# **SMC** Information

**SMC Corporation** 

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**09-E548** D-DN

Vinyl Chloride Air Operated Valve

Series LVP

Employs vinyl chloride CPVC for body material

Fluid wetted part materials: Diaphragm: PTFE

**Body: CPVC** 

O-ring can be selected: FKM (Standard)

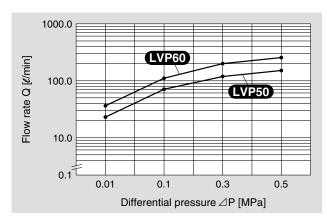
**EPDM** (Option)

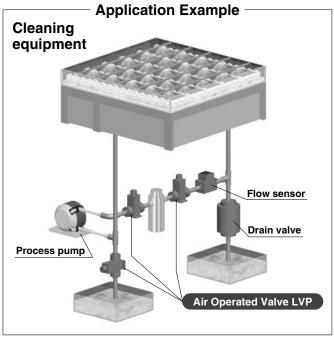
 Applicable fluids: Deionized water, chemicals

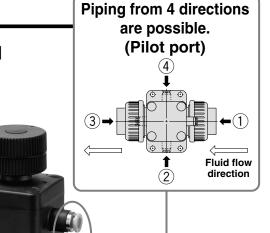
 Low water hammer: 50% down compared with the conventional models

 Export Trade Control Order Not applicable for list control

Flow characteristics (Deionized water)



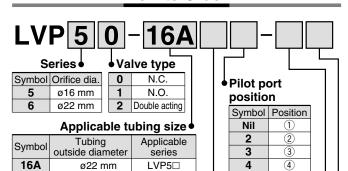




With PVC unfixed union

Applicable to rigid vinyl chloride tube

#### **How to Order**



25A ø32 mm LVP6

Pilot port thread (fitting) type

ø26 mm

acting

| Phot port thread (fitting) type |                         |  |  |  |
|---------------------------------|-------------------------|--|--|--|
| Symbol Thread (fitting) type    |                         |  |  |  |
| Nil                             | ø6 mm one-touch fitting |  |  |  |
| 1                               | Rc1/8                   |  |  |  |
| 2                               | M5 x 0.8                |  |  |  |
| N                               | NPT1/8                  |  |  |  |

| _ | wateriai • |                 |  |  |  |
|---|------------|-----------------|--|--|--|
|   | Symbol     | O-ring material |  |  |  |
|   | Nil        | FKM             |  |  |  |
|   | N          | EPDM            |  |  |  |
|   |            |                 |  |  |  |

\* Refer to the above.

|        |      |                      |        |                           |      |      | Option •      |
|--------|------|----------------------|--------|---------------------------|------|------|---------------|
| Symbol |      | Symbol               | Option | Applicable valve type     |      |      |               |
| PA     | PB   | PA                   | Symbol | Орион                     | N.C. | N.O. | Double acting |
|        |      |                      | Nil    | None                      | 0    | 0    | 0             |
| B⊢⊢A   | В    | . В <mark>⊕</mark> А | 1      | With flow rate adjustment | 0    | _    | _             |
|        | •    | PΒ                   | ,      |                           |      |      |               |
| N.C.   | N.O. | Double               |        |                           |      |      |               |

20A

# Series LVP

# **Specifications**

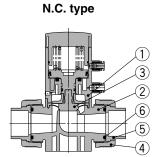
| Model  |                                |                           | LVP5□   | LVP6□   |  |
|--|--------------------------------|---------------------------|---|---|--|
| Fluid pressure   |                                |                           | 0 to 0.3 MPa  | 0 to 0.4 MPa  |  |
| Withstand pressure   |                                |                           | 1 MPa   |   |  |
| Pilot pressure   |                                |                           | 0.3 to 0.5 MPa  |   |  |
| Valve type: N.C. type  |                                | . type                    | 0.2 MPa or less   |   |  |
| Back<br>pressure   | Valve type: N.O                | . type                    | 0.2 MPa or less   |   |  |
| pressure   | Valve type: Double acting type |                           | 0.3 MPa or less   |   |  |
| Valve leakage  |                                |                           | 0 cm <sup>3</sup> /min (with water pressure 0.3 MPa)  | 0 cm <sup>3</sup> /min (with water pressure 0.4 MPa)  |  |
| Fluid  |                                |                           | Deionized water, chemicals (Fluid wetted part materials, fluid that does not corrode rigid vinyl chloride tube) |   |  |
| Orifice diameter   |                                |                           | ø16 mm  | ø22 mm  |  |
| Flow characteristics Av x 10 <sup>-6</sup> m <sup>2</sup> (Cv) |                                | I 0 <sup>-6</sup> m² (Cv) | 120 (5)   | 228 (9.5)   |  |
| Fluid temperature  |                                |                           | 0 to 60°C (No freezing)   |   |  |
| Ambient temperature  |                                |                           | 0 to 60°C   |   |  |
| Fluid wetted part material Diaphragm Body                      |                                | Diaphragm                 | PTFE  |   |  |
|  |                                | Body                      | CPVC  |   |  |
| Port size  |                                |                           | PVC unfixed union<br>(Nominal dia.: 16A)  | PVC unfixed union<br>(Nominal dia.: 20A or 25A)   |  |
| Applicable tube  |                                |                           | Rigid vinyl chloride tube Note 1) O.D. ø22 mm (Nominal dia.: 16A)   | Rigid vinyl chloride tube Note 1) O.D. ø26 mm (Nominal dia.: 20A) O.D. ø32 mm (Nominal dia.: 25A) |  |
| Pilot port size  |                                |                           | ø6 mm One-touch fitting Note 2) Rc1/8, M5 x 0.8, NPT1/8   |   |  |

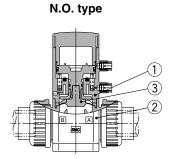
Note 1) Rigid vinyl chloride tube complies with JIS K6742

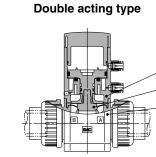
Complement: Polyurethane tubing (Series TU), nylon tubing (Series T), and soft nylon tubing (Series TS) can be used, but the degree of clean performance will be reduced.

# Construction

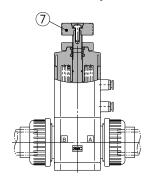
### Standard type







#### With flow rate adjustment

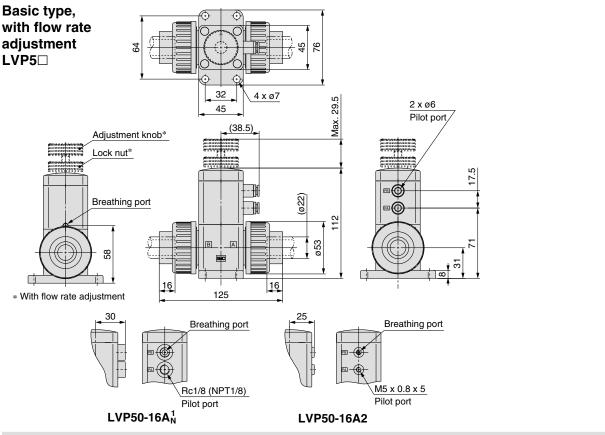


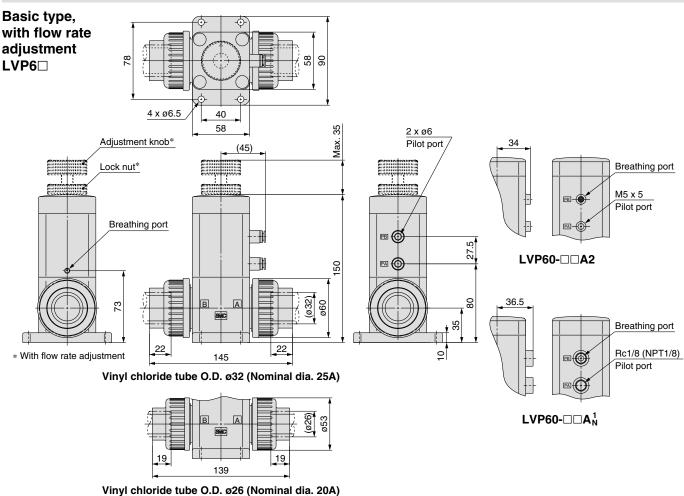
**Component Parts** 

| oomponent rans |                            |          |        |  |  |
|----------------|----------------------------|----------|--------|--|--|
| No.            | Description                | Material | Option |  |  |
| 1              | Actuator section           | PPS      | _      |  |  |
| 2              | Body                       | CPVC     | _      |  |  |
| 3              | Diaphragm                  | PTFE     | _      |  |  |
| 4              | Union nut                  | U-PVC    | _      |  |  |
| 5              | Union end                  | U-PVC    | _      |  |  |
| 6              | O-ring                     | FKM      | EPDM   |  |  |
| 7              | Flow rate adjuster section | PPS      | _      |  |  |

Note 2) SMC polyolefin tubing (Series TRH) and soft polyolefin tubing (Series TPH) are recommended for piping since the same mechanism and construction as SMC Series KP are used for ø6 mm One-touch fittings.

### **Dimensions**







# Material and Fluid Compatibility Check List for Vinyl Chloride **Air Operated Valves**

| Che   | Compatibility                                       |                             |
|---|---|-----------------------------|
| Ammonium hydroxide                          | Temperature 40°C or less                            | Material option "N" Note 2) |
| Isobutyl alcohol                            | Temperature 40°C or less                            | Note 1) Note 2)             |
| Isopropyl alcohol                           | Temperature 40°C or less                            | Note 1) Note 2)             |
| Hydrochloric acid                           | Concentration 30% or less                           | O Note 2)                   |
| Hydrogen peroxide                           | Concentration 5% or less, Temperature 50°C or less  | 0                           |
| Nitric acid (except fuming nitric acid)     | Concentration 10% or less, Temperature 40°C or less | O Note 2)                   |
| Deionized water                             |   | 0                           |
| Sodium hydroxide (Caustic soda)             | Concentration 50% or less                           | 0                           |
| Nitrogen gas                                |   | 0                           |
| Super pure water                            |   | 0                           |
| Sulfuric acid (except fuming sulfuric acid) | Concentration 30% or less                           | O Note 2)                   |
| Phosphoric acid                             | Concentration 50% or less                           | 0                           |



The material and fluid compatibility check list provides reference values as a guide only. Note 1) Since static electricity may be generated, implement suitable countermeasures. Note 2) Use caution as permeation may occur. The permeated fluid may effect the parts

: Can be used : Can be used in certain conditions

- Compatibility is indicated for fluid temperatures of 60°C or less.
- The material and fluid compatibility check list provides reference values as a guide only, therefore we do not guarantee the application to our product.
- The data above is based on the information presented by the material manufacturers.
- SMC is not responsible for its accuracy and any damage happened because of this