

# Finger Valve Series VHK

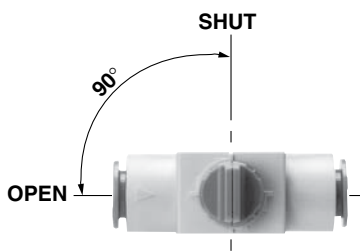
Large effective area: 2.0 to 17.5 mm<sup>2</sup>  
 Small knob operating force: 0.43 to 1.4 kgfcm  
 Poppet valve construction with few seal defects

The series begins with the min. tube O.D. of  $\phi 4$ .  
 Selection from four types in accordance with the piping specifications

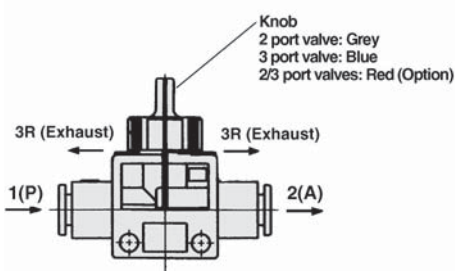
The knob in the SHUT position of 3 port valves discharges residual pressure from side A.  
 (There is no exhaust port.)



The valve direction clearly indicates whether the valve is open or closed.  
 (SHUT-OPEN: Counterclockwise)



Classification of knob by colour difference facilitates distinction between 2 port valves and 3 port valves

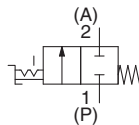


## Specifications

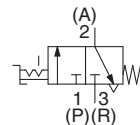
| Valve                         | 2/3 port valves                 |
|-------------------------------|---------------------------------|
| Fluid                         | Air                             |
| Proof pressure                | 1.5MPa                          |
| Max. operating pressure       | 1.0MPa                          |
| Operating vacume pressure*    | -100kPa                         |
| Ambient and fluid temperature | 0 to 60°C                       |
| Applicable tube material (1)  | Nylon, Soft nylon, Polyurethane |
| Accessory (Option)            | Bracket                         |

Note 1) Be careful of maximum operating pressure when soft nylon or polyurethane tube is used.  
 \* Use VHK2 (2 port valve) for vacuum application. VHK3 is not suitable for vacuum.

## JIS Symbol 2 port valve



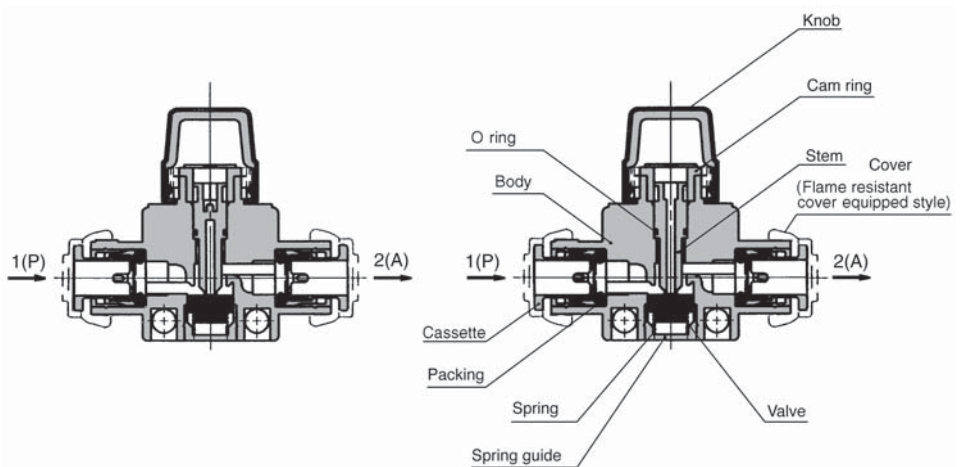
## JIS Symbol 3 port valve



## Construction

### 2 port valve/Series VHK2

### 3 port valve/Series VHK3



## Component Parts

|                        |  |                                       |
|------------------------|--|---------------------------------------|
| Body                   | Standard style   | PBT                                   |
|                        | Flame resistant style  | Flame resistant PBT (UL Standard V-0) |
| Knob                   | Standard style   | PBT                                   |
|                        | Flame resistant style  | Flame resistant PBT (UL Standard V-0) |
| Cover                  | Flame resistant (UL Standard V-0)CR<br>For flame resistant cover equipped style only |                                       |
| Cam ring               | POM  |                                       |
| Stem                   | POM  |                                       |
| Spring guide           | C3604B<br>Electroless nickel plated  |                                       |
| Spring                 | SUS304   |                                       |
| Packing, O ring, Valve | NBR  |                                       |

## How to Order

**Standard** VHK 2 — 02S — 02S R L

**Flame resistant** VHK 2 R — 04F — 04F R L C

**Valve model**

|   |              |
|---|--------------|
| 2 | 2 port valve |
| 3 | 3 port valve |

**Flame resistant**

**P port size**

|     |          |
|-----|----------|
| 04F | ø4       |
| 06F | ø6       |
| 08F | ø8       |
| 10F | ø10      |
| 12F | ø12      |
| M5  | M5       |
| 01S | R(PT)1/8 |
| 02S | R(PT)1/4 |
| 03S | R(PT)3/8 |
| 04S | R(PT)1/2 |

**Bracket**

|   |                |
|---|----------------|
| — | None           |
| L | With L bracket |

\*Bracket and screws are attached.

**Flame resistant cover**

|   |   |
|---|---|
| — | Without cover                                 |
| C | With cover (For One-touch fitting style only) |

**Knob colour**

|            |              |      |
|------------|--------------|------|
| —          | 2 port valve | Grey |
| (Standard) | 3 port valve | Blue |
| R (Option) | 2 port valve | Red  |
|            | 3 port valve |      |

**A port size**

|     |          |
|-----|----------|
| 04F | ø4       |
| 06F | ø6       |
| 08F | ø8       |
| 10F | ø10      |
| 12F | ø12      |
| M5  | M5       |
| 01S | R(PT)1/8 |
| 02S | R(PT)1/4 |
| 03S | R(PT)3/8 |
| 04S | R(PT)1/2 |

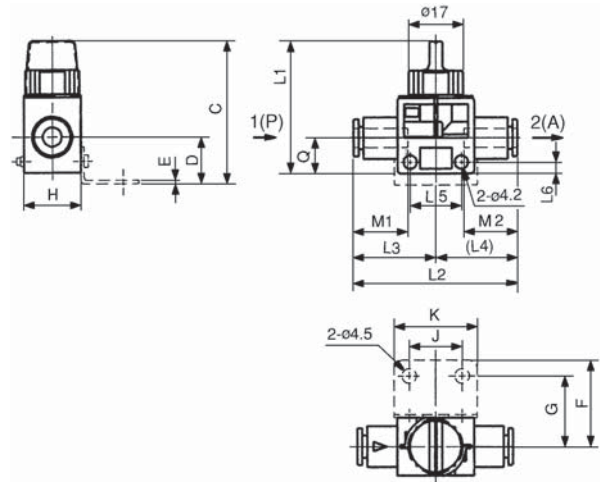
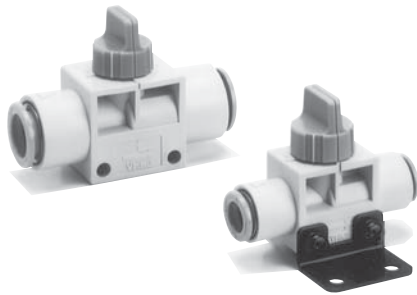
### Standard

| <b>1(P): One-touch/2(A): One-touch</b>  | <b>1(P): Male thread/2(A): One-touch</b> | <b>1(P): One-touch/2(A): Male thread</b> | <b>1(P): Male thread/2(A): Male thread</b> |     |     |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |
|---|--|--|--|-----|-----|-----|--|----|----|----|-----|-----|----------------|----|---|--|--|--|--|----|---|---|--|--|--|----|--|---|---|--|--|-----|--|--|---|---|--|-----|--|--|--|---|---|---|------|--|--------------------------------|--|--|--|--|----|----|----|-----|-----|-----------------|----|---|---|--|--|--|-----|---|---|---|--|--|-----|--|---|---|---|---|-----|--|---|---|---|---|-----|--|--|---|---|---|--|------|--|----------------------|--|--|--|--|----|-----|-----|-----|-----|----------------|----|---|---|--|--|--|----|---|---|---|---|--|----|--|---|---|---|---|-----|--|--|---|---|---|-----|--|--|---|---|---|--|------|--|----------------------|--|--|--|--|----|-----|-----|-----|-----|-----------------|----|---|--|--|--|--|-----|---|---|--|--|--|-----|--|---|---|--|--|-----|--|--|---|---|--|-----|--|--|--|---|---|
| <table border="1"> <tr> <th colspan="2" rowspan="2">1(P)</th> <th colspan="5">2(A) Applicable tube O.D. (mm)</th> </tr> <tr> <th>ø4</th> <th>ø6</th> <th>ø8</th> <th>ø10</th> <th>ø12</th> </tr> <tr> <th rowspan="5">Tube O.D. (mm)</th> <th>ø4</th> <td>●</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <th>ø6</th> <td>●</td> <td>●</td> <td></td> <td></td> <td></td> </tr> <tr> <th>ø8</th> <td></td> <td>●</td> <td>●</td> <td></td> <td></td> </tr> <tr> <th>ø10</th> <td></td> <td></td> <td>●</td> <td>●</td> <td></td> </tr> <tr> <th>ø12</th> <td></td> <td></td> <td></td> <td>●</td> <td>●</td> </tr> </table> | 1(P)                                     |  | 2(A) Applicable tube O.D. (mm)             |     |     |     |  | ø4 | ø6 | ø8 | ø10 | ø12 | Tube O.D. (mm) | ø4 | ● |  |  |  |  | ø6 | ● | ● |  |  |  | ø8 |  | ● | ● |  |  | ø10 |  |  | ● | ● |  | ø12 |  |  |  | ● | ● | <table border="1"> <tr> <th colspan="2" rowspan="2">1(P)</th> <th colspan="5">2(A) Applicable tube O.D. (mm)</th> </tr> <tr> <th>ø4</th> <th>ø6</th> <th>ø8</th> <th>ø10</th> <th>ø12</th> </tr> <tr> <th rowspan="5">Port size R(PT)</th> <th>M5</th> <td>●</td> <td>●</td> <td></td> <td></td> <td></td> </tr> <tr> <th>1/8</th> <td>●</td> <td>●</td> <td>●</td> <td></td> <td></td> </tr> <tr> <th>1/4</th> <td></td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> </tr> <tr> <th>3/8</th> <td></td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> </tr> <tr> <th>1/2</th> <td></td> <td></td> <td>●</td> <td>●</td> <td>●</td> </tr> </table> | 1(P) |  | 2(A) Applicable tube O.D. (mm) |  |  |  |  | ø4 | ø6 | ø8 | ø10 | ø12 | Port size R(PT) | M5 | ● | ● |  |  |  | 1/8 | ● | ● | ● |  |  | 1/4 |  | ● | ● | ● | ● | 3/8 |  | ● | ● | ● | ● | 1/2 |  |  | ● | ● | ● | <table border="1"> <tr> <th colspan="2" rowspan="2">1(P)</th> <th colspan="5">2(A) Port size R(PT)</th> </tr> <tr> <th>M5</th> <th>1/8</th> <th>1/4</th> <th>3/8</th> <th>1/2</th> </tr> <tr> <th rowspan="5">Tube O.D. (mm)</th> <th>ø4</th> <td>●</td> <td>●</td> <td></td> <td></td> <td></td> </tr> <tr> <th>ø6</th> <td>●</td> <td>●</td> <td>●</td> <td>●</td> <td></td> </tr> <tr> <th>ø8</th> <td></td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> </tr> <tr> <th>ø10</th> <td></td> <td></td> <td>●</td> <td>●</td> <td>●</td> </tr> <tr> <th>ø12</th> <td></td> <td></td> <td>●</td> <td>●</td> <td>●</td> </tr> </table> | 1(P) |  | 2(A) Port size R(PT) |  |  |  |  | M5 | 1/8 | 1/4 | 3/8 | 1/2 | Tube O.D. (mm) | ø4 | ● | ● |  |  |  | ø6 | ● | ● | ● | ● |  | ø8 |  | ● | ● | ● | ● | ø10 |  |  | ● | ● | ● | ø12 |  |  | ● | ● | ● | <table border="1"> <tr> <th colspan="2" rowspan="2">1(P)</th> <th colspan="5">2(A) Port size R(PT)</th> </tr> <tr> <th>M5</th> <th>1/8</th> <th>1/4</th> <th>3/8</th> <th>1/2</th> </tr> <tr> <th rowspan="5">Port size R(PT)</th> <th>M5</th> <td>●</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <th>1/8</th> <td>●</td> <td>●</td> <td></td> <td></td> <td></td> </tr> <tr> <th>1/4</th> <td></td> <td>●</td> <td>●</td> <td></td> <td></td> </tr> <tr> <th>3/8</th> <td></td> <td></td> <td>●</td> <td>●</td> <td></td> </tr> <tr> <th>1/2</th> <td></td> <td></td> <td></td> <td>●</td> <td>●</td> </tr> </table> | 1(P) |  | 2(A) Port size R(PT) |  |  |  |  | M5 | 1/8 | 1/4 | 3/8 | 1/2 | Port size R(PT) | M5 | ● |  |  |  |  | 1/8 | ● | ● |  |  |  | 1/4 |  | ● | ● |  |  | 3/8 |  |  | ● | ● |  | 1/2 |  |  |  | ● | ● |
| 1(P)  |  |  | 2(A) Applicable tube O.D. (mm)             |     |     |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |
|   |  | ø4                                       | ø6   | ø8  | ø10 | ø12 |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |
| Tube O.D. (mm)  | ø4                                       | ●  |  |     |     |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |
|   | ø6                                       | ●  | ●  |     |     |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |
|   | ø8                                       |  | ●  | ●   |     |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |
|   | ø10                                      |  |  | ●   | ●   |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |
|   | ø12                                      |  |  |     | ●   | ●   |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |
| 1(P)  |  | 2(A) Applicable tube O.D. (mm)           |  |     |     |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |
|   |  | ø4                                       | ø6   | ø8  | ø10 | ø12 |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |
| Port size R(PT)   | M5                                       | ●  | ●  |     |     |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |
|   | 1/8                                      | ●  | ●  | ●   |     |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |
|   | 1/4                                      |  | ●  | ●   | ●   | ●   |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |
|   | 3/8                                      |  | ●  | ●   | ●   | ●   |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |
|   | 1/2                                      |  |  | ●   | ●   | ●   |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |
| 1(P)  |  | 2(A) Port size R(PT)                     |  |     |     |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |
|   |  | M5                                       | 1/8  | 1/4 | 3/8 | 1/2 |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |
| Tube O.D. (mm)  | ø4                                       | ●  | ●  |     |     |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |
|   | ø6                                       | ●  | ●  | ●   | ●   |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |
|   | ø8                                       |  | ●  | ●   | ●   | ●   |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |
|   | ø10                                      |  |  | ●   | ●   | ●   |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |
|   | ø12                                      |  |  | ●   | ●   | ●   |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |
| 1(P)  |  | 2(A) Port size R(PT)                     |  |     |     |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |
|   |  | M5                                       | 1/8  | 1/4 | 3/8 | 1/2 |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |
| Port size R(PT)   | M5                                       | ●  |  |     |     |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |
|   | 1/8                                      | ●  | ●  |     |     |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |
|   | 1/4                                      |  | ●  | ●   |     |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |
|   | 3/8                                      |  |  | ●   | ●   |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |
|   | 1/2                                      |  |  |     | ●   | ●   |  |    |    |    |     |     |                |    |   |  |  |  |  |    |   |   |  |  |  |    |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |   |      |  |                                |  |  |  |  |    |    |    |     |     |                 |    |   |   |  |  |  |     |   |   |   |  |  |     |  |   |   |   |   |     |  |   |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                |    |   |   |  |  |  |    |   |   |   |   |  |    |  |   |   |   |   |     |  |  |   |   |   |     |  |  |   |   |   |  |      |  |                      |  |  |  |  |    |     |     |     |     |                 |    |   |  |  |  |  |     |   |   |  |  |  |     |  |   |   |  |  |     |  |  |   |   |  |     |  |  |  |   |   |

### Flame resistant style (UL-94 Standard V-0 equivalent)

| <b>1(P): One-touch/2(A): One-touch</b>  | <b>1(P): Male thread/2(A): Male thread</b> |                      |                                |     |     |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |  |   |  |  |  |    |  |  |   |  |  |     |  |  |  |   |  |     |  |  |  |  |   |  |      |  |                      |  |  |  |     |     |     |     |                 |     |   |  |  |  |     |  |   |  |  |     |  |  |   |  |     |  |  |  |   |
|---|--|----------------------|--------------------------------|-----|-----|-----|--|----|----|----|-----|-----|----------------|----|---|--|--|--|--|----|--|---|--|--|--|----|--|--|---|--|--|-----|--|--|--|---|--|-----|--|--|--|--|---|--|------|--|----------------------|--|--|--|-----|-----|-----|-----|-----------------|-----|---|--|--|--|-----|--|---|--|--|-----|--|--|---|--|-----|--|--|--|---|
| <table border="1"> <tr> <th colspan="2" rowspan="2">1(P)</th> <th colspan="5">2(A) Applicable tube O.D. (mm)</th> </tr> <tr> <th>ø4</th> <th>ø6</th> <th>ø8</th> <th>ø10</th> <th>ø12</th> </tr> <tr> <th rowspan="5">Tube O.D. (mm)</th> <th>ø4</th> <td>●</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <th>ø6</th> <td></td> <td>●</td> <td></td> <td></td> <td></td> </tr> <tr> <th>ø8</th> <td></td> <td></td> <td>●</td> <td></td> <td></td> </tr> <tr> <th>ø10</th> <td></td> <td></td> <td></td> <td>●</td> <td></td> </tr> <tr> <th>ø12</th> <td></td> <td></td> <td></td> <td></td> <td>●</td> </tr> </table> | 1(P)                                       |                      | 2(A) Applicable tube O.D. (mm) |     |     |     |  | ø4 | ø6 | ø8 | ø10 | ø12 | Tube O.D. (mm) | ø4 | ● |  |  |  |  | ø6 |  | ● |  |  |  | ø8 |  |  | ● |  |  | ø10 |  |  |  | ● |  | ø12 |  |  |  |  | ● | <table border="1"> <tr> <th colspan="2" rowspan="2">1(P)</th> <th colspan="4">2(A) Port size R(PT)</th> </tr> <tr> <th>1/8</th> <th>1/4</th> <th>3/8</th> <th>1/2</th> </tr> <tr> <th rowspan="4">Port size R(PT)</th> <th>1/8</th> <td>●</td> <td></td> <td></td> <td></td> </tr> <tr> <th>1/4</th> <td></td> <td>●</td> <td></td> <td></td> </tr> <tr> <th>3/8</th> <td></td> <td></td> <td>●</td> <td></td> </tr> <tr> <th>1/2</th> <td></td> <td></td> <td></td> <td>●</td> </tr> </table> | 1(P) |  | 2(A) Port size R(PT) |  |  |  | 1/8 | 1/4 | 3/8 | 1/2 | Port size R(PT) | 1/8 | ● |  |  |  | 1/4 |  | ● |  |  | 3/8 |  |  | ● |  | 1/2 |  |  |  | ● |
| 1(P)  |  |                      | 2(A) Applicable tube O.D. (mm) |     |     |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |  |   |  |  |  |    |  |  |   |  |  |     |  |  |  |   |  |     |  |  |  |  |   |  |      |  |                      |  |  |  |     |     |     |     |                 |     |   |  |  |  |     |  |   |  |  |     |  |  |   |  |     |  |  |  |   |
|   |  | ø4                   | ø6                             | ø8  | ø10 | ø12 |  |    |    |    |     |     |                |    |   |  |  |  |  |    |  |   |  |  |  |    |  |  |   |  |  |     |  |  |  |   |  |     |  |  |  |  |   |  |      |  |                      |  |  |  |     |     |     |     |                 |     |   |  |  |  |     |  |   |  |  |     |  |  |   |  |     |  |  |  |   |
| Tube O.D. (mm)  | ø4   | ●                    |                                |     |     |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |  |   |  |  |  |    |  |  |   |  |  |     |  |  |  |   |  |     |  |  |  |  |   |  |      |  |                      |  |  |  |     |     |     |     |                 |     |   |  |  |  |     |  |   |  |  |     |  |  |   |  |     |  |  |  |   |
|   | ø6   |                      | ●                              |     |     |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |  |   |  |  |  |    |  |  |   |  |  |     |  |  |  |   |  |     |  |  |  |  |   |  |      |  |                      |  |  |  |     |     |     |     |                 |     |   |  |  |  |     |  |   |  |  |     |  |  |   |  |     |  |  |  |   |
|   | ø8   |                      |                                | ●   |     |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |  |   |  |  |  |    |  |  |   |  |  |     |  |  |  |   |  |     |  |  |  |  |   |  |      |  |                      |  |  |  |     |     |     |     |                 |     |   |  |  |  |     |  |   |  |  |     |  |  |   |  |     |  |  |  |   |
|   | ø10  |                      |                                |     | ●   |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |  |   |  |  |  |    |  |  |   |  |  |     |  |  |  |   |  |     |  |  |  |  |   |  |      |  |                      |  |  |  |     |     |     |     |                 |     |   |  |  |  |     |  |   |  |  |     |  |  |   |  |     |  |  |  |   |
|   | ø12  |                      |                                |     |     | ●   |  |    |    |    |     |     |                |    |   |  |  |  |  |    |  |   |  |  |  |    |  |  |   |  |  |     |  |  |  |   |  |     |  |  |  |  |   |  |      |  |                      |  |  |  |     |     |     |     |                 |     |   |  |  |  |     |  |   |  |  |     |  |  |   |  |     |  |  |  |   |
| 1(P)  |  | 2(A) Port size R(PT) |                                |     |     |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |  |   |  |  |  |    |  |  |   |  |  |     |  |  |  |   |  |     |  |  |  |  |   |  |      |  |                      |  |  |  |     |     |     |     |                 |     |   |  |  |  |     |  |   |  |  |     |  |  |   |  |     |  |  |  |   |
|   |  | 1/8                  | 1/4                            | 3/8 | 1/2 |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |  |   |  |  |  |    |  |  |   |  |  |     |  |  |  |   |  |     |  |  |  |  |   |  |      |  |                      |  |  |  |     |     |     |     |                 |     |   |  |  |  |     |  |   |  |  |     |  |  |   |  |     |  |  |  |   |
| Port size R(PT)   | 1/8  | ●                    |                                |     |     |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |  |   |  |  |  |    |  |  |   |  |  |     |  |  |  |   |  |     |  |  |  |  |   |  |      |  |                      |  |  |  |     |     |     |     |                 |     |   |  |  |  |     |  |   |  |  |     |  |  |   |  |     |  |  |  |   |
|   | 1/4  |                      | ●                              |     |     |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |  |   |  |  |  |    |  |  |   |  |  |     |  |  |  |   |  |     |  |  |  |  |   |  |      |  |                      |  |  |  |     |     |     |     |                 |     |   |  |  |  |     |  |   |  |  |     |  |  |   |  |     |  |  |  |   |
|   | 3/8  |                      |                                | ●   |     |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |  |   |  |  |  |    |  |  |   |  |  |     |  |  |  |   |  |     |  |  |  |  |   |  |      |  |                      |  |  |  |     |     |     |     |                 |     |   |  |  |  |     |  |   |  |  |     |  |  |   |  |     |  |  |  |   |
|   | 1/2  |                      |                                |     | ●   |     |  |    |    |    |     |     |                |    |   |  |  |  |  |    |  |   |  |  |  |    |  |  |   |  |  |     |  |  |  |   |  |     |  |  |  |  |   |  |      |  |                      |  |  |  |     |     |     |     |                 |     |   |  |  |  |     |  |   |  |  |     |  |  |   |  |     |  |  |  |   |

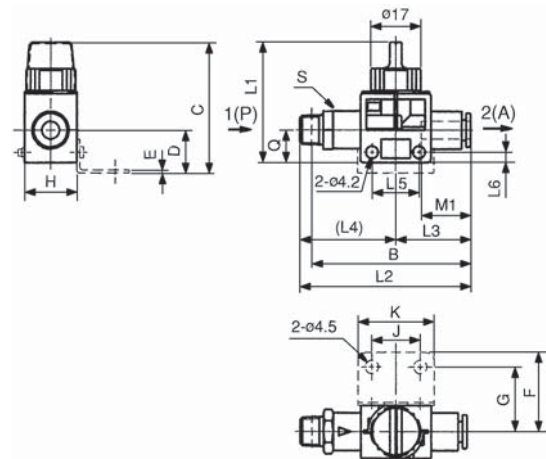
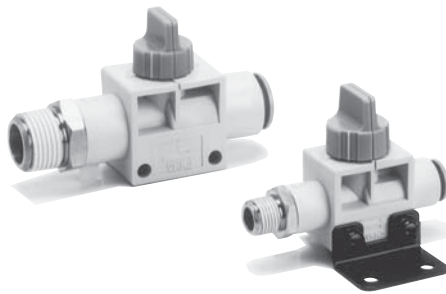
## 1(P)/2(A): One-touch fitting



| Tube O.D. (mm) |      | Model        | H  | L1 | L2   | L3   | L4   | L5   | L6  | M1   | M2 | Q  | Effective area (mm <sup>2</sup> ) |             | Weight (g) | Bracket mounting dimension |      |      |   |    |    |      |    |
|----------------|------|--------------|----|----|------|------|------|------|-----|------|----|----|-----------------------------------|-------------|------------|----------------------------|------|------|---|----|----|------|----|
| 1(P)           | 2(A) |              |    |    |      |      |      |      |     |      |    |    | 1(P)/E2(A)                        | 2(A)/E3(R)* |            | Bracket ass'y No.          | C    | D    | E | F  | G  | J    | K  |
| 4              | 4    | VHK□-04F-04F | 18 | 41 | 47.6 | 23.8 | 23.8 | 16.5 | 3.5 | 15.8 | 11 | 11 | 3.4                               | 1.2         | 15         | VHK-B1A                    | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 |
| 6              | 4    | VHK□-06F-04F | 18 | 41 | 48   | 24.3 | 23.7 | 16.5 | 3.5 | 16.8 | 11 | 11 | 5.1                               | 1.2         | 15         | VHK-B1A                    | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 |
|                | 6    | VHK□-06F-06F |    |    | 48.6 |      | 24.3 |      |     |      |    |    | 16.8                              |             |            |                            |      |      |   |    |    |      |    |
| 8              | 6    | VHK□-08F-06F | 18 | 41 | 50.5 | 26.2 | 24.3 | 16.5 | 3.5 | 18.7 | 11 | 11 | 9                                 | 1.2         | 16         | VHK-B1A                    | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 |
|                | 8    | VHK□-08F-08F |    |    | 52.4 |      | 26.2 |      |     |      |    |    | 18.7                              |             |            |                            |      |      |   |    |    |      |    |
| 10             | 8    | VHK□-10F-08F | 22 | 46 | 58.5 | 30.5 | 28   | 21.5 | 4   | 20.8 | 14 | 14 | 13.7                              | 3.2         | 28         | VHK-B2A                    | 49   | 17   | 1 | 30 | 25 | 21.5 | 31 |
|                | 10   | VHK□-10F-10F |    |    | 61   |      | 30.5 |      |     |      |    |    | 20.8                              |             |            |                            |      |      |   |    |    |      |    |
| 12             | 10   | VHK□-12F-10F | 22 | 46 | 62   | 31.5 | 30.5 | 21.5 | 4   | 21.8 | 14 | 14 | 17                                | 3.2         | 31         | VHK-B2A                    | 49   | 17   | 1 | 30 | 25 | 21.5 | 31 |
|                | 12   | VHK□-12F-12F |    |    | 63   |      | 31.5 |      |     |      |    |    | 21.8                              |             |            |                            |      |      |   |    |    |      |    |

\* 3 port valve

## 1(P): Male thread, 2(A): One-touch fitting

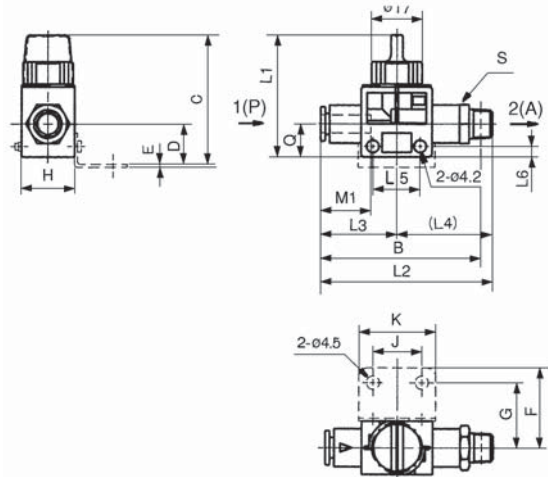
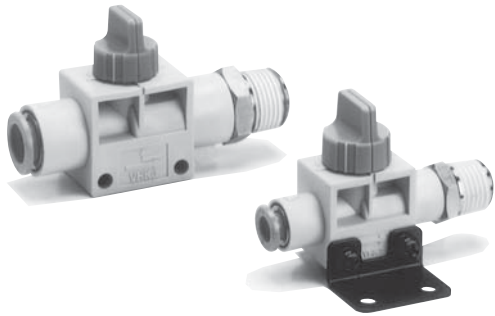


| Connection thread R(PT) | Tube O.D. (mm) | Model        | H  | L1 | L2   | L3   | L4   | L5   | L6  | M1   | Q  | Effective area (mm <sup>2</sup> ) |             | Weight (g) | B** | S (Width across flats) | Bracket mounting dimension |         |      |      |   |    |    |      |    |
|-------------------------|----------------|--------------|----|----|------|------|------|------|-----|------|----|-----------------------------------|-------------|------------|-----|------------------------|----------------------------|---------|------|------|---|----|----|------|----|
|                         |                |              |    |    |      |      |      |      |     |      |    | 1(P)/E2(A)                        | 2(A)/E3(R)* |            |     |                        | Bracket ass'y No.          | C       | D    | E    | F | G  | J  | K    |    |
| 1(P)                    | 2(A)           |              |    |    |      |      |      |      |     |      |    |                                   |             |            |     |                        |                            |         |      |      |   |    |    |      |    |
|                         |                |              |    |    |      |      |      |      |     |      |    |                                   |             |            |     |                        |                            |         |      |      |   |    |    |      |    |
| M5                      | 4              | VHK□-M5-04F  | 18 | 41 | 52.9 | 23.8 | 29.1 | 16.5 | 3.5 | 15.8 | 11 | 11                                | 2.0         | 1.2        | 19  | 49                     | 11                         | VHK-B1A | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 |
|                         | 6              | VHK□-M5-06F  |    |    | 53.9 | 24.3 | 29.6 |      |     | 16.8 |    |                                   | 21          |            | 50  | 13                     |                            |         |      |      |   |    |    |      |    |
| 1/8                     | 4              | VHK□-01S-04F | 18 | 41 | 55.4 | 23.8 | 31.6 | 16.5 | 3.5 | 15.8 | 11 | 11                                | 3.4         | 1.2        | 21  | 51                     | 11                         | VHK-B1A | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 |
|                         | 6              | VHK□-01S-06F |    |    | 56.9 | 24.3 | 32.6 |      |     | 16.8 |    |                                   | 23          |            | 53  | 13                     |                            |         |      |      |   |    |    |      |    |
| 1/4                     | 8              | VHK□-01S-08F | 18 | 41 | 62.2 | 26.2 | 36   | 16.5 | 3.5 | 18.7 | 11 | 11                                | 7.2         | 1.2        | 31  | 58                     | 17                         | VHK-B1A | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 |
|                         | 6              | VHK□-02S-06F |    |    | 60.4 | 24.3 | 36.1 |      |     | 16.8 |    |                                   | 31          |            | 54  | 14                     |                            |         |      |      |   |    |    |      |    |
| 1/4                     | 8              | VHK□-02S-08F | 18 | 41 | 65.2 | 26.2 | 39   | 16.5 | 3.5 | 18.7 | 11 | 11                                | 9.7         | 1.2        | 32  | 59                     | 17                         | VHK-B1A | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 |
|                         | 10             | VHK□-02S-10F |    |    | 73.8 | 30.5 | 43.3 |      |     | 20.8 |    |                                   | 49          |            | 68  | 19                     |                            |         |      |      |   |    |    |      |    |
| 1/4                     | 12             | VHK□-02S-12F | 22 | 46 | 76.3 | 31.5 | 44.8 | 21.5 | 4   | 21.8 | 14 | 14                                | 17.5        | 3.2        | 63  | 70                     | 22                         | VHK-B2A | 49   | 17   | 1 | 30 | 25 | 21.5 | 31 |
|                         | 6              | VHK□-03S-06F |    |    | 62.4 | 24.3 | 38.1 |      |     | 16.8 |    |                                   | 41          |            | 56  | 17                     |                            |         |      |      |   |    |    |      |    |
| 3/8                     | 8              | VHK□-03S-08F | 18 | 41 | 66.2 | 26.2 | 40   | 16.5 | 3.5 | 18.7 | 11 | 11                                | 7.2         | 1.2        | 40  | 60                     | 17                         | VHK-B1A | 44.5 | 11.5 | 1 | 27 | 22 | 16.5 | 26 |
|                         | 10             | VHK□-03S-10F |    |    | 74.8 | 30.5 | 44.3 |      |     | 20.8 |    |                                   | 51          |            | 68  | 19                     |                            |         |      |      |   |    |    |      |    |
| 1/2                     | 12             | VHK□-03S-12F | 22 | 46 | 77.3 | 31.5 | 45.8 | 21.5 | 4   | 21.8 | 14 | 14                                | 17.5        | 3.2        | 64  | 71                     | 22                         | VHK-B2A | 49   | 17   | 1 | 30 | 25 | 21.5 | 31 |
|                         | 10             | VHK□-04S-10F |    |    | 78.2 | 30.5 | 47.7 |      |     | 20.8 |    |                                   | 72          |            | 70  | 22                     |                            |         |      |      |   |    |    |      |    |
| 1/2                     | 12             | VHK□-04S-12F | 22 | 46 | 80.2 | 31.5 | 48.7 | 21.5 | 4   | 21.8 | 14 | 14                                | 17.5        | 3.2        | 70  | 72                     | 22                         | VHK-B2A | 49   | 17   | 1 | 30 | 25 | 21.5 | 31 |

\* 3 port valve

\*\*Reference dimensions after insertion of R(PT) threads.

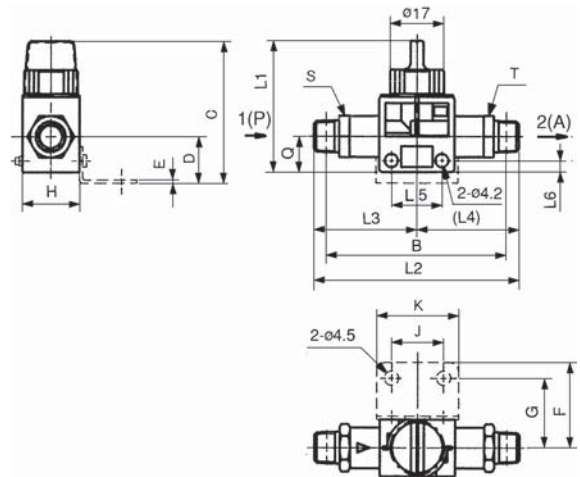
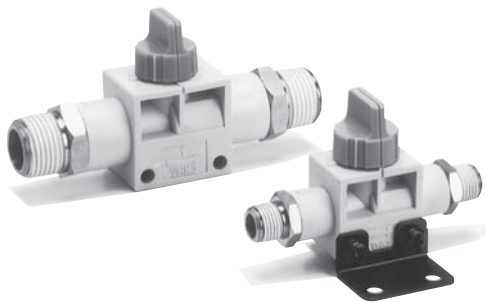
## 1(P): One-touch fitting, 2(A): Male thread



| Tube O.D. (mm) | Connection thread R(PT) | Model        | H  | L1 | L2   | L3   | L4   | L5   | L6  | M1   | Q  | Effective area (mm <sup>2</sup> ) |             | Weight (g) |    | B** | S (Width across flats) | Bracket mounting dimension |      |      |   |    |    |      |    |    |
|----------------|-------------------------|--------------|----|----|------|------|------|------|-----|------|----|-----------------------------------|-------------|------------|----|-----|------------------------|----------------------------|------|------|---|----|----|------|----|----|
|                |                         |              |    |    |      |      |      |      |     |      |    | 1(P)/E2(A)                        | 2(A)/E3(R)* | 1          | 2  |     |                        | C                          | D    | E    | F | G  | J  | K    |    |    |
| 4              | M5                      | VHK□-04F-M5  | 18 | 41 | 52.9 | 23.8 | 29.1 | 16.5 | 3.5 | 15.8 | 11 | 2.0                               | 1.2         | 19         | 49 | 11  | 11                     | VHK-B1A                    | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 |    |
|                | 1/8                     | VHK□-04F-01S |    |    | 55.4 |      | 31.6 |      |     |      |    |                                   |             | 21         | 51 |     |                        |                            |      |      |   |    |    |      |    | 13 |
| 6              | M5                      | VHK□-06F-M5  | 18 | 41 | 53.9 | 24.3 | 29.6 | 16.5 | 3.5 | 16.8 | 11 | 2.0                               | 1.2         | 21         | 50 | 11  | 11                     | VHK-B1A                    | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 |    |
|                | 1/8                     | VHK□-06F-01S |    |    | 56.9 |      | 32.6 |      |     |      |    |                                   |             | 23         | 53 |     |                        |                            |      |      |   |    |    |      |    | 13 |
|                | 1/4                     | VHK□-06F-02S |    |    | 60.4 |      | 36.1 |      |     |      |    |                                   |             | 31         | 54 |     |                        |                            |      |      |   |    |    |      |    | 17 |
|                | 3/8                     | VHK□-06F-03S |    |    | 62.4 |      | 38.1 |      |     |      |    |                                   |             | 41         | 56 |     |                        |                            |      |      |   |    |    |      |    | 14 |
| 8              | 1/8                     | VHK□-08F-01S | 18 | 41 | 62.2 | 26.2 | 36   | 16.5 | 3.5 | 18.7 | 11 | 9.7                               | 1.2         | 31         | 58 | 17  | 11                     | VHK-B1A                    | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 |    |
|                | 1/4                     | VHK□-08F-02S |    |    | 65.2 |      | 39   |      |     |      |    |                                   |             | 32         | 59 |     |                        |                            |      |      |   |    |    |      |    | 19 |
|                | 3/8                     | VHK□-08F-03S |    |    | 66.2 |      | 40   |      |     |      |    |                                   |             | 40         | 60 |     |                        |                            |      |      |   |    |    |      |    | 22 |
| 10             | 1/4                     | VHK□-10F-02S | 22 | 46 | 73.8 | 30.5 | 43.3 | 21.5 | 4   | 20.8 | 14 | 16.1                              | 3.2         | 49         | 68 | 17  | 11                     | VHK-B2A                    | 49   | 17   | 1 | 30 | 25 | 21.5 | 31 |    |
|                | 3/8                     | VHK□-10F-03S |    |    | 74.8 |      | 44.3 |      |     |      |    |                                   |             | 51         | 70 |     |                        |                            |      |      |   |    |    |      |    | 19 |
|                | 1/2                     | VHK□-10F-04S |    |    | 78.2 |      | 47.7 |      |     |      |    |                                   |             | 72         | 70 |     |                        |                            |      |      |   |    |    |      |    | 19 |
| 12             | 1/4                     | VHK□-12F-02S | 22 | 46 | 76.3 | 31.5 | 44.8 | 21.5 | 4   | 21.8 | 14 | 17.5                              | 3.2         | 63         | 70 | 22  | 11                     | VHK-B2A                    | 49   | 17   | 1 | 30 | 25 | 21.5 | 31 |    |
|                | 3/8                     | VHK□-12F-03S |    |    | 77.3 |      | 45.8 |      |     |      |    |                                   |             | 64         | 71 |     |                        |                            |      |      |   |    |    |      |    | 22 |
|                | 1/2                     | VHK□-12F-04S |    |    | 80.2 |      | 48.7 |      |     |      |    |                                   |             | 70         | 72 |     |                        |                            |      |      |   |    |    |      |    | 22 |

\* 3 port valve \*\*Reference dimensions after insertion of R(PT) threads.

## 1(P)/2(A): Male thread



| Connection thread R(PT) | Model      | H            | L1 | L2   | L3   | L4   | L5   | L6   | Q   | Effective area (mm <sup>2</sup> ) |             | Weight (g) |     | B** | S (Width across flats) | T (Width across flats) | Bracket mounting dimension |      |      |    |    |      |      |    |
|-------------------------|------------|--------------|----|------|------|------|------|------|-----|-----------------------------------|-------------|------------|-----|-----|------------------------|------------------------|----------------------------|------|------|----|----|------|------|----|
|                         |            |              |    |      |      |      |      |      |     | 1(P)/E2(A)                        | 2(A)/E3(R)* | 1          | 2   |     |                        |                        | C                          | D    | E    | F  | G  | J    | K    |    |
| M5                      | VHK□-M5-M5 | 18           | 41 | 58.2 | 29.1 | 29.1 | 16.5 | 3.5  | 11  | 2.0                               | 1.2         | 23         | 51  | 11  | 11                     | VHK-B1A                | 44.5                       | 14.5 | 1    | 27 | 22 | 16.5 | 26   |    |
| 1/8                     | M5         | VHK□-01S-M5  | 18 | 41   | 61.6 | 32.6 | 29   | 16.5 | 3.5 | 11                                | 2.0         | 1.2        | 26  | 54  | 13                     | 13                     | VHK-B1A                    | 44.5 | 14.5 | 1  | 27 | 22   | 16.5 | 26 |
|                         | 1/8        | VHK□-01S-01S |    |      | 65.2 |      | 32.6 |      |     |                                   |             |            | 30  | 57  |                        |                        |                            |      |      |    |    |      |      |    |
| 1/4                     | 1/8        | VHK□-02S-01S | 18 | 41   | 71.6 | 39   | 32.6 | 16.5 | 3.5 | 11                                | 9.0         | 1.2        | 39  | 62  | 17                     | 13                     | VHK-B1A                    | 44.5 | 14.5 | 1  | 27 | 22   | 16.5 | 26 |
|                         | 1/4        | VHK□-02S-02S |    |      | 78   |      | 39   |      |     |                                   |             |            | 47  | 66  |                        |                        |                            |      |      |    |    |      |      |    |
| 3/8                     | 1/4        | VHK□-03S-02S | 22 | 46   | 85.1 | 44.3 | 40.8 | 21.5 | 4   | 14                                | 13.7        | 3.2        | 65  | 73  | 19                     | 17                     | VHK-B2A                    | 49   | 17   | 1  | 30 | 25   | 21.5 | 31 |
|                         | 3/8        | VHK□-03S-03S |    |      | 88.6 |      | 44.3 |      |     |                                   |             |            | 72  | 76  |                        |                        |                            |      |      |    |    |      |      |    |
| 1/2                     | 3/8        | VHK□-04S-03S | 22 | 46   | 93   | 48.7 | 44.3 | 21.5 | 4   | 14                                | 15.1        | 3.2        | 90  | 79  | 22                     | 19                     | VHK-B2A                    | 49   | 17   | 1  | 30 | 25   | 21.5 | 31 |
|                         | 1/2        | VHK□-04S-04S |    |      | 97.4 |      | 48.7 |      |     |                                   |             |            | 101 | 81  |                        |                        |                            |      |      |    |    |      |      |    |

\*3 port valve \*\*Reference dimensions after insertion of R(PT) threads.

## ⚠ Precautions

### Design

#### ⚠ Warning

- ① Contact SMC if using fluids other than air.
- ② Do not supply air pressure from 2(A) port. The air will leak to 1(P) port.
- ③ Since the valve may have slight air leakage, it may not be suitable for holding pressure in a pressure vessel.

### Selection

#### ⚠ Caution

Operation method:  
To stop the knob in a midway position can cause malfunction.  
Switch it to ON or OFF quickly and firmly.

### Mounting

#### ⚠ Caution

L type bracket mounting:  
Tightening torque of 0.5 to 0.6 N should be applied to the bolts when mounting the bracket to the body.

## Piping

### ⚠ Caution

Precautions for handling the male threads of the R (PT) pipe fitting with a seal;

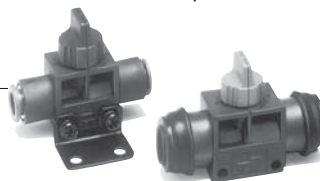
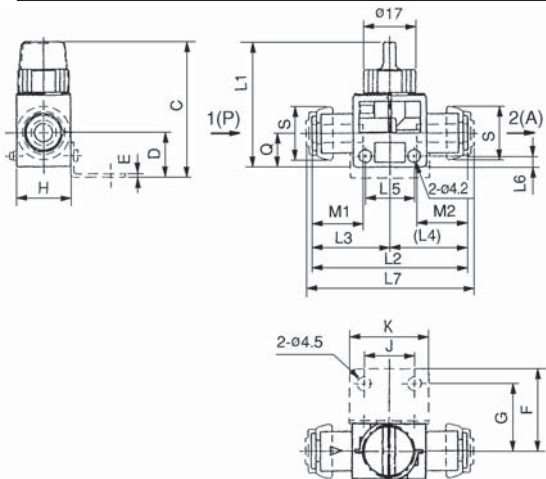
- ① Use a wrench to secure the hexagon portion to screw in the fitting. If the size of the wrench is not appropriate it will be stripped.
- ② To screw in the fitting, first hand-tighten; then, use a tool to rotate it 2 to 3 turns. If it is tightened excessively, the amount of sealing agent that protrudes will increase, so make sure to remove the sealing agent that has protruded.
- ③ Re-use of fittings:
  - (1) Ordinarily, the fitting can be reused 2 to 3 times.
  - (2) Using an air blower, remove the sealing agent that is peeling from the removed pipe fitting before reusing the fitting. If the peeled sealing agent enters the peripheral equipment, it could cause air leakage.
  - (3) If the sealing effect has been lost, place a seal tape over the sealing agent to reuse the fitting. Do not use any other agent except a seal tape.

## One-touch fitting

### ⚠ Caution

- (1) When tubes other than SMC's are used, verify that the tube O.D. satisfies the following accuracy;
  - Nylon tube.....Within  $\pm 0.1$ mm
  - Soft nylon tube.....Within  $\pm 0.1$ mm
  - Polyurethane tube.....Within  $+0.1$ mm,  $-0.2$ mm
 If the tube's external accuracy is not satisfied, it might not be possible to connect the tube or after it is connected, it could lead to air leakage or cause the tube to pull out.

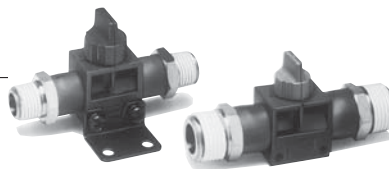
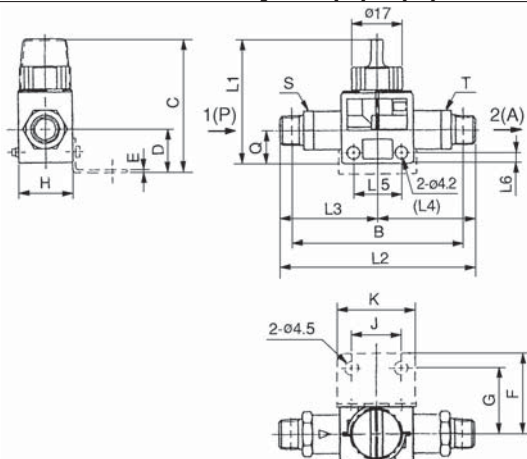
## Flame resistant style 1(P)/2(A): One-touch fitting



| Tube O.D (mm) | Model         | H  | L1 | L2   | L3   | L4   | L5   | L6  | L7   | Q  | M1   | M2   | Effective area (mm <sup>2</sup> ) |           |
|---------------|---------------|----|----|------|------|------|------|-----|------|----|------|------|-----------------------------------|-----------|
|               |               |    |    |      |      |      |      |     |      |    |      |      | 1(P)→2(A)                         | 2(A)→3(R) |
| 4             | VHK□R-04F-04F | 18 | 41 | 47.6 | 23.8 | 23.8 | 16.5 | 3.5 | 51.6 | 11 | 15.8 | 15.8 | 3.4                               | 1.2       |
| 6             | VHK□R-06F-06F | 18 | 41 | 48.6 | 24.3 | 24.3 | 16.5 | 3.5 | 52.6 | 11 | 16.8 | 16.8 | 7.2                               | 1.2       |
| 8             | VHK□R-08F-08F | 18 | 41 | 52.4 | 26.2 | 26.2 | 16.5 | 3.5 | 56.4 | 11 | 18.7 | 18.7 | 9.7                               | 1.2       |
| 10            | VHK□R-10F-10F | 22 | 46 | 61   | 30.5 | 30.5 | 21.5 | 4   | 65   | 14 | 20.8 | 20.8 | 16.1                              | 3.2       |
| 12            | VHK□R-12F-12F | 22 | 46 | 63   | 31.5 | 31.5 | 21.5 | 4   | 67   | 14 | 21.8 | 21.8 | 17.5                              | 3.2       |

| Tube O.D (mm) | Model         | Weight (g) | S     | Bracket mounting dimensions |      |      |   |    |    |      |    |
|---------------|---------------|------------|-------|-----------------------------|------|------|---|----|----|------|----|
|               |               |            |       | Bracket ass'y No.           | C    | D    | E | F  | G  | J    | K  |
| 4             | VHK□R-04F-04F | 15         | ø14.4 | VHK-B1A                     | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 |
| 6             | VHK□R-06F-06F | 16         | ø16.8 | VHK-B1A                     | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 |
| 8             | VHK□R-08F-08F | 17         | ø19.2 | VHK-B1A                     | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 |
| 10            | VHK□R-10F-10F | 29         | ø23.3 | VHK-B2A                     | 49   | 17   | 1 | 30 | 25 | 21.5 | 31 |
| 12            | VHK□R-12F-12F | 32         | ø25.7 | VHK-B2A                     | 49   | 17   | 1 | 30 | 25 | 21.5 | 31 |

## Flame resistant style 1(P)/2(A): Male thread



\*Reference dimensions after insertion of R(PT) thread

| Connection thread R(PT) | Model         | H  | L1 | L2   | L3   | L4   | L5   | L6  | Q  | B* | Effective area (mm <sup>2</sup> ) |           | Weight (g) |
|-------------------------|---------------|----|----|------|------|------|------|-----|----|----|-----------------------------------|-----------|------------|
|                         |               |    |    |      |      |      |      |     |    |    | 1(P)→2(A)                         | 2(A)→3(R) |            |
| 1/8                     | VHK□R-01S-01S | 18 | 41 | 65.2 | 32.6 | 32.6 | 16.5 | 3.5 | 11 | 57 | 8.6                               | 1.2       | 30         |
| 1/4                     | VHK□R-02S-02S | 18 | 41 | 78   | 39   | 39   | 16.5 | 3.5 | 11 | 66 | 9.7                               | 1.2       | 47         |
| 3/8                     | VHK□R-03S-03S | 22 | 46 | 88.6 | 44.3 | 44.3 | 21.5 | 4   | 14 | 76 | 16.1                              | 3.2       | 72         |
| 1/2                     | VHK□R-04S-04S | 22 | 46 | 97.4 | 48.7 | 48.7 | 21.5 | 4   | 14 | 81 | 17.5                              | 3.2       | 101        |

| Connection thread R(PT) | Model         | S (Width across flats) | T (Width across flats) | Bracket mounting dimensions |      |      |   |    |    |      |    |
|-------------------------|---------------|------------------------|------------------------|-----------------------------|------|------|---|----|----|------|----|
|                         |               |                        |                        | Bracket ass'y No.           | C    | D    | E | F  | G  | J    | K  |
| 1/8                     | VHK□R-01S-01S | 13                     | 13                     | VHK-B1A                     | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 |
| 1/4                     | VHK□R-02S-02S | 17                     | 17                     | VHK-B1A                     | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 |
| 3/8                     | VHK□R-03S-03S | 19                     | 19                     | VHK-B2A                     | 49   | 17   | 1 | 30 | 25 | 21.5 | 31 |
| 1/2                     | VHK□R-04S-04S | 22                     | 22                     | VHK-B2A                     | 49   | 17   | 1 | 30 | 25 | 21.5 | 31 |