

5 Port Solenoid Valve

VQ7-6/7-8 Series

Metal Seal

Rubber Seal

ISO Standard Size 1/Size 2



| |
|------------|
| SV |
| SYJ |
| SZ |
| VF |
| VP4 |
| VQ 1/2 |
| VQ 4/5 |
| VQC 1/2 |
| VQC 4/5 |
| VQZ |
| SQ |
| VFS |
| VFR |
| VQ7 |

VQ7-6/Single unit

P.1118

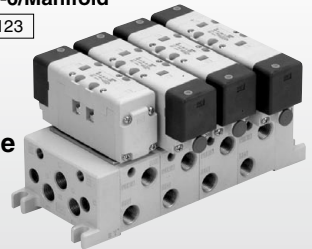


Conforms to ISO standard 5599-1
Interface conforms to ISO standard
Size 1 (VQ7-6) and Size 2 (VQ7-8).

Outstanding high speed response
and long service life

VQ7-6/Manifold

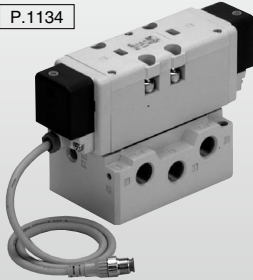
P.1123



Enclosure IP65 compliant
Dusttight/Low jetproof type

VQ7-8/Single unit

P.1134



A wide variety of manifold options

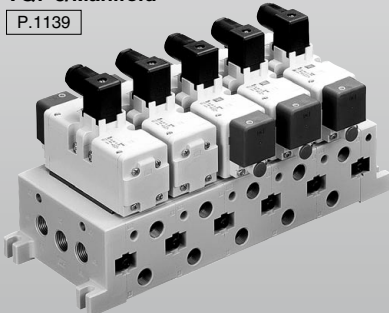
Manifolds can be configured with a wide range of interface
options to meet a variety of application requirements.

Lighter weight

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

VQ7-8/Manifold

P.1139



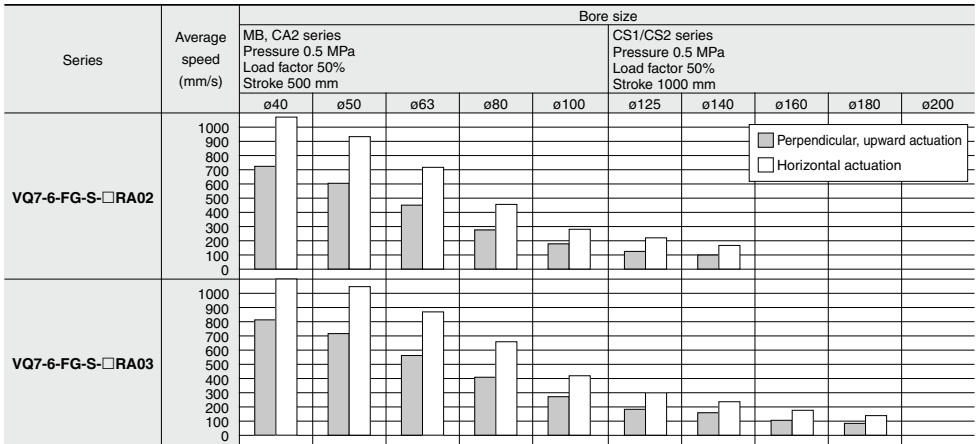
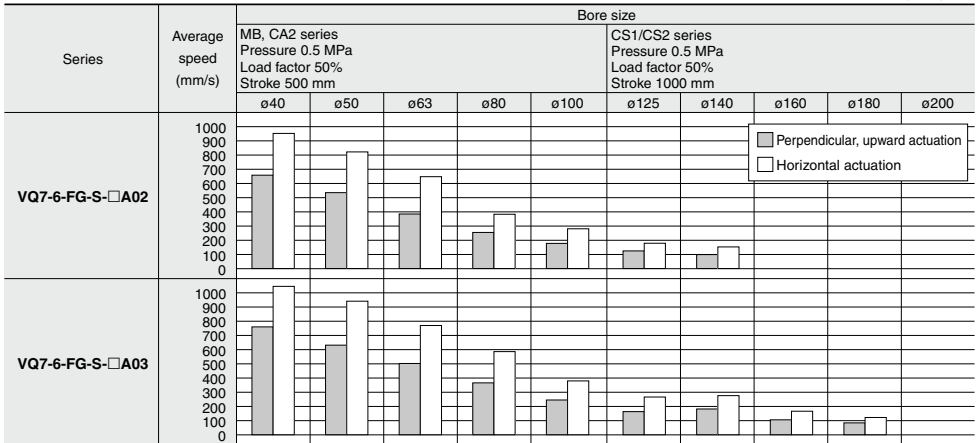
Space-saving profile

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.

Cylinder Speed Chart

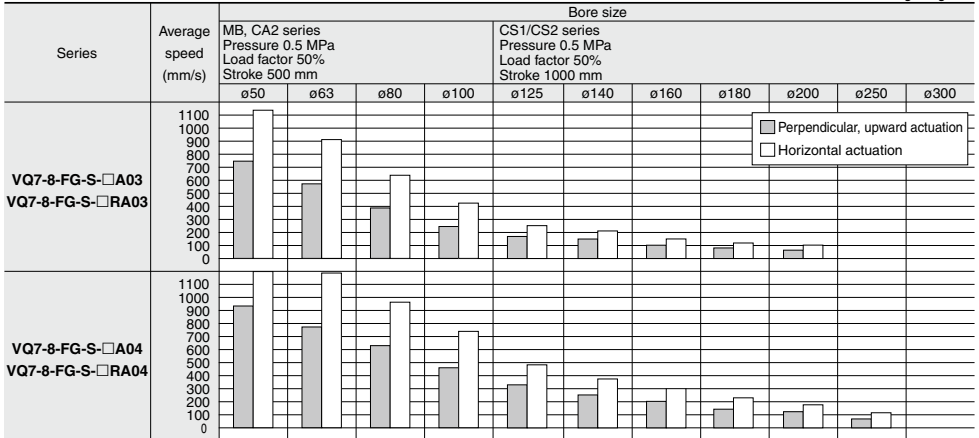
Use as a guide for selection.
Please confirm the actual conditions with SMC Sizing Program.



- * 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 mass x 9.8)/Theoretical force) x 100%

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 mass x 9.8)/Theoretical force) x 100%

Conditions

| | Base mounted | |
|------------------|--------------------------------|----------------|
| | MB, CA2 series | CS1/CS2 series |
| VQ7-6-FG-S-□A02 | SGP (Steel pipe) dia. x Length | 6A x 1 m |
| | Speed controller | AS4000-02 |
| | Silencer | AN20-02 |
| VQ7-6-FG-S-□A03 | SGP (Steel pipe) dia. x Length | 10A x 1 m |
| | Speed controller | AS420-03 |
| | Silencer | AN30-03 |
| VQ7-6-FG-S-□RA02 | SGP (Steel pipe) dia. x Length | 6A x 1 m |
| | Speed controller | AS4000-02 |
| | Silencer | AN20-02 |
| VQ7-6-FG-S-□RA03 | SGP (Steel pipe) dia. x Length | 10A x 1 m |
| | Speed controller | AS420-03 |
| | Silencer | AN30-03 |

| | Base mounted | |
|------------------|--------------------------------|----------------|
| | MB, CA2 series | CS1/CS2 series |
| VQ7-8-FG-S-□A03 | SGP (Steel pipe) dia. x Length | 10A x 1 m |
| | Speed controller | AS4000-03 |
| | Silencer | AN30-03 |
| VQ7-8-FG-S-□A04 | SGP (Steel pipe) dia. x Length | 15A x 1 m |
| | Speed controller | AS420-04 |
| | Silencer | AN40-04 |
| VQ7-8-FG-S-□RA03 | SGP (Steel pipe) dia. x Length | 10A x 1 m |
| | Speed controller | AS4000-03 |
| | Silencer | AN30-03 |
| VQ7-8-FG-S-□RA04 | SGP (Steel pipe) dia. x Length | 15A x 1 m |
| | Speed controller | AS420-04 |
| | Silencer | AN40-04 |

SV

SYJ

SZ

VF

VP4

VQ 1/2

VQ 4/5

VQC 1/2

VQC 4/5

VQZ

SQ

VFS

VFR

VQ7

ISO Standard Solenoid Valve

VQ7-6 Series

Size 1/Single Unit



How to Order Valves

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

Passage symbol

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

* Semi-standard

Number of solenoids

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

CE-compliant

| | |
|------------|--------------|
| Nil | — |
| Q | CE-compliant |

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 1/4" |
| A03 | Side ported 3/8" |
| B02 | Bottom ported 1/4" |
| B03 | Bottom ported 3/8" |

* Port R is 3/8"

Thread type

| | |
|------------|------|
| Nil | Rc |
| F | G |
| T | NPTF |

Seal

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

Pilot exhaust

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

Option

| | |
|------------|--------------------------------|
| Nil | None |
| Z | Light/Surge voltage suppressor |
| N | With indicator light |

Coil rated

| | |
|----------|------------------|
| 1 | 100 VAC, 50/60Hz |
| 2 | 200 VAC, 50/60Hz |
| 3 | 24 VDC |
| 4 | 12 VDC |
| 5 | 110 VAC, 50/60Hz |
| 6 | 220 VAC, 50/60Hz |

For other rated voltages, please consult with SMC.

How to Order Sub-plate

VS7-1 - **A02** [] []

Port size

| | |
|------------|--------------------|
| A02 | Side ported 1/4" |
| A03 | Side ported 3/8" |
| B02 | Bottom ported 1/4" |
| B03 | Bottom ported 3/8" |

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

Thread type

| | |
|------------|------|
| Nil | Rc |
| F | G |
| T | NPTF |

Specifications

| Model | Piping location | Porting 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 | | |

Model

| Series | Number of positions | Model | | Port size | Flow rate characteristics | | | | | | Response time (ms) ⁽¹⁾ | Weight (kg) ⁽²⁾ | | |
|--------|---------------------|-----------------|-------------|----------------|-------------------------------|-----|------|-------------------------------|-----|------|-----------------------------------|----------------------------|------|------|
| | | | | | 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 | |
| | | | Rubber seal | 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 | | |

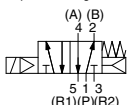
Note 1) Based on JIS B 8419: 2010 (Value for supply pressure of 0.5 MPa, with light/surge voltage suppressor, when using clean air.)
Response time values will change depending on pressure and air quality.
Value when ON for double type.

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

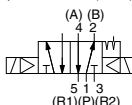


Symbol

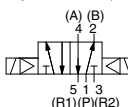
2 position single



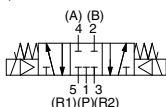
2 position double (Metal)



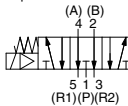
2 position double (Rubber)



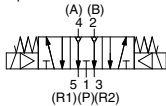
3 position closed center



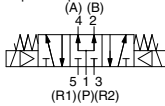
3 position exhaust center



3 position double check



3 position pressure center



Standard Specifications

| | | Valve construction | Metal seal | Rubber seal |
|-------------------------------|-----------------------------|---|------------------|---------------------------|
| | | Valve specifications | | Air |
| Fluid | | Air | | |
| 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) | | |
| Impact/Vibration resistance | | 150/30 m/s ² (2) | | |
| Enclosure | | IP65 (Dusttight, Low jetproof) | | |
| Coil rated voltage | | 12 VDC, 24 VDC, 100 VAC, 110 VAC, 200 VAC, 220 VAC, 240 VAC (50/60Hz) | | |
| Allowable voltage fluctuation | | ±10% of rated voltage | | |
| Coil insulation type | | Class B or equivalent | | |
| Solenoid specifications | Power consumption (Current) | 24 VDC | 1W DC (42 mA) | |
| | | 12 VDC | 1W DC (83 mA) | |
| | | 100 VAC ⁽³⁾ | 1.2 VA (12 mA) | |
| | | 110 VAC ⁽³⁾ | 1.3 VA (11.5 mA) | |
| | | 120 VAC ⁽³⁾ | 1.5 VA (12 mA) | |
| | | 200 VAC ⁽³⁾ | 2.5 VA (12.5 mA) | |
| | | 220 VAC ⁽³⁾ | 2.6 VA (13 mA) | |
| | | 230 VAC ⁽³⁾ | 2.8 VA (12.5 mA) | |
| 240 VAC ⁽³⁾ | 3 VA (13 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)

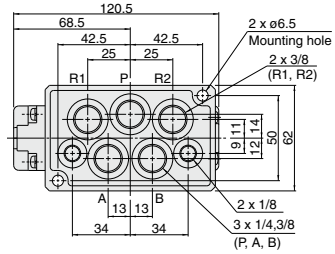
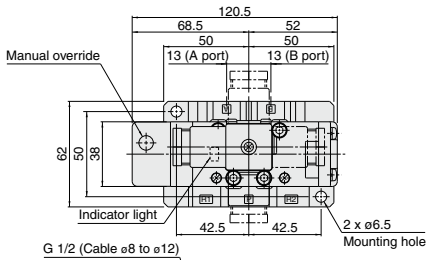
Note 3) The valve with an AC coil comes with a rectifying device; therefore, there is no difference in the consumption current when it is in the inrush and holding states.

- SV
- SYJ
- SZ
- VF
- VP4
- VQ 1/2
- VQ 4/5
- VQC 1/2
- VQC 4/5
- VQZ
- SQ
- VFS
- VFR
- VQ7

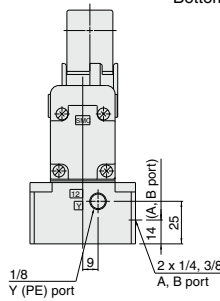
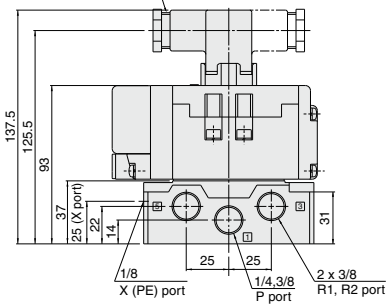
VQ7-6 Series

DIN Terminal Type

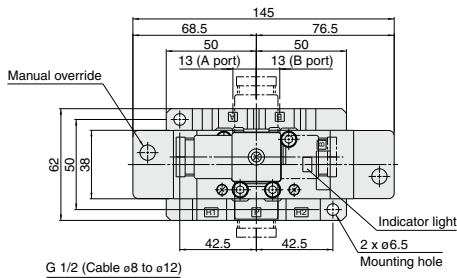
2 position single : VQ7-6-FG-S
single (Reverse pressure): VQ7-6-YZ-S



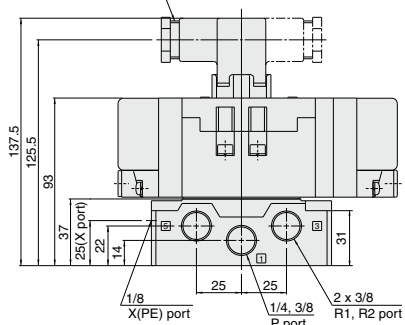
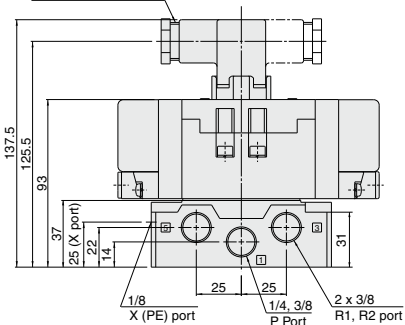
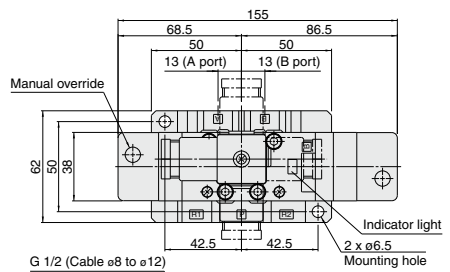
Bottom ported drawing



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

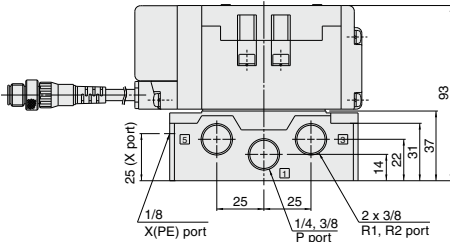
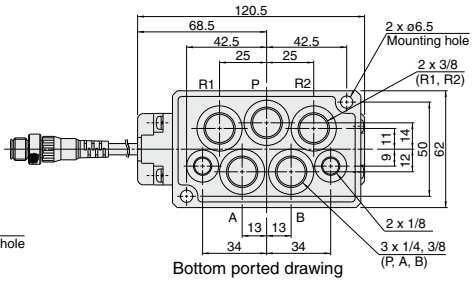
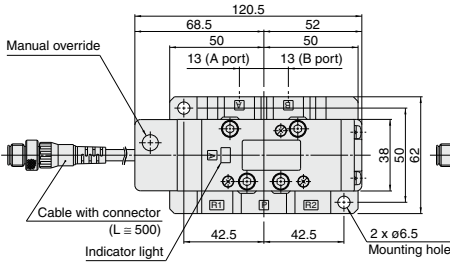


3 position closed center : VQ7-6-FHG-D
exhaust center : VQ7-6-FJG-D
pressure center: VQ7-6-FIG-D

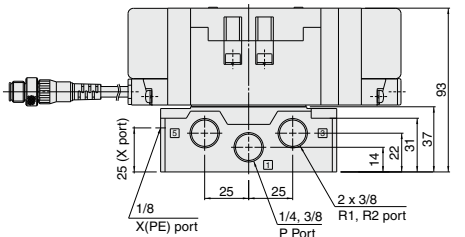
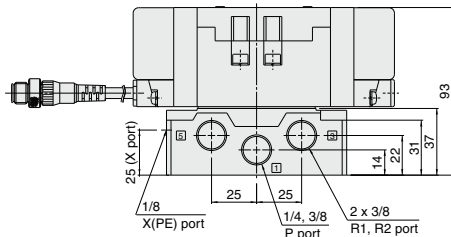
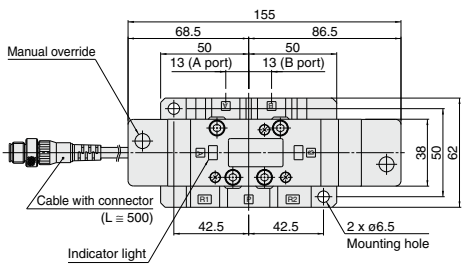
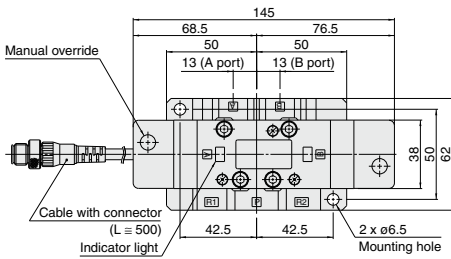


Prewired Connector Type

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



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



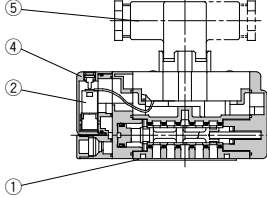
| |
|---------|
| SV |
| SYJ |
| SZ |
| VF |
| VP4 |
| VQ 1/2 |
| VQ 4/5 |
| VQC 1/2 |
| VQC 4/5 |
| VQZ |
| SQ |
| VFS |
| VFR |
| VQ7 |

VQ7-6 Series Construction

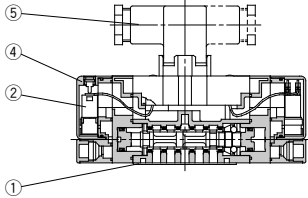
DIN Terminal Type

Metal seal type

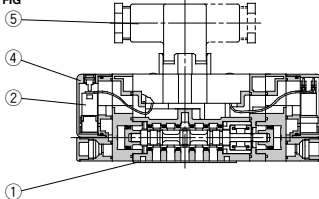
VQ7-6-FG-S-□



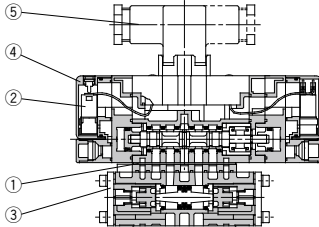
VQ7-6-FG-D-□



VQ7-6-^{FHG}_{FJG}-D-□

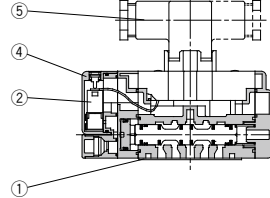


VQ7-6-FPG-D-□

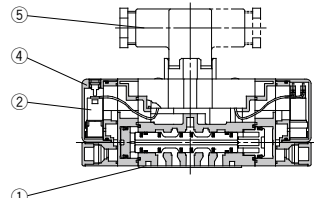


Rubber seal type

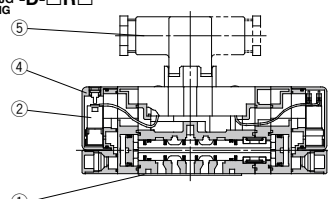
VQ7-6-FG-S-□R□



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 | | | | | VQ7060-13-4-1 | | |
| 2 | Pilot valve assembly ^{(1) (2)} | | | VQZ110Q-□ (5: 24 VDC, 6: 12 VDC, 1: For AC ⁽³⁾) | | | | |
| 3 | Double check spacer | | — | | VV71-FPG | | — | |
| 4 | Pilot valve cover | | | | VQ7060-9A-1 | | | |
| 5 | DIN terminal | | | | UKL-S1 | | | |

Note 1) When the voltage is the same, the replacement of pilot valve assembly is possible.

Note 2) Since the substrate circuit in the valve is different, voltage cannot be changed with the pilot valve assembly.

Note 3) The pilot valve for 100 to 240 VAC is common.

Manifold VV71 Series VQ7-6 Series



How to Order Manifold

VV71 6 - 02R - - - 02D - - -

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 | 1/4 (R side) |
| 03R | 3/8 (R side) |
| 02L | 1/4 (L side) |
| 03L | 3/8 (L side) |
| 02Y | 1/4 (Bottom side) |
| 03Y | 3/8 (Bottom side) |
| C6R | One-touch fitting ø6 (R side) |
| C8R | One-touch fitting ø8 (R side) |
| C10R | One-touch fitting ø10 (R side) |
| C6L | One-touch fitting ø6 (L side) |
| C8L | One-touch fitting ø8 (L side) |
| C10L | One-touch fitting ø10 (L 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) With One-touch fittings: Nil

CE-compliant

| | |
|-----|--------------|
| Nil | — |
| Q | CE-compliant |

Silencer box

| | |
|-----|------|
| Nil | None |
| SB | With |

Note) The silencer box is mounted on the end plate located on the side (D, U, B) that is selected in "1(P), 3(R2), 5(R1) port connection".

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 |
| 5 | 110 VAC, 50/60 Hz |
| 6 | 220 VAC, 50/60 Hz |

For other rated voltages, please consult with SMC.

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

| | |
|------|------------------------------------|
| 02D | 1/4 (D side) |
| 02U | 1/4 (U side) |
| 02B | 1/4 (Both sides) |
| 03D | 3/8 (D side) |
| 03U | 3/8 (U side) |
| 03B | 3/8 (Both sides) |
| C12D | One-touch fitting ø12 (D side) |
| C12U | One-touch fitting ø12 (U 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 1130 and 1131 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 | | | ○ | | ○ | | | | |
| 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 | 2 | 1 |

Manifold Specifications

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

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

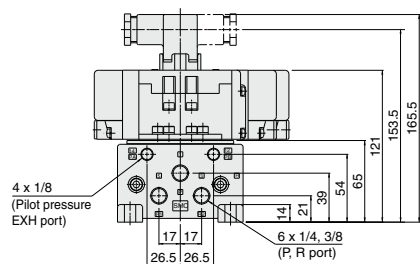
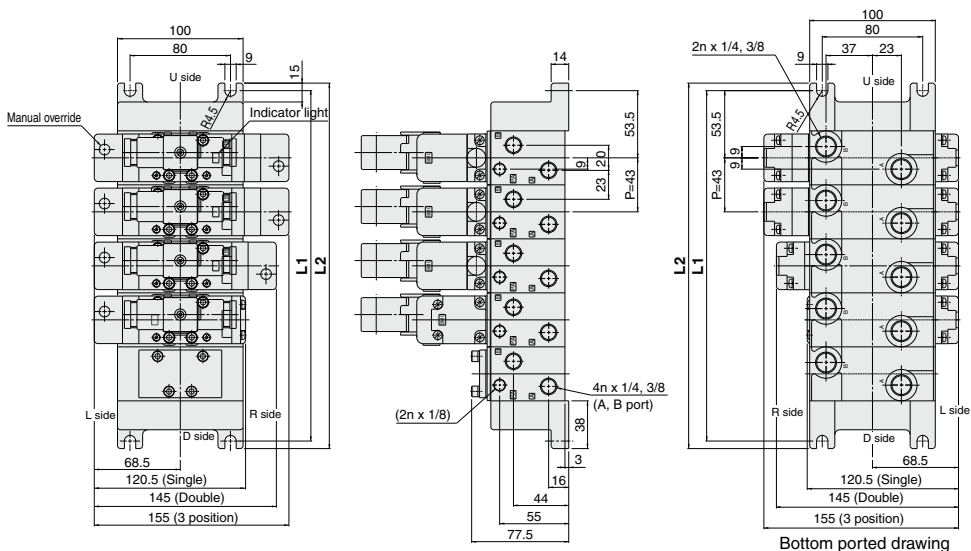


| |
|---------|
| SV |
| SYJ |
| SZ |
| VF |
| VP4 |
| VQ 1/2 |
| VQ 4/5 |
| VQC 1/2 |
| VQC 4/5 |
| VQZ |
| SQ |
| VFS |
| VFR |
| VQ7 |

VQ7-6 Series

DIN Terminal Type

VV71□-□-□□□



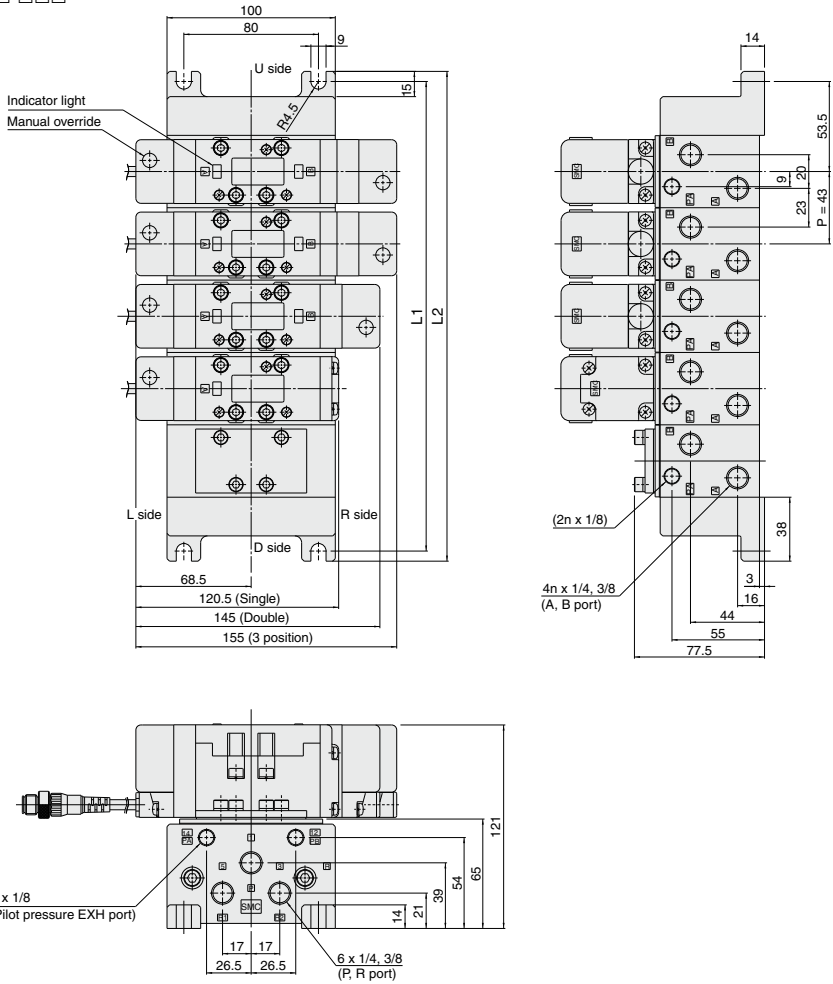
L Dimension

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 | $L2 = 43n + 76$ |

Prewired Connector Type

VV71□-□-□□□



- SV
- SYJ
- SZ
- VF
- VP4
- VQ 1/2
- VQ 4/5
- VQC 1/2
- VQC 4/5
- VQZ
- SQ
- VFS
- VFR
- VQ7**

L Dimension

n: Stations

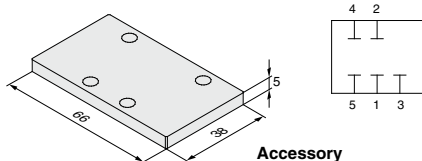
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Formula |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------------|
| L1 | 107 | 150 | 193 | 236 | 279 | 322 | 365 | 408 | 451 | 494 | $L1 = 43n + 64$ |
| L2 | 119 | 162 | 205 | 248 | 291 | 334 | 377 | 420 | 463 | 506 | $L2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

VQ7-6 Series

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.



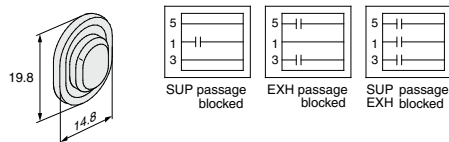
Accessory

| Description | Part no. | Qty. |
|-------------|-------------|------|
| Gasket | AXT500-13 | 1 |
| Bolt | AXT632-45-2 | 4 |

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

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

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



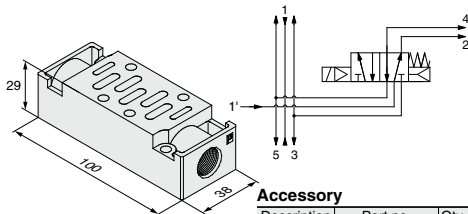
Individual SUP spacer VV71-P-02 03 C10

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.

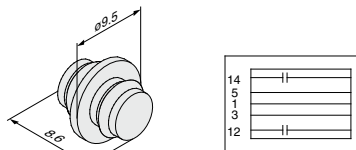


Accessory

| Description | Part no. | Qty. |
|-------------|-------------|------|
| Gasket | AXT500-13 | 1 |
| Bolt | AXT632-45-6 | 4 |

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

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



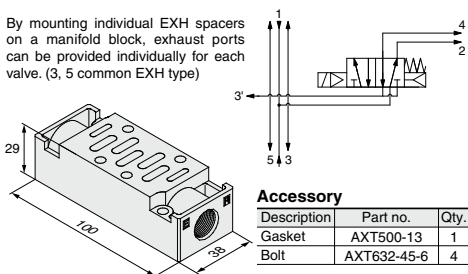
Individual EXH spacer VV71-R-02 03 C12

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)

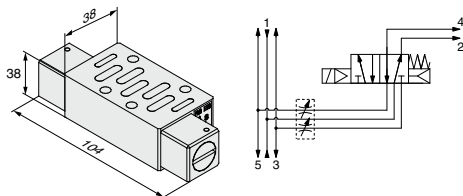


Accessory

| Description | Part no. | Qty. |
|-------------|-------------|------|
| Gasket | AXT500-13 | 1 |
| Bolt | AXT632-45-6 | 4 |

Throttle valve spacer AXT503-23A

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



Accessory

| Description | Part no. | Qty. |
|-------------|-------------|------|
| Gasket | AXT500-13 | 1 |
| Bolt | AXT632-45-5 | 4 |

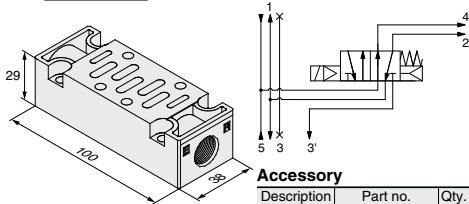
Reverse pressure spacer

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.}



Accessory

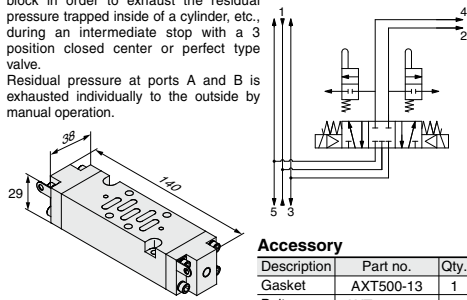
| Description | Part no. | Qty. |
|-------------|-------------|------|
| Gasket | AXT500-13 | 1 |
| Bolt | AXT632-45-6 | 4 |

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.



Accessory

| Description | Part no. | Qty. |
|-------------|-------------|------|
| Gasket | AXT500-13 | 1 |
| Bolt | AXT632-45-6 | 4 |

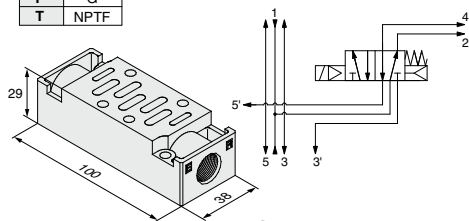
R1, R2 individual EXH spacer

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.)



Accessory

| Description | Part no. | Qty. |
|-------------|-------------|------|
| Gasket | AXT500-13 | 1 |
| Bolt | AXT632-45-6 | 4 |

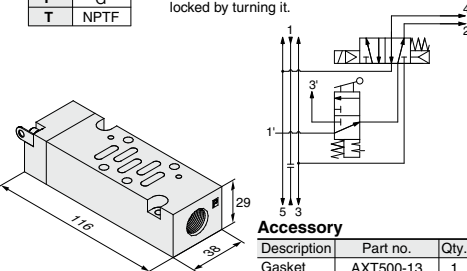
Individual SUP spacer with residual pressure release valve

VV71-PR-02 □

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.



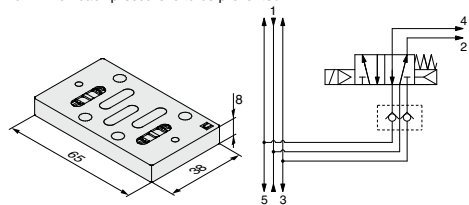
Accessory

| Description | Part no. | Qty. |
|-------------|-------------|------|
| Gasket | AXT500-13 | 1 |
| Bolt | AXT632-45-6 | 4 |

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.



Accessory

| Description | Part no. | Qty. |
|-------------|-------------|------|
| Gasket | AXT500-13 | 1 |
| Bolt | AXT632-45-4 | 4 |

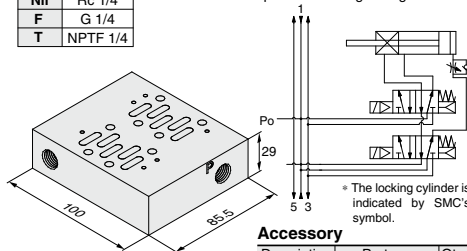
Adapter plate for locked-up cylinder

AXT502-26A □

Thread type

| | |
|-----|----------|
| Nil | Rc 1/4 |
| F | G 1/4 |
| T | NPTF 1/4 |

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.



* The locking cylinder is indicated by SMC's symbol.

Accessory

| Description | Part no. | Qty. |
|-------------|-------------|------|
| Gasket | AXT500-13 | 2 |
| Bolt | AXT632-45-6 | 8 |

| |
|---------|
| SV |
| SYJ |
| SZ |
| VF |
| VP4 |
| VQ 1/2 |
| VQ 4/5 |
| VQC 1/2 |
| VQC 4/5 |
| VQZ |
| SQ |
| VFS |
| VFR |
| VQ7 |

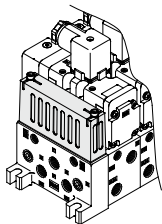
VQ7-6 Series

Manifold Option Parts

Silencer box

VV71-□□□-□□-SB

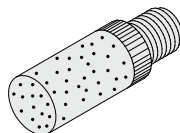
This can be provided as a unit on the end plate to reduce manifold exhaust noise and piping labor.



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.



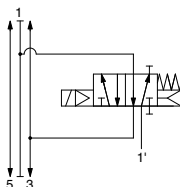
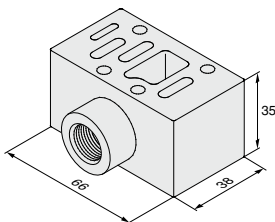
Release valve spacer

AXT502-17A □

Thread type

| | |
|-----|----------|
| Nil | Rc 3/8 |
| F | G 3/8 |
| T | NPTF 3/8 |

Combination of VQ7-6-FG-S (Single) and release valve spacer can be used as air release valve.
 (Note) Mounting on 2 position double and 3 position valves is not possible.



Accessory

| Description | Part no. | Qty. |
|-------------|-------------|------|
| Gasket | AXT500-13 | 1 |
| Bolt | AXT643-45-7 | 4 |

Residual pressure release valve spacer

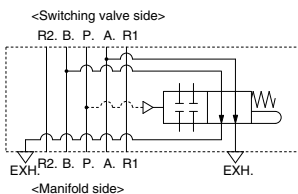
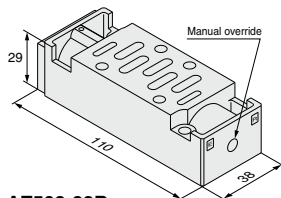
AZ503-82 □

Pilot type

| | |
|---|----------------|
| A | Internal pilot |
| B | External pilot |

At the same time as pilot pressure is released, residual pressure between the cylinder and valve is released.
 There are two pilot types: internal pilot and external pilot types.

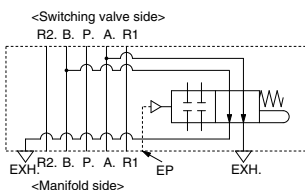
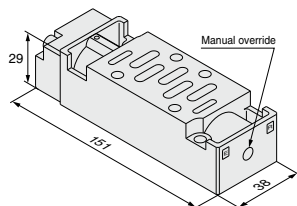
AZ503-82A



Accessory

| Description | Part no. | Qty. |
|-------------|-------------|------|
| Gasket | AXT500-13 | 1 |
| Bolt | AXT632-45-6 | 4 |

AZ503-82B

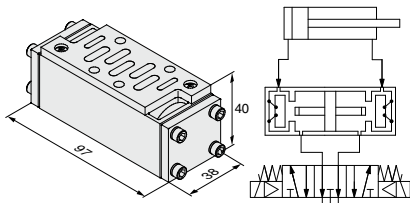


Specifications

| Model | AZ503-82A | AZ503-82B |
|------------------------------------|---|----------------|
| Switching signal type (Pilot type) | Internal pilot | External pilot |
| Applicable solenoid valve | VQ7-6 | |
| Applicable sub-plate | ISO standard size 1 | |
| Max. operating pressure | 1.0 MPa | |
| Min. operating pressure | 0.15 MPa (Pressure generated when the valve element is switched to the stopping side.) | |
| Ambient and fluid temperature | 5 to 60°C | |
| Lubrication | Non-lube (Use turbine oil Class 1 (ISO VG32), if lubricated.) | |

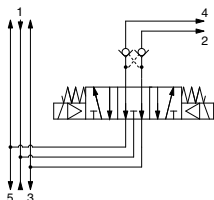
Double check spacer
VV71-FPG

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.



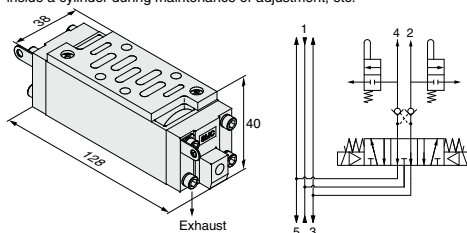
Accessory

| Description | Part no. | Qty. |
|-------------|-------------|------|
| Gasket | AXT500-13 | 1 |
| Bolt | AXT632-45-8 | 4 |



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.



Accessory

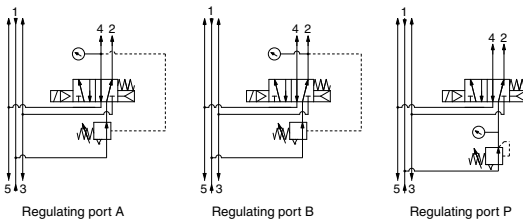
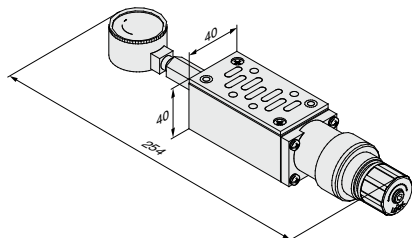
| Description | Part no. | Qty. |
|-------------|-------------|------|
| Gasket | AXT500-13 | 1 |
| Bolt | AXT632-45-8 | 4 |

⚠ 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 is recommended when stopping the cylinder in the middle for a long time.
- Combination of 3 position, closed center and pressure center valves is not possible.
- 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.
- Be aware that if the exhaust side of perfect spacer is restricted excessively, the intermediate stopping accuracy will decrease and will lead to improper intermediate stops.
- To combat the effects of back pressure, when required, we recommend installing an individual EXH spacer between the double check spacer and the manifold.

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.



Accessory

| Description | Part no. | Qty. |
|-------------|-------------|------|
| Gasket | AXT500-13 | 1 |
| Bolt | AXT632-45-8 | 4 |

Part No.

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

⚠ Caution

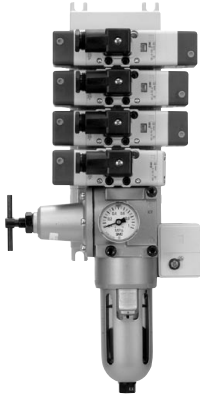
- When combining a pressure center valve and interface regulator with reduced pressure at ports A and B, use model ARB210-^A_B.
- When combining a reverse pressure valve and interface regulator, use model ARB210-^A_B. Further, it cannot be used with reduced pressure at port P.
- When combining a double 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.

SV
SYJ
SZ
VF
VP4
VQ 1/2
VQ 4/5
VQC 1/2
VQC 4/5
VQZ
SQ
VFS
VFR
VQ7

VQ7-6 Series

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.



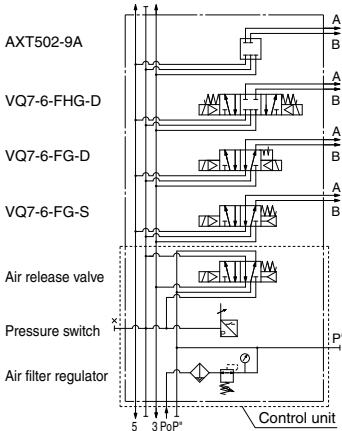
Control Unit Specifications

| | |
|---|---|
| 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 |

Options

| | |
|------------------------------------|--|
| Blanking plate | AXT502-9A (For manifold) |
| | AXT502-18A (For release valve adapter plate) |
| | MP2 (For control equipment/filter regulator) |
| | MP3-1 (For pressure switch) |
| Release valve adapter plate | AXT502-17A |
| Pressure switch | IS3100-X230 |

Manifold specifications example



Control Unit Type

| Control equipment | Ordering symbol | | | | | | | | |
|--|-----------------|----------|----------|----------|----------|----------|----------|----------|---------|
| | NII | A | AP | M | MP | F | G | C | E |
| 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 | 2 | 1 |
| | stations | stations | stations | stations | stations | stations | stations | stations | station |

Use of Control Unit

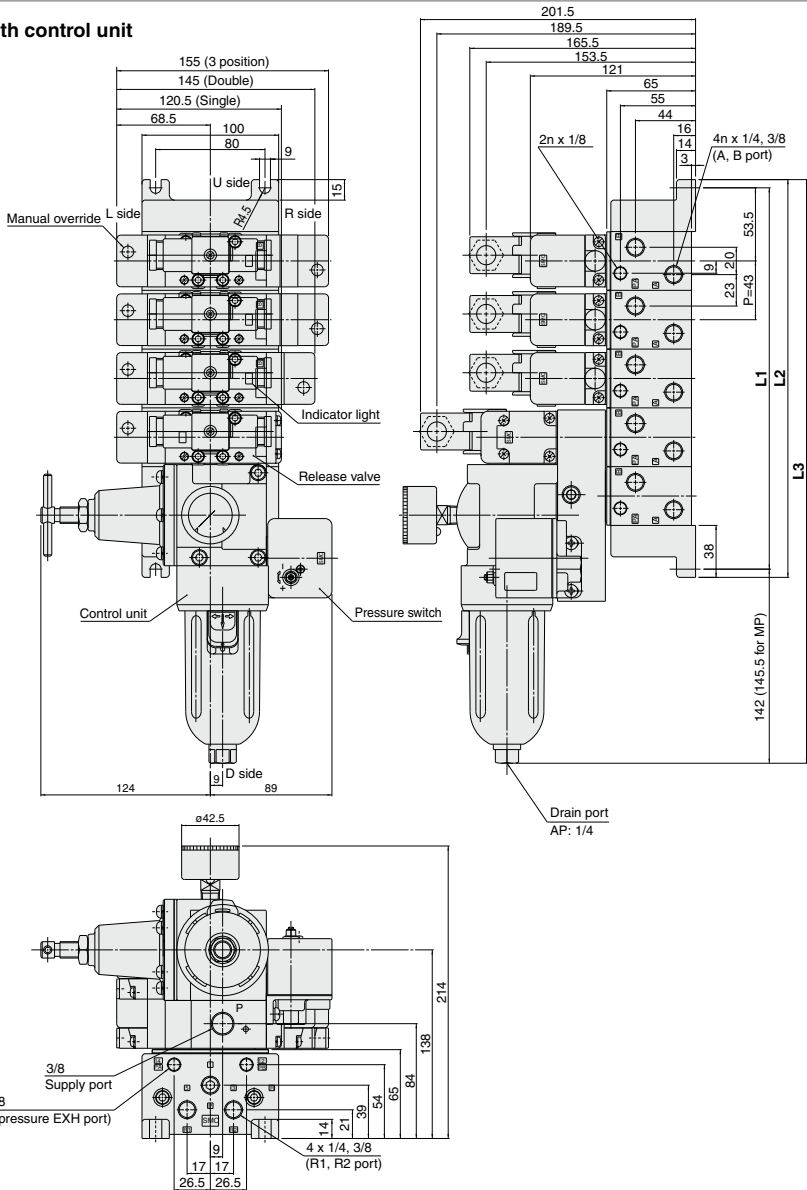
<Construction and piping >

- 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).
- 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.
- 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.

Manifold with control unit



- SV
- SYJ
- SZ
- VF
- VP4
- VQ 1/2
- VQ 4/5
- VQC 1/2
- VQC 4/5
- VQZ
- SQ
- VFS
- VFR
- VQ7**

L Dimension

| | 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) | |

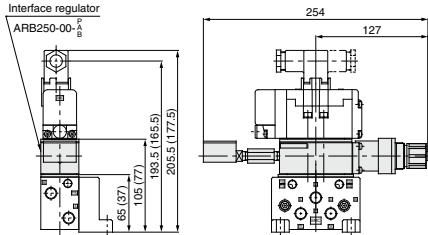
L3 dimensions inside () are for MP.

VQ7-6 Series

Manifold Option Parts

Interface regulator

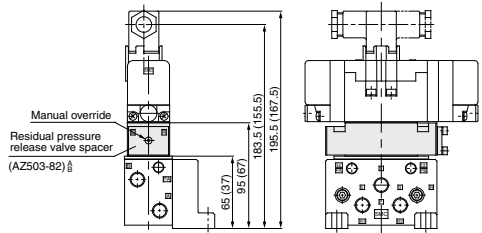
ARB250-00-^P_A^B



* Dimensions inside () are for sub-plate.

Residual pressure release valve spacer

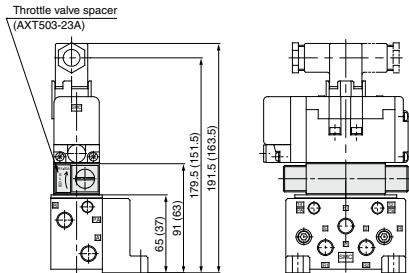
AZ503-82^A_B



* Dimensions inside () are for sub-plate.

Throttle valve spacer

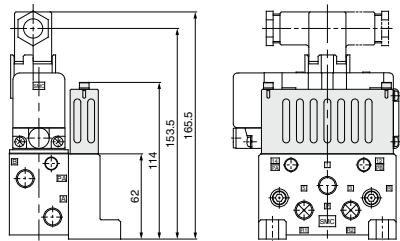
AXT503-23A



* Dimensions inside () are for sub-plate.

Silencer box

AXT503-60A

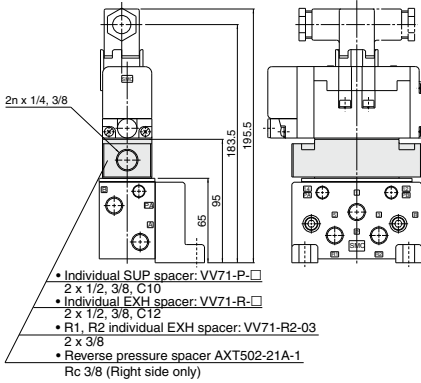


Spare parts

| Description | Part no. |
|-------------|---------------|
| Element | AXT503-60-2-4 |

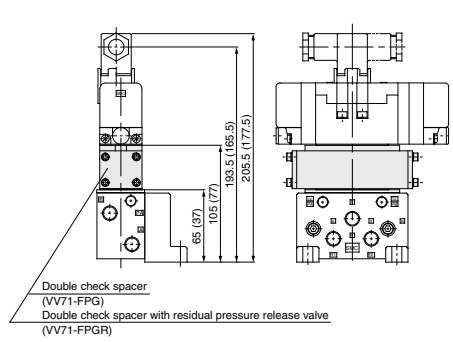
Individual SUP spacer
Individual EXH spacer
R1, R2 individual EXH spacer
Reverse pressure spacer

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



Double check spacer
Double check spacer with residual pressure release valve

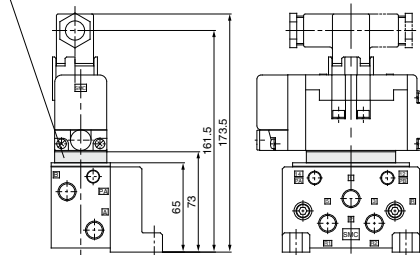
VV71-FPG
VV71-FPGR



* Dimensions inside () are for sub-plate.

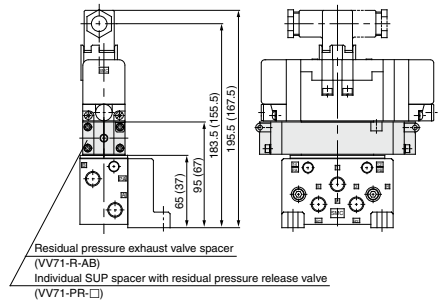
Main EXH back pressure check plate
AXT503-37A

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



Residual pressure release valve spacer
Individual SUP spacer with residual pressure release valve

VV71-R-AB
VV71-PR-□



* Dimensions inside () are for sub-plate.

| |
|------------|
| SV |
| SYJ |
| SZ |
| VF |
| VP4 |
| VQ 1/2 |
| VQ 4/5 |
| VQC 1/2 |
| VQC 4/5 |
| VQZ |
| SQ |
| VFS |
| VFR |
| VQ7 |

ISO Standard Solenoid Valve

VQ7-8 Series

Size 2/Single Unit



How to Order Valves

VQ7-8 - FG - S - 3 [] [] [] [] [] [] [] [] []

Passage symbol

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

* Semi-standard

Number of solenoids

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

CE-compliant

| | |
|------------|--------------|
| Nil | — |
| Q | CE-compliant |

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 3/8 |
| A04 | Side ported 1/2 |
| A06D | Side ported 3/4 |
| B03 | Bottom ported 3/8 |
| B04 | Bottom ported 1/2 |
| B06 | Bottom ported 3/4 |

Thread type

| | |
|------------|------|
| Nil | Rc |
| F | G |
| T | NPTF |

Seal

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

Pilot exhaust

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

Option

| | |
|------------|--------------------------------|
| Nil | None |
| Z | Light/Surge voltage suppressor |
| N | With indicator light |

Coil rated

| | |
|----------|------------------|
| 1 | 100 VAC, 50/60Hz |
| 2 | 200 VAC, 50/60Hz |
| 3 | 24 VDC |
| 4 | 12 VDC |
| 5 | 110 VAC, 50/60Hz |
| 6 | 220 VAC, 50/60Hz |

For other rated voltages, please consult with SMC.

How to Order Sub-plate

VS7-2 - A03 [] []

Port size

| | |
|-------------|-------------------|
| A03 | Side ported 3/8 |
| A04 | Side ported 1/2 |
| A06D | Side ported 3/4 |
| B03 | Bottom ported 3/8 |
| B04 | Bottom ported 1/2 |
| B06 | Bottom ported 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 | |

Model

| Series | Number of positions | Model | | Port size | Flow rate 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 8419: 2010 (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: 3/8, 1/2: 0.68 kg, 3/4: 1.29 kg)



Standard Specifications

| | | Valve construction | Metal seal | Rubber seal |
|-------------------------|-------------------------------|---|------------------|---------------------------|
| Valve specifications | Fluid | Air | | |
| | 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) | | |
| | Impact/Vibration resistance | 150/30 m/s ² ⁽²⁾ | | |
| | Enclosure | IP65 (Dusttight, Low Jproof) | | |
| Solenoid specifications | Coil rated voltage | 12 VDC, 24 VDC, 100 VAC, 110 VAC, 200 VAC, 220 VAC, 240 VAC (50/60Hz) | | |
| | Allowable voltage fluctuation | ±10% of rated voltage | | |
| | Coil insulation type | Class B or equivalent | | |
| | Power consumption (Current) | 24 VDC | 1 WDC (42 mA) | |
| | | 12 VDC | 1 WDC (83 mA) | |
| | | 100 VAC ⁽³⁾ | 1.2 VA (12 mA) | |
| | | 110 VAC ⁽³⁾ | 1.3 VA (11.5 mA) | |
| | | 120 VAC ⁽³⁾ | 1.5 VA (12 mA) | |
| | | 200 VAC ⁽³⁾ | 2.5 VA (12.5 mA) | |
| | | 220 VAC ⁽³⁾ | 2.6 VA (13 mA) | |
| 230 VAC ⁽³⁾ | 2.8 VA (12.5 mA) | | | |
| 240 VAC ⁽³⁾ | 3 VA (13 mA) | | | |

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

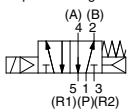
Note 2) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)

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)

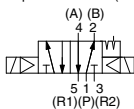
Note 3) Since AC coil specifications include a rectifying device, there is no difference in power consumption between inrush and holding.

Symbol

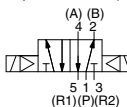
2 position single



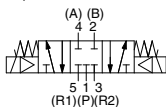
2 position double (Metal)



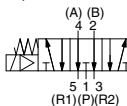
2 position double (Rubber)



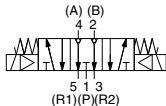
3 position closed center



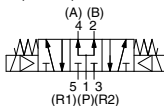
3 position exhaust center



3 position double check



3 position pressure center



SV

SYJ

SZ

VF

VP4

VQ 1/2

VQ 4/5

VQC 1/2

VQC 4/5

VQZ

SQ

VFS

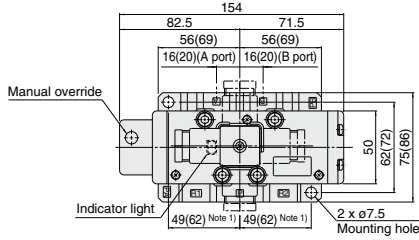
VFR

VQ7

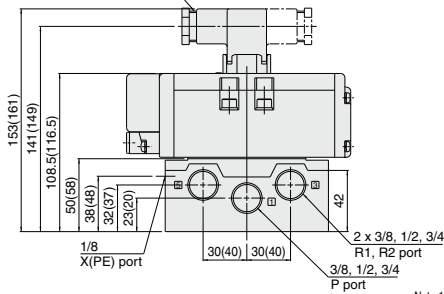
VQ7-8 Series

DIN Terminal Type

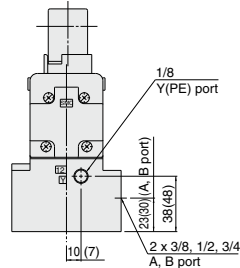
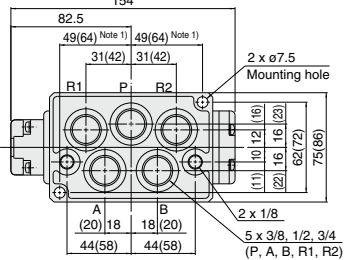
2 position single : VQ7-8-FG-S
single (Reverse pressure): VQ7-8-YZ-S



G 1/2 (Cable ø8 to ø12)



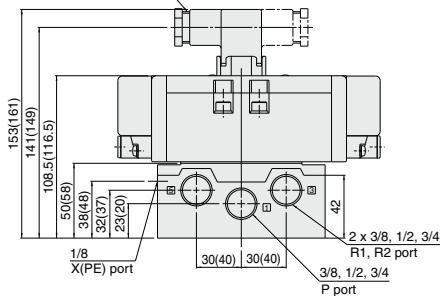
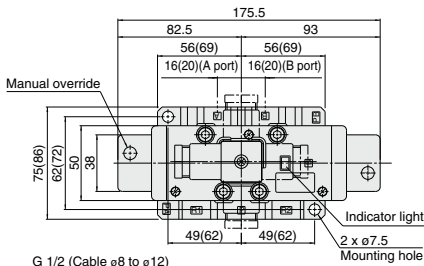
Bottom ported drawing



* () : 3/4

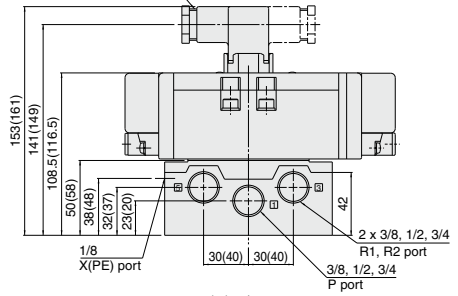
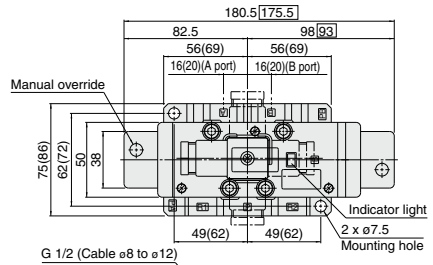
Note 1) For 3/4, the mounting hole pitch differs between the side ported type and the bottom ported type.

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



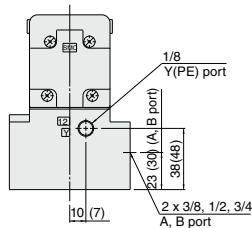
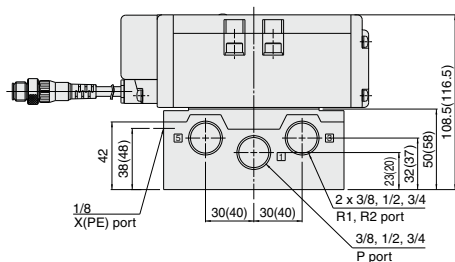
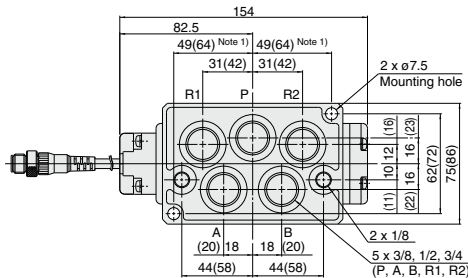
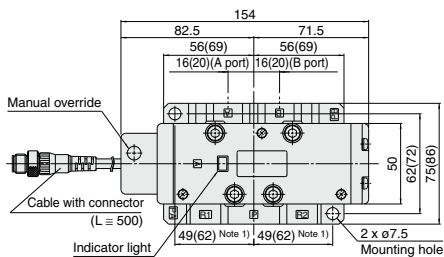
* () : 3/4

Dimensions inside □ are for rubber seals.

Prewired Connector Type

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

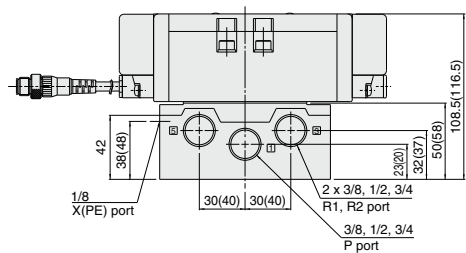
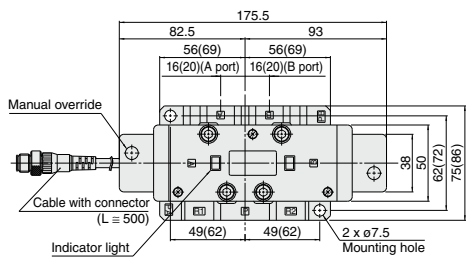
Bottom ported drawing



* () : 3/4

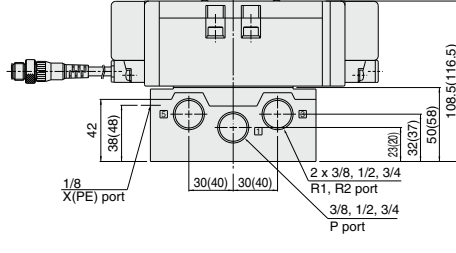
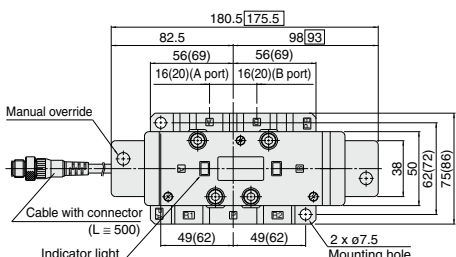
Note 1) For 3/4, the mounting hole pitch differs between the side ported type and the bottom ported type.

2 position double : VQ7-8-FG-D-□□□□SC
double (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.

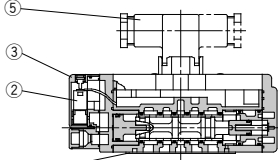
| |
|---------|
| SV |
| SYJ |
| SZ |
| VF |
| VP4 |
| VQ 1/2 |
| VQ 4/5 |
| VQC 1/2 |
| VQC 4/5 |
| VQZ |
| SQ |
| VFS |
| VFR |
| VQ7 |

VQ7-8 Series Construction

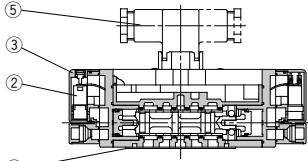
DIN Terminal Type

Metal seal

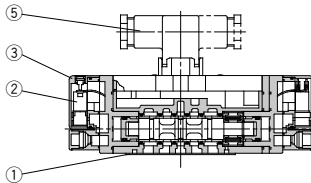
VQ7-8-FG-S-□



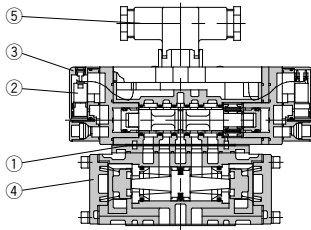
VQ7-8-FG-D-□



VQ7-8-^{FHG}_{FJG}^{FIG}-D-□

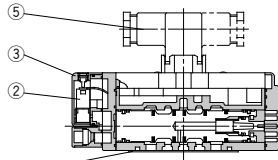


VQ7-8-FPG-D-□

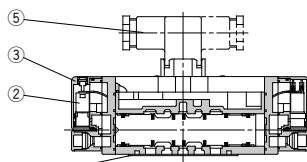


Rubber seal type

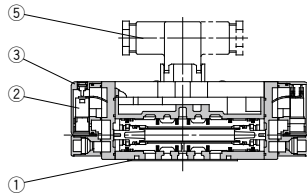
VQ7-8-FG-S-□R□



VQ7-8-FG-D-□R□



VQ7-8-^{FHG}_{FJG}^{FIG}-D-□R□



Replacement Parts (For valve)

| Number | Description | VQ7-8-FG-S-□ | VQ7-8-FG-D-□ | VQ7-8- ^{FHG} _{FJG} ^{FIG} -D-□ | VQ7-8-FPG-D-□ | VQ7-8-FG-S-□R□ | VQ7-8-FG-D-□R□ | VQ7-8- ^{FHG} _{FJG} ^{FIG} -D-□R□ |
|--------|--|--------------|--------------|--|---|----------------|----------------|--|
| 1 | Gasket | | | | VQ7080-13-4-1 | | | |
| 2 | Pilot valve assembly ⁽¹⁾ ⁽²⁾ | | | | VQZ110Q-□ (5: 24 VDC, 6: 12 VDC, 1: For AC ⁽³⁾) | | | |
| 3 | Pilot valve cover | | | | VQ7060-9A-1 | | | |
| 4 | Double check spacer | | | — | VV72-FPG | | — | |
| 5 | DIN terminal | | | | UKL-S1 | | | |

Note 1) When the voltage is the same, the replacement of pilot valve assembly is possible.

Note 2) Since the substrate circuit in the valve is different, voltage cannot be changed with the pilot valve assembly.

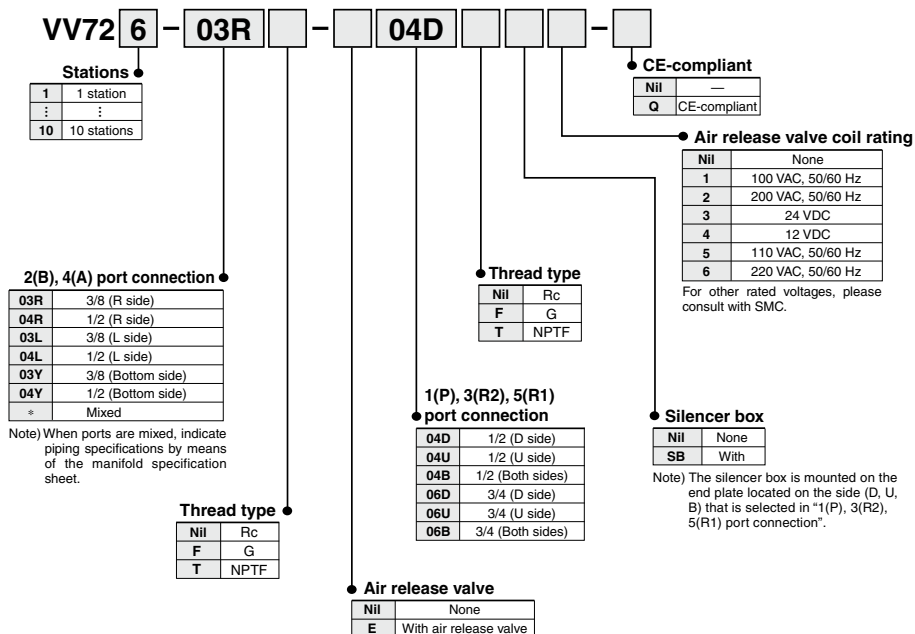
Note 3) The pilot valve for 100 to 240 VAC is common.

Manifold VV72 Series

VQ7-8 Series



How to Order Manifold



- SV
- SYJ
- SZ
- VF
- VP4
- VQ 1/2
- VQ 4/5
- VQC 1/2
- VQC 4/5
- VQZ
- SQ
- VFS
- VFR
- VQ7

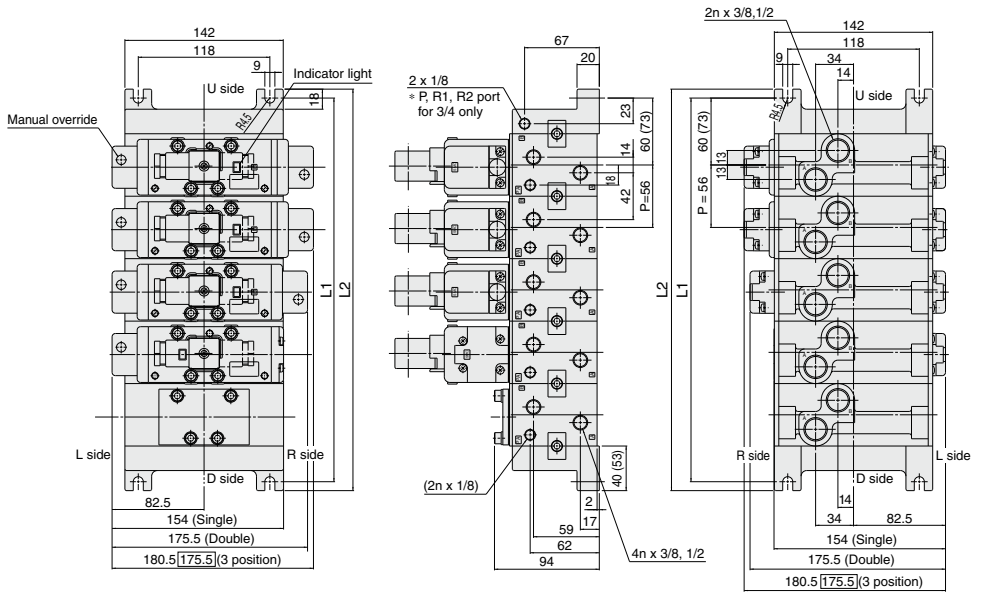
Manifold Specifications

| 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 | VQ7-8 Series ISO size 2 | 3/8 1/2 | 1/2 3/4 | Max. 10 stations | 0.96n + 0.77 (n: Stations) |

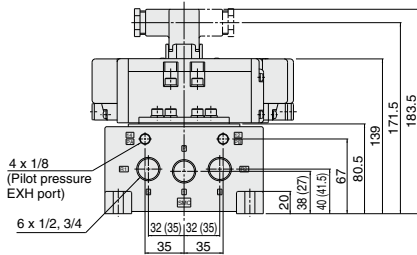
VQ7-8 Series

DIN Terminal Type

VV72□-□-□□□



Bottom ported drawing



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

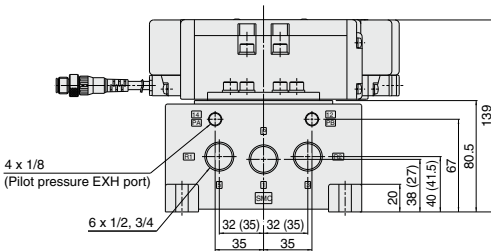
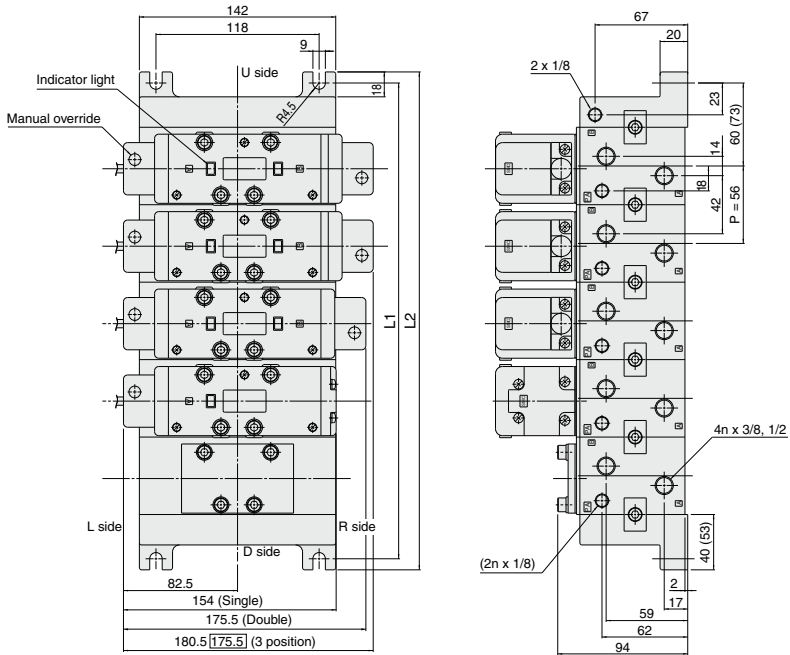
L Dimension

| 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 | |
| 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 | | |

Note) L dimension of SB type with a port size of 1/2 is the same as of SB type with a port size of 3/4.

Pre-wired Connector Type

VV72□-□-□□□



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

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 | 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 |

Note) L dimension of SB type with a port size of 1/2 is the same as of SB type with a port size of 3/4.

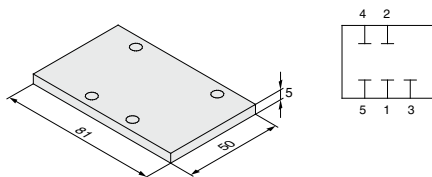
- SV
- SYJ
- SZ
- VF
- VP4
- VQ 1/2
- VQ 4/5
- VQC 1/2
- VQC 4/5
- VQZ
- SQ
- VFS
- VFR
- VQ7

VQ7-8 Series

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.

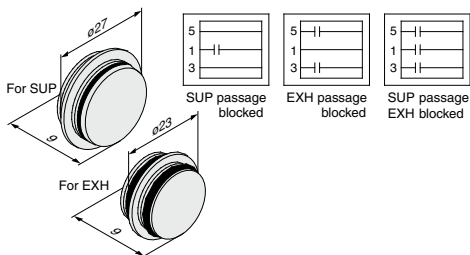


Accessory

| Description | Part no. | Qty. |
|-------------|-------------|------|
| Gasket | AXT510-13 | 1 |
| Bolt | AXT632-54-2 | 4 |

Block 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, block plates are installed between stations having different pressures. Also, in cases such as when valve exhaust effects other stations in a circuit, block plates are used for exhaust at stations where the exhaust is to be separated.



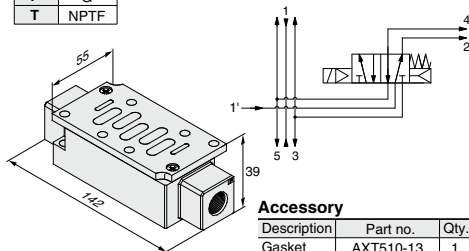
Individual SUP spacer VV72-P-03

03
04

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

Thread type

| Nil | Rc |
|-----|------|
| F | G |
| T | NPTF |

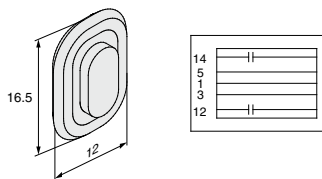


Accessory

| Description | Part no. | Qty. |
|-------------|-------------|------|
| Gasket | AXT510-13 | 1 |
| Bolt | AXT632-54-5 | 4 |

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

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



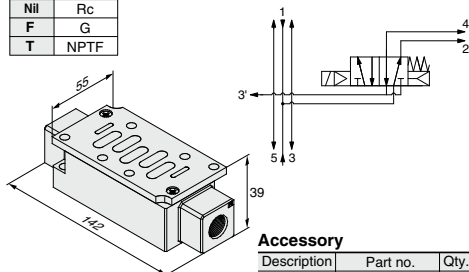
Individual EXH spacer VV72-R-03

03
04

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

Thread type

| Nil | Rc |
|-----|------|
| F | G |
| T | NPTF |

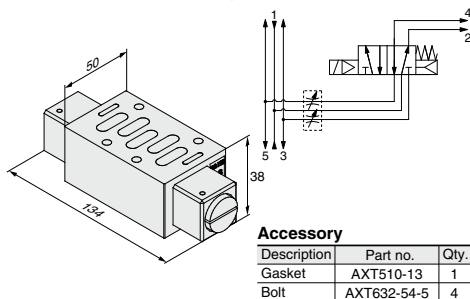


Accessory

| Description | Part no. | Qty. |
|-------------|-------------|------|
| Gasket | AXT510-13 | 1 |
| Bolt | AXT632-54-5 | 4 |

Throttle valve spacer AXT510-32A

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



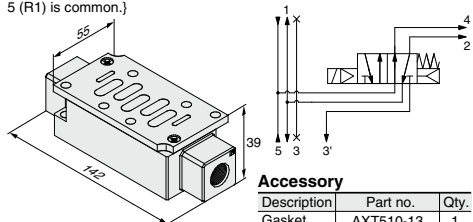
Accessory

| Description | Part no. | Qty. |
|-------------|-------------|------|
| Gasket | AXT510-13 | 1 |
| Bolt | AXT632-54-5 | 4 |

Reverse pressure spacer

AXT512-19A-

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.)



● **Thread type**

| | |
|-----|------|
| Nil | Rc |
| F | G |
| T | NPTF |

● **Port size**

| | |
|---|-----|
| 1 | 3/8 |
| 2 | 1/2 |

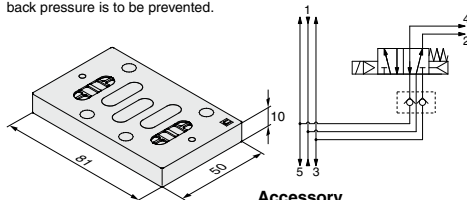
Accessory

| Description | Part no. | Qty. |
|-------------|-------------|------|
| Gasket | AXT510-13 | 1 |
| Bolt | AXT632-54-5 | 4 |

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.



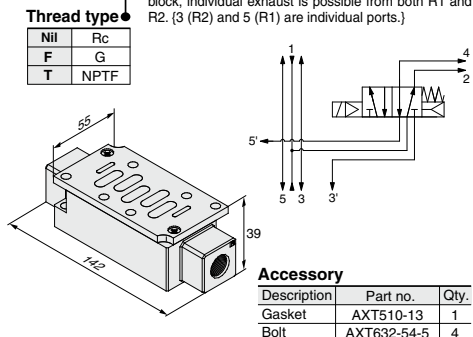
Accessory

| Description | Part no. | Qty. |
|-------------|-------------|------|
| Gasket | AXT510-13 | 1 |
| Bolt | AXT632-54-3 | 4 |

R1/R2 individual EXH spacer

VV72-R2-04

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



● **Thread type**

| | |
|-----|------|
| Nil | Rc |
| F | G |
| T | NPTF |

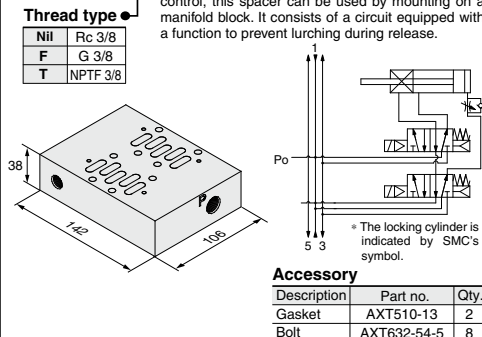
Accessory

| Description | Part no. | Qty. |
|-------------|-------------|------|
| Gasket | AXT510-13 | 1 |
| Bolt | AXT632-54-5 | 4 |

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.



● **Thread type**

| | |
|-----|----------|
| Nil | Rc 3/8 |
| F | G 3/8 |
| T | NPTF 3/8 |

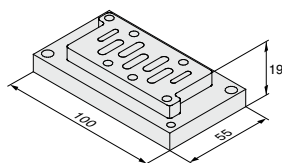
Accessory

| Description | Part no. | Qty. |
|-------------|-------------|------|
| Gasket | AXT510-13 | 2 |
| Bolt | AXT632-54-5 | 8 |

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)



Accessory

| Description | Part no. | Qty. |
|-------------|-----------------------|------|
| Gasket | AXT512-11 | 1 |
| Bolt | M6 x 20 (With switch) | 2 |
| | M4 x 20 (With switch) | 2 |

When a conversion adapter plate is mounted, remove the adapter plate on the manifold block and assemble in the order of gasket and conversion adapter plate.

SV

SYJ

SZ

VF

VP4

VQ 1/2

VQ 4/5

VQC 1/2

VQC 4/5

VQZ

SQ

VFS

VFR

VQ7

VQ7-8 Series

Manifold Option Parts

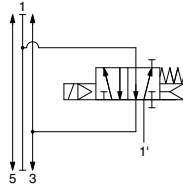
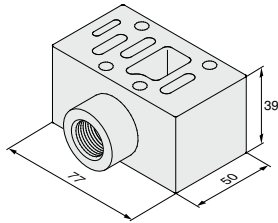
Release valve spacer

AXT512-17A

Combination of VQ7-8-FG-S (Single) and release valve spacer can be used as air release valve.
 (Note) Mounting on 2 position double and 3 position valves is not possible.

● Thread type

| | |
|-----|-----------|
| Nil | Rc(3/8) |
| F | G(3/8) |
| T | NPTF(3/8) |



Accessory

| Description | Part no. | Qty. |
|-------------|-------------|------|
| Gasket | AXT510-13 | 1 |
| Bolt | AXT632-54-5 | 4 |

Residual pressure release valve spacer

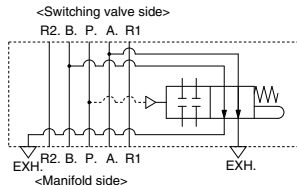
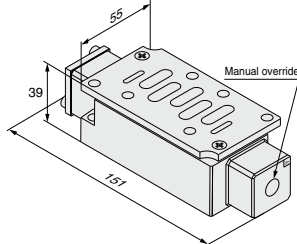
AZ512-59

At the same time as pilot pressure is released, residual pressure between the cylinder and valve is released.
 There are two pilot types: internal pilot and external pilot.

● Pilot type

| | |
|---|----------------|
| A | Internal pilot |
| B | External pilot |

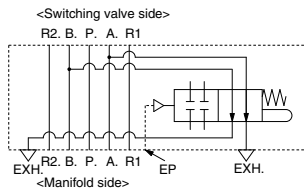
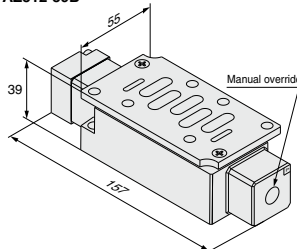
AZ512-59A



Accessory

| Description | Part no. | Qty. |
|-------------|-------------|------|
| Gasket | AXT510-13 | 1 |
| Bolt | AXT632-54-5 | 4 |

AZ512-59B

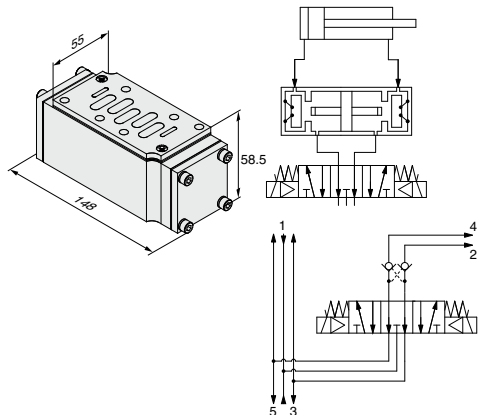


Specifications

| Model | AZ512-59A | AZ512-59B |
|------------------------------------|---|----------------|
| Switching signal type (Pilot type) | Internal pilot | External pilot |
| Applicable solenoid valve | VQ7-8 | |
| Applicable sub-plate | ISO standard size 1 | |
| Max. operating pressure | 1.0 MPa | |
| Min. operating pressure | 0.15 MPa (Pressure generated when the valve element is switched to the stopping side.) | |
| Ambient and fluid temperature | 5 to 60°C | |
| Lubrication | Non-lube (Use turbine oil Class 1 (ISO VG32), if lubricated.) | |

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.

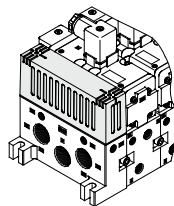


Caution

- 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 is recommended when stopping the cylinder in the middle for a long time.
- Combination of 3 position, closed center and pressure center valves is not possible.
- 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.
- Be aware that if the exhaust side of perfect spacer is restricted excessively, the intermediate stopping accuracy will decrease and will lead to improper intermediate stops.
- To combat the effects of back pressure, when required, we recommend installing an individual EXH spacer between the double check spacer and the manifold.

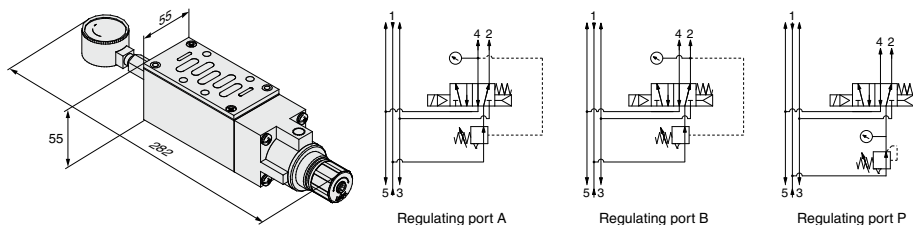
Silencer box
VV72-□□□-□□-SB

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



Interface regulator
ARB350-00-^A/_B

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



Accessory

| Description | Part no. | Qty. |
|-------------|-------------|------|
| Gasket | AXT510-13 | 1 |
| Bolt | AXT632-54-6 | 4 |

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.

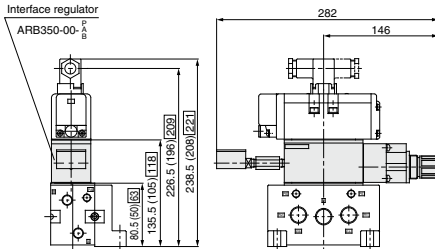
| |
|---------|
| SV |
| SYJ |
| SZ |
| VF |
| VP4 |
| VQ 1/2 |
| VQ 4/5 |
| VQC 1/2 |
| VQC 4/5 |
| VQZ |
| SQ |
| VFS |
| VFR |
| VQ7 |

VQ7-8 Series

Manifold Option Parts

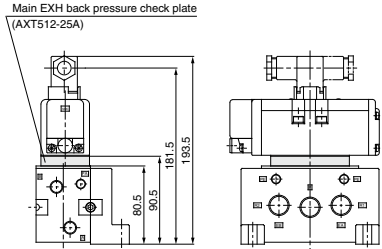
Interface regulator

ARB350-00-^PA
_B

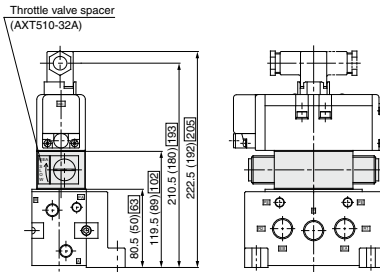


* Dimensions inside () are for sub-plate aperture 3/8 and 1/2.
Dimensions inside □ are for sub-plate aperture 3/4.

Main EXH back pressure check plate AXT512-25A

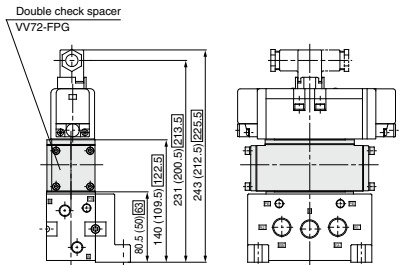


Throttle valve spacer AXT510-32A



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

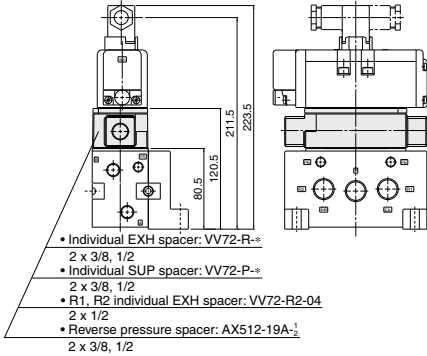
Double check spacer VV72-FPG



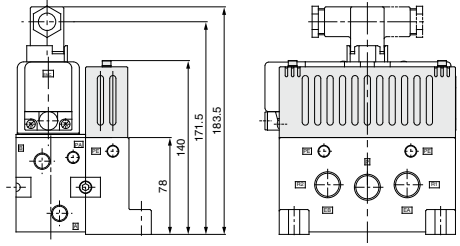
* Dimensions inside () are for sub-plate aperture 3/8 and 1/2.
Dimensions inside □ are for sub-plate aperture 3/4.

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



Silencer box
AXT512-26A

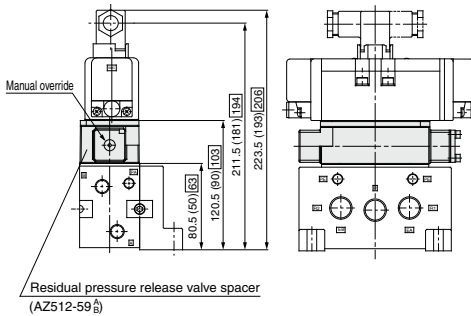


Spare parts

| Description | Part no. |
|-------------|-------------|
| Element | AXT512-26-2 |

| |
|---------|
| SV |
| SYJ |
| SZ |
| VF |
| VP4 |
| VQ 1/2 |
| VQ 4/5 |
| VQC 1/2 |
| VQC 4/5 |
| VQZ |
| SQ |
| VFS |
| VFR |
| VQ7 |

Residual pressure release valve spacer
AZ512-59_A



* Dimensions inside () are for sub-plate aperture 3/8 and 1/2.
 Dimensions inside [] are for sub-plate aperture 3/4.

VQ7-6/VQ7-8 Series

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 | | | | | | | | | | | | | | |

| 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 | | | | | | |

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) (Bottom) 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 | | | | | | | | | | | |

| 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 | | | | | |

Spacers

- Main EXH back pressure check plate
- Interface regulator (P port regulation)
- 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
- Release valve spacer

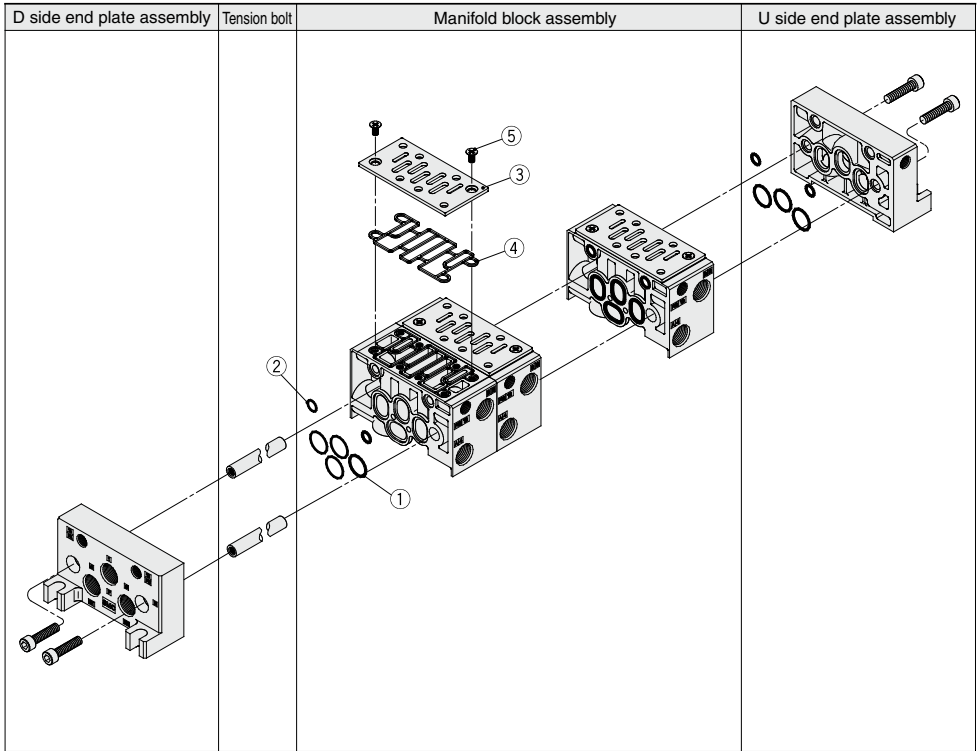
Note 1) A throttle valve spacer and double check spacer cannot be combined.

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

Note 3) 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 4) 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.

Exploded View of Manifold/VQ7-6



<End Plate Assembly>

AXT502 - [] A - [] []

End plate position

| | |
|---|--------|
| L | U side |
| R | D side |

P, R port size

| | |
|-----|---------------------------|
| 02 | 1/4 |
| 03 | 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 | 1/4 |
| 03 | 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.

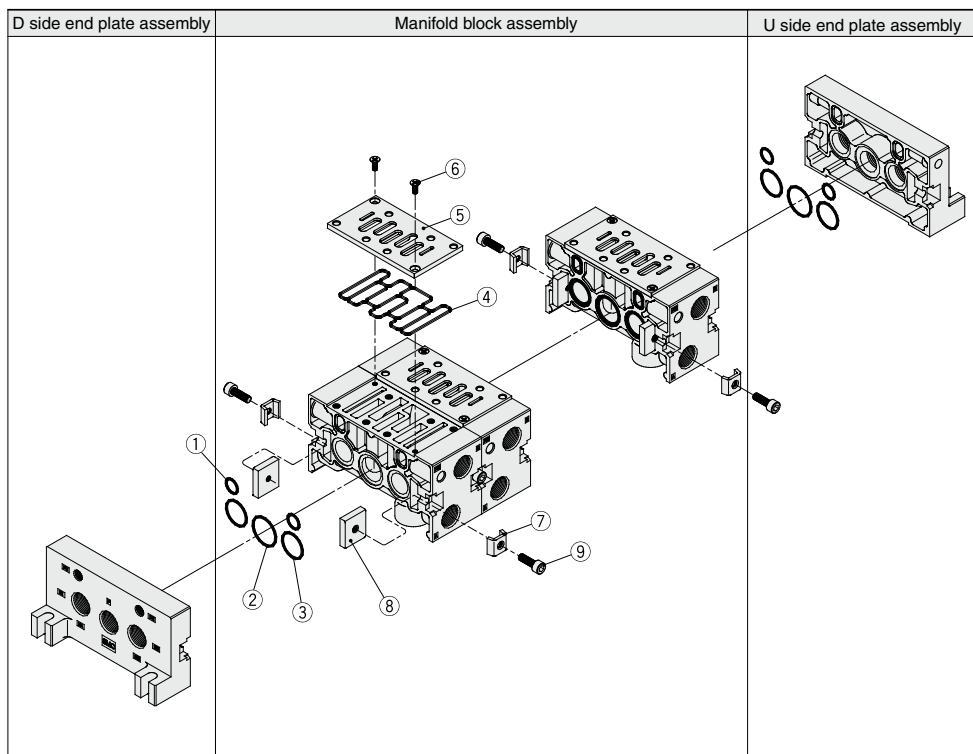
Replacement Parts (For manifold block)

| | Part no. | Description | Qty. | Material |
|---|-------------|-----------------------------|------|----------|
| 1 | AXT502-19 | O-ring | 4 | NBR |
| 2 | AXT502-20 | O-ring | 2 | NBR |
| 3 | AXT502-22-2 | Plate | 1 | SPCC |
| 4 | AXT502-31 | Gasket | 1 | NBR |
| 5 | M4 x 8 | Oval countersunk head screw | 2 | SWRH |

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

VQ7-6/VQ7-8 Series

Exploded View of Manifold/VQ7-8



<End Plate Assembly>

AXT512 - A -

End plate position

| | |
|---|--------|
| L | U side |
| R | D side |

Thread type

| | |
|-----|------|
| Nil | Rc |
| F | G |
| T | NPTF |

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

P, R port size

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

<Manifold Block Assembly>

AXT512 - 1A - -

Porting 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 |
|----------|-------------|------|----------|
| 1 | AXT512-13 | 2 | NBR |
| 2 | AS568-022 | 1 | NBR |
| 3 | AS568-020 | 2 | NBR |
| 4 | AXT512-5 | 1 | NBR |
| 5 | AXT512-4 | 1 | SPCC |
| 6 | M4 x 10 | 2 | SWRH |
| 7 | AXT512-6-1 | 2 | SPCC |
| 8 | AXT512-6-4 | 2 | SS |
| 9 | AXT512-6-3 | 2 | SCM |



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

Be sure to read this before handling the products.

Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

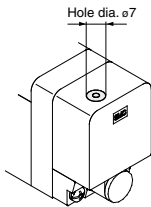
Warning

Manual Override Operation

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)



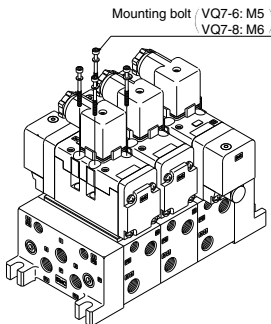
Push down on the manual override button with a small screwdriver until it stops. (Approx. 1.5 mm)
Release the screwdriver and the manual override will return.

Caution

Mounting of Valves

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 |



Caution

Installation and Removal of Pilot Valve Cover

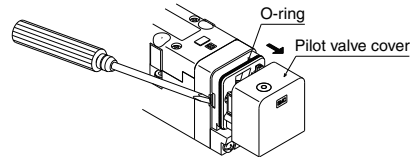
Installation and Removal of Pilot Valve cover

● 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.)

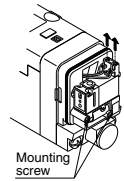


Caution

Replacement of Pilot Valves

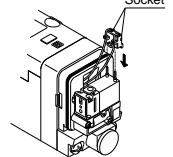
● Removal

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.



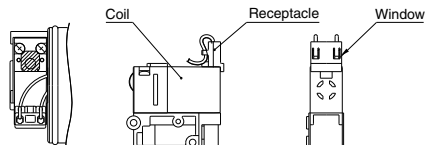
● Installation

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.

| Mounting screw | Proper tightening torque (N·m) |
|----------------|--------------------------------|
| M1.7 x 12 | 0.12 to 0.13 |



| |
|---------|
| SV |
| SYJ |
| SZ |
| VF |
| VP4 |
| VQ 1/2 |
| VQ 4/5 |
| VQC 1/2 |
| VQC 4/5 |
| VQZ |
| SQ |
| VFS |
| VFR |
| VQ7 |



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

Be sure to read this before handling the products.

Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

Warning

How to Wire DIN Terminal

ISO#: DIN 43650 A compatible

Connection

- Loosen the top screw and remove the connector housing from the terminal spades on the solenoid.
- 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.
- Place 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.
- Tighten the ground nut to secure the wire.

Change of electrical entry (Orientation)

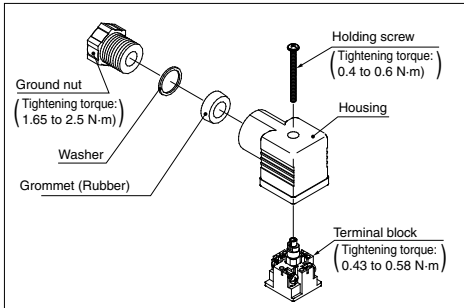
After separating terminal block and housing, the cord entry direction can be changed by attaching the housing in the desired direction (4 directions in 90° increments).

Precautions

Pull a connector out vertically, never at an angle.

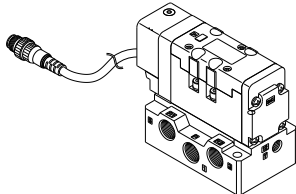
Applicable cable

O.D.: $\phi 8$ to $\phi 12$ (When you use the cord longer than $\phi 9$, cut the inside of grommet along the cutout and then insert the code.)



Using a Pre-wired Connector

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

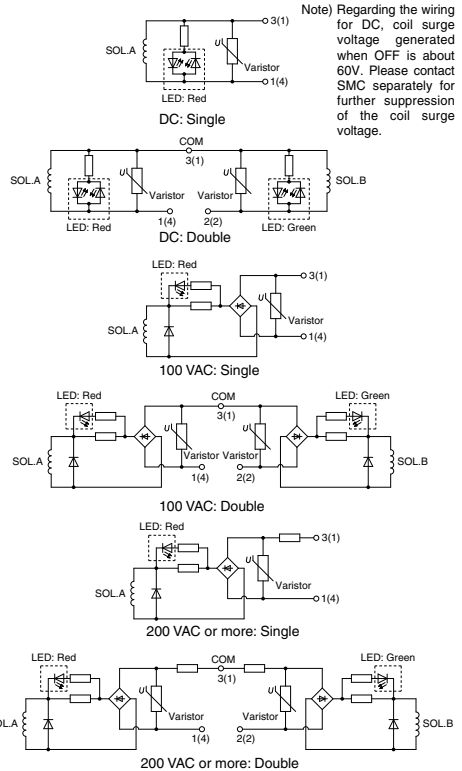


How to Calculate the Flow Rate

Refer to front matters 42 to 45 for How to Calculate the Flow Rate.

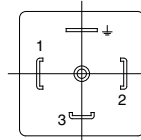
Caution

Internal Wiring Specifications



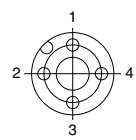
* Terminal numbers in the circuits are for a DIN connector. Numbers inside () are pre-wired connector pin numbers.

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.

Note) There is no polarity. It can also be used as -COM.