

5 Port Operated Valve

Series **SYA3000/5000/7000**

Features

- ➔ Modular 5 port air pilot valves.
- ➔ Competitive flow figures.
- ➔ Choice of body ported or base mounted.
- ➔ Can be manifold mounted.
- ➔ May be mixed with solenoid operated versions.
- ➔ Threaded or one-touch fitting cylinder ports.



Body ported

Base mounted

How to Order

| Series | |
|--------|---------|
| 3 | SYA3000 |
| 5 | SYA5000 |
| 7 | SYA7000 |

| Body ported valve | A, B port size Thread piping | | |
|-------------------|---------------------------------|-----------|-------------------|
| | Symbol | Port size | Applicable series |
| | M5 | M5 | SYA3000 |
| | O1 | 1/8 | SYA5000 |
| | O2 | 1/4 | SYA7000 |

| Body ported valve | One-touch fitting (Metric size) | | |
|-------------------|---------------------------------|---------------------------|-------------------|
| | Symbol | Port size | Applicable series |
| | C4 | One-touch fitting for ø4 | SYA3000 |
| | C6 | One-touch fitting for ø6 | SYA3000 |
| | C4 | One-touch fitting for ø4 | SYA5000 |
| | C6 | One-touch fitting for ø6 | SYA5000 |
| | C8 | One-touch fitting for ø8 | SYA5000 |
| | C8 | One-touch fitting for ø8 | SYA7000 |
| | C10 | One-touch fitting for ø10 | SYA7000 |

Body ported

SYA **5** **1** 20—**C6** **F**

Base mounted

SYA **5** **1** 40—**O1F**

| Type of actuation | |
|-------------------|----------------------------|
| 1 | 2 position single |
| 2 | 2 position double |
| 3 | 3 position closed centre |
| 4 | 3 position exhaust centre |
| 5 | 3 position pressure centre |

| Port size | | |
|-----------|-------------------------------------|--------------------|
| — | Without sub-plate | |
| O1F | 1/8 With sub-plate | SYA3000 |
| O2F | 1/4 With sub-plate | SYA5000 SYA7000 |
| O3F | 3/8 With sub-plate | SYA7000 |
| O0F | Without sub-plate G Thread pilot | SYA7000 |

P, R port
thread type
F G
Not SY300.

Symbols

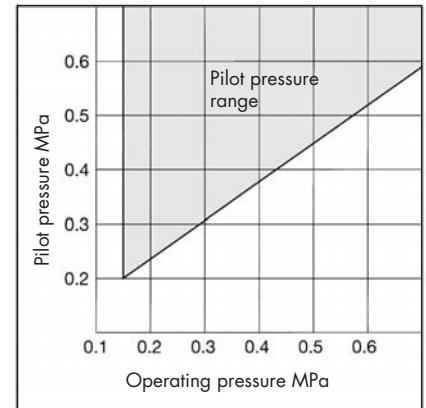
| | |
|---|---|
| 1 | 2 position single (A)(B) 4 2 5 1 3 (EA)(P)(EB) |
| 2 | 2 position double (A)(B) 4 2 5 1 3 (EA)(P)(EB) |
| 3 | 3 position closed centre (A)(B) 4 2 5 1 3 (EA)(P)(EB) |
| 4 | 3 position exhaust centre (A)(B) 4 2 5 1 3 (EA)(P)(EB) |
| 5 | 3 position pressure centre (A)(B) 4 2 5 1 3 (EA)(P)(EB) |

Accessories

Side mounting bracket and foot mounting brackets for body ported types are common to solenoid operated SY valves. See that section for details and part numbers.

Specifications

| Fluid | | Air | |
|------------------------------------|-------------------|-----------------------|--|
| Operating pressure range MPa | 2 position single | 0.15 to 0.7 | |
| | 2 position double | 0.1 to 0.7 | |
| | 3 position | 0.2 to 0.7 | |
| Pilot pressure range MPa | 2 position single | See the next chart | |
| | 2 position double | 0.1 to 0.7 | |
| | 3 position | 0.2 to 0.7 | |
| Ambient and fluid temperature (°C) | | Max. 60 | |
| Manual override (Manual operation) | | Non-locking push type | |
| Lubrication | | Not required | |
| Mounting orientation | | Unrestricted | |

Pilot Pressure Range
(Single pilot)

Flow Characteristics/Weight

Model/Series SYA3000

| Valve model | Type of actuation | | Pilot port size (Nominal size) | Port size | | Flow characteristics | | | | | | Weight (g) |
|--------------------------|-------------------|----------------|--------------------------------|-----------|-------------------------------|------------------------------|------|------|------------------------------|------|------|------------|
| | | | | | | 1 → 4/2 (P → A/B) | | | 4/2 → 5/3 (A/B → EA/EB) | | | |
| | | | | | | C (dm ³ /[s·bar]) | b | Cv | C (dm ³ /[s·bar]) | b | Cv | |
| SYA3□20-C4 (Body Ported) | 2 position | Single | M5 | M5 | C4 (One-touch fitting for ø4) | 0.72 | 0.29 | 0.18 | 0.64 | 0.34 | 0.17 | 44 |
| | | Double | | | | 0.59 | 0.28 | 0.15 | 0.59 | 0.30 | 0.15 | 46 |
| | 3 position | Closed centre | | | | 0.63 | 0.35 | 0.16 | 0.42 | 0.34 | 0.11 | 48 |
| | | Exhaust centre | | | | 0.76 | 0.42 | 0.21 | 0.59 | 0.29 | 0.15 | |

| Valve model | Type of actuation | | Pilot port size (Nominal size) | Port size | | Flow characteristics ^{Note 1)} | | | | | | Weight (g) |
|---------------------------|-------------------|----------------|--------------------------------|-----------|------|---|------|------|------------------------------|------|----|------------|
| | | | | | | 1 → 4/2 (P → A/B) | | | 4/2 → 5/3 (A/B → EA/EB) | | | |
| | | | | | | C (dm ³ /[s·bar]) | b | Cv | C (dm ³ /[s·bar]) | b | Cv | |
| SYA3□40-01 (Base mounted) | 2 position | Single | M5 | 1/8 | 1.0 | 0.30 | 0.24 | 1.1 | 0.30 | 0.26 | 69 | |
| | | Double | | | 0.77 | 0.28 | 0.18 | 0.85 | 0.30 | 0.19 | 71 | |
| | 3 position | Closed centre | | | 0.73 | 0.31 | 0.18 | 1.1 | 0.26 | 0.24 | 73 | |
| | | Exhaust centre | | | 1.2 | 0.24 | 0.29 | 0.89 | 0.47 | 0.24 | | |

Note) []: Flow and mass differ slightly for M5 and C6 ported version.

Model/Series SYA5000

| Valve model | Type of actuation | | Pilot port size (Nominal size) | Port size | | Flow characteristics ^{Note)} | | | | | | Weight (g) |
|--------------------------|-------------------|----------------|--------------------------------|-----------|-------------------------------|---------------------------------------|-------------|-------------|------------------------------|-------------|-------------|------------|
| | | | | | | 1 → 4/2 (P → A/B) | | | 4/2 → 5/3 (A/B → EA/EB) | | | |
| | | | | | | C (dm ³ /[s·bar]) | b | Cv | C (dm ³ /[s·bar]) | b | Cv | |
| SYA5□20-C6 (Body Ported) | 2 position | Single | M5 | 1/8 | C6 (One-touch fitting for ø6) | 1.5 | 0.33 | 0.33 | 2.0 | 0.37 | 0.52 | 76 |
| | | Double | | | | 1.3 | 0.31 | 0.33 | 1.6 | 0.32 | 0.39 | 82 |
| | 3 position | Closed centre | | | | 1.3 | 0.33 | 0.33 | 1.8 [1.4] | 0.35 [0.37] | 0.44 [0.35] | 87 |
| | | Exhaust centre | | | | 1.7 [0.80] | 0.31 [0.47] | 0.42 [0.23] | 1.7 | 0.33 | 0.44 | |

| Valve model | Type of actuation | | Pilot port size (Nominal size) | Port size | | Flow characteristics ^{Note 1)} | | | | | | Weight (g) |
|---------------------------|-------------------|----------------|--------------------------------|-----------|------------|---|-------------|-----------|------------------------------|-------------|-----|------------|
| | | | | | | 1 → 4/2 (P → A/B) | | | 4/2 → 5/3 (A/B → EA/EB) | | | |
| | | | | | | C (dm ³ /[s·bar]) | b | Cv | C (dm ³ /[s·bar]) | b | Cv | |
| SYA5□40-02 (Base mounted) | 2 position | Single | M5 | 1/4 | 2.4 | 0.41 | 0.64 | 2.8 | 0.29 | 0.66 | 105 | |
| | | Double | | | 1.8 | 0.47 | 0.50 | 1.8 | 0.40 | 0.47 | 110 | |
| | 3 position | Closed centre | | | 1.4 | 0.55 | 0.44 | 3.0 [1.2] | 0.33 [0.48] | 0.72 [0.37] | 115 | |
| | | Exhaust centre | | | 3.3 [0.84] | 0.36 [0.60] | 0.85 [0.28] | 1.8 | 0.40 | 0.48 | | |

Note) []: Flow and mass differ slightly for 01, C4 and C8 ported version.

Flow Characteristics/Weight

Model/Series SYA7000

| Valve model | Type of actuation | | Pilot port size (Nominal size) | Port size | | Flow characteristics | | | | | | Weight (g) |
|-------------|-------------------|-----------------------------------|--------------------------------|------------------|----------------------------------|----------------------|------|------------------------------|-------------------------|----------------|------------------------------|------------|
| | | | | | | 1 → 4/2 (P → A/B) | | | 4/2 → 5/3 (A/B → EA/EB) | | | |
| | | | | | | P, EA, EB | A, B | C [dm ³ /(s·bar)] | b | C _v | C [dm ³ /(s·bar)] | |
| SYA7□20-C8 | 2 position | Single | 1/8 | P port: 1/4 | C8 (One-touch fitting for ø8) | 3.2 | 0.26 | 0.77 | 3.2 | 0.37 | 0.82 | 138 |
| | | Double | | | | 2.6 | 0.24 | 0.63 | 2.4 | 0.31 | 0.62 | 183 |
| | 3 position | Closed center | | EA, EB port: 1/8 | | 2.4 | 0.25 | 0.57 | 2.6 | 0.42 | 0.70 | 192 |
| | | Exhaust center Pressure center | | | | 3.3 | 0.28 | 0.78 | 2.2 | 0.34 | 0.60 | |

| Valve model | Type of actuation | | Pilot port size (Nominal size) | Port size | | Flow characteristics ^{Note 1)} | | | | | | Weight ^{Note 2)} (g) |
|-------------|-------------------|-----------------------------------|--------------------------------|-----------|-----|---|------|----------------|------------------------------|------|----------------|-------------------------------|
| | | | | | | 1 → 4/2 (P → A/B) | | | 4/2 → 5/3 (A/B → EA/EB) | | | |
| | | | | | | C [dm ³ /(s·bar)] | b | C _v | C [dm ³ /(s·bar)] | b | C _v | |
| SYA7□40-02 | 2 position | Single | 1/8 | 1/4 | 4.1 | 0.41 | 1.1 | 4.1 | 0.29 | 1.0 | 240 | |
| | | Double | | | 3.0 | 0.43 | 0.80 | 2.6 | 0.41 | 0.72 | 286 | |
| | 3 position | Closed center | | | 2.6 | 0.42 | 0.71 | 4.7 | 0.35 | 1.1 | 294 | |
| | | Exhaust center Pressure center | | | 5.3 | 0.39 | 1.3 | 2.2 | 0.49 | 0.63 | | |

Note) [] : Flow and mass differ slightly for 02,C10 and 03 ported versions.

Note

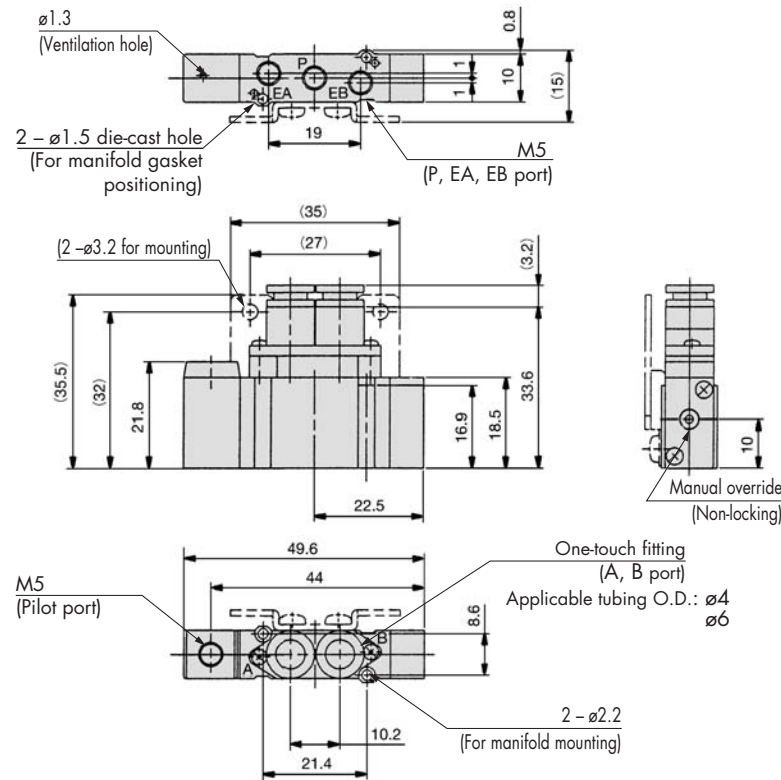
Manifold and single sub-bases:
The SYA valves are the same manifolds and sub-bases as the solenoid operated SY series.
See that series for information and ordering information.

Dimensions

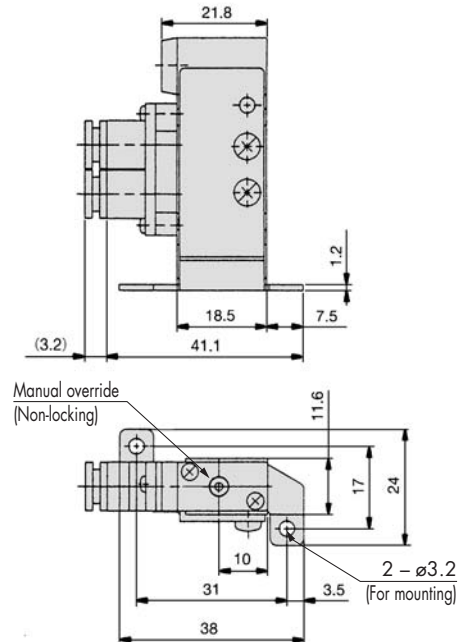
Series SYA3000: Body Ported

2 position single

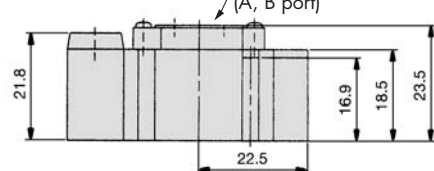
SYA3120-C4
C6



Foot bracket
SYA3120-C4
C6

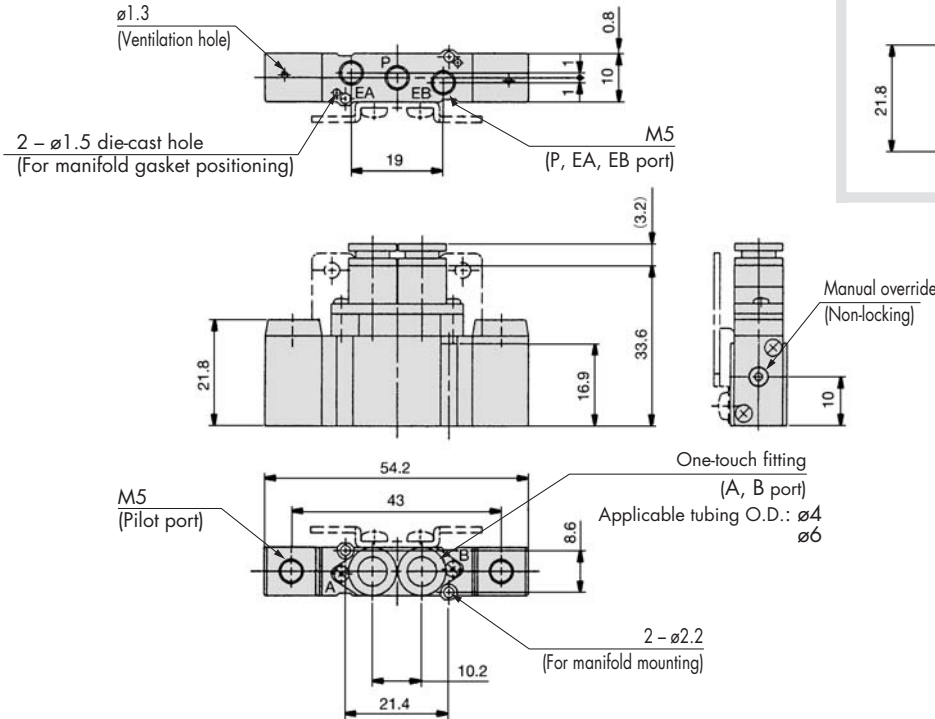


SYA3120-M5

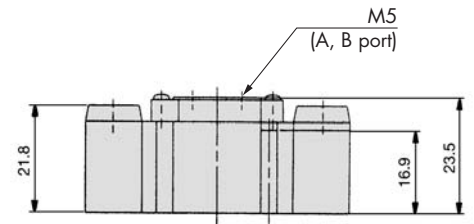


Dimensions:

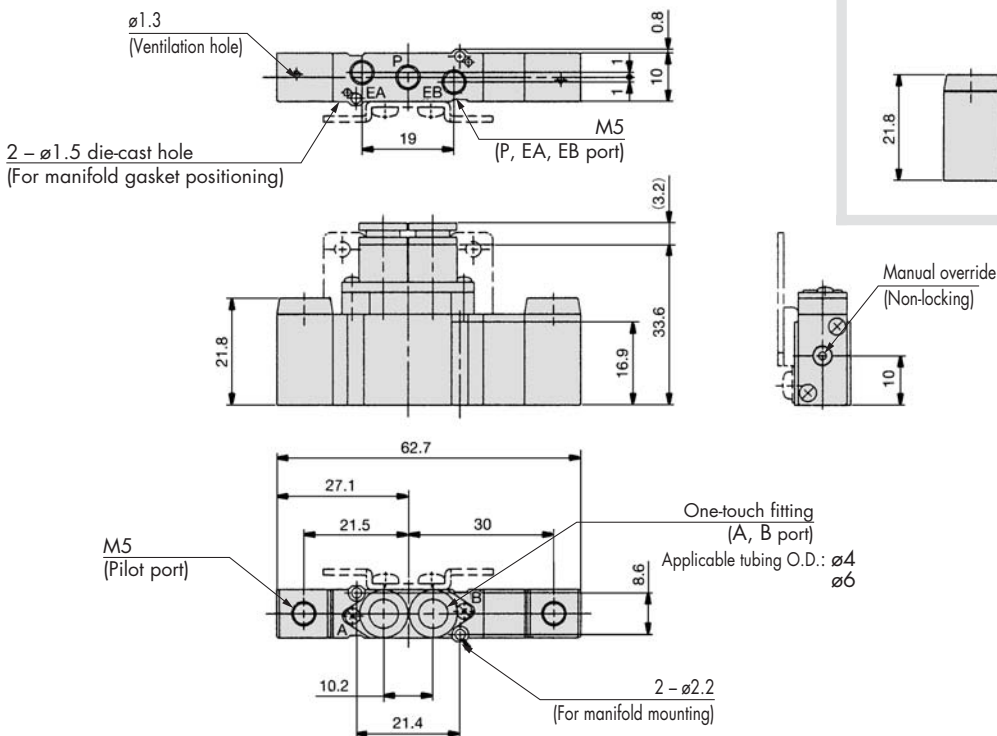
Series SYA3000: Body Ported
2 position double
SYA3220-C₄
C₆



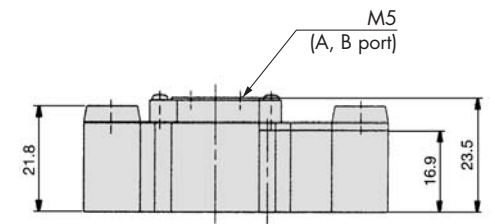
SYA3220-M5



3 position closed centre/exhaust centre/pressure centre
SYA3³/₄20-C₄
C₆



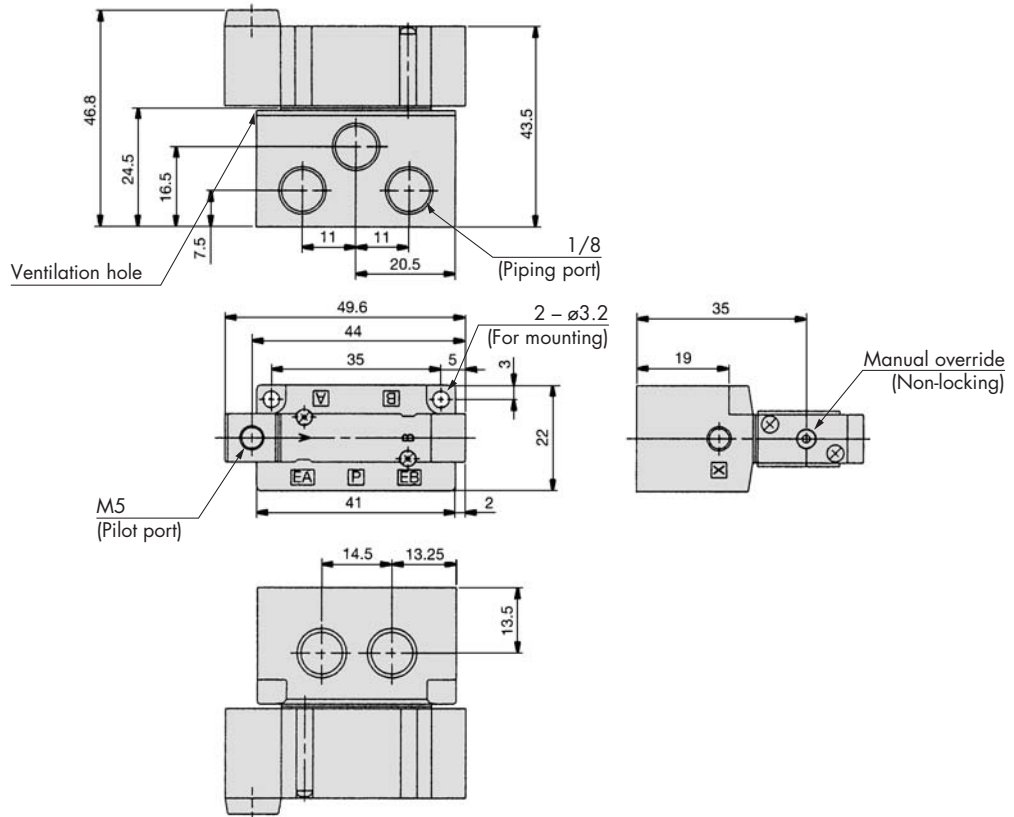
SYA3³/₄20-M5



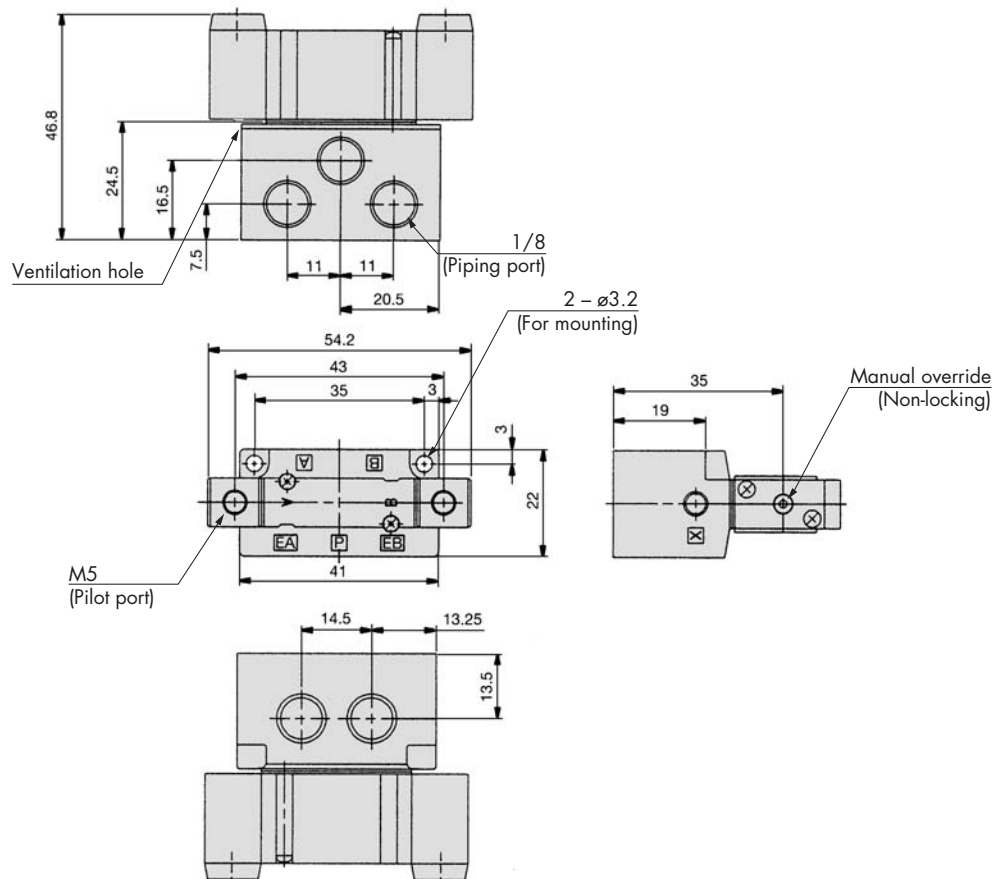
Dimensions:

Series SYA3000: Base Mounted

2 position single
SYA3140-01F



2 position double
SYA3240-01F

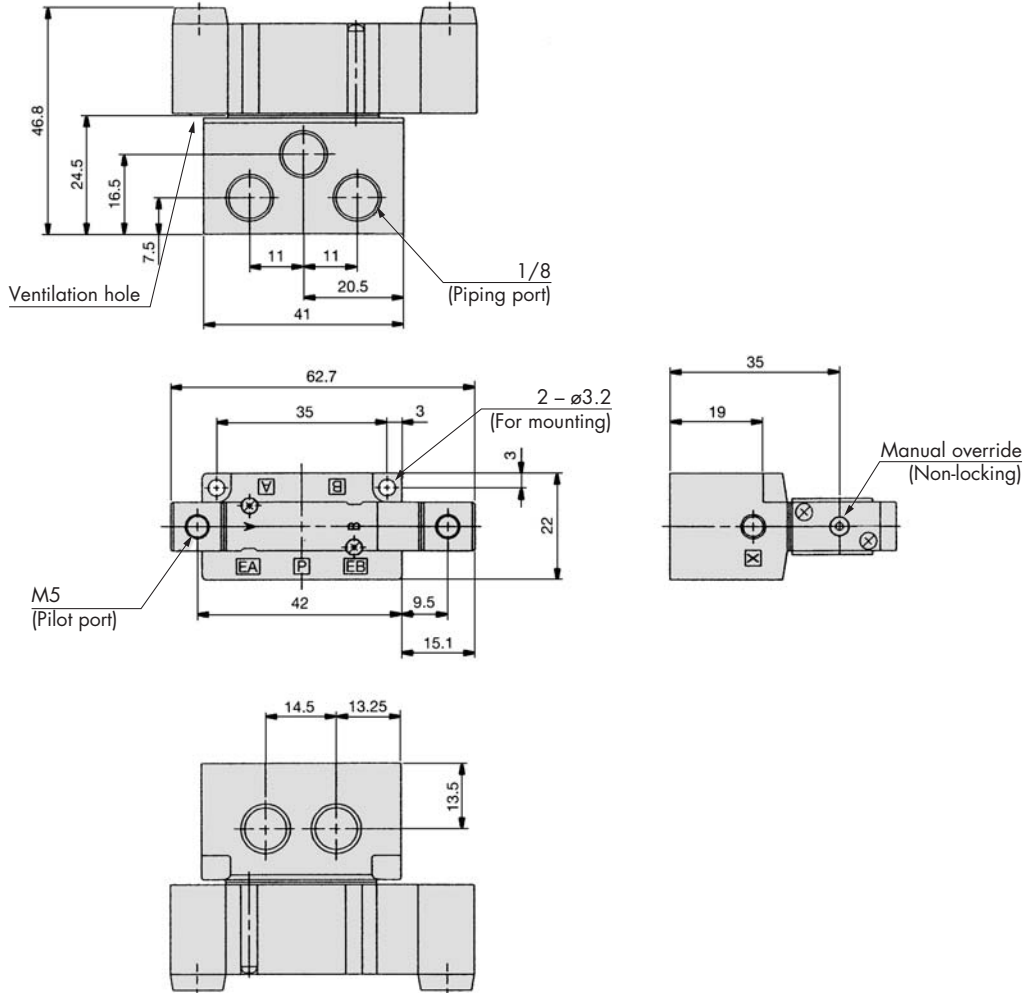


Dimensions:

Series SYA3000: Base Mounted

3 position closed centre/exhaust centre/pressure centre

SYA3³/₅440-01F

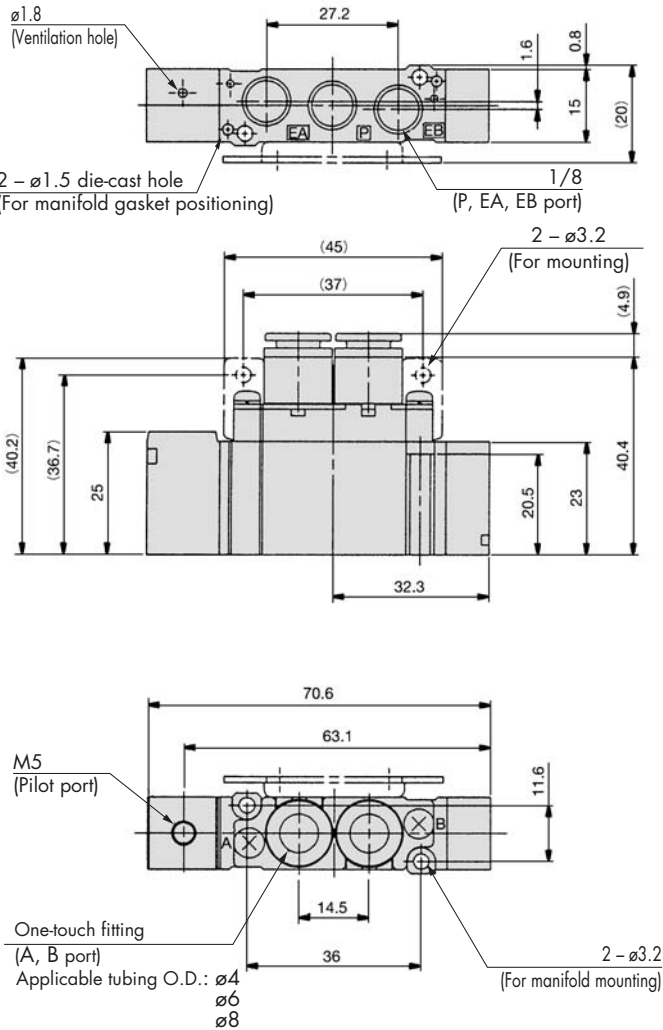


Dimensions:

Series SYA5000: Body Ported

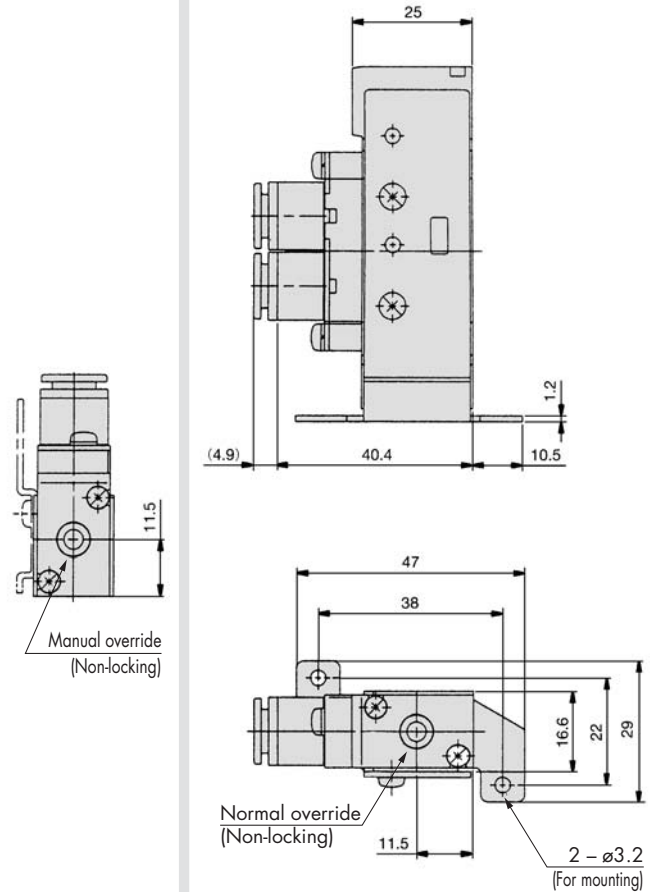
2 position single

SYA5120-^{C4}/_{C6}F
_{C8}

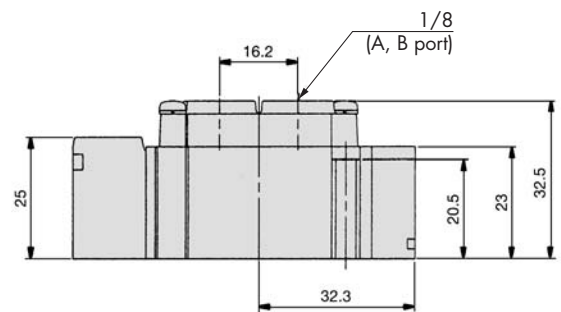


Foot bracket

SYA5120-^{C4}/_{C6}F
_{C8}



SYA5120-01F

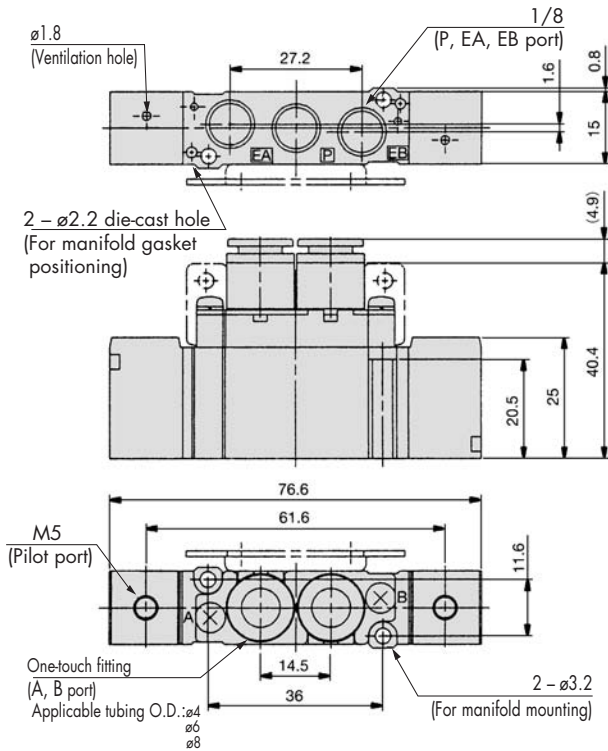


Dimensions:

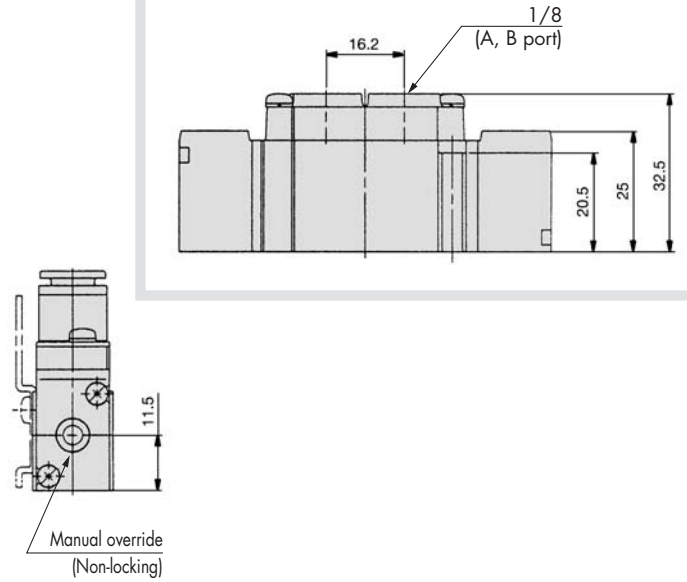
Series SYA5000: Body Ported

2 position double

SYA5220-^{C4}/_{C6}F

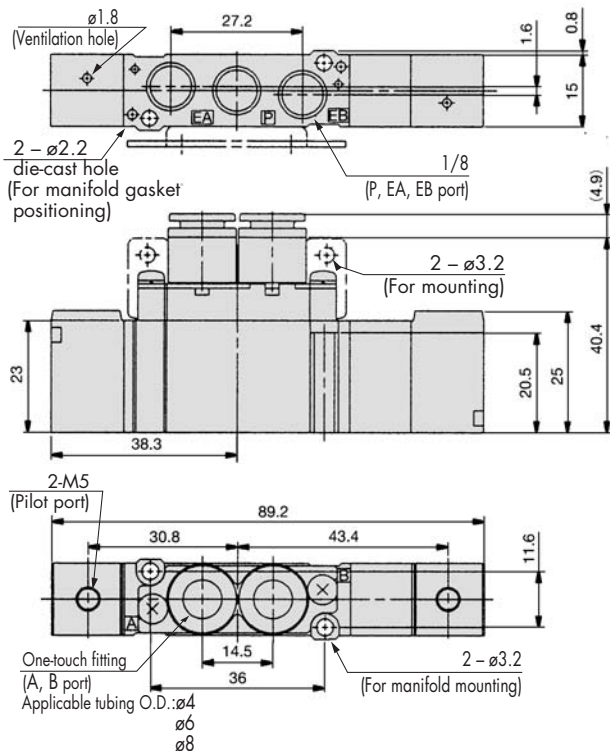


SYA5220-01F

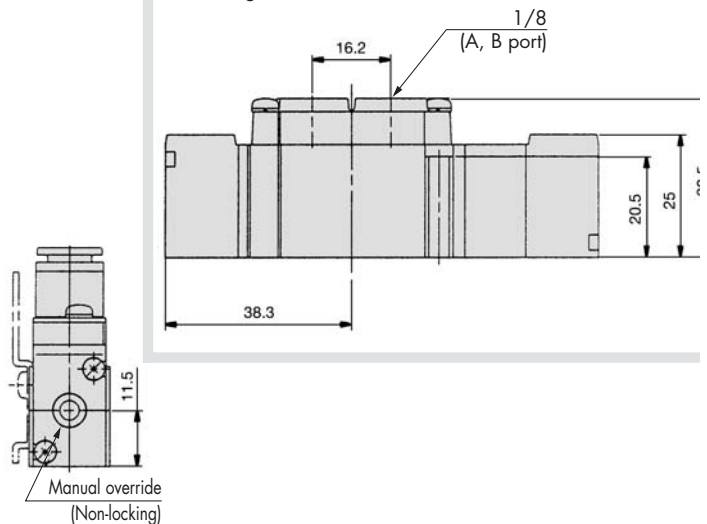


3 position closed centre/exhaust centre/pressure centre

SYA5³/₄20-^{C4}/_{C6}F



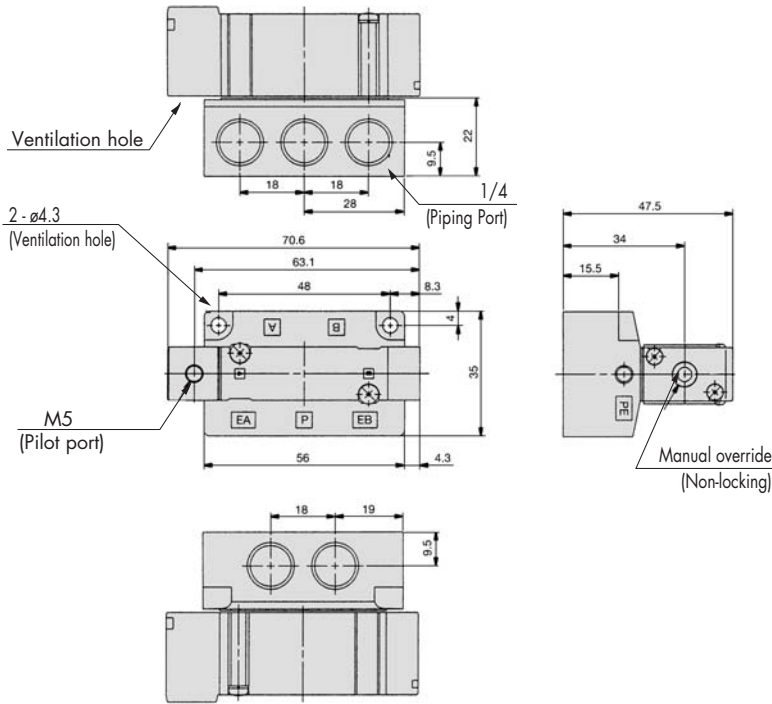
SYA5³/₄20-01F



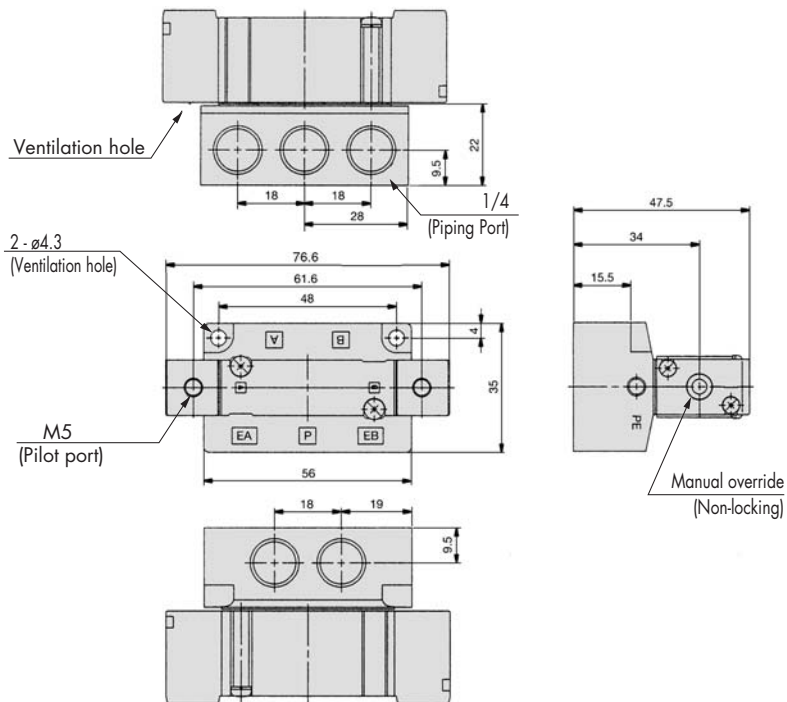
Dimensions:

Series SYA5000: Base Mounted

2 position single
SYA5140-02F



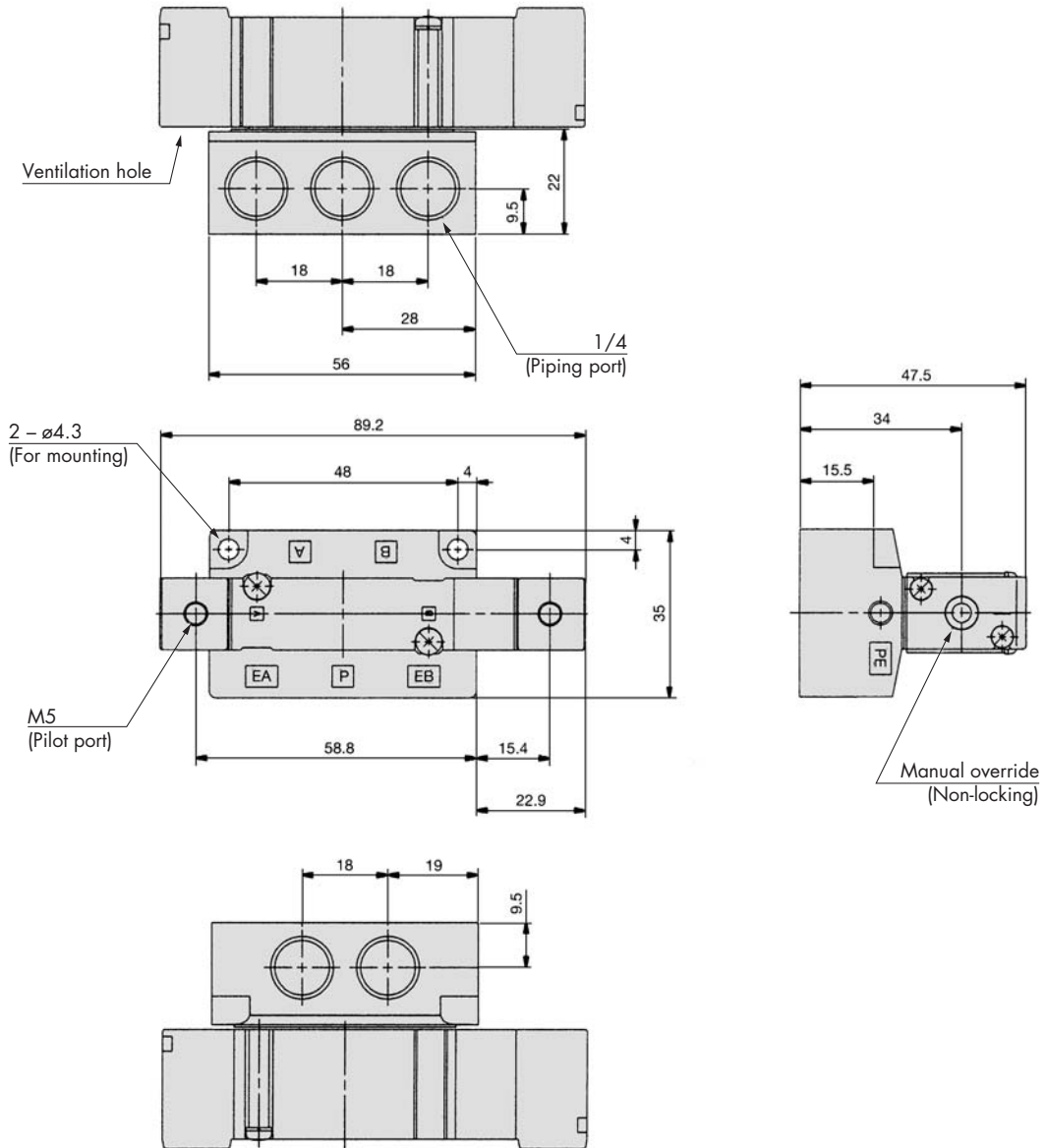
2 position double
SYA5240-02F



Dimensions:

Series SYA5000: Base Mounted

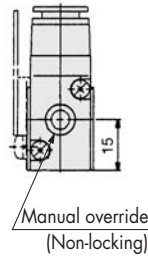
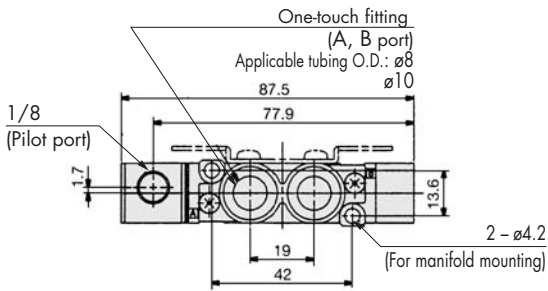
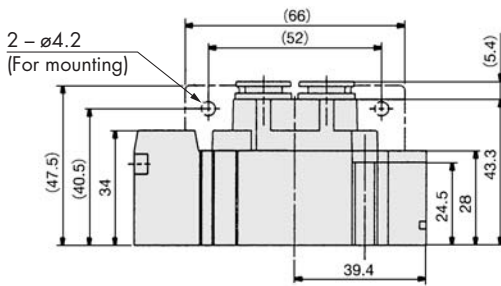
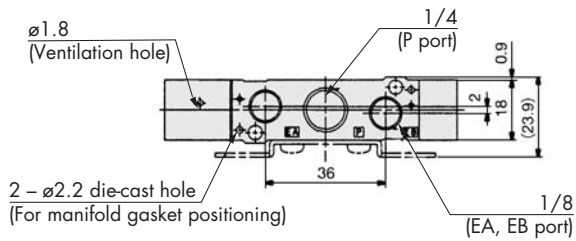
3 position closed centre/exhaust centre/pressure centre
 SYA5³/₄40-02F



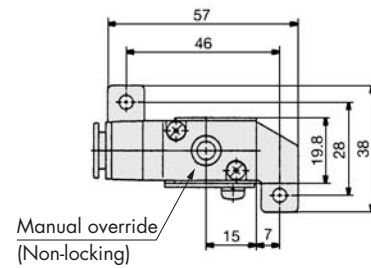
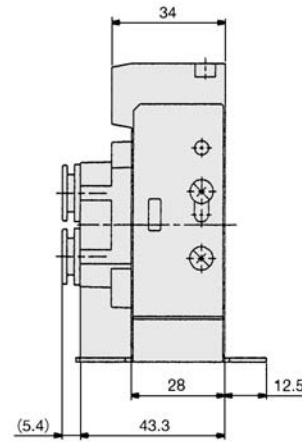
Dimensions:

Series SYA7000: Body Ported

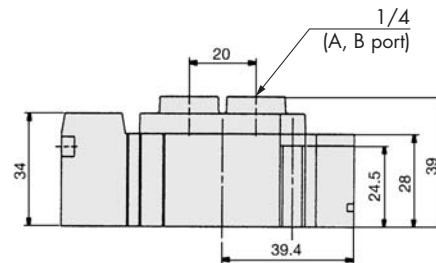
2 position single
SYA7120-C₈^F



Foot bracket
SYA7120-C₈^F



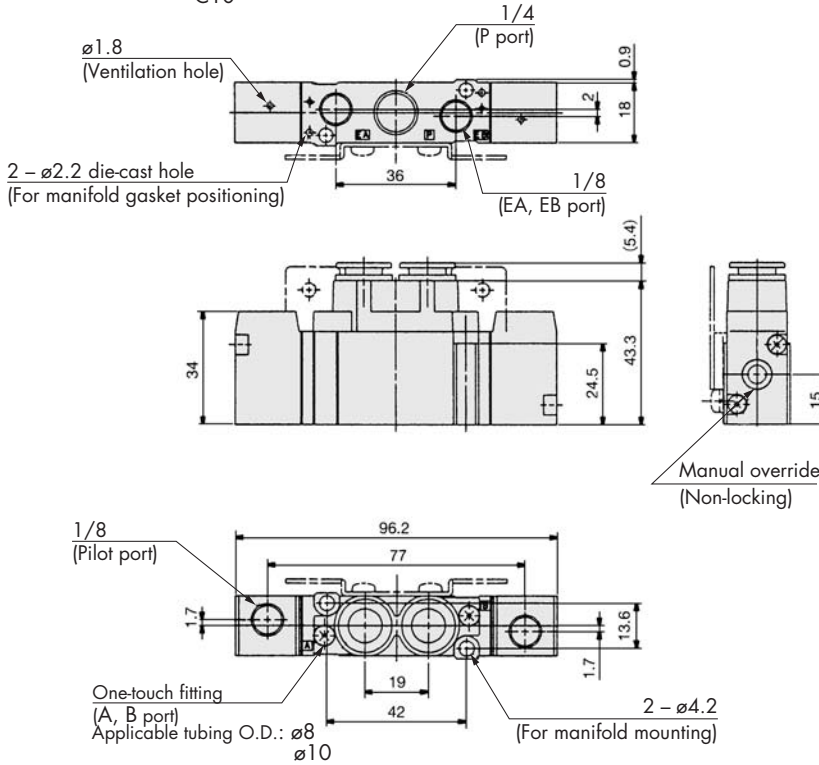
SYA7120-02F



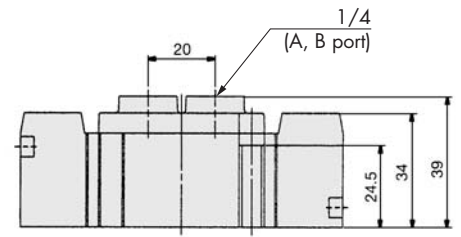
Dimensions:

Series SYA7000: Body Ported

2 position double
SYA7220-^{C8}/_{C10} F

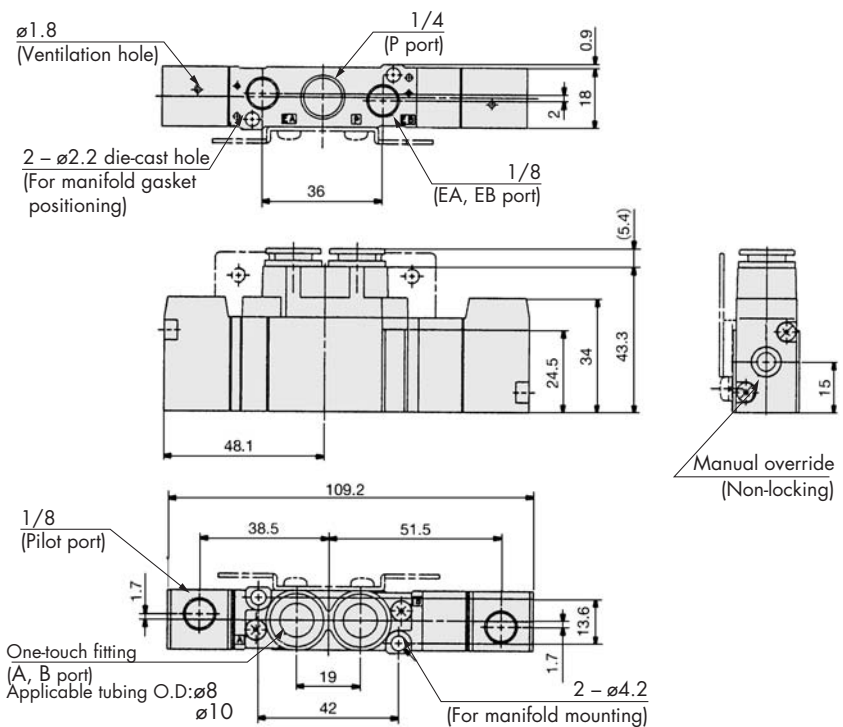


SYA7220-02F

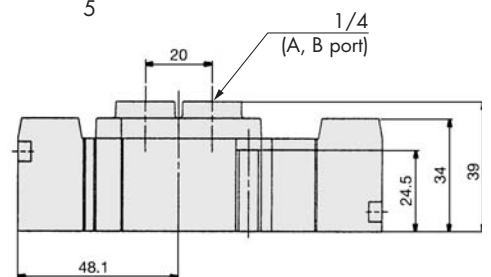


Valves

3 position closed centre/exhaust centre/pressure centre
SYA7³/₄20-^{C8}/_{C10} F



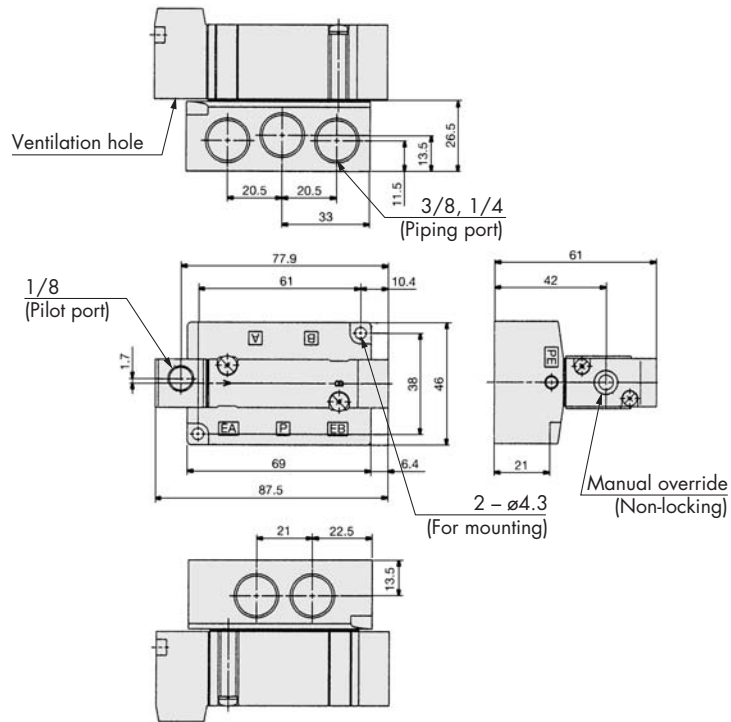
SYA7³/₄20-02F



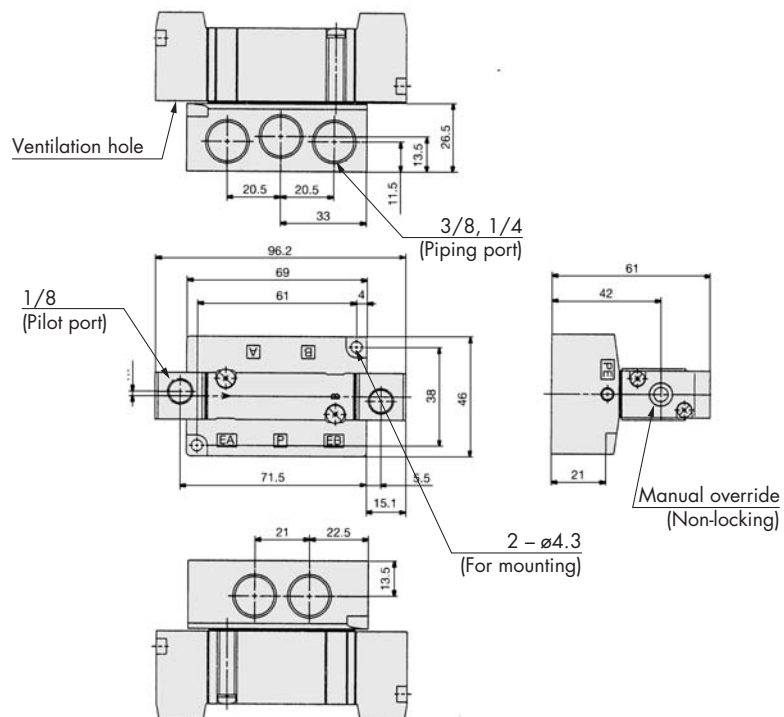
Dimensions:

Series SYA7000: Base Mounted

2 position single
SYA7140- $\frac{02}{03}$ F



2 position double
SYA7240- $\frac{02}{03}$ F



Dimensions:

Series SYA7000: Base Mounted

3 position closed centre/exhaust centre/pressure centre
 SYA7³440-⁰²F
₅

