

ISO Standard Solenoid Valve: Size 1, 2 Metal Seal/Rubber Seal Series VQ7-6/7-8

(Size 1)

(Size 2)

Conforms to ISO standard 5599/I
Interface conforms to ISO standard
Size 1 (VQ7-6) and Size 2 (VQ7-8).



VK

VZ

VF

VFR

VP4

VZS

VFS

VS4

VQ7

EVS

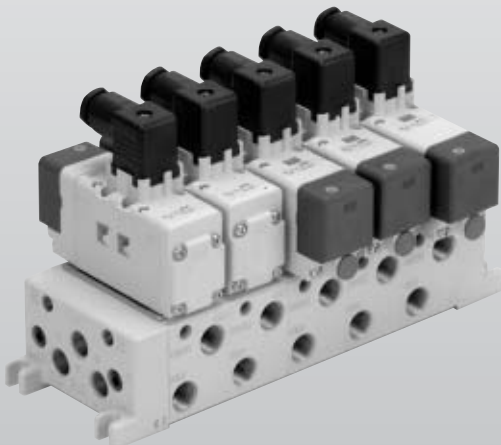
VFN

**Outstanding high speed response
and long service life**

**Enclosure IP65 compliant
Dusttight/Low jetproof type**



A wide variety of manifold options
Manifolds can be configured with a wide range of interface
options to meet a variety of application requirements.



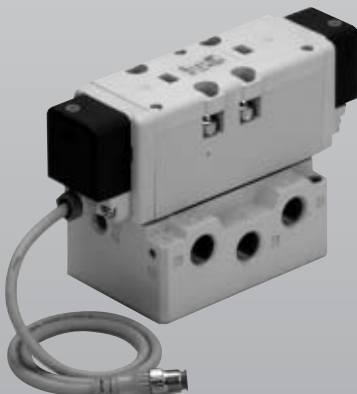
Lighter weight

Size 1 (3 position) 0.48 kg ...24% less (Compared with previous series)
Size 2 (3 position) 0.75 kg ...15% less

Space-saving profile

Installation space..... 13% reduction
Installation volume....10% reduction
(Compared with previous series)

**Choice of metal or rubber seal increases
compatibility with various operating and
environmental conditions.**



⚠ Precautions 1

Be sure to read before handling. For Safety Instructions and Solenoid Valve Precautions, refer to page 3-13-2.

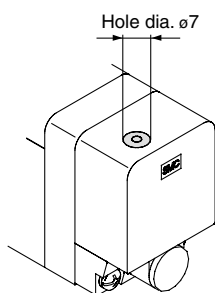
Manual Override Operation

⚠ Warning

Since connected equipment will be actuated when the manual override is operated, first confirm that conditions are safe.

Push type is standard. (Tool required)

Push type (Tool required)



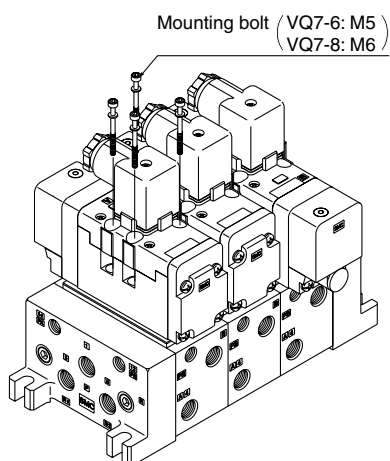
Push down on the manual override button with a small screwdriver until it stops.
Release the screwdriver and the manual override will return.

Mounting of Valves

⚠ Caution

After confirming the gasket is correctly placed under the valve, securely tighten the bolts with the proper torque shown in the table below.

Series	Proper tightening torque (N·m)
VQ7-6	2.3 to 3.7
VQ7-8	4.0 to 6.0



Installation and Removal of Pilot Valve Cover

⚠ Caution

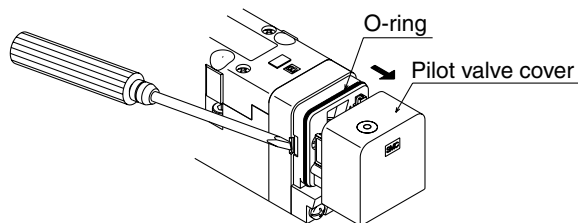
Installation and Removal of Pilot Valve cover

● Removal

To remove the pilot valve cover, spread the cover's hook outward about 1 mm with a flat head screw driver, and pull the cover straight off. If it is pulled off at an angle, the pilot valve may be damaged or the protective O-ring may be scratched.

● Installation

Put the cover back on straight without touching the pilot valve, and push it all the way until the cover's hook locks, without twisting the protective O-ring. (When pushed in, the hook opens and locks automatically.)

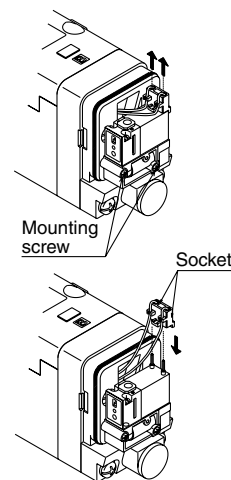


Replacement of Pilot Valves

⚠ Caution

● Removal

1. Remove the sockets which are installed on the pilot valve pins by pulling them straight upward.
2. Remove the pilot valve mounting screws with a small screwdriver.

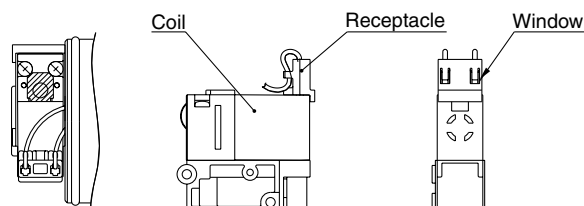


● Installation

1. After confirming installation of the gasket, securely tighten the mounting screws with the proper torque shown in the table below.
2. Put the sockets on straight and install them securely so that the receptacle housings touch the coil surface as shown in the drawing below.

If they are pushed in with excessive force, there is a danger of the sockets coming off of the receptacle housings. Confirm that the sockets do not protrude from the windows on the side of the receptacle housings.

Proper tightening torque (N·m)
0.08 to 0.12



⚠ Precautions 2

Be sure to read before handling. For Safety Instructions and Solenoid Valve Precautions, refer to page 3-13-2.

How to Wire DIN Terminal

⚠ Caution

ISO#: DIN 43650 A compatible

Connection

1. Loosen the top screw and remove the connector housing from the terminal spades on the solenoid.
2. Remove the housing screw and insert a screwdriver into the slot area on the underside of the DIN cap and carefully separate block and housing.
3. Loosen the terminal screws (slotted screws) on the terminal block, insert the core of the lead wire into the terminal in accordance with the prescribed connection method, and attach securely with the terminal screws.
4. Tighten the ground nut to secure the wire.

Change of electrical entry (Orientation)

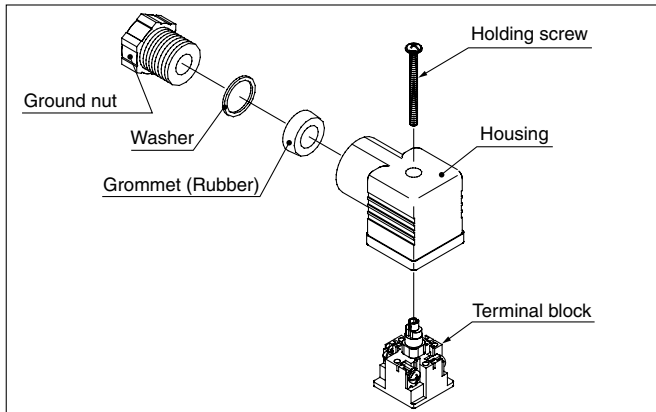
After separating terminal block and housing, the cord entry direction can be changed by attaching the housing in the desired direction (4 directions in 90° increments).

Precautions

Pull a connector out vertically, never at an angle.

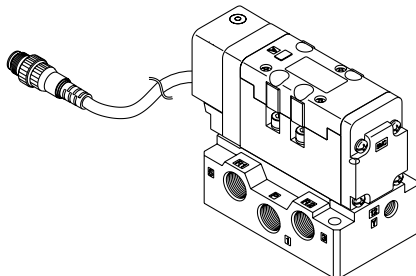
Applicable cable

O.D.: $\varnothing 8$ to $\varnothing 10$



Using a Pre-wired Connector

4 core wire round type connector (M12) conforming to NECA (Nippon Electric Control Equipment Industries Association) standard 4202

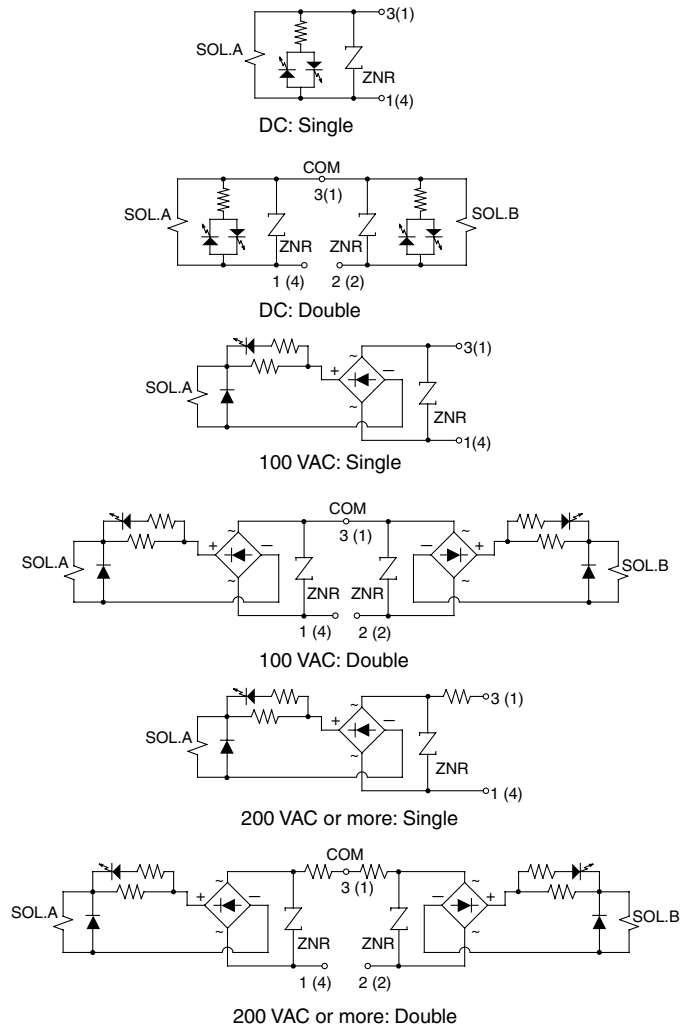


How to Calculate the Flow Rate

For obtaining the flow rate, refer to page 3-1-10.

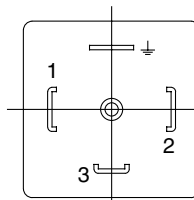
Internal Wiring Specifications

⚠ Caution



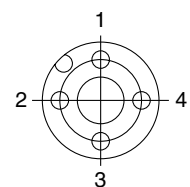
Terminal numbers in the circuits are for a DIN connector. Numbers inside () are pre-wired connector pin numbers.

DIN terminal wiring specifications



Terminal no.
1: A side SOL.
2: B side SOL.
3: COM terminal

Pre-wired connector wiring specifications



Pin no.
1: COM. pin
2: B side SOL.
3: Not in use
4: A side SOL.

VK

VZ

VF

VFR

VP4

VZS

VFS

VS4

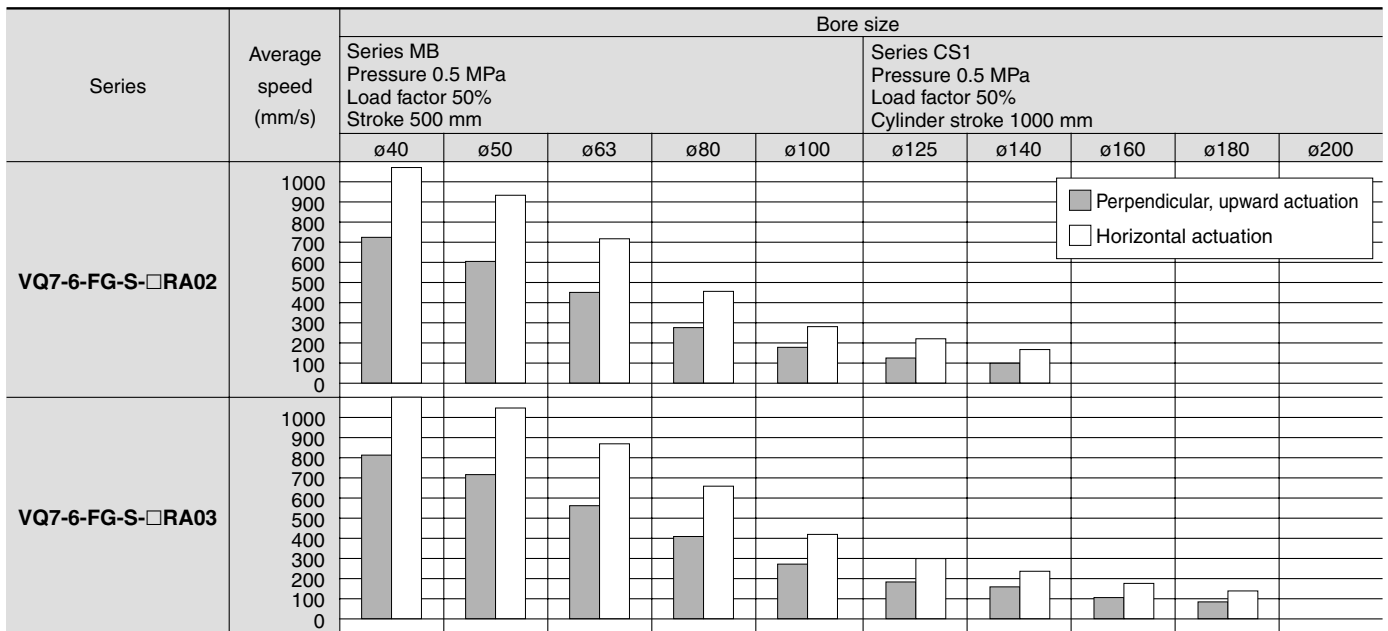
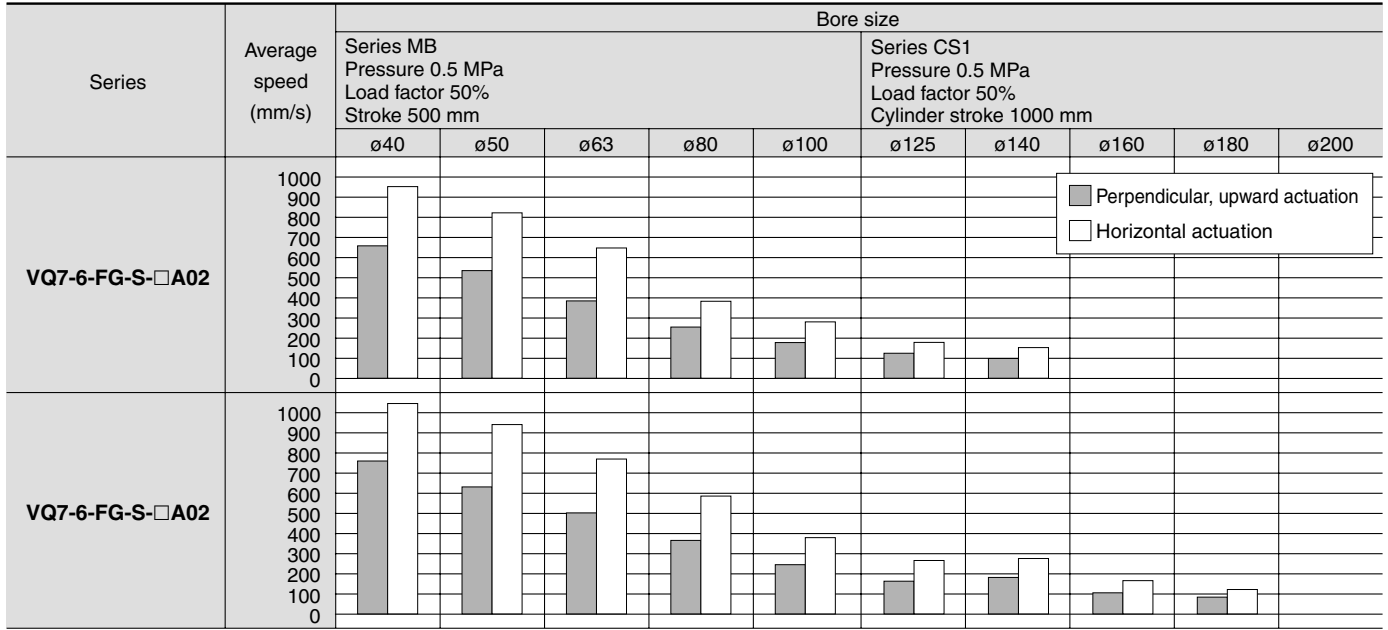
VQ7

EVS

VFN

Cylinder Speed Chart

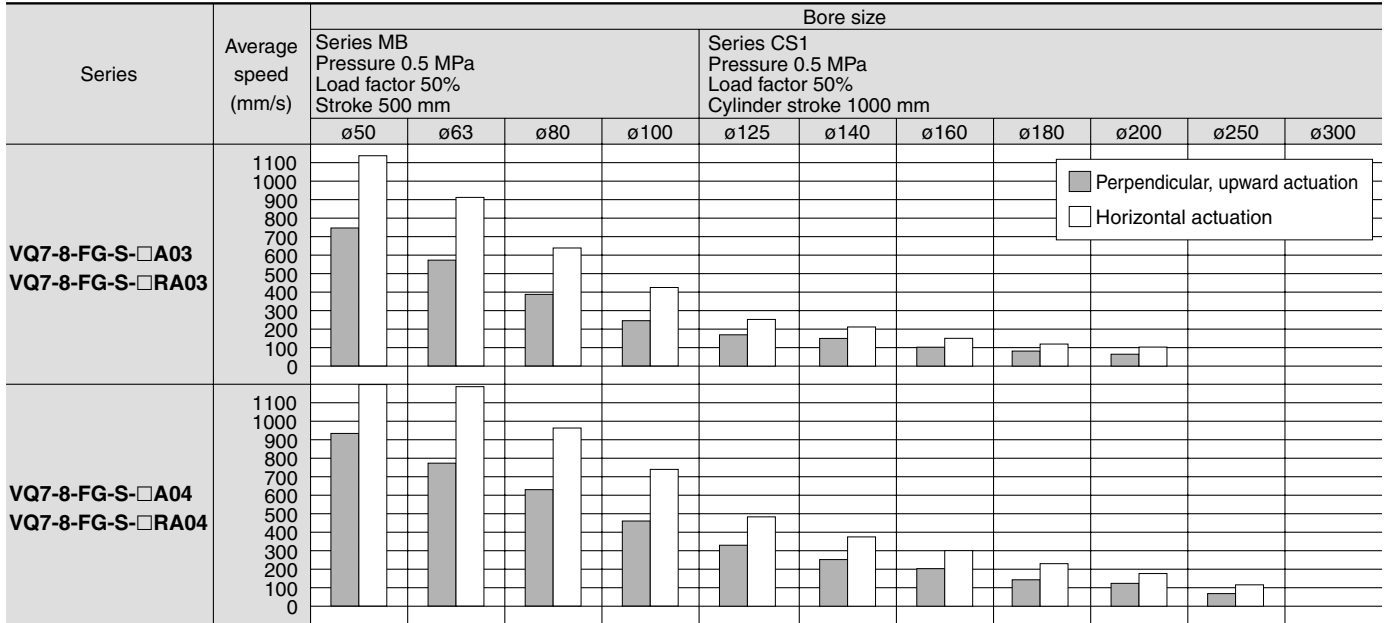
Use as a guide for selection.
Please confirm the actual conditions with SMC Sizing Program.



- * It is when the cylinder is extending that is meter-out controlled by speed controller which is directly connected with cylinder, and its needle valve with being fully open.
- * The average velocity of the cylinder is what the stroke is divided by the total stroke time.
- * Load factor: ((Load weight x 9.8)/Theoretical force) x 100%

Cylinder Speed Chart

Use as a guide for selection.
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- VK
- VZ
- VF
- VFR
- VP4
- VZS
- VFS
- VS4
- VQ7**
- EVS
- VFN



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- * The average velocity of the cylinder is what the stroke is divided by the total stroke time.
- * Load factor: ((Load weight x 9.8)/Theoretical force) x 100%

Conditions

	Base mounted	Series MB	Series CS1
VQ7-6-FG-S-□A02	SGP (Steel pipe) dia. x Length	6A x 1 m	
	Speed controller	AS4000-02	
	Silencer	AN200-02	
VQ7-6-FG-S-□A03	SGP (Steel pipe) dia. x Length	10A x 1 m	
	Speed controller	AS420-03	
	Silencer	AN300-03	
VQ7-6-FG-S-□RA02	SGP (Steel pipe) dia. x Length	6A x 1 m	
	Speed controller	AS4000-02	
	Silencer	AN200-02	
VQ7-6-FG-S-□RA03	SGP (Steel pipe) dia. x Length	10A x 1 m	
	Speed controller	AS420-03	
	Silencer	AN300-03	

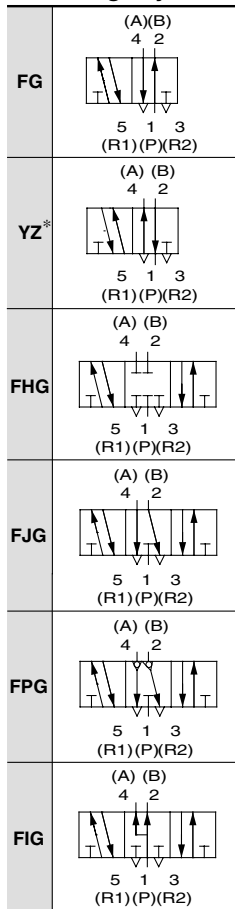
	Base mounted	Series MB	Series CS1
VQ7-8-FG-S-□A03	SGP (Steel pipe) dia. x Length	10A x 1 m	
	Speed controller	AS4000-03	
	Silencer	AN300-03	
VQ7-8-FG-S-□A04	SGP (Steel pipe) dia. x Length	15A x 1 m	
	Speed controller	AS420-04	
	Silencer	AN400-04	
VQ7-8-FG-S-□RA03	SGP (Steel pipe) dia. x Length	10A x 1 m	
	Speed controller	AS4000-03	
	Silencer	AN300-03	
VQ7-8-FG-S-□RA04	SGP (Steel pipe) dia. x Length	15A x 1 m	
	Speed controller	AS420-04	
	Silencer	AN400-04	

ISO Standard Solenoid Valve: Size 1 Metal Seal/Rubber Seal, Single Unit Series VQ7-6

How to Order Valves

VQ7-6-FG-S-3- - - - -

Passage symbol



* Option

Number of solenoids	
S	Single
D	Double

Connector

Nil	DIN terminal block (With connector)
O	DIN terminal block (Without connector)
SC	Pre-wired connector

Sub-plate port size

Nil	Without sub-plate
A02	Side ported Rc 1/4 *
A03	Side ported Rc 3/8
B02	Bottom ported Rc 1/4 *
B03	Bottom ported Rc 3/8

* Port R is Rc 3/8

Thread type

Nil	Rc
F	G
T	NPTF

Seal

Nil	Metal seal
R	Rubber seal

Option

Nil	None
Z	Light/Surge voltage suppressor
V	Individual pilot exhaust

* When two or more symbols are specified, indicate them alphabetically.

Coil rated

1	100 VAC
2	200 VAC
3	24 VDC
4	12 VDC
9	Other voltages

* For other voltages, please contact SMC separately.

How to Order Sub-plate

VS7-1-A02- -

Port size

A02	Side ported RC 1/4*
A03	Side ported Rc 3/8
B02	Bottom ported Rc 1/4*
B03	Bottom ported Rc 3/8

* Port 3(R2) and 5(R1) are Rc 3/8

Thread type

Nil	Rc
F	G
T	NPTF

Specifications

Model	Porting specifications			Weight (kg)
	Piping location	1(P), 2(B), 4(A) port size	3(R2), 5(R1) port size	
VS7-1-A02□	Side	1/4	3/8	0.37
VS7-1-A03□		3/8		
VS7-1-B02□	Bottom	1/4	3/8	
VS7-1-B03□		3/8		

ISO Standard Solenoid Valve: Size 1 Metal Seal/Rubber Seal Series VQ7-6

Model

Series	Number of positions		Model		Port size	Flow characteristics						(1) Response time (ms)	(2) Weight (kg)	
						1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)					
						C [dm ³ /(s·bar)]	b	Cv	C [dm ³ /(s·bar)]	b	Cv			
VQ7-6	2 position	Single	Metal seal	VQ7-6-FG-S-□	1/4	4.1	0.10	0.9	5.2	0.10	1.1	20 or less	0.40	
			Rubber seal	VQ7-6-FG-S-□R		5.0	0.13	1.1	6.0	0.11	1.4	25 or less		
		Double	Metal seal	VQ7-6-FG-D-□		4.1	0.10	0.9	5.2	0.10	1.1	12 or less		0.45
			Rubber seal	VQ7-6-FG-D-□R		5.0	0.13	1.1	6.0	0.11	1.4	15 or less		
	3 position	Closed center	Metal seal	VQ7-6-FHG-D-□		4.1	0.10	0.9	5.2	0.10	1.1	40 or less	0.48	
			Rubber seal	VQ7-6-FHG-D-□R		5.0	0.13	1.1	5.6	0.20	1.3	45 or less		
		Exhaust center	Metal seal	VQ7-6-FJG-D-□		4.1	0.10	0.9	5.2	0.10	1.1	40 or less	0.48	
			Rubber seal	VQ7-6-FJG-D-□R		4.8	0.16	1.1	6.0	0.17	1.4	45 or less		
		Double check	Metal seal	VQ7-6-FPG-D-□		1.4	—	—	3.1	—	—	50 or less	0.84	
				VQ7-6-FPG-D-□R		1.4	—	—	3.1	—	—	50 or less		
			Pressure center	Metal seal		VQ7-6-FIG-D-□	4.1	0.10	0.9	5.2	0.08	1.1	40 or less	0.48
				Rubber seal		VQ7-6-FIG-D-□R	5.6	0.15	1.2	5.9	0.08	1.3	45 or less	



Note 1) Based on JIS B 8375-1981 (Value for supply pressure of 0.5 MPa, with light/surge voltage suppressor, when using clean air.) Response time values will change depending on pressure and air quality.

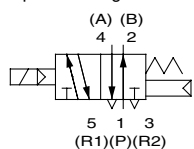
Value when ON for double type.

Note 2) Weight without sub-plate. (Sub-plate: 0.37 kg)

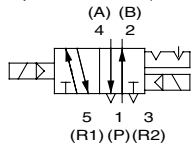


JIS Symbol

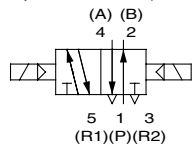
2 position single



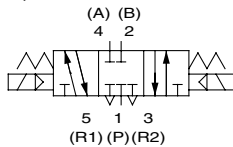
2 position double (Metal)



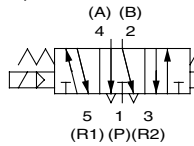
2 position double (Rubber)



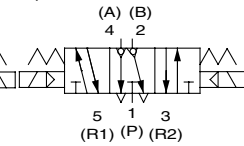
3 position closed center



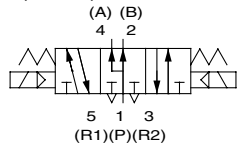
3 position exhaust center



3 position double check



3 position pressure center



Standard Specifications

Valve specifications	Valve construction		Metal seal	Rubber seal	
	Fluid	Air/Inert gas			
Maximum operating pressure	1.0 MPa				
Min. operating pressure	Single	0.15 MPa	0.20 MPa		
	Double	0.15 MPa	0.15 MPa		
	3 position	0.15 MPa	0.20 MPa		
Ambient and fluid temperature	-10 to 60°C ⁽¹⁾		-5 to 60°C ⁽¹⁾		
Lubrication	Not required				
Manual override	Push type (Tool required)				
Shock/Vibration resistance	150/30 m/s ² ⁽²⁾				
Enclosure	IP65 (Dusttight, Low jetproof)				
Solenoid specifications	Coil rated voltage	12 VDC, 24 VDC, 100 VAC, 110 VAC, 200 VAC, 220 VAC (50/60 Hz)			
	Allowable voltage fluctuation	±10% of rated voltage			
	Coil insulation type	Class B or equivalent			
	Power consumption (Current)	24 VDC	1 W DC (42 mA)		
		12 VDC	1 W DC (83 mA)		
		100 VAC	Inrush 1.2 VA (12 mA), Holding 1.2 VA (12 mA)		
		110 VAC	Inrush 1.3 VA (11.7 mA), Holding 1.3 VA (11.7 mA)		
200 VAC		Inrush 2.4 VA (12 mA), Holding 2.4 VA (12 mA)			
220 VAC	Inrush 2.6 VA (11.7 mA), Holding 2.6 VA (11.7 mA)				



Note 1) Use dry air to prevent condensation when operating at low temperatures.

Note 2) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)

Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

VK

VZ

VF

VFR

VP4

VZS

VFS

VS4

VQ7

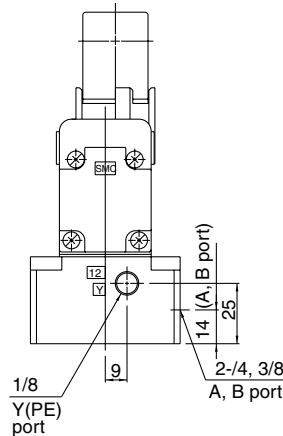
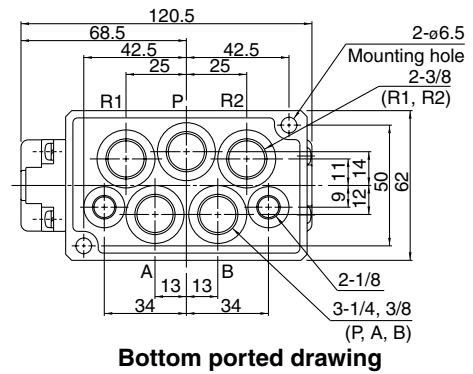
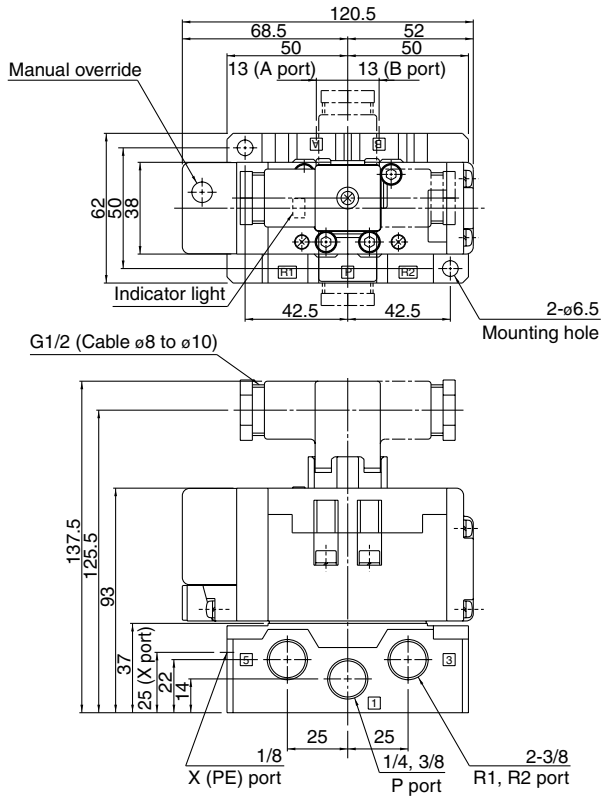
EVS

VFN

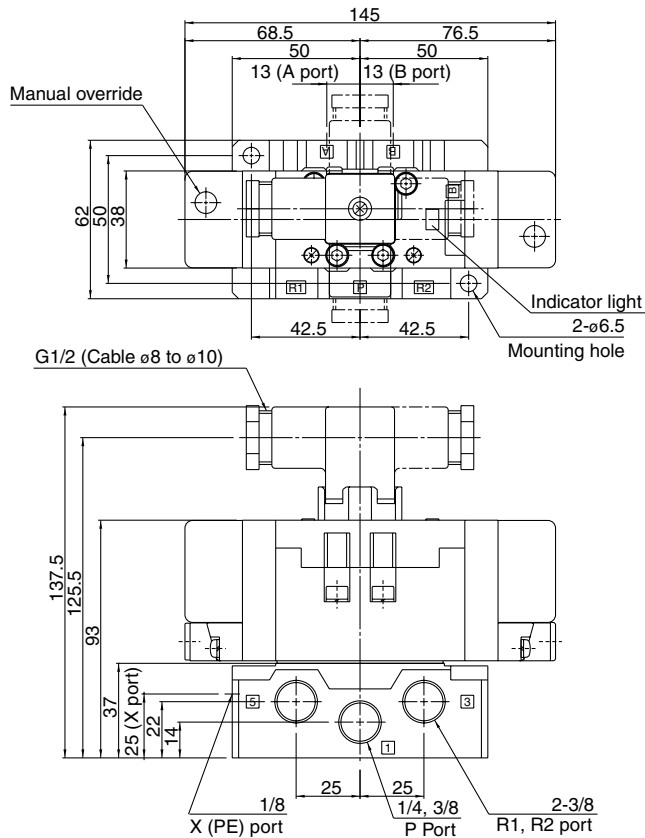
Series VQ7-6

DIN Terminal Type

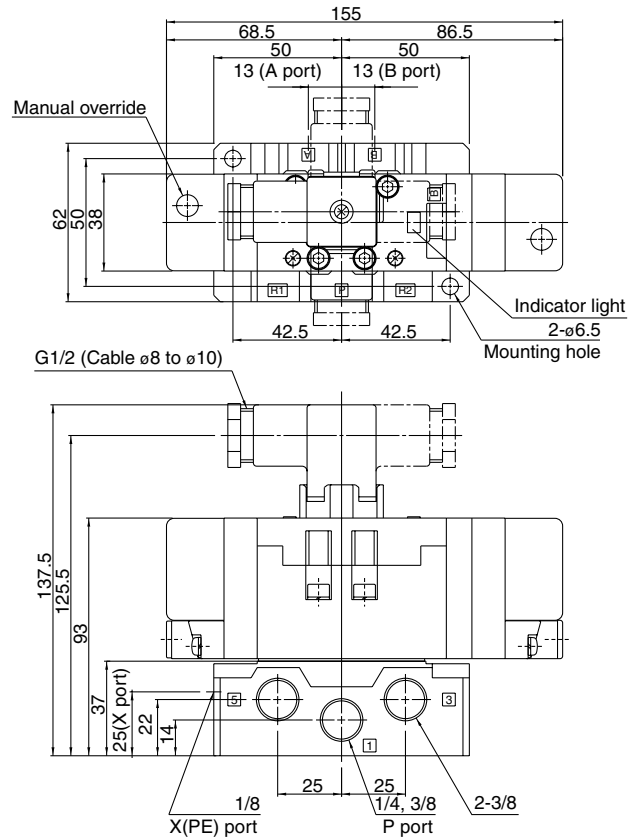
2 position single : VQ7-6-FG-S
 single (Reverse pressure): VQ7-6-YZ-S



2 position double : VQ7-6-FG-D
 double (Reverse pressure): VQ7-6-YZ-D



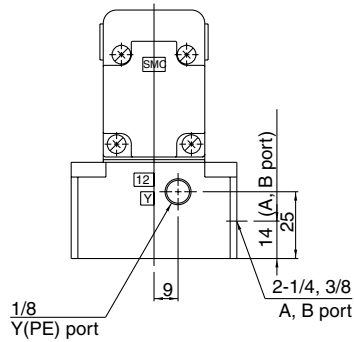
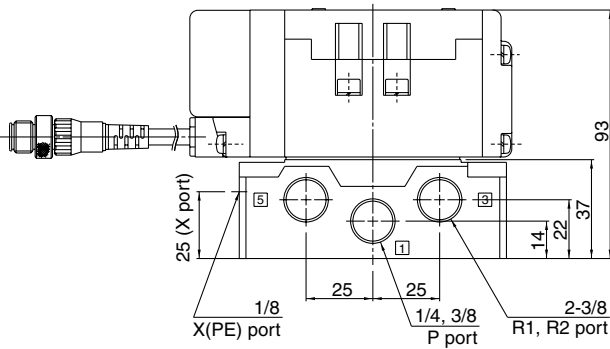
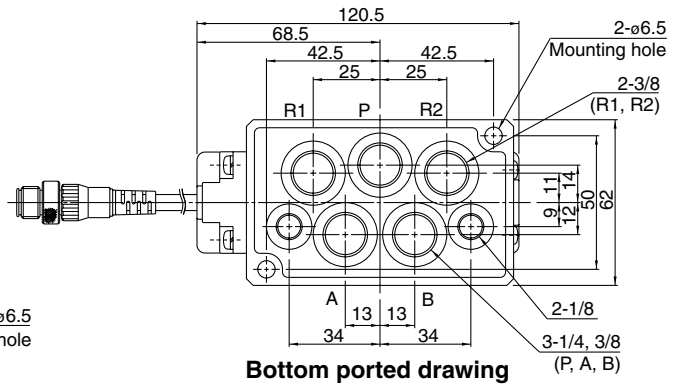
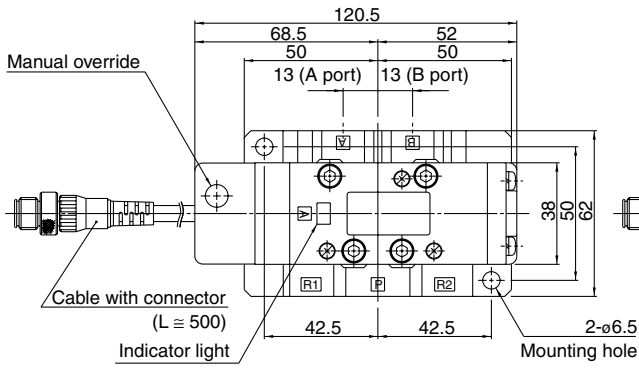
3 position closed center : VQ7-6-FHG-D
 exhaust center : VQ7-6-FJG-D
 pressure center: VQ7-6-FIG-D



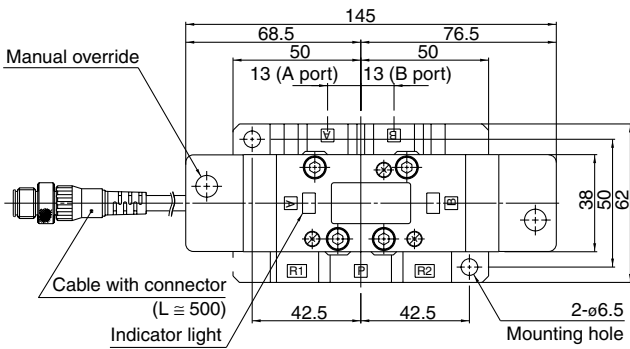
ISO Standard Solenoid Valve: Size 1 Metal Seal/Rubber Seal Series VQ7-6

Prewired Connector Type

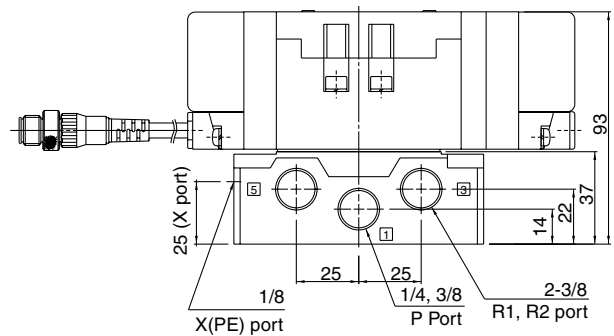
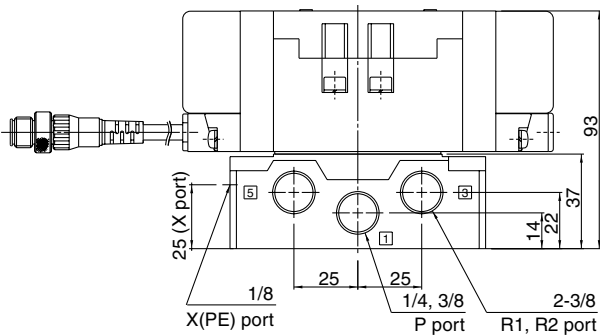
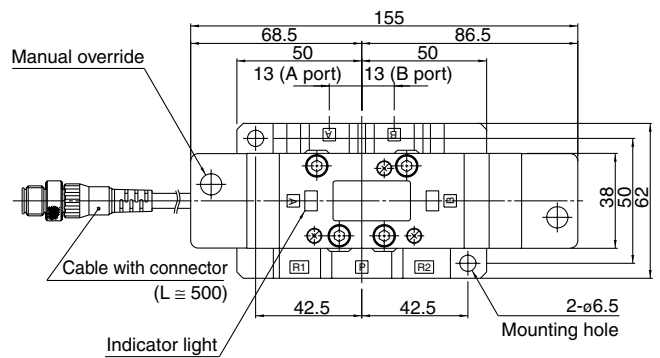
2 position single : VQ7-6-FG-S□□□□SC
single (Reverse pressure): VQ7-6-YZ-S□□□□SC



2 position double : VQ7-6-FG-D-□□□□SC
double (Reverse pressure): VQ7-6-YZ-D-□□□□SC



3 position closed center : VQ7-6-FHG-D-□□□□SC
exhaust center: VQ7-6-FJG-D-□□□□SC
pressure center: VQ7-6-FIG-D-□□□□SC



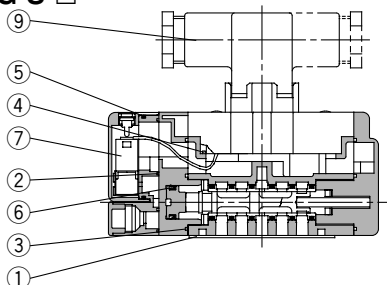
- VK
- VZ
- VF
- VFR
- VP4
- VZS
- VFS
- VS4
- VQ7**
- EVS
- VFN

Series VQ7-6 Construction

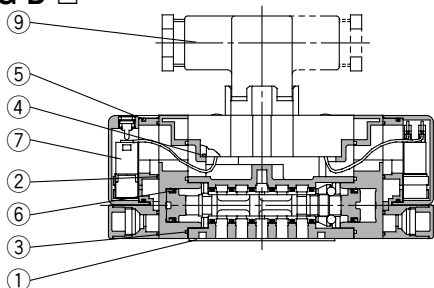
DIN Terminal Type

Metal seal type

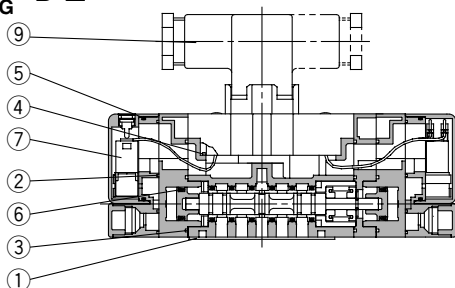
VQ7-6-FG-S-□



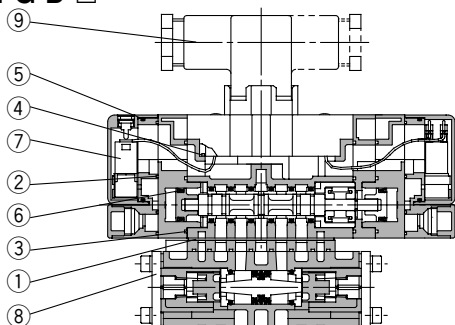
VQ7-6-FG-D-□



VQ7-6-^{FHG}_{FJG}-D-□

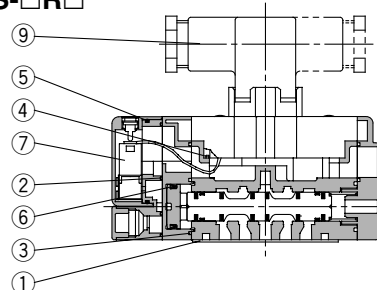


VQ7-6-FPG-D-□

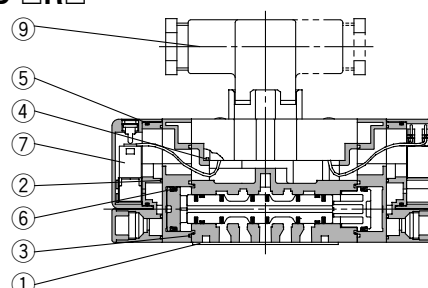


Rubber seal type

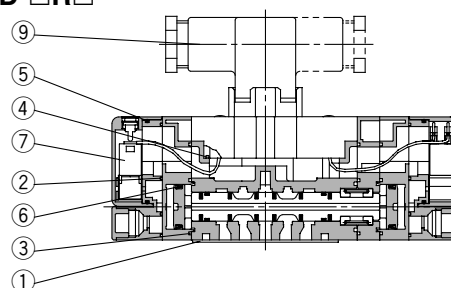
VQ7-6-FG-S-□R□



VQ7-6-FG-D-□R□



VQ7-6-^{FHG}_{FJG}-D-□R□



Replacement Parts (For valve)

No.	Description	VQ7-6-FG-S-□	VQ7-6-FG-D-□	VQ7-6- ^{FHG} _{FJG} -D-□	VQ7-6-FPG-D-□	VQ7-6-FG-S-□R□	VQ7-6-FG-D-□R□	VQ7-6- ^{FHG} _{FJG} -D-□R□
①	Gasket				AXT500-13			
②	Gasket A				VQ7060-13-2			
③	Gasket B				VQ7060-13-1			
④	Gasket C				VQ7060-13-3			
⑤	O-ring				37 x 1.6			
⑥	Mini Y seal		MYN-11				MYN-16	
⑦	Pilot valve assembly				VQZ110Q-□			
⑧	Double check spacer		—		VV71-FPG		—	
⑨	DIN terminal				UKL-S1			

Manifold Specifications

How to Order Manifold



Stations

1	1 station
⋮	⋮
10	10 stations

Note) When equipped with control unit, 1 or 2 stations are used for mounting.

2 (B), 4 (A) port connection

02R	Rc 1/4 (Right side)
03R	Rc 3/8 (Right side)
02L	Rc 1/4 (Left side)
03L	Rc 3/8 (Left side)
02Y	Rc 1/4 (Bottom side)
03Y	Rc 3/8 (Bottom side)
C6R	One-touch fitting ø6 (Right side)
C8R	One-touch fitting ø8 (Right side)
C10R	One-touch fitting ø10 (Right side)
C6L	One-touch fitting ø6 (Left side)
C8L	One-touch fitting ø8 (Left side)
C10L	One-touch fitting ø10 (Left side)
*	Mixed

Note) When ports are mixed, indicate piping specifications by means of the manifold specification sheet.

Thread type

Nil	Rc
F	G
T	NPTF

Note) It is not applicable to One-touch fittings.

Air release valve coil rating

Nil	None
1	100 VAC, 50/60 Hz
2	200 VAC, 50/60 Hz
3	24 VDC
4	12 VDC
9	Other

Silencer box

Nil	None
SB	With

Note) The silencer box mounting position corresponds to piping connection at ports 3 (R2) and 5 (R1).

Thread type

Nil	Rc
F	G
T	NPTF

Note) It is not applicable to One-touch fittings.

1 (P), 3 (R2), 5 (R1) port connection

02D	Rc 1/4 (Bottom side)
02U	Rc 1/4 (Top side)
02B	Rc 1/4 (Both sides)
03D	Rc 3/8 (Bottom side)
03U	Rc 3/8 (Top side)
03B	Rc 3/8 (Both sides)
C12D	One-touch fitting ø12 (Bottom side)
C12U	One-touch fitting ø12 (Top side)
C12B	One-touch fitting ø12 (Both sides)
*	Mixed

Note) When ports are mixed, indicate piping specifications by means of the manifold specification sheet.

Control unit type (See pages 3-10-18 and 19 for details.)

Symbol	Nil	A	AP	M	MP	F	G	C	E
Control equipment									
Air filter with auto-drain		○	○			○			
Air filter with manual drain				○	○		○		
Regulator		○	○	○	○	○	○		
Air release valve		○	○	○	○			○	○
Pressure switch			○		○				
Blanking plate (Air release valve)						○	○		
Blanking plate (Filter, Regulator)								○	
Blanking plate (Pressure switch)		○		○		○	○	○	
Number of manifold blocks required for mounting (stations)		2	2	2	2	2	2	2	1

Manifold Specifications

Manifold block size	Applicable solenoid valve	Porting specifications			Stations	Weight (kg)
		2(B), 4(A) port		1(P), 3(R2)		
		Port location	Port size	5(R1) port size		
ISO size 1	Series VQ7-6 ISO size 1	Right, Left	1/4 3/8 C6 (ø6) C8 (ø8) C10 (ø10)	1/4 3/8 C12 (ø12)	Note) Max. 10 stations	0.43n + 0.49 (n: Stations)
		Bottom	1/4 3/8			

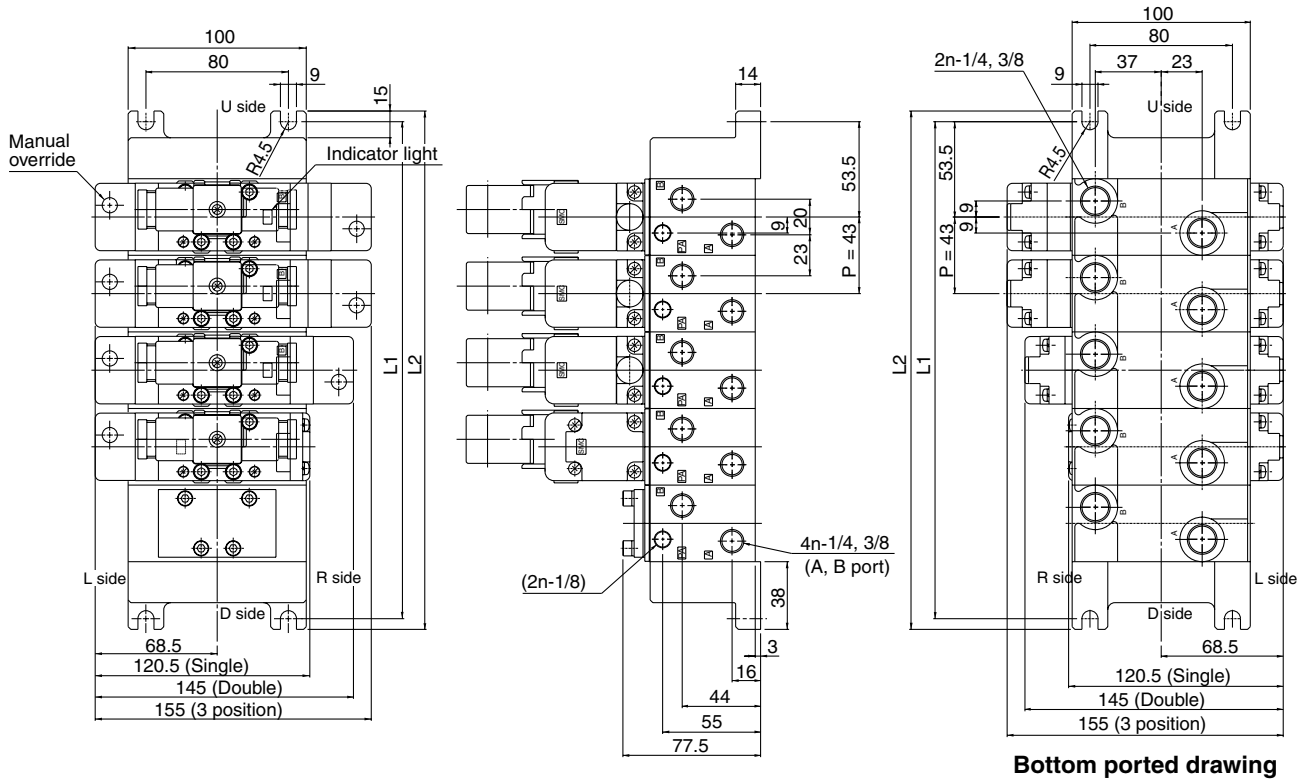
Note) When equipped with control unit, 1 or 2 stations are used for mounting.

- VK
- VZ
- VF
- VFR
- VP4
- VZS
- VFS
- VS4
- VQ7
- EVS
- VFN

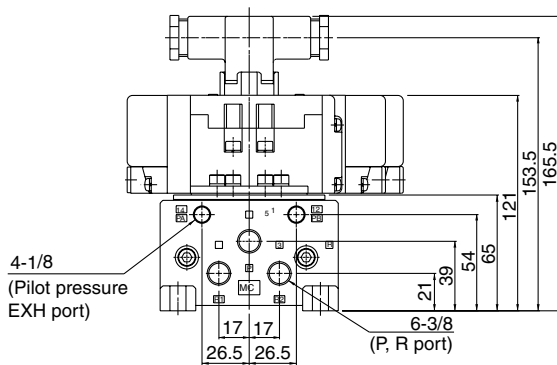
Series VQ7-6

DIN Terminal Type

VV71□-□-□□□



Bottom ported drawing



L Dimension

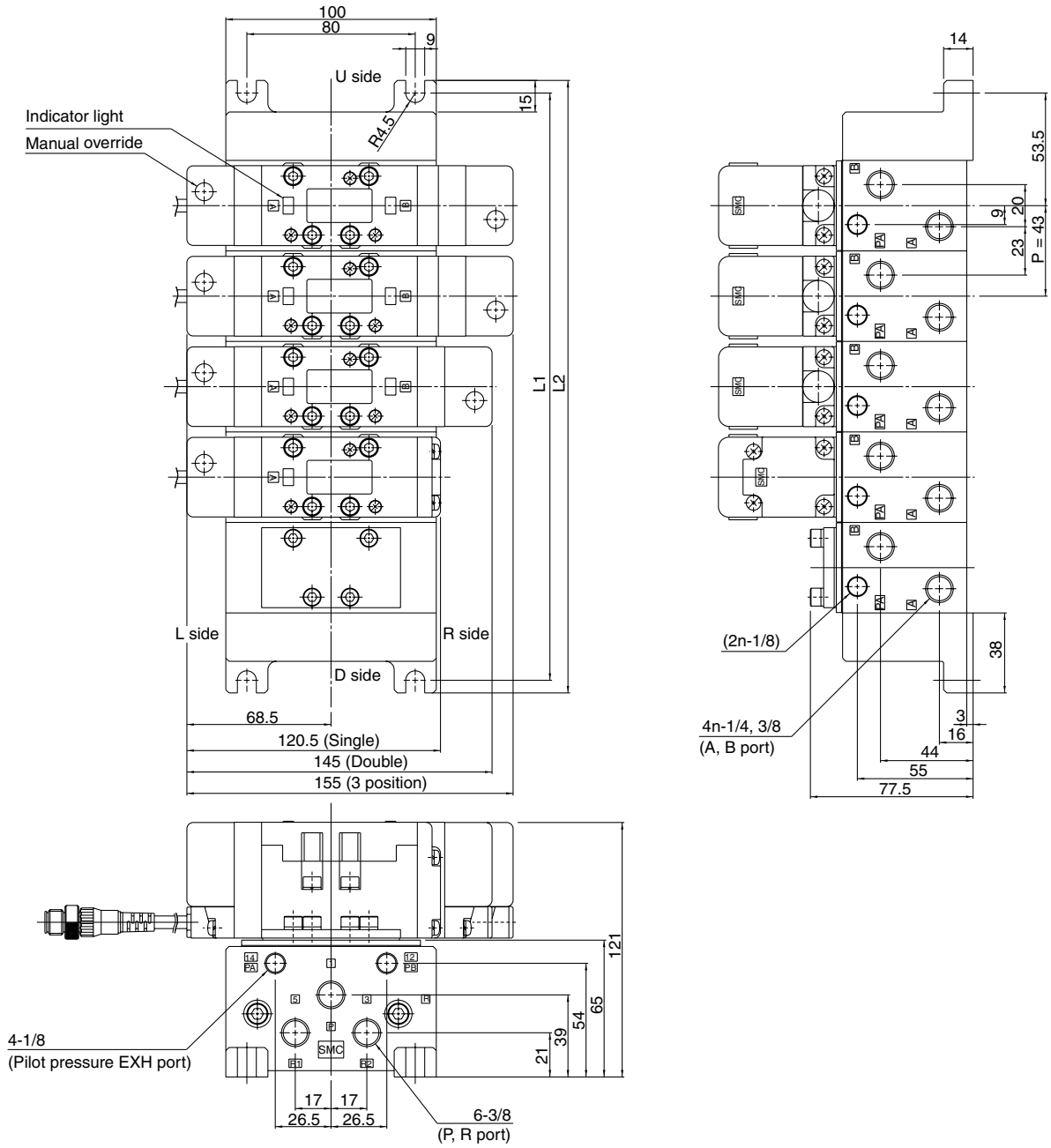
n: Stations

	1	2	3	4	5	6	7	8	9	10	Formula
L1	107	150	193	236	279	322	365	408	451	494	$L1 = 43n + 64$
L2	119	162	205	248	291	334	377	420	463	506	$L2 = 43n + 76$

ISO Standard Solenoid Valve: Size 1 Metal Seal/Rubber Seal Series VQ7-6

Prewired Connector Type

VV71□-□-□□□



- VK
- VZ
- VF
- VFR
- VP4
- VZS
- VFS
- VS4
- VQ7**
- EVS
- VFN

L Dimension

n: Stations

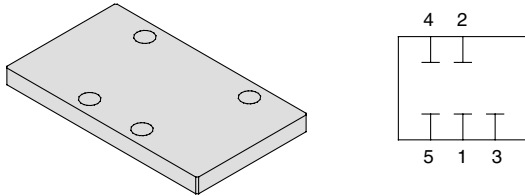
	1	2	3	4	5	6	7	8	9	10	Formula
L1	107	150	193	236	279	322	365	408	451	494	L1 = 43n + 64
L2	119	162	205	248	291	334	377	420	463	506	L2 = 43n + 76

Series VQ7-6

Manifold Option Parts

Blanking plate assembly AXT502-9A

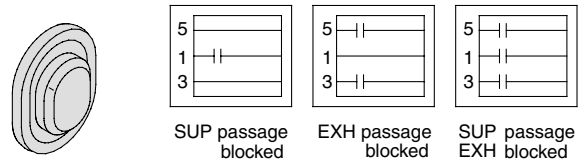
It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.



Block disk (For SUP/EXH passages) AXT502-14

When two or more different high pressures are supplied to one manifold, block disks are installed between stations having different pressures.

Also, in cases such as when valve exhaust effects other stations in a circuit, block disks are used for exhaust at stations where the exhaust is to be separated.



Individual SUP spacer VV71-P-⁰²₀₃

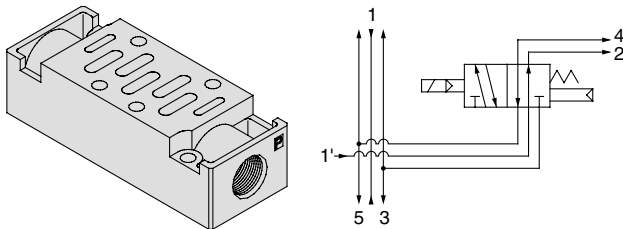
C10

Thread type

Nil	Rc
F	G
T	NPTF

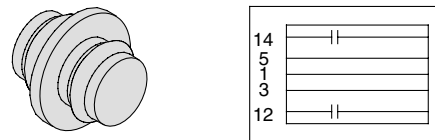
Note) It is not applicable to One-touch fittings.

By mounting individual SUP spacers on a manifold block, it is possible to provide individual supply ports for each valve.



Block disk (For pilot EXH passage) AZ503-53A

When a valve's pilot valve exhaust effects other valves in a circuit, block disks are used between stations where the pilot exhaust passages are to be separated.



Individual EXH spacer VV71-R-⁰²₀₃

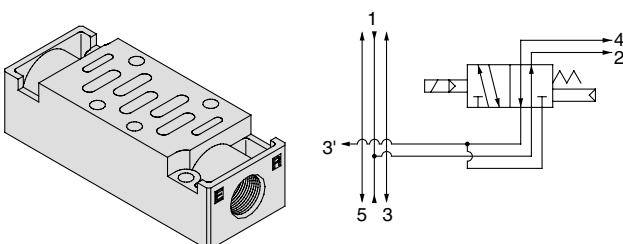
C12

Thread type

Nil	Rc
F	G
T	NPTF

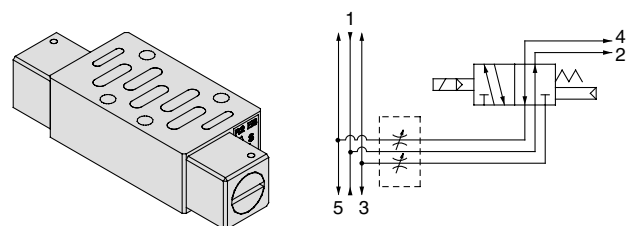
Note) It is not applicable to One-touch fittings.

By mounting individual EXH spacers on a manifold block, exhaust ports can be provided individually for each valve. (3, 5 common EXH type)



Throttle valve spacer AXT503-23A

A throttle valve spacer is mounted on a manifold block to control cylinder speed by throttling exhaust air flow.

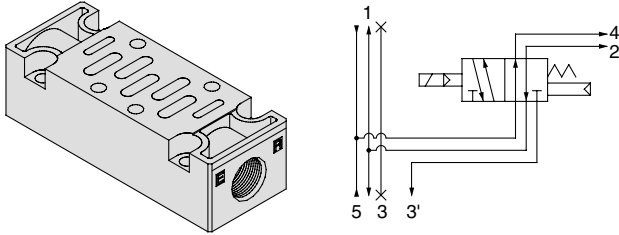


Reverse pressure spacer
AXT502-21A-1

● **Thread type**

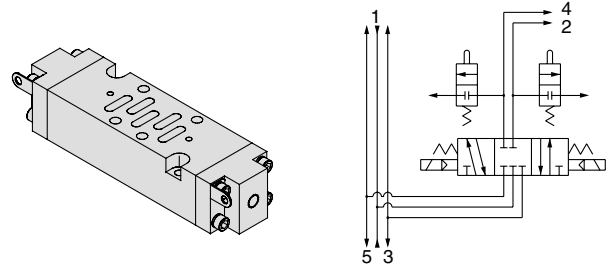
Nil	Rc
F	G
T	NPTF

With reverse pressure control manifold specifications, when pressure is changed individually on one side (ex. high speed cylinder return), pressure can be supplied individually to the R2 side by mounting a reverse pressure spacer. {Port 3 (R2) is individual and 5 (R1) is common.}



Residual pressure release valve spacer
VV71-R-AB

This is used by mounting on a manifold block in order to exhaust the residual pressure trapped inside of a cylinder, etc., during an intermediate stop with a 3 position closed center or perfect type valve. Residual pressure at ports A and B is exhausted individually to the outside by manual operation.

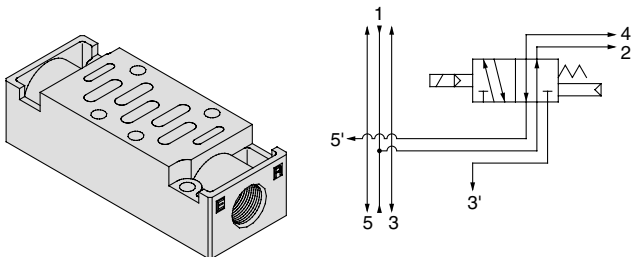


R1, R2 individual EXH spacer
VV71-R2-03

● **Thread type**

Nil	Rc
F	G
T	NPTF

By mounting an individual EXH spacer on a manifold block, individual exhaust is possible from both R1 and R2. {3 (R2) and 5 (R1) are individual ports.}

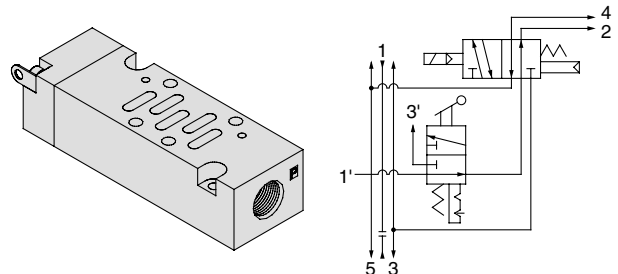


Individual SUP spacer with residual pressure release valve
VV71-PR-02-03

● **Thread type**

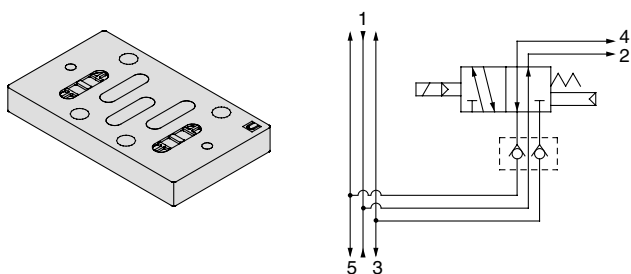
Nil	Rc
F	G
T	NPTF

This is used by mounting on a manifold block in order to stop the inlet side supply pressure in an individual supply spacer, while at the same time exhausting the residual pressure are performed by pressing the manual override, which can be locked by turning it.



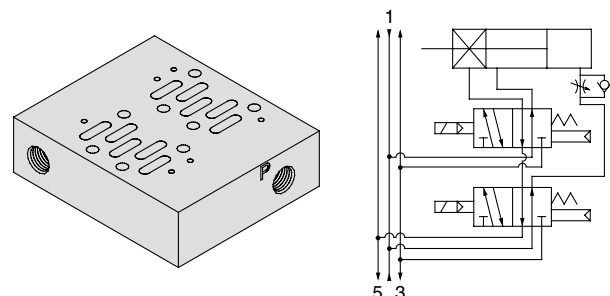
Main EXH back pressure check plate
AXT503-37A

In cases where back pressure effects actuator operation due to simultaneous operation of manifold valves, etc., this effect can be eliminated by installing a plate between the manifold block and the valve from which back pressure is to be prevented.



Adapter plate for locked-up cylinder
AXT502-26A

When using a locked-up cylinder with 2 valves for control, this spacer can be used by mounting on a manifold block. It consists of a circuit equipped with a function to prevent lurching during release.



- VK
- VZ
- VF
- VFR
- VP4
- VZS
- VFS
- VS4
- VQ7**
- EVS
- VFN

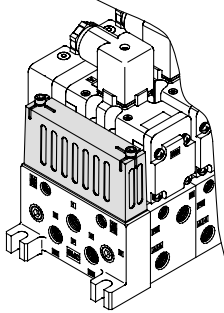
Series VQ7-6

Manifold Option Parts

Silencer box

VV71-□□□-□□-SB

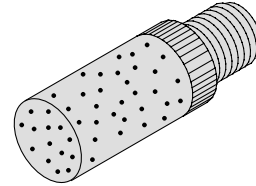
This can be provided as a unit on the end plate to reduce manifold exhaust noise and piping labor.



Pilot EXH silencer

AN110-01

This is used by mounting on the pilot exhaust port in order to reduce manifold and single type pilot exhaust noise, and to prevent the entry of dust.

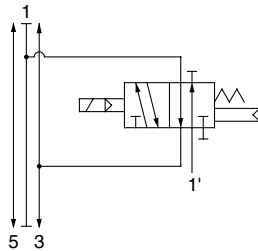
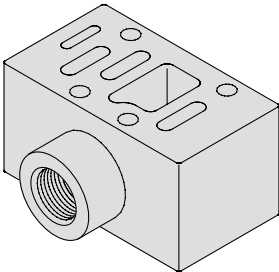


Release valve spacer

AXT502-17A□

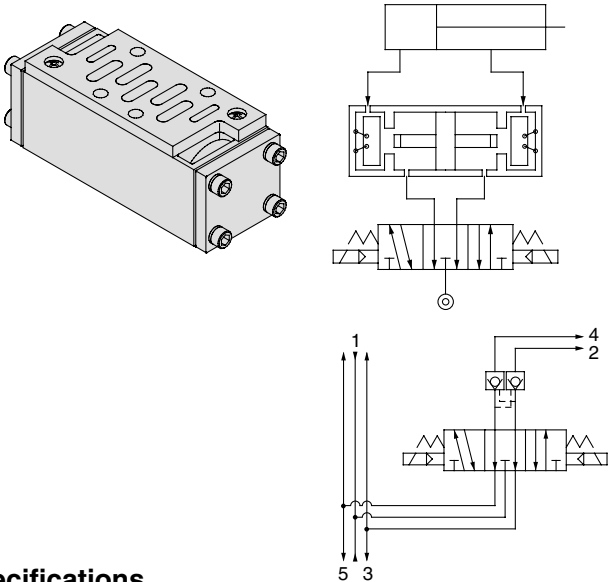
● Thread type

Nil	Rc
F	G
T	NPTF



Double check spacer VV71-FPG

By combining a 3 position exhaust center valve with a double check spacer, an intermediate stopping position of a cylinder can be held for an extended period. It can also be used for drop prevention at the cylinder stroke end when releasing residual supply pressure, by combining it with a 2 position single or double valve.

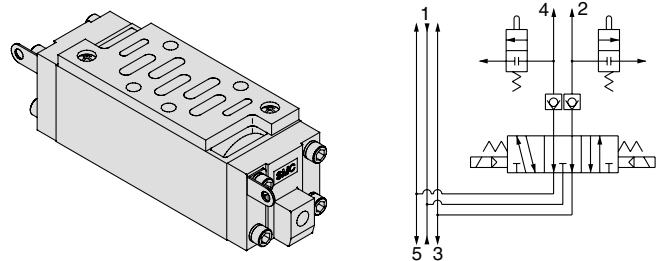


Specifications

Double check spacer part no.		VV71-FPG		
Applicable solenoid or air operated valve		Series VQ7-6		
Leakage (cm ³ /min (ANR))	One solenoid energized (One pilot pressurized)	P	R1	130
		P	R2	130
	Both solenoids unenergized (Both pilots unpressurized)	B	R1	0
		A	R2	0

Double check spacer with residual pressure release valve VV71-FPGR

This is a double check spacer equipped with a residual pressure release function, to release residual pressure inside a cylinder during maintenance or adjustment, etc.



⚠ Caution

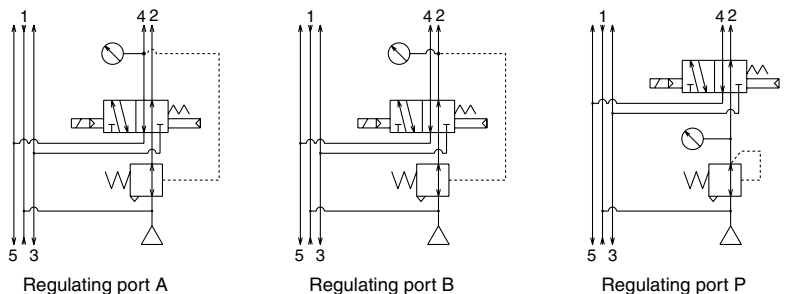
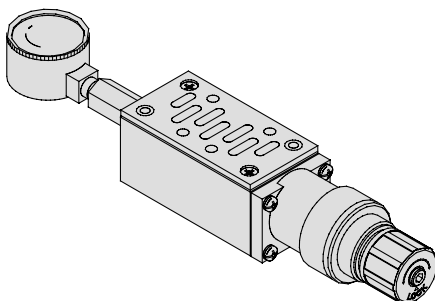
- Since extended cylinder stops are not possible if there are leaks from piping between the valve and cylinder or from fittings, etc., check for leakage using a neutral liquid detergent.
- Since One-touch fittings allow slight air leakage, screw piping (with M5 thread) is recommended when stopping the cylinder in the middle for a long time.
- This spacer cannot be combined with a 3 position closed center valve.
- Set the load weight so that the cylinder side pressure is less than two times the supply side pressure.
- When using the residual pressure release function, confirm the action of actuators, etc., and operate after providing for safety measures.

VK
VZ
VF
VFR
VP4
VZS
VFS
VS4
VQ7
EVS
VFN

Interface regulator

ARB250-00-^P/_A/_B

Spacer Interface regulators can be placed on top of the manifold block to reduce the pressure of each of the valves.



Part No.

P reduced pressure	ARB250-00-P
A reduced pressure	ARB250-00-A
B reduced pressure	ARB250-00-B

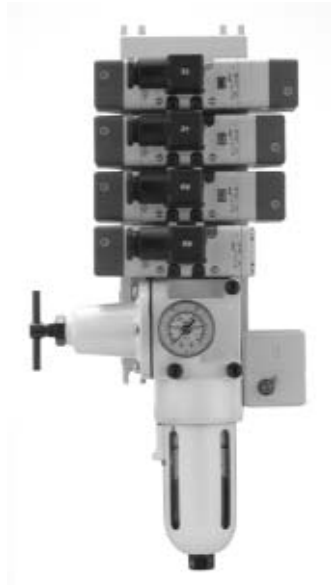
⚠ Caution

- When combining a pressure center valve and interface regulator with reduced pressure at ports A and B, use model ARB210-^A/_B.
- When combining a reverse pressure valve and interface regulator, use model ARB210-^A/_B. Further, it cannot be used with reduced pressure at port P.
- When combining a double check valve and an interface regulator, use a manifold or sub-plate as a basis, and stack them in the following order; the perfect spacer → the interface regulator → the valve.
- When a closed center valve is combined with the interface regulator's A, B port regulation, note that it cannot be used for intermediate stops of a cylinder because there is leakage from relief port on the regulator.

Series VQ7-6

Control Unit

Control equipment (filters, regulators, pressure switches, air release valves) has been made into standardized units which can be mounted on manifolds without any modifications.



Control Unit Specifications

Air filter (With auto-drain/With manual drain)	
Filtration degree	5 μm
Regulator	
Set pressure (Outlet pressure)	0.05 to 0.85 MPa
Pressure switch	
Pressure adjustment range	0.1 to 0.7 MPa
Contact	1 ab
Rated current	(Induction load) 125 VAC 15 A, 250 VAC 15 A
Air release valve (Single only)	
Operating pressure range	0.15 to 1.0 MPa

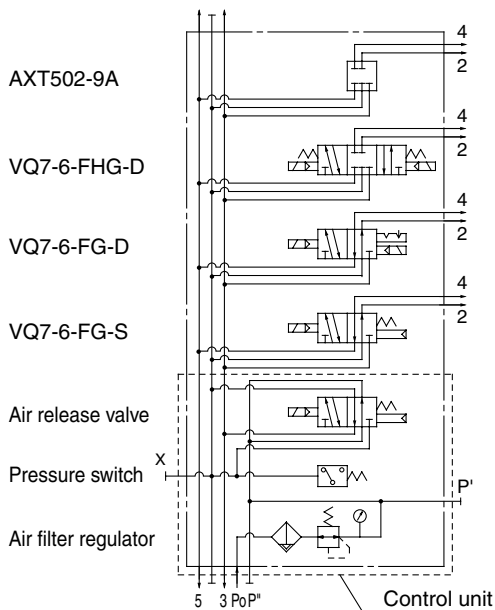
Option

Blanking plate	AXT502-9A (For manifold)
	AXT502-18A (For release valve adapter plate)
	MP2 (For control equipment/filter regulator)
Release valve adapter plate	MP3 (For pressure switch)
	AXT502-17A
Control equipment	VAW-A (Adapter plate, Filter with auto-drain cock, Regulator)
	VAW-M (Adapter plate, Filter with manual drain cock, Regulator)
Pressure switch	IS3100-X230

Control Unit Type

Ordering symbol	Nil	A	AP	M	MP	F	G	C	E
Control equipment									
Air filter with auto-drain		○	○			○			
Air filter with manual drain				○	○		○		
Regulator		○	○	○	○	○	○		
Air release valve		○	○	○	○			○	○
Pressure switch			○		○				
Blanking plate (Air release valve)						○	○		
Blanking plate (Filter, Regulator)								○	
Blanking plate (Pressure switch)		○		○		○	○	○	
Number of manifold blocks required for mounting (stations)		2 stations	2 stations	2 stations	2 stations	2 stations	2 stations	2 stations	1 station

Manifold specifications example



Use of Control Unit

<Construction and piping >

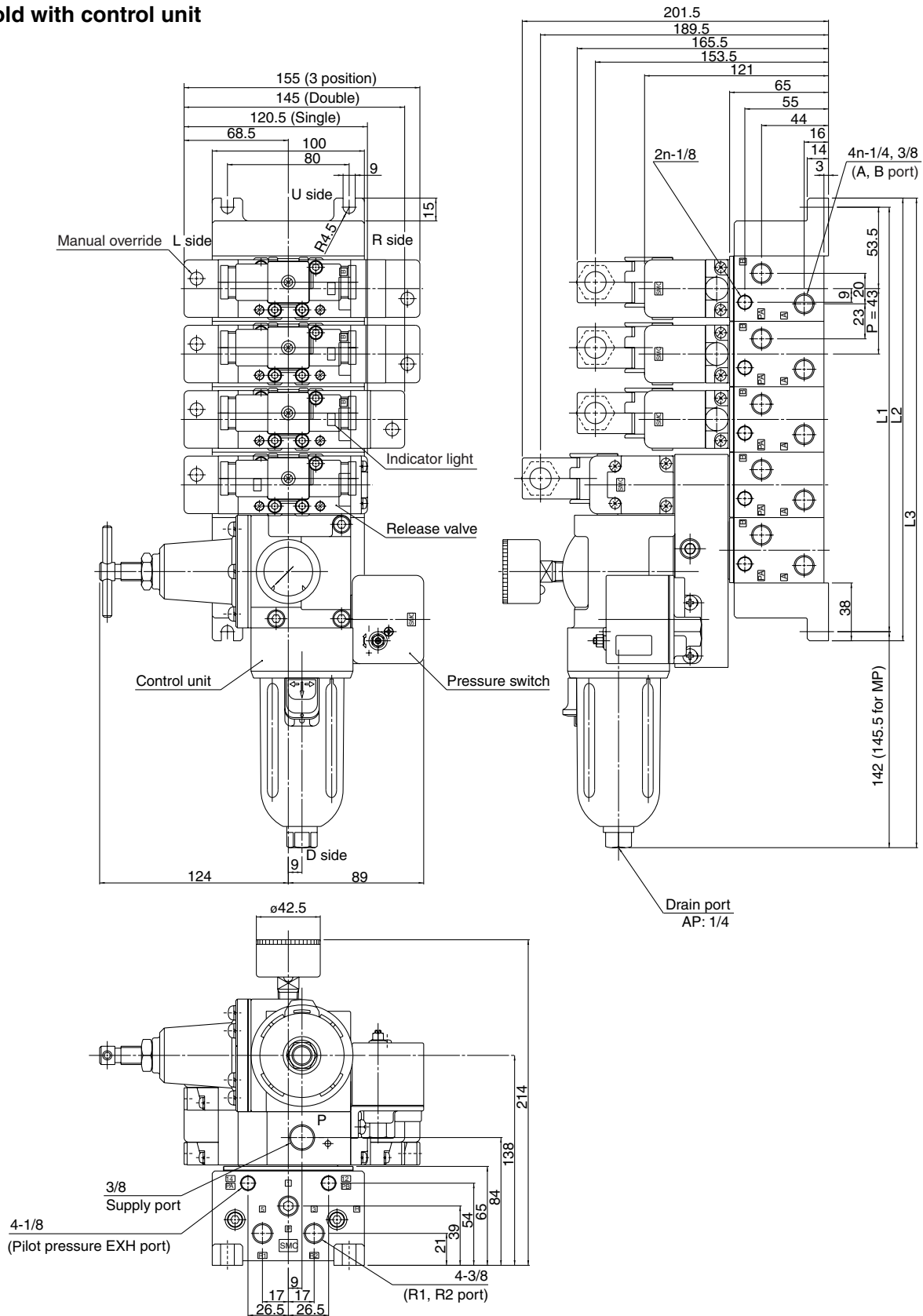
- The supply pressure (Po) passes through the regulator with filter and is adjusted to the prescribed pressure. Next, it goes through the release valve (downstream residual pressure switching function used as normally ON) and is supplied to the manifold base side (P).
- When the release valve ② is OFF, the supply pressure from port Po is blocked, and the air which was being supplied to the manifold side port P passes through the release valve and is discharged from port R1.
- The pressure switch is piped into the outlet side of the release valve ②. (It operates when the release valve ② is energized.) Also, since there is an internal voltage drop of 4V, it may not be possible to confirm the OFF and ON states with a tester, etc.

⚠ Caution

- In the case of air filters with auto-drain or manual drain, mount so that the air filter is at the bottom.

ISO Standard Solenoid Valve: Size 1 Metal Seal/Rubber Seal Series VQ7-6

Manifold with control unit



- VK
- VZ
- VF
- VFR
- VP4
- VZS
- VFS
- VS4
- VQ7**
- EVS
- VFN

L Dimension

n: Stations

	1	2	3	4	5	6	7	8	9	10	Formula
L1	107	150	193	236	279	322	365	408	451	494	$L1 = 43n + 64$
L2	119	162	205	248	291	334	377	420	463	506	$L2 = 43n + 76$
L3	255	298	341	384	427	470	513	556	599	642	$L3 = 43n + 212$ (215.5)
	(258.5)	(301.5)	(344.5)	(387.5)	(430.5)	(473.5)	(516.5)	(559.5)	(602.5)	(645.5)	

L3 dimensions inside () are for MP.

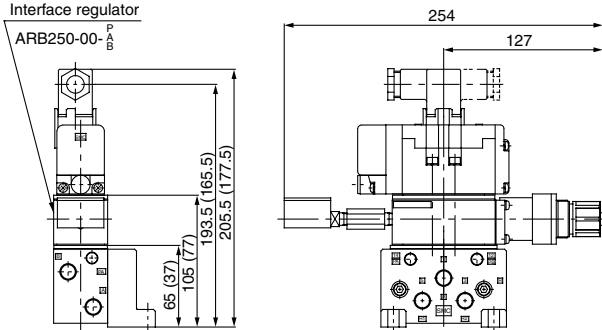


Series VQ7-6

Manifold Option Parts

Interface regulator

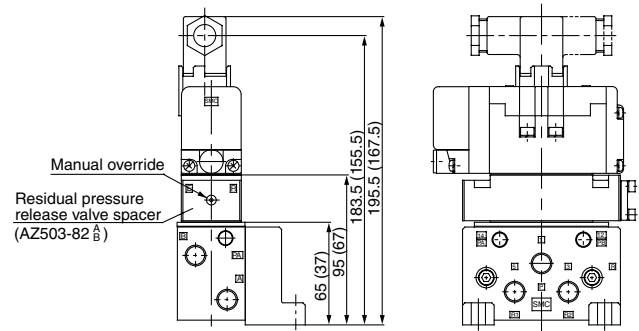
ARB250-00-^P_A^B



Dimensions inside () are for sub-plate.

Residual pressure release valve spacer

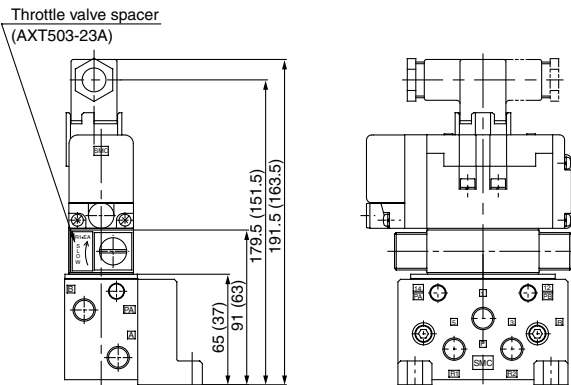
AZ503-82^A_B



Dimensions inside () are for sub-plate.

Throttle valve spacer

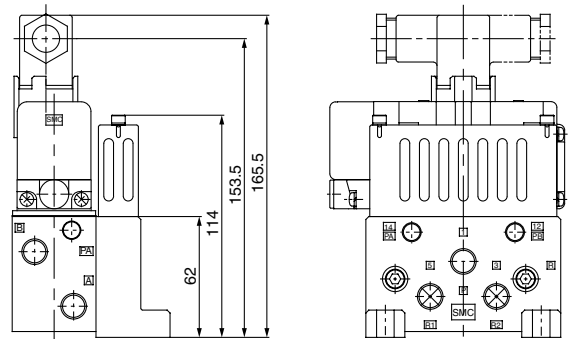
AXT503-23A



Dimensions inside () are for sub-plate.

Silencer box

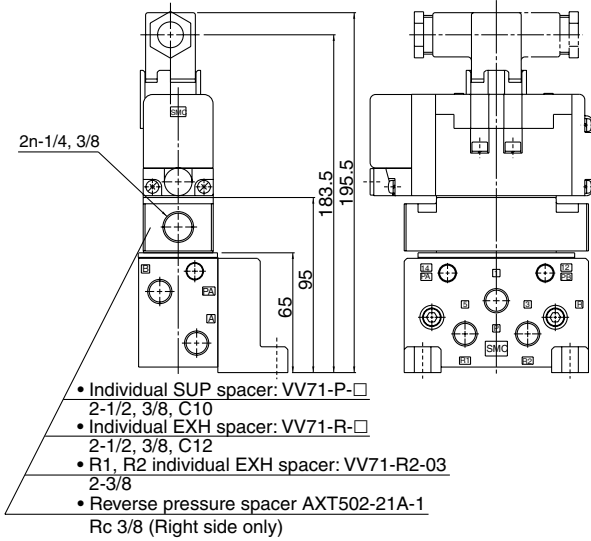
AXT503-60A



ISO Standard Solenoid Valve: Size 1 Metal Seal/Rubber Seal Series VQ7-6

Individual SUP spacer
Individual EXH spacer
R1, R2 individual EXH spacer
Reverse pressure spacer

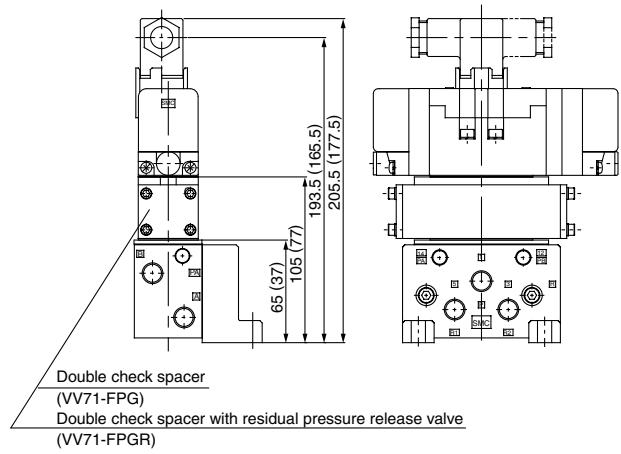
VV71-P-□
VV71-R-□
VV71-R2-03
AXT502-21A-1



Double check spacer

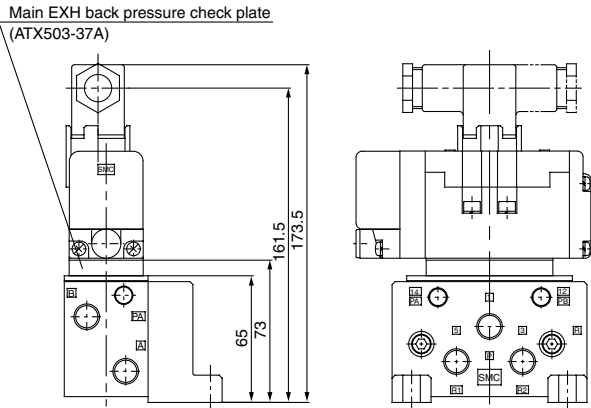
VV71-FPG

Double check spacer with residual pressure release valve **VV71-FPGR**



Dimensions inside () are for sub-plate.

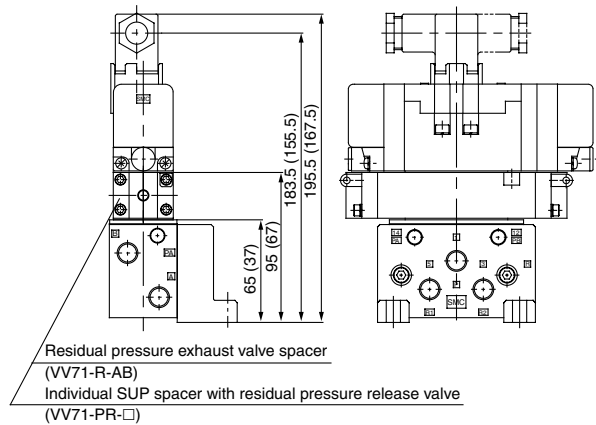
Main EXH back pressure check plate
AXT503-37A



Residual pressure release valve spacer

VV71-R-AB

Individual SUP spacer with residual pressure release valve **VV71-PR-□**



Dimensions inside () are for sub-plate.

VK

VZ

VF

VFR

VP4

VZS

VFS

VS4

VQ7

EVS

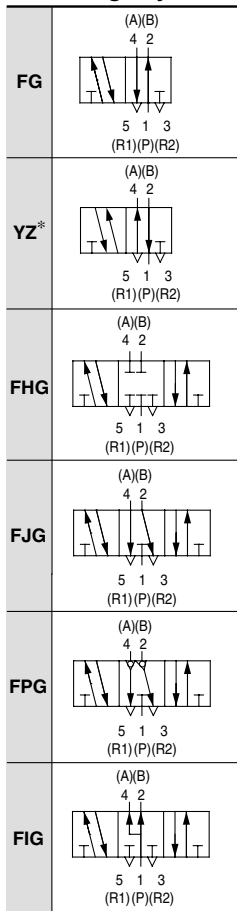
VFN

ISO Standard Solenoid Valve: Size 2 Metal Seal/Rubber Seal, Single Unit Series VQ7-8

How to Order Valves

VQ7-8-FG-S-3- - - - -

Passage symbol



* Option

Number of solenoids

S	Single
D	Double

Connector

Nil	DIN terminal block (With connector)
O	DIN terminal block (Without connector)
SC	Pre-wired connector

Sub-plate port size

Nil	Without sub-plate
A03	Side ported Rc 3/8
A04	Side ported Rc 1/2
A06	Side ported Rc 3/4
B03	Bottom ported Rc 3/8
B04	Bottom ported Rc 1/2
B06	Bottom ported Rc 3/4

Thread type

Nil	Rc
F	G
T	NPTF

Seal

Nil	Metal seal
R	Rubber seal

Option

Nil	None
Z	Light/Surge voltage suppressor
V	Individual pilot exhaust

* When two or more symbols are specified, indicate them alphabetically.

Coil rated

1	100 VAC
2	200 VAC
3	24 VDC
4	12 VDC
9	Other voltages

* For other voltages, please contact SMC separately.

How to Order Sub-plate

VS7-2-A03- -

Port size

A03	Side ported Rc 3/8
A04	Side ported Rc 1/2
A06	Side ported Rc 3/4
B03	Bottom ported Rc 3/8
B04	Bottom ported Rc 1/2
B06	Bottom ported Rc 3/4

Thread type

Nil	Rc
F	G
T	NPTF

Specifications

Model	Porting specifications		Weight (kg)
	Piping location	Port size	
VS7-2-A03□	Side	3/8	0.68
VS7-2-A04□		1/2	
VS7-2-A06□		3/4	
VS7-2-B03□	Bottom	3/8	0.68
VS7-2-B04□		1/2	
VS7-2-B06□		3/4	

ISO Standard Solenoid Valve: Size 2 Metal Seal/Rubber Seal Series VQ7-8

Model

Series	Number of positions	Model		Port size	Flow characteristics						(1) Response time (ms)	(2) Weight (kg)		
					1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)						
					C[dm ³ /(s·bar)]	b	Cv	C[dm ³ /(s·bar)]	b	Cv				
VQ7-8	2 position	Single	Metal seal	VQ7-8-FG-S-□	3/8	10	0.18	2.4	12	0.24	3.0	40 or less	0.64	
			Rubber seal	VQ7-8-FG-S-□R		12	0.24	3.0	13	0.27	3.3	45 or less		
		Double	Metal seal	VQ7-8-FG-D-□		10	0.18	2.4	12	0.24	3.0	15 or less		0.70
			Rubber seal	VQ7-8-FG-D-□R		12	0.24	3.0	13	0.27	3.3	20 or less		
	3 position	Closed center	Metal seal	VQ7-8-FHG-D-□		10	0.28	2.4	10	0.24	2.4	45 or less	0.75	
			Rubber seal	VQ7-8-FHG-D-□R		11	0.25	2.8	11	0.27	2.8	50 or less		
		Exhaust center	Metal seal	VQ7-8-FJG-D-□		10	0.16	2.4	10	0.20	2.4	45 or less	0.75	
			Rubber seal	VQ7-8-FJG-D-□R		11	0.26	2.8	13	0.27	3.3	50 or less		
		Double check	Metal seal	VQ7-8-FPG-D-□	7.2	—	—	7.0	—	—	60 or less	1.98		
				VQ7-8-FPG-D-□R	7.2	—	—	7.0	—	—	60 or less			
			Pressure center	Metal seal	VQ7-8-FIG-D-□	10	0.26	2.4	11	0.25	2.8		45 or less	0.75
				Rubber seal	VQ7-8-FIG-D-□R	13	0.27	3.3	12	0.29	3.0		50 or less	

Note 1) Based on JIS B 8375-1981 (Value for supply pressure of 0.5 MPa, with light/surge voltage suppressor, when using clean air.) Response time values will change depending on pressure and air quality. Value when ON for double type.
 Note 2) Weight without sub-plate. (Sub-plate: Rc 3.8, 1/2: 0.68 kg, Rc 3/4: 1.29 kg)

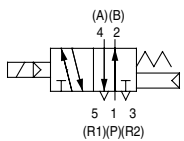


Standard Specifications

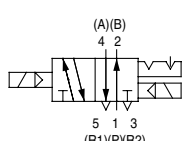
	Valve construction		Metal seal	Rubber seal	
	Fluid	Air/Inert gas			
Maximum operating pressure	1.0 MPa				
Min. operating pressure	Single	0.15 MPa		0.20 MPa	
	Double	0.15 MPa		0.15 MPa	
	3 position	0.15 MPa		0.20 MPa	
Ambient and fluid temperature	-10 to 60°C ⁽¹⁾		-5 to 60°C ⁽¹⁾		
Lubrication	Not required				
Manual override	Push type (Tool required)				
Shock/Vibration resistance	150/30 m/s ² ⁽²⁾				
Enclosure	IP65 (Dusttight, Low jetproof)				
Solenoid specifications	Coil rated voltage	12 VDC, 24 VDC, 100 VAC, 110 VAC, 200 VAC, 220 VAC (50/60 Hz)			
	Allowable voltage fluctuation	±10% of rated voltage			
	Coil insulation type	Class B or equivalent			
	Power consumption (Current)	24 VDC	1 W DC (42 mA)		
		12 VDC	1 W DC (83 mA)		
		100 VAC	Inrush 1.2 VA (12 mA), Holding 1.2 VA (12 mA)		
		110 VAC	Inrush 1.3 VA (11.7 mA), Holding 1.3 VA (11.7 mA)		
200 VAC	Inrush 2.4 VA (12 mA), Holding 2.4 VA (12 mA)				
220 VAC	Inrush 2.6 VA (11.7 mA), Holding 2.6 VA (11.7 mA)				

JIS Symbol

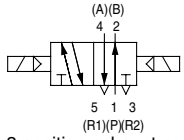
2 position single



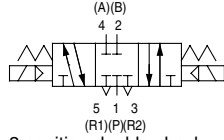
2 position double (Metal)



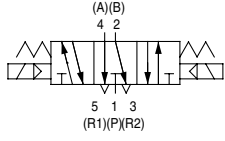
2 position double (Rubber)



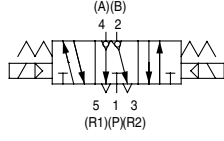
3 position closed center



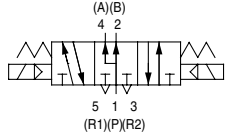
3 position exhaust center



3 position double check



3 position pressure center



Note 1) Use dry air to prevent condensation when operating at low temperatures.

Note 2) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)

Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

VK

VZ

VF

VFR

VP4

VZS

VFS

VS4

VQ7

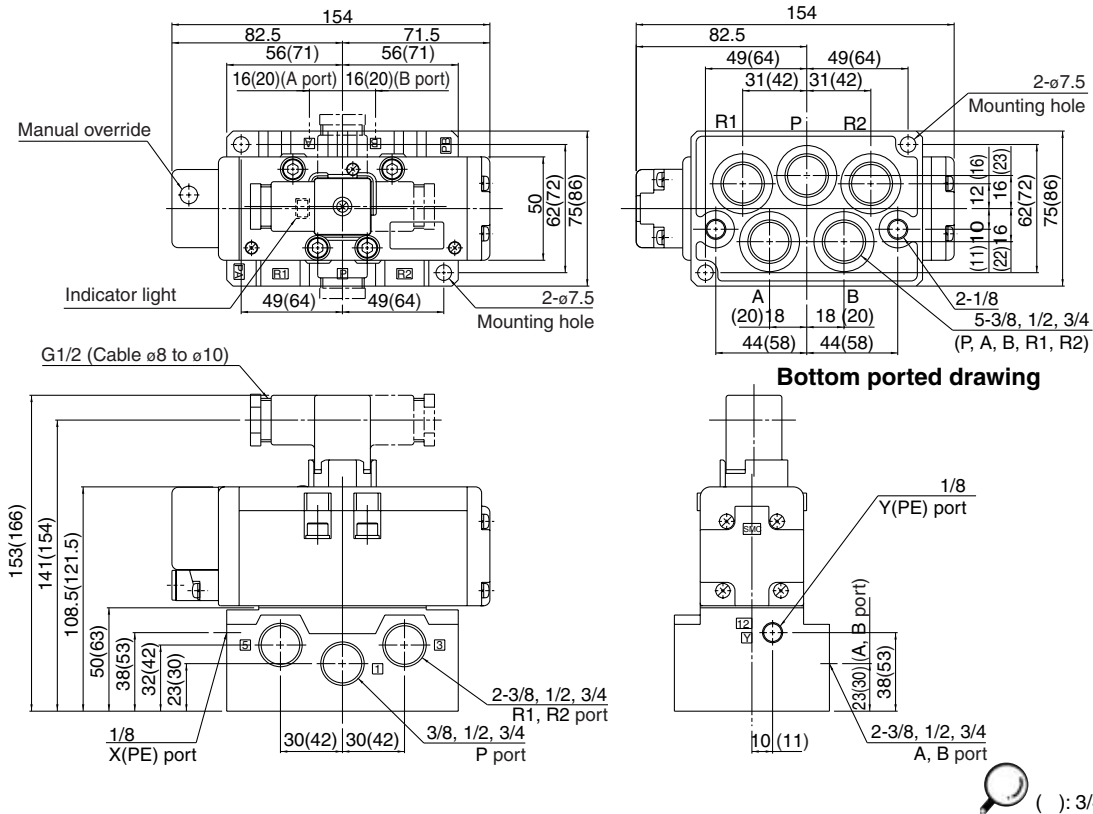
EVS

VFN

Series VQ7-8

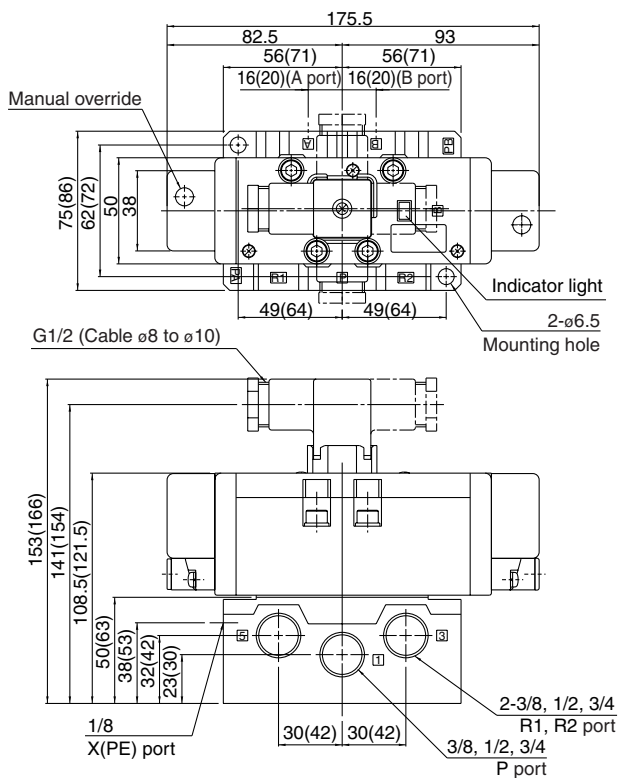
DIN Terminal Type

2 position single : VQ7-8-FG-S
 single (Reverse pressure): VQ7-8-YZ-S



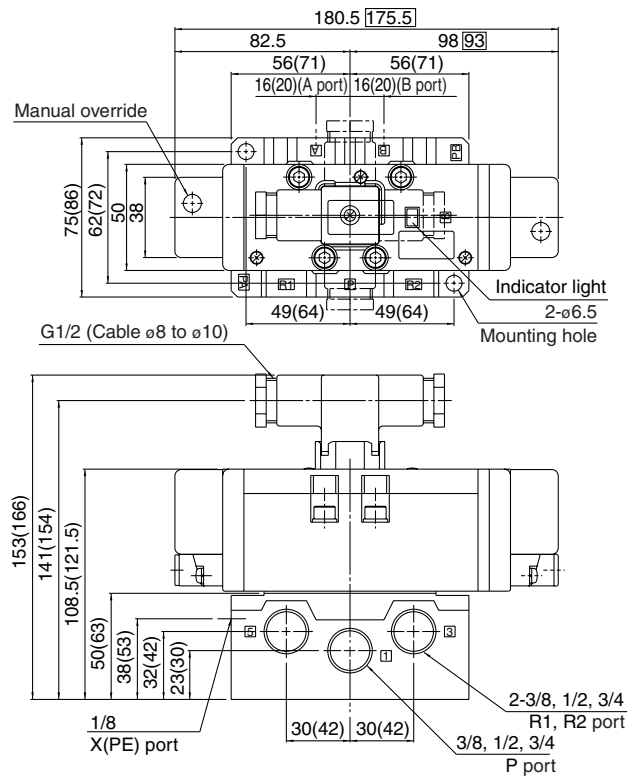
() : 3/4

2 position double : VQ7-8-FG-D
 double (Reverse pressure): VQ7-8-YZ-D



() : 3/4

3 position closed center : VQ7-8-FHG-D
 exhaust center : VQ7-8-FJG-D
 pressure center : VQ7-8-FIG-D

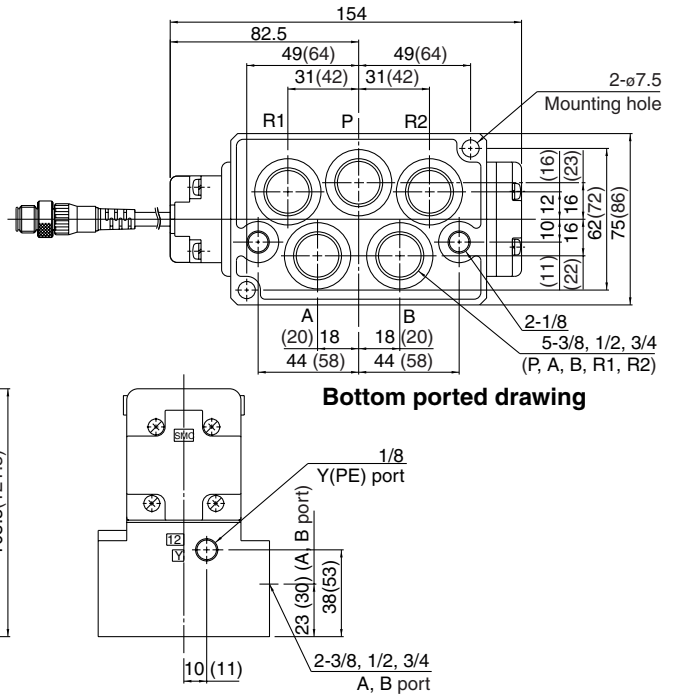
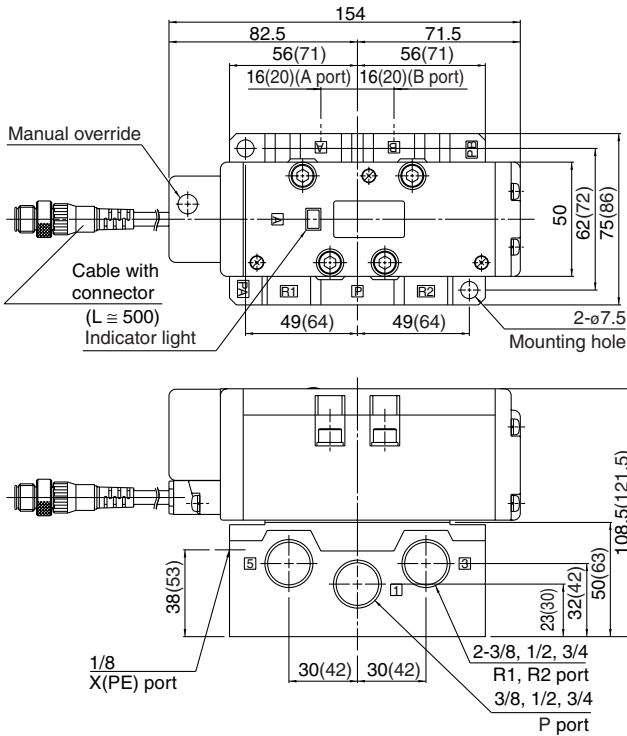


() : 3/4
 Dimensions inside □ are for rubber seals.

ISO Standard Solenoid Valve: Size 2 Metal Seal/Rubber Seal Series VQ7-8

Prewired Connector Type

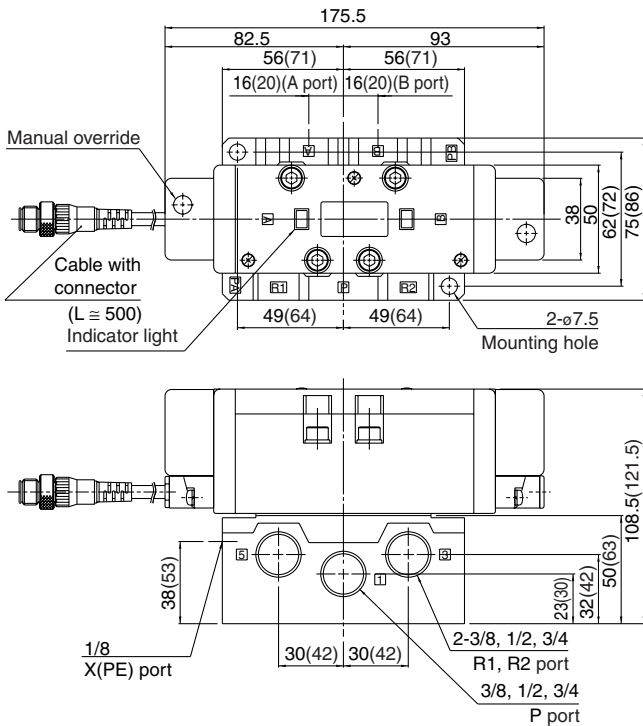
2 position single : VQ7-8-FG-S-□□□□SC
 single (Reverse pressure): VQ7-8-YZ-S-□□□□SC



() : 3/4

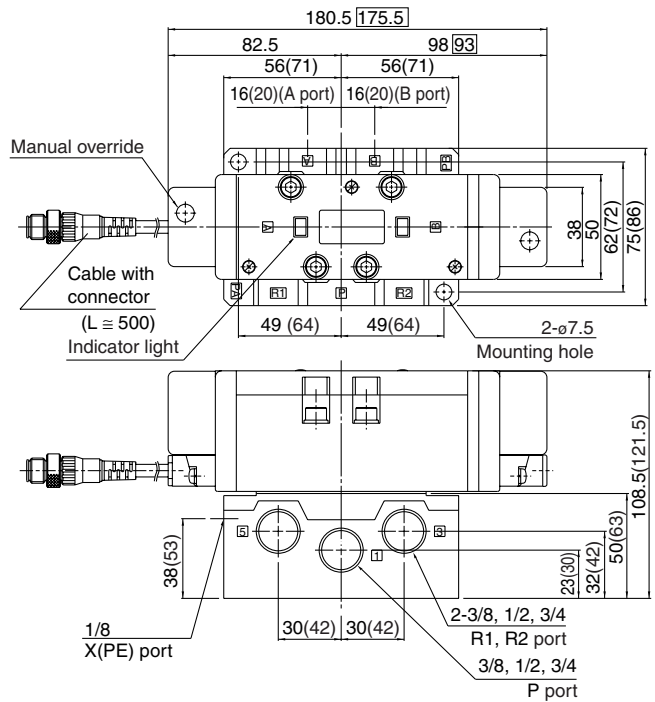
- VK
- VZ
- VF
- VFR
- VP4
- VZS
- VFS
- VS4
- VQ7
- EVS
- VFN

2 position single : VQ7-8-FG-D-□□□□SC
 single (Reverse pressure): VQ7-8-YZ-D-□□□□SC



() : 3/4

3 position closed center : VQ7-8-FHG-D-□□□□SC
 exhaust center : VQ7-8-FJG-D-□□□□SC
 pressure center : VQ7-8-FIG-D-□□□□SC



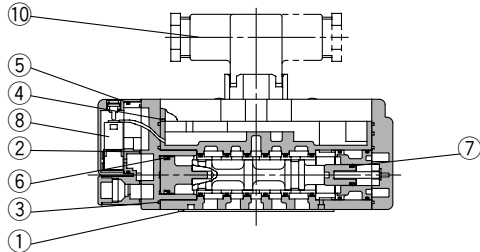
() : 3/4
 Dimensions inside □ are for rubber seals.

Series VQ7-8 Construction

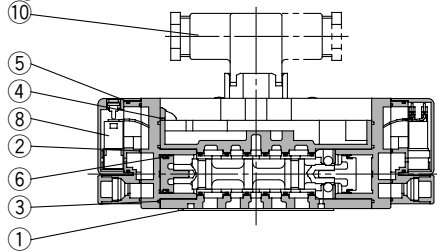
DIN Terminal Type

Metal seal

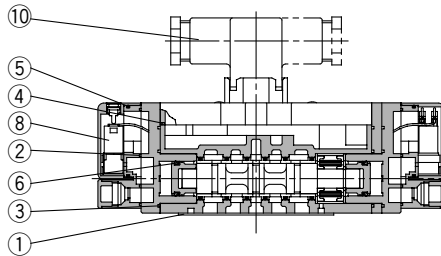
VQ7-8-FG-S-□



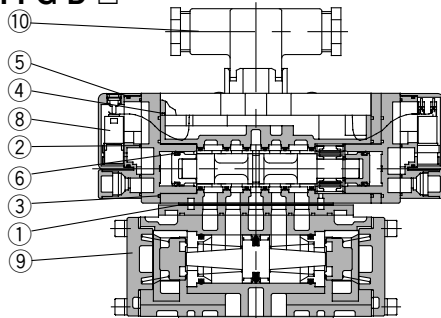
VQ7-8-FG-D-□



VQ7-8-^{FHG}_{FJG}-D-□ FIG

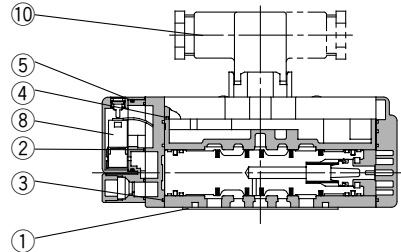


VQ7-8-FPG-D-□

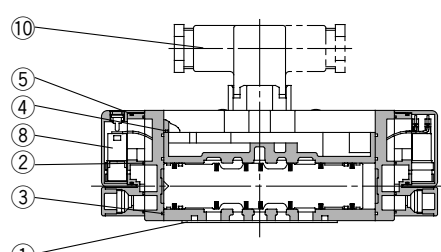


Rubber seal type

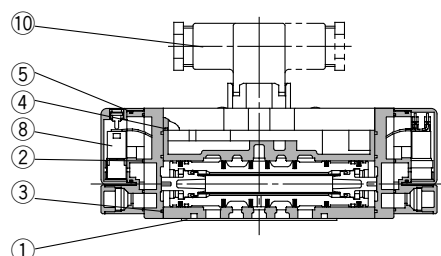
VQ7-8-FG-S-□R□



VQ7-8-FG-D-□R□



VQ7-8-^{FHG}_{FJG}-D-□R□ FIG



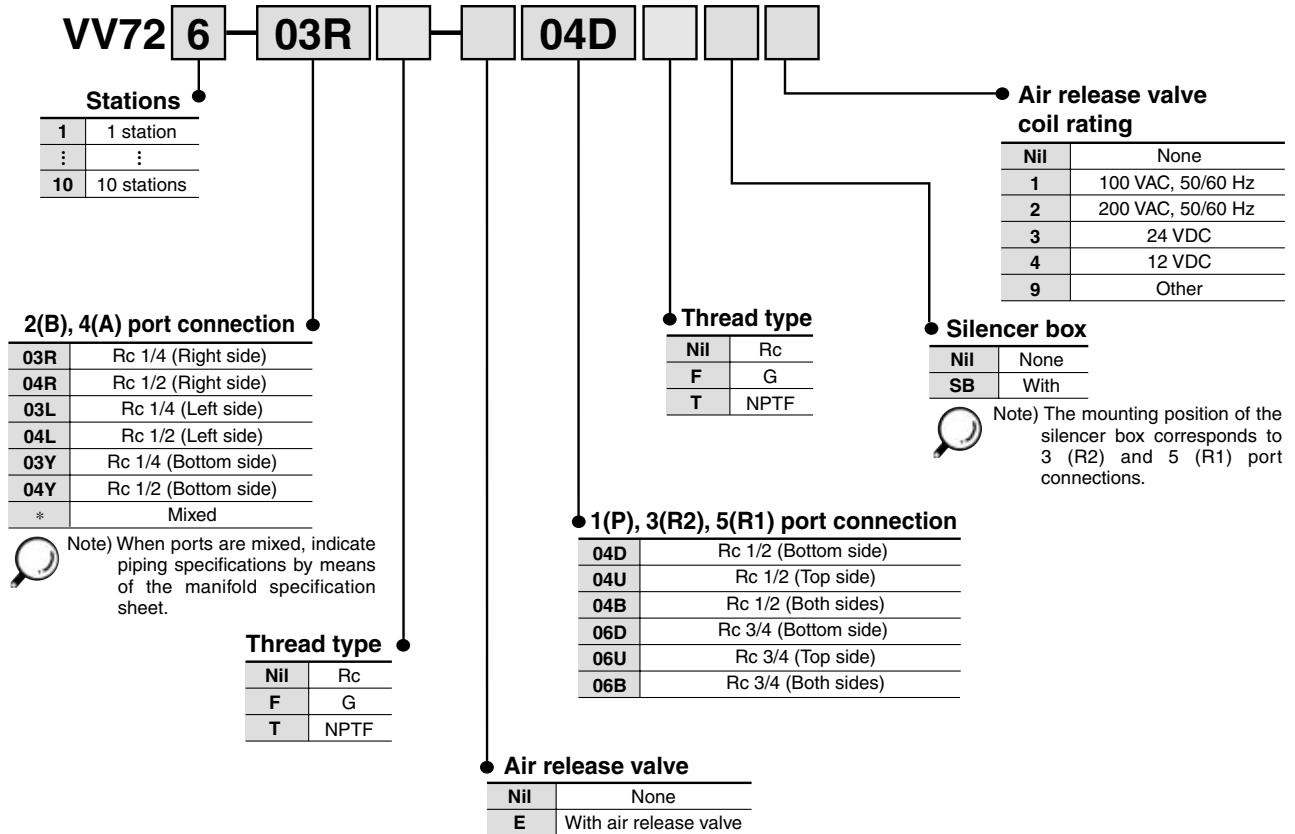
Replacement Parts (For valve)

Number	Description	VQ7-8-FG-S-□	VQ7-8-FG-D-□	VQ7-8-■-D-□	VQ7-8-FPG-D-□	VQ7-8-FG-S-□R□	VQ7-8-FG-D-□R□	VQ7-8-■-D-□R□
①	Gasket				AXT510-13			
②	Gasket A				VQ7060-13-2			
③	Gasket B				VQ7080-13-1			
④	Gasket C				VQ7080-13-3			
⑤	O-ring				37 x 1.6			
⑥	Mini Y seal		MYN-16		MYN-14			—
⑦	Mini Y seal		MYN-8		—			—
⑧	Pilot valve assembly				VQZ110Q-□			
⑨	Double check spacer				VV72-FPG			—
⑩	DIN terminal				UKL-S1			

Series VQ7-8

Manifold Specifications

How to Order Manifold



VK

VZ

VF

VFR

VP4

VZS

VFS

VS4

VQ7

EVS

VFN

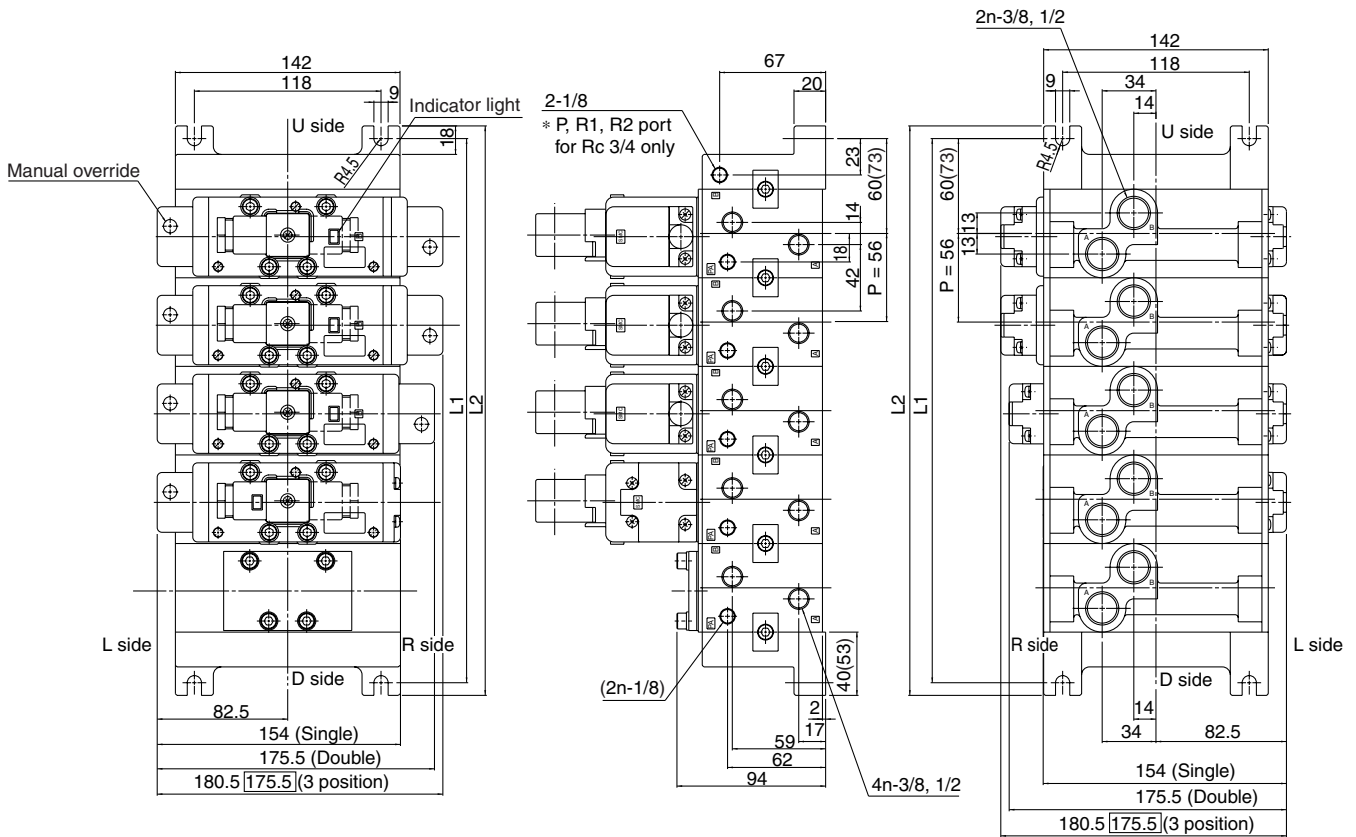
Manifold Specifications

Manifold block size	Applicable solenoid valve	Porting specifications		Stations	Weight (kg)
		2(B), 4(A) port size	1(P), 3(R2) 5(R1) port size		
ISO size 2	Series VQ7-8 ISO size 2	3/8 1/2	1/2 3/4	Max. 10 stations	0.96n + 0.77 (n: Stations)

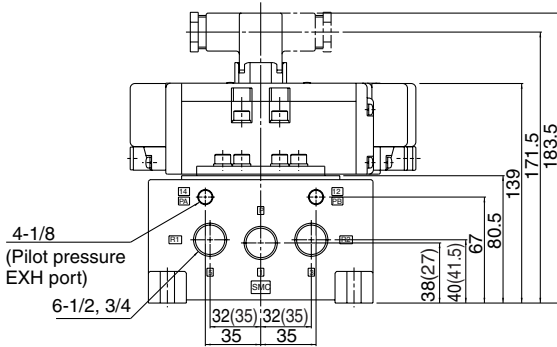
Series VQ7-8

DIN Terminal Type

VV72□-□-□□□



Bottom ported drawing



L Dimension

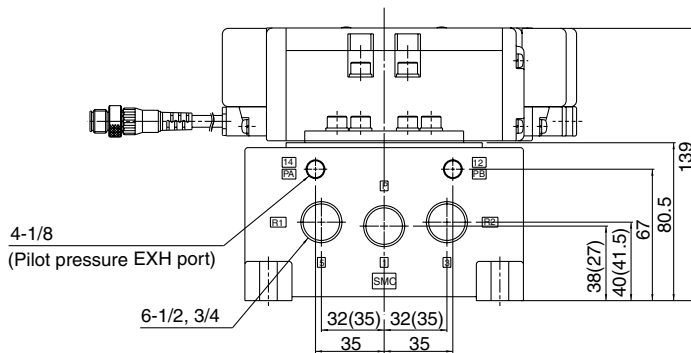
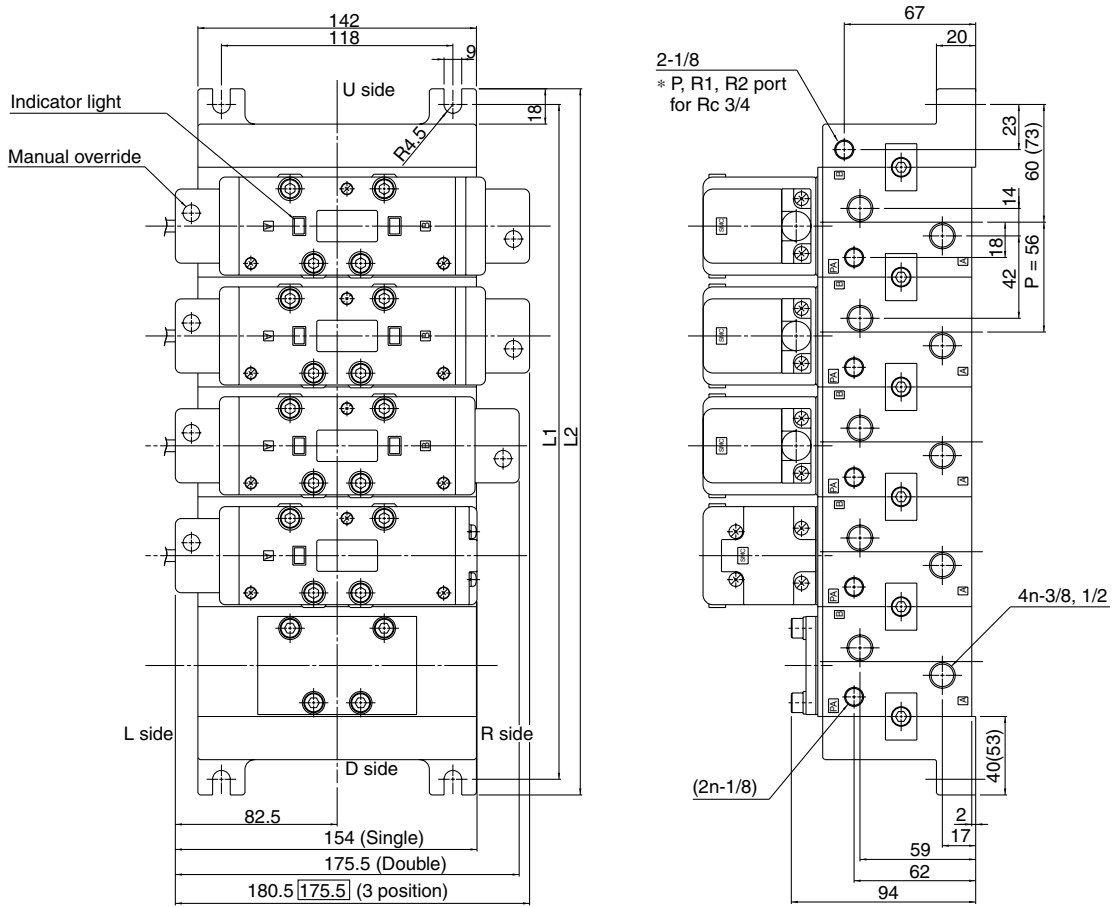
P, R1, R2 port	L	n	1	2	3	4	5	6	7	8	9	10	Formula
1/2	L1		120	176	232	288	344	400	456	512	568	624	n: Stations L1 = 56n + 64 L2 = 56n + 80
	L2		136	192	248	304	360	416	472	528	584	640	
3/4	L1		146	202	258	314	370	426	482	538	594	650	n: Stations L1 = 56n + 90 L2 = 56n + 106
	L2		162	218	274	330	386	442	498	554	610	666	

() : 3/4
 Dimensions inside □ are for rubber seals.

ISO Standard Solenoid Valve: Size 2 Metal Seal/Rubber Seal Series VQ7-8

Pre-wired Connector Type

VV72□-□-□□□



- VK
- VZ
- VF
- VFR
- VP4
- VZS
- VFS
- VS4
- VQ7**
- EVS
- VFN

L Dimension

P, R1, R2 port	L	n										Formula
		1	2	3	4	5	6	7	8	9	10	
1/2	L1	120	176	232	288	344	400	456	512	568	624	n: Stations L1 = 56n + 64 L2 = 56n + 80
	L2	136	192	248	304	360	416	472	528	584	640	
3/4	L1	146	202	258	314	370	426	482	538	594	650	n: Stations L1 = 56n + 90 L2 = 56n + 106
	L2	162	218	274	330	386	442	498	554	610	666	

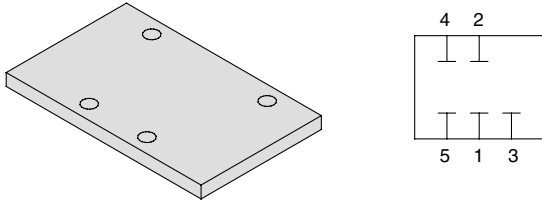
() : 3/4
 Dimensions inside are for rubber seals.

Series VQ7-8

Manifold Option Parts

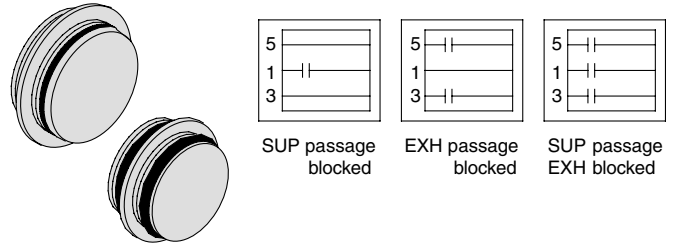
Blanking plate assembly AXT512-9A

It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.



Block disk (For SUP/EXH passages) AXT512-14-1A (For SUP) AXT512-14-2A (For EXH)

When two or more different high pressures are supplied to one manifold, blocking plates are installed between stations having different pressures. Also, in cases such as when valve exhaust effects other stations in a circuit, block disks are used for exhaust at stations where the exhaust is to be separated.

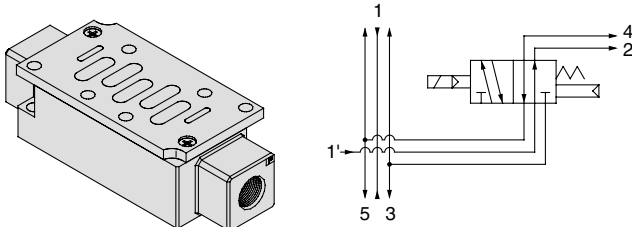


Individual SUP spacer VV72-P-⁰³/₀₄

● Thread type

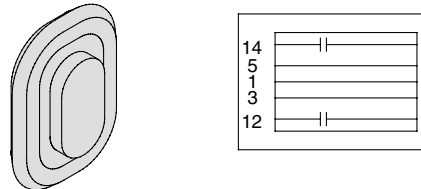
Nil	Rc
F	G
T	NPTF

By mounting individual SUP spacers on a manifold block, it is possible to provide individual supply ports for each valve.



Block disk (For pilot EXH passage) AZ512-49A

When a valve's pilot valve exhaust effects other valves in a circuit, block disks are used between stations where the pilot exhaust passages are to be separated.

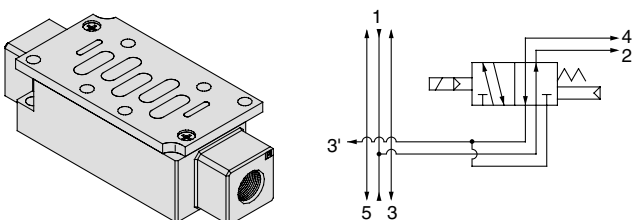


Individual EXH spacer VV72-R-⁰³/₀₄

● Thread type

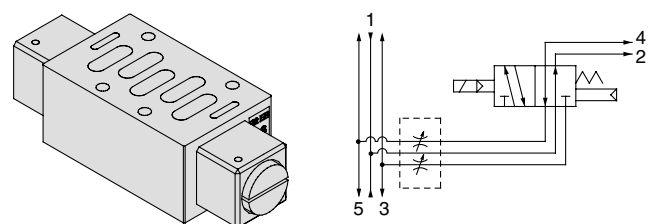
Nil	Rc
F	G
T	NPTF

By mounting individual EXH spacers on a manifold block, exhaust ports can be provided individually for each valve. (3, 5 common exhaust type)



Throttle valve spacer AXT510-32A

A throttle valve spacer is mounted on a manifold block to control cylinder speed by throttling exhaust air flow.



Reverse pressure spacer
AXT519-19A-1

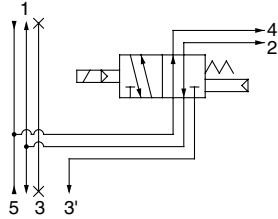
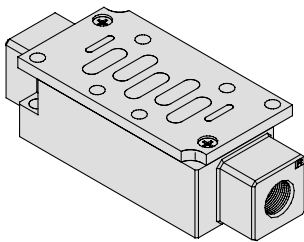
● Thread type

Nil	Rc
F	G
T	NPTF

● Port size

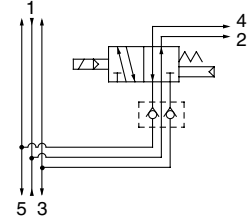
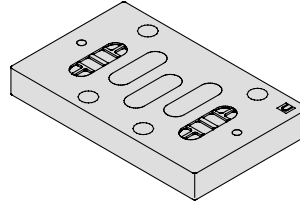
1	3/8
2	1/2

With reverse pressure control manifold specifications, when pressure is changed individually on one side (ex. high speed cylinder return), pressure can be supplied individually to the R2 side by mounting a reverse pressure spacer. {Port 3 (R2) is individual and 5 (R1) is common.}



Main EXH back pressure check plate
AXT512-25A

In cases where back pressure effects actuator operation due to simultaneous operation of manifold valves, etc., this effect can be eliminated by installing a plate between the manifold block and the valve from which back pressure is to be prevented.

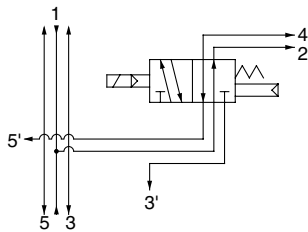
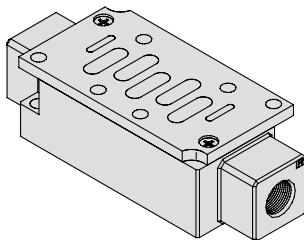


R1/R2 individual EXH spacer
VV72-R2-04

● Thread type

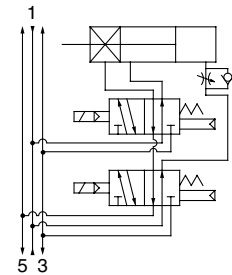
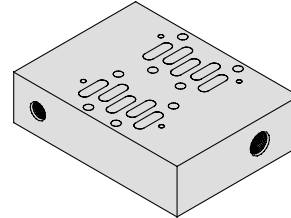
Nil	Rc
F	G
T	NPTF

By mounting an individual EXH spacer on a manifold block, individual exhaust is possible from both R1 and R2. {3 (R2) and (R1) are individual ports.}



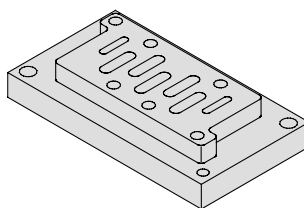
Adapter plate for locked-up cylinder
AXT602-6A

When using a locked-up cylinder with 2 valves for control, this spacer can be used by mounting on a manifold block. It consists of a circuit equipped with a function to prevent lurching during release.



Conversion adapter plate
VV72-V-1

This conversion adapter plate allows a VQ7-6 (size 1) valve to be mounted on a VQ7-8 manifold base. (V type)



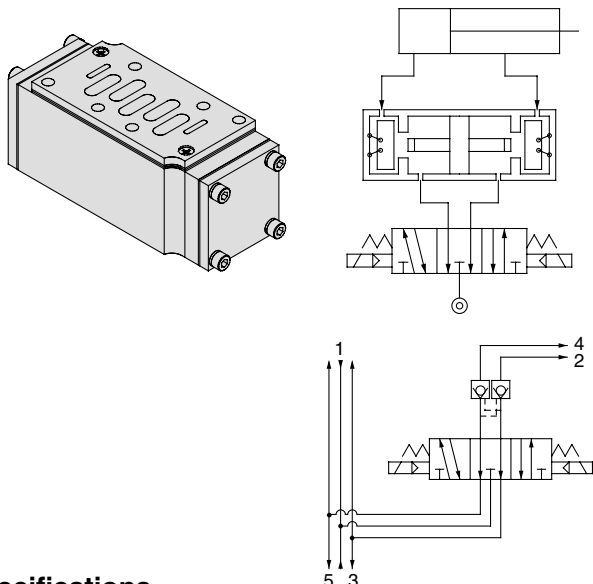
- VK
- VZ
- VF
- VFR
- VP4
- VZS
- VFS
- VS4
- VQ7**
- EVS
- VFN

Series VQ7-8

Manifold Option Parts

Double check spacer VV72-FPG

By combining a 3 position exhaust center valve with a double check spacer, an intermediate stopping position of a cylinder can be held for an extended period. It can also be used for drop prevention at the cylinder stroke end when releasing residual supply pressure, by combining it with a 2 position single or double valve.

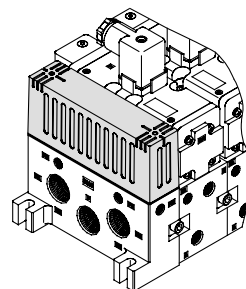


Specifications

Double check spacer part no.		VV72-FPG		
Applicable solenoid or air operated valve		Series VS7-8/VSA7-8		
Leakage (cm ³ /min (ANR))	One solenoid energized (One pilot pressurized)	P	R1	280
			R2	
	Both solenoids unenergized (Both pilots unpressurized)	P	R1	280
			R2	
		A	R1	0
		B	R2	

Silencer box VV72-□□□-□□-SB

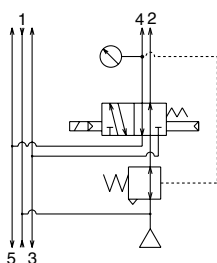
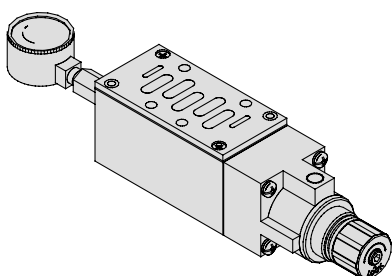
This can be provided as a unit on the end plate to reduce manifold exhaust noise and piping labor.



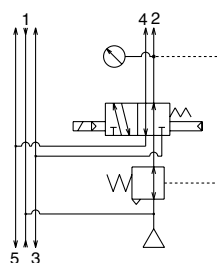
Interface regulator

ARB350-00-^P_A_B

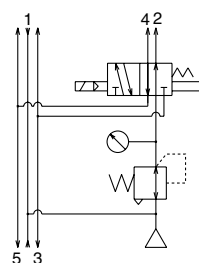
Spacer Interface regulators can be placed on top of the manifold block to reduce the pressure of each of the valves.



Regulating port A



Regulating port B



Regulating port P

Part No.

P reduced pressure	ARB350-00-P
A reduced pressure	ARB350-00-A
B reduced pressure	ARB350-00-B

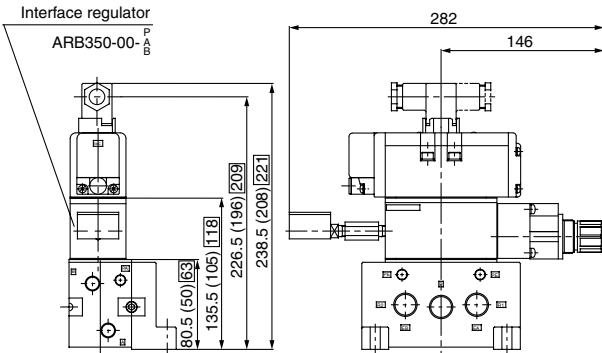
⚠ Caution

- When combining a pressure center valve and interface regulator with reduced pressure at ports A and B, use model ARB310-^A_B.
- When combining a reverse pressure valve and interface regulator, use model ARB310-^A_B. Further, it cannot be used with reduced pressure at port P.
- When combining a double check valve and an interface regulator, use a manifold or sub-plate as a basis, and stack them in the following order; the perfect spacer → the interface regulator → the valve.
- When a closed center valve is combined with the interface regulator's A, B port regulation, note that it cannot be used for intermediate stops of a cylinder because there is leakage from relief port on the regulator.

Manifold Option Parts

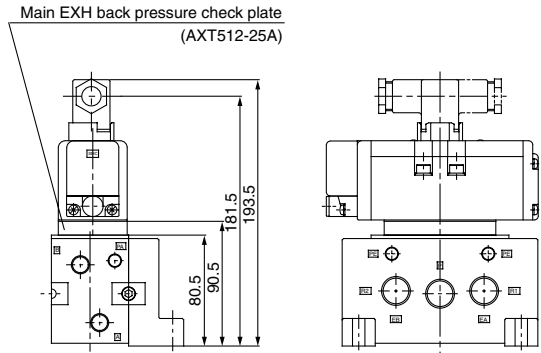
Interface regulator

ARB350-00-^P
A
B



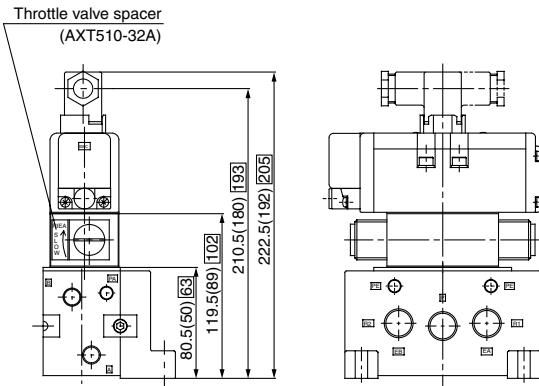
Dimensions inside () are for sub-plate aperture Rc 3/8 and 1/2.
Dimensions inside □ are for sub-plate aperture Rc 3/4.

Main EXH back pressure check plate
AXT512-25A



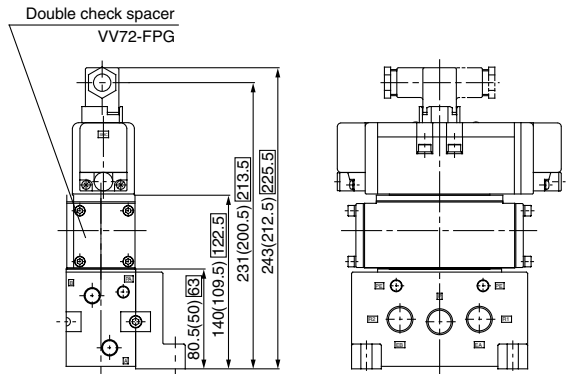
- VK
- VZ
- VF
- VFR
- VP4
- VZS
- VFS
- VS4
- VQ7**
- EVS
- VFN

Throttle valve spacer
AXT510-32A



Dimensions inside () are for sub-plate aperture Rc 3/8 and 1/2.
Dimensions inside □ are for sub-plate aperture Rc 3/4.

Double check spacer
VV72-FPG



Dimensions inside () are for sub-plate aperture Rc 3/8 and 1/2.
Dimensions inside □ are for sub-plate aperture Rc 3/4.

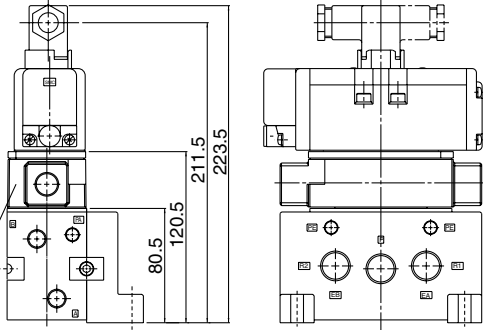
Series VQ7-8

Manifold Option Parts

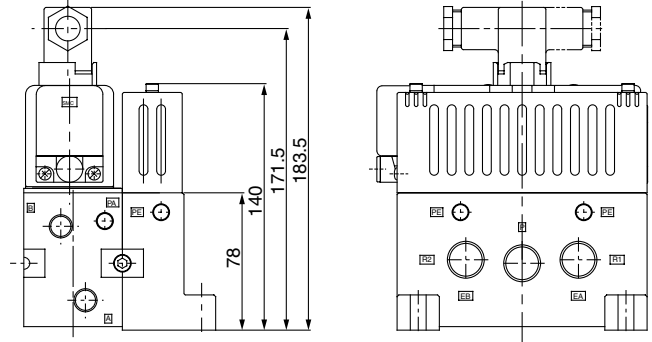
Individual EXH spacer
 Individual SUP spacer
 R1/R2 individual EXH spacer
 Reverse pressure spacer

VV72-R-03/04
 VV72-P-03/04
 VV72-R2-04
 AXT512-19A-¹/₂

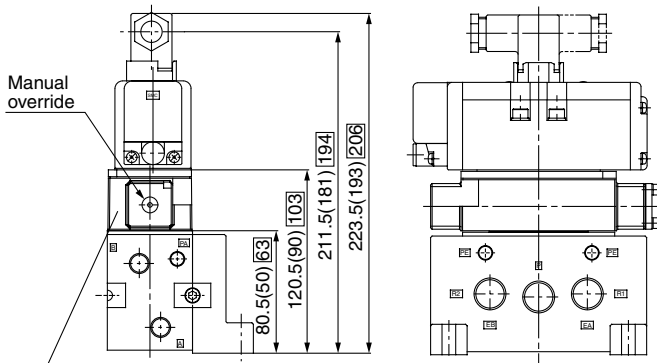
Silencer box
 AXT512-26A



- Individual EXH spacer VV72-R-*
2-3/8, 1/2
- Individual SUP spacer: VV72-P-*
2-3/8, 1/2
- R1, R2 individual EXH spacer: VV72-R2-04
2-1/2
- Reverse pressure spacer: AX512-19A-¹/₂
2-3/8, 1/2



Residual pressure release valve spacer AZ512-59^A/_B



Residual pressure release valve spacer
 (AZ512-59^A/_B)

Dimensions inside () are for sub-plate aperture Rc 3/8 and 1/2.
 Dimensions inside □ are for sub-plate aperture Rc 3/4.

ISO Standard Solenoid Valve: Size 2 Metal Seal/Rubber Seal Series VQ7-8

Manifold Option Parts/Mounting Bolt Part No.

VQ7-6 Mounting Bolt Part No.

Number of options		0		Single stack				Double stack					
Mounting bolt	No.	AXT632-45-1	AXT632-45-2	AXT632-45-4	AXT632-45-5	AXT632-45-6	AXT632-45-7	AXT632-45-8	AXT632-45-9	AXT632-45-10	AXT632-45-11	AXT632-45-12	AXT632-45-13
	Size	M5 x 35 with SW	M5 x 15 with SW	M5 x 45 with SW	M5 x 60 with SW	M5 x 65 with SW	M5 x 70 with SW	M5 x 75 with SW	M5 x 90 with SW	M5 x 95 with SW	M5 x 100 with SW	M5 x 105 with SW	M5 x 115 with SW
Option mounting diagram													
		Valve	Blanking plate	Main exhaust back pressure check plate	Throttle valve spacer	Spacer (1)	Release valve spacer	Spacer (2)	Throttle valve spacer	Spacer (1)	Interface regulator	Spacer (2)	Spacer (2)
												Note 2)	Note 3)

Number of options		Triple stack				
Mounting bolt	No.	AXT632-45-14	AXT632-45-16	AXT632-45-17	AXT632-45-18	AXT632-45-19
	Size	M5 x 120 with SW	M5 x 130 with SW	M5 x 135 with SW	M5 x 140 with SW	M5 x 145 with SW
Option mounting diagram						
		Throttle valve spacer	Spacer (2)	Spacer (2)	Spacer (2)	Spacer (2)
			Note 1)	Note 2)	Note 3)	Note 3)

The installation position of spacer (1) in the option mounting diagrams is limited only by the precautions given below.

Spacers

- Main EXH back pressure check plate
- Throttle valve spacer
- Release valve spacer
- Spacer (1)
 - Individual SUP spacer
 - Individual EXH spacer
 - R1, R2 individual EXH spacer
 - Reverse pressure spacer
 - Residual pressure release valve spacer
 - Individual SUP spacer with residual pressure release valve
- Spacer (2)
 - Interface regulator (P port regulation)
 - Interface regulator (A port regulation)
 - Interface regulator (B port regulation)
 - Double check spacer
 - Double check spacer with residual pressure release valve

- Note 1) A throttle valve spacer and double check spacer (including those with residual pressure release valve) cannot be combined.
- Note 2) When a double check spacer (Top) (including those with residual pressure release valve) and individual EXH spacer (Bottom) are combined with a R1, R2 individual EXH spacer (Bottom), be careful regarding the installation position.
- Note 3) When an interface regulator (Top) and double check spacer (Bottom) (including those with residual pressure release valve) are combined, be careful regarding the installation position.

VQ7-8 Mounting Bolt Part No.

Number of options		0		Single stack				Double stack			
Mounting bolt	No.	AXT632-54-1	AXT632-54-2	AXT632-54-3	AXT632-54-5	AXT632-54-6	AXT632-54-7	AXT632-54-8	AXT632-54-9	AXT632-54-10	AXT632-54-11
	Size	M6 x 45 with SW	M6 x 18 with SW	M6 x 55 with SW	M6 x 85 with SW	M6 x 100 with SW	M6 x 105 with SW	M6 x 125 with SW	M6 x 140 with SW	M6 x 145 with SW	M6 x 160 with SW
Option mounting diagram											
		Valve	Blanking plate	Main exhaust back pressure check plate	Spacer (1)	Interface regulator	Double check spacer	Spacer (1)	Interface regulator	Double check spacer	Interface regulator

Number of options		Triple stack			
Mounting bolt	No.	AXT632-54-12	AXT632-54-13	AXT632-54-14	AXT632-54-15
	Size	M6 x 165 with SW	M6 x 180 with SW	M6 x 185 with SW	M6 x 200 with SW
Option mounting diagram					
		Spacer (1)	Interface regulator	Double check spacer	Interface regulator

Spacers

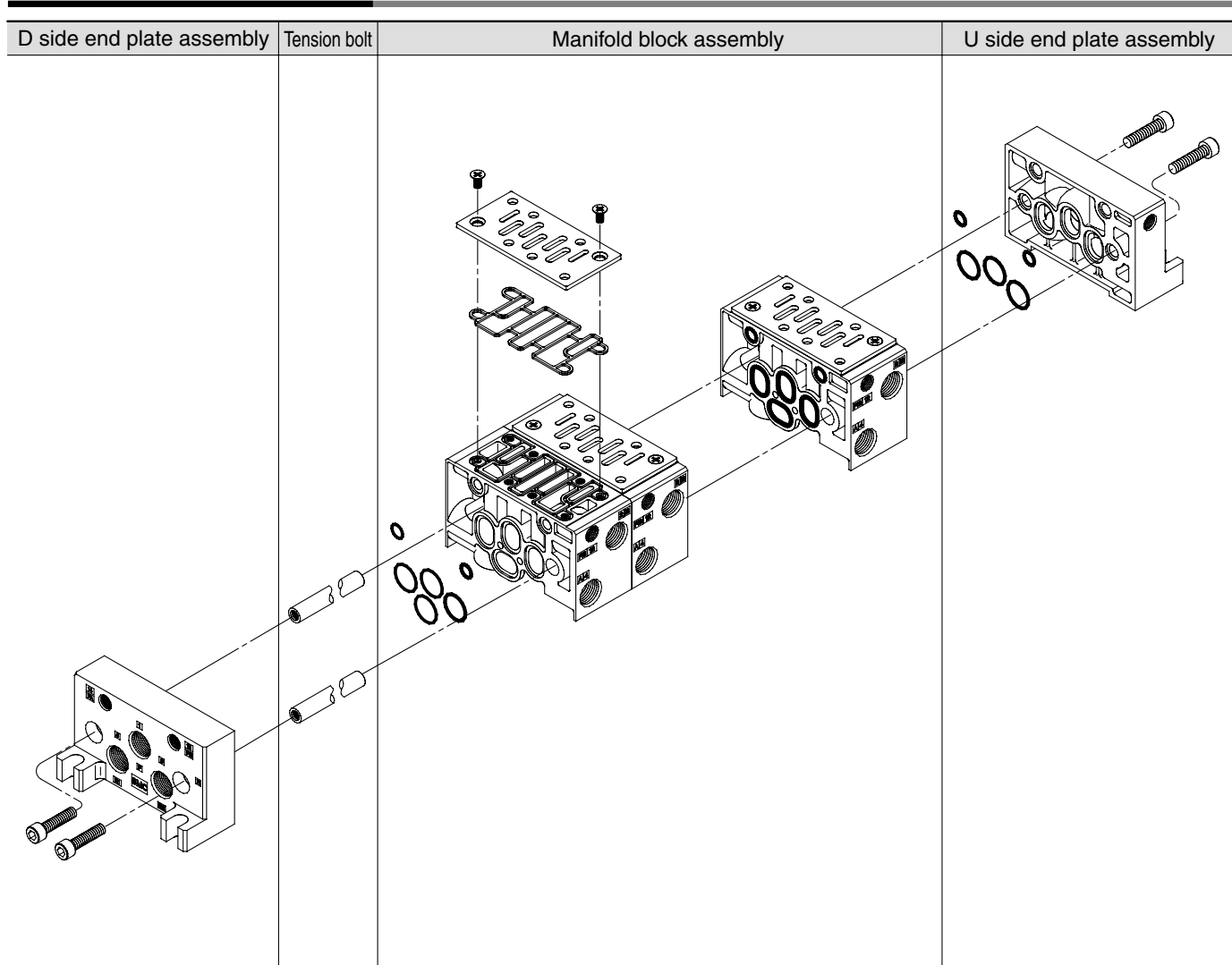
- Main EXH back pressure check plate
- Interface regulator (P reduced pressure)
- Interface regulator (A port regulation)
- Interface regulator (B port regulation)
- Double check spacer
- Spacer (1)
 - Individual SUP spacer
 - Individual EXH spacer
 - R1, R2 individual EXH spacer
 - Reverse pressure spacer
 - Residual pressure release valve spacer
- Throttle valve spacer

- Note 1) A throttle valve spacer and double check spacer cannot be combined.
- Note 2) There is no limitation on the mounting position for spacer (1).

- VK
- VZ
- VF
- VFR
- VP4
- VZS
- VFS
- VS4
- VQ7
- EVS
- VFN

Series VQ7-8

Exploded View of Manifold



<End Plate Assembly>

AXT502 - A -

End plate position

L	U side
R	D side

P, R port size

02	Rc 1/4
03	Rc 3/8
C12	One-touch fitting for ø12

Thread type

Nil	Rc
F	G
T	NPTF

Note) It is not applicable to One-touch fittings.

<Tension Bolt Part No.>

AXT502 - 34 -

Stations

2	For 2 stations
3	For 3 stations
⋮	⋮
10	For 10 stations

Note) These tie-rods are solid pieces for each number of stations.

<Manifold Block Assembly>

AXT502 - 1A -

Porting specifications

A	Side
B	Bottom

Cylinder port location

L	L side
R	R side

Cylinder port size

02	Rc 1/4
03	Rc 3/8
C6 ⁽¹⁾	One-touch fitting for ø6
C8 ⁽¹⁾	One-touch fitting for ø8
C10 ⁽¹⁾	One-touch fitting for ø10

Thread type

Nil	Rc
F	G
T	NPTF

Note) It is not applicable to One-touch fittings.

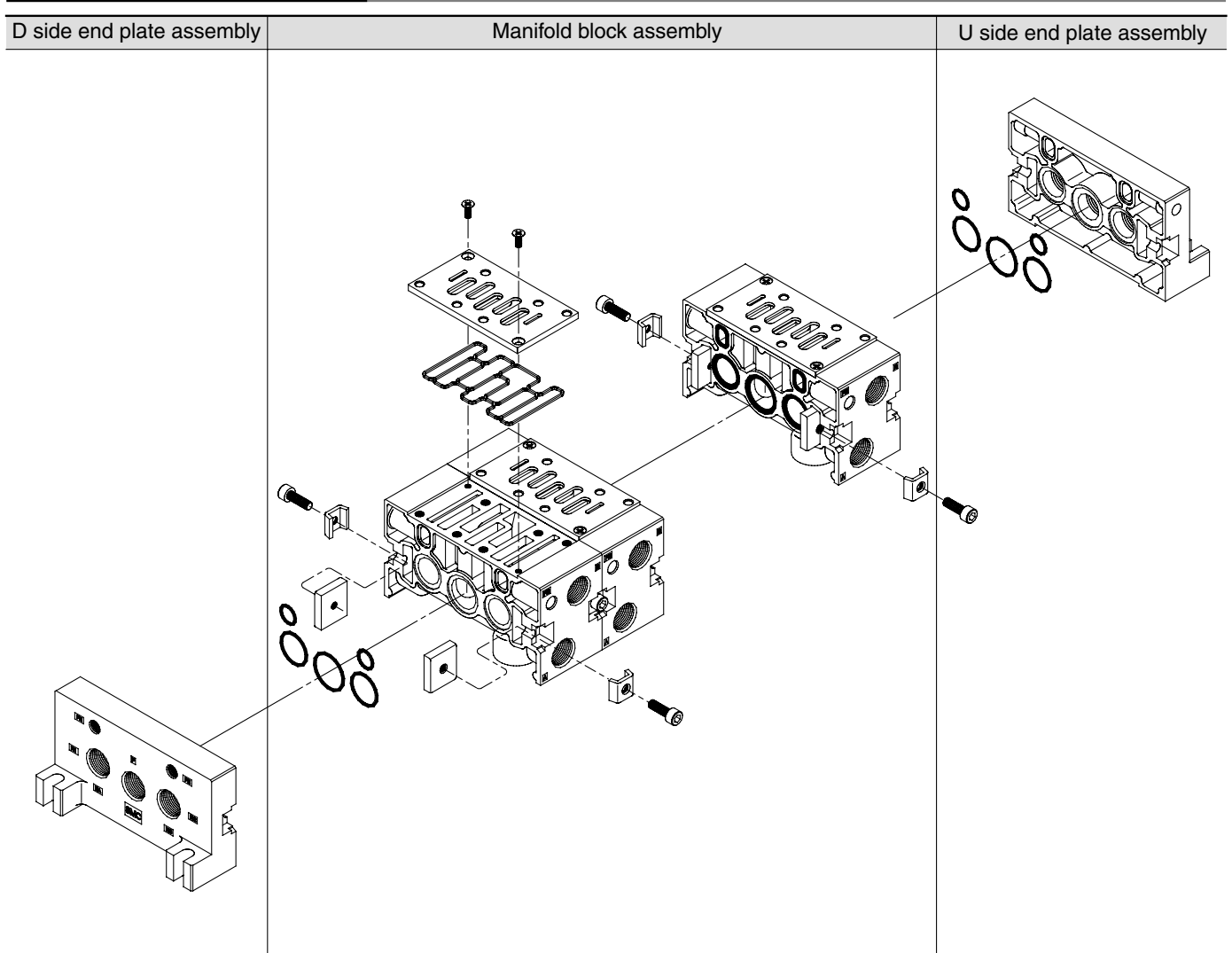
Note 1) Side piping only

Note 2) In this manifold block assembly, the tension bolt for increasing station (1 station) is included.

Replacement Parts (For manifold block)

Part no.	Description	Qty.	Material
AXT502-19	O-ring	4	NBR
AXT502-20	O-ring	2	NBR
AXT502-22-2	Plate	1	SPCC
AXT502-31	Gasket	1	NBR
M4 x 8	Oval countersunk head screw	2	SWRH3

Exploded View of Manifold



- VK
- VZ
- VF
- VFR
- VP4
- VZS
- VFS
- VS4
- VQ7**
- EVS
- VFN

<End Plate Assembly>

AXT512 - [] A - [] []

End plate position

L	U side
R	D side

P, R port size

04	Rc 1/2
06	Rc 3/4
C12	One-touch fitting for ø12

Thread type

Nil	Rc
F	G
T	NPTF

Note) It is not applicable to One-touch fittings.

<Manifold Block Assembly>

AXT512 - 1A - [] [] [] []

Wiring specifications

A	Side
B	Bottom

Cylinder port location

L	L side
R	R side

Cylinder port size

03	3/8
04	1/2

Thread type

Nil	Rc
F	G
T	NPTF

Replacement Parts (For manifold block)

Part no.	Description	Qty.	Material
AXT512-13	O-ring	2	NBR
AS568-022	O-ring	1	NBR
AS568-020	O-ring	2	NBR
AXT512-5	Gasket	1	NBR
AXT512-4	Plate	1	SPCC
M4X10	Oval countersunk head screw	2	SWRH3
AXT512-6-1	Connection fitting A	2	
AXT512-6-4	Connection fitting B	2	
AXT512-6-3	Hexagon socket head screw	2	