
IO-Link	Class	NPN		JA9G
	ClassB	PNP		JA9H
		NPN		JB1C
IO-LINK WIREless		PNP		JB1D

1 Serial transmission

Communica	tion protocol	Output	No. of points	Code		
DoviceNo	.+	NPN		2D		
Deviceive	WICEINEL			2D-P		
			NPN		2G	
CC-LINK		PNP		2G-P		
EthorCAT		NPN		2EC		
EllierCAI		PNP		2EC-P		
EthorNot/	ID	NPN		2EN		
Ellienvel/	IF	PNP		2EN-P		
		NPN		2EB		
CC-LINK I	EF Dasic	PNP		2EB-P		
	· -	NPN	32	2EP		
PROFINE	: 1	PNP	Output	2EP-P		
	Link IE Field			2EF		
CC-LINK I	E FIEIU	PNP		2EF-P		
		NPN		2TG		
CC-LINK I	EISN	PNP		2TG-P		
	Class	NPN		2KC-A		
	ClassA			2KC-PA		
		NPN		2KC-B		
		PNP		2KC-PB		
10.1.1.1.1.1		NPN		2WK		
	lieless	PNP		2WK-P		

*1: PNP specifications are Special-order products



TVG1P Series



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

3 Port size (port A/B)

Metric fitting

	ie intainig	
04CS	ø4 push-in fitting	
06CS	ø6 push-in fitting	
Single side plug specs	Port A	Port B
04CA	ø4 push-in fitting	Dlug
06CA	ø6 push-in fitting	Flug
04CF	Diug	ø4 push-in fitting
06CF	Flug	ø6 push-in fitting

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

5 Wiring method inside the base *1

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 type.

Electric circuit specifications

* Multiple selection is not possible.

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

*1: E1 is not compatible with PNP specifications.

4 Voltage 3 24 VDC

	6 Pilo	t operated			*1
	Blank	Internal pilot			
	K	External pilot			
į					

1: OSolenoid position "Z" cannot be selected.

Manual override Locking/Non-locking common, Blank nisoneration prev

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	
M3	Non-locking, tool operation, without cover	

*1: OSlenoid position "Z" cannot be selected.

1 Exhaust check valve

Blank 10 *1 н With exhaust check valve

*1:
Solenoid positions "3" and "5" cannot be selected. Refer to page 147 for details on the type with exhaust check valve.

Air flow path partition Refer to page 12 for data

	pu	90 12	101	dotallo.	
Blank	<u> </u>	No			

Віапк	NO
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

The right flow path is shut off with port A/B facing forward.

8 Common specifications



- *1: Multiple selection is not possible.
- *2: Select the same polarity as that of the wiring block.
- *3: PNP specifications are Special-order products.

How to order (valve block with solenoid valve)

TVG1P Series

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

*1: Osolenoid position "Z" cannot be selected.

Port A/B filter

*1

Blank	None	
F	Port A/B filter built in	8:



TVG2P Series



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

3 Port size (port A/B)

04CS ø4 push-in fitting 06CS ø6 push-in fitting 08CS ø8 push-in fitting 08CA ø4 push-in fitting 04CA ø4 push-in fitting 06CA ø6 push-in fitting 08CA ø8 push-in fitting 08CA ø8 push-in fitting 08CA ø6 push-in fitting 08CA ø8 push-in fitting 08CA ø8 push-in fitting 08CF Ø4 push-in fitting	• Metr	Metric fitting					
06CS ø6 push-in fitting 08CS ø8 push-in fitting order side plug specifications Port A Port B 04CA ø4 push-in fitting Plug 08CA ø8 push-in fitting Plug 08CA ø8 push-in fitting Ø4 push-in fitting 04CF Plug Ø4 push-in fitting 06CF Plug Ø4 push-in fitting 08CF Plug Ø4 push-in fitting	04CS	ø4 push-in fitting					
08CS ø8 push-in fitting Specifications Port A Port B 04CA ø4 push-in fitting Port B 06CA ø6 push-in fitting Plug 04CF ø8 push-in fitting Ø4 push-in fitting 04CF Plug Ø4 push-in fitting 06CF Plug Ø4 push-in fitting 08CF Plug Ø4 push-in fitting	06CS	ø6 push-in fitting					
Single side plug specificationsPort APort B04CAø4 push-in fitting06CAø6 push-in fittingPlug08CAø8 push-in fitting04CFPlug06CFPlugø6 push-in fitting08CFø8 push-in fitting	08CS	ø8 push-in fitting					
o4CA ø4 push-in fitting o6CA ø6 push-in fitting o8CA ø8 push-in fitting o4CF Plug o8CF ø8 push-in fitting	Single side plug	Port A	Port B				
04CA ø4 push-in fitting 06CA ø6 push-in fitting 08CA ø8 push-in fitting 04CF ø4 push-in fitting 06CF Plug 08CF ø8 push-in fitting	specifications	1 of the	1 of t B				
06CA ø6 push-in fitting Plug 08CA ø8 push-in fitting ø4 push-in fitting 04CF Plug ø6 push-in fitting 08CF ø8 push-in fitting ø8 push-in fitting	04CA	ø4 push-in fitting					
08CA ø8 push-in fitting 04CF ø4 push-in fitting 06CF Plug 08CF ø8 push-in fitting	06CA	ø6 push-in fitting	Plug				
04CFø4 push-in fitting06CFPlugø6 push-in fitting08CFø8 push-in fitting	08CA	ø8 push-in fitting					
06CF Plug ø6 push-in fitting 08CF ø8 push-in fitting	04CF		ø4 push-in fitting				
08CF ø8 push-in fitting	06CF	Plug	ø6 push-in fitting				
	08CF		ø8 push-in fitting				

*1: Radial push-in fittings upward are not compatible with 3-position.

*1

5 Wiring method inside the base

Blank	Double wiring
<u> </u>	Single solenoid
3	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 type.

7	Electric	circuit	specifications
---	----------	---------	----------------

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

*1: E1 is not compatible with PNP specifications.

4 Voltage 3 24 VDC

6 Pilo	t operated	*1
Blank	Internal pilot	
K	External pilot	

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

Manual override

Blank	Locking/Non-locking common/with misop- eration prevention cover	
M1	Non-locking, with misoperation prevention cover	
M2	Locking/Non-locking common, tool opera- tion, without cover	
M3	Non-locking, tool operation, without cover	

*1: OSlenoid position "Z" cannot be selected.

1 Type of valve mounting screw

Blank	Pan head machine screw with Phillips head/flathead	
J	Hexagon socket head cap screw	

B Port A/B filter



*1: A filter is built into port P.

8 Common specifications

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.

95

CKD

How to order (valve block with solenoid valve)

TVG2P Series

(Ozone/Coolant proof ***		
Γ	Blank	Standard specifications	
	А	Ozone/Coolant proof (main valve fluorine	

*1: OSolenoid position "Z" cannot be selected.

Exhaust check valve

	Blank	None	
1	н	With exhaust check valve	

*1: OSolenoid positions "3", "4", and "5" cannot be selected. Refer to page 147 for details on the type with exhaust check valve.

Air flow path partition Refer to page 44 for details.

Blank	No	
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	

The right flow path is shut off with port A/B facing forward.



TVG1P Series



· Tie rod is not included. Order separately. Refer to page 45 for details. The gasket between blocks is included.



3 Voltage 3 24 VDC

* Multiple selection is not possible.		
Bla	nk	With surge suppressor and indicator lamp
E	1	Low exoergic/energy circuit (surgeless specifications)
E2 Surgeless		

*1: E1 is not compatible with PNP specifications.

Port A/B filter



*1: A filter is built into port P.

	2 Port size (port A/B)				
	• Metr	ric fitting			
	04CS	ø4 push-in fitting			
	06CS	ø6 push-in fitting			
*1	Single side plug specs	Port A	Port B		
	04CA	ø4 push-in fitting	Dlug		
	06CA	ø6 push-in fitting	Fiug		
	04CF	Dlug	ø4 push-in fitting		
	06CF	Flug	ø6 push-in fitting		

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

*1

	4	Wiring	method	inside	the	base	
--	---	--------	--------	--------	-----	------	--

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 type.

6 Common specifications

Blank	nk NPN, plus common specifications PNP/minus common specifications
Р	PNP/minus common specifications

*1: Multiple selection is not possible.

*2: Select the same polarity as that of the wiring block. PNP specifications are Special-order product.

8 Air flow path partition

Refer to page 42 for details.

Blank	No
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



TVG2P

How to order

15 mm

Width

Valve block



06CS

В

- V



5 Electric circuit specifications

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

*1: E1 is not compatible with PNP specifications.

Port A/B filter



*1: A filter is built into port P.



· Tie rod is not included. Order separately. Refer to page 45 for details. The gasket between blocks is included.

	 Port size (port A/B) Metric fitting 			
	06CS	ø6 push-in fitting		
	08CS	ø8 push-in fitting		
*1	Single side plug specs	Port A	Port B	
	06CA	ø6 push-in fitting	Plug	
	08CA	ø8 push-in fitting	Flug	
	06CF	Plug	ø6 push-in fitting	
	08CF	Flug	ø8 push-in fitting	

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

4	Wiring	method	inside	the	base	*

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 type.

6 Common specifications

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. PNP specifications are Special-order product.

8 Air flow path partition

Refer to page 44 for details.

Blank	ik No	
Т	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		



TVG1P/TVG2P Series



•For intermediate supply and exhaust block **TVG1P-TR-Q** TVG2P-TR-Q •For valve block expansion TVG1P-TR-01 TVG2P-TR-01

*1: TVG1P is available in sets of 3 and TVG2P in sets of 2.

Regarding expansion of stations

• With 2 to 17 stations, the manifold can be expanded by 3 stations. Up to a total of 3 stations can be expanded with valve blocks and intermediate supply and exhaust blocks. When expanding 18 or more stations of manifolds, use a tie rod that matches the station No. after

• Fix the tie rod for station expansion/tie rod for intermediate supply and exhaust to the wiring block. If installed on the end block side, it may not be possible to assemble correctly.

How to order

End supply and exhaust block (U side) A hexagon socket head cap screw for tie rod tightening and the gasket between the block are included.





• TVG1P-EB-08CS-P4

• TVG1P-EB-08CS-KZ-P4







TVG

TVG1P/TVG2P Series How to order (end block)

		1 Mo	1 Model No.	
Por	t size	TVG1P	TVG2P	
ic fitt	ting			
CS	ø8 push-in fitting			
CS	S ø10 push-in fitting			
X	Port P, R plug			





TVG1P/TVG2P Series

How to order

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. This block cannot be adjacent to an end supply and exhaust block or wiring block. The electrical internal wiring and the P.R.PA.PR port connect with the adjacent blocks.



Port size		TVG1P	TVG2P
Metric fitting			
08CS	ø8 push-in fitting		
10CS	ø10 push-in fitting		

1 Model No.

Note: These blocks cannot be adjacent to each other. This block cannot be adjacent to an end supply and exhaust block or wiring and supply/exhaust block.

4 Pilot operated

Blank Internal pilot

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.

*1,*2

Manifold gasket: 1

Tie rod is not included. Order separately. Refer to page 99 for details. The gasket between blocks is included.

● TVG1P-QB-08CS-P4



• TVG1P-QB-08CS-KZ-P4



MEMO



