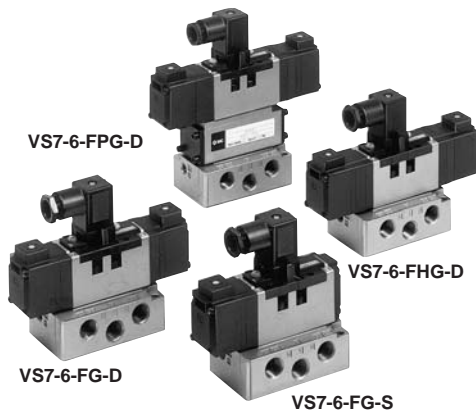


ISO Interface Solenoid Valve/SIZE ① Metal Seal

Series VS7-6



Note:

Please note that single subplates and manifolds have changed colour from platinum silver to white as standard. Valves will remain platinum silver.

| | Single solenoid (FG-S) | Double solenoid (FG-D) | Reverse pressure (YZ-S)* | Reverse pressure (YZ-D)* |
|------------|------------------------|------------------------|--------------------------|--------------------------|
| 2 position | | | | |
| 3 position | | | | |

* Option

Standard Specifications

| | |
|--|--|
| Fluid | Air/Inert gas |
| Operating pressure | 0.1 to 1.0MPa |
| Ambient and fluid temperature | 5 to 60°C |
| Manual override | Non-locking style, Locking style* |
| Electrical entry | DIN connector |
| Lubrication | Non-lube If provided, use turbine oil (ISO, VG32) |
| Shock resistance (Vibration resistance) ⁽¹⁾ | 150/50 m/s ² |
| Applicable sub-plate | VS7-1 (ISO size ①) |



* Option

Note) Shock resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed on the axis and right angle directions of the main valve and armature, for both energized and de-energized states. (Value in the initial stage.)

Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2000 Hz. Test was performed at both energized and de-energized states to the axis and right angle directions of the main valve and armature. (Value in the initial stage.)

Pilot Valve/Specifications

| Part No.* | AXT511 _A -1 (V) | AXT511 _B -2 (V) | AXT511 _B -3 (V) | AXT511 _B -4 (V) |
|-----------------------|-------------------------------|----------------------------|----------------------------|----------------------------|
| Rated voltage (V) | 100V AC 50/60 Hz | 200V AC 50/60 Hz | 24V DC | 12V DC |
| Inrush current (A) | 0.049/0.043 | 0.024/0.021 | 0.075 | 0.15 |
| Holding current (A) | 0.031/0.020 | 0.015/0.01 | | |
| Allowable voltage (V) | 85 to 110% of rated voltage | | | |
| Insulation | Class B (130°C) or equivalent | | | |



* A: With 2-M4 X 46 bolts for 2 position valve, B: With 2-M4 X 54 bolts for 3 position valve Note) Based on JIS C4003.
(V): Pilot EXH individual style.

Option/Interface regulator

| Interface regulator model ⁽¹⁾ | ARB250 | | |
|---|-----------------|--------------------|----|
| Applicable solenoid valve | VS7-6 | | |
| Regulation port | A | B | P |
| Proof pressure | 1.5MPa | | |
| Max. operating pressure | 1.0MPa | | |
| Set pressure range | 0.1 to 0.83 Mpa | | |
| Ambient and fluid temperature | 5 to 60°C | | |
| Pressure gauge port size | 1/8 | | |
| Weight (kg) | 0.55 | | |
| Air supply side eff. area S (P=0.7MPa, P1=0.5MPa) ⁽²⁾ (mm ²) | P/A | 15 | 16 |
| | P/B | 16 | 16 |
| Air exhaust side eff. area S (P2=0.5MPa) ⁽²⁾ | A/EA | 25 mm ² | |
| | B/EB | 18 mm ² | |



Note 1) Use "ARB210" for pressure centre style and reverse pressure style.

Note 2) Synthesized effective area with 2 position single style solenoid valve.

Model

| No. of positions | Model | Effective area (With 1/4 sub-plate) (mm ²) (N/min) | Max. operating rate (1) (cycle/sec.) | Response time (2) (sec) | Weight (3) (kg) |
|--------------------|-----------------|--|--------------------------------------|-------------------------|-----------------|
| 2 (Single) | VS7-6-FG-S-□-Q | 27 (1472.25) | 20 | 0.025 or less | 0.460 |
| 2 (Double) | VS7-6-FG-D-□-Q | 27 (1472.25) | 20 | 0.015 or less | 0.560 |
| 3 (Closed centre) | VS7-6-FHG-D-□-Q | 25.5 (1374.10) | 10 | 0.045 or less | 0.635 |
| 3 (Exhaust centre) | VS7-6-FJG-D-□-Q | 27 (1374.10) | 10 | 0.045 or less | 0.635 |
| 3 (Pilot check) | VS7-6-FPG-D-□-Q | 20 (1079.65) | 10 | 0.05 or less | 0.990 |



(1) Min. operating frequency is based on JIS B8375. (Once every 30 days)

(3) Weight without sub-plate (Sub-plate: 0.37kg)

(2) Based on JIS B8375-1975 (At 0.5MPa)

(4) (1) and (2) are the rates in the condition of controlled clean air.

Accessories

| | |
|-----------------------------|-------------|
| Mounting bolt (with washer) | TA-B-5 X 35 |
| Packing | AXT500-13 |
| Indicator light | (Option) |

Optional Specifications

| | |
|--------------------------|---|
| Surge voltage suppressor | Available |
| Reverse pressure | R1/R2 port: Pressure in R1=P1 pressure R2=P2 pressure, P1≠P2 |

SV
SY
SYJ
SX
VK
VZ
VF
VFR
VP7

VQC
SQ
VQ
VQ4
VQ5
VQZ
VQD
VFS
VS
VS7
VQ7

VS7-6

Double Pilot Check Spacer/Series FPG

Cylinder mid-stroke, long term retention possible.

The use of the double pilot check spacer equipped with a built-in double check valve enables the cylinder to stop and remain at mid-stroke for long periods regardless of air leakage between the spool and sleeve.

3 Position Double Pilot Check Valve (Wedge packing style) VS7-6-FHG-D-□R

3 position double pilot check valve achieves a reduction in air leakage as a result of main valve construction which features co-axial wedge packing (Max. leakage: 10 cm³/min (ANR)).

⚠ Caution

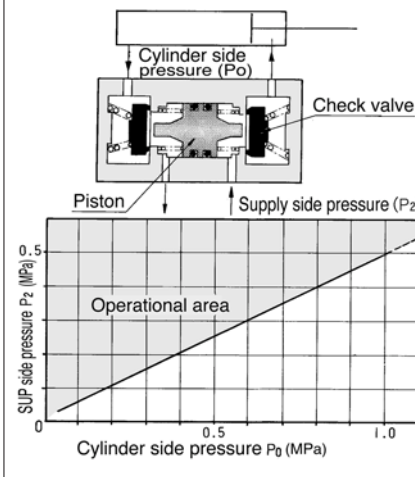
- Verify that there is no leakage from the pipes between valve and cylinder, and from fittings. Check for leaks by using neutral detergent solution before use. Also check the cylinder packing and the piston packing. If there is leakage, cylinder may not stop at the mid-stroke position, and could move immediately after the valve is de-energized.
- Be aware that if the exhaust side is restricted excessively, the intermediate stopping accuracy will decrease and will lead to improper intermediate stops.

Double Pilot Check Spacer Specifications

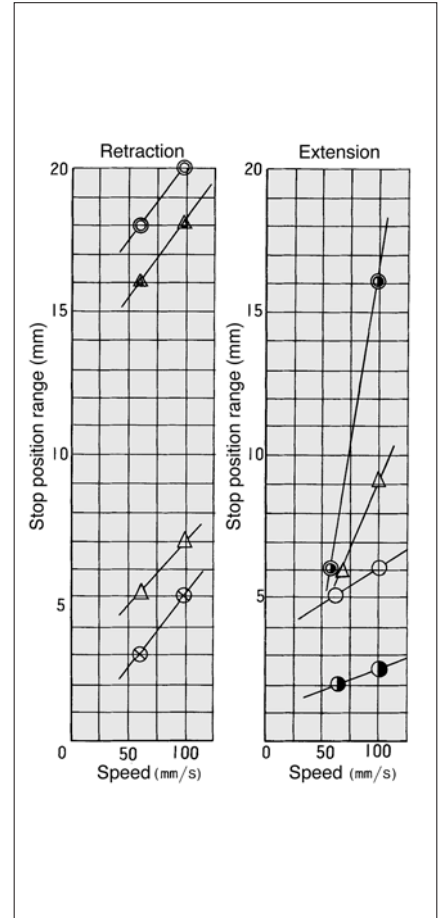
| Double pilot check spacer model | | VV71-FPG | | |
|--|---|---------------------|----------------|-----|
| Applicable solenoid valve/air operated valve | | Series VS7-6/VSA7-6 | | |
| Leakage (cm ³ /min (ANR)) | With one side solenoid energized. (With one side pilot air pressured) | P | R ₁ | 130 |
| | | | R ₂ | |
| | Both sides solenoids de-energized. (With both sides pilots not air pressured) | P | R ₁ | 130 |
| | | | R ₂ | |
| | | B | R ₁ | 0 |
| | | A | R ₂ | |

Check Valve/Operation Pressure Characteristics

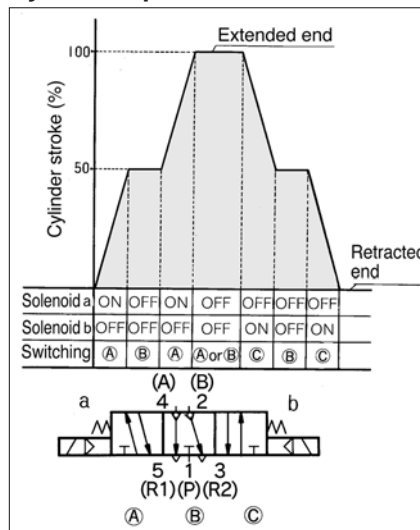
The check valve will operate correctly providing that cylinder side pressure is not in excess of two times the supply pressure.



Cylinder Speed/Stop Position Range



Cylinder Operation Chart



| Cylinder | | Supply pressure | Load | Load factor | |
|-----------------------|-----------------------|-----------------|------|-------------|-----|
| ø50-450 st | ø80-450 st | | | ø50 | ø80 |
| ○ | ○ | 0.2MPa | 25kg | 51% | 28% |
| ⊗ | ⊗ | 0.5 | 25 | 25 | 11 |
| ● | ● | 0.2 | 35 | 72 | 39 |
| △ | △ | 0.5 | 35 | 36 | 16 |

How to Order

E VS7-6-**FG** **S** 1 **Q**

| Symbol | | Number of solenoid | | Rated voltage | | Option | | Port size of sub-plate | | Connector | |
|------------|--|--------------------|--|---------------|-----------------------|----------|---------|------------------------|---|---------------|--------------------|
| FG | | FJG | | S | Single | 1 | 100V AC | — | None | — | Without sub-plate |
| YZ* | | FPG | | D | Double | 2 | 200V AC | N | Indicator light | A02 | Side piping 1/4* |
| FHG | | FIG* | | 3 | | 3 | 24V DC | M | Direct manual override | A03 | Side piping 3/8 |
| | | | | 4 | | 4 | 12V DC | Z | Indicator light with surge voltage suppressor | B02 | Bottom piping 1/4* |
| | | | | 9 | Others (250V or less) | 9 | | MR | Indicator light with direct manual override | B03 | Bottom piping 3/8 |
| | | | | | | | | R | Wedge packing style | * R port: 3/8 | |
| | | | | | | | | V | Individual pilot EXH | Thread | |
| | | | | | | | | | | — | Rc (PT) |
| | | | | | | | | | | F | G (PF) |
| | | | | | | | | | | N | NPT |
| | | | | | | | | | | T | NPTF |

Order Made Contact SMC for other voltages (9)

Protective class class I (Mark:)

Note: If specifying more than one symbol, indicate them in the alphabetical order.

Note: Manifold exploded view see page 1.19-33 for details.

*** Option**

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

SV
SY
SYJ
SX
VK
VZ
VF
VFR
VP7

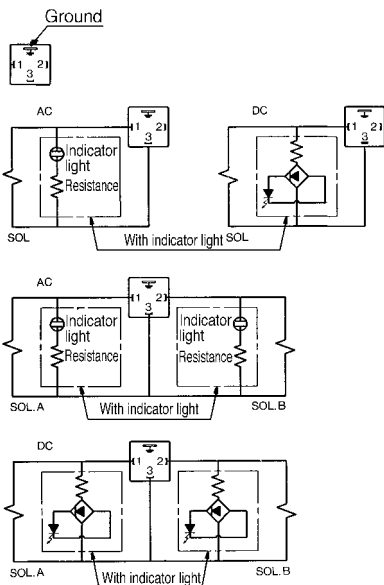
VQC
SQ
VQ
VQ4
VQ5
VQZ
VQD
VFS
VS
VS7
VQ7

⚠ Precautions

Be sure to read before handling. Refer to p.0-33 to 0-36 for Safety Instructions and common precautions.

⚠ Caution

DIN Connector (Wiring)



Interface Regulator Specifications

Specifications

| Interface regulator model | | ARB250 | | |
|---|--------|-------------------------------|----|----|
| Applicable solenoid valve | | VS7-6 | | |
| Regulation port | | A | B | P |
| Max. operating pressure | | 1.0MPa ⁽¹⁾ | | |
| Setting pressure range | | 0.1 to 0.83MPa ⁽¹⁾ | | |
| Ambient and fluid temperature | | 5 to 60°C ⁽³⁾ | | |
| Pressure gauge port size | | 1/8 | | |
| Weight (kg) | | 0.55 | | |
| Air supply side eff area (mm ²) | P → A | 15 | 16 | 13 |
| S (P=0.7MPa, P1=0.5MPa) | P → B | 16 | 16 | 11 |
| Air exhaust side eff area | A → EA | 25 mm ² | | |
| S (P2=0.5MPa) | B → EB | 18 mm ² | | |

- Note 1) Maximum operating pressure of solenoid valve is 0.9 MPa.
 Note 2) Be sure to set pressure within setting pressure range of the solenoid valve.
 Note 3) Solenoid valve: Max. 50°C
 Note 4) Synthesized effective area with 2 position single style solenoid valve.
 Note 5) Supply pressure to interface regulator only from P port except when it is used with reverse pressure style valve.
- Use the ARB210 or ARB310 model to combine a pressure centre valve and the A and B port pressure reduction of a spacer style regulator.
 - Use the ARB210 or ARB310 model to combine a reverse pressure valve and a spacer style regulator. The P port pressure reduction cannot be used.
 - To use a perfect valve and a spacer style regulator, use a manifold or a sub plate as the standard and stack in the following order: the perfect spacer, spacer style regulator, and the valve.
 - When a closed centre valve is combined with the A and B port pressure reduction of a spacer style regulator, it cannot be used for intermediate stops of the cylinder because of the leakage from the relief port of the regulator.

Power Source and Wiring

- 1) Make sure all contacts are secure.
- 2) Voltage should be held within the allowable voltage range.

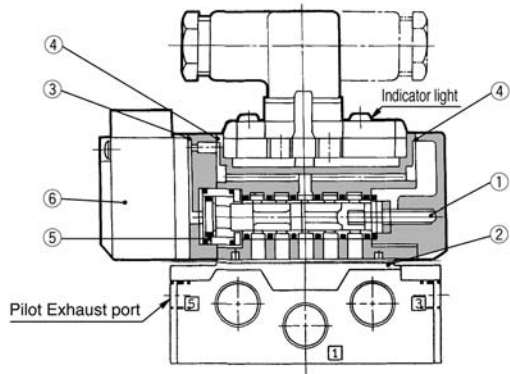
How to calculate flow rate

Refer to p.0-36 for flow rate calculations.

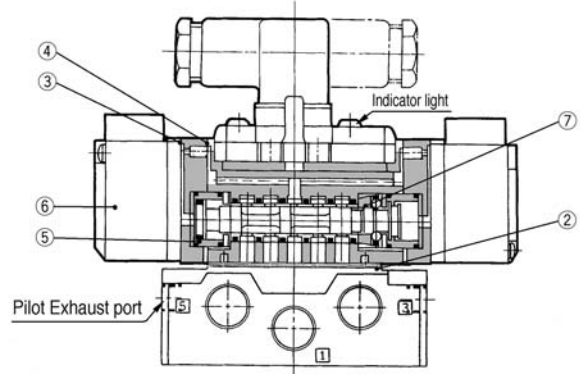
VS7-6

Construction

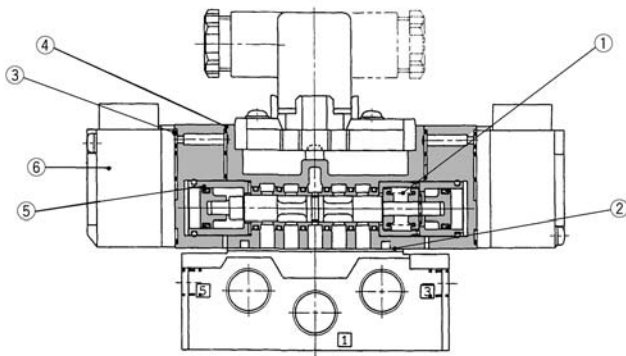
VS7-6-FG-S-□□-Q



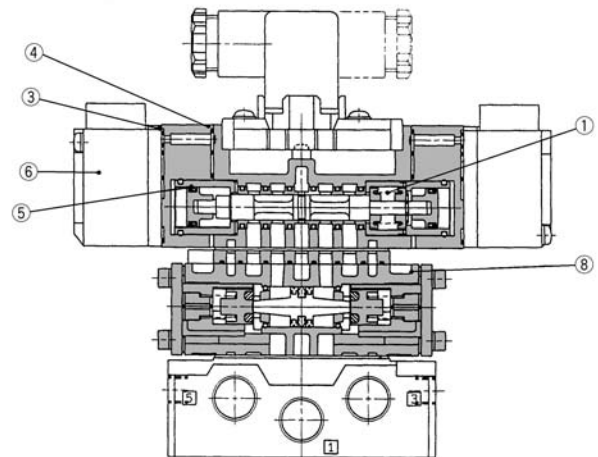
VS7-6-FG-D-□□-Q



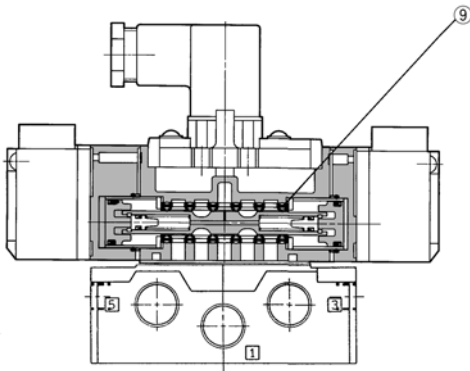
VS7-6-FHG-□□-Q
VS7-6-FJG-□□-Q



VS7-6-FPG-□□-Q



VS7-6-FHG-D-□R-Q

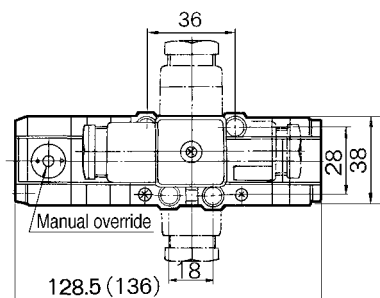
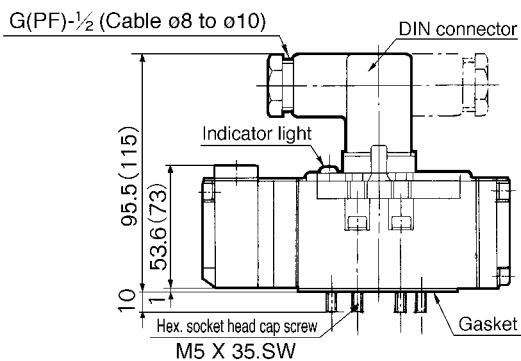


Replacement Parts

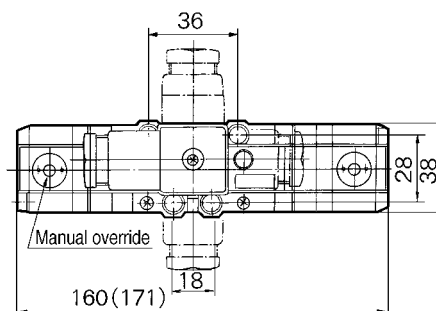
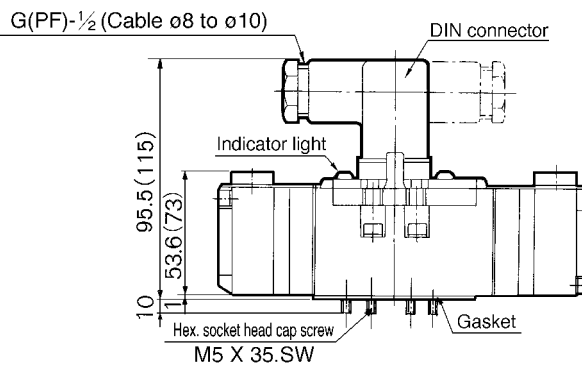
| No. | Description | Material | Part No. | | | | |
|-----|---------------------------|----------|-------------|-------------|--------------|--------------|--------------|
| | | | VS7-6-FG-S | VS7-6-FG-D | VS7-6-FHG | VS7-6-FJG | VS7-6-FPG |
| ① | Return spring | SUS | AXT500-12-2 | — | VFS3000-17-2 | VFS3000-17-2 | VFS3000-17-2 |
| ② | Gasket | NBR | AXT500-13 | AXT500-13 | AXT500-13 | AXT500-13 | AXT500-13 |
| ③ | Gasket | NBR | AXT503-35 | AXT503-35 | AXT503-35 | AXT503-35 | AXT503-35 |
| ④ | Gasket | NBR | AXT503-12-1 | AXT503-12-1 | AXT503-12-1 | AXT503-12-1 | AXT503-12-1 |
| ⑤ | Mini-Y-packing | NBR | MY-11N | MY-11N | MY-11N | MY-11N | MY-11N |
| ⑥ | Pilot valve assembly | — | AXT511A-□ | AXT511A-□ | AXT511B-□ | AXT511B-□ | AXT511B-□ |
| ⑦ | Detent assembly | — | — | AXT500-9 | — | — | — |
| ⑧ | Double pilot check spacer | — | — | — | — | — | VV71-FPG |
| ⑨ | Packing | NBR | — | — | AXT643-2-1 | — | — |

Without Sub-plate/Dimensions

VS7-6-FG-S-□□-Q



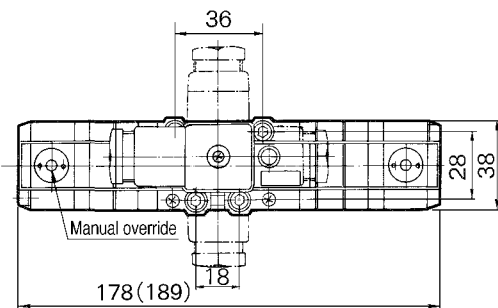
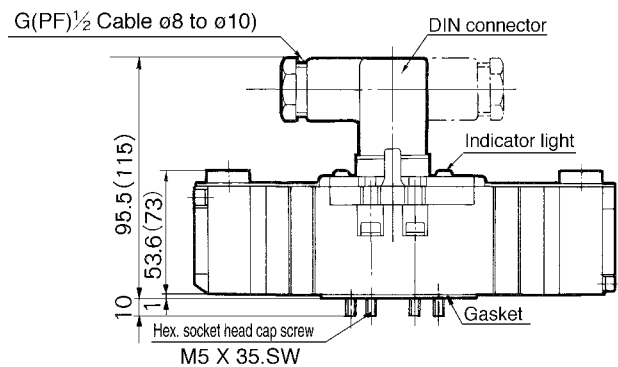
VS7-6-FG-D-□□-Q



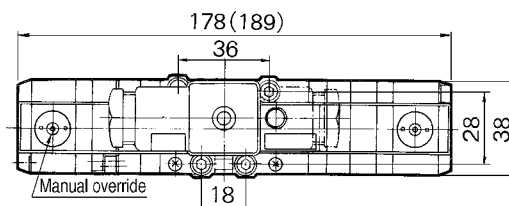
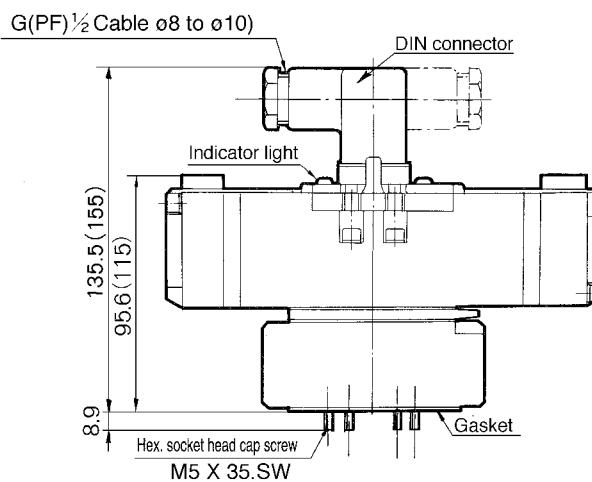
() : In case of direct manual override style.

VS7-6-FHG-□□-Q

VS7-6-FJG-□□-Q



VS7-6-FPG-□□-Q



() : In case of direct manual override style.

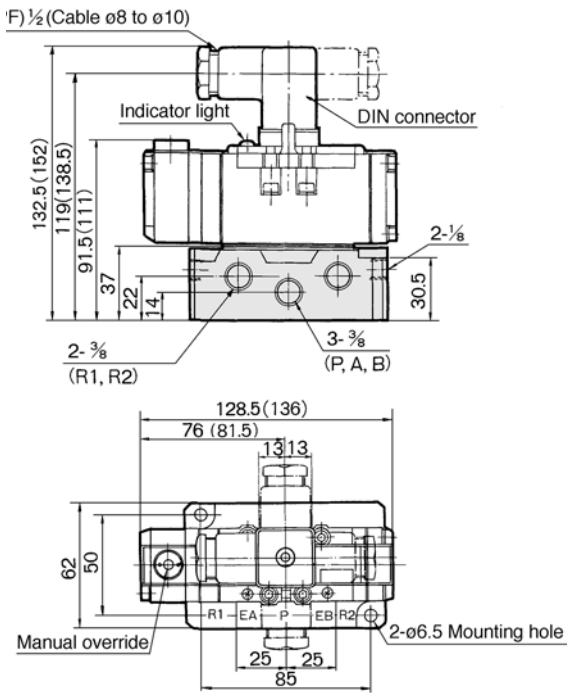
SV
SY
SYJ
SX
VK
VZ
VF
VFR
VP7

VQC
SQ
VQ
VQ4
VQ5
VQZ
VQD
VFS
VS
VS7
VQ7

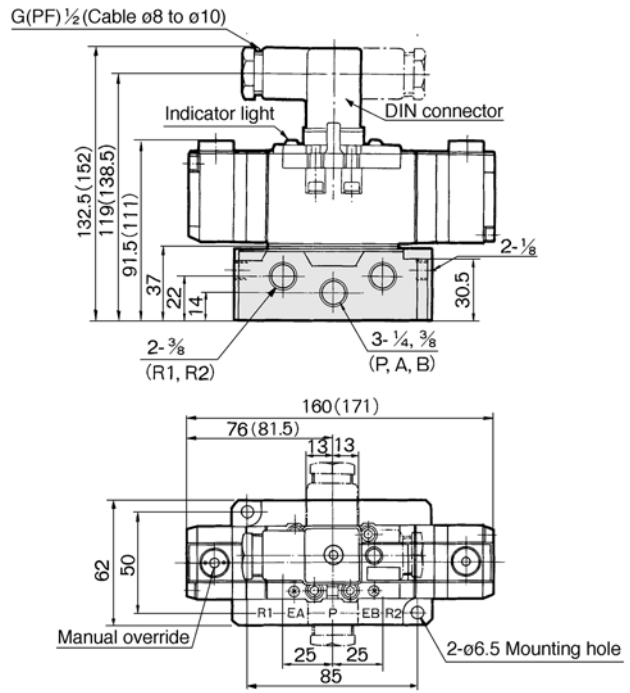
VS7-6

With Sub-plate/Dimensions

VS7-6-FG-S-□□ Port size of sub-plate -Q

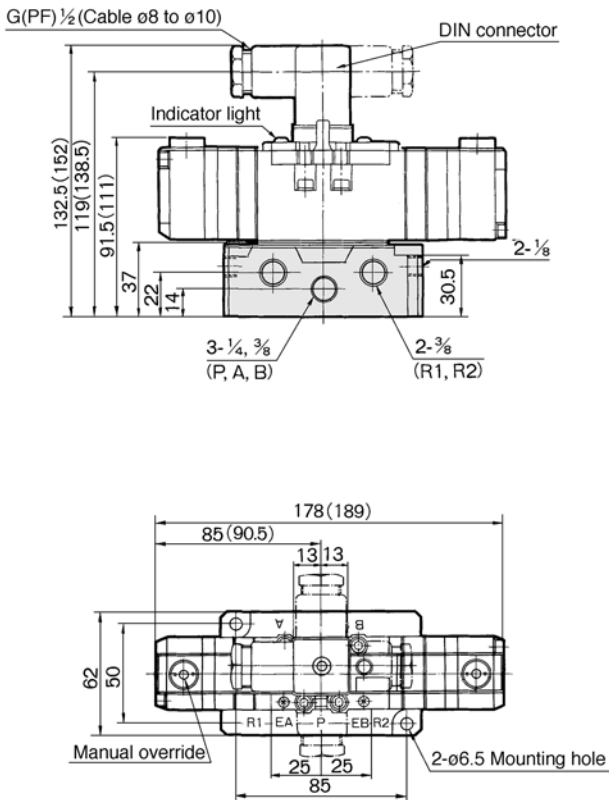


VS7-6-FG-D-□□ Port size of sub-plate -Q

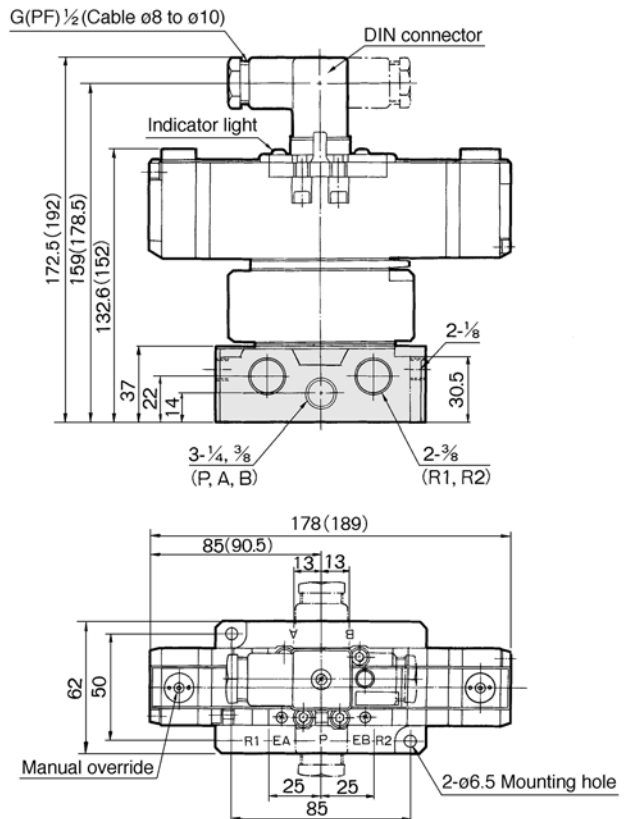


VS7-6-FHG-□□ Port size of sub-plate -Q

VS7-6-FJG-□□ Port size of sub-plate -Q



VS7-6-FPG-□□ Port size of sub-plate -Q

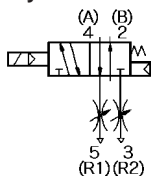


() : In case of direct manual override style.

Interface Speed Control

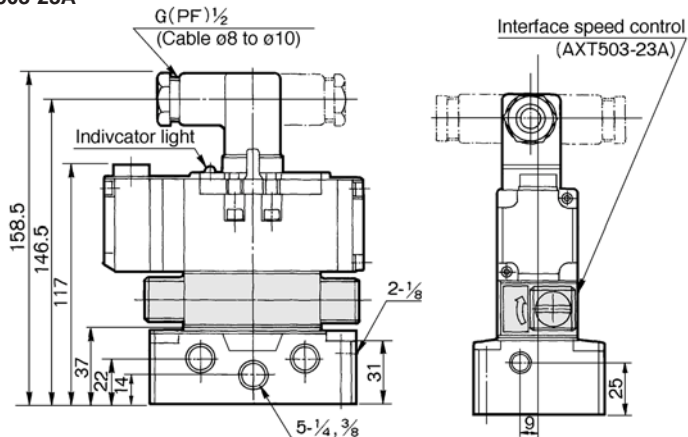


Symbol

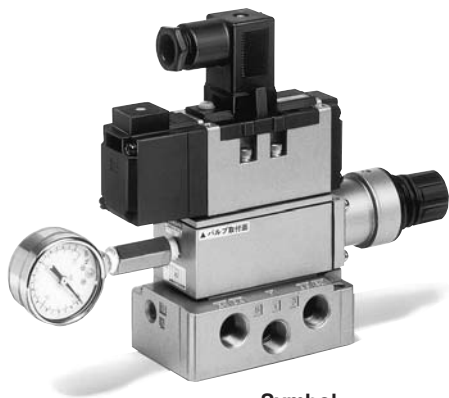


Interface Speed Control

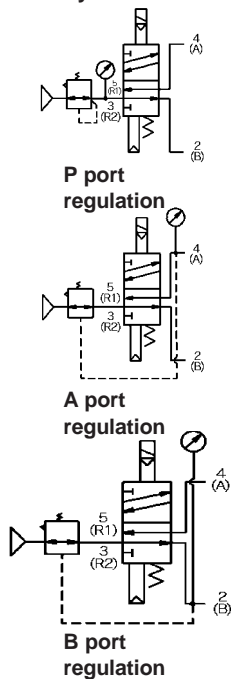
AXT503-23A



Interface Regulator

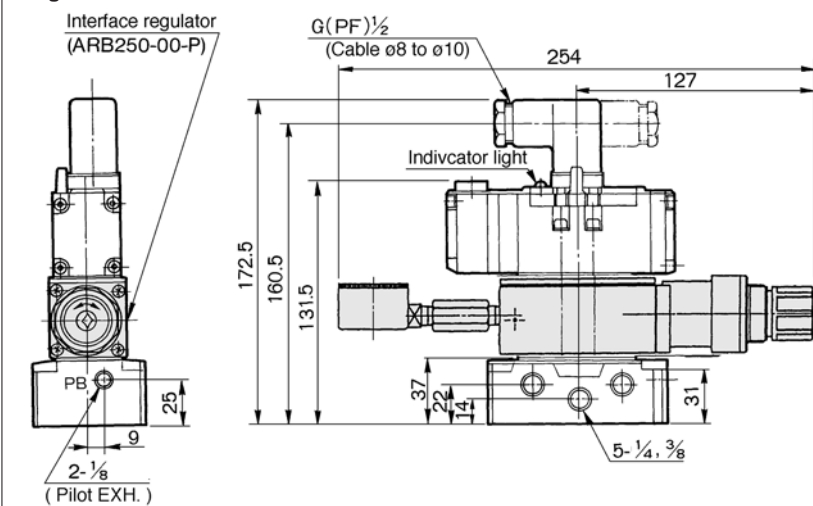


Symbol

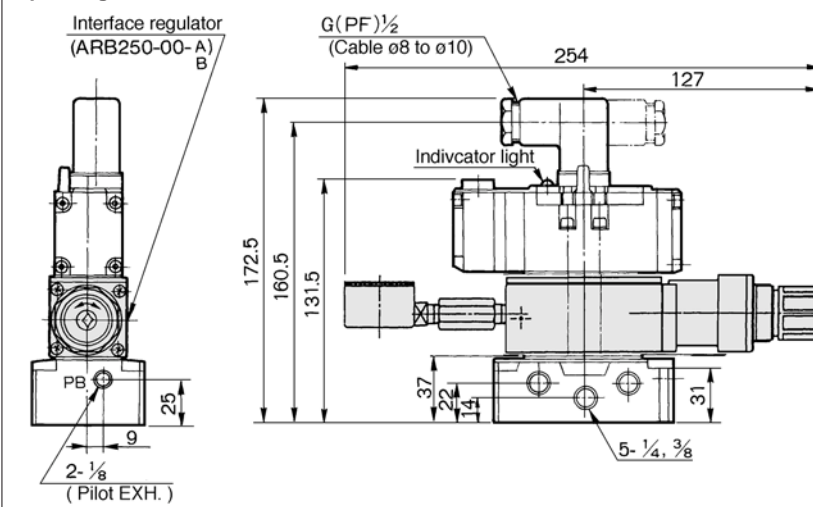


Interface Regulator/Dimensions

P regulation/ARB250-00-P



A port regulation/ARB250-00-A
B port regulation/ARB250-00-B



- SV
- SY
- SYJ
- SX
- VK
- VZ
- VF
- VFR
- VP7
- VQC
- SQ
- VQ
- VQ4
- VQ5
- VQZ
- VQD
- VFS
- VS
- VS7**
- VQ7

Series VS7-6 Sub-plate

Sub-plate: Series VS7-1/SA7-1



Specifications

| | |
|--|--|
| Applicable solenoid valve/air operated valve | Series ISO size ① |
| Sub-plate size | ISO size ① |
| Piping* | Side piping 1/4 3/8 Bottom piping 1/4 3/8 |
| Weight | 0.37kg |

* All R ports: 3/8

How to Order

E VS7-1-**A02**

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

* R port: 3/8

Thread

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

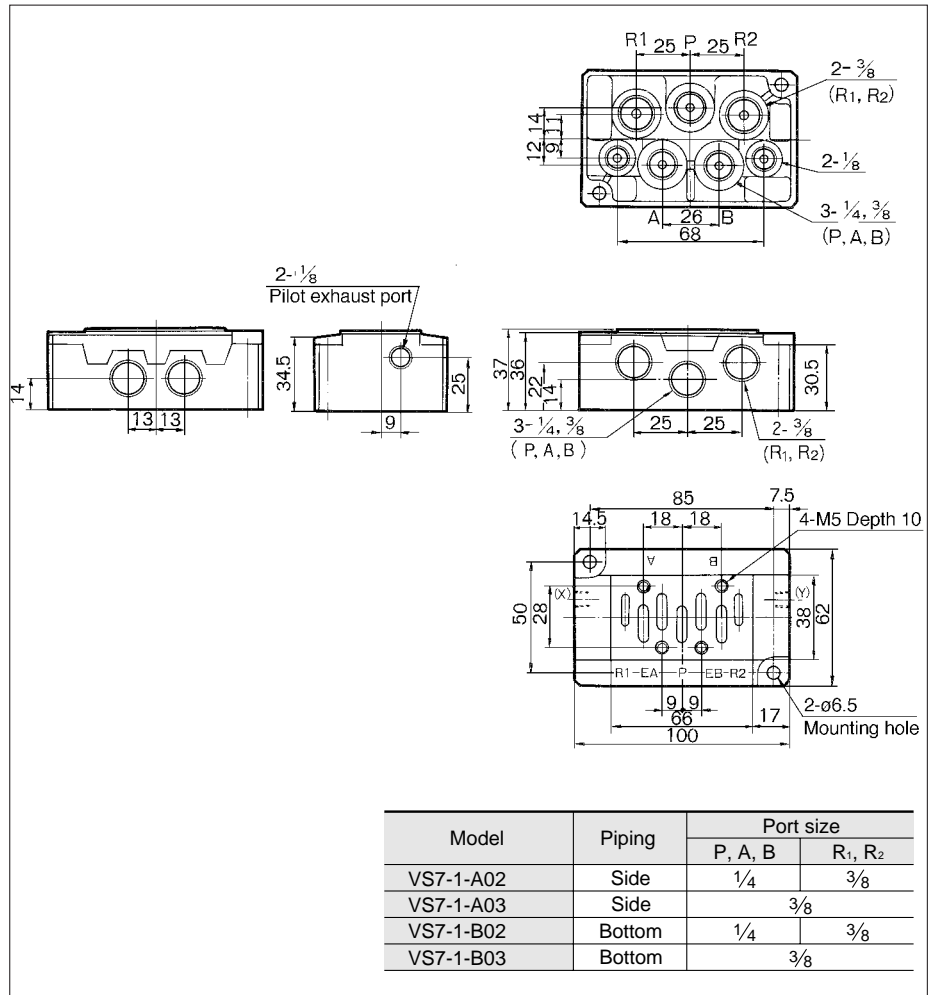
Ordering source area code

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

Note:

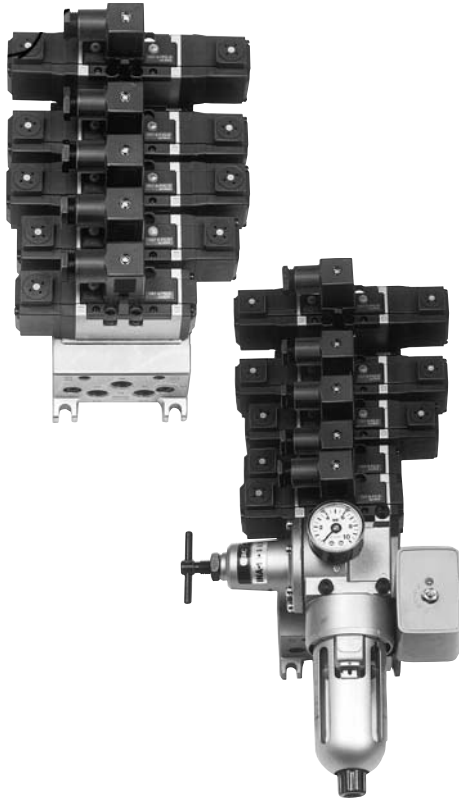
Please note that single subplates and manifolds have changed colour from platinum silver to white as standard. Valves will remain platinum silver.

Dimensions



Series VS7-6 Manifold

Manifold: Series VV71



Note:

Please note that single subplates and manifolds have changed colour from platinum silver to white as standard. Valves will remain platinum silver.

Standard Specifications

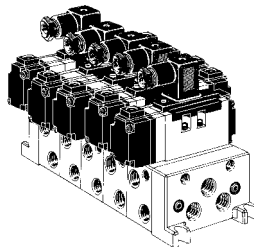
| | | |
|--|----------------|--|
| Manifold block size | | ISO size ① |
| Applicable solenoid valve | | Series ISO size ① |
| Number of stations | | 1 to 10* |
| Piping | A, B-port | 1/4 3/8 One-touch fitting: ø6, ø8, ø10 |
| | P, R1, R2-port | 1/4 3/8 One-touch fitting: ø12 |
| F. R. Unit | | Air filter (Auto drain, Manual drain), Regulator, Pressure switch, Air release valve |
| Individual SUP spacer | | VV71-P-□(02:1/4,03:3/8,C10:ø10) |
| Individual EXH spacer | | VV71-R-□(02:1/4,03:3/8,C12:ø12) |
| Gallery blank disc (Differential pressure style) | | AXT502-14 |

* Including F.R.Unit (equivalent to 2 stations)

The manifold Series VV71□ has a wide variety of functions and piping, compatible with virtually any application.

Common EXH Style

Every valve is supplied and exhausted by the same SUP and EXH ports running through the connected manifolds. This is the most popular configuration. When there are 5 or more stations operating simultaneously and pilot back pressure is 0.2kgf/cm² or more, it is recommended that all pilot EXH ports (PE) of the manifold base (4 on U side and 2 on D side, total 6 ports) be open. Also, use "AN110-01" for silencer for pilot EXH.



Multiple Pressure SUP Style

Allows supply of 2 or more different pressure to one manifold.

Put in a gallery blank disc (AXT502-14) between the stations to operate at different pressures. A dual pressure supply can be supplied from both the left and right sides of the manifold. If 3 or more pressures are supplied, the individual SUP spacer should be used.

Bottom Piping Style/1/4, 3/8 (A, B-port)

When side piping appearance is not acceptable or space is limited, either some of, or all ports, can be arranged with bottom piping.

Individual Pilot EXH Style

If there are many valve stations operating at the same time or operation frequency is high, trouble caused by back pressure will be prevented by using individual pilot EXH style valve ("VS7-6-□-□").

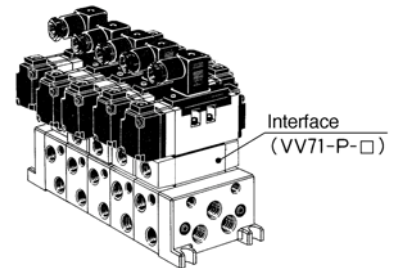
Individual EXH Style

Every valve has an independent EXH port of its own.

An Individual EXH spacer (VV71-R-□) mounted on the manifold block allows each valve to exhaust individually.

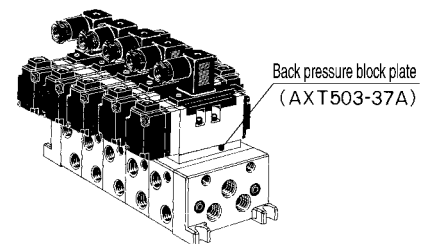
Individual SUP Style

An Individual SUP spacer (VV71-P-□) mounted on the manifold block allows each valve to be supplied individually.



Main EXH Back Pressure Block Style

If there are many valve stations operating at the same time and main EXH back pressure may cause trouble, mount back pressure block plate ("AXT503-37A") to prevent effects of main EXH back pressure.



SV

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VQC

SQ

VQ

VQ4

VQ5

VQZ

VQD

VFS

VS

VS7

VQ7

VS7-6

How to Order (Manifold)

E VV71 5-03R-03D-Q

| Stations | Piping/A, B port | Control unit | Piping/P, R ₁ , R ₂ Port | Silencer box | Air release valve/Rated voltage |
|----------|-------------------------------------|--|--|--------------------|---------------------------------|
| 1 | 02R 1/4 (Right) | - Without | 02D 1/4 (Bottom) | - W/o silencer box | - Without air release valve |
| ⋮ | 03R 3/8 (Right) | A Filter with auto-drain, regulator, air release valve | 02U 1/4 (Top) | SB Silencer box | 1 100V AC 50/60Hz |
| 10 | 02L 1/4 (Left) | AP Filter with auto-drain, regulator, pressure switch, air release valve | 02B 1/4 (Both sides) | | 2 200V AC 50/60Hz |
| | 03L 3/8 (Left) | M Filter with manual drain, regulator, air release valve | 03D 3/8 (Bottom) | | 3 24V DC |
| | 02Y 1/4 (Bottom) | MP Filter with manual drain, regulator, pressure switch, air release valve | 03U 3/8 (Top) | | 4 12V DC |
| | 03Y 3/8 (Bottom) | F Filter with auto-drain, regulator (air release valve-blank) | 03B 3/8 (Both sides) | | 9 Others(250V or less) |
| | C6R One-touch for ø6 tube (Right) | G Filter with manual drain, regulator (air release valve-blank) | C12D One-touch fitting for ø12 tube (Bottom) | | |
| | C8R One-touch for ø8 tube (Right) | C Air release valve (filter, regulator-blank) | C12U One-touch fitting for ø12 tube (Top) | | |
| | C10R One-touch for ø10 tube (Right) | E Air release valve | C12B One-touch fitting for ø12 tube (Both sides) | | |
| | C6L One-touch for ø6 tube (Left) | | * Combination | | |
| | C8L One-touch for ø8 tube (Left) | | | | |
| | C10L One-touch for ø10 tube (Left) | | | | |
| | * Combination | | | | |

* Includes F. R. Unit (equivalent to 2 stations).

* Please provide piping specifications.

* Mounting position of silencer box is in accordance with piping of R₁ and R₂ ports.

* Please provide piping specifications.

Contact SMC for other voltages (9)

Protective class I (Mark: ⚡)

Note) Manifold exploded view see page 1.19-33 for details

Ordering source area code

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

F. R. Unit for Manifold

Air filter, regulator, pressure switch, air release valve can be directly mounted to the manifold base, simplifying piping.

Classification of Control Unit

| Symbol | Control unit | | | | | | | | |
|--|--------------|---|----|---|----|---|---|---|---|
| | - | A | AP | M | MP | F | G | C | E |
| Air filter with auto-drain | ○ | ○ | | | | ○ | | | |
| Air filter with manual drain | | | | ○ | ○ | | ○ | | |
| Regulator | | ○ | ○ | ○ | ○ | ○ | | | |
| Air release valve | ○ | ○ | ○ | ○ | | | | ○ | ○ |
| Pressure switch | | | ○ | | ○ | | | | |
| Blank plate (Air release valve) | | | | | | | ○ | ○ | |
| Blank plate (Air filter, Regulator) | | | | | | | | | ○ |
| Manifold blocks necessary for mounting | - | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 |

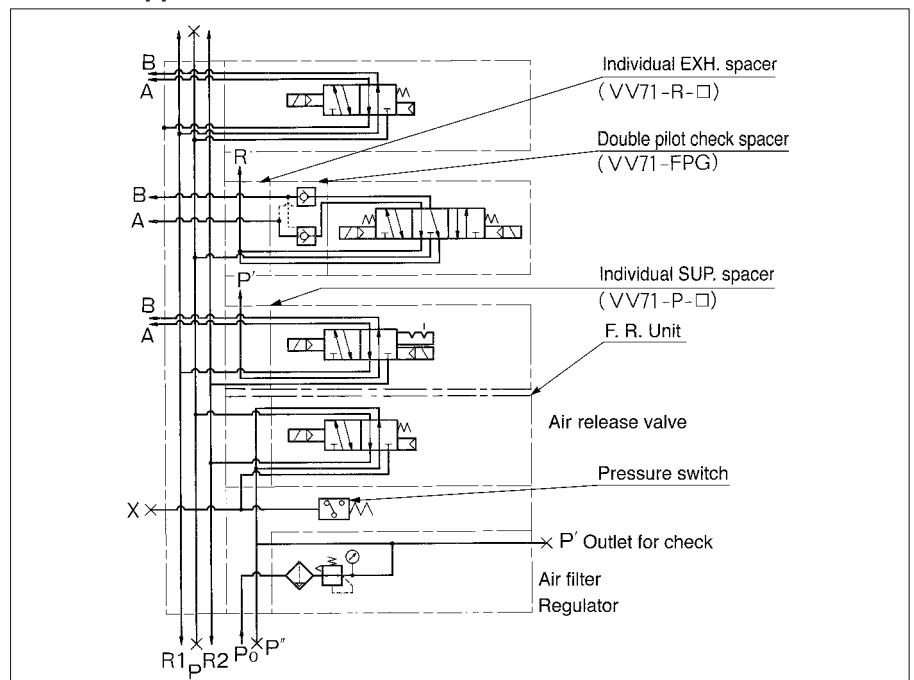
F. R. Unit/Specifications

| | |
|--|---|
| Air filter (w/auto-drain, w/manual drain) | |
| Filtration | 5μm |
| Regulator | |
| Set press. (secondary) | 0.05 to 0.85MPa |
| Pressure switch | |
| Pressure regulation range | 0.1 to 0.7MPa |
| Contacts | 1ab |
| Rated current | (Induction load) 125V AC 3A, 250V AC 2A |
| Air release valve (Single only) | |
| Operating press. range | 0.1 to 1.0MPa |

Options

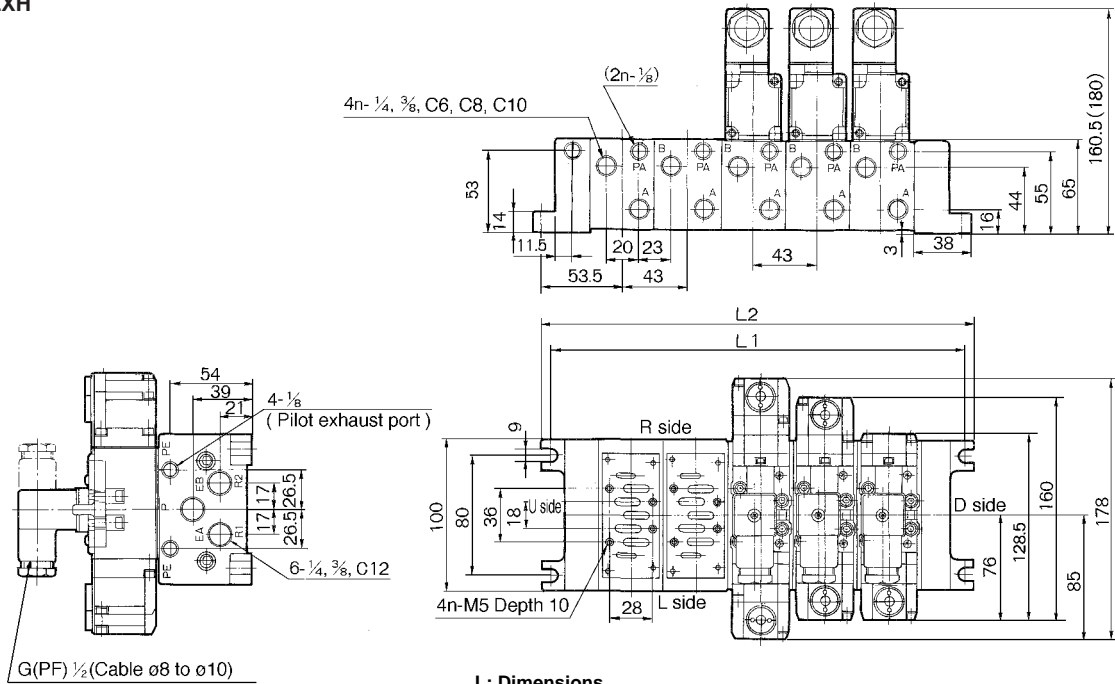
| | | | |
|---------------------------------|---|--|--|
| Blank plate | AXT502-9A (for manifold) | Interface for reverse pressure R ₁ , R ₂ individual EXH spacer | AXT502-21A-1 (3/8) |
| | AXT502-18A (for air release valve adaptor plate) | Interface speed control | VV71-R2-03 |
| | MP2 (for control unit/filter regulation valve) | Lock up cylinder adaptor plate | AXT503-23A |
| Air release valve adaptor plate | MP3 (for pressure switch) | Relieving style | ARB250-00- P port regulation A port regulation B port regulation |
| | AXT502-17A | Main EXH back pressure block plate | AXT503-37A |
| F. R. Unit | VAW-A (Adaptor plate, filter with auto drain cock, regulator) | Silencer for pilot EXH | AN110-01 |
| | VAW-M (Adaptor plate, filter with manual drain cock, regulator) | Residual pressure release valve spacer | VV71-R-AB |
| Pressure switch | IS3100-X230 (2-M5 X 12) | Individual SUP spacer with residual pressure release valve | VV71-PR-□ 02: 1/4 03: 3/8 |
| | | Double pilot check spacer with residual pressure release valve | VV71-FPGR |

Manifold/Applications



Manifold/Dimensions

Common EXH



L: Dimensions

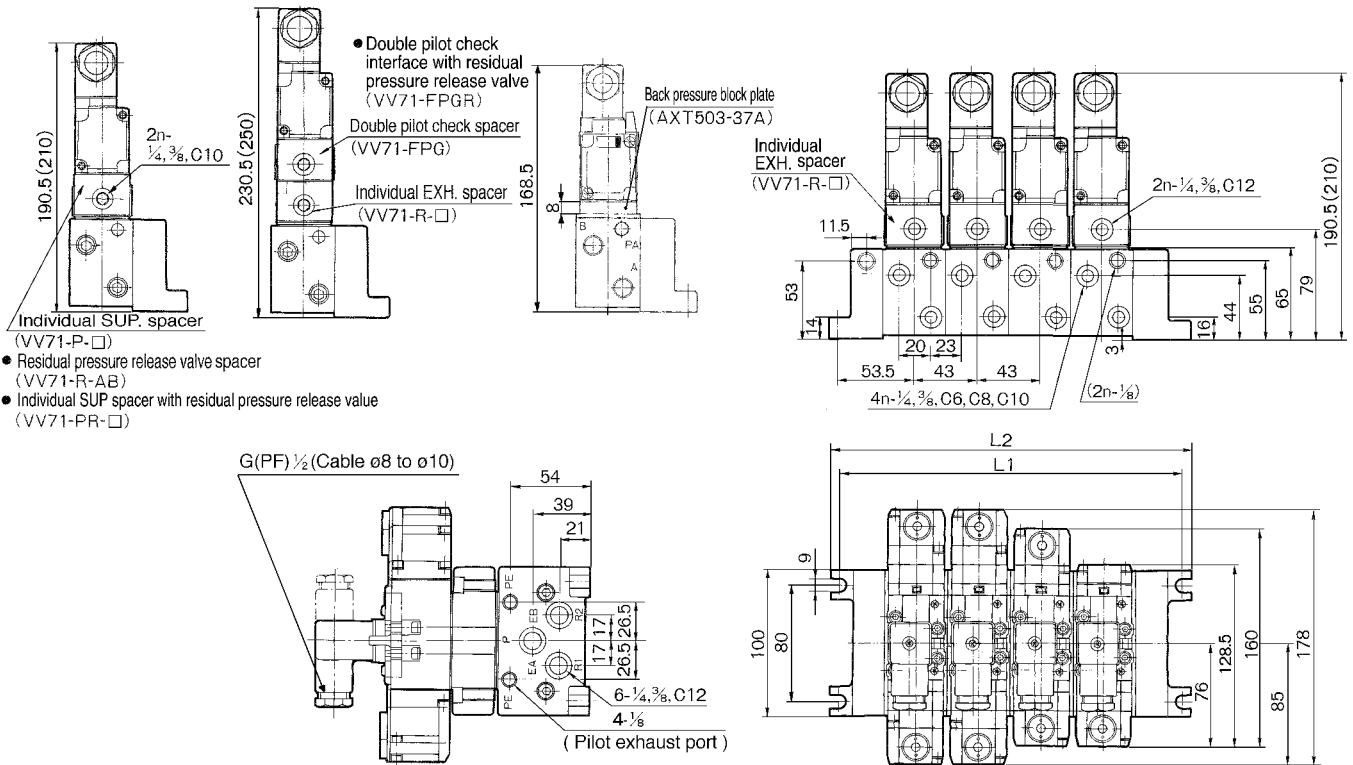
n: Station

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Equation |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------|
| 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 | $L2=43n+76$ |

Manifold weight general formula=0.43n+0.49 (kg)

(): In case of direct manual override style.

Individual EXH



(): In case of direct manual override style.

SV

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VQC

SQ

VQ

VQ4

VQ5

VQZ

VQD

VFS

VS

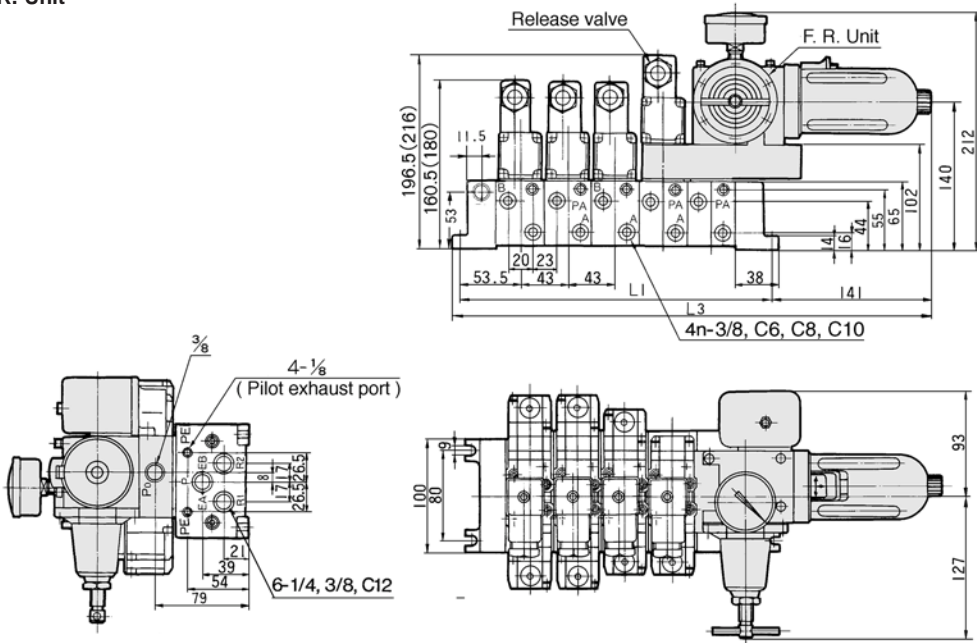
VS7

VQ7

VS7-6

Manifold/Dimensions

F. R. Unit



L: Dimensions

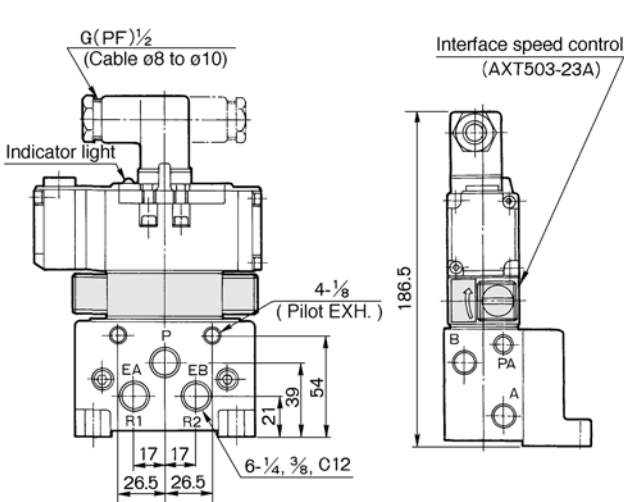
n: Station

| L \ n | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Equation |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------|
| L1 | 150 | 193 | 236 | 279 | 322 | 365 | 408 | 451 | 494 | L1=43n+64 |
| L2 | 162 | 205 | 248 | 291 | 334 | 377 | 420 | 463 | 506 | L2=43n+76 |
| L3 | 297 | 340 | 383 | 426 | 469 | 512 | 555 | 598 | 641 | L3=43n+211 |

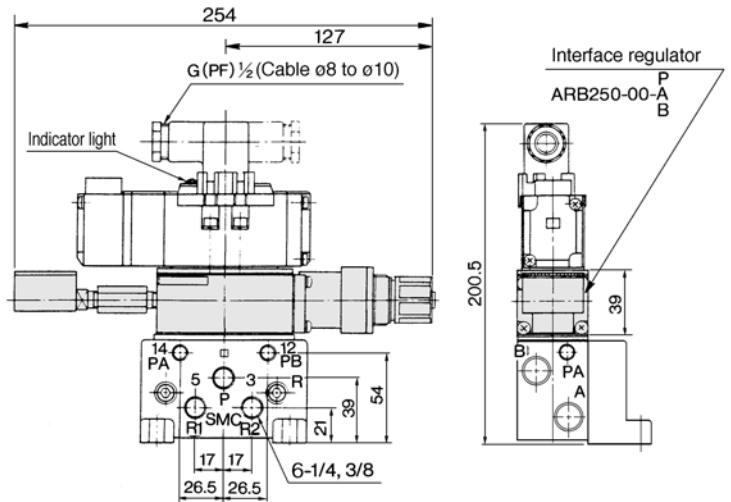


(): In case of direct manual override style.

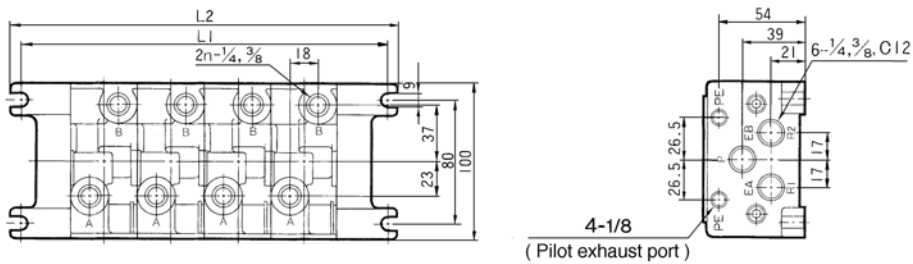
Interface Speed Control



Interface Regulator

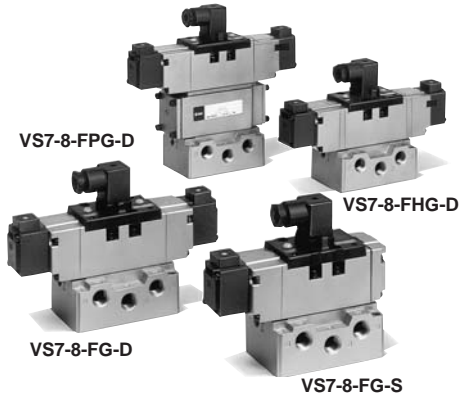


Bottom Piping



ISO Interface Solenoid Valve/SIZE ② Metal Seal

Series VS7-8



Note:

Please note that single subplates and manifolds have changed colour from platinum silver to white as standard. Valves will remain platinum silver.

| | | | | |
|------------|--------------------------|--------------------------|------------------------------|----------------------------|
| 2 position | Single solenoid (FG-S) | Double solenoid (FG-D) | Reverse pressure (YZ-S)* | Reverse pressure (YZ-D)* |
| | | | | |
| 3 position | Closed centre (FHG-D) | Exhaust centre (FJG-D) | Double pilot check (FPG-D) | Pressure centre (FIG-D)* |
| | | | | |

* Option

Standard Specifications

| | |
|---|--|
| Fluid | Air/Inert gas |
| Operating pressure | 0.1 to 1.0MPa |
| Ambient and fluid temperature | 5 to 60 °C |
| Manual override | Non-locking style, Locking style* |
| Electrical entry | DIN connector |
| Lubrication | Non-lube If provided, use turbine oil (ISO, VG32) |
| Shock/Vibration resistance ⁽¹⁾ | 150/50 m/s ² |
| Applicable sub-plate | VS7-2 (ISO size ②) |



* Option

NOTE 1): Shock resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed on the axis and right angle directions of the main valve and armature, for both energized and de-energized states. (Value in the initial stage.)

Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2000 Hz. Test was performed at both energized and de-energized states to the axis and right angle directions of the main valve and armature. (Value in the initial stage.)

Pilot Valve/Specifications

| Part No. | AXT511C-1 (V) | AXT511C-2 (V) | AXT511C-3 (V) | AXT511C-4 (V) |
|-----------------------|-------------------------------|------------------|---------------|---------------|
| Rated voltage (V) | 100V AC 50/60 Hz | 200V AC 50/60 Hz | 24V DC | 12V DC |
| Inrush current (A) | 0.049/0.043 | 0.024/0.021 | 0.075 | 0.15 |
| Holding current (A) | 0.031/0.02 | 0.015/0.01 | | |
| Allowable voltage (V) | 85 to 110% of rated voltage | | | |
| Insulation | Class B (130°C) or equivalent | | | |



(V): Pilot EXH individual style.

Option/Interface Regulator

| | | | | |
|---|-----------------|--------------------|----|----|
| Interface regulator model ⁽¹⁾ | ARB350 | | | |
| Applicable solenoid valve | VS7-8 | | | |
| Regulation port | A | B | P | |
| Proof pressure | 1.5MPa | | | |
| Max. operating pressure | 1.0MPa | | | |
| Set pressure range | 0.1 to 0.83 MPa | | | |
| Ambient and fluid temperature | 5 to 60°C | | | |
| Pressure gauge port size | 1/8 | | | |
| Weight (kg) | 0.83 | | | |
| Air supply side eff. area S (P=0.7MPa, P1=0.5MPa) ⁽²⁾ (mm ²) | P/A | 40 | 31 | 27 |
| | P/B | 31 | 34 | 27 |
| Air exhaust side eff. area S (P2=0.5MPa) ⁽²⁾ | A/EA | 60 mm ² | | |
| | B/EB | 53 mm ² | | |



Note 1) Use "ABR210" for pressure centre style and reverse pressure style.

Note 2) Synthesized effective area with 2 position single style solenoid valve.

Option

| | |
|-------------|-----------|
| Blank plate | AXT512-9A |
|-------------|-----------|

Model

| No. of positions | Model | Effective area (With 3/8 sub-plate) (mm ²) (N/min) | Max. operating rate (1) (cycle/sec) | Response time (2) (sec) | Weight (3) (kg) |
|--------------------|-----------------|--|-------------------------------------|-------------------------|-----------------|
| 2 (Single) | VS7-8-FG-S-□-Q | 58 (3140.80) | 15 | 0.040 or less | 0.655 |
| 2 (Double) | VS7-8-FG-D-□-Q | 58 (3140.80) | 15 | 0.020 or less | 0.74 |
| 3 (Closed centre) | VS7-8-FHG-D-□-Q | 58 (3140.80) | 10 | 0.05 or less | 0.89 |
| 3 (Exhaust centre) | VS7-8-FJG-D-□-Q | 58 (3140.80) | 10 | 0.05 or less | 0.89 |
| 3 (Pilot check) | VS7-8-FPG-D-□-Q | 40 (2159.30) | 8 | 0.06 or less | 2.12 |



(1) Min. operating frequency is based on JIS B8375. (Once in 30 days) (3) Weight without sub-plate (Sub-plate: 0.37kg)

(2) Based on JIS B8375-1975 (At 0.5MPa)

(4) (1) and (2) are the rates in the condition of controlled clean air.

Accessories

| | |
|-------------------------------|-------------|
| Mounting bolt (with washer) | TA-B-6 X 45 |
| Packing | AXT510-13 |
| Indicator light | (Option) |

Optional Specifications

| | |
|--------------------------|---|
| Surge voltage suppressor | Available |
| Reverse pressure | R1/R2 port: Pressure in R1=P1 pressure R2=P2 pressure, P1≠P2 |

SV

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VQC

SQ

VQ

VQ4

VQ5

VQZ

VQD

VFS

VS

VS7

VQ7

VS7-8

Double Pilot Check Spacer/Series FPG

Cylinder mid-stroke/long term retention possible.

The use of the double pilot check spacer equipped with a built-in double check valve enables the cylinder to stop and remain at mid-stroke for long periods regardless of air leakage between the spool and sleeve.

3 Position Double Pilot Check Valve (Wedge packing style)

VS7-8-FHG-D-□R

3 position double pilot check valve achieves a reduction in air leakage as a result of main valve construction which features co-axial wedge packing (Max. leakage: 10 cm³/min (ANR)).

⚠ Caution

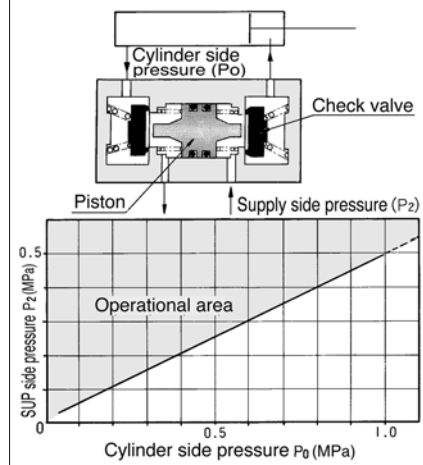
- Verify that there is no leakage from the pipes between valve and cylinder, and from fittings. Check for leaks by using neutral detergent solution before use. Also check the cylinder packing and the piston packing. If there is leakage, cylinder may not stop at the mid-stroke position, and could move immediately after the valve is de-energized.
- Be aware that if the exhaust side is restricted excessively, the intermediate stopping accuracy will decrease and will lead to improper intermediate stops.

Double Pilot Check Spacer Specifications

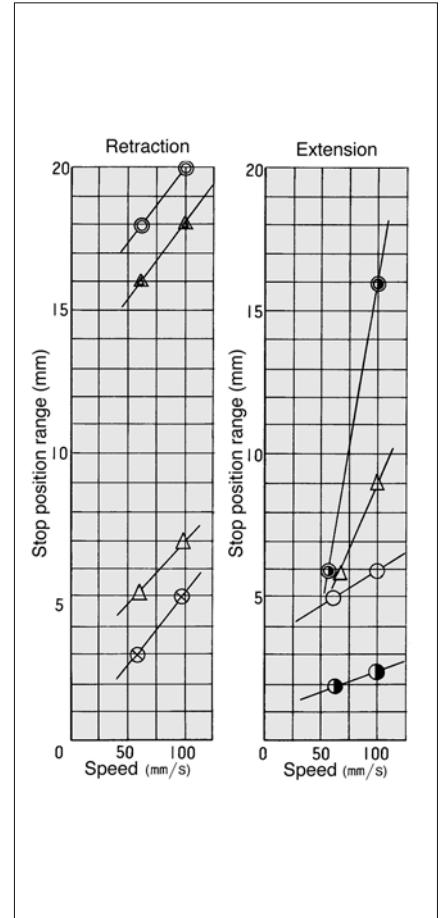
| Double pilot check spacer model | | VV72-FPG | | |
|--|---|---------------------|----|-----|
| Applicable solenoid valve/air operated valve | | Series VS7-8/VSA7-8 | | |
| Leakage (cm ³ /min (ANR)) | With one side solenoid energized. (With one side pilot air pressured) | P | R1 | 280 |
| | | | R2 | |
| | Both sides solenoids de-energized. (With both sides pilots not air pressured) | P | R1 | 280 |
| | | | R2 | |
| | | A | R1 | 0 |
| | | B | R2 | |

Check Valve/Operation Pressure Characteristics

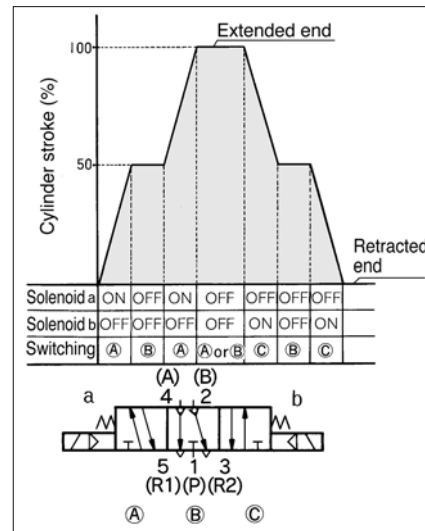
The check valve will operate correctly providing that cylinder side pressure is not in excess of two times the supply pressure.



Cylinder Speed/Stop Position Range



Cylinder Operation Chart



| Cylinder | | Supply pressure | Load | Load factor | |
|-----------------------|-----------------------|-----------------|------|-------------|-----|
| ø50-450 st | ø80-450 st | | | ø50 | ø80 |
| ○ | ○ | 0.2MPa | 25kg | 51% | 28% |
| ⊗ | ⊗ | 0.5 | 25 | 25 | 11 |
| ● | ● | 0.2 | 35 | 72 | 39 |
| △ | △ | 0.5 | 35 | 36 | 16 |

How to Order

Thread

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

Symbol

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

* Option

Ordering source area code

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

No. of solenoids

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

Rated voltage

| | |
|---|-----------------------|
| 1 | 100V AC |
| 2 | 200V AC |
| 3 | 24V DC |
| 4 | 12V DC |
| 9 | Others (250V or less) |

Option

| | |
|----|---|
| — | None |
| N | Indicator light |
| M | Direct manual override |
| Z | Indicator light with surge voltage suppressor |
| MR | Wedge packing style with direct manual override |
| R | Wedge packing style |
| V | Individual pilot EXH |

Port size of sub-plate

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

Connector

| | |
|---|---------------|
| — | Connector |
| 0 | W/o connector |

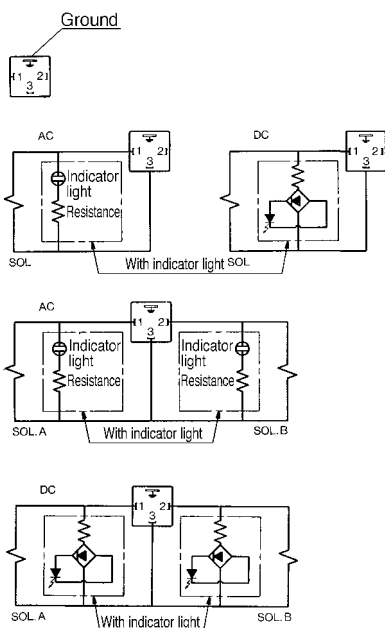
Note:
Manifold exploded view see page 1.19-34 for details.

⚠ Precautions

Be sure to read before handling. Refer to p.0-33 to 0-36 for Safety Instructions and common precautions.

⚠ Caution

DIN Connector (Wiring)



Power Source and Wiring

- Make sure all contacts are secure.
- Voltage should be held within the allowable voltage range.

Interface Regulator Specifications

Specifications

| | | | |
|--|-------------------------------|--------------------|----|
| Interface regulator model | ARB350 | | |
| Applicable solenoid valve | VS7-8 | | |
| Regulation port | A | B | P |
| Max. operating pressure | 1.0MPa ⁽¹⁾ | | |
| Set pressure range | 0.1 to 0.83MPa ⁽²⁾ | | |
| Ambient and fluid temperature | 5 to 60°C ⁽³⁾ | | |
| Pressure gauge port size | 1/8 | | |
| Weight (kg) | 0.83 | | |
| Air supply side eff. area (mm ²) | P→A | 31 | 27 |
| S (P=0.7MPa, P1=0.5MPa) | P→B | 34 | 27 |
| Air exhaust side eff. area | A→EA | 60 mm ² | |
| S (P2=0.5MPa) | B→EB | 53 mm ² | |

Note 1) Maximum operating pressure of solenoid valve is 0.9 MPa.

Note 2) Be sure to set pressure within setting pressure range of the solenoid valve.

Note 3) Solenoid valve: Max. 50°C

Note 4) Synthesized effective area with 2 position single style solenoid valve.

Note 5) •Supply pressure to interface regulator only from P port except when it is used with reverse pressure style valve.

- Use the ARB210 or ARB310 model to combine a pressure centre valve and the A and B port pressure reduction of a spacer style regulator.
- Use the ARB210 or ARB310 model to combine a reverse pressure valve and a spacer style regulator. The P port pressure reduction cannot be used.
- To use a perfect valve and a spacer style regulator, use a manifold or a sub plate as the standard and stack in the following order: the perfect spacer, spacer style regulator, and the valve.
- When a closed centre valve is combined with the A and B port pressure reduction of a spacer style regulator, it cannot be used for intermediate stops of the cylinder because of the leakage from the relief port of the regulator.

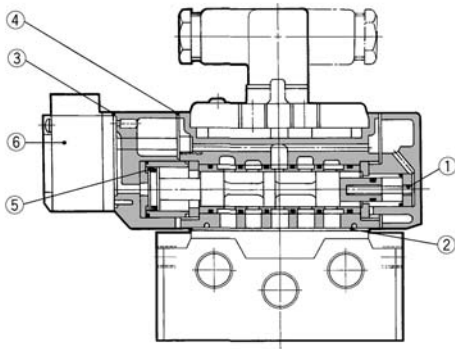
How to calculate flow rate

Refer to p.0-36 for flow rate calculation.

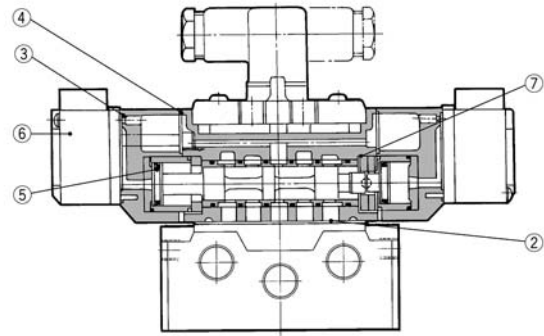
VS7-8

Construction

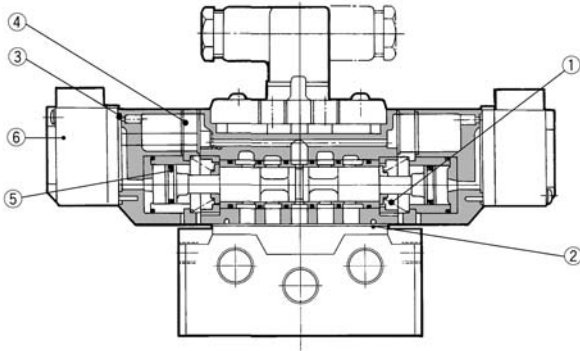
VS7-8-FG-S-□□-Q



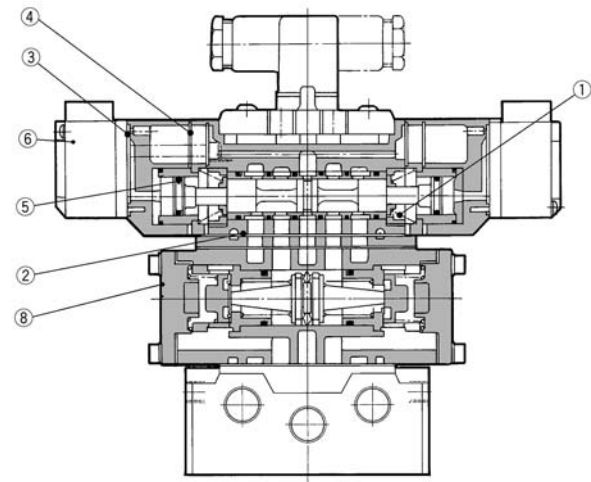
VS7-8-FG-D-□□-Q



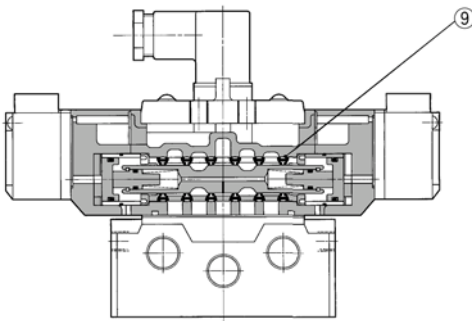
VS7-8-FHG-□□-Q
VS7-8-FJG-□□-Q



VS7-8-FPG-□□-Q



VS7-8-FHG-D-□R-Q

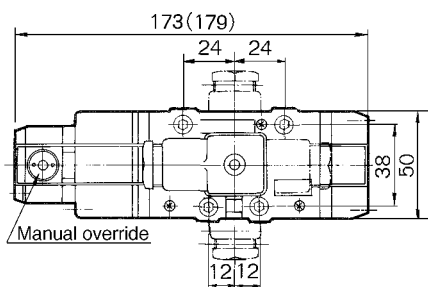
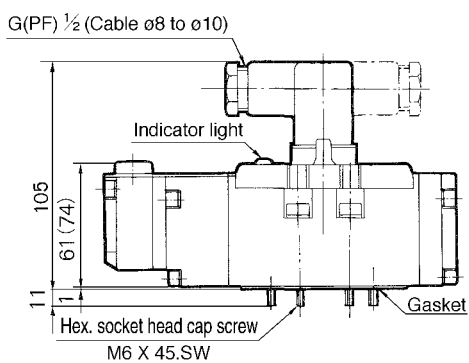


Replacement Parts

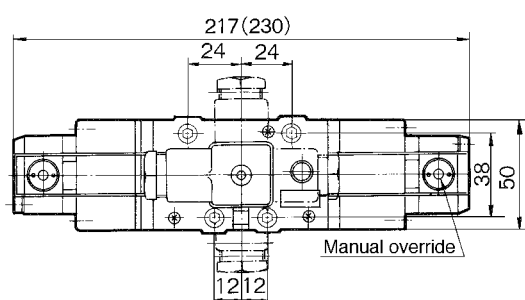
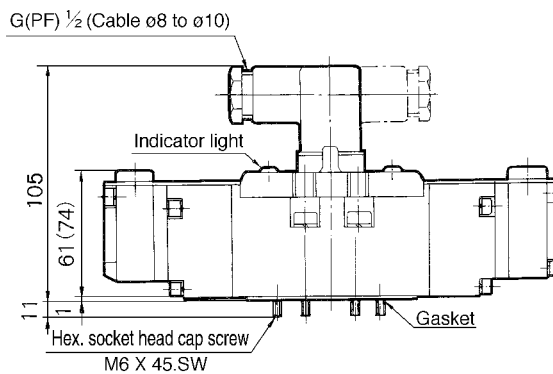
| No. | Description | Material | Part No. | | | | |
|-----|---------------------------|----------|-------------|-------------|-------------|-------------|-------------|
| | | | VS7-8-FG-S | VS7-8-FG-D | VS7-8-FHG | VS7-8-FJG | VS7-8-FPG |
| ① | Return spring | SUS | AXT510-12 | — | AXT510-21 | AXT510-21 | AXT510-21 |
| ② | Gasket | NBR | AXT510-13 | AXT510-13 | AXT510-13 | AXT510-13 | AXT510-13 |
| ③ | Gasket | NBR | AXT510-14-2 | AXT510-14-2 | AXT510-14-2 | AXT510-14-2 | AXT510-14-2 |
| ④ | Gasket | NBR | AXT510-14-1 | AXT510-14-1 | AXT510-14-1 | AXT510-14-1 | AXT510-14-1 |
| ⑤ | Mini-Y-packing | NBR | MY-16N | MY-16N | MY-14N | MY-14N | MY-14N |
| ⑥ | Pilot valve assembly | — | AXT511C-□ | AXT511C-□ | AXT511C-□ | AXT511C-□ | AXT511C-□ |
| ⑦ | Detent assembly | — | — | AXT510-9 | — | — | — |
| ⑧ | Double pilot check spacer | — | — | — | — | — | VV72-FPG |
| ⑨ | Packing | NBR | — | — | AXT644-7-1 | — | — |

With Sub-plate/Dimensions

VS7-8-FG-S-□□-Q

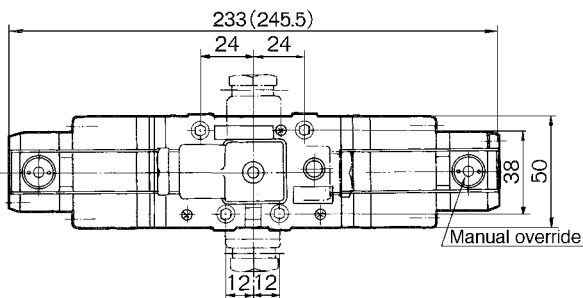
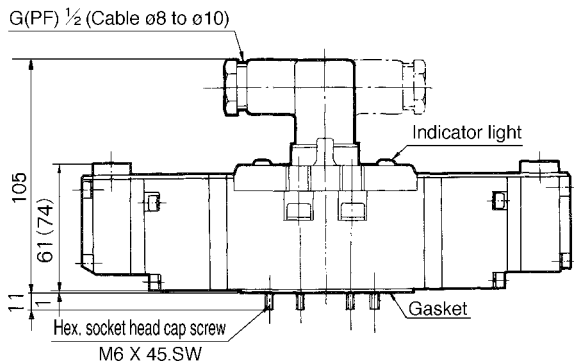


VS7-8-FG-D-□□-Q

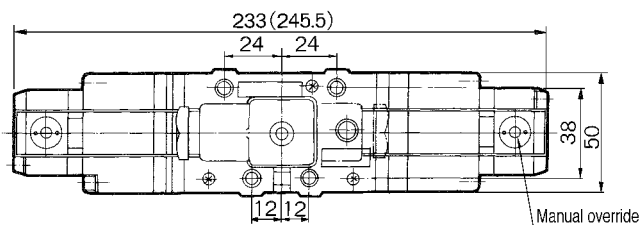
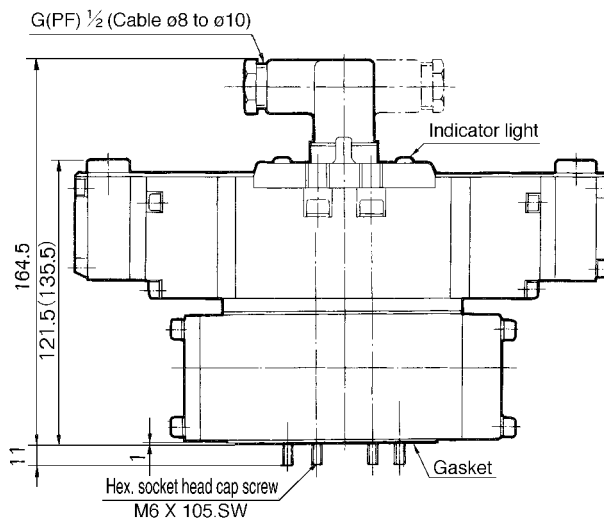


VS7-8-FHG-□□-Q

VS7-8-FJG-□□-Q



VS7-8-FPG-□□-Q



 (): In case of direct manual override style.

SV

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VQC

SQ

VQ

VQ4

VQ5

VQZ

VQD

VFS

VS

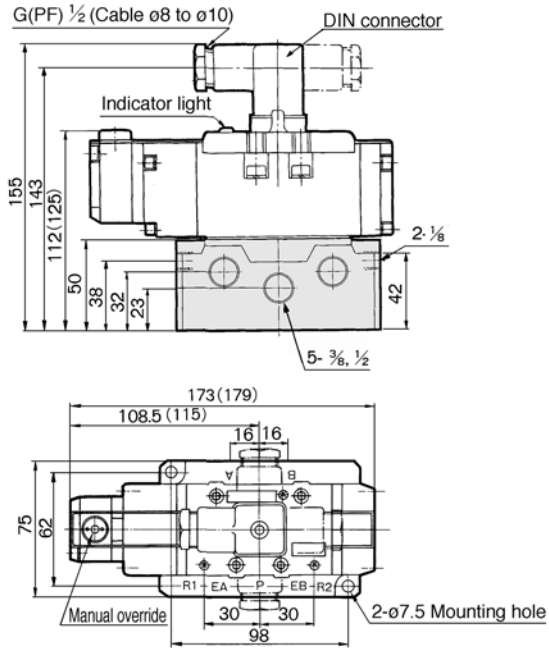
VS7

VQ7

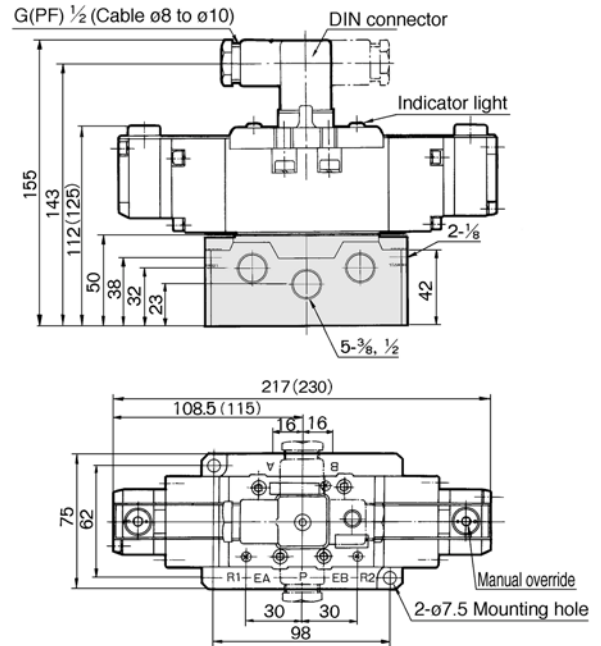
VS7-8

Without Sub-plate/Dimensions

VS7-8-FG-S-□□ Port size of sub-plate -Q

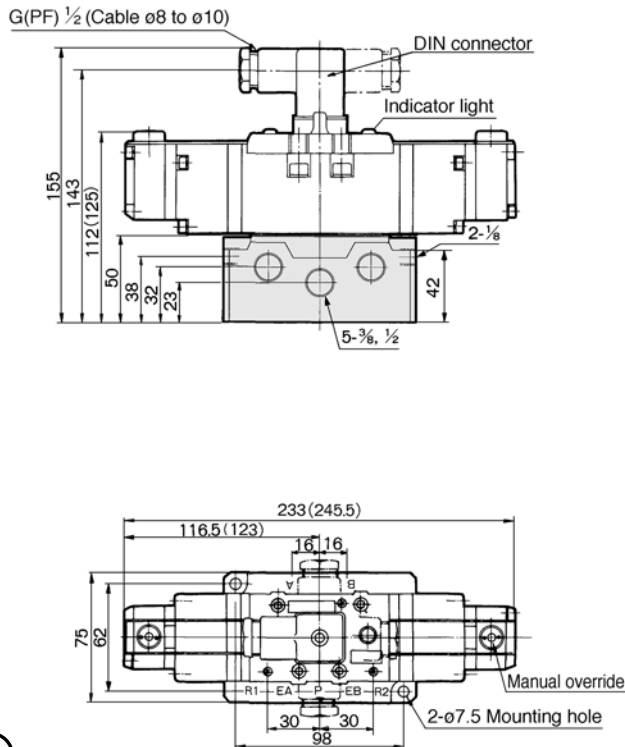


VS7-8-FG-D-□□ Port size of sub-plate -Q

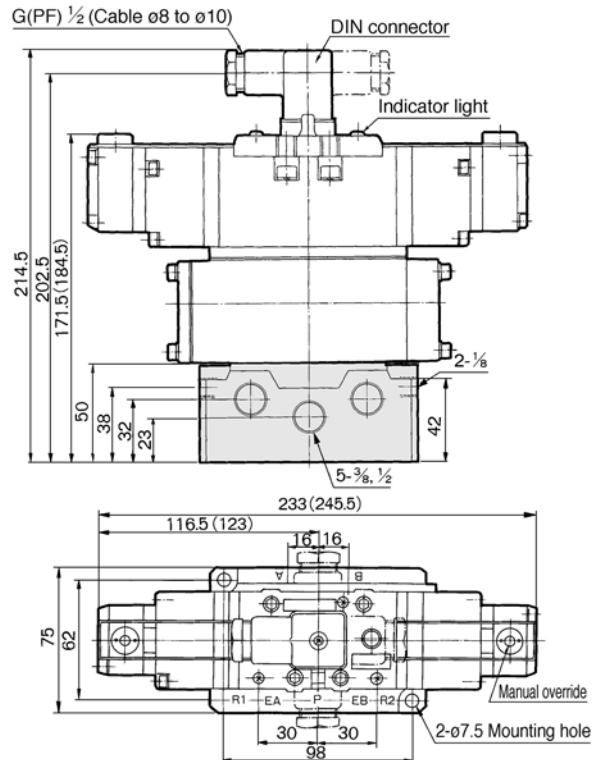


VS7-8-FHG-□□ Port size of sub-plate -Q

VS7-8-FJG-□□ Port size of sub-plate -Q



VS7-8-FPG-□□ Port size of sub-plate -Q



(): In case of direct manual override style.

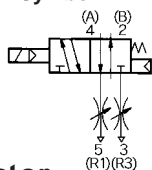


Note) Symbol EA and EB correspond to R1 and R2 respectively (R1=EA, R2=EB)

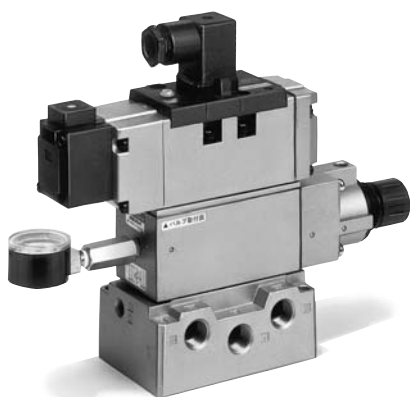
Interface Speed Control



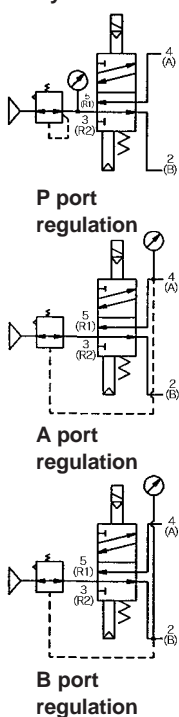
Symbol



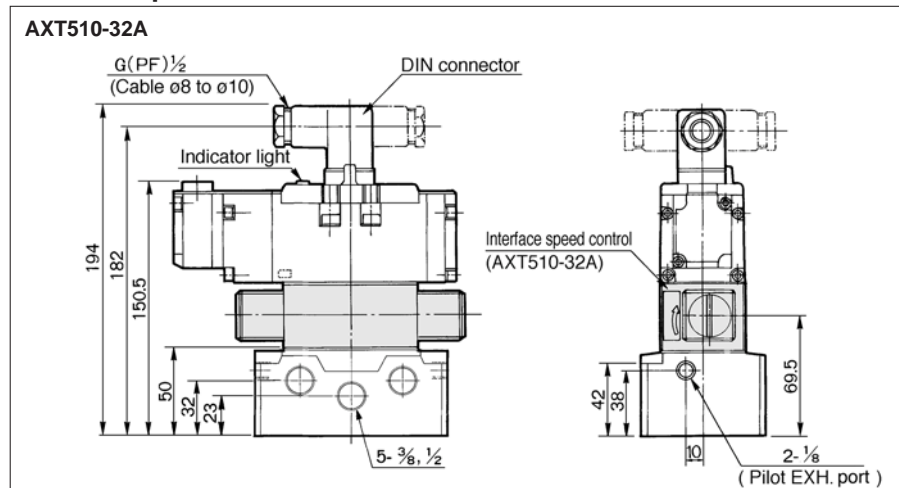
Interface Regulator



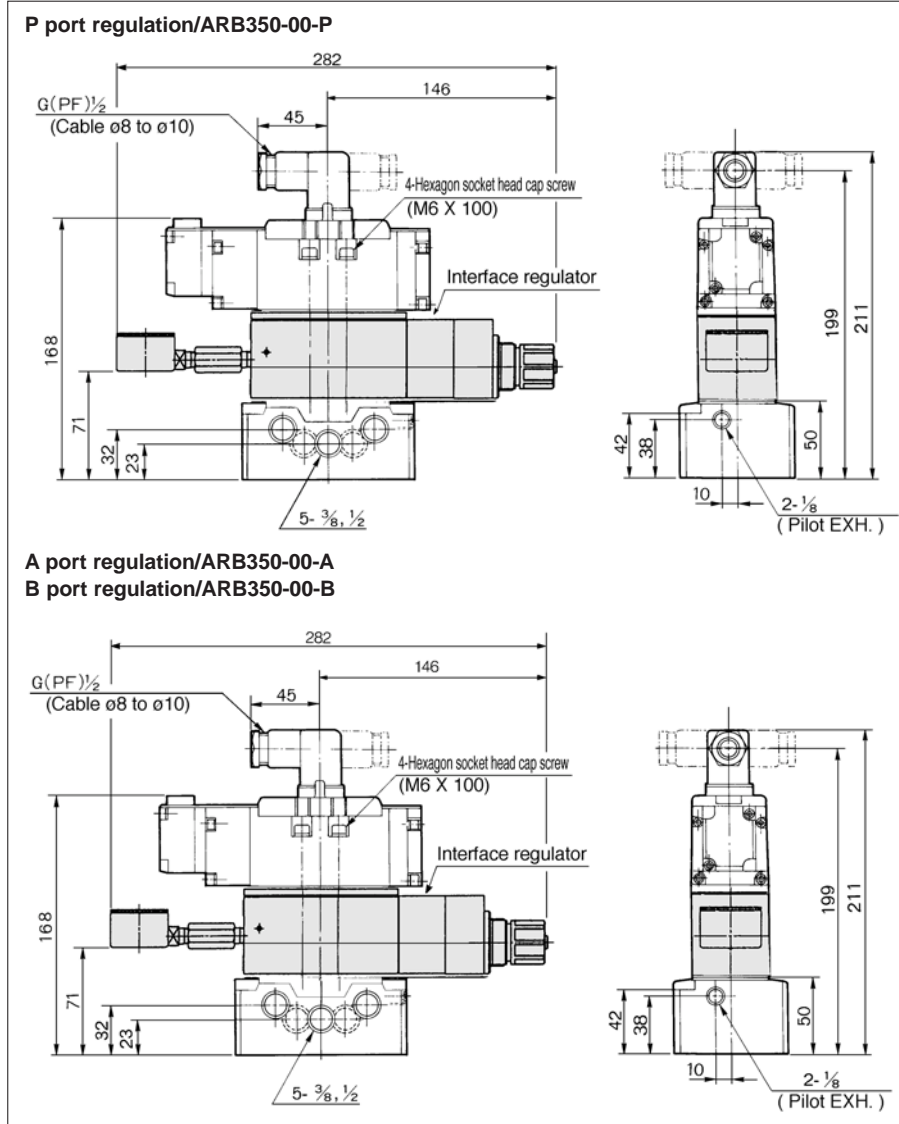
Symbol



Interface Speed Control/Dimensions



Interface Regulator/Dimensions



- SV
- SY
- SYJ
- SX
- VK
- VZ
- VF
- VFR
- VP7
- VQC
- SQ
- VQ
- VQ4
- VQ5
- VQZ
- VQD
- VFS
- VS
- VS7**
- VQ7

Series VS7-8 Sub-plate

Sub-plate: Series VS7-2/VSA7-2



Note:

Please note that single subplates and manifolds have changed colour from platinum silver to white as standard. Valves will remain platinum silver.

Specifications

| | |
|--|--|
| Applicable solenoid valve/air operated valve | Series ISO size ② |
| Sub-plate size | ISO size ② |
| Piping | Side piping: 3/8, 1/2, 3/4 Bottom piping: 3/8, 1/2, 3/4 |
| Weight | 0.68kg (3/8, 1/2) 1.29kg (3/4) |

How to Order

E VS7-2 - **A03**

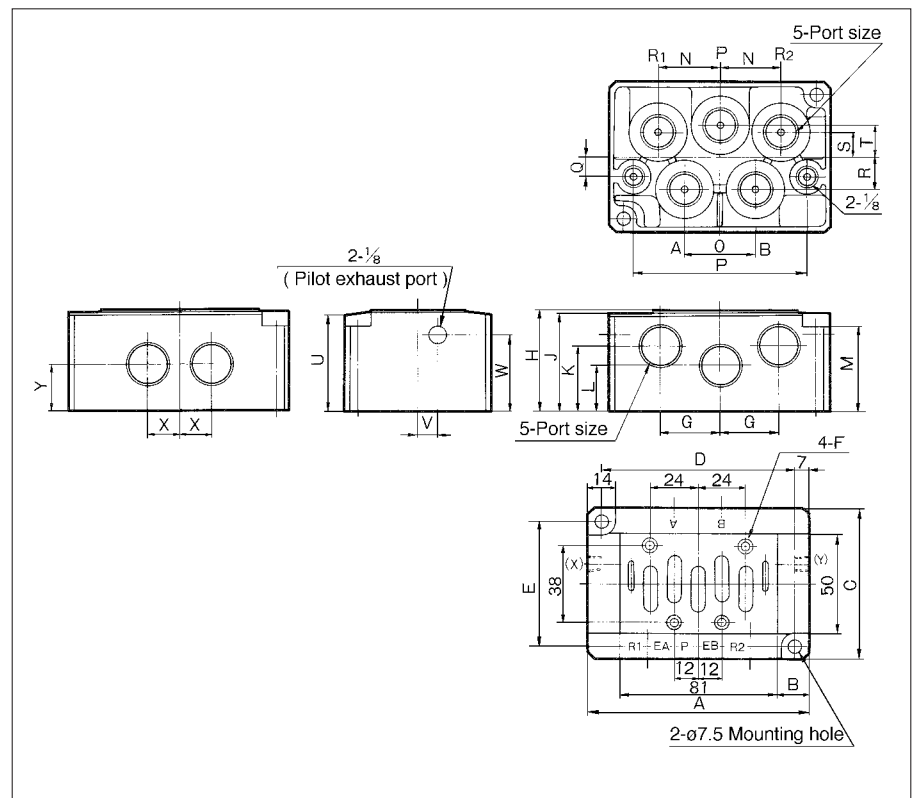
| | Piping |
|------------|--------------------|
| A03 | Side piping: 3/8 |
| A04 | Side piping: 1/2 |
| A06 | Side piping: 3/4 |
| B03 | Bottom piping: 3/8 |
| B04 | Bottom piping: 1/2 |
| B06 | Bottom piping: 3/4 |

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

Ordering source area code

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

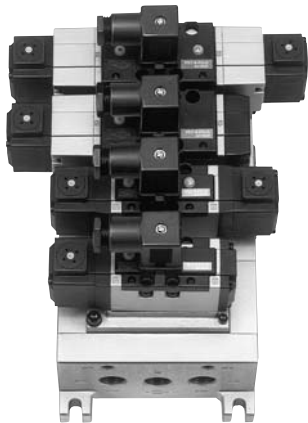
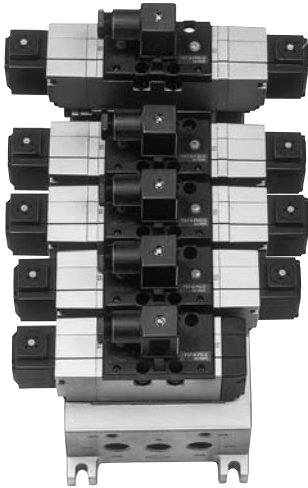
Dimensions



| Model | Symbol | Piping | Port size | A | B | C | D | E | F | G | H | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y |
|-----------|--------|--------|-----------|-----|------|----|-----|----|------------------|----|----|----|----|----|----|----|----|-----|----|----|----|----|------|----|----|----|----|
| VS7-2-A03 | A03 | Side | 3/8, 1/2 | 112 | 15.5 | 75 | 98 | 62 | 4-M6 Depth 10 | 30 | 50 | 49 | 32 | 23 | 42 | 31 | 36 | 88 | 10 | 16 | 12 | 16 | 47.5 | 10 | 38 | 16 | 23 |
| VS7-2-B03 | B03 | Bottom | | | | | | | | | | | | | | | | | | | | | | | | | |
| VS7-2-A06 | A06 | Side | 3/4 | 142 | 30.5 | 86 | 128 | 72 | 4-M6 Depth 12 | 42 | 63 | 62 | 42 | 30 | 55 | 42 | 40 | 116 | 11 | 22 | 16 | 23 | 61.5 | 11 | 53 | 20 | 30 |
| VS7-2-B06 | B06 | Bottom | | | | | | | | | | | | | | | | | | | | | | | | | |

Series VS7-8 Manifold

Manifold: Series VV72



Note:

Please note that single subplates and manifolds have changed colour from platinum silver to white as standard. Valves will remain platinum silver.

Standard Specifications

| | | |
|--|----------------|--------------------------------|
| Manifold block size | | ISO Size ② |
| Applicable solenoid valve | | Series ISO Size ② |
| Number of stations | | 1 to 10* |
| Piping | A, B-port | 3/8, 1/2 |
| | P, R1, R2-port | 1/2, 3/4 |
| Individual SUP spacer | | VV72-P-□ |
| Individual EXH spacer | | VV72-R-□ |
| Gallery blank disc (Differential pressure style) | | AXT512-14-1A (for P port) |
| | | AXT512-14-2A (for R1, R2 port) |

The manifold Series VV72□ has a wide variety of functions and porting compatible with virtually any application need.

Common EXH Style

Every valve is supplied and exhausted by the same SUP and EXH ports running through the connected manifolds. This is the most popular configuration. When there are 5 or more stations operating simultaneously and pilot back pressure is 0.2kgf/cm² or more, it is recommended that all pilot EXH ports (PE) of the manifold base (4 on U side and 2 on D side, total 6 ports) be opened. Also, use "AN110-01" for silencer for pilot EXH.

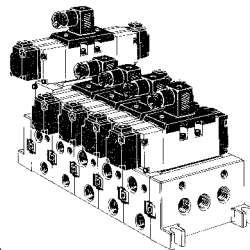
Individual EXH Style

Every valve has an independent EXH port of its own.

¡An individual EXH spacer (VV72-R-03, 04) mounted on the manifold block allows each valve to exhaust individually.

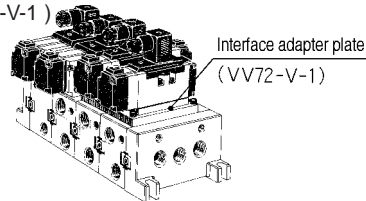
Individual SUP Style

¡An individual SUP spacer (VV72-P-03, 04) mounted on the manifold-block allows each valve to be supplied individually.



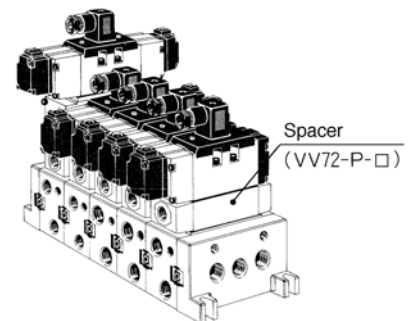
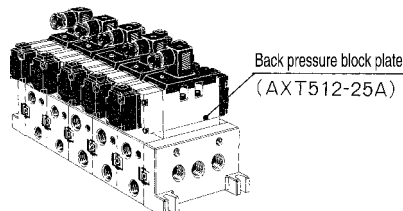
V Type

V type allows combinations with valves of varying body size. (Interface adapter plate VV72-V-1)



Main EXH Back Pressure Block Style

¡If there are many valve stations operating at the same time and main EXH back pressure may cause trouble, mount back pressure block plate ("AXT503-37A") to prevent effects of main EXH back pressure.



Multiple Pressure SUP Style

Allows supply of 2 or more different pressures to one manifold.

¡Put in a gallery blank disc (AXT512-14-1A) between the stations to operate at different pressures. When using a dual pressures supply, the pressure can be supplied from both the left and right sides of the manifold. If 3 or more pressures are supplied, pressure should be supplied from the spacer (VV72-P-□) port.

Bottom Piping Style (3/8, 1/2)

When side piping appearance is not acceptable or space is limited, bottom piping for A or B ports is possible.

Individual Pilot EXH Style

¡If there are many valve stations operating at the same time or operation frequency is high, trouble caused by back pressure will be prevented by using individual pilot EXH style valve ("VS7-8-□-□V").

SV

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VQC

SQ

VQ

VQ4

VQ5

VQZ

VQD

VFS

VS

VS7

VQ7

VS7-8

How to Order (Manifold)



Stations

| | |
|----|----|
| 1 | 1 |
| ⋮ | ⋮ |
| 10 | 10 |

Piping/A, B port

| | |
|-----|--------------|
| 03R | 3/8 (Right) |
| 04R | 1/2 (Right) |
| 03L | 3/8 (Left) |
| 04L | 1/2 (Left) |
| 03Y | 3/8 (Bottom) |
| 04Y | 1/2 (Bottom) |
| * | Combination |

Note) When mixing, inscribe a "*" mark and designate a separate piping specification.

Air release valve

| | |
|---|---------------------------|
| - | Without air release valve |
| E | With air release valve |

Piping/P, R₁, R₂ Port

| | |
|-----|------------------|
| 04D | 1/2 (Bottom) |
| 04U | 1/2 (Top) |
| 04B | 1/2 (Both sides) |
| 06D | 3/4 (Bottom) |
| 06U | 3/4 (Top) |
| 06B | 3/4 (Both sides) |

Silencer box

| | |
|----|----------------------|
| - | Without silencer box |
| SB | With silencer box |



* Mounting position of silencer box is in accordance with piping of R₁ and R₂ port.

Air release valve/Voltage

| | |
|---|---------------------------|
| - | Without air release valve |
| 1 | 100A CV 50/60Hz |
| 2 | 200A CV 50/60Hz |
| 3 | 24V DC |
| 4 | 12V DC |
| 9 | Others (250V or less) |



Contact SMC for other voltages (9)



Protective class class I (Mark: ⊕)

Note) Manifold exploded view see page 1.19-34

Ordering source area code

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

Option

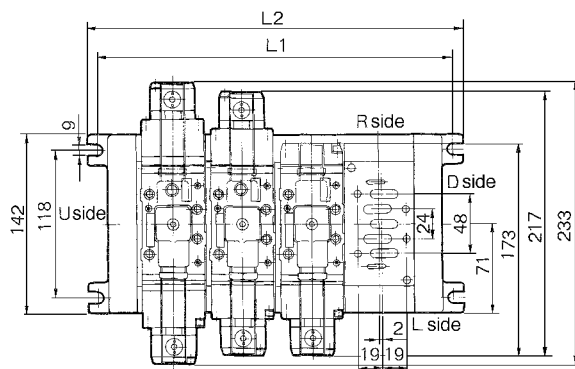
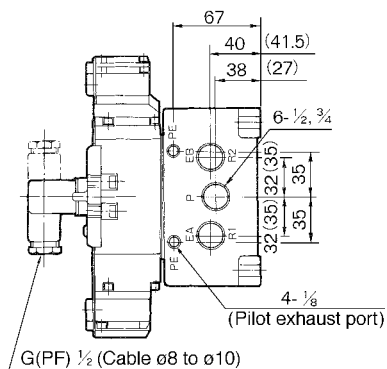
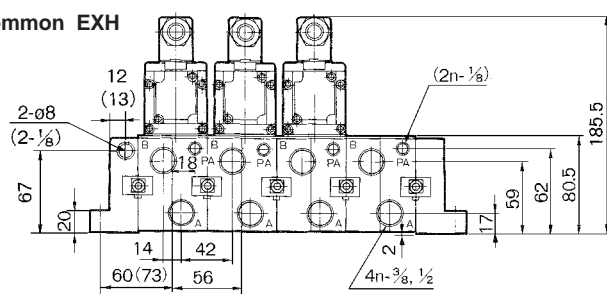
| | |
|---|---|
| Blank plate | AXT512-9A AXT512-18A (for air release valve adaptor plate) |
| Air release valve adaptor plate | AXT512-17A |
| Interface regulator | Relief style ARB350-00- A (A port regulation) B (B port regulation) |
| Interface for reverse pressure | AXT512-19A-1 3/8 AXT512-19A-2 1/2 |
| R ₁ , R ₂ Individual EXH spacer | VV72-R2-04 |
| Interface speed control | AXT510-32A |
| Main EXH back pressure block plate | AXT512-25A |
| Silencer for pilot EXH | AN110-01 |

Manifold/Dimensions

L: Dimensions

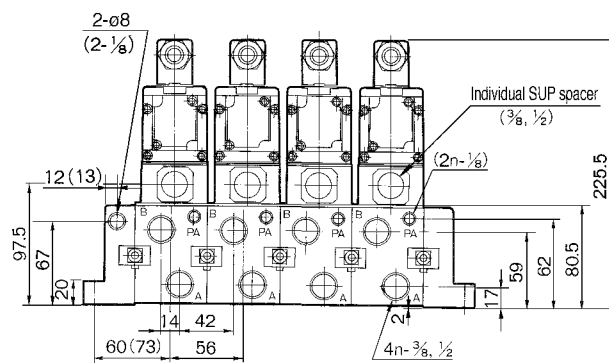
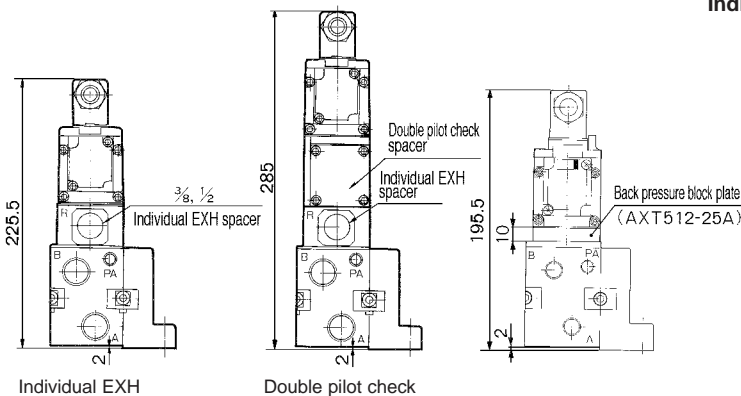
| Size | L | n | Equation | | | | | | | | | | |
|------|----|---|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| 1/2 | L1 | | 120 | 176 | 232 | 288 | 344 | 400 | 456 | 512 | 568 | 624 | n: stations L1=56n+64 L2=56n+80 |
| | L2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

Common EXH



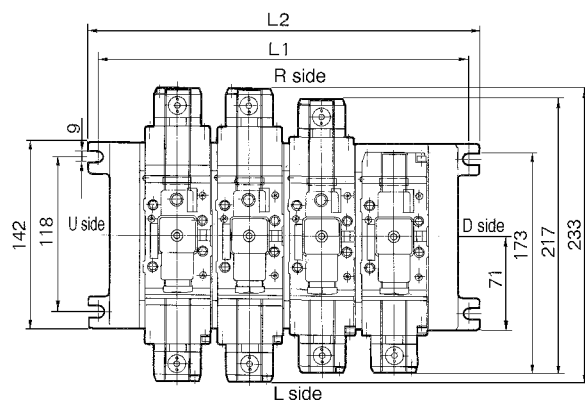
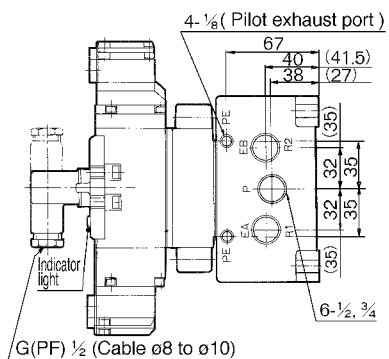
(): In case of direct manual override style.

Individual SUP



Individual EXH

Double pilot check



(): In case of direct manual override style.

- SV
- SY
- SYJ
- SX
- VK
- VZ
- VF
- VFR
- VP7

- VQC
- SQ
- VQ
- VQ4
- VQ5
- VQZ
- VQD
- VFS
- VS
- VS7**
- VQ7

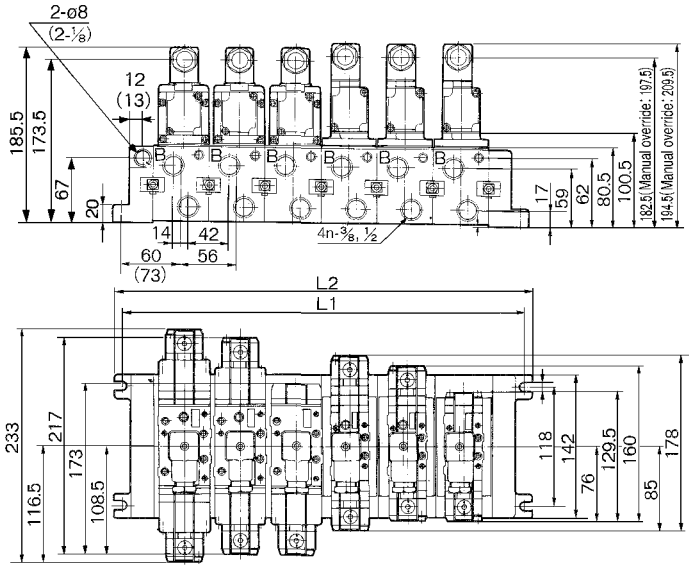
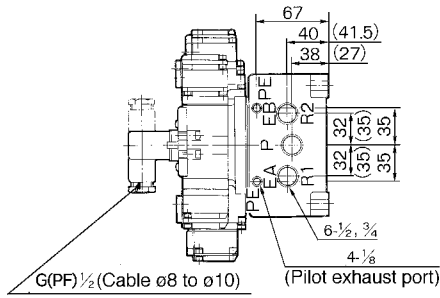
VS7-8

Manifold/Dimensions

L: Dimensions

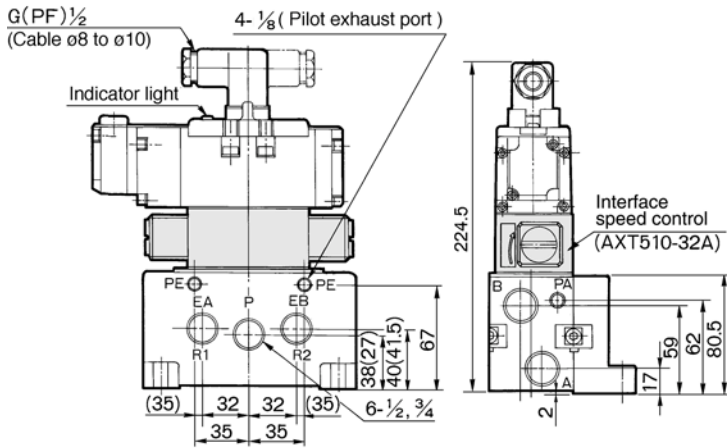
| Size | L | n | n | | | | | | | | | | Equation |
|------|----|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| 1/2 | L1 | | 120 | 176 | 232 | 288 | 344 | 400 | 456 | 512 | 568 | 624 | n: stations L1=56n+64 L2=56n+80 |
| | L2 | |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

V Type

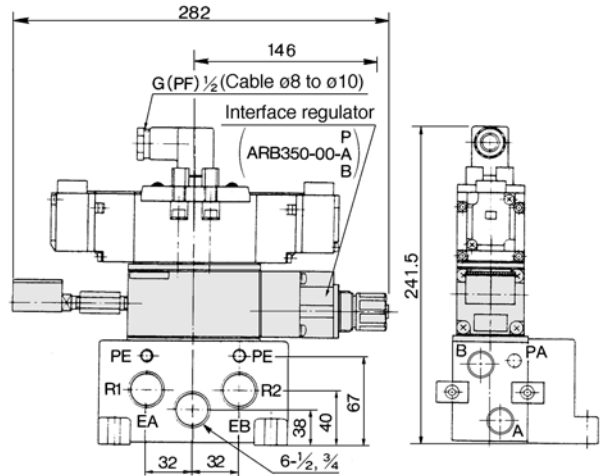


(): In case of direct manual override style.

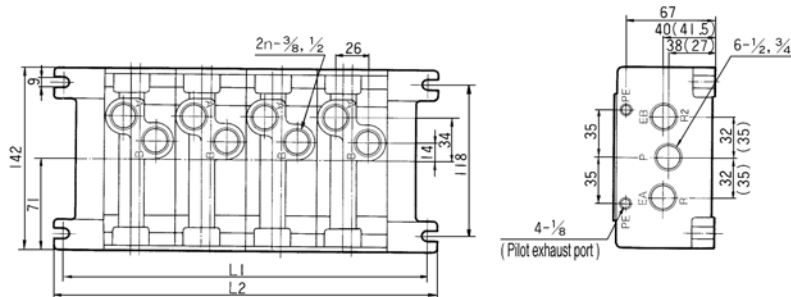
Interface Speed Control



Interface Regulator



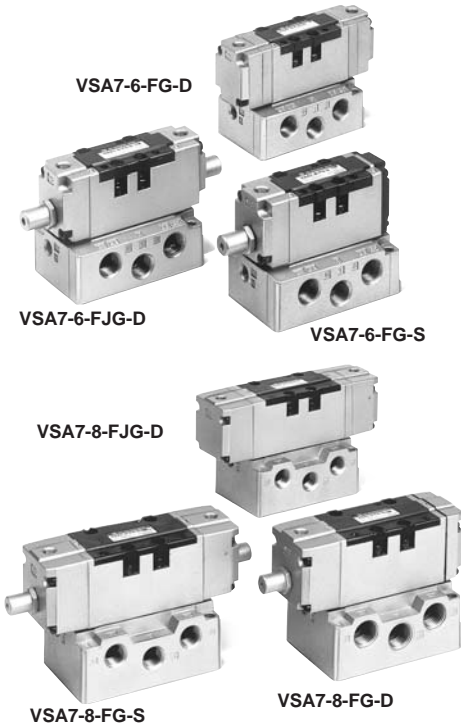
Bottom Piping



(): In case of direct manual override style.

Air Operated/SIZE ① ②

Series VSA7-6/VSA7-8



| | Single (FG-S) | Double (FG-D) | Reverse pressure* (YZ-S) |
|------------|--------------------------|------------------------|----------------------------|
| 2 position | | | |
| 3 position | Closed centre (FHG-D) | Exhaust centre (FJG-D) | Double pilot check (FPG-D) |
| | | | |
| | Pressure centre* (FIG-D) | | |
| | | | |

* Option

Specifications

| | | |
|---|---------------------------------|--------|
| Fluid | Air/Inert gas | |
| Max. operating pressure | 1.0MPa | |
| Min. operating pressure ⁽³⁾ | YZ-S, FG-S ⁽¹⁾ | 0.1MPa |
| | Others | 0MPa |
| Proof pressure | 1.5MPa | |
| Ambient and fluid temperature | -10 to -60°C ⁽²⁾ | |
| Lubrication | Not required. | |
| Shock/Vibration resistance ⁽⁴⁾ | 150/50m/s ² | |
| Enclosure | Dust proof | |
| Manual override | Non-locking push style (Option) | |
| Pilot air pressure ⁽³⁾ | 0.1 to 1.0 to 10.2 MPa | |



Note 1) Min. operating pressure should be equivalent to or lower than pilot supply pressure.

Note 2) Use dry air at the low temperatures.

Note 3) Use controlled clean air.

Note 4) Shock resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed on the axis and right angle directions of the main valve and armature, for both energized and de-energized states. (Value in the initial stage.)

Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2000 Hz. Test was performed at both energized and de-energized states to the axis and right angle directions of the main valve and armature. (Value in the initial stage.)

Model

| Size ① Series | No. of positions | Model | Effective area (mm ²)(Nl/min) | Size ② Series | No. of positions | Model | Effective area (mm ²)(Nl/min) |
|---------------|----------------------|--------------|---|---------------|----------------------|--------------|---|
| | | | | | | | |
| VSA 7-6 | 2 (Single) | VSA7-6-FG-S | 27 (1472.25) | VSA 7-8 | 2 (Single) | VSA7-8-FG-S | 58(3140.80) |
| | 2 (Double) | VSA7-6-FG-D | 27 (1472.25) | | 2 (Double) | VSA7-8-FG-D | 58(3140.80) |
| | 3 (Closed) | VSA7-6-FHG-D | 25.5 (1374.10) | | 3 (Closed) | VSA7-8-FHG-D | 58(3140.80) |
| | 3 (Exhaust) | VSA7-6-FJG-D | 27 (1472.25) | | 3 (Exhaust) | VSA7-8-FJG-D | 58(3140.80) |
| | 3 (Pilot check) | VSA7-6-FPG-D | 20 (1079.65) | | 3 (Pilot check) | VSA7-8-FPG-D | 40(2159.30) |
| | 3 (Pressure) | VSA7-6-FIG-D | 25.5 (1374.10) | | 3 (Pressure) | VSA7-8-FIG-D | 58(3140.80) |
| | 2 (Reverse pressure) | VSA7-6-YZ-S | 27 (1472.25) | | 2 (Reverse pressure) | VSA7-8-YZ-S | 58(3140.80) |

How to Order

Ordering source area code

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

Body size

| | |
|---|--------|
| 6 | SIZE ① |
| 8 | SIZE ② |

Passage symbol

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

Pilot port position

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

Pilot port position

| | |
|---|-----------------------------------|
| 1 | Pilot cover, PA/PB port |
| 2 | Sub-plate, 14X/12Y port (PE port) |

Thread

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

Port size

| Symbol | Size ① Series VSA 7-6 | Size ② Series VSA 7-8 |
|--------|-----------------------|-----------------------|
| A02 | Side piping 1/4" | - |
| A03 | Side piping 3/8" | Side piping 3/8" |
| A04 | - | Side piping 1/2" |
| B02 | Bottom piping 1/4" | - |
| B03 | Bottom piping 3/8" | Bottom piping 3/8" |
| B04 | - | Bottom piping 1/2" |

* R port: 3/8"

Option (Manual override)

| | |
|---|-------------------------|
| - | Without manual override |
| M | With manual override |

SV

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VQC

SQ

VQ

VQ4

VQ5

VQZ

VQD

VFS

VS

VS7

VQ7

VSA7-6/VSA7-8

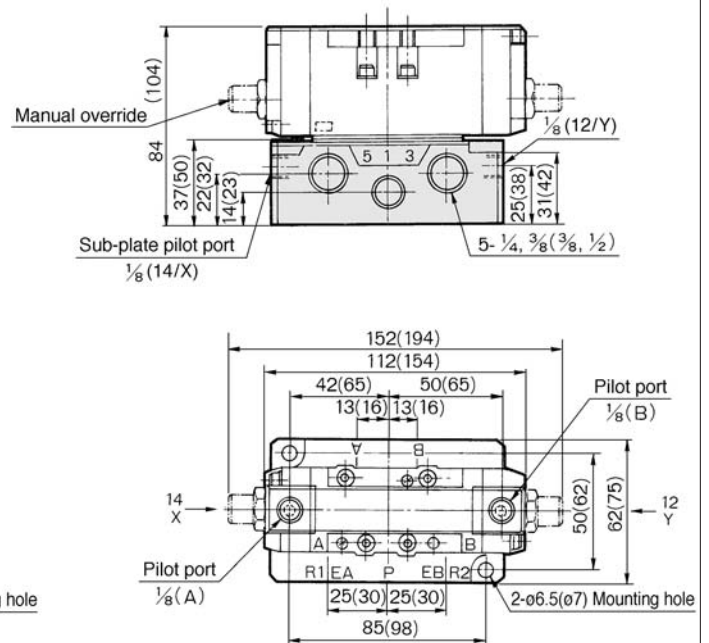
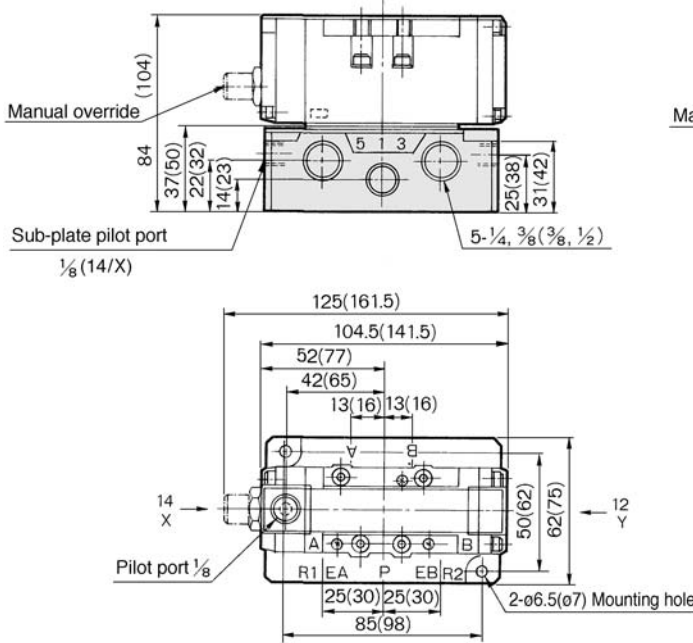
Air Operated/Dimensions

SIZE① VSA7-6-FG-S-□□-□
YG

SIZE② VSA7-8-FG-S-□□-□
YG

SIZE① VSA7-6-FG-D-□□-□

SIZE② VSA7-8-FG-D-□□-□

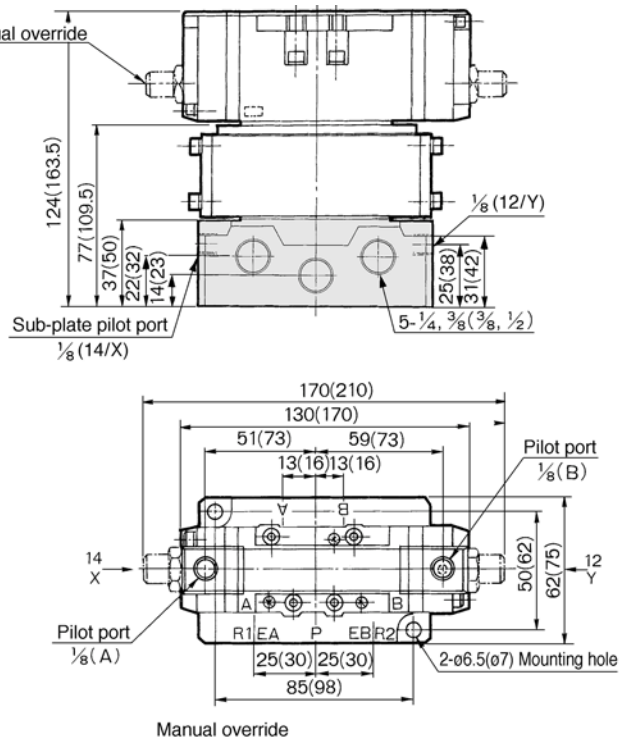
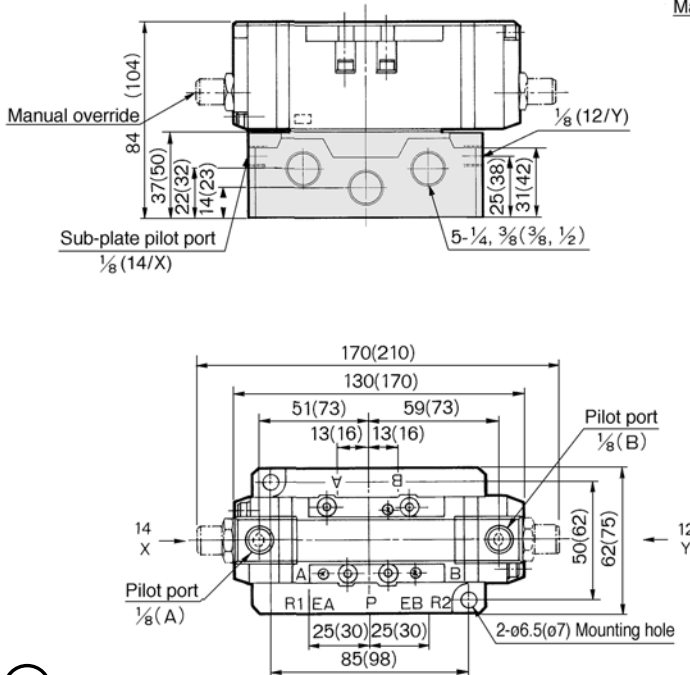


(): In case of VSA7-8

SIZE① VSA7-6-FHG-FJG-□□-□
FIG
SIZE② VSA7-8-FHG-FJG-□□-□
FIG

SIZE① VSA7-6-FPG-FPG-□□-□

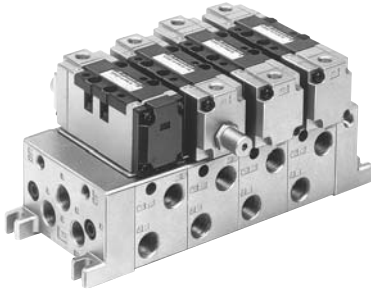
SIZE② VSA7-8-FPG-FPG-□□-□



(): In case of VSA7-8

Air Operated: SIZE 1 Manifold

Manifold: Series VVA71



Standard Specifications

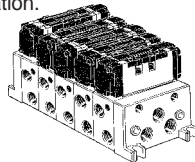
| | | |
|---|--|---|
| Manifold block size | ISO size 1 | |
| Applicable valve | Series ISO size 1 | |
| Stations | 1 to 10* | |
| Piping | A, B port | 1/4, 3/8 One-touch fitting: ø6, ø8, ø10 |
| | P, R1, R2 port | 3/8 One-touch fitting: ø12 |
| Control unit | Air filter (Auto drain, Manual drain), Regulator, Pressure switch, Air release valve | |
| Individual SUP spacer | VV71-P-□(02: 1/4, 03: 3/8, C10: ø10) | |
| Individual EXH spacer | VV71-R-□(02: 1/4, 03: 3/8, C10: ø10) | |
| Block plate (Differential pressure style) | AXT502-14 | |

* Including F.R. Unit (equivalent to 2 stations).

The manifold Series VVA71 has a wide variety of functions and piping, compatible with virtually any application.

Common EXH Style

Every valve is supplied and exhausted by the same SUP and EXH ports running through the connected manifolds. This is the most popular configuration.



Multiple Pressure SUP Style

Allows supply of 2 or more different levels of pressures to one manifold.

Put in a gallery blank disc (AXT502-14) between the stations to operate at different pressures. A dual pressure supply can be applied to both the left and right sides of the manifold. If 3 or more pressures are supplied, the individual SUP spacer should be used.

Bottom Piping Style 1/4, 3/8 (A, B port)

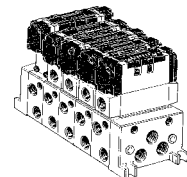
When side piping appearance is not acceptable or space is limited, either some of, or all ports, can be arranged with bottom piping.

Individual EXH Style

An individual EXH spacer (VVA71-R-□) mounted on the manifold block allows each valve to exhaust individually.

Individual SUP Style

An individual SUP spacer (VVA71-P-□) mounted on the manifold block allows each valve to be supplied individually.



How to Order

VVA71 - 5 - 03R - 03D - 1

Stations

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

* Including F.R. Unit (2 stations)

Pilot supply port

| | | |
|---|---------------------|--|
| 1 | Valve body side | |
| 2 | Manifold block side | |

Piping (A, B port)

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

* Indicate piping specifications.

Piping (P, R1, R2 port)

| | |
|------|------------------------------------|
| 03D | 3/8 (Bottom) |
| 03U | 3/8 (Top) |
| 03B | 3/8 (Both sides) |
| C12D | One-touch fitting ø12 (Bottom) |
| C12U | One-touch fitting ø12 (Top) |
| C12B | One-touch fitting ø12 (Both sides) |
| ** | Mix |

** Indicate piping specifications.

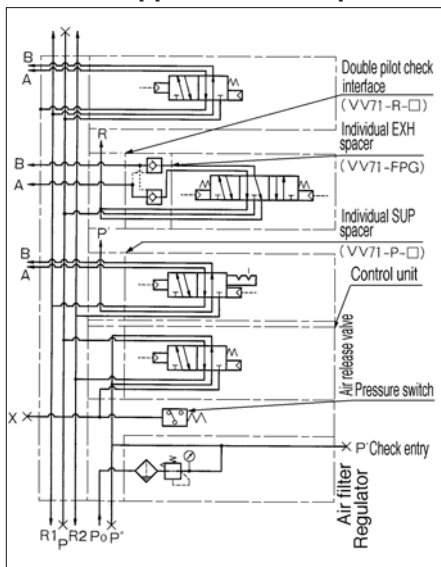
Control Unit

| | |
|----|---|
| — | None |
| A | Filter with auto drain, regulator, air release valve* |
| AP | Filter with auto drain, regulator, air release valve, pressure switch |
| M | Filter with manual drain, regulator, air release valve* |
| MP | Filter with manual drain, regulator, air release valve, pressure switch |
| F | Filter with auto drain, regulator (air release valve blank plate) |
| G | Filter with manual drain, regulator (air release valve blank plate) |
| C | Air release valve* (filter, air release valve blank plate) |
| E | Air release valve* |

* Indicate pilot supply port.

- 1 VSA7-6-FG-S-1
- 2 VSA7-6-FG-S-2

Manifold application example



SV

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VQC

SQ

VQ

VQ4

VQ5

VQZ

VQD

VFS

VS

VS7

VQ7

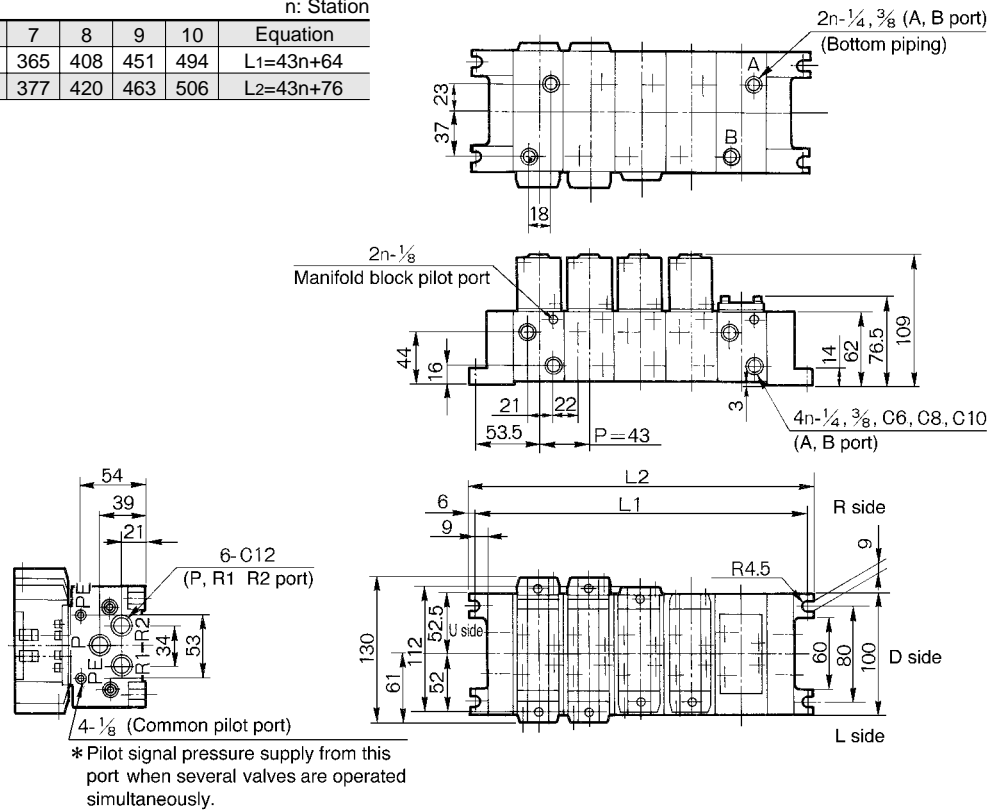
VSA7-6/VSA7-8

Manifold/Dimensions

L: Dimensions

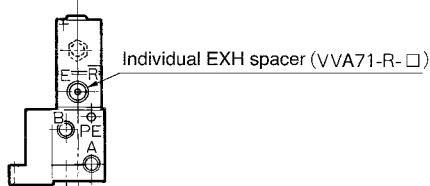
| | | n: Station | | | | | | | | | |
|----|---|------------|-----|-----|-----|-----|-----|-----|-----|-----|-------------|
| L | n | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Equation |
| L1 | | 150 | 193 | 236 | 279 | 322 | 365 | 408 | 451 | 494 | $L1=43n+64$ |
| L2 | | 162 | 205 | 248 | 291 | 334 | 377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

Common EXH

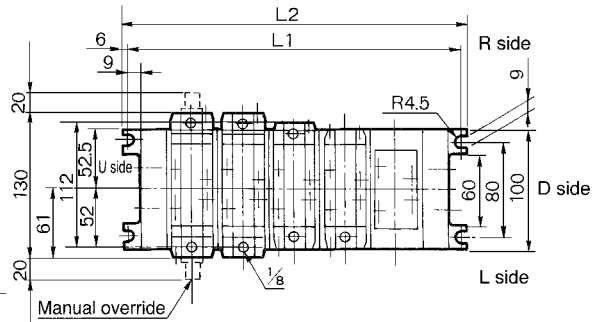
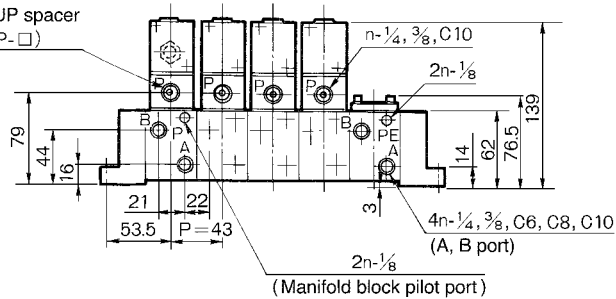


Individual SUP

(Individual EXH)



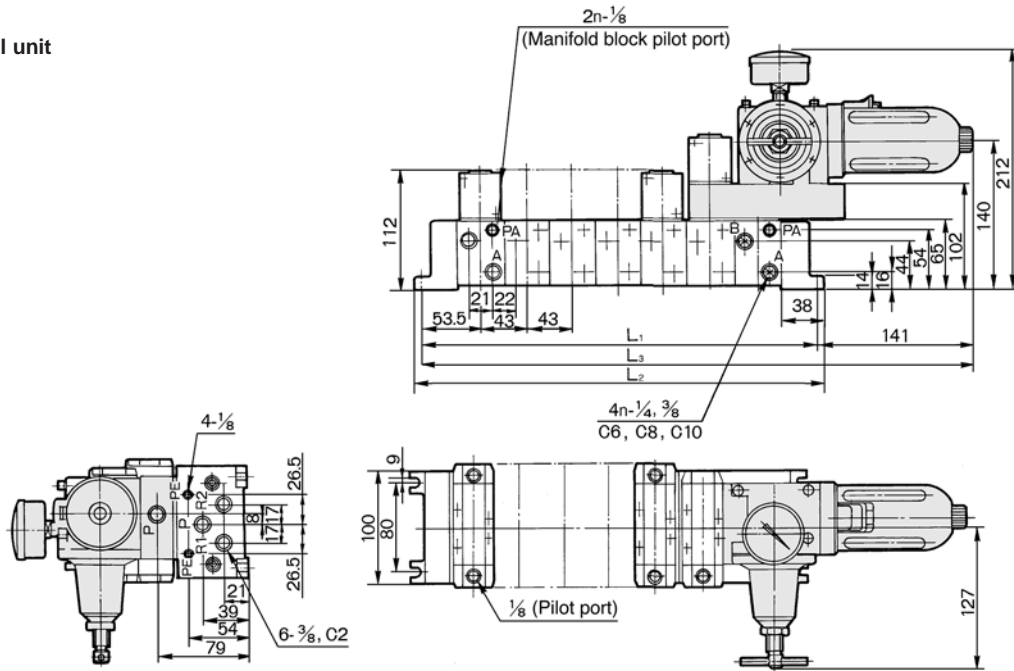
Individual SUP spacer
(VVA71-P-□)



VSA7-6/VSA7-8

Manifold/Dimensions

Control unit

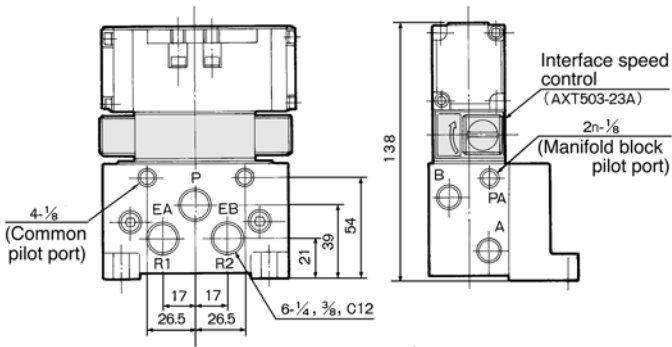


L: Dimensions

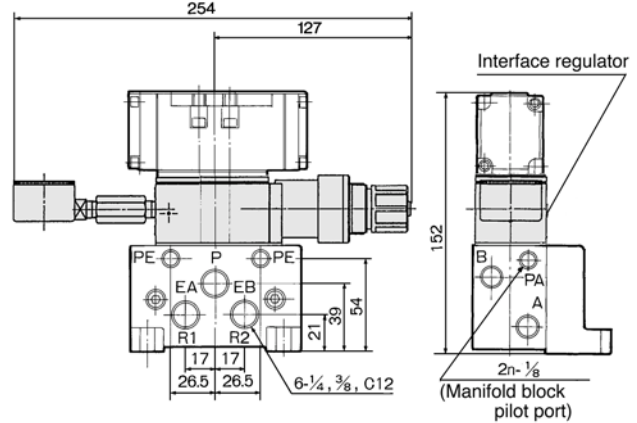
n: Station

| L \ n | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Equation |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------------|
| L1 | 150 | 193 | 236 | 279 | 322 | 365 | 408 | 451 | 494 | $L1=43n+64$ |
| L2 | 162 | 205 | 248 | 291 | 334 | 377 | 420 | 463 | 506 | $L2=43n+76$ |
| L3 | 297 | 340 | 383 | 426 | 469 | 512 | 555 | 598 | 641 | $L3=43n+211$ |

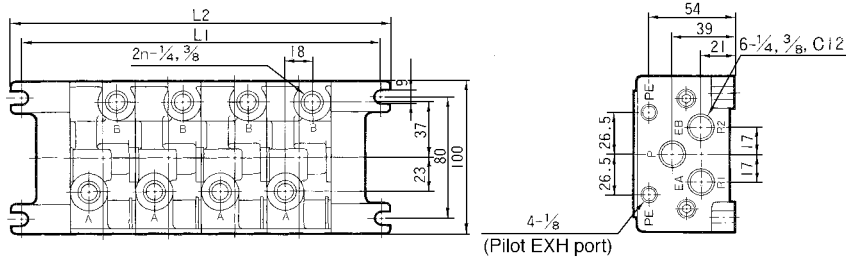
Interface Speed Control



Interface Regulator



Bottom Piping



SV

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VQC

SQ

VQ

VQ4

VQ5

VQZ

VQD

VFS

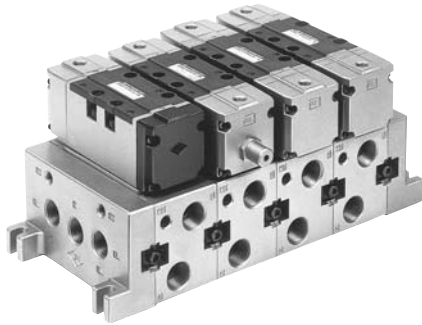
VS

VS7

VQ7

Air Operated: SIZE ② Manifold

Manifold: Series VVA72



Standard Specifications

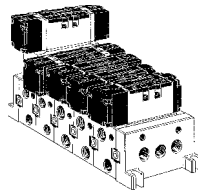
| | | |
|---|--------------------------------|---------|
| Manifold block size | ISO size 2 | |
| Applicable valve | Series ISO size 2 | |
| Stations | 1 to 10* | |
| Piping | A, B port | 3/8 1/2 |
| | P, R1, R2 port | 1/2 3/4 |
| Individual SUP spacer | VV72-P-□ | |
| Individual EXH spacer | VV72-R-□ | |
| Block plate (Differential pressure style) | AXT512-14-1A (for P port) | |
| | AXT512-14-2A (for R1, R2 port) | |

* Including F. R. Unit (equivalent to 2 stations).

The manifold Series VVA72□ has a wide variety of functions and piping, compatible with virtually any application.

Common EXH Style

Every valve is supplied and exhausted by the same SUP and EXH ports running through the connected manifolds. This is the most popular configuration.

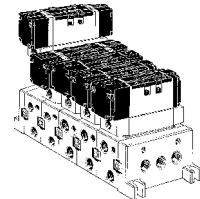


Individual EXH Style

¡An individual EXH spacer (VVA72-R-03/04) mounted on the manifold block allows each valve to exhaust individually.

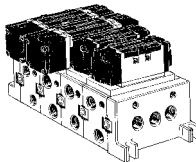
Individual SUP Style

¡An individual SUP spacer (VVA72-P-03/04) mounted on the manifold block allows each valve to be supplied individually.



V Type

V type allows combinations with valves of varying body size. (Interface adapter plate VVA72-V-1)



Multiple Pressure SUP Style

Allows supply of 2 or more different pressures to one manifold. ¡Put in a gallery blank disc (AXT502-14-1A) between the stations to operate at different pressures. A dual pressure supply can be applied to both the left and right sides of the manifold. If 3 or more pressures are supplied, the individual SUP spacer (VV71-P-□) should be used.

Bottom Piping Style/(3/8, 2/1)

When side piping appearance is not acceptable or space is limited, A or B port can be arranged with bottom piping.

How to Order

VVA72-5-03R-□-04D-1

Stations

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

Piping (A, B port)

| | |
|-----|--------------|
| 03R | 3/8 (Right) |
| 04R | 1/2 (Right) |
| 03L | 3/8 (Left) |
| 04L | 1/2 (Left) |
| 03Y | 3/8 (Bottom) |
| 04Y | 1/2 (Bottom) |
| * | Mix |

* Indicate piping specifications.

Pilot supply port

| | | |
|---|---------------------|--|
| 1 | Valve body side | |
| 2 | Manifold block side | |

Piping (P, R1, R2 port)

| | |
|-----|------------------|
| 04D | 1/2 (Bottom) |
| 04U | 1/2 (Top) |
| 04B | 1/2 (Both sides) |
| 06D | 3/4 (Bottom) |
| 06U | 3/4 (Top) |
| 06B | 3/4 (Both sides) |

Air release valve

| | |
|---|---------------------------|
| — | Without air release valve |
| E | With air release valve* |

* Indicates pilot supply port.

- 1 VSA7-6-FG-S-1
2 VSA7-6-FG-S-2

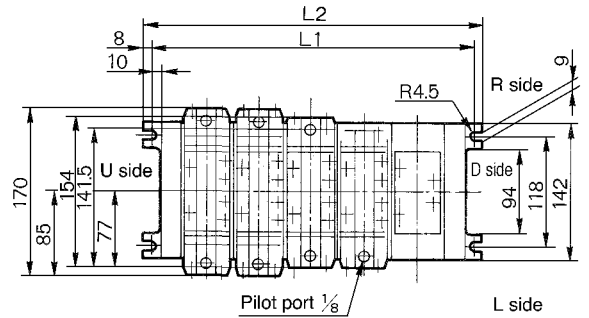
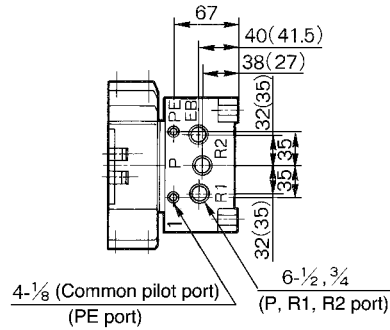
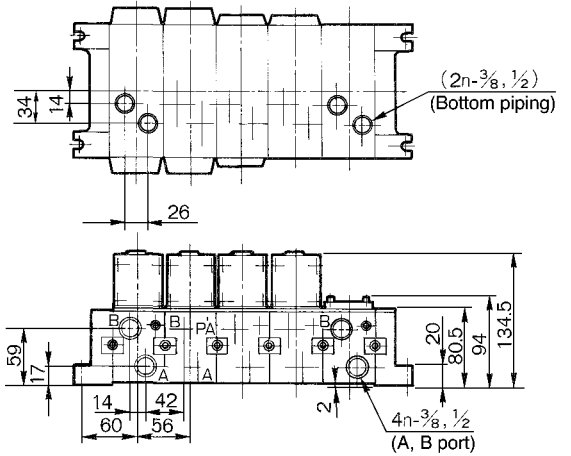
VSA7-6/VSA7-8

Manifold/Dimensions

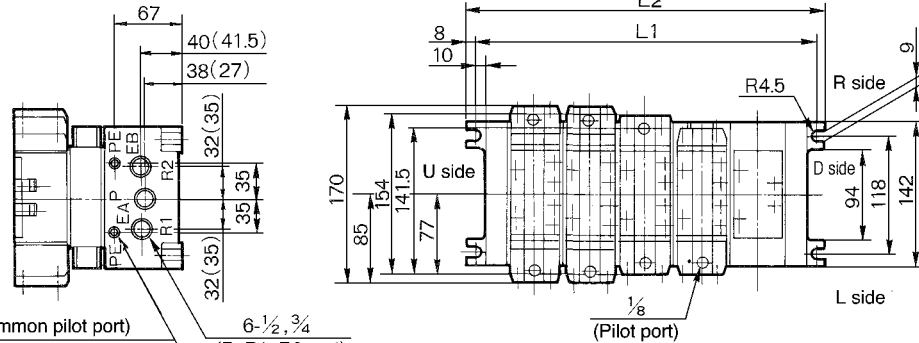
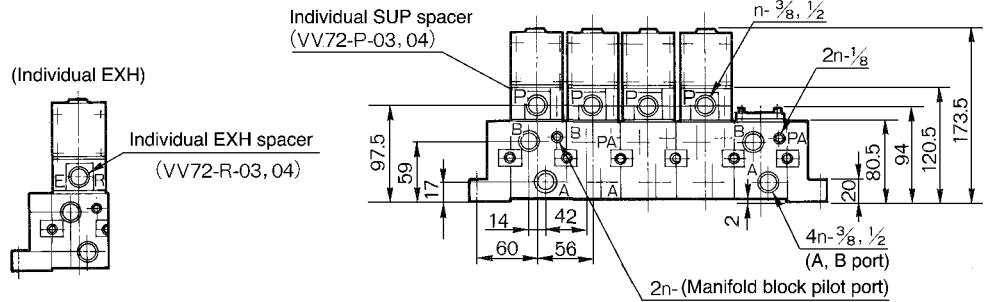
L: Dimensions

| Size | L | n: Station | | | | | | | | | Equation |
|------|----|------------|-----|-----|-----|-----|-----|-----|-----|-----|---------------|
| | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| 1/2 | L1 | 176 | 232 | 288 | 344 | 400 | 456 | 512 | 568 | 624 | $L_1=56n+64$ |
| | L2 | 192 | 248 | 304 | 360 | 416 | 472 | 528 | 584 | 640 | $L_2=56n+80$ |
| 3/4 | L1 | 202 | 258 | 314 | 370 | 426 | 482 | 538 | 594 | 650 | $L_1=56n+90$ |
| | L2 | 218 | 274 | 330 | 386 | 442 | 498 | 554 | 610 | 666 | $L_2=56n+106$ |

Common EXH



() : 3/4
Individual SUP



* Pilot signal pressure supply from this port when several valves are operated simultaneously.

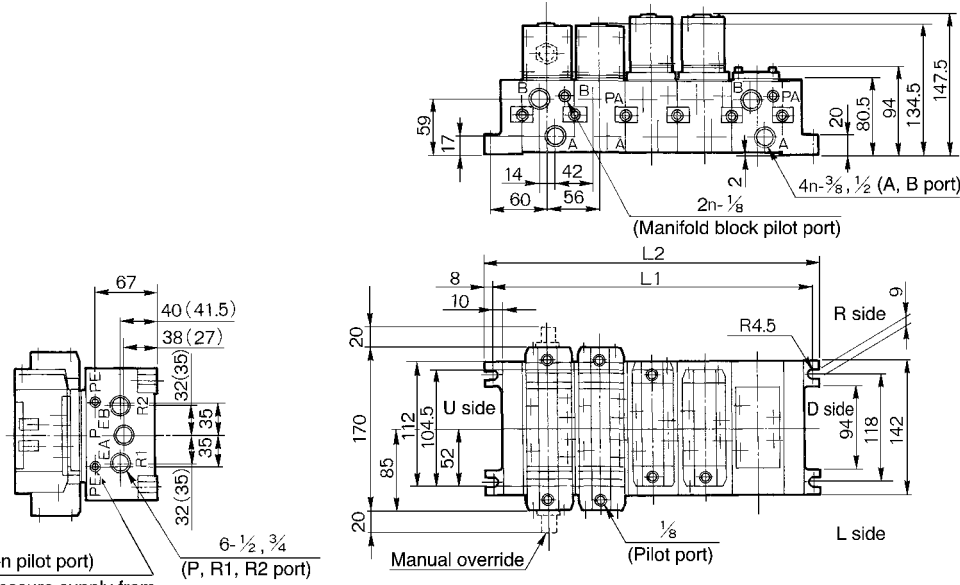
() : 3/4

- SV
- SY
- SYJ
- SX
- VK
- VZ
- VF
- VFR
- VP7
- VQC
- SQ
- VQ
- VQ4
- VQ5
- VQZ
- VQD
- VFS
- VS
- VS7**
- VQ7

VSA7-6/VSA7-8

Manifold/Dimensions

V Type



4- $\frac{1}{8}$ (Common pilot port)
 * Pilot signal pressure supply from this port when several valves are operated simultaneously.

L: Dimensions

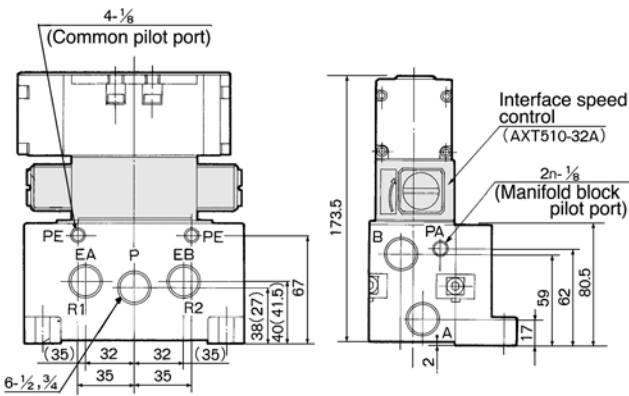
n: Station

| Size | L | n | | | | | | | | | | Equation |
|------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------|----------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| 1/2 | L1 | 176 | 232 | 288 | 344 | 400 | 456 | 512 | 568 | 624 | L1=56n+64 | |
| | L2 | 192 | 248 | 304 | 360 | 416 | 472 | 528 | 584 | 640 | L2=56n+80 | |
| 3/4 | L1 | 202 | 258 | 314 | 370 | 426 | 482 | 538 | 594 | 650 | L1=56n+90 | |
| | L2 | 218 | 274 | 330 | 386 | 442 | 498 | 554 | 610 | 666 | L2=56n+106 | |

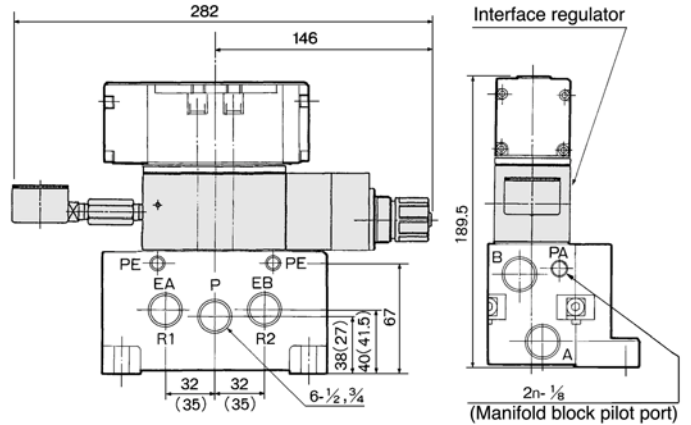


(): 3/4

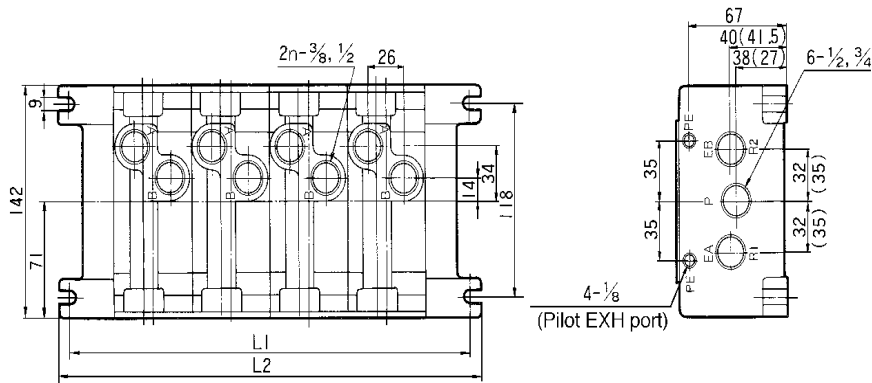
Interface Speed Control



Interface Regulator

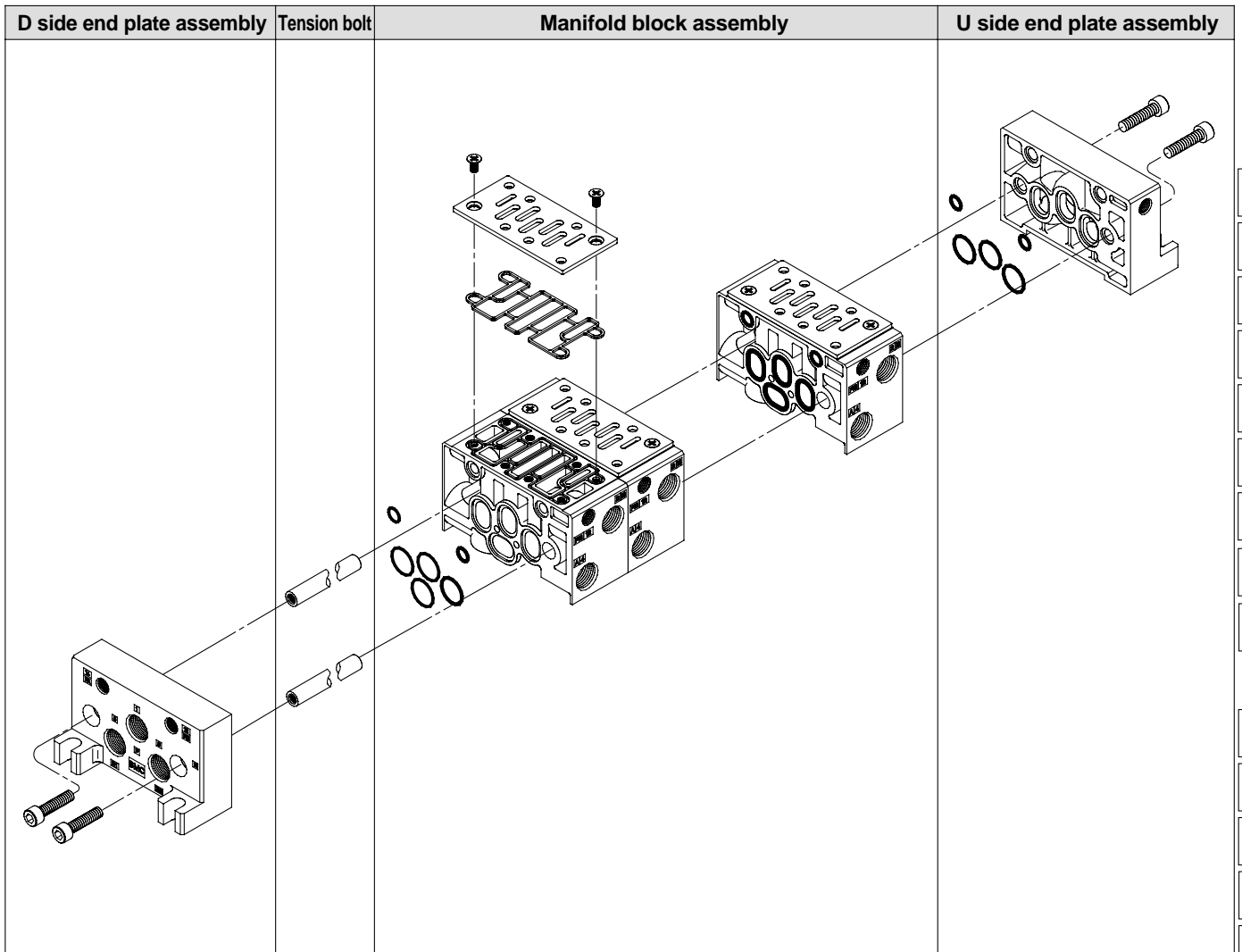


Bottom Piping



(): 3/4

Manifold Exploded View VS7-6



- SV
- SY
- SYJ
- SX
- VK
- VZ
- VF
- VFR
- VP7
- VQC
- SQ
- VQ
- VQ4
- VQ5
- VQZ
- VQD
- VFS
- VS
- VS7**
- VQ7

< End plate assembly >

E AXT502 - **A** - **□**

End plate position

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

Ordering source area code

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

P, R port size

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

< Tension bolt part number >

AXT502 - 34 - **□**

Number of stations

| | |
|----|-----------------|
| 2 | For 2 stations |
| 3 | For 3 stations |
| ⋮ | ⋮ |
| 10 | For 10 stations |

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

< Manifold block assembly >

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

E AXT502 - 1A - **□** - **□** - **□**

Wiring specification

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

Cylinder port position

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

Ordering source area code

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

Cylinder port size

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

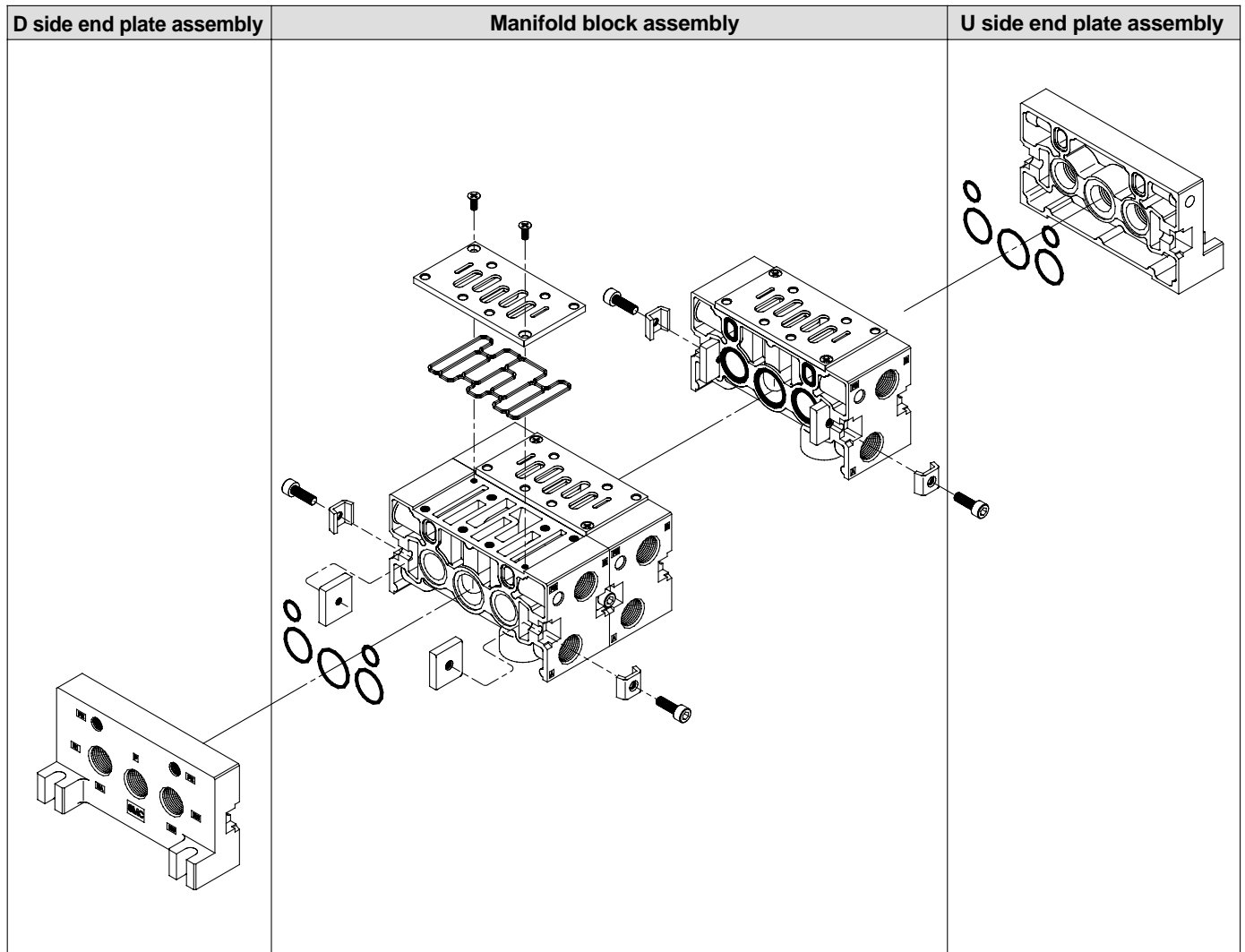
Note 1) Side ported only

< Manifold block replacement parts >

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

VS7-8

Manifold Exploded View VS7-8



< End plate assembly >

E AXT512 - **A** - **A**

End plate position

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

P, R port size

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

Ordering source area code

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

<Manifold block assembly>

E AXT512 - 1A - **A** - **A**

Wiring specification

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

Cylinder port position

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

Ordering source area code

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

Cylinder port size

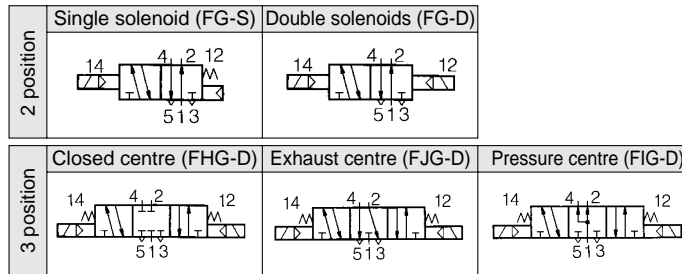
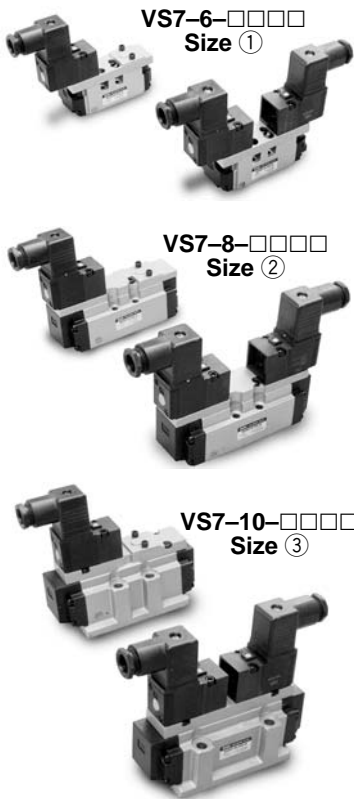
| | |
|----|-----|
| 03 | 3/8 |
| 04 | 1/2 |

< Manifold block replacement parts >

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

ISO CNOMO Standard Solenoid Valve Metal Seal - SIZES ①②③

Series VS7-6•8•10



Standard Specifications

| | | | |
|---------------------------------|--------|--|-------------|
| Fluid | | Air and inert gas | |
| Operating pressure (MPa) | Single | 2 position | 0.15 to 0.9 |
| | Double | 2 position | 0.1 to 0.9 |
| | | 3 position | 0.15 to 0.9 |
| Ambient and fluid temperature | | Max. 50°C | |
| Manual operation | | Non-locking | |
| Electrical entry | | DIN43650 connector | |
| Lubrication | | Unnecessary (Turbine oil class 1 - ISO VG32 if used) | |
| Environmental protection rating | | IP65 | |
| Shock/Vibration resistance | | 300/50m/s ² | |



Note 1) Shock resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed on the axis and right angle direction of the main valve and armature, for both energized and de-energized states.

Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2000Hz. Test was performed at both energized and de-energized states to the axis and right angle direction of the main valve and armature. (value in the initial stage.)

- Solenoid interface conforms to CNOMO.
- Manifold interface to ISO standards.
- Low power consumption: 1.8W per solenoid.
- Internal or external pilot supply.
- Available in ISO 1, 2 and 3 sizes.
- Large flow capacity.
- Fast response and long life.

Pilot Valve Specifications

| | | | |
|-----------------------|-------------------------|--|--|
| Rated voltage (V) | | 100V AC 50/60Hz, 200V AC 50/60Hz, 24V DC, 12V DC | |
| Power consumption | DC (W) | 1.8 | |
| | AC Inrush current (VA) | 5.4 | |
| | AC Holding current (VA) | 3.6 | |
| Allowable voltage (V) | | -15% to +10% of rated voltage | |
| Coil insulation | | Class B (130°C) or equivalent | |

Model

| No. of positions | Model | Flow (Nl/min) | Max. operating frequency (Hz) | Response time (Ms) | Weight (g) |
|------------------|-------|---------------|-------------------------------|--------------------|------------|
|------------------|-------|---------------|-------------------------------|--------------------|------------|

Size ①

| | | | | | |
|---------------------|-----------------|------|----|----|-----|
| 2 (Single) | VS7-6-FG-S-□-Q | 1476 | 20 | 25 | 420 |
| 2 (Double) | VS7-6-FG-D-□-Q | 1476 | 20 | 15 | 518 |
| 3 (Closed centre) | VS7-6-FHG-D-□-Q | 1378 | 10 | 45 | 546 |
| 3 (Exhaust centre) | VS7-6-FJG-D-□-Q | 1476 | 10 | 45 | 546 |
| 3 (Pressure centre) | VP7-6-FIG-D-□-Q | 1080 | 10 | 45 | 546 |

Size ②

| | | | | | |
|---------------------|-----------------|------|----|----|-----|
| 2 (Single) | VS7-8-FG-S-□-Q | 3148 | 20 | 25 | 698 |
| 2 (Double) | VS7-8-FG-D-□-Q | 3148 | 20 | 15 | 806 |
| 3 (Closed centre) | VS7-8-FHG-D-□-Q | 3148 | 10 | 45 | 850 |
| 3 (Exhaust centre) | VS7-8-FJG-D-□-Q | 3148 | 10 | 45 | 850 |
| 3 (Pressure centre) | VS7-8-FIG-D-□-Q | 3148 | 10 | 45 | 850 |

Size ③

| | | | | | |
|---------------------|------------------|------|----|----|------|
| 2 (Single) | VS7-10-FG-S-□-Q | 4900 | 20 | 25 | 926 |
| 2 (Double) | VS7-10-FG-D-□-Q | 4900 | 20 | 15 | 1026 |
| 3 (Closed centre) | VS7-10-FHG-D-□-Q | 4690 | 10 | 45 | 1080 |
| 3 (Exhaust centre) | VS7-10-FJG-D-□-Q | 4690 | 10 | 45 | 1080 |
| 3 (Pressure centre) | VS7-10-FIG-D-□-Q | 4690 | 10 | 45 | 1080 |

SV

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VQC

SQ

VQ

VQ4

VQ5

VQZ

VQD

VFS

VS



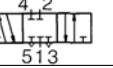
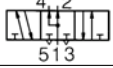
VS7


VQ7

VS7-6•8•10

How to Order Valve

EVS7-**6**-**FG**-**S**-**3**CV-Q

| Size | Configuration | Solenoid | Voltage |
|----------|---|---|-------------------------|
| 6 ISO 1 | FG  | S Single | 5 110V AC, 50/60Hz |
| 8 ISO 2 | FJG  | D Double | 6 220V AC, 50/60Hz |
| 10 ISO 3 | FHG  | FIG  | 3 24V DC |
| | | | 4 12V DC |
| | | | 9 Others (250V or less) |


 Contact SMC for other voltages (9)

How to Order Sub-plate - Size ①

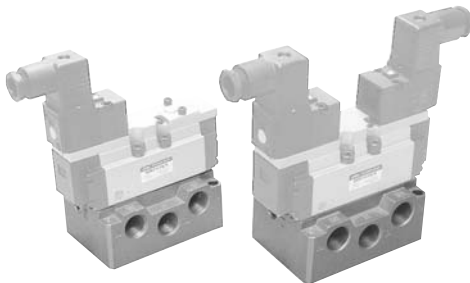



Specifications

| | |
|---------------------------|------------------------|
| Applicable solenoid valve | ISO size 1 |
| Sub-plate size | ISO size 1 |
| Piping* | Side piping, 1/4 3/8 |
| | Bottom piping, 1/4 3/8 |
| Weight | 0.37kg |

 *) All R ports: 3/8

How to Order Sub-plate



E VS7-1-**A02** 

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

Ordering source area code

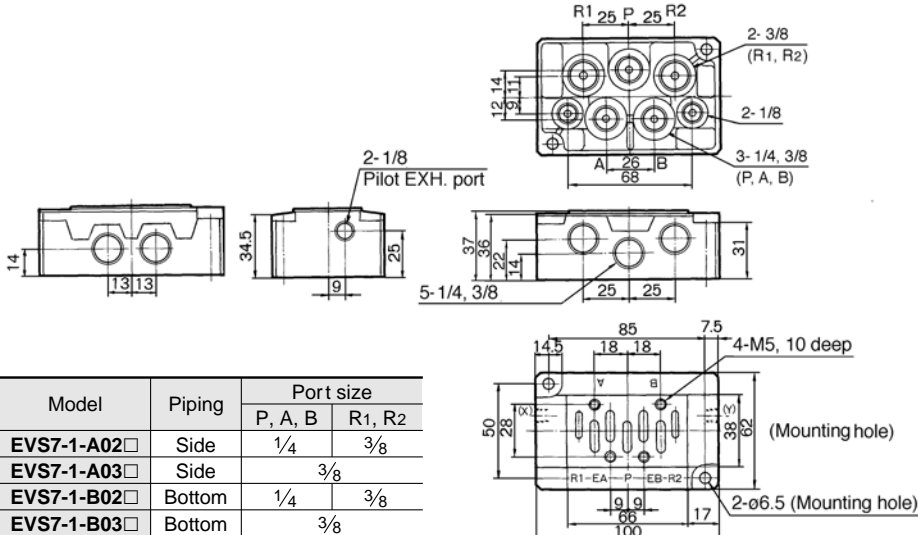
| Code | areas |
|------|--------------------------|
| - | Japan, Asia Australia |
| E | Europe |
| N | North America |

Piping and port size

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

 *R port: 3/8

Dimensions

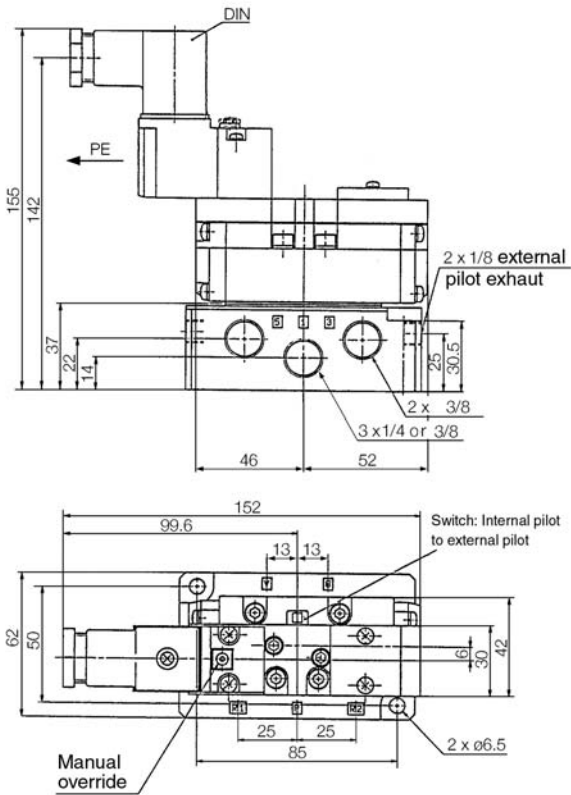


| Model | Piping | Port size | |
|------------|--------|-----------|--------|
| | | P, A, B | R1, R2 |
| EVS7-1-A02 | Side | 1/4 | 3/8 |
| EVS7-1-A03 | Side | 3/8 | |
| EVS7-1-B02 | Bottom | 1/4 | 3/8 |
| EVS7-1-B03 | Bottom | 3/8 | |

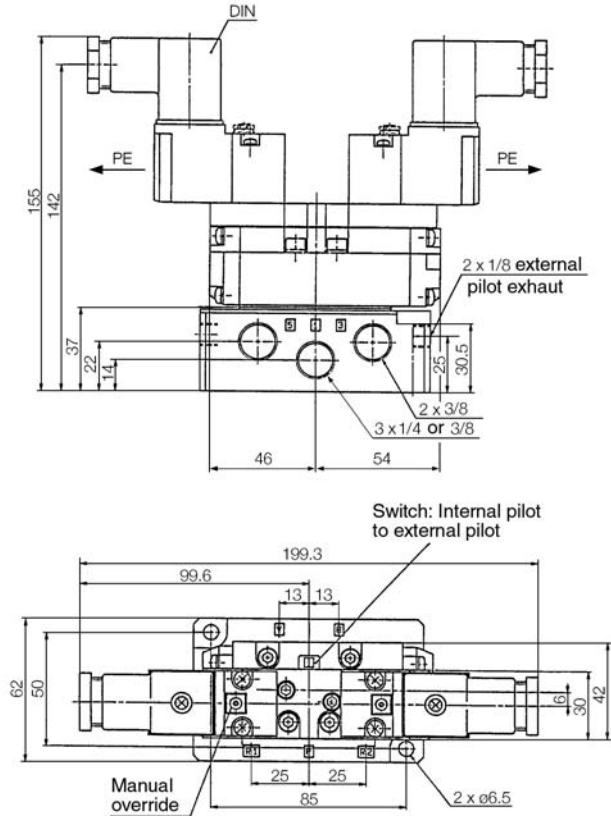
ISO/CNOMO type VS7-6•8•10

Dimensions with Sub-plate - Size ①

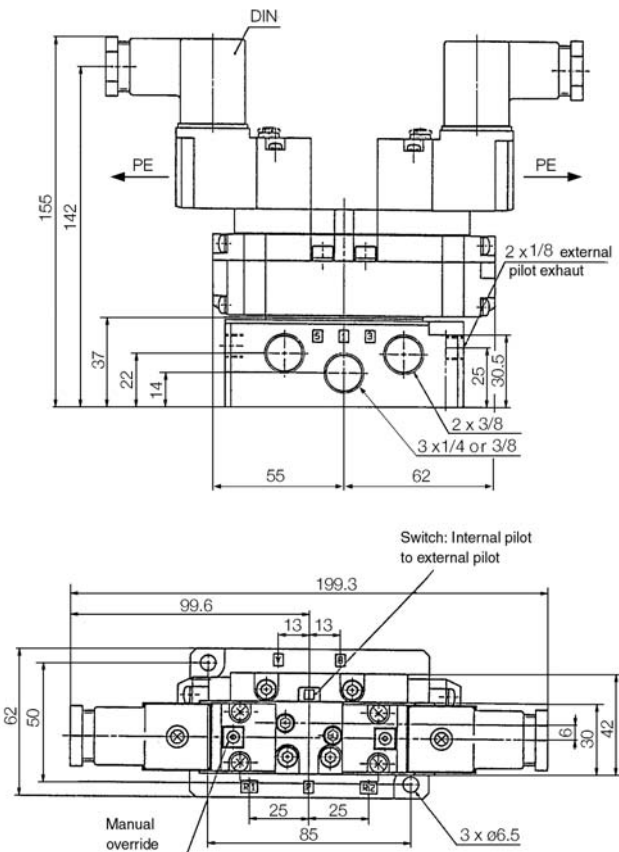
EVS7-6-FG-S-□CV-Q



EVS7-6-FG-D-□CV-Q



EVS7-6-FHG-D-□CV-Q • EVS7-6-FJG-D-□CV-Q • EVS7-6-FIG-D-□CV-Q



SV

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VQC

SQ

VQ

VQ4

VQ5

VQZ

VQD

VFS

VS

VS7

VQ7

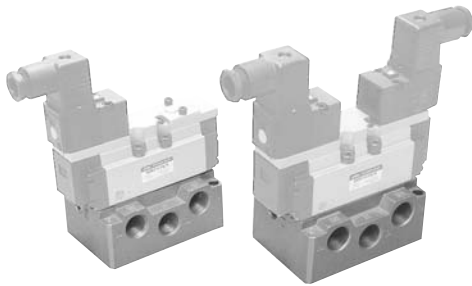
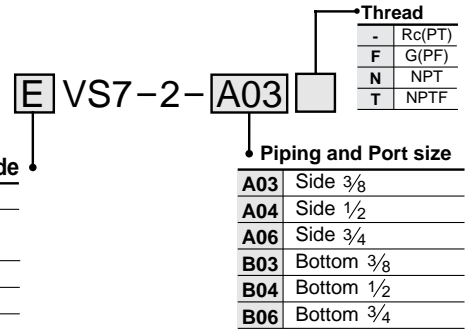
VS7-6•8•10

How to Order Sub-plate - Size ②

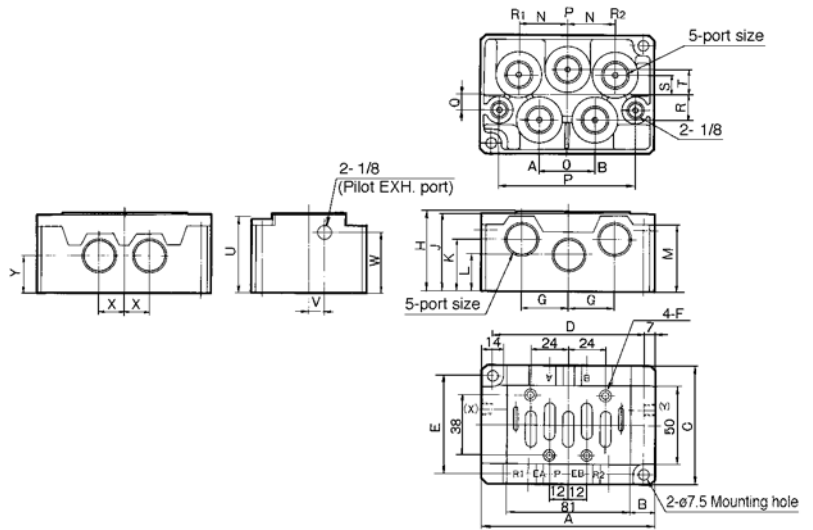


| | |
|---------------------------|------------------------------|
| Applicable solenoid valve | ISO size 2 |
| Sub-plate size | ISO size 2 |
| Piping | Side piping: 3/8, 1/2, 3/4 |
| | Bottom piping: 3/8, 1/2, 3/4 |
| Weight | 0.68 (3/8, 1/2) 1.29 (3/4) |

How to Order Sub-plate



Dimensions

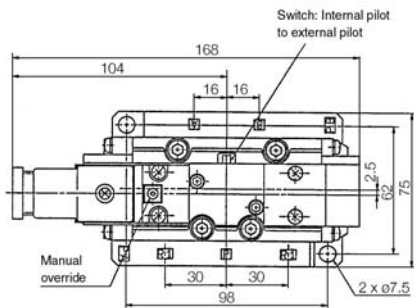
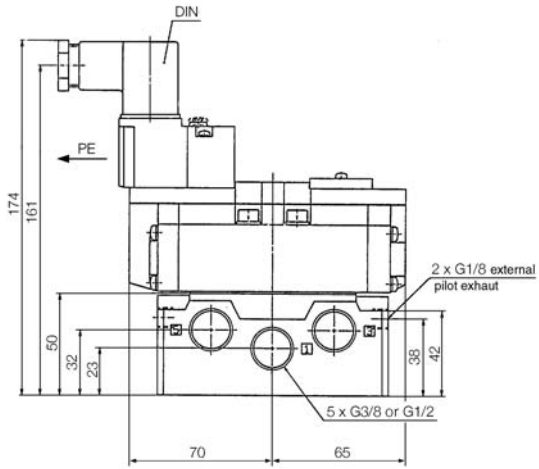


| | Piping | Port size | A | B | C | D | E | F | G | H | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y |
|--------------------------------------|----------------|-----------|-----|------|----|-----|----|------------------|----|----|----|----|----|----|----|----|-----|----|----|----|----|------|----|----|----|----|
| EV7-2-A03 A04 | Side | 3/8, 1/2 | 112 | 15.5 | 75 | 98 | 62 | 4-M6, 12 Deep | 30 | 50 | 49 | 32 | 23 | 42 | 31 | 36 | 88 | 10 | 16 | 12 | 16 | 47.5 | 10 | 38 | 16 | 23 |
| EV7-2-B03 B04 | Bottom | | | | | | | | | | | | | | | | | | | | | | | | | |
| EV7-2-A06 EV7-2-B06 | Side Bottom | 3/4 | 142 | 30.5 | 86 | 128 | 72 | 4-M6, 12 Deep | 42 | 63 | 62 | 42 | 30 | 55 | 42 | 40 | 116 | 11 | 22 | 16 | 23 | 60 | 11 | 53 | 20 | 30 |

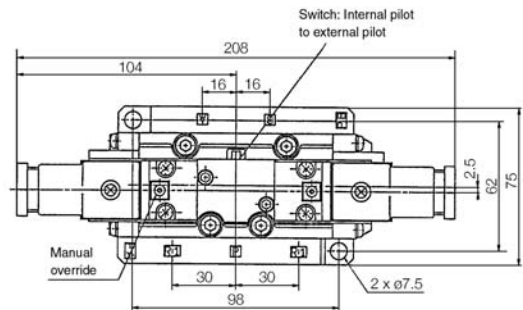
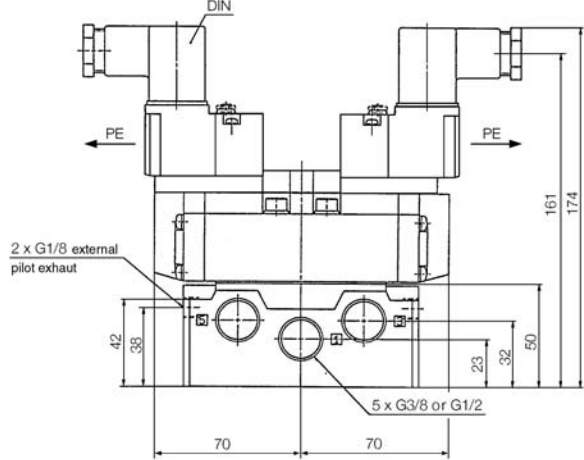
ISO/CNOMO type VS7-6•8•10

Dimensions with Sub-plate - Size ②

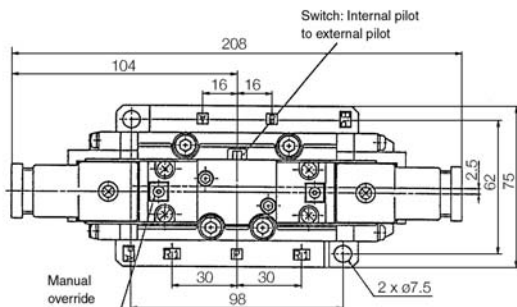
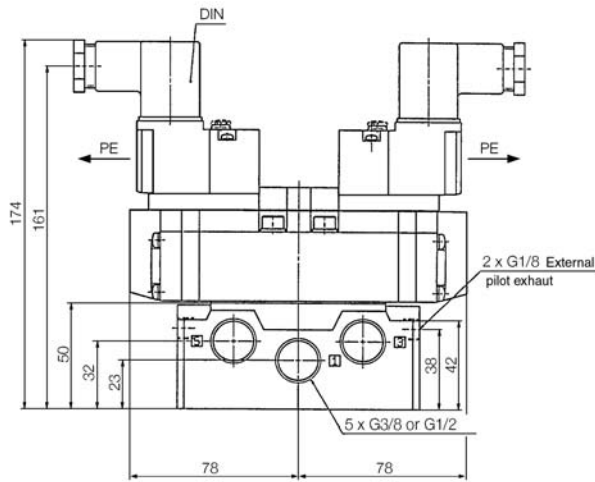
EVS7-8-FG-S-□CV-Q



EVS7-8-FG-D-□CV-Q



EVS7-8-FHG-D-□CV-Q • EVS7-8-FJG-D-□CV-Q • EVS7-8-FIG-D-□CV-Q



SV

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VQC

SQ

VQ

VQ4

VQ5

VQZ

VQD

VFS

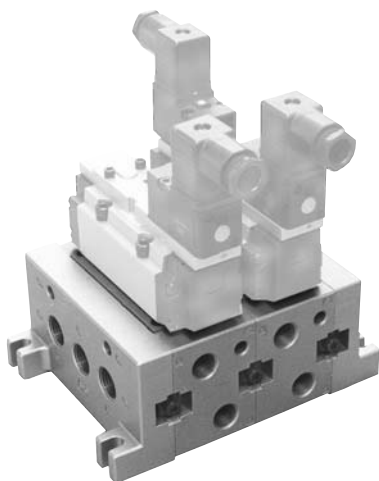
VS

VS7

VQ7

VS7-6•8•10

How to Order Manifold



Specifications



*) These are available for ISO1 and ISO2 size manifolds and are common to those and on the VS7-6/8 and VQ7-6/8 series valves. For more details on Specifications, options, how to order and dimensions please refer to these series.

How to Order Manifold



*) These are available for ISO1 and ISO2 size manifolds and are common to those and on the VS7-6/8 and VQ7-6/8 series valves. For more details on Specifications, options, how to order and dimensions please refer to these series.

Options



*) These are available for ISO1 and ISO2 size manifolds and are common to those and on the VS7-6/8 and VQ7-6/8 series valves. For more details on Specifications, options, how to order and dimensions please refer to these series.

Dimensions



*) These are available for ISO1 and ISO2 size manifolds and are common to those and on the VS7-6/8 and VQ7-6/8 series valves. For more details on Specifications, options, how to order and dimensions please refer to these series.