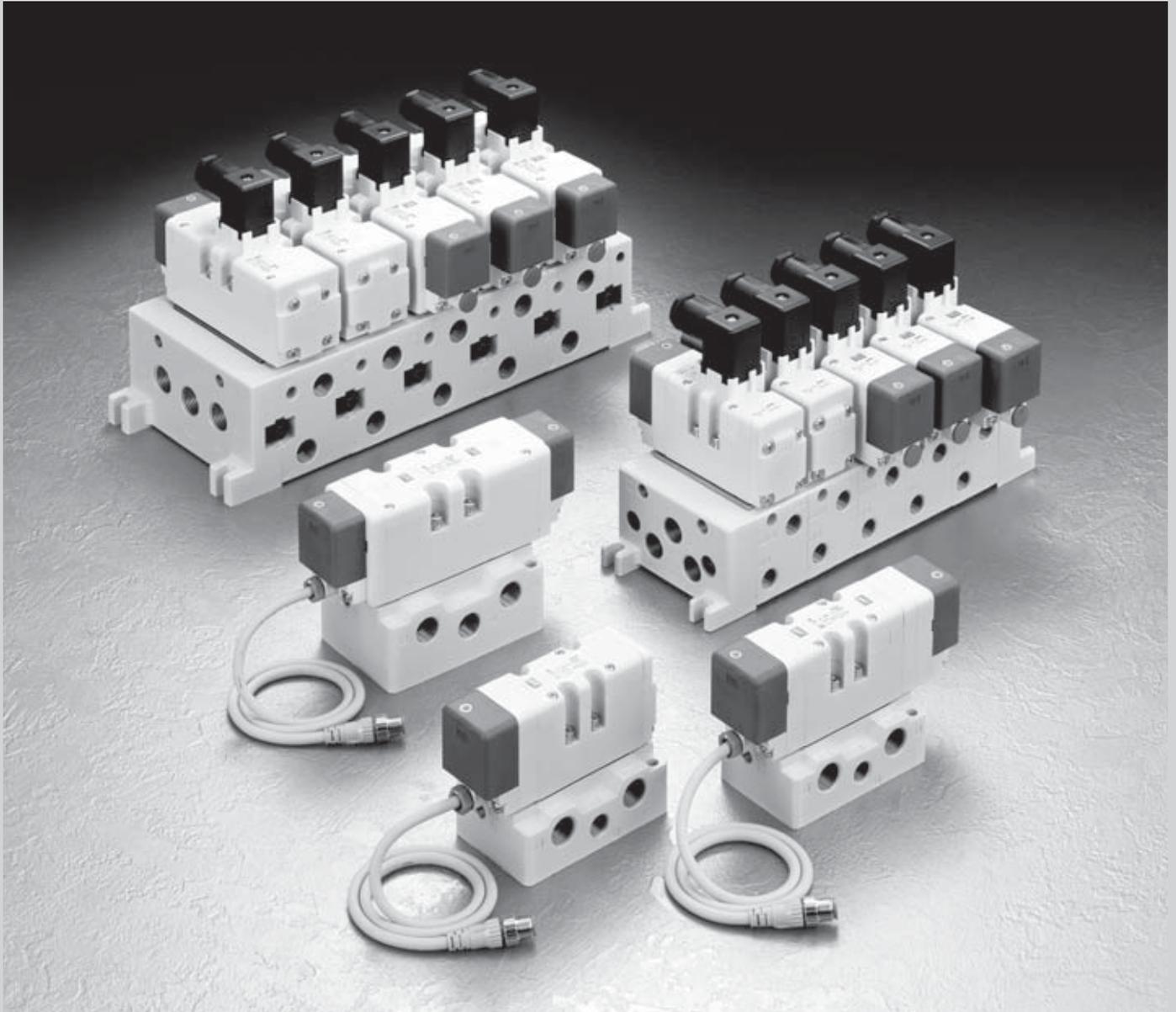


ISO Standard Solenoid Valve

Series *VQ7-6/7-8*

(Size 1)

(Size 2)



Conforms to ISO Standard 5599/1

Series VQ7-6, (Size 1)

Large flow capacity

Ideal for driving cylinders up to
ø100 (VQ7-6, Size 1)
ø160 (VQ7-8, Size 2)
Nl/min VQ7-6: 1668.55
VQ7-8: 3140.80

Conforms to ISO standard 5599/I

Interfaces conform to ISO standard
Size 1 (VQ7-6) and Size 2 (VQ7-8).

High speed response and long life

IP65 enclosure is dust tight and splash proof

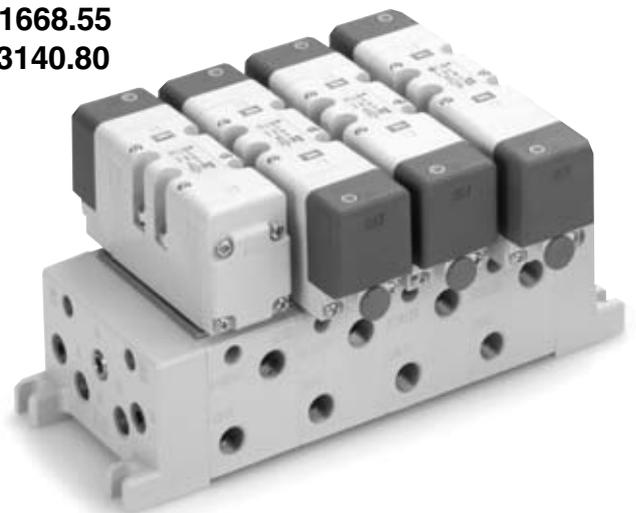
A wide variety of manifold options

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

- Interface regulator
- Double check spacer
- Double check spacer with residual pressure release valve
- Individual supply spacer
- Supply spacer with residual pressure release valve
- Individual exhaust spacer

- Blocking plate
- Adapter plate with release valve
- Reverse pressure spacer
- R1, R2 individual exhaust spacer
- Throttle valve spacer
- Locking cylinder adapter plate
- Main exhaust back pressure check plate

- Control unit
- Silencer box



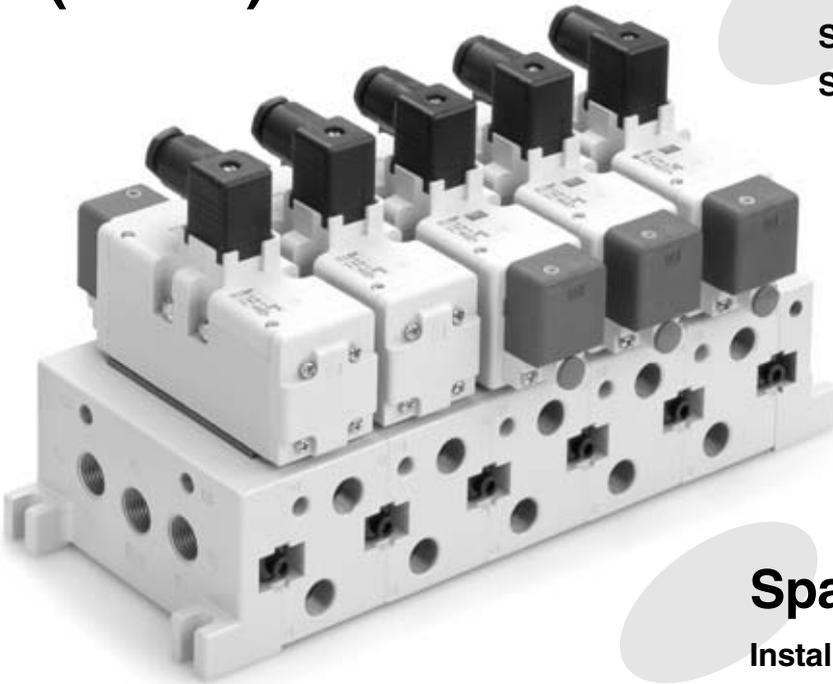
Adopted colour tone contributes to brighter factory environments

VQ7-8

(Size 2)

Lighter weight

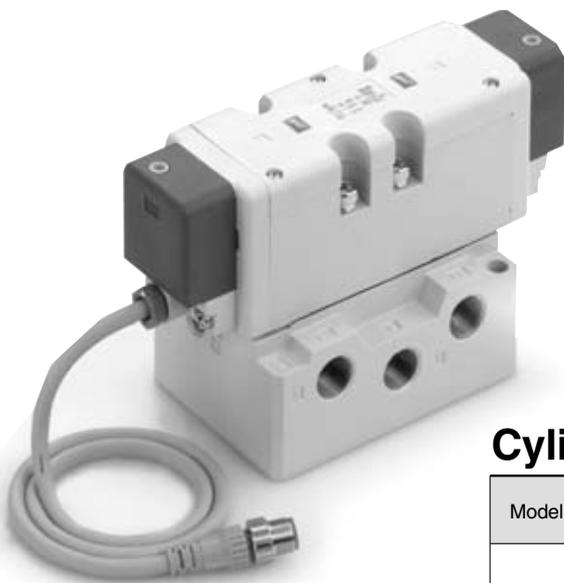
Size 1 (3 position) 0.48kg 24% less
 Size 2 (3 position) 0.75kg 15% less
 (Compared to previous series)



Space saving profile

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

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



Cylinder Speed Chart

| Model | N/min Metal seal (Rubber seal) | Cylinder speed mm/s | Cylinder bore size mm | | | | | | | |
|-------|--------------------------------------|------------------------|-----------------------|----|----|----|-----|-----|-----|-----|
| | | | 40 | 50 | 63 | 80 | 100 | 125 | 140 | 160 |
| VQ7-6 | 1472.25 (1668.55) | 150 | | | | | | | | |
| | | 300 | | | | | | | | |
| | | 450 | | | | | | | | |
| | | 600 | | | | | | | | |
| | | 750 | | | | | | | | |
| VQ7-8 | 3140.80 (3140.80) | 150 | | | | | | | | |
| | | 300 | | | | | | | | |
| | | 450 | | | | | | | | |
| | | 600 | | | | | | | | |
| | | 750 | | | | | | | | |

Pressure 0.5MPa, Load factor 50%

Note) Use as a guide for selection, as cylinder speeds will vary depending on the piping equipment.

Series VQ7-6

ISO Standard Solenoid Valve

Size 1/Single Unit

How to Order Valves

VQ7-6-FG-S-3 [] [] [] [] [] [] [] **Q**

Passage symbol

| | |
|------------|--|
| FG | |
| YZ* | |
| FHG | |
| FJG | |
| FPG | |
| FIG | |

* Optional

Connector

| | |
|------------|--|
| Nil | DIN terminal block (with connector) |
| O | DIN terminal block (without connector) |
| SC | Prewired connector |

Sub plate port size

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

* Port R is 3/8

Thread

| | |
|----------|---------|
| - | Rc (PT) |
| F | G (PF) |
| N | NPT |
| T | NPTF |

Seal type

| | |
|------------|-------------|
| Nil | Metal seal |
| R | Rubber seal |

Options

| | |
|------------|---|
| Nil | None |
| N | Indicator light |
| Z | Indicator light with surge voltage suppressor |

Pilot exhaust

| | |
|------------|--------------------|
| Nil | Common exhaust |
| V | Individual exhaust |

Number of solenoids

| | |
|----------|--------|
| S | Single |
| D | Double |

Coil rating

| | |
|-----------|--------------------------------|
| 1 | 100VAC |
| 2 | 200VAC |
| 3 | 24VDC |
| 4 | 12VDC |
| 9* | Other voltage (less than 240V) |

* Contact SMC for other voltages (9)

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

How to Order Sub Plates

E VS7-1-A02 []

Port size

| | |
|------------|-------------------|
| A02 | Side port 1/4 * |
| A03 | Side port 3/8 |
| B02 | Bottom port 1/4 * |
| B03 | Bottom port 3/8 |

* Ports 3 (R2) and 5 (R1) are 3/8

Thread

| | |
|----------|---------|
| - | Rc (PT) |
| F | G (PF) |
| N | NPT |
| T | NPTF |

Ordering source area code

| Code | areas |
|----------|--------------------------|
| - | Japan, Asia Australia |
| E | Europe |
| N | North America |

Specifications

| Type | Piping location | Piping specifications | | Weight kg |
|------------------|-----------------|-------------------------------|--------------------------|-----------|
| | | 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 | | |

Models



| Series | Positions | | Model | | Note 1) | Note 2) | Note 3) |
|--------|------------|-----------------|-------------|----------------|---|---------------------|--------------|
| | | | | | Effective area mm ² (N/min) | Response time ms | Weight kg |
| VQ7-6 | 2 position | Single | Metal seal | VQ7-6-FG-S-□ | 27.0 (1472.25) | 20 or less | 0.40 |
| | | | Rubber seal | VQ7-6-FG-S-□R | 31.0 (1668.55) | 25 or less | |
| | | Double | Metal seal | VQ7-6-FG-D-□ | 27.0 (1472.25) | 12 or less | 0.45 |
| | | | Rubber seal | VQ7-6-FG-D-□R | 31.0 (1668.55) | 15 or less | |
| | 3 position | Closed centre | Metal seal | VQ7-6-FHG-D-□ | 25.5 (1374.10) | 40 or less | 0.48 |
| | | | Rubber seal | VQ7-6-FHG-D-□R | 27.0 (1472.25) | 45 or less | |
| | | Exhaust centre | Metal seal | VQ7-6-FJG-D-□ | 27.0 (1472.25) | 40 or less | 0.48 |
| | | | Rubber seal | VQ7-6-FJG-D-□R | 31.0 (1668.55) | 45 or less | |
| | | Double check | Metal seal | VQ7-6-FPG-D-□ | 20.0 (1079.65) | 50 or less | 0.84 |
| | | | Rubber seal | VQ7-6-FPG-D-□R | 20.0 (1079.65) | 50 or less | |
| | | Pressure centre | Metal seal | VQ7-6-FIG-D-□ | 27.0 (1472.25) | 40 or less | 0.48 |
| | | | Rubber seal | VQ7-6-FIG-D-□R | 31.0 (1668.55) | 45 or less | |

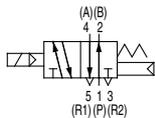
Note 1) Port size 1/4: Value when mounted on sub plate.

Note 2) Based on JIS B 8375-1981 (Value for supply pressure of 0.5MPa, with light/surge voltage suppressor, when using clean air.) Response time values will change depending on pressure and air quality.
The value when ON for the double type.

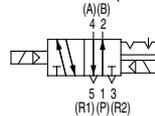
Note 3) The weight without sub plate. (Sub plate: 0.37kg)

Symbols

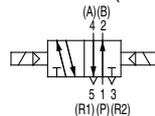
2 position single



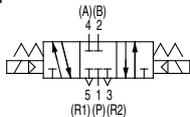
2 position double (metal)



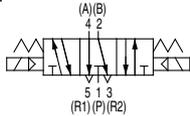
2 position double (rubber)



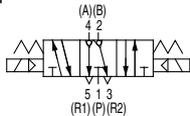
3 position closed centre



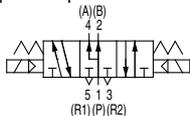
3 position exhaust centre



3 position double check



3 position pressure centre



Standard Specifications

| Valve specifications | Valve construction | Metal seal | Rubber seal | |
|-------------------------------|---|--|---|--|
| | Fluid | Air/Inert gas | | |
| Maximum operating pressure | 1.0MPa | | | |
| Minimum operating pressure | Single | 0.15MPa | 0.20MPa | |
| | Double | 0.15MPa | 0.15MPa | |
| | 3 position | 0.15MPa | 0.20MPa | |
| Ambient and fluid temperature | -10 to 60°C Note 1) | -5 to 60°C Note 1) | | |
| Lubrication | Not required | | | |
| Manual operation | Push type (tool required) | | | |
| Impact/Vibration resistance | 150/30 m/s ² Note 2) | | | |
| Enclosure | IP65 (splash proof/jet proof) | | | |
| Electrical specifications | Rated coil voltage | 12VDC, 24VDC, 100VAC, 110VAC, 200VAC, 220VAC (50/60Hz) | | |
| | Allowable voltage fluctuation | ±10% of rated voltage | | |
| | Coil insulation type | Class B equivalent | | |
| | Power consumption (current) | 24VDC | DC1W (42mA) | |
| | | 12VDC | DC1W (83mA) | |
| | | 100VAC | Inrush 1.2VA (12mA), Holding 1.2VA (12mA) | |
| | | 110VAC | Inrush 1.3VA (11.7mA), Holding 1.3VA (11.7mA) | |
| | | 200VAC | Inrush 2.4VA (12mA), Holding 2.4VA (12mA) | |
| 220VAC | Inrush 2.6VA (11.7mA), Holding 2.6VA (11.7mA) | | | |

Note 1) For low temperature, use dry air with no condensation.

Note 2) Impact resistance: No malfunction when tested with a drop tester in the axial direction and at a right angle to the main valve and armature, one time each in both energized and deenergized states. (initial value)

Vibration resistance: No malfunction when tested with one sweep of 8.3 to 2000Hz in the axial direction and at a right angle to the main valve and armature, one time each in both energized and deenergized states. (initial value)

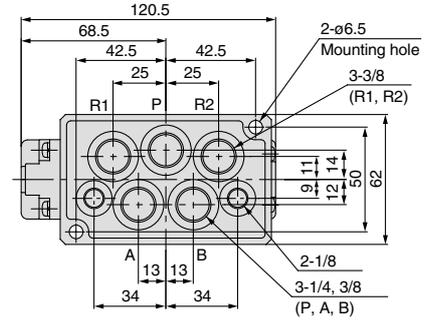
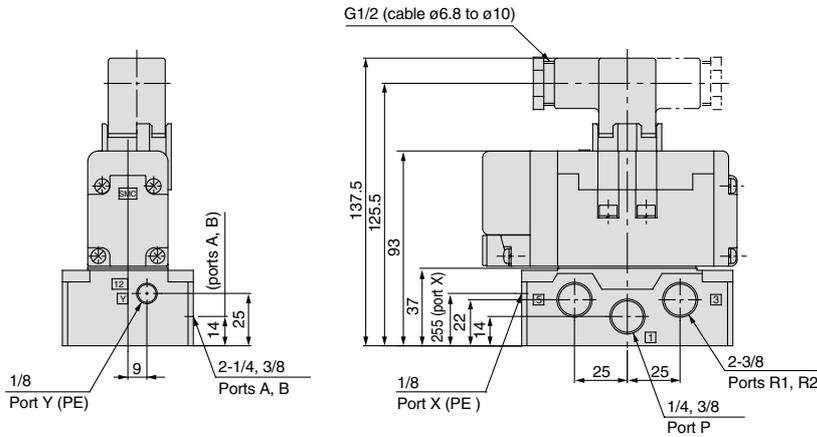
Series VQ7-6

DIN Connector Type

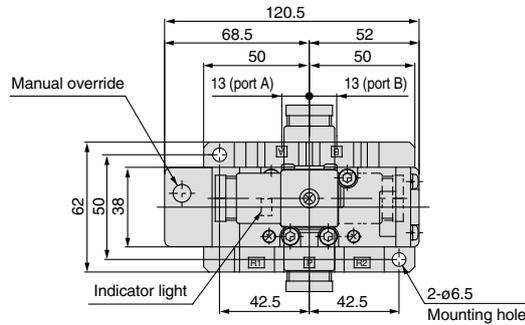
2 position/Single

: VQ7-6-FG-S

Single (reverse pressure): VQ7-6-YZ-S



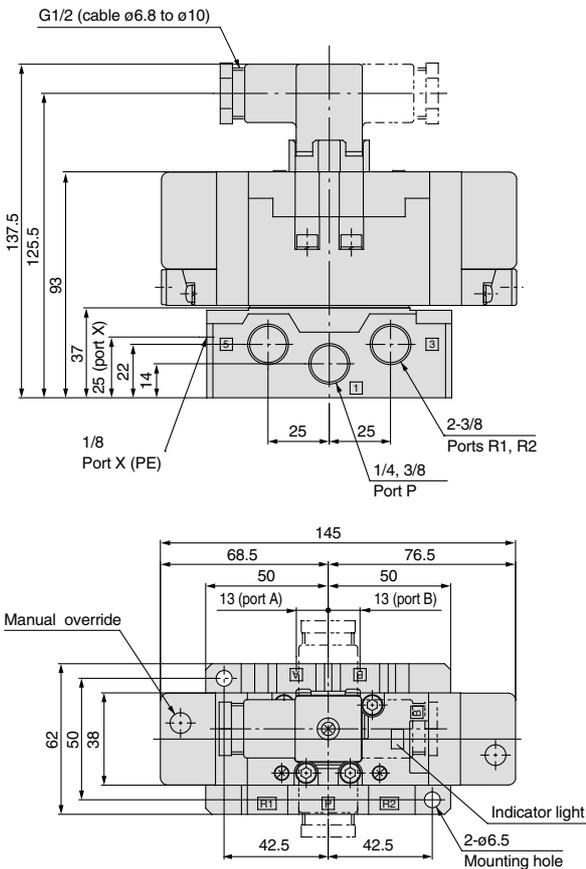
Bottom port drawing



2 position/Double

: VQ7-6-FG-D

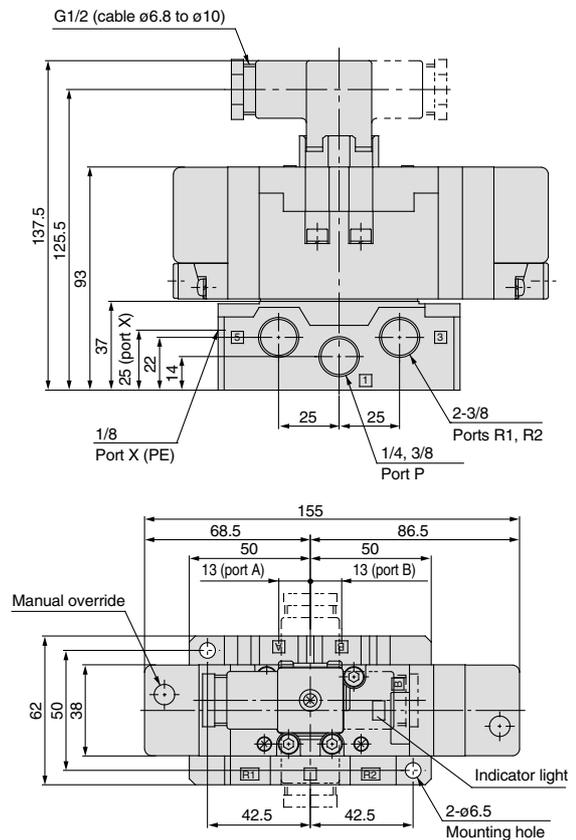
Double (reverse pressure): VQ7-6-YZ-D



3 position/Closed centre : VQ7-6-FHG-D

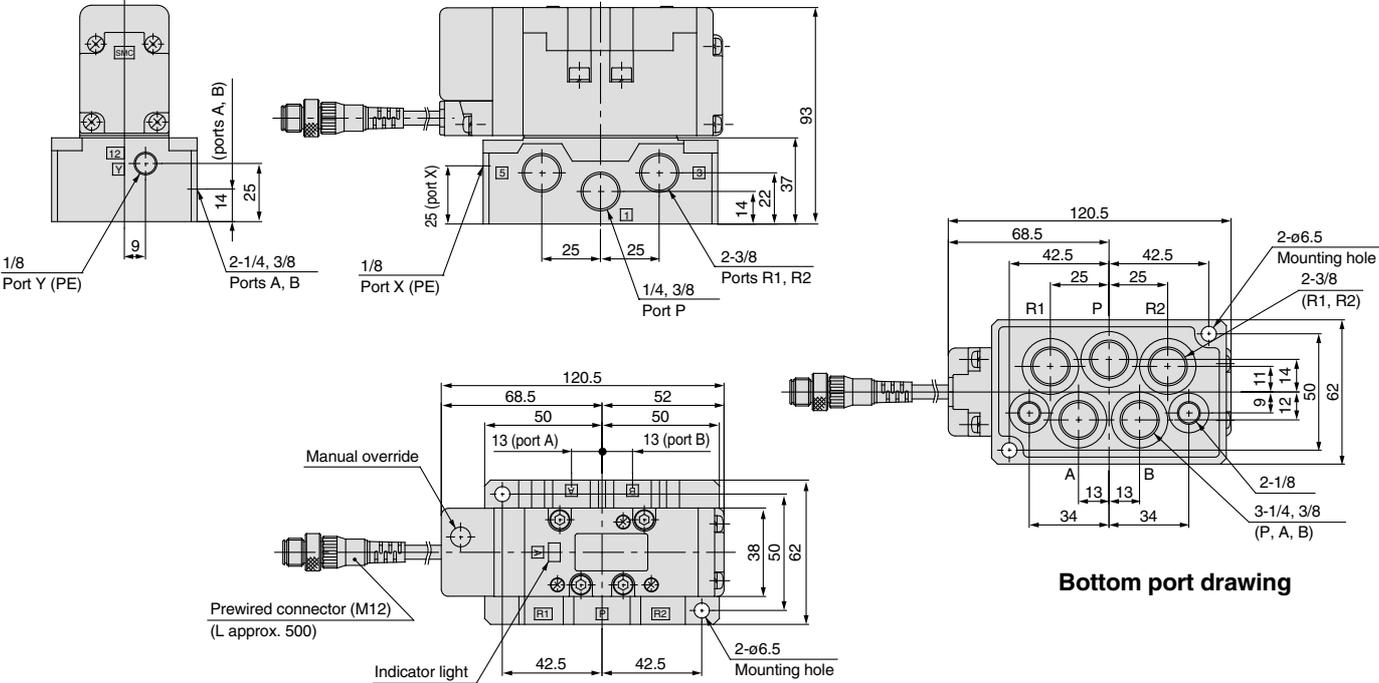
Exhaust centre : VQ7-6-FJG-D

Pressure centre : VQ7-6-FIG-D

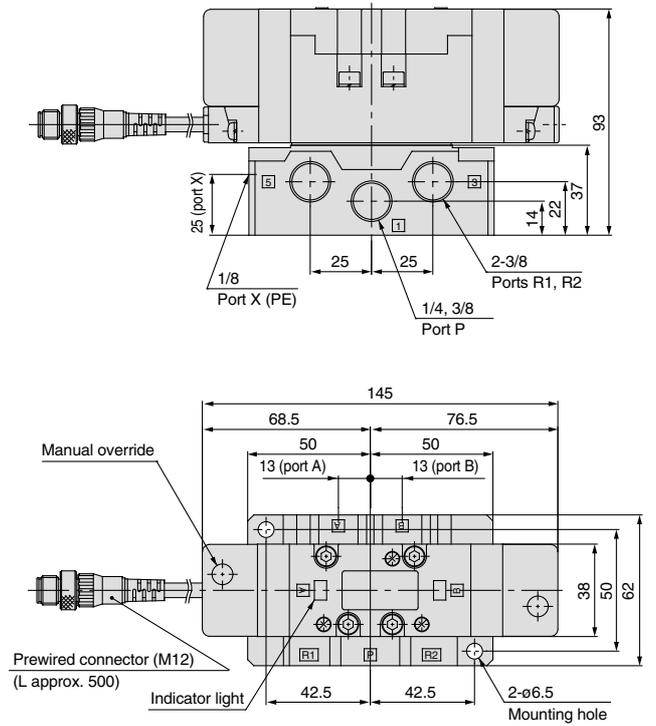


Prewired Connector Type

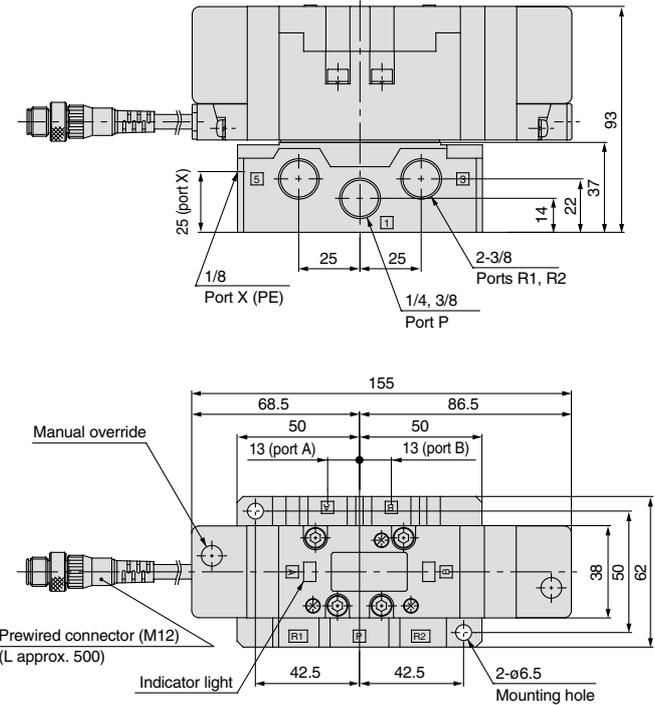
2 position/Single : VQ7-6-FG-S□□□□SC
 Single (reverse pressure): VQ7-6-YZ-S□□□□SC



2 position/Double : VQ7-6-FG-D-□□□□SC
 Double (reverse pressure): VQ7-6-YZ-D-□□□□SC



3 position/Closed centre : VQ7-6-FHG-D-□□□□SC
 Exhaust centre : VQ7-6-FJG-D-□□□□SC
 Pressure centre : VQ7-6-FIG-D-□□□□SC

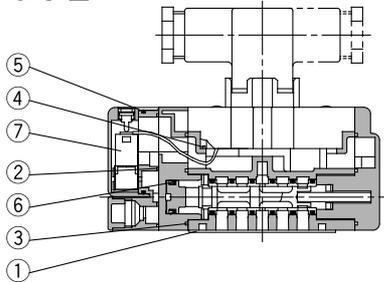


Series VQ7-6 Construction

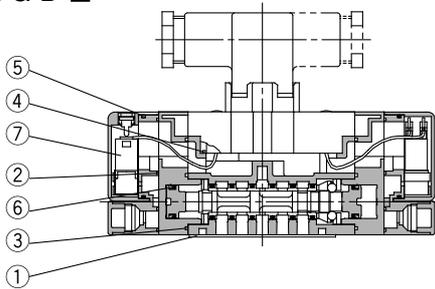
DIN Connector Type

Metal seal type

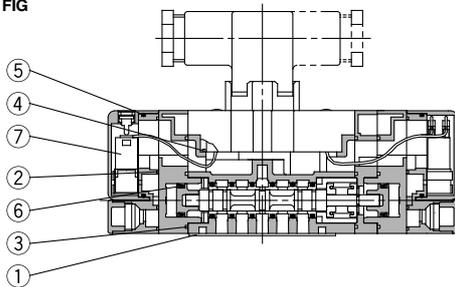
VQ7-6-FG-S-□



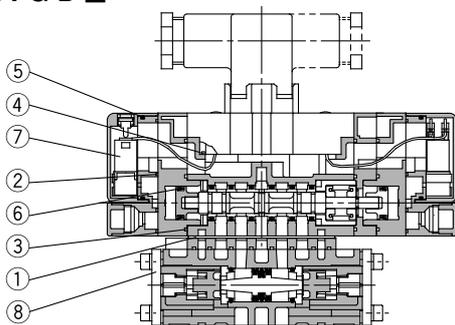
VQ7-6-FG-D-□



VQ7-6-^{FHG} FJG-D-□ FIG

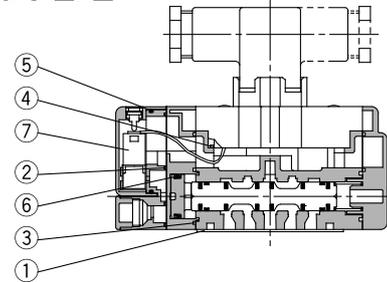


VQ7-6-FPG-D-□

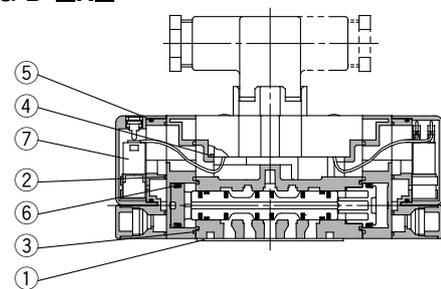


Rubber seal type

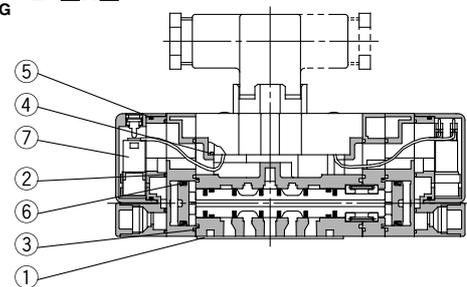
VQ7-6-FG-S-□R□



VQ7-6-FG-D-□R□



VQ7-6-^{FHG} FJG-D-□R□ FIG



Valve replacement parts

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

Series VQ7-6 Manifold Series VV71

How to order Manifolds

E **VV71** **6** - **02R** - **02D** - **Q**

Stations

| | |
|----|-------------|
| 1 | 1 station |
| ⋮ | ⋮ |
| 10 | 10 stations |

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

Ordering source area code

| Code | areas |
|------|--------------------------|
| - | Japan, Asia Australia |
| E | Europe |
| N | North America |

2(B), 4(A) port piping connection

| | |
|------|------------------------------------|
| 02R | 1/4 (right side) |
| 03R | 3/8 (right side) |
| 02L | 1/4 (left side) |
| 03L | 3/8 (left side) |
| 02Y | 1/4 (bottom) |
| 03Y | 3/8 (bottom) |
| 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 using the instructions and manifold specification sheet.

Note) Manifold spliced view, see page 1.20-34 for details.



Contact SMC for other voltages (9)



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

Air release valve coil rating

| Nil | None |
|-----|------------------------|
| 1 | 100VAC 50Hz/60Hz |
| 2 | 200VAC 50Hz/60Hz |
| 3 | 24VDC |
| 4 | 12VDC |
| 9 | Other (less than 240V) |

Silencer box

| Nil | Without |
|-----|---------|
| SB | With |

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

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

| | |
|------|------------------------------------|
| 02D | Rc1/4 (bottom) |
| 02U | Rc1/4 (top) |
| 02B | Rc1/4 (both sides) |
| 03D | Rc3/8 (bottom) |
| 03U | Rc3/8 (top) |
| 03B | Rc3/8 (both sides) |
| C12D | One-touch fitting ø12 (bottom) |
| C12U | One-touch fitting ø12 (top) |
| C12B | One-touch fitting ø12 (both sides) |
| * | Mixed |

Note) When ports are mixed, indicate piping specifications using the instructions and manifold specification sheet.

Control unit type (see pages 1.20-16 and 1.20-17 for details)

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

Manifold Specifications

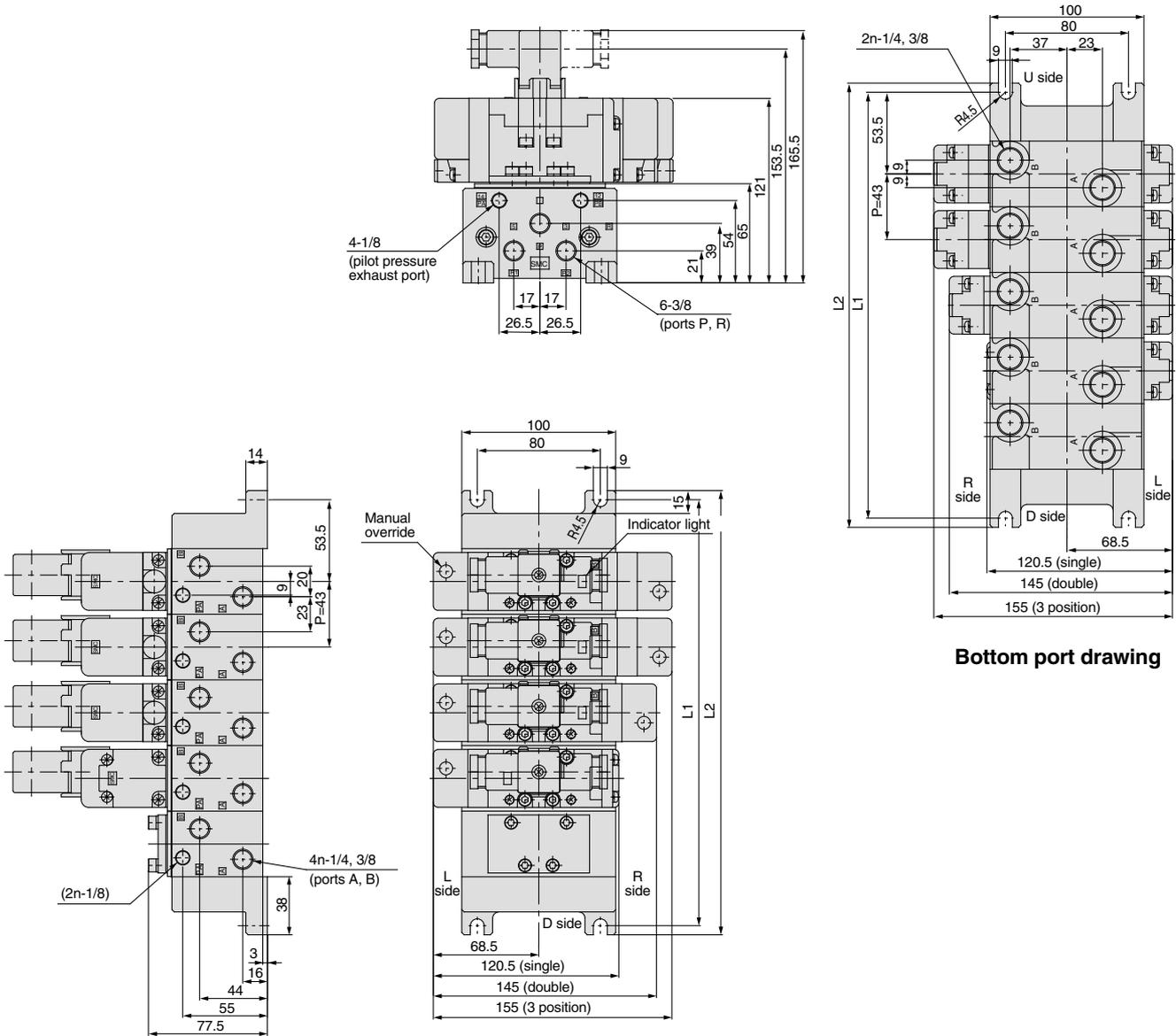
| Manifold block size | Applicable solenoid valve | Piping specifications | | | Stations | Weight kg |
|---------------------|-------------------------------|-----------------------|---|-----------------------------------|------------------------------|-------------------------------|
| | | Ports 2 (B), 4 (A) | | 1 (P), 3 (R2) 5 (R1) port size | | |
| | | Piping direction | Size | | | |
| ISO size 1 | VQ7-6 ISO size 1 series | Right, Left | 1/4 3/8 C6 (for ø6) C8 (for ø8) C10 (for ø10) | 1/4 3/8 C12 (for ø12) | Note) 10 stations max. | 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.

Series VQ7-6

DIN Connector Type

VV71□-□-□□□

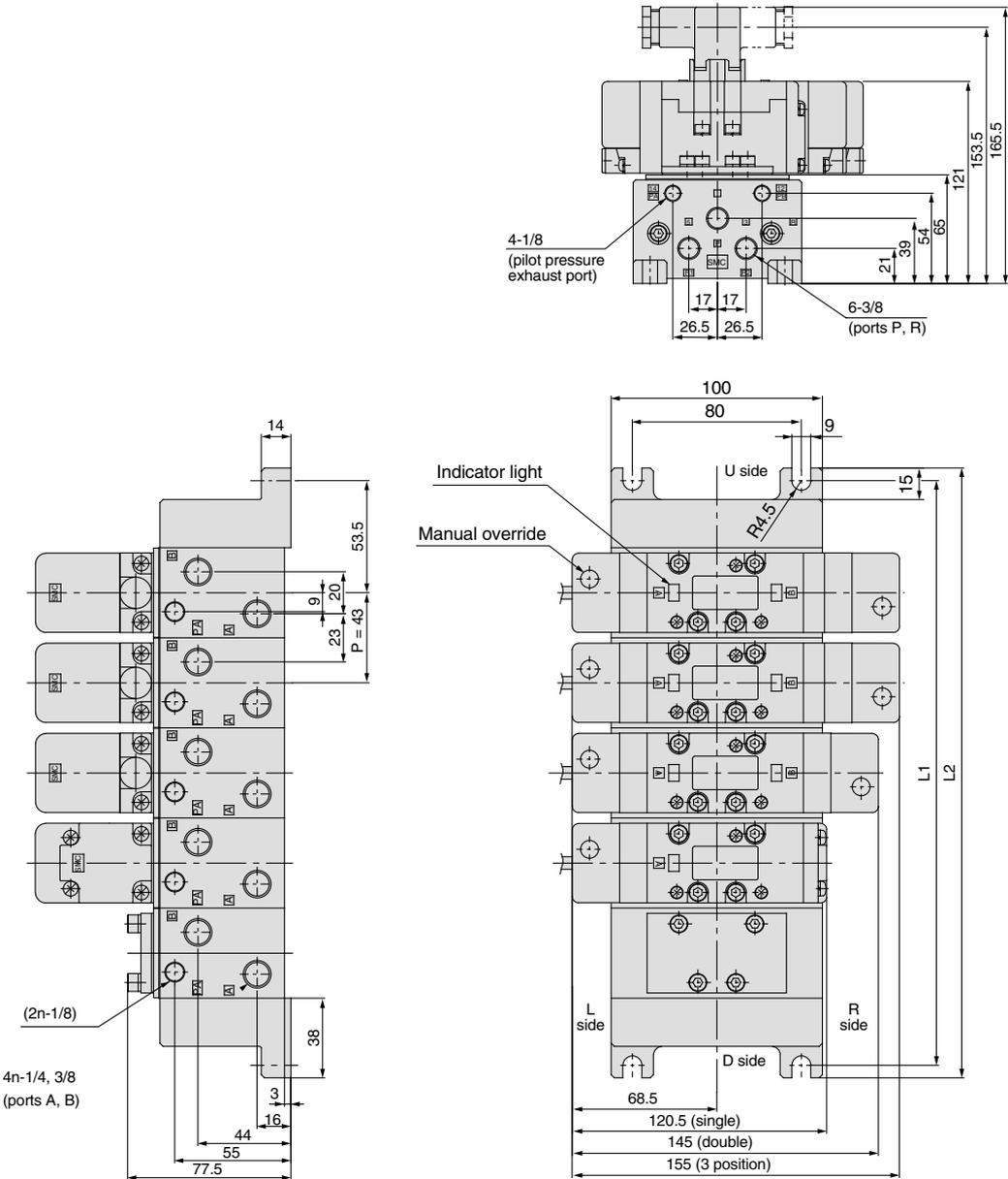


Bottom port drawing

| L: Dimensions | | | | | | | | | | 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 | $L2 = 43n + 76$ |

Prewired Connector Type

VV71□-□-□□□



| L: Dimensions | | | | | | | | | | 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 | $L2 = 43n + 76$ |

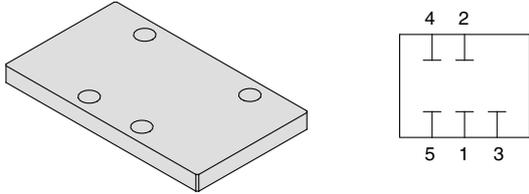
Series VQ7-6

Optional Manifold Parts

Blank plate assembly

AXT502-9A

This is used by mounting it on a manifold block when a valve is removed for maintenance or when it is planned to install an additional valve in the future, etc.

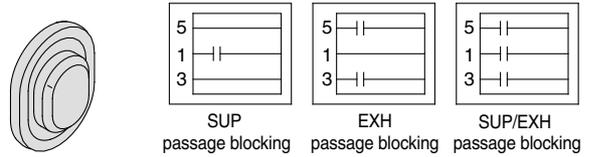


Blocking plate (for SUP/EXH passages)

AXT502-14

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

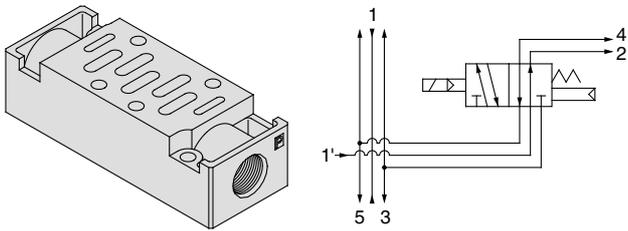
Also, in cases such as when valve exhaust effects other stations in a circuit, blocking plates are used for exhaust at stations where the exhaust is to be separated.



Individual SUP spacer

VV71-P-⁰²₀₃ C10

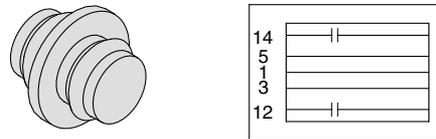
By mounting individual supply spacers on a manifold block, supply ports can be provided individually for each valve.



Blocking plate (for pilot EXH passage)

AZ503-53A

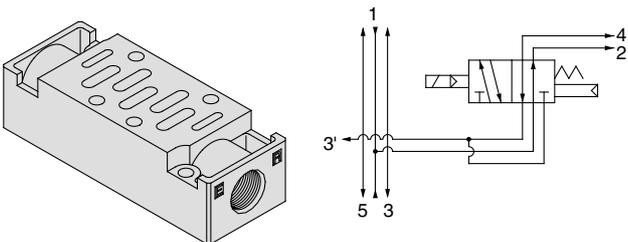
When a valve's pilot valve exhaust effects other valves in a circuit, blocking plates are used between stations where the pilot exhaust passages are to be separated.



Individual EXH spacer

VV71-R-⁰²₀₃ C12

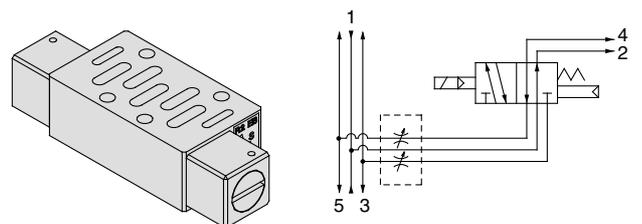
By mounting individual exhaust spacers on a manifold block, exhaust ports can be provided individually for each valve. (3, 5 common exhaust type)



Throttle valve spacer

AXT503-23A

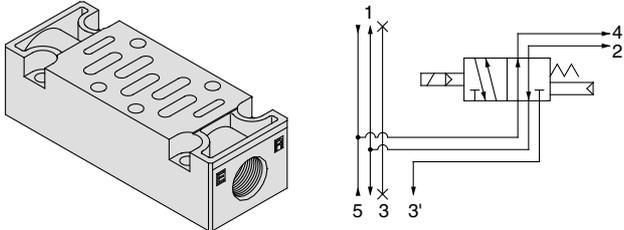
By mounting a throttle valve spacer on a manifold block, a cylinder's speed can be controlled by throttling the exhaust.



Reverse pressure spacer

AXT502-21A-1

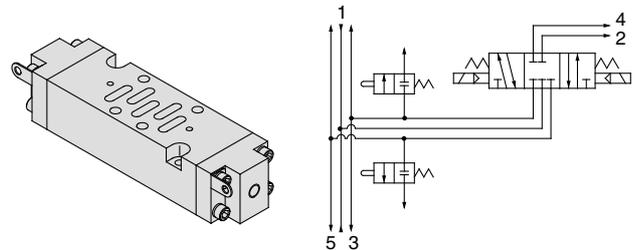
With reverse pressure control manifold specifications, when pressure is changed individually on one side (ex. high speed cylinder return), pressure can be supplied individually to the R2 side by mounting a reverse pressure spacer.
{port 3 (R2) is individual and 5 (R1) is common}



Residual pressure release valve spacer

VV71-R-AB

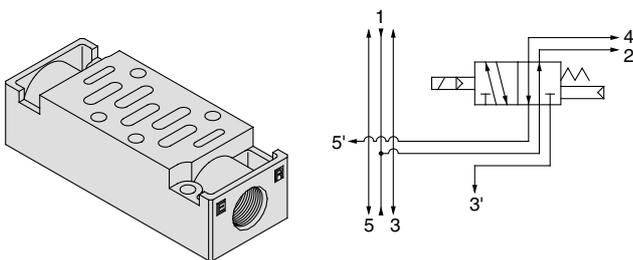
This is used by mounting on a manifold block in order to exhaust the residual pressure trapped inside of a cylinder, etc., during an intermediate stop with a 3 position closed centre or perfect type valve. Residual pressure at ports A and B is exhausted individually to the outside by manual operation.



R1, R2 individual EXH spacer

VV71-R2-03

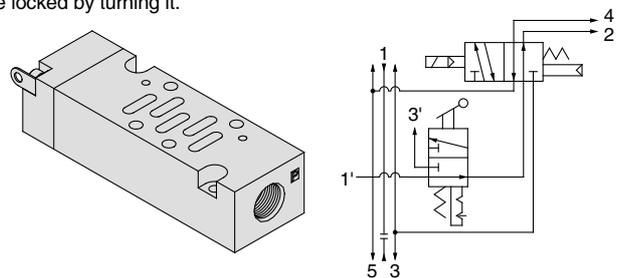
By mounting an individual exhaust spacer on a manifold block individual exhaust is possible from both R1 and R2.
{3 (R2) and 5 (R1) are individual ports}



Individual SUP spacer with residual pressure release valve

VV71-PR-⁰²₀₃

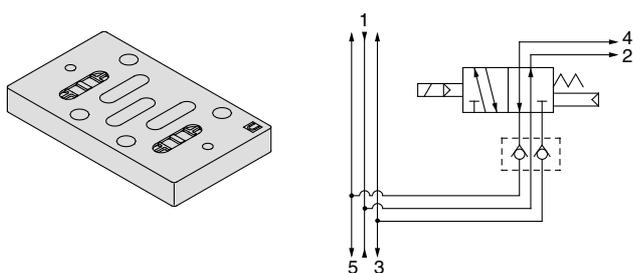
This is used by mounting on a manifold block in order to stop the primary side supply pressure in an individual supply spacer, while at the same time exhausting the residual pressure on the secondary side. Stopping the supply and exhausting the residual pressure are performed by pressing the manual override,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



Main EXH back pressure check plate

AXT503-37A

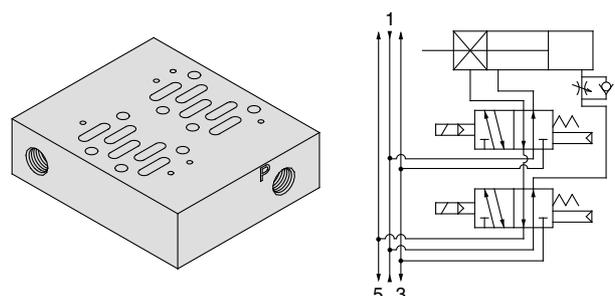
In cases where back pressure effects actuator operation due to simultaneous operation of manifold valves, etc., this effect can be eliminated by installing a plate between the manifold block and the valve from which back pressure is to be prevented.



Adapter plate for locking cylinder

AXT502-26A

When using a locking 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.



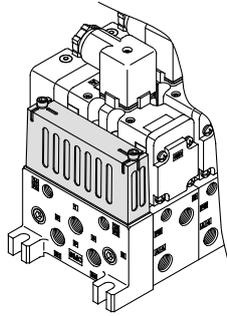
Series VQ7-6

Optional Manifold Parts

Silencer box

VV71-□□□-□□-SB

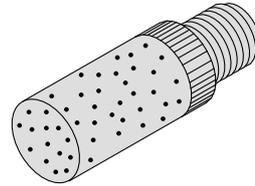
This can be provided as a unit on the end plate to reduce manifold exhaust noise and piping labour.



Pilot EXH silencer

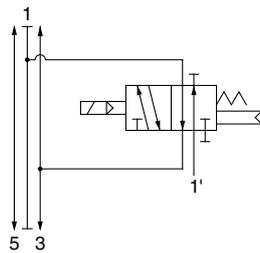
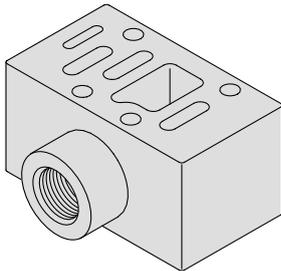
AN110-01

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

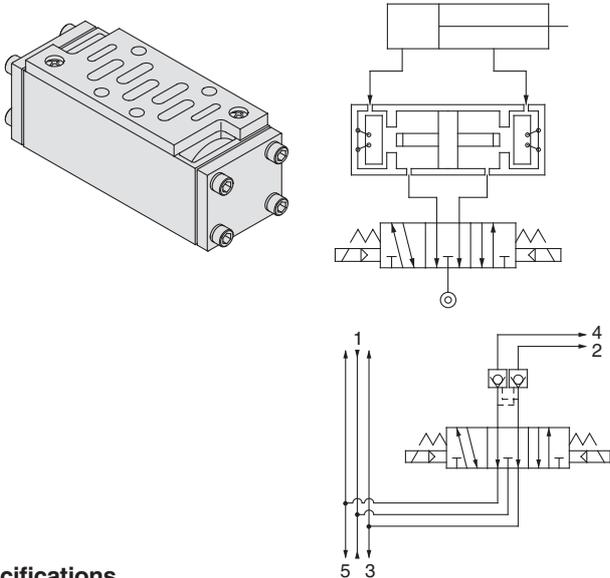
AXT502-17A



Double check spacer

VV71-FPG

By combining a 3 position exhaust centre 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 combination with a 2 position single or double valve.



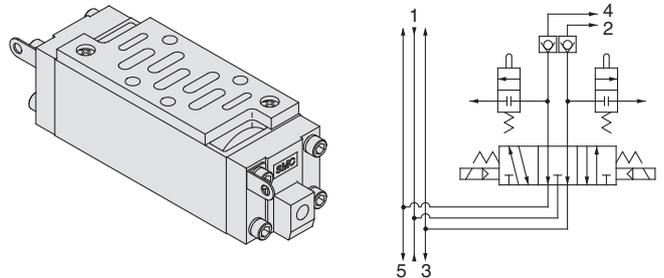
Specifications

| 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 |
| | | | R2 | |
| | Both solenoids unenergized (Both pilots unpressurized) | P | R1 | 130 |
| | | | R2 | |
| | | B | R1 | 0 |
| | | A | R2 | |

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.



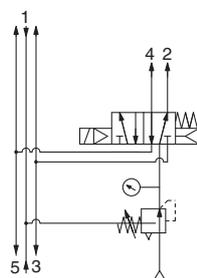
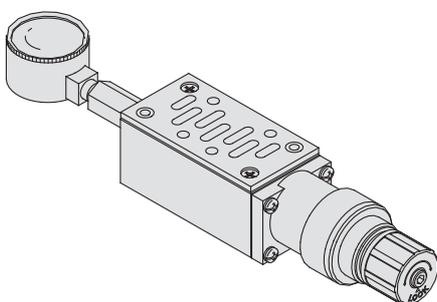
⚠ Handling precautions

- 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 for some air leakage, threaded piping is recommended in cases of extended intermediate cylinder stops.
- This spacer cannot be combined with a 3 position closed centre 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.

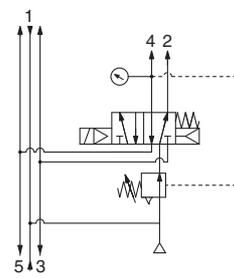
Interface regulator

ARB250-00-A^P B

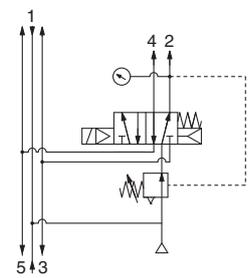
By mounting an interface regulator on a manifold block, it is possible to regulate each valve.



Regulating port P



Regulating port A



Regulating port B

Part No.

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

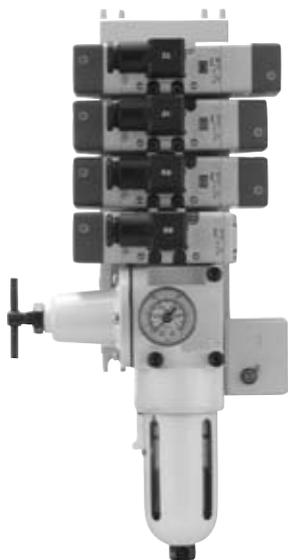
⚠ Handling precautions

- When combining a pressure centre 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 interface regulator, use a manifold or sub plate as a base, and assemble by stacking in the order of double check spacer, interface regulator and valve.
- When combining a closed centre valve and interface regulator with reduced pressure at ports A and B, it cannot be used for intermediate cylinder stops because of air leakage from the regulator's relief port.

Series VQ7-6

Control Units

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 μ m |
| Regulator | |
| Set pressure (downstream pressure) | 0.05 to 0.85MPa |
| Pressure switch | |
| Pressure adjustment range | 0.1 to 0.7MPa |
| Contact | 1ab |
| Rated current | (induction load) 125VAC 15A, 250VAC 15A |
| Air release valve (single only) | |
| Operating pressure range | 0.15 to 1.0MPa |

Options

| | |
|------------------------------------|---|
| Blank plate | AXT502-9A (for manifold) |
| | AXT502-18A (for release valve adapter plate) |
| | MP2 (for control equipment/filter regulator) |
| | MP3 (for pressure switch) |
| Release valve adapter plate | 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 types

| 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 | | | ○ | | ○ | | | | |
| Blank plate (air release valve) | | | | | | ○ | ○ | | |
| Blank plate (filter, regulator) | | | | | | | | ○ | |
| Number of manifold blocks required for mounting (stations) | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 |

Use of control units

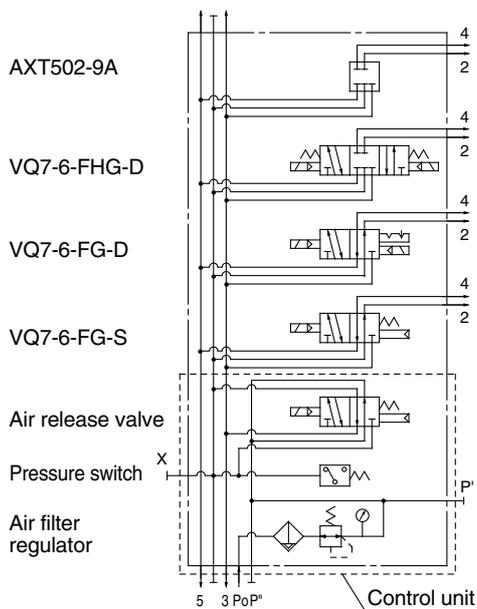
<Construction and piping >

- 1) The supply pressure (Po) passes through the regulator with filter ① and is adjusted to the prescribed pressure. Next, it goes through the release valve ② (downstream residual pressure switching function used as normally ON) and is supplied to the manifold base side (P).
- 2) 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 ② and is discharged from port R1.
- 3) The pressure switch is piped into the downstream 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.

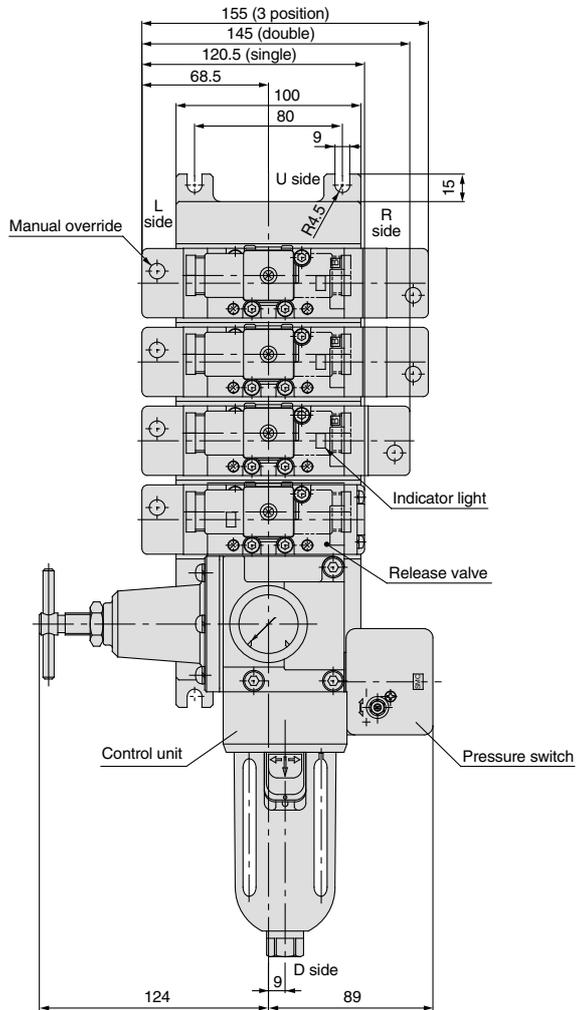
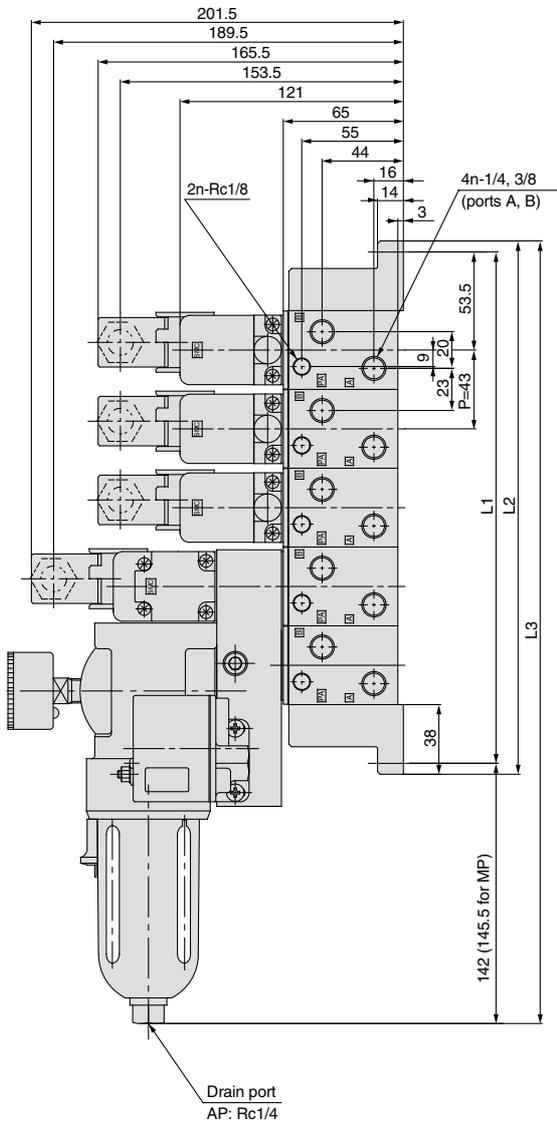
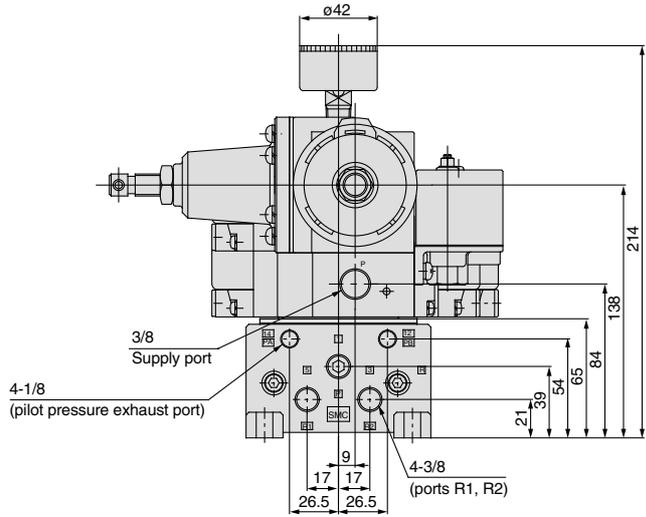
⚠ Caution

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

Manifold specification example



Manifold with control unit



| L: Dimensions | | | | | | | | | | 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) | |

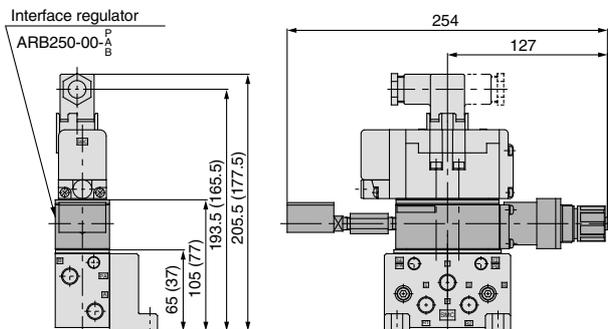
L3 dimensions inside () are for MP

Series VQ7-6

Manifold Options

Interface regulator

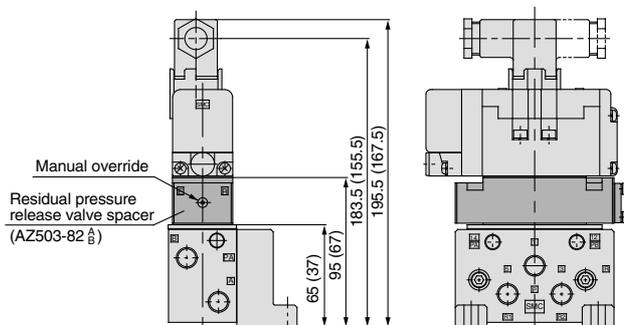
ARB250-00-^P_A
_B



Dimensions inside () are for sub plate

Residual pressure release valve spacer

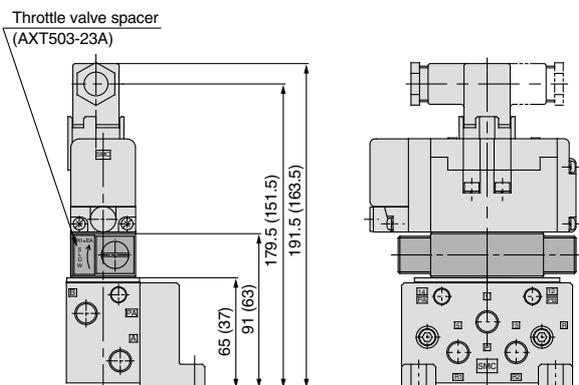
AZ503-82-^A
_B



Dimensions inside () are for sub plate

Throttle valve spacer

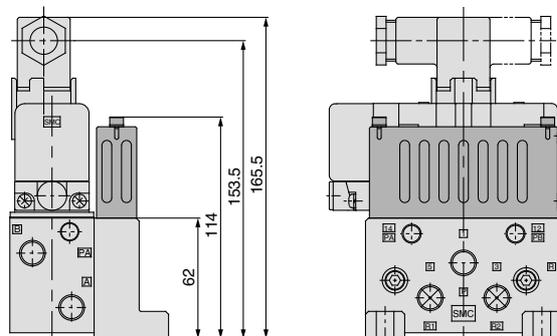
AXT503-23A



Dimensions inside () are for sub plate

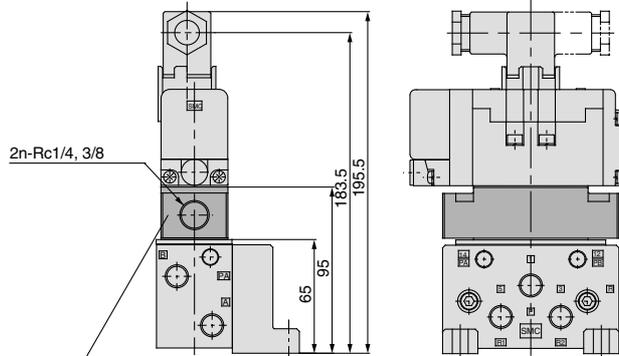
Silencer box

AXT503-60A



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

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

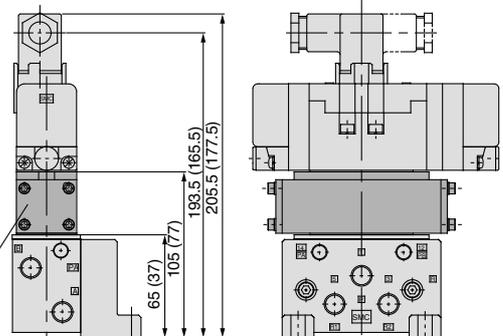


Individual SUP spacer: VV71-P-□
 2-Rc1/2, 3/8, C10
 Individual EXH spacer: VV71-R-□
 2-Rc1/2, 3/8, C12
 R1, R2 individual EXH spacer: VV71-R2-03
 2-Rc3/8
 Reverse pressure spacer: AXT502-21A-1
 Rc3/8 (right side only)

Double check spacer

VV71-FPG

Double check spacer
 with residual pressure release valve VV71-FPGR



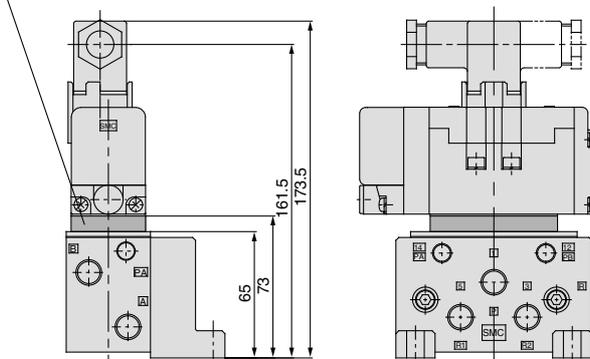
Double check spacer
 (VV71-FPG)
 Double check spacer with residual pressure release valve
 (VV71-FPGR)

Dimensions inside () are for sub plate

Main EXH back pressure check plate

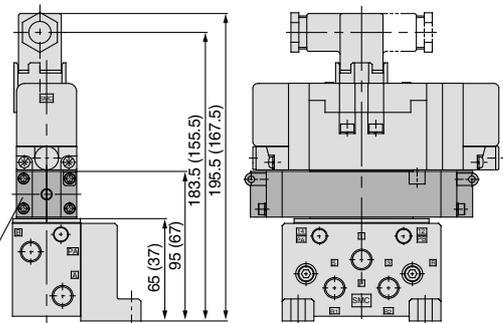
AXT503-37A

Main EXH back pressure check plate
 (ATX503-37A)



Residual pressure release valve spacer VV71-R-AB

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



Residual pressure exhaust valve spacer
 (VV71-R-AB)
 Individual SUP spacer with residual pressure release valve
 (VV71-PR-□)

Dimensions inside () are for sub plate

Series VQ7-8 ISO Standard Solenoid Valve Size 2/Single Unit

How to Order Valves

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

Passage symbol

| | |
|------|--|
| FG | |
| * YZ | |
| FHG | |
| FJG | |
| FPG | |
| FIG | |

* Optional

Connector

| | |
|-----|--|
| Nil | DIN terminal block (with connector) |
| O | DIN terminal block (without connector) |
| SC | Prewired connector |

Sub plate port size

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

Thread

| | |
|---|---------|
| - | Rc (PT) |
| F | G (PF) |
| N | NPT |
| T | NPTF |

Seal type

| | |
|-----|-------------|
| Nil | Metal seal |
| R | Rubber seal |

Pilot exhaust

| | |
|-----|--------------------|
| Nil | Common exhaust |
| V | Individual exhaust |

Options

| | |
|-----|---|
| Nil | None |
| N | Indicator light |
| Z | Indicator light with surge voltage suppressor |

Number of solenoids

| | |
|---|--------|
| S | Single |
| D | Double |

Coil rating

| | |
|----|--------------------------------|
| 1 | 100VAC |
| 2 | 200VAC |
| 3 | 24VDC |
| 4 | 12VDC |
| 9* | Other voltage (less than 240V) |

* Contact SMC for other voltages (9)

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

How to Order Sub Plates

E VS7-2-A03- -

Ordering source area code

| Code | areas |
|------|--------------------------|
| - | Japan, Asia Australia |
| E | Europe |
| N | North America |

Port size

| | |
|-----|-----------------|
| A03 | Side port 3/8 |
| A04 | Side port 1/2 |
| A06 | Side port 3/4 |
| B03 | Bottom port 3/8 |
| B04 | Bottom port 1/2 |
| B06 | Bottom port 3/4 |

Thread

| | |
|---|---------|
| - | Rc (PT) |
| F | G (PF) |
| N | NPT |
| T | NPTF |

Specifications

| Model | Piping specifications | | Weight kg |
|-----------|-----------------------|-----------|-----------|
| | Piping direction | 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 | |

Models



| Series | Number of positions | Models | Note 1) | Note 2) | Note 3) | | |
|--------|---------------------|-----------------|--|-----------------------|----------------|------------|------|
| | | | Effective area mm ² (N _l /min) | Response time ms | Weight kg | | |
| VQ7-8 | 2 position | Single | Metal seal | VQ7-8-FG-S-□ | 58.0 (3140.80) | 40 or less | 0.64 |
| | | | Rubber seal | VQ7-8-FG-S-□R | 58.0 (3140.80) | 45 or less | |
| | | Double | Metal seal | VQ7-8-FG-D-□ | 58.0 (3140.80) | 15 or less | 0.70 |
| | | | Rubber seal | VQ7-8-FG-D-□R | 58.0 (3140.80) | 20 or less | |
| | 3 position | Closed centre | Metal seal | VQ7-8-FHG-D-□ | 50.4 (2748.20) | 45 or less | 0.75 |
| | | | Rubber seal | VQ7-8-FHG-D-□R | 50.4 (2748.20) | 50 or less | |
| | | Exhaust centre | Metal seal | VQ7-8-FJG-D-□ | 54.0 (2944.50) | 45 or less | 0.75 |
| | | | Rubber seal | VQ7-8-FJG-D-□R | 58.0 (3140.80) | 50 or less | |
| | | Double check | Metal seal | VQ7-8-FPG-D-□ | 40.0 (2159.30) | 60 or less | 1.98 |
| | | | Rubber seal | VQ7-8-FPG-D-□R | 40.0 (2159.30) | 60 or less | |
| | | Pressure centre | Metal seal | VQ7-8-FIG-D-□ | 54.0 (2944.50) | 45 or less | 0.75 |
| | | | Rubber seal | VQ7-8-FIG-D-□R | 58.0 (3140.80) | 50 or less | |

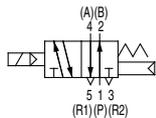
Note 1) Port size 3/8: Value when mounted on sub plate

Note 2) Based on JIS B 8375-1981 (Value for supply pressure of 0.5MPa, with light and surge voltage suppressor and using clean air.) Response time values will change depending on the pressure and air quality. Value when ON for double type.

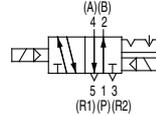
Note 3) Weight without sub plate (Sub plate: 3/8, 1/2: 0.68kg, 3/4: 1.29kg)

Symbols

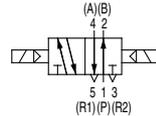
2 position single



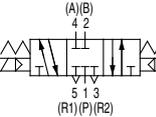
2 position double (metal)



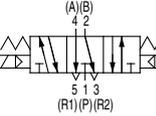
2 position double (rubber)



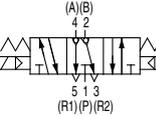
3 position closed centre



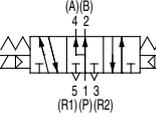
3 position exhaust centre



3 position double check



3 position pressure centre



Standard Specifications

| Valve specifications | Valve structure | Metal seal | Rubber seal | |
|-------------------------------|---|--|---|--|
| | Fluid | Air, Inert gas | | |
| Maximum operating pressure | 1.0MPa | | | |
| Minimum operating pressure | Single | 0.15MPa | 0.20MPa | |
| | Double | 0.15MPa | 0.15MPa | |
| | 3 position | 0.15MPa | 0.20MPa | |
| Ambient and fluid temperature | - 10 to 60° Note 1) | - 5 to 60° Note 1) | | |
| Lubrication | Not required | | | |
| Manual operation | Push type (tool required) | | | |
| Impact/Vibration resistance | 150/30 m/s ² Note 2) | | | |
| Enclosure | IP65 (splash proof, jet proof) | | | |
| Electrical specifications | Rated coil voltage | 12VDC, 24VDC, 100VAC, 110VAC, 200VAC, 220VAC (50/60Hz) | | |
| | Allowable voltage fluctuation | ±10% of rated voltage | | |
| | Coil insulation type | Class B equivalent | | |
| | Power consumption (current) | 24VDC | DC1W (42mA) | |
| | | 12VDC | DC1W (83mA) | |
| | | 100VAC | Start-up 1.2VA (12mA), Holding 1.2VA (12mA) | |
| | | 110VAC | Start-up 1.3VA (11.7mA), Holding 1.3VA (11.7mA) | |
| 200VAC | | Start-up 2.4VA (12mA), Holding 2.4VA (12mA) | | |
| 220VAC | Start-up 2.6VA (11.7mA), Holding 2.6VA (11.7mA) | | | |

Note 1) For low temperature, use dry air with no condensation.

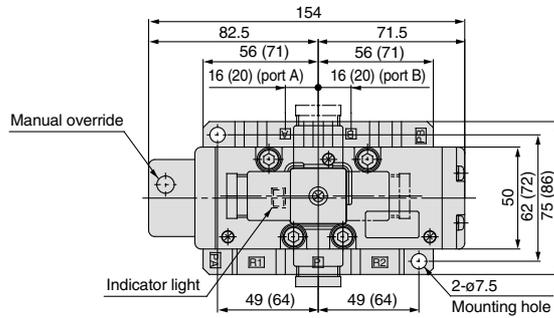
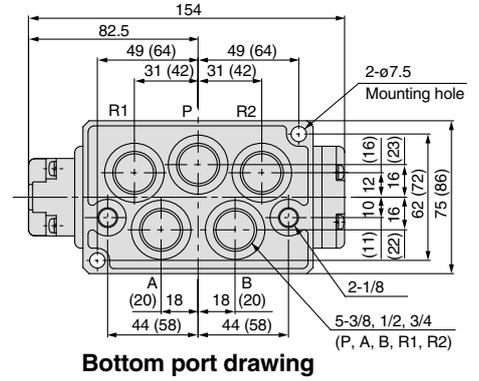
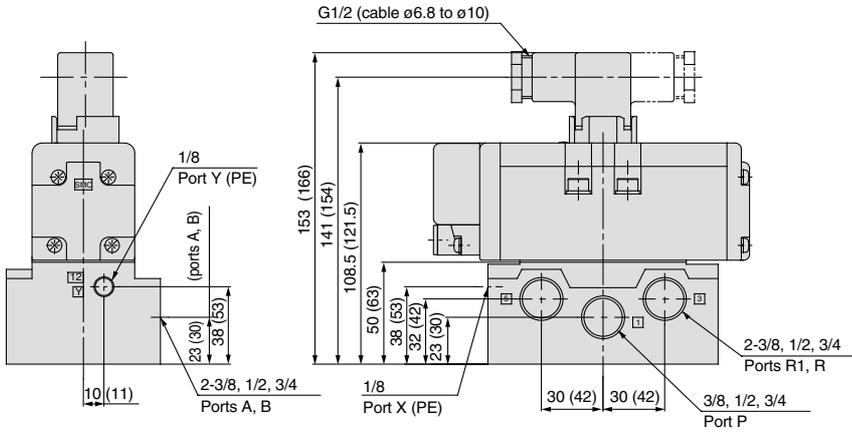
Note 2) Impact resistance: No malfunction when tested with a drop tester in the axial direction and at a right angle to the main valve and armature, one time each in both energized and deenergized states. (initial value)

Vibration resistance: No malfunction when tested with one sweep of 8.3 to 2000Hz in the axial direction and at a right angle to the main valve and armature, one time each in both energized and deenergized states. (initial value)

Series VQ7-8

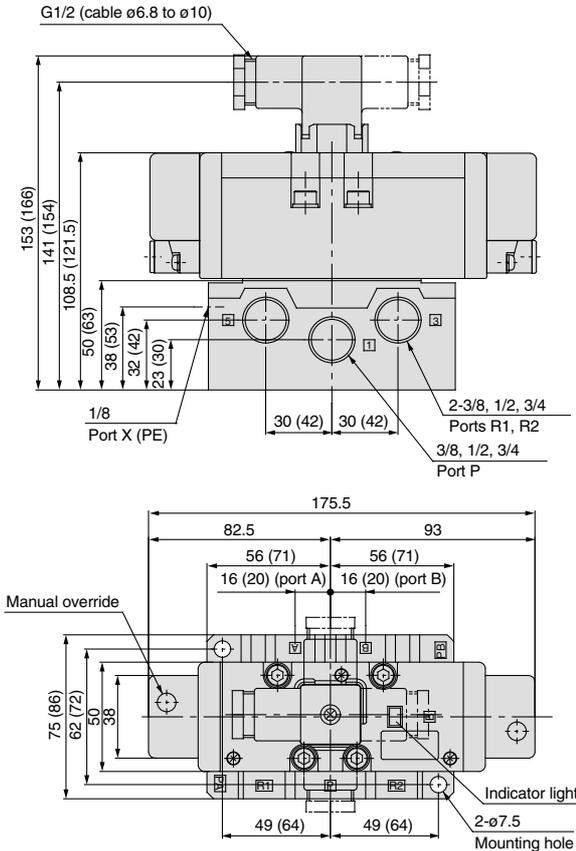
DIN Connector Type

2 position/Single : VQ7-8-FG-S
 Single (reverse pressure) : VQ7-8-YZ-S

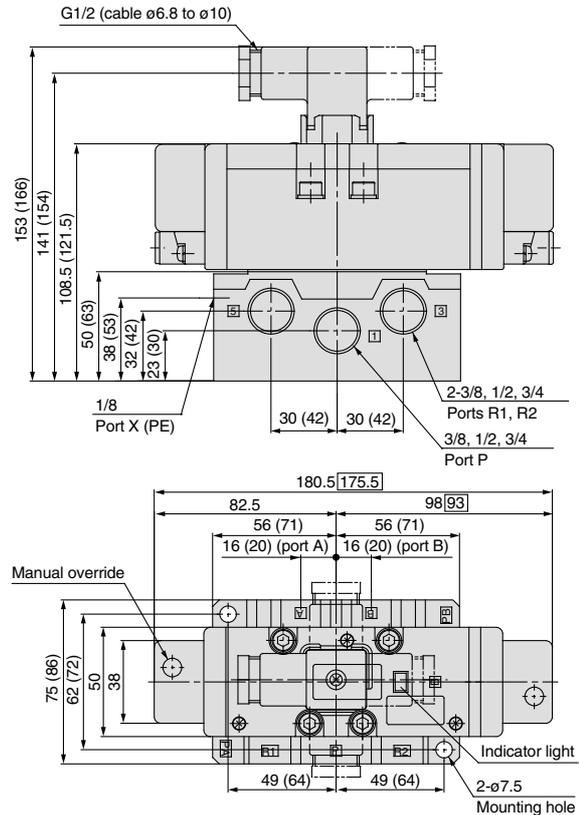


Dimensions inside () are for 3/4

2 position/Double : VQ7-8-FG-D
 Double (reverse pressure): VQ7-8-YZ-D



3 position/Closed centre : VQ7-8-FHG-D
 Exhaust centre : VQ7-8-FJG-D
 Pressure centre : VQ7-8-FIG-D



Dimensions inside () are for 3/4

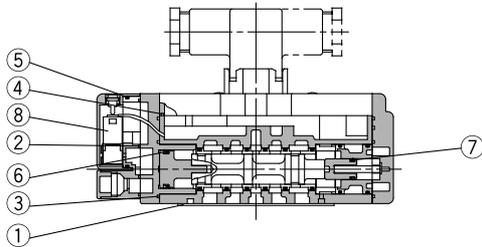
Dimensions inside () are for 3/4
 Dimensions inside □ are for rubber seals

Series VQ7-8 Construction

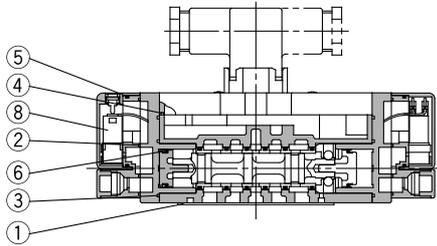
DIN Connector Type

Metal seal type

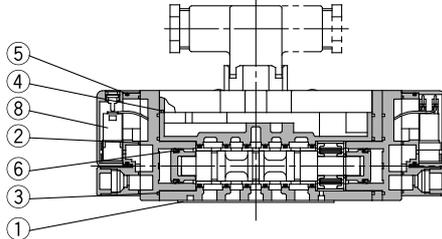
VQ7-8-FG-S-□



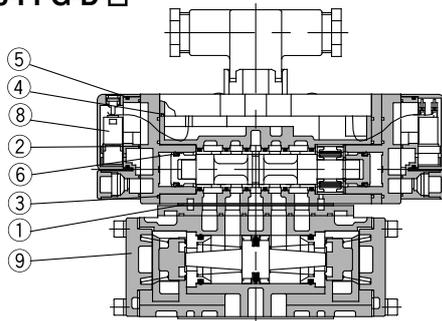
VQ7-8-FG-D-□



VQ7-8-^{FHG}
FJG-D-□
FIG

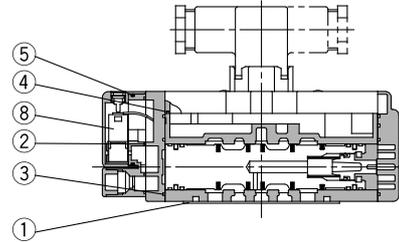


VQ7-8-FPG-D-□

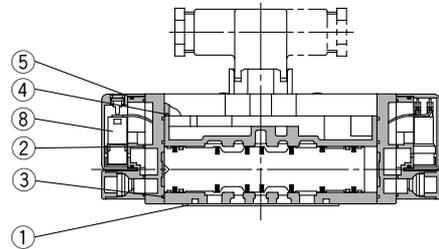


Rubber seal type

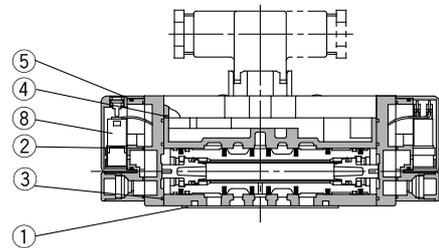
VQ7-8-FG-S-□R□



VQ7-8-FG-D-□R□



VQ7-8-^{FHG}
FJG-D-□R□
FIG

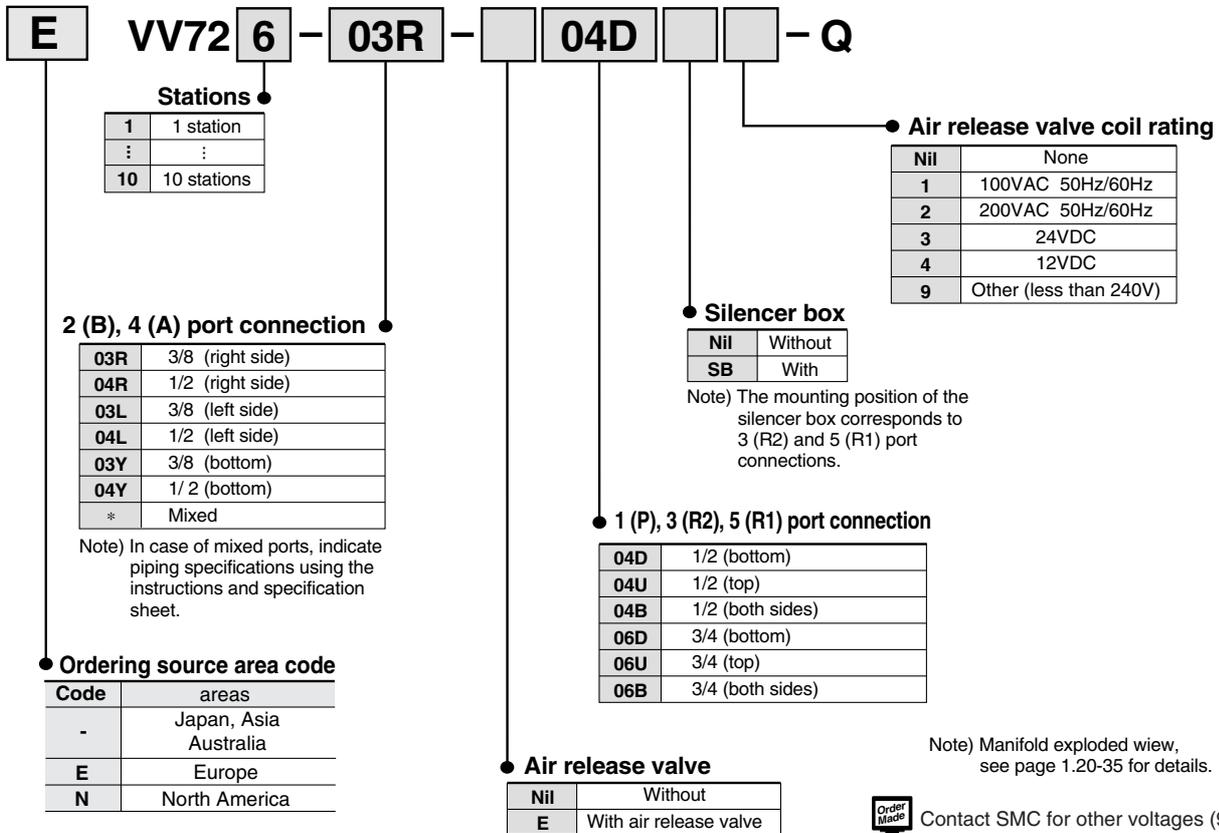


Valve replacement parts

| No. | Description | Material | VQ7-8-FG-S-□ | VQ7-8-FG-D-□ | VQ7-8- ^{FHG} FJG-D-□ FIG | VQ7-8-FPG-D-□ | VQ7-8-FG-S-□R□ | VQ7-8-FG-D-□R□ | VQ7-8- ^{FHG} FJG-D-□R□ FIG |
|-----|----------------------|----------|--------------|--------------|---|---------------|----------------|----------------|---|
| 1 | Gasket | NBR | | | | AXT510-13 | | | |
| 2 | Gasket A | NBR | | | | VQ7060-13-2 | | | |
| 3 | Gasket B | NBR | | | | VQ7080-13-1 | | | |
| 4 | Gasket C | NBR | | | | VQ7080-13-3 | | | |
| 5 | O-ring | NBR | | | | 37 x 1.6 | | | |
| 6 | Mini Y seal | NBR | MYN-16 | | | MYN-14 | | | |
| 7 | Mini Y seal | NBR | MYN-8 | | | | | | |
| 8 | Pilot valve assembly | | | | | VQZ110Q-□ | | | |
| 9 | Double check spacer | | | | | VV72-FPG | | | |

Series VQ7-8 Manifold Series VV72

How to Order Manifolds



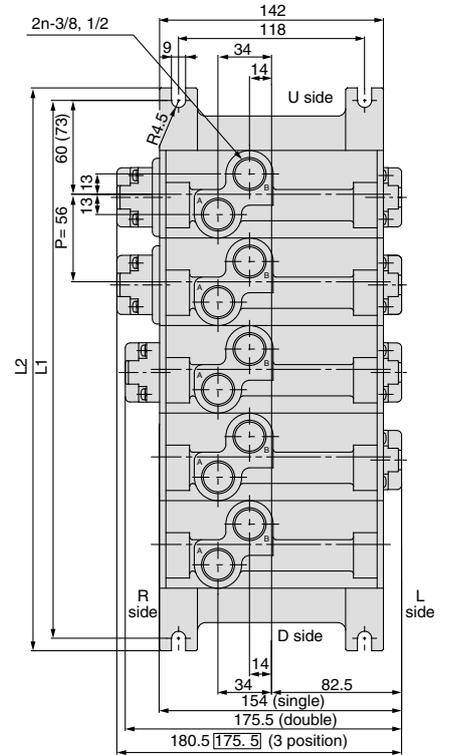
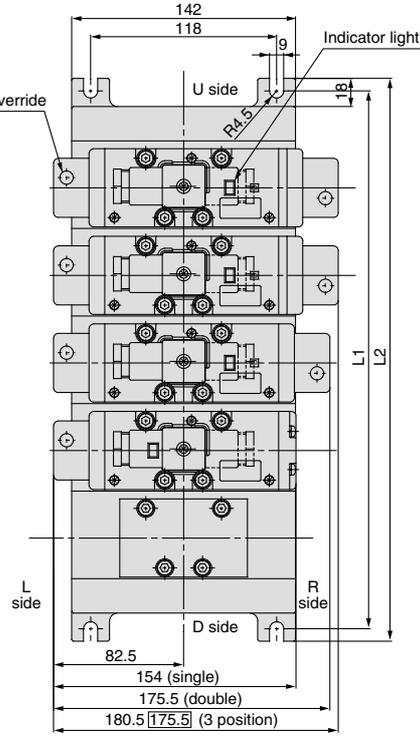
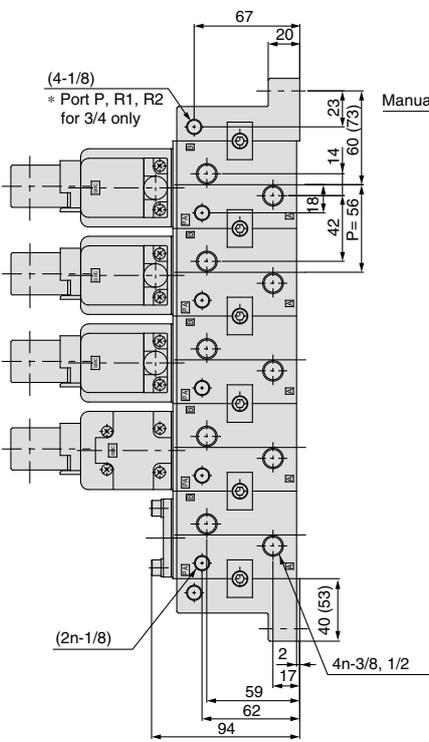
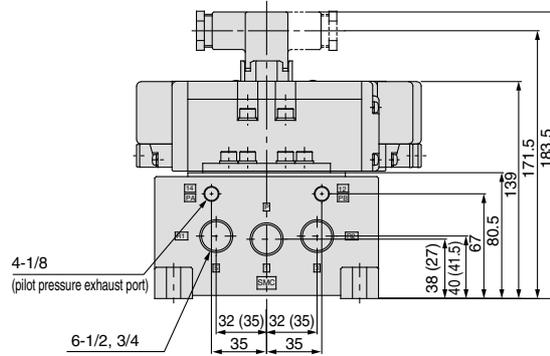
Manifold specifications

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

Series VQ7-8

DIN Connector Type

VV72□-□-□□□



Bottom port drawing

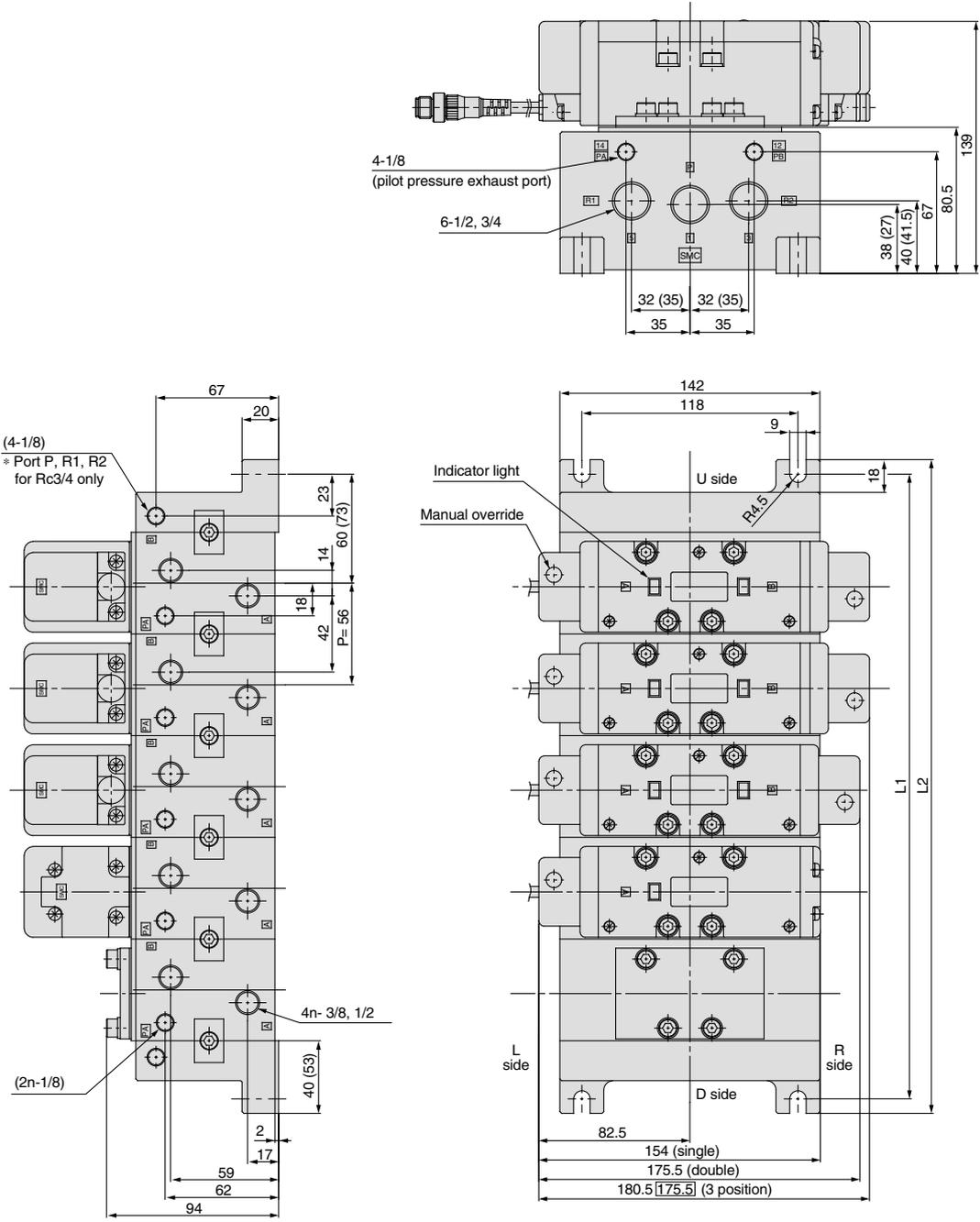
L: Dimensions

| Port P, R1, R2 | L | n | 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 | |

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

Prewired Connector Type

VV72□-□-□□□



L: Dimensions

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

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

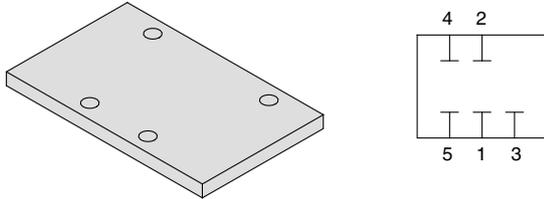
Series VQ7-8

Optional Manifold Parts

Blank plate assembly

AXT512-9A

This is used by mounting it on a manifold block when a valve is removed for maintenance or when it is planned to install an additional valve in the future, etc.

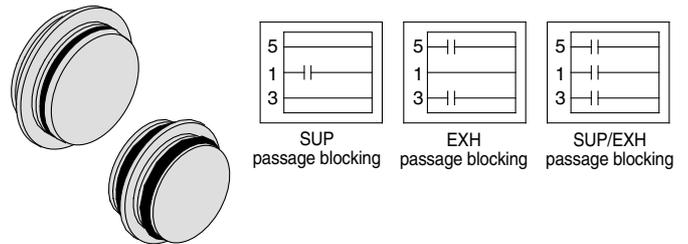


Blocking plate (for SUP/EXH passages)

AXT512-14-1A (for SUP)

AXT512-14-2A (for EXH)

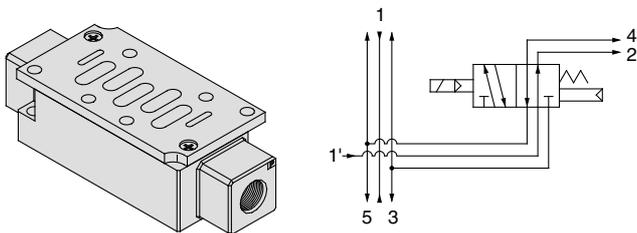
When two or more different high pressures are supplied to one manifold, blocking plates are installed between stations having different pressures. Also, in cases such as when valve exhaust effects other stations in a circuit, blocking plates are used for exhaust at stations where the exhaust is to be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



Individual SUP spacer

VV72-P-⁰³/₀₄

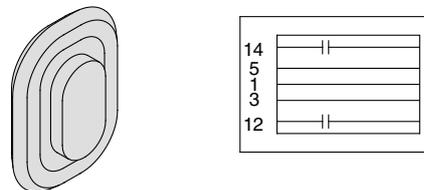
By mounting individual supply spacers on a manifold block, supply ports can be provided individually for each valve.



Blocking plate (for pilot EXH passage)

AZ512-49A

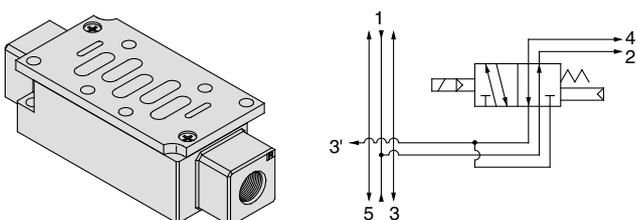
When a valve's pilot valve exhaust effects other valves in a circuit, blocking plates are used between stations where the pilot exhaust passages are to be separated.



Individual EXH spacer

VV72-R-⁰³/₀₄

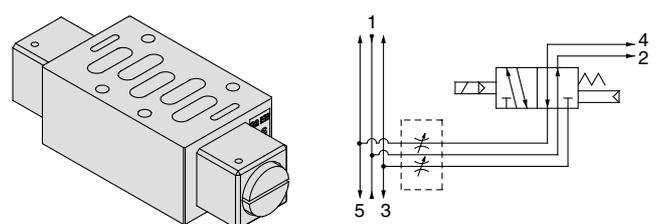
By mounting individual exhaust spacers on a manifold block, exhaust ports can be provided individually for each valve. (3, 5 common exhaust type)



Throttle valve spacer

AXT510-32A

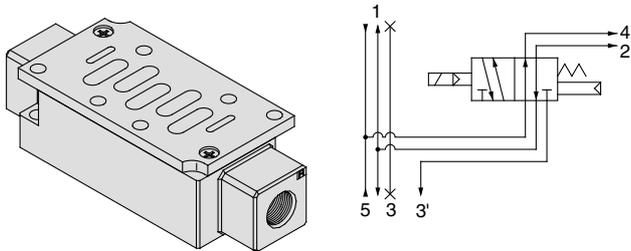
By mounting a throttle valve spacer on a manifold block, a cylinder's speed can be controlled by throttling the exhaust.



Reverse pressure spacer

AXT512-19A-2

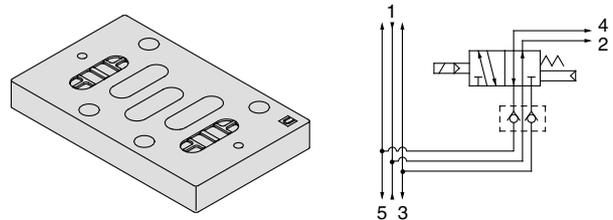
With reverse pressure control manifold specifications, when pressure is changed individually on one side (ex. high speed cylinder return), pressure can be supplied individually to the R2 side by mounting a reverse pressure spacer. {port 3 (R2) is individual and 5 (R1) is common}



Main EXH back pressure check plate

AXT512-25A

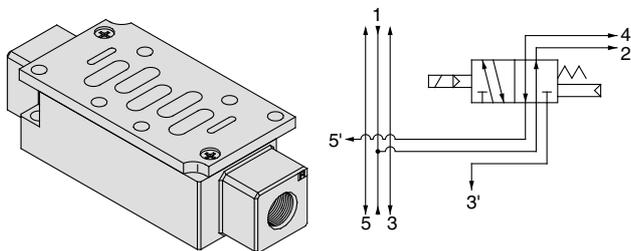
In cases where back pressure effects actuator operation due to simultaneous operation of manifold valves, etc., this effect can be eliminated by installing a plate between the manifold block and the valve from which back pressure is to be prevented.



R1, R2 individual EXH spacer

VV72-R2-04

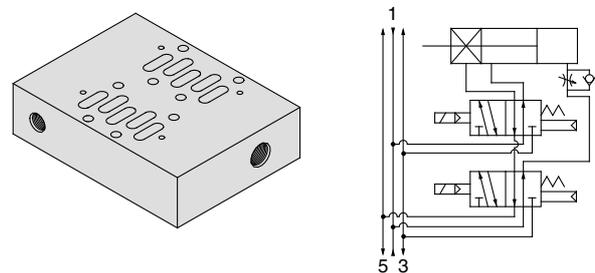
By mounting an individual exhaust spacer on a manifold block, individual exhaust is possible from both R1 and R2. {3 (R2) and 5 (R1) are individual ports}



Adapter plate for locking cylinder

AXT602-6A

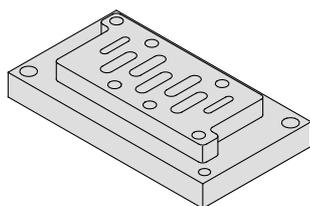
When using a locking cylinder with 2 valves for control, this spacer can be used by mounting on a manifold block. It consists of a circuit equipped with a function to prevent lurching during release.



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)



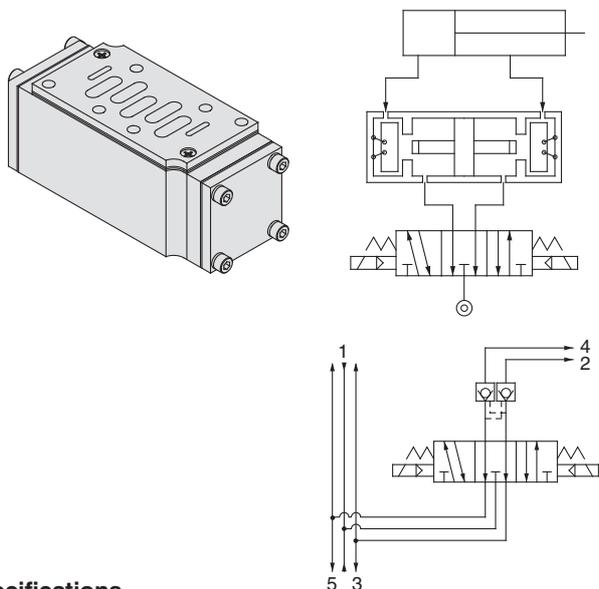
Series VQ7-8

Optional Manifold Parts

Double check spacer

VV72-FPG

By combining a 3 position exhaust centre 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 combination with a 2 position single or double valve.



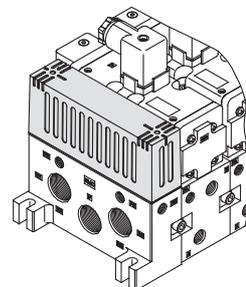
Specifications

| 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 | 280 |
| | Both solenoids unenergized (Both pilots unpressurized) | A | R1 | 0 |
| | | B | R2 | 0 |

Silencer box

VV72-□□□-□□-SB

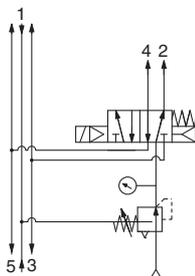
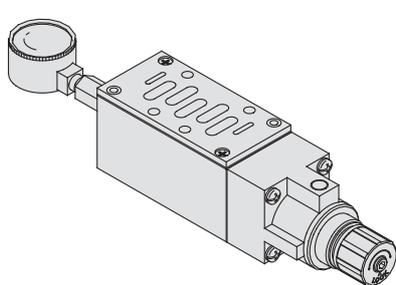
This can be provided as a unit on the end plate to reduce manifold exhaust noise and piping labour.



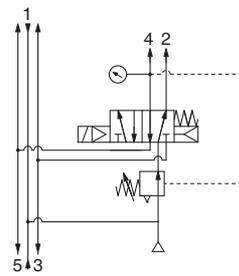
Interface regulator

ARB350-00-^P_A_B

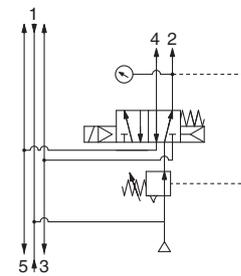
By mounting an interface regulator on a manifold block, it is possible to regulate each valve.



Regulating port P



Regulating port A



Regulating port B

Part No.

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

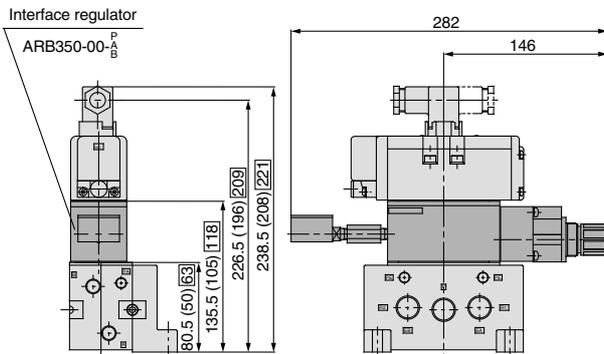
⚠ Caution

- When combining a pressure centre 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 interface regulator, use a manifold or sub plate as a base, and assemble by stacking in the order of double check spacer, interface regulator and valve.
- When combining a closed centre valve and interface regulator with reduced pressure at ports A and B, it cannot be used for intermediate cylinder stops because of air leakage from the regulator's relief port.

Manifold Options

Interface regulator

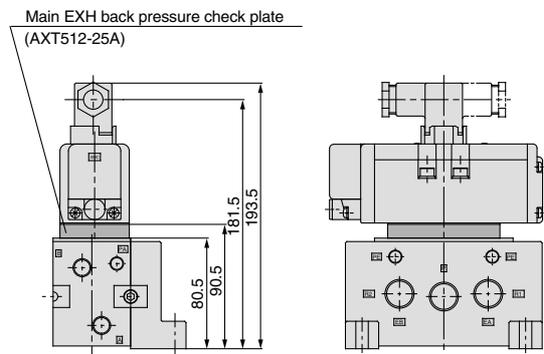
ARB350-00-^P
-A
-B



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

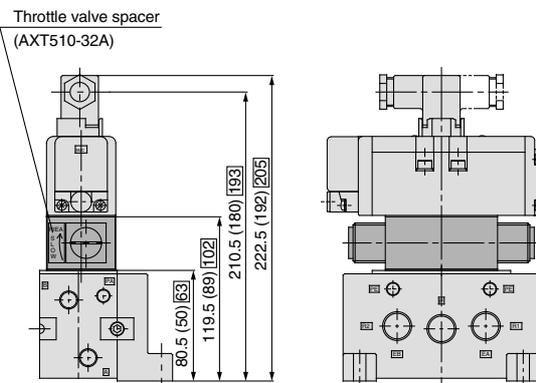
Main EXH back pressure check plate

AXT512-25A



Throttle valve spacer

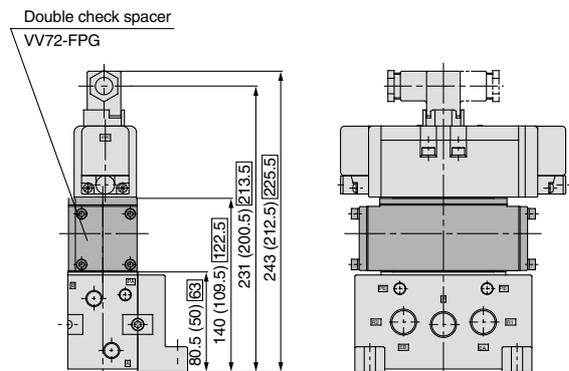
AXT510-32A



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

Double check spacer

VV72-FPG



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

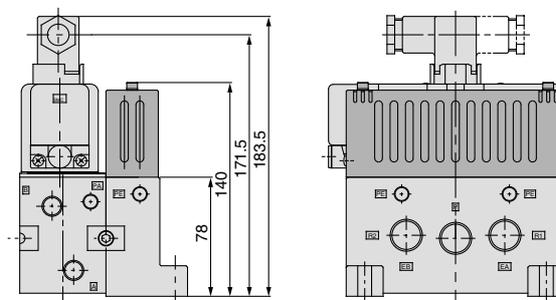
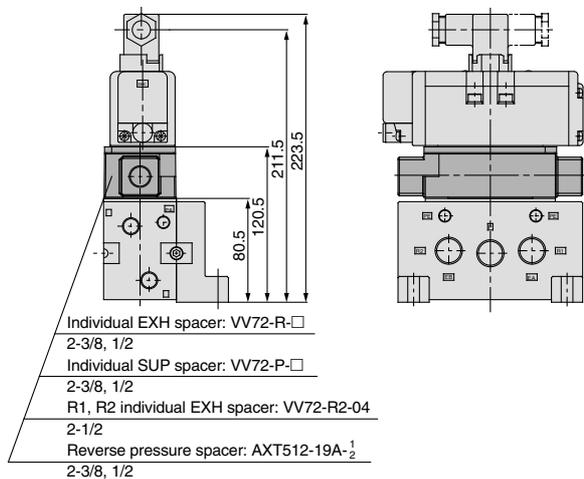
Series VQ7-8

Manifold Options

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

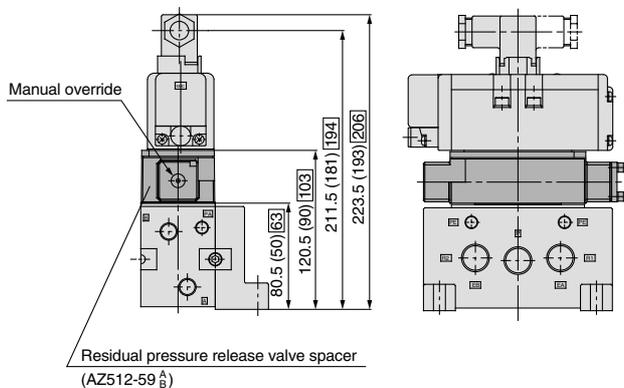
VV72-R-03, 04
 VV72-P-03, 04
 VV72-R2-04
 AXT512-19A-¹/₂

Silencer box
 AXT512-26A



Residual pressure release valve spacer

AZ512-59 ^A/_B



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

Manifold Options/Mounting Bolt Part Numbers

VQ7-6 mounting bolt part numbers

| Number of options | 0 | | Single stack | | | | | Double stack | | | | | |
|-------------------------|----------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|
| Mounting bolt | Part 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 | | | | | | | | | | | | | |

| Number of options | Triple stack | | | | |
|-------------------------|--------------|------------------|------------------|------------------|------------------|
| Mounting bolt | Part No. | AXT632-45-14 | AXT632-45-16 | AXT632-45-17 | AXT632-45-19 |
| | Size | M5 X 120 with SW | M5 X 130 with SW | M5 X 135 with SW | M5 X 140 with SW |
| Option mounting diagram | | | | | |

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

Spacers

- Main exhaust back pressure check plate
- Throttle valve spacer
- Release valve spacer
- Spacer 1
 - Individual supply spacer
 - Individual exhaust spacer
 - R1, R2 individual exhaust spacer
 - Reverse pressure spacer
 - Residual pressure release valve spacer
 - Individual supply spacer with residual pressure release valve
- Spacer 2
 - Interface regulator (P reduced pressure)
 - Interface regulator (A reduced pressure)
 - Interface regulator (B reduced pressure)
 - 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 exhaust spacer (**Bottom**) are combined with a R1, R2 individual exhaust 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) (**Bottom**) are combined, be careful regarding the installation position.

VQ7-8 mounting bolt part numbers

| Number of options | 0 | | Single stack | | | | Double stack | | | | |
|-------------------------|----------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Mounting bolt | Part 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 | | | | | | | | | | | |

| Number of options | Triple stack | | | | |
|-------------------------|--------------|------------------|------------------|------------------|------------------|
| Mounting bolt | Part 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 | | | | | |

Spacers

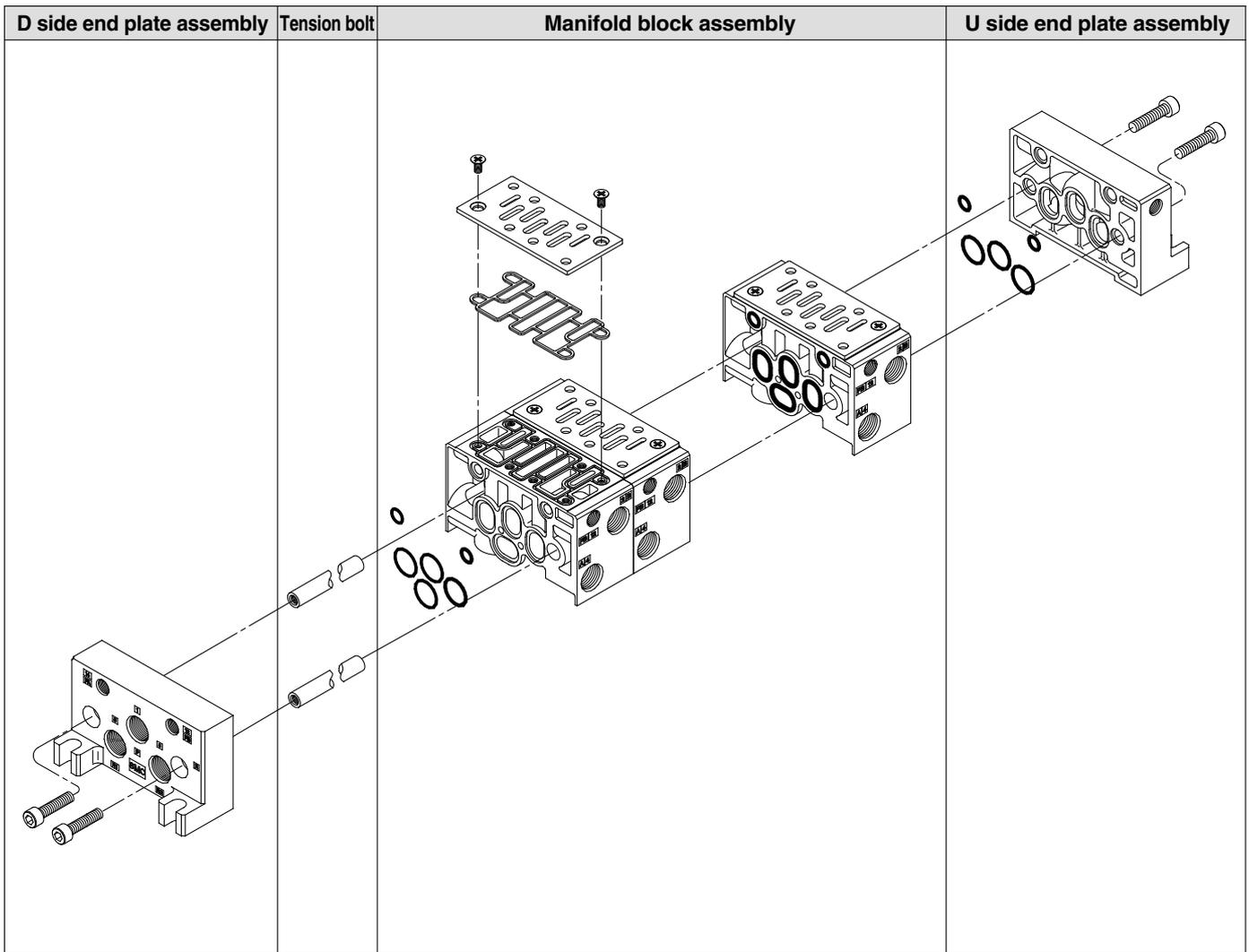
- Main exhaust back pressure check plate
- Interface regulator (P reduced pressure)
- Interface regulator (A reduced pressure)
- Interface regulator (B reduced pressure)
- Double check spacer
- Spacer 1
 - Individual supply spacer
 - Individual exhaust spacer
 - R1, R2 individual exhaust spacer
 - Reverse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

Note 1) A throttle spacer and double check spacer cannot be combined.

Note 2) There is no limitation on the mounting position for spacer 1.

Series VQ7-6

Manifold Exploded View



< End plate assembly >

E AXT502 - **A** -

End plate position

| | |
|---|--------|
| L | L side |
| R | R side |

Ordering source area code

| Code | areas |
|------|--------------------------|
| - | Japan, Asia Australia |
| E | Europe |
| N | North America |

P, R port size

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

<Tension bolt part number >

AXT502 - 34 -

Number of 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 >

E AXT502 - 1A - -

Wiring specification

| | |
|---|--------|
| A | Side |
| B | Bottom |

Cylinder port position

| | |
|---|--------|
| L | L side |
| R | R side |

Ordering source area code

| Code | areas |
|------|--------------------------|
| - | Japan, Asia Australia |
| E | Europe |
| N | North America |

Cylinder port size

| | |
|-------------|-----------------------|
| 02 | 1/4 |
| 03 | 3/8 |
| C6 Note 1) | ø6 One-touch fitting |
| C8 Note 1) | ø8 One-touch fitting |
| C10 Note 1) | ø10 One-touch fitting |

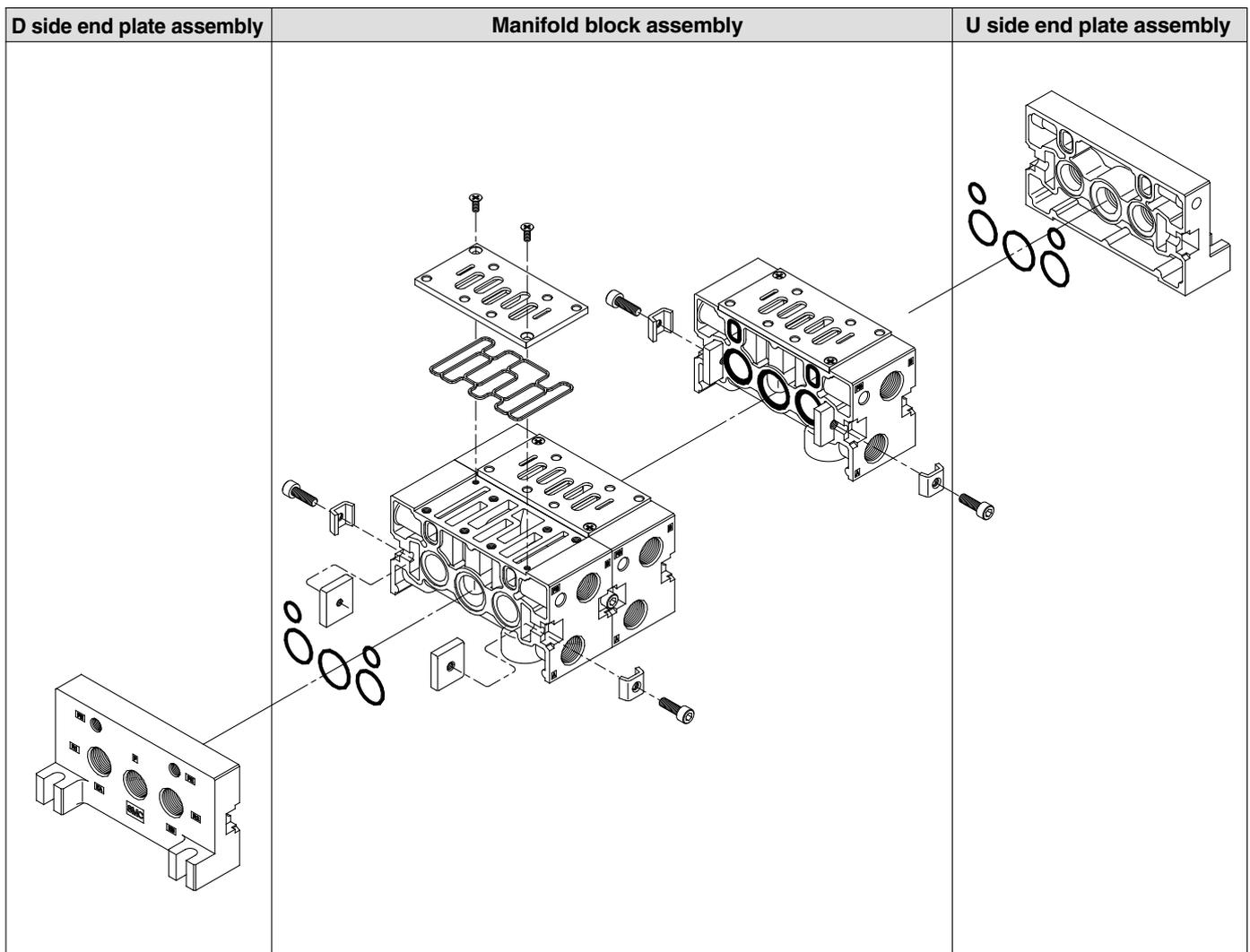
Note 1) Side ported only

* This manifold block assembly includes tension bolts for a single station addition.

< Manifold block replacement parts >

| 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 |

Manifold Exploded View



< End plate assembly >

E AXT512 - **A** -

● End plate position

| | |
|---|--------|
| L | L side |
| R | R side |

● Ordering source area code

| Code | areas |
|------|--------------------------|
| - | Japan, Asia Australia |
| E | Europe |
| N | North America |

● P, R port size

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

<Manifold block assembly>

E AXT512 - 1A - -

● Wiring specification

| | |
|---|--------|
| A | Side |
| B | Bottom |

● Cylinder port position

| | |
|---|--------|
| L | L side |
| R | R side |

● Ordering source area code

| Code | areas |
|------|--------------------------|
| - | Japan, Asia Australia |
| E | Europe |
| N | North America |

● Cylinder port size

| | |
|----|-----|
| 03 | 3/8 |
| 04 | 1/2 |

< Manifold block replacement parts >

| 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 | |



Series VQ7-6/7-8 Specific Product Precautions 1

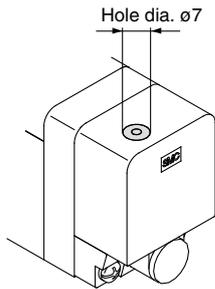
⚠ Warning

Manual Override Operation

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

The push type is standard (tool required).

Push type (tool required)



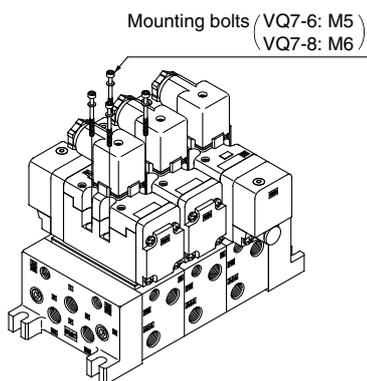
Press the manual override all the way down with a small screw driver, etc. The manual override resets when released.

⚠ Caution

Mounting Valves

After confirming installation of the gasket, 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 |



⚠ Caution

Installation and Removal of Pilot Valve cover

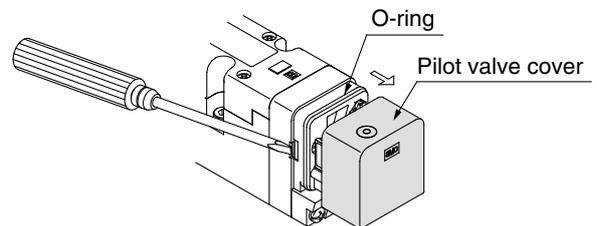
• Removal

To remove the pilot valve cover, spread the cover's hook outward about 1mm 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.)



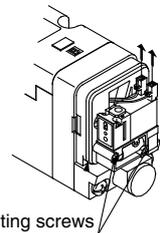
⚠ Caution

Replacement of Pilot Valve

• Removal

1) Take off 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 screw driver.

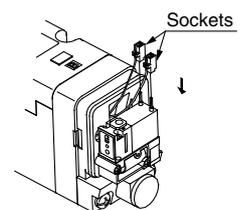


• Installation

1) After confirming installation of the gasket, securely tighten the mounting screws with the proper torque shown in the table below.

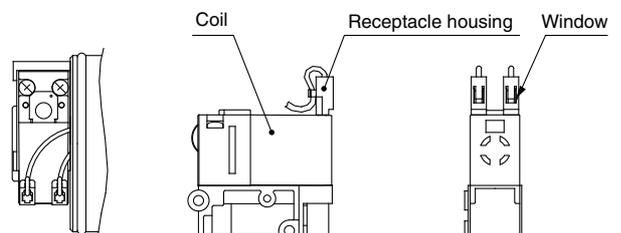
2) Put the sockets on straight and install them securely so that the receptacle housings touch the coil surface as shown in the drawing below.

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

0.8 to 1.2





Series VQ7-6/7-8 Specific Product Precautions 2

Caution Using a DIN Connector

ISO# : DIN 43650 A compatible

Connections

1. Loosen the holding screw and pull the connector off of the solenoid valve terminal block.
2. After removing the holding screw, insert a flat head screw driver, etc., into the notch at the bottom of the terminal block and pry it up, separating the terminal block and housing.
3. Loosen the terminal screws on the terminal block, insert the cores of the lead wires into the terminals in accordance with the connection method, and fix securely with the terminal screws.
4. Secure the cord by screwing in the ground nut.

Changing the cord entry

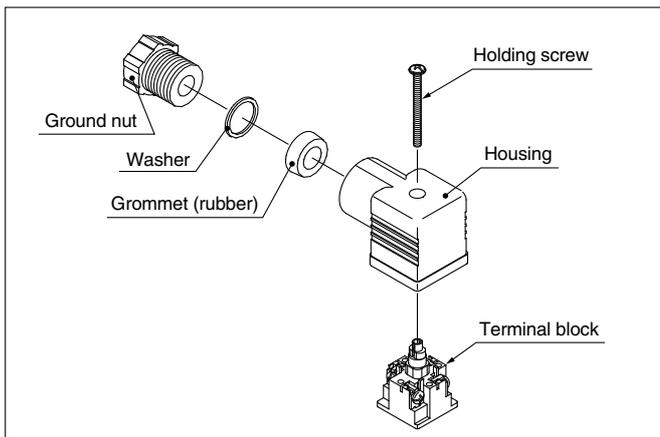
After separating the terminal block and housing, the cord entry direction can be changed by attaching the housing in the desired direction (4 directions at 90° intervals).

Precautions

Insert and pull out the connector in a straight line so that it does not tilt at an angle.

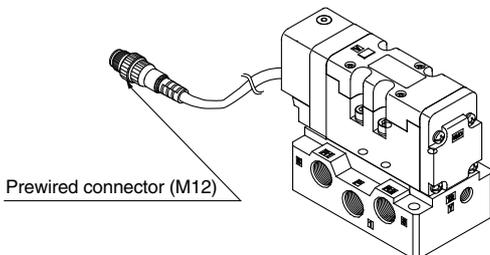
Compatible cable

Cord outside diameter: $\phi 6.8$ to $\phi 10$



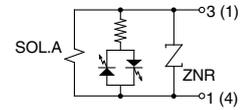
Using a Prewired Connector

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

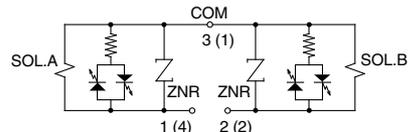


Prewired connector (M12)

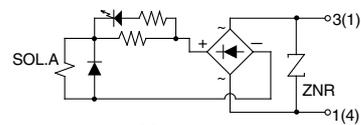
Caution Internal Wiring Specifications



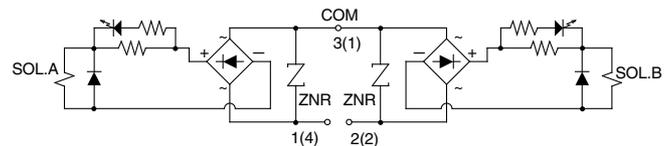
DC: Single



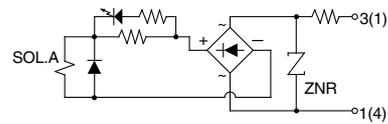
DC: Double



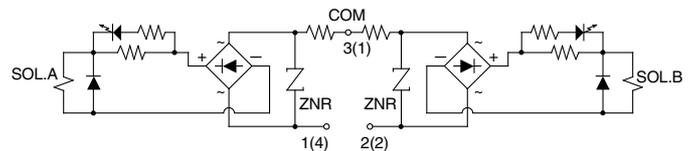
100VAC: Single



100VAC: Double



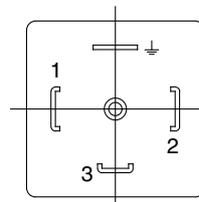
200VAC or more: Double



200VAC or more: Double

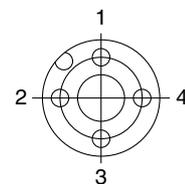
Terminal numbers in the circuits are for a DIN connector.
Numbers inside () are prewired connector pin numbers.

DIN connector wiring specification



Terminal Nos.
1: A side SOL.
2: B side SOL.
3: COM terminal

Prewired connector wiring specification



Pin Nos.
1: COM. pin
2: B side SOL.
3: Not in use
4: A side SOL.

