ELCO INDUSTRIAL AUTOMATION

MVTG Series valve terminals

Performance characteristics

- Configurable products to meet different configuration requirements
- It is equipped with a small-size, large-flow solenoid valve, and the flow rate of the solenoid valve can reach up to 773L/min
- Three types of valve terminal nodes are available for communication with a variety of protocols
- Reversible piston spool valves, up to 24 valve positions, can be fitted with multiple vacant valves to allow room for subsequent solenoid valve applications
- Quick couplings are available to meet the needs of different diameter tubing
- Two pressure zones are available to meet the needs of different pressure control at the same valve terminal
- The plug or pin can be used to pilot or external pilot in the valve terminal
- LED display for quick removal of obstacles

Configure the list

MVTG-001 14-002 CLK-003 I-004 Q6L-005 UL-006 4M4B2C2TC-007 12Q6-008 XS009

001	Valve terminal
MVT	MVT series

002	size
14	The valve width is 14mm

003	Valve terminal node
CLK	IO-Link slaves
CEN	Multi-bus protocol slaves
EEN	Multi-bus protocol with IO-Link master

004	Pilot method
I	Inner Pilot
E	External pilot: with straight push-in fitting 6mm

005	Air intake port
Q6	Straight push-in fitting 6mm
Q8	Straight push-in fitting 8mm
Q10	Straight push-in fitting 10mm
Q12	Straight push-in fitting 12mm
Q14	G1/4 screw thread
	Air intake position
B	Air intake at both ends
L	Left air intake
R	Right air intake
BK	Back air intake

006	Exhaust port
U	muffler
G14	G1/4 screw threadthread
	Exhaust position
B	Exhaust at both ends
L	Left side exhaust
R	Right side exhaust
BK	Back exhaust

007	Valve function
M	5/2-way valve, single solenoid, Mechanical spring return
B	5/2-way valve, double solenoid
E	5/3-way valve, Midposition exhausted
P	5/3-way valve, Midposition pressurised
C	5/3-way valve, Midposition closed
TC	2x 3/2-way valve, Normally closed, mechanical spring return
TO	2x 3/2-way valve, Normally open, mechanical spring return
TB	2x 3/2-way valve,1x normally open, 1x normally closed, mechanical spring return
N	Empty valve position

008	Working port
C	Blanking plug
Q4	Straight push-infitting 4mm
Q6	Straight push-infitting 6mm
Q8	Straight push-infitting 8mm
Q4C	Straight push-infitting 4mm, Blanking plug
Q6C	Straight push-infitting 6mm, Blanking plug
Q8C	Straight push-infitting 8mm, Blanking plug
	Working port position
—	Located on the front
BK	Located on the back

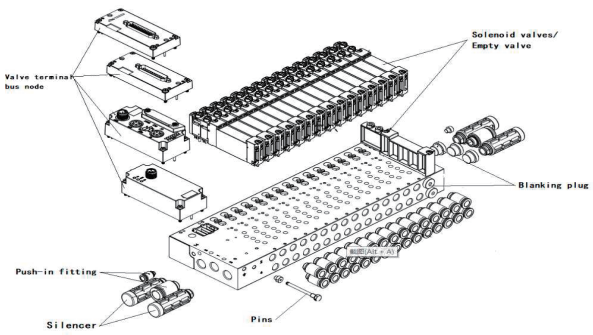
009	Pressure zone location
—	not
X	Create a pressure zone behind the X valve position
	Pressure zone
S	Air source 1 port with pressure partition
U	Air source 3 and 5 ports with pressure partition
G	Air source 1/3/5 ports are equipped with pressure zones

Note: Information that is not in the configuration list, please note or call the sales phone for consultation.

Key features

1.Valve terminal bus node:

Three types of valve terminal nodes are available: They are IO-Link valve terminal nodes, multi-protocol valve terminal nodes, and multi-protocol valve terminal nodes with IO-Link master, which can meet the requirements of various communication protocols.Among them, the multi-protocol valve terminal node and the multi-protocol valve terminal node with IO-Link master support three protocols: Profinet, CC-Link IE, and Ethernet/IP.

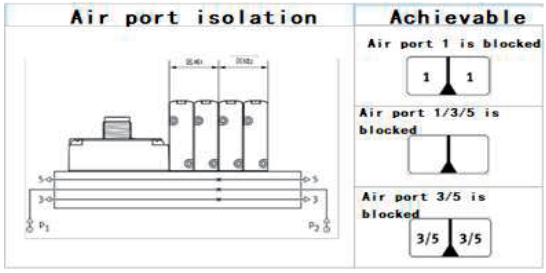


2.A variety of solenoid valves are available:

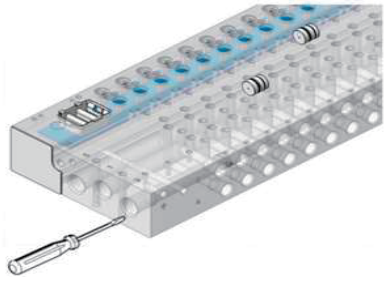
- 5/2-way valve, single solenoid,Mechanical spring return
- 5/2-way valve, double solenoid
- 2x 3/2-way valve, Normally closed,mechanical spring return
- 2x 3/2-way valve, Normally open,mechanical spring return
- 2x 3/2-way valve, 1x normally open,1x normally closed,mechanical spring return
- 5/3-way valve, Mid-position closed
- 5/3-way valve, Mid-position exhausted
- 5/3-way valve, Mid-position pressurised
- Empty valve position

3.Dual pressure partitions can be created

Pressure zones are available for air ports 1,3 and 5

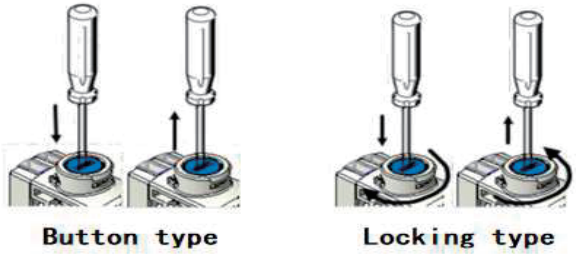


The Separator VTG-14-S provides pressure partition function
The Separator can be installed with a flathead screwdriver at the specified valve



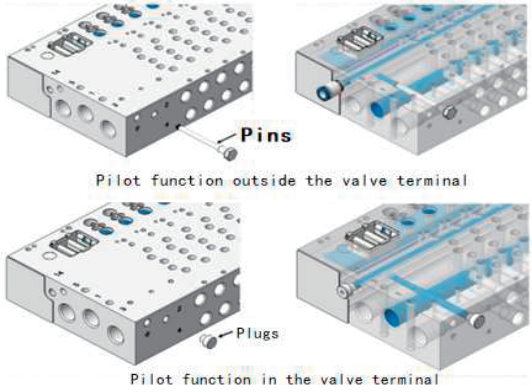
4.The on/off of the valve can be manually controlled, which isconvenient for valve terminal commissioning

- The pilot end of each solenoid valve is equipped with a blue hand adjustment ever, which allows the valve to be switched on and off by manually adjusting the hand adjustment lever, which is very useful during valve terminal commissioning.
- There are two ways to drive the manual adjustment lever: push-button type andlock-on type.
- Button type: press the hand adjustment lever with a flathead screwdriver, andthe pilot valve can be switched to drive the main valve; Release the handad-justment lever, the pilot valve is reset, and the main valve is reset (not applicable-to 5/2-way valve, double solenoid).
- Locking type: press the hand adjustment lever with a flathead screwdriver, andthen rotate 90° clockwise until the hand adjustment lever is locked and the main valve remains driven; The hand adjustment lever rotates 90° counterclock-wise until it stops, then releases the hand adjustment lever, the pilot valve resets, and the main valve resets (not applicable to 5/2-way valve, double solenoid).



5.The installation of pins and plugs can realize the external pilot and inner pilot functions of the valve terminal

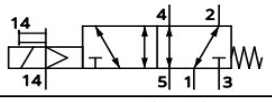
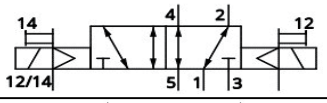
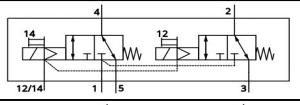
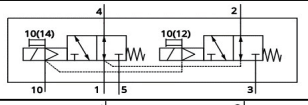
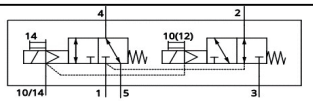
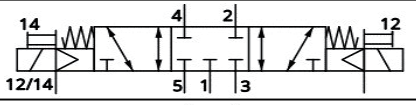
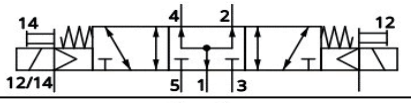
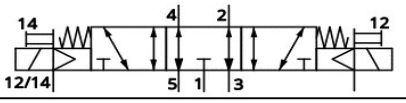
The valve terminal pilot and external pilot functions are optional, only need to install plugs or pins in the air path plate inside and outside pilot conversion holes.



Solenoid valve characteristics

Example sub-base valves
The valve width is 14mm
Air ports 1, 3 and 5 and working ports 2 and 4 are all connected with corresponding holes on the gas circuit plate

Solenoid valve function overview

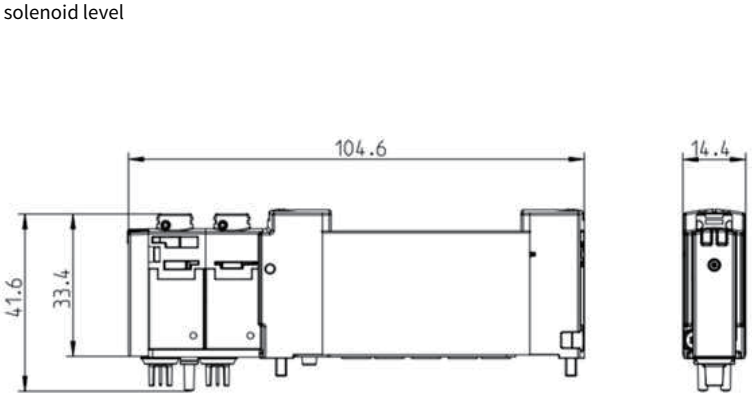
Valve type	Schematic	Valve description
M52-M		5/2-way valve, single solenoid, Mechanical spring return
B52		5/2-way valve, double solenoid
T32C-M		2x 3/2-way valve, Normally closed, mechanical spring return
T32O-M		2x 3/2-way valve, Normally open, mechanical spring return
T32B-M		2x 3/2-way valve, 1x normally open, 1x normally closed, mechanical spring return
P53C		5/3-way valve, Mid-position closed
P53P		5/3-way valve, Mid-position pressurised
P53E		5/3-way valve, Mid-position exhausted

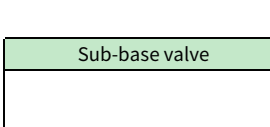
Datasheet

General technical data	M52- M	B52	T32	P53
Ambient temperature (°C)	-5~50			
storage temperature (°C)	-5~50			
Sealing principle	Soft			
Pilot air supply	External			
Type of actuation	Piloted,Electrical			
Manual override	Button type/Locking type			
Type of mounting	On manifold rail			
Mounting position	Any			
Signal status indication	LED			
Standard nominal flow rate (l/min)**	773	773	620	652
Switching time Open (ms)*	14	-	24	16.2
Switching time close (ms)*	45	-	38	52.3
Switching time reversal (ms)*	-	12	-	31.6
Operating pressure (Internal pilot air supply) (Mpa)	0.2~0.8	0.15~0.8	0.2~0.8	0.2~0.8
Operating pressure (External pilot air supply) (Mpa)	-0.09~0.8	-0.09~0.8	-0.09~0.8	-0.09~0.8
External pilot pressure (Mpa)	0.2~0.8	0.15~0.8	0.2~0.8	0.2~0.8
Product weight (g)	79	85	85	86
Vibration resistance rating	2 (EN60068-2-6)			
Impact resistance rating	2 (EN60068-2-27)			
Protection rating	IP65			
Operating voltage (V DC)	24±10%			
power (W)	0.95			
Sustainable electricity rate (%)	100			

Note:
*This time is the response time at the solenoid level
*Based on ISO 12238
**Based on ISO 6358-1

Dimensions

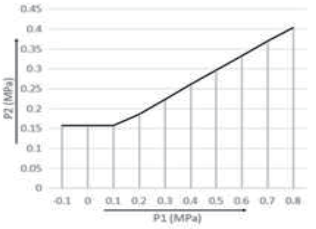


Sub-base valve	Description	Type
	5/2-way valve, double solenoid	VG-B14-B52-E-F-24
	5/2-way valve, single solenoid, Mechanical spring return	VG-B14-M52-ME-F-24
	5/3-way valve, Mid-position closed	VG-B14-P53C-ME-F-24
	5/3-way valve, Mid-position exhausted	VG-B14-P53E-ME-F-24
	5/3-way valve, Mid-position pressurised	VG-B14-P53P-ME-F-24
	2x 3/2-way valve, Normally closed, mechanical spring return	VG-B14-T32C-ME-F-24
	2x 3/2-way valve, 1x normally open, 1x normally closed, mechanical spring return	VG-B14-T32B-ME-F-24
	2x 3/2-way valve, Normally open, mechanical spring return	VG-B14-T32O-ME-F-24

Valve terminal characteristics

Datasheet

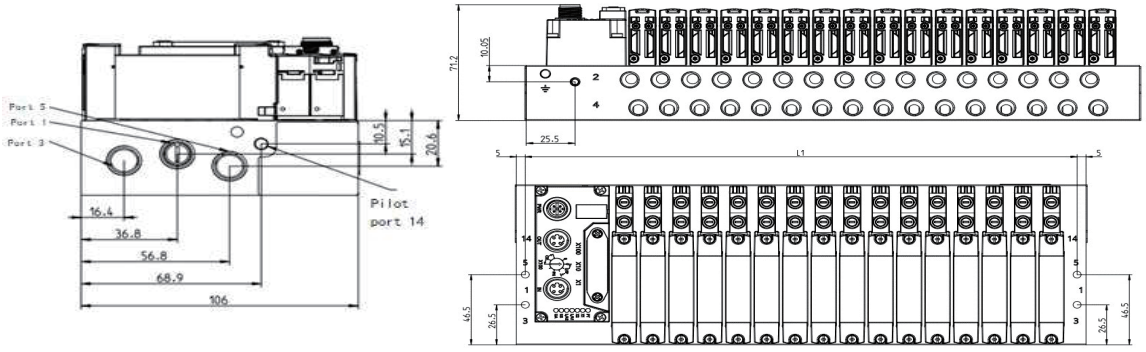
Operating voltage (V DC)	24±10%
Vibration resistance rating	2 (EN60068-2-6)
Impact resistance rating	2 (EN60068-2-27)
Protection rating	IP65



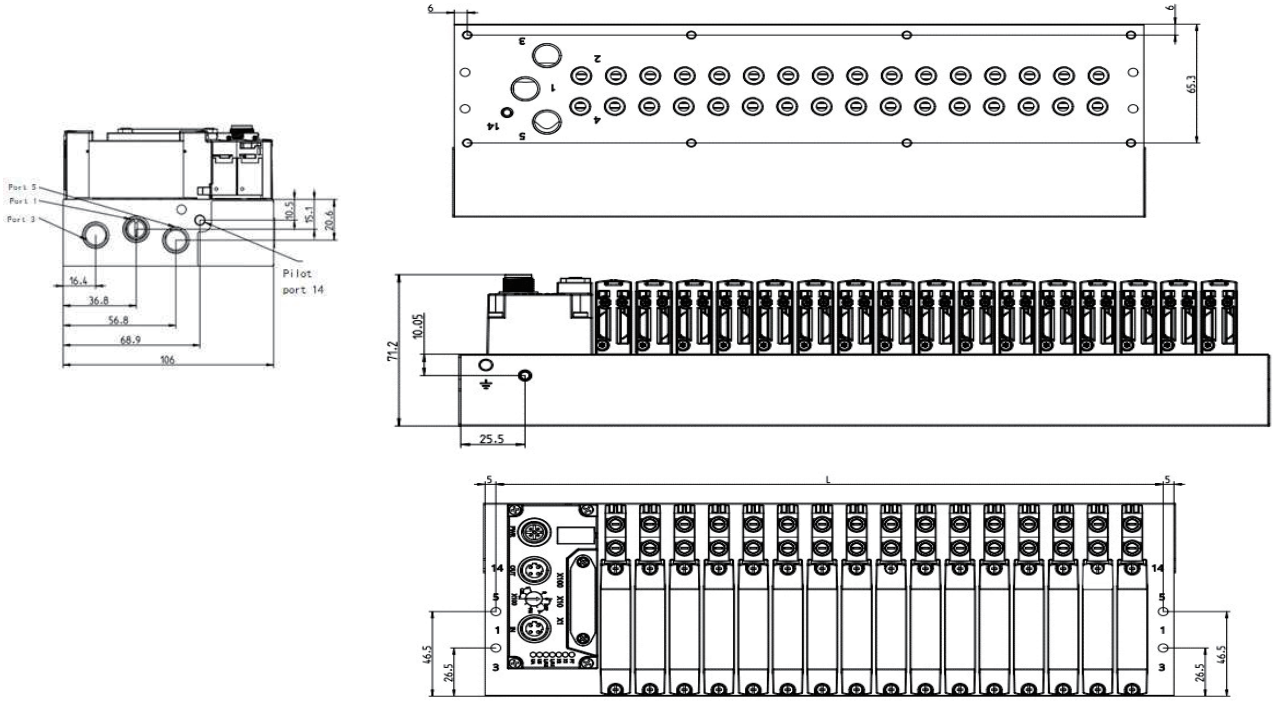
2x 3/2-way valve, mechanical spring return, The relationship between pilot pressure P2 and working pressure P1

Dimensions

1.Dimensions - side outlet valve terminals



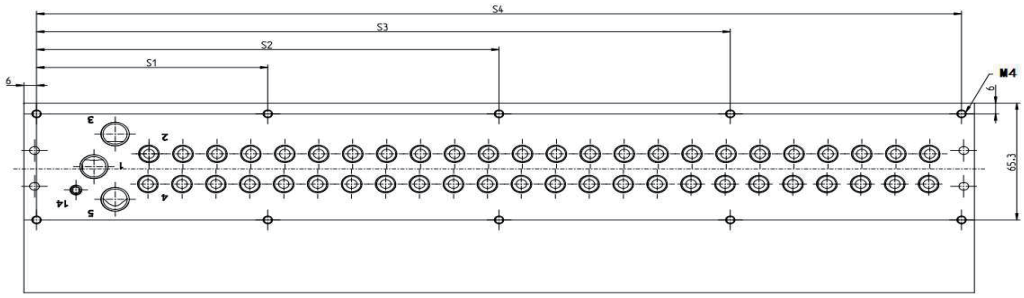
2.Dimensions - Rear outlet valve terminal



L1 dimensions for different valve numbers

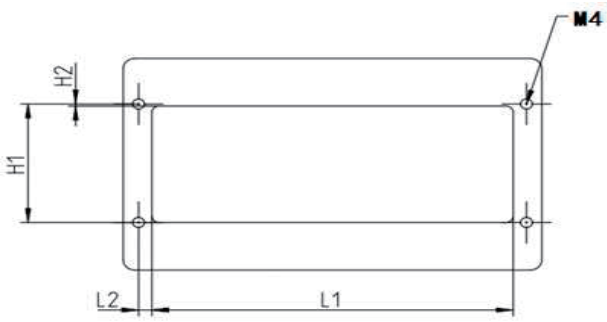
Valve number	L1 size (mm)
4	118
6	150
8	182
10	214
12	246
16	310
20	374
24	438

For the rear outlet valve terminal, the valve terminal mounting holes are as follows for control cabinet installation:

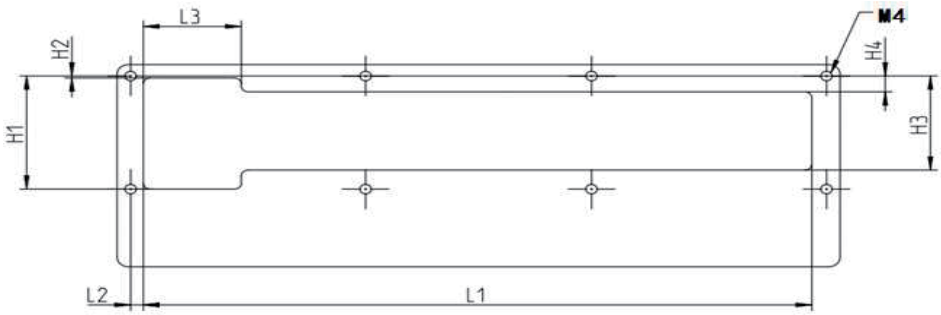


Type	Valve number	S1	S2	S3	S4
VG-L1-14BK-4	4	-	-	-	116
VG-L1-14BK-6	6	-	-	-	148
VG-L1-14BK-8	8	90	-	-	180
VG-L1-14BK-10	10	106	-	-	212
VG-L1-14BK-12	12	82	162	-	244
VG-L1-14BK-16	16	104	204	-	308
VG-L1-14BK-20	20	93	186	279	372
VG-L1-14BK-24	24	109	218	327	436

For the rear outlet valve terminal, the valve terminal control cabinet opening dimensions are as follows for control cabinet installation:



Suitable for valve terminals with less than 8 positions

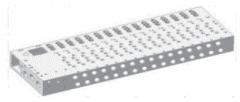


Suitable for valve terminals with 8 valve positions and above

Valve number	H1	H2	L1	L2	L3	H3	H4
4	59.4	1	104	5.5	-	-	-
6			136		-	-	-
8			168		43.5	49.4	8.2
10			200				
12			232				
16			296				
20			360				
24			424				

Accessories

1.Manifold rail

Manifold rail	Description	Type
	4 valve positions	VG-L1-14W-4
	6 valve positions	VG-L1-14W-6
	8 valve positions	VG-L1-14W-8
	10 valve positions	VG-L1-14W-10
	12 valve positions	VG-L1-14W-12
	16 valve positions	VG-L1-14W-16
	20 valve positions	VG-L1-14W-20
	24 valve positions	VG-L1-14W-24
	4 valve positions	VG-L1-14BK-4
	6 valve positions	VG-L1-14BK-6
	8 valve positions	VG-L1-14BK-8
	10 valve positions	VG-L1-14BK-10
	12 valve positions	VG-L1-14BK-12
	16 valve positions	VG-L1-14BK-16
	20 valve positions	VG-L1-14BK-20
	24 valve positions	VG-L1-14BK-24

2.Valve terminal bus node

IO-Link Valve terminal bus node			
It supports the IO-Link protocol, is directly connected to the IO-Link master, adopts the Class-B interface, and can be configured with up to 24 dual-control solenoid valves.		Type	MVT-C-LK
		Description	Class-B
		Protocol	IO-Link
		Field bus, connection system	Class-B:1*M12,A-CODE,5pin,Male
		Max. address volume, inputs	6 Byte
		Max. address volume, outputs	6 Byte
		Max. no. of valve positions	24
		Intern power consumption (mA)	Less than 100 mA
		Operation temperature	-5°C-60°C
		protection class	IP67
Multiple protocols Valve terminal bus node			
It supports multiple buses and can be configured with up to 24 dual-control solenoid valves.		Type	MVT-C-EN
		Description	Supports multiple bus protocols
		Protocol	Profinet,CC-Link IE,Ethernet/IF
		Field bus, connection system	2*M12,D-CODE,4pin,Female
		Power supply, connection system	M12*1,L-CODE,5pin,Male
		Max. address volume, inputs	8 Byte
		Max. address volume, outputs	6 Byte
		Max. no. of valve positions	24
		Intern power consumption (mA)	Less than 200 mA
		Operation temperature	-5°C-60°C
		protection class	IP67
Multiple protocols Valve terminal bus node			
Supports multiple bus protocols with IO-Link master stations, and can be configured with a maximum of 24 double-controlled solenoid valves.		Type	MVT-E-EN
		Description	Supports multiple bus protocols, with IO-Link master (2*Class-A)
		Protocol	Profinet,CC-Link IE,Ethernet/IF
		Field bus, connection system	2* M12,D-CODE,4pin,Female
		Power supply, connection system	M12*1,L-CODE,5pin,Male
		IO-Link Expansion port	2*M12,A-CODE,5pin,Female
		Max. address volume, inputs	74 Byte

3.Other Accessories

Quick Connector	Description		Type
	M5 thread	Suitable for air tubes with a diameter of ϕ4mm.	FP-M5-Q4-P10
		Suitable for air tubes with a diameter of ϕ6mm.	FP-M5-Q6-P10
	G1/8 thread	Suitable for air tubes with a diameter of ϕ4mm.	FP-G18-Q4-P10
		Suitable for air tubes with a diameter of ϕ6mm.	FP-G18-Q6-P10
		Suitable for air tubes with a diameter of ϕ8mm.	FP-G18-Q8-P10
	G1/4 thread	Suitable for air tubes with a diameter of ϕ6mm.	FP-G14-Q6-P10
		Suitable for air tubes with a diameter of ϕ8mm.	FP-G14-Q8-P10
		Suitable for air tubes with a diameter of ϕ10mm.	FP-G14-Q10-P10
		Suitable for air tubes with a diameter of ϕ12mm.	FP-G14-Q12-P10
Empty valve position			
	Empty valve position, width of 14mm.		VG-B14
Silencer			
	G1/4 thread		FM-1/4
Separator			
	Specification 14		VTG-14-S
Metal Plug			
	G14 Metal Plug		FB-G14-P10
	G18 Metal Plug		FB-G18-P10
	M5 Metal Plug		FB-M5-P10
PU Tube			
 	Outer Diameter 4mm, Blue Color		PN- 4*0.75- BL- 100
	Outer Diameter 6mm, Blue Color		PN-6*1-BL-100
	Outer Diameter 8mm, Blue Color		PN-8*1.25-BL-100
	Outer Diameter 10mm, Blue Color		PN- 10*1.5- BL- 100
	Outer Diameter 12mm, Blue Color		PN- 12*2- BL- 100
	Outer Diameter 16mm, Blue Color		PN- 16*2.5- BL- 100
	Outer Diameter 4mm, Black Color		PN- 4*0.75- BK- 100
	Outer Diameter 6mm, Black Color		PN- 6*1- BK- 100
	Outer Diameter 8mm, Black Color		PN- 8*1.25- BK- 100
	Outer Diameter 10mm, Black Color		PN- 10*1.5- BK- 100
	Outer Diameter 12mm, Black Color		PN- 12*2- BK- 100
	Outer Diameter 16mm, Black Color		PN- 16*2.5- BK- 100
	Outer Diameter 4mm, Transparent Color		PN- 4*0.75- TT- 100
	Outer Diameter 6mm, Transparent Color		PN- 6*1- TT- 100
	Outer Diameter 8mm, Transparent Color		PN- 8*1.25- TT- 100
	Outer Diameter 10mm, Transparent Color		PN- 10*1.5- TT- 100
	Outer Diameter 12mm, Transparent Color		PN- 12*2- TT- 100
	Outer Diameter 16mm, Transparent Color		PN- 16*2.5- TT- 100
PA Tube			
	Outer Diameter 4mm, Black Color		PA- 4*0.75- BK- 100
	Outer Diameter 6mm, Black Color		PA- 6*1- BK- 100
	Outer Diameter 8mm, Black Color		PA- 8*1- BK- 100
	Outer Diameter 10mm, Black Color		PA- 10*1.25- BK- 100
	Outer Diameter 12mm, Black Color		PA- 12*1.5- BK- 100
	Outer Diameter 16mm, Black Color		PA- 16*1.5- BK- 100

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