

Finger Valve

VHK-A Series

RoHS

With a function to prevent the knob from coming out

Large effective area: 2.0 to 17.5 mm²

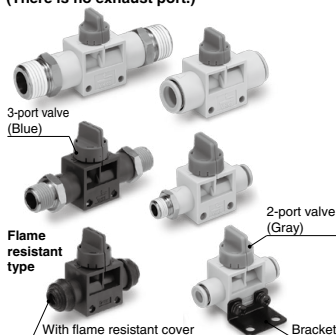
Reduced operating force

Poppet valve construction seldom suffers seal deflection.

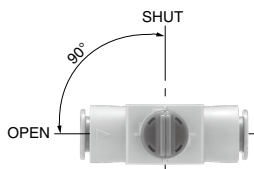
The series begins with the min. tubing O.D. of $\phi 4$.

Selection from four types in accordance with the piping specifications

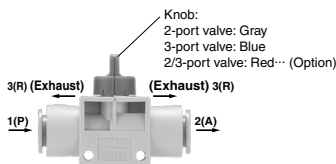
The 3-port valve discharges residual pressure from 2(A) with the handle set at SHUT. (There is no exhaust port.)



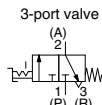
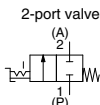
The valve direction clearly indicates whether the valve is open or closed. (SHUT-OPEN: Counterclockwise)



2-port valves and 3-port valves can be distinguished by the color of their knobs.



Symbol



Specifications

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

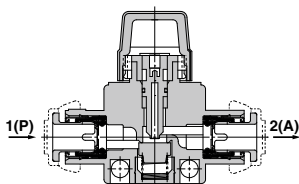
Note 1) Please note that when the valve is used at micro pressures of 0.1 MPa or less, valve leakage may be more than the standard value (5 cm³/min).

Note 2) Use caution about the maximum operating pressure when soft nylon or polyurethane tubing is used. (Refer to Best Pneumatics No. 7 for details.)

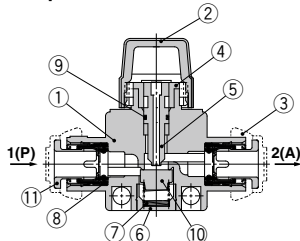
* Use VHK2 (2-port valve) for vacuum application.

Construction

2-port valve: VHK2A series



3-port valve: VHK3A series



Component Parts

| No. | Description | Material | Note |
|-----|--------------|---|---|
| 1 | Body | Standard type: PBT | |
| | | Flame resistant type: Flame resistant PBT (UL standard V-0) | |
| 2 | Knob | Standard type: POM | |
| | | Flame resistant type: Flame resistant PBT (UL standard V-0) | |
| 3 | Cover | Flame resistant CR (UL standard V-0) | Applicable to the flame-resistant cover only. |
| 4 | Cam ring | POM | |
| 5 | Stem | POM | |
| 6 | Spring guide | Brass | |
| 7 | Spring | Electroless nickel plated | |
| 8 | Seal | Stainless steel | |
| 9 | O-ring | NBR | |
| 10 | Valve | NBR | |
| 11 | Cassette | Standard type: POM | |
| | | Flame resistant type: Flame resistant PBT (UL standard V-0) | |

Replacement Parts

| Description | Model | |
|-------------|---|---|
| | <ul style="list-style-type: none"> One-touch fitting Applicable tubing O.D. $\phi 8$ or less | <ul style="list-style-type: none"> One-touch fitting Applicable tubing O.D. $\phi 10$ or more 1(P)-Male thread • 2(A)-Male thread Port size R3/8 or more |
| | Part no. | |
| | VHK-B1 ^{Note 2)} | VHK-B2 ^{Note 1)} |

Note 1) For details on selection of each bracket assembly part no., refer to the tables on page 1687-3.

Note 2) The bracket, bolts, nuts, and washers are supplied with the bracket assembly.

How to Order



Standard type VHK 2 A — 02S — 02S — — —

Flame resistant type VHK 2 A R — 04F — 04F — — — **Made to order**

Valve model

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

Flame resistant type

1(P) port size

| | |
|-----|----------|
| 04F | ø4 |
| 06F | ø6 |
| 08F | ø8 |
| 10F | ø10 |
| 12F | ø12 |
| M5 | M5 x 0.8 |
| 01S | R 1/8 |
| 02S | R 1/4 |
| 03S | R 3/8 |
| 04S | R 1/2 |

2(A) port size

| | |
|-----|----------|
| 04F | ø4 |
| 06F | ø6 |
| 08F | ø8 |
| 10F | ø10 |
| 12F | ø12 |
| M5 | M5 x 0.8 |
| 01S | R 1/8 |
| 02S | R 1/4 |
| 03S | R 3/8 |
| 04S | R 1/2 |

Bracket

| | |
|-----|----------------|
| Nil | None |
| L | With L-bracket |

* Bracket and screws are attached.

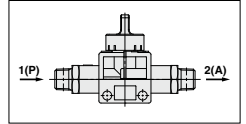
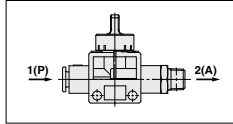
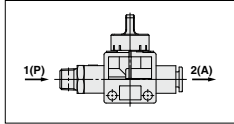
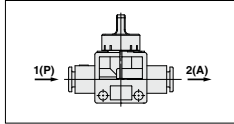
Flame resistant cover

| | |
|-----|---|
| Nil | None |
| C | With cover (For One-touch fitting only) |

Knob color

| | | |
|----------------|--------------|------|
| Nil (Standard) | 2-port valve | Gray |
| | 3-port valve | Blue |
| R (Option) | 2-port valve | Red |
| | 3-port valve | Red |

Standard Type



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

| | | | | | | |
|-----------------------------|------|-----------------------------|----|----|-----|-----|
| | 2(A) | Applicable tubing O.D. (mm) | | | | |
| 1(P) | | ø4 | ø6 | ø8 | ø10 | ø12 |
| Applicable tubing O.D. (mm) | ø4 | ● | | | | |
| | ø6 | | ● | | | |
| | ø8 | | | ● | | |
| | ø10 | | | | ● | |
| | ø12 | | | | | ● |

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

| | | | | | | |
|-------------|------|-----------------------------|----|----|-----|-----|
| | 2(A) | Applicable tubing O.D. (mm) | | | | |
| 1(P) | | ø4 | ø6 | ø8 | ø10 | ø12 |
| Port size R | M5 | ● | ● | | | |
| | 1/8 | | ● | | | |
| | 1/4 | | | ● | | |
| | 3/8 | | | | ● | |
| | 1/2 | | | | | ● |

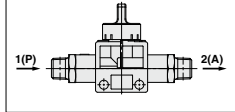
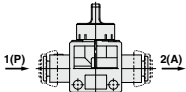
1(P): One-touch fitting
2(A): Male thread

| | | | | | | |
|-----------------------------|------|-------------|-----|-----|-----|-----|
| | 2(A) | Port size R | | | | |
| 1(P) | | M5 | 1/8 | 1/4 | 3/8 | 1/2 |
| Applicable tubing O.D. (mm) | ø4 | ● | ● | | | |
| | ø6 | | ● | ● | | |
| | ø8 | | | ● | ● | |
| | ø10 | | | | ● | ● |
| | ø12 | | | | | ● |

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

| | | | | | | |
|-------------|------|-------------|-----|-----|-----|-----|
| | 2(A) | Port size R | | | | |
| 1(P) | | M5 | 1/8 | 1/4 | 3/8 | 1/2 |
| Port size R | M5 | ● | | | | |
| | 1/8 | | ● | | | |
| | 1/4 | | | ● | | |
| | 3/8 | | | | ● | |
| | 1/2 | | | | | ● |

Flame Resistant Type (UL-94 Standard V-0 equivalent)



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

| | | | | | | |
|-----------------------------|------|-----------------------------|----|----|-----|-----|
| | 2(A) | Applicable tubing O.D. (mm) | | | | |
| 1(P) | | ø4 | ø6 | ø8 | ø10 | ø12 |
| Applicable tubing O.D. (mm) | ø4 | ● | | | | |
| | ø6 | | ● | | | |
| | ø8 | | | ● | | |
| | ø10 | | | | ● | |
| | ø12 | | | | | ● |

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

| | | | | | |
|-------------|------|-------------|-----|-----|-----|
| | 2(A) | Port size R | | | |
| 1(P) | | 1/8 | 1/4 | 3/8 | 1/2 |
| Port size R | 1/8 | ● | | | |
| | 1/4 | | ● | | |
| | 3/8 | | | ● | |
| | 1/2 | | | | ● |

VM

VMG

VR

VR51

VHK

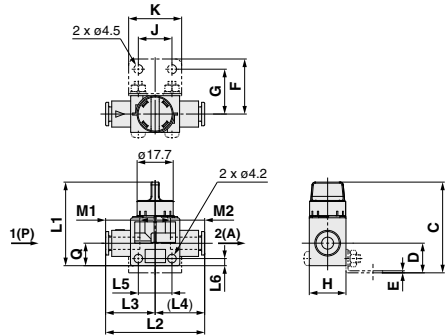
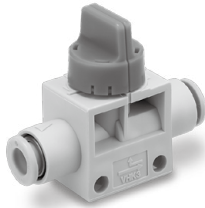
VH

VHS □

VHS

VHK-A Series

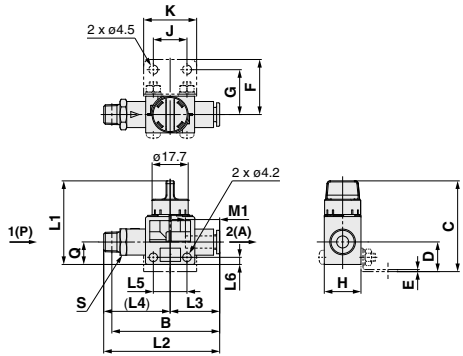
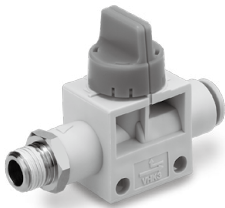
1(P)/2(A): One-touch Fitting



| Applicable tubing O. D. (mm) | | Model | H | L1 | L2 | L3 | L4 | L5 | L6 | M1 | M2 | Q | Flow rate characteristics | | | | | | Weight (g) | Bracket mounting dimensions | | | | | | | |
|---------------------------------|------|---------------|----|------------------------|------|------|------------------------|------|-----|------|------|----|---------------------------|------|------|-------------|-----|------|---------------|-----------------------------|------|------|---|----|----|------|----|
| 1(P) | 2(A) | | | | | | | | | | | | 1(P)→2(A) | | | 2(A)→3(R)*1 | | | | Bracket assembly no. | | C | D | E | F | G | J |
| | | | | Q(m ³ /bar) | | | Q(m ³ /bar) | | | b | | Cv | | b | | Cv | | | | | | | | | | | |
| 4 | 4 | VHK□A-04F-04F | 18 | 41 | 47.6 | 23.8 | 23.8 | 16.5 | 3.5 | 15.8 | 15.8 | 11 | 0.7 | 0.15 | 0.14 | 0.25 | 0.6 | 0.06 | 15 | VHK-B1A | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 |
| | | | | | | | | | | | | | 1.0 | 0.15 | 0.21 | 0.25 | 0.6 | 0.06 | 15 | | | | | | | | |
| 6 | 6 | VHK□A-06F-04F | 18 | 41 | 48 | 24.3 | 24.3 | 16.5 | 3.5 | 16.8 | 16.8 | 11 | 2 | 0.15 | 0.36 | 0.25 | 0.6 | 0.06 | 16 | VHK-B1A | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 |
| | | | | | | | | | | | | | 1.9 | 0.15 | 0.39 | 0.25 | 0.6 | 0.06 | 17 | | | | | | | | |
| 8 | 8 | VHK□A-08F-06F | 18 | 41 | 50.5 | 26.2 | 26.2 | 16.5 | 3.5 | 18.7 | 18.7 | 11 | 2 | 0.15 | 0.36 | 0.25 | 0.6 | 0.06 | 16 | VHK-B1A | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 |
| | | | | | | | | | | | | | 1.9 | 0.15 | 0.39 | 0.25 | 0.6 | 0.06 | 17 | | | | | | | | |
| 10 | 10 | VHK□A-10F-08F | 22 | 46 | 58.5 | 30.5 | 28 | 21.5 | 4 | 20.8 | 20.8 | 14 | 2.7 | 0.15 | 0.55 | 0.67 | 0.6 | 0.16 | 29 | VHK-B2A | 49 | 17 | 1 | 30 | 25 | 21.5 | 31 |
| | | | | | | | | | | | | | 3.1 | 0.15 | 0.65 | 0.67 | 0.6 | 0.16 | 29 | | | | | | | | |
| 12 | 12 | VHK□A-12F-10F | 22 | 46 | 62 | 31.5 | 30.5 | 21.5 | 4 | 21.8 | 21.8 | 14 | 3.3 | 0.15 | 0.68 | 0.67 | 0.6 | 0.16 | 31 | VHK-B2A | 49 | 17 | 1 | 30 | 25 | 21.5 | 31 |
| | | | | | | | | | | | | | 3.4 | 0.15 | 0.70 | 0.67 | 0.6 | 0.16 | 32 | | | | | | | | |

*1 3-port valve

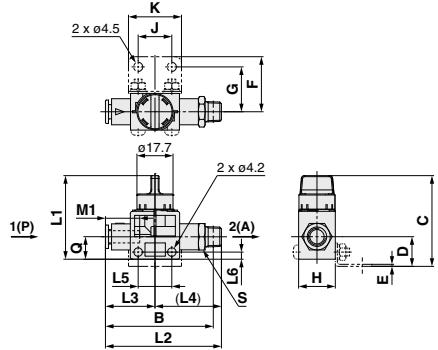
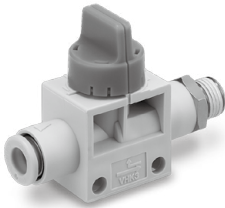
1(P): Male Thread, 2(A): One-touch Fitting



| Connection thread R | | Applicable tubing O. D. (mm) | Model | H | L1 | L2 | L3 | L4 | L5 | L6 | M1 | Q | Flow rate characteristics | | | | | | Weight (g) | S (Width across flats) | Bracket mounting dimensions | | | | | | | | |
|------------------------|------|---------------------------------|-------|------------------------|------|------|------------------------|------|-----|------|------|----|---------------------------|------|------|-------------|-----|------|---------------|---------------------------------|-----------------------------|---------|------|------|---|----|----|------|----|
| 1(P) | 2(A) | | | | | | | | | | | | 1(P)→2(A) | | | 2(A)→3(R)*1 | | | | | Bracket assembly no. | | C | D | E | F | G | J | K |
| | | | | Q(m ³ /bar) | | | Q(m ³ /bar) | | | b | | Cv | | b | | Cv | | | | | | | | | | | | | |
| M5 | 4 | VHK□A-M5-04F | 18 | 41 | 52.9 | 23.8 | 29.1 | 16.5 | 3.5 | 15.8 | 16.8 | 11 | 0.4 | 0.15 | 0.10 | 0.25 | 0.6 | 0.06 | 19 | 49 | 11 | VHK-B1A | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 |
| | | | | | | | | | | | | | 0.4 | 0.15 | 0.10 | 0.25 | 0.6 | 0.06 | 21 | 50 | 13 | | | | | | | | |
| 1/8 | 4 | VHK□A-01S-04F | 18 | 41 | 55.4 | 23.8 | 31.6 | 16.5 | 3.5 | 15.8 | 15.8 | 11 | 0.7 | 0.15 | 0.17 | 0.25 | 0.6 | 0.06 | 21 | 51 | 11 | VHK-B1A | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 |
| | | | | | | | | | | | | | 1.4 | 0.15 | 0.35 | 0.25 | 0.6 | 0.06 | 23 | 53 | 13 | | | | | | | | |
| 1/4 | 6 | VHK□A-01S-08F | 18 | 41 | 62.2 | 26.2 | 36 | 16.5 | 3.5 | 18.7 | 18.7 | 11 | 1.9 | 0.15 | 0.47 | 0.25 | 0.6 | 0.06 | 31 | 58 | 17 | VHK-B1A | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 |
| | | | | | | | | | | | | | 1.4 | 0.15 | 0.35 | 0.25 | 0.6 | 0.06 | 31 | 54 | 17 | | | | | | | | |
| 1/4 | 8 | VHK□A-02S-06F | 18 | 41 | 60.4 | 24.3 | 36.1 | 16.5 | 3.5 | 16.8 | 18.7 | 11 | 1.9 | 0.15 | 0.47 | 0.25 | 0.6 | 0.06 | 32 | 59 | 14 | VHK-B1A | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 |
| | | | | | | | | | | | | | 3.1 | 0.15 | 0.78 | 0.67 | 0.6 | 0.16 | 49 | 68 | 19 | | | | | | | | |
| 1/4 | 10 | VHK□A-02S-12F | 22 | 46 | 73.8 | 30.5 | 43.3 | 21.5 | 4 | 20.8 | 20.8 | 14 | 3.4 | 0.15 | 0.85 | 0.67 | 0.6 | 0.16 | 63 | 70 | 22 | VHK-B2A | 49 | 17 | 1 | 30 | 25 | 21.5 | 31 |
| | | | | | | | | | | | | | 3.4 | 0.15 | 0.85 | 0.67 | 0.6 | 0.16 | 60 | 60 | 22 | | | | | | | | |
| 3/8 | 6 | VHK□A-03S-06F | 18 | 41 | 62.4 | 24.3 | 38.1 | 16.5 | 3.5 | 16.8 | 18.7 | 11 | 1.4 | 0.15 | 0.35 | 0.25 | 0.6 | 0.06 | 41 | 56 | 17 | VHK-B1A | 44.5 | 11.5 | 1 | 27 | 22 | 16.5 | 26 |
| | | | | | | | | | | | | | 1.9 | 0.15 | 0.47 | 0.25 | 0.6 | 0.06 | 40 | 60 | 17 | | | | | | | | |
| 3/8 | 8 | VHK□A-03S-08F | 18 | 41 | 66.2 | 26.2 | 40 | 16.5 | 3.5 | 18.7 | 18.7 | 11 | 1.9 | 0.15 | 0.47 | 0.25 | 0.6 | 0.06 | 41 | 56 | 17 | VHK-B1A | 44.5 | 11.5 | 1 | 27 | 22 | 16.5 | 26 |
| | | | | | | | | | | | | | 3.1 | 0.15 | 0.78 | 0.67 | 0.6 | 0.16 | 51 | 68 | 19 | | | | | | | | |
| 3/8 | 10 | VHK□A-03S-10F | 22 | 46 | 74.8 | 31.5 | 45.8 | 21.5 | 4 | 21.8 | 21.8 | 14 | 3.4 | 0.15 | 0.85 | 0.67 | 0.6 | 0.16 | 64 | 71 | 22 | VHK-B2A | 49 | 17 | 1 | 30 | 25 | 21.5 | 31 |
| | | | | | | | | | | | | | 3.1 | 0.15 | 0.78 | 0.67 | 0.6 | 0.16 | 72 | 70 | 22 | | | | | | | | |
| 1/2 | 10 | VHK□A-04S-10F | 22 | 46 | 78.2 | 30.5 | 47.7 | 21.5 | 4 | 20.8 | 20.8 | 14 | 3.1 | 0.15 | 0.78 | 0.67 | 0.6 | 0.16 | 72 | 70 | 22 | VHK-B2A | 49 | 17 | 1 | 30 | 25 | 21.5 | 31 |
| | | | | | | | | | | | | | 3.4 | 0.15 | 0.85 | 0.67 | 0.6 | 0.16 | 70 | 72 | 22 | | | | | | | | |

*1 3-port valve *2 Reference dimensions after insertion of R thread.

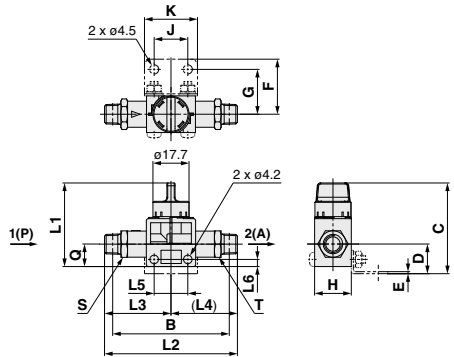
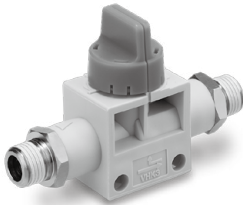
1(P): One-touch Fitting, 2(A): Male Thread



| Applicable tubing O.D. (mm) | Connection thread R | Model | H | L1 | L2 | L3 | L4 | L5 | L6 | M1 | Q | Flow rate characteristics | | | | | | Weight (g) | +2 B | S (Width across flats) | Bracket mounting dimensions | | | | | | | | | | | |
|--------------------------------|------------------------|---------------|------|------|------|------|------|------|------|------|------|---------------------------|------|------|--------------------------|------|------|---------------|---------|---------------------------------|-----------------------------|---------|------|------|----|----|------|------|----|---|---|---|
| | | | | | | | | | | | | 1(P)→2(A) | | | 2(A)→3(R)*1 | | | | | | Cv | b | Cv | b | Cv | C | D | E | F | G | J | K |
| | | | | | | | | | | | | Q _{min} (l/min) | b | Cv | Q _{min} (l/min) | b | Cv | | | | | | | | | | | | | | | |
| 4 | M5 | VHK□A-04F-M5 | 18 | 41 | 52.9 | 23.8 | 29.1 | 31.6 | 16.5 | 3.5 | 15.8 | 11 | 0.4 | 0.15 | 0.08 | 0.25 | 0.6 | 0.08 | 19 | 49 | 11 | VHK-B1A | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 | | | |
| | 1/8 | VHK□A-04F-01S | 55.4 | 53.9 | 29.6 | 56.9 | 29.6 | 32.6 | 16.5 | 3.5 | 16.8 | 11 | 0.7 | 0.15 | 0.14 | 0.25 | 0.6 | 0.08 | 21 | 51 | 11 | | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 | | | |
| | 1/4 | VHK□A-06F-01S | 60.4 | 56.9 | 24.3 | 36.1 | 38.1 | 32.6 | 16.5 | 3.5 | 16.8 | 11 | 0.4 | 0.15 | 0.08 | 0.25 | 0.6 | 0.08 | 21 | 50 | 13 | | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 | | | |
| 6 | 1/8 | VHK□A-06F-01S | 18 | 41 | 52.9 | 23.8 | 29.1 | 31.6 | 16.5 | 3.5 | 15.8 | 11 | 1.4 | 0.15 | 0.35 | 0.25 | 0.6 | 0.08 | 23 | 53 | 13 | VHK-B1A | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 | | | |
| | 1/4 | VHK□A-06F-02S | 62.4 | 56.9 | 24.3 | 36.1 | 38.1 | 32.6 | 16.5 | 3.5 | 16.8 | 11 | 1.4 | 0.15 | 0.29 | 0.25 | 0.6 | 0.08 | 31 | 54 | 14 | | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 | | | |
| | 3/8 | VHK□A-06F-03S | 62.4 | 56.9 | 24.3 | 36.1 | 38.1 | 32.6 | 16.5 | 3.5 | 16.8 | 11 | 1.4 | 0.15 | 0.29 | 0.25 | 0.6 | 0.08 | 41 | 56 | 17 | | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 | | | |
| 8 | 1/8 | VHK□A-08F-01S | 18 | 41 | 65.2 | 26.2 | 39 | 36.5 | 3.5 | 18.7 | 11 | 1.9 | 0.15 | 0.39 | 0.25 | 0.6 | 0.08 | 32 | 59 | 17 | VHK-B1A | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 | | | | |
| | 1/4 | VHK□A-08F-02S | 66.2 | 56.9 | 24.3 | 36.1 | 38.1 | 32.6 | 16.5 | 3.5 | 16.8 | 11 | 1.9 | 0.15 | 0.39 | 0.25 | 0.6 | 0.08 | 32 | 59 | | 17 | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 | | | |
| | 3/8 | VHK□A-08F-03S | 66.2 | 56.9 | 24.3 | 36.1 | 38.1 | 32.6 | 16.5 | 3.5 | 16.8 | 11 | 1.9 | 0.15 | 0.39 | 0.25 | 0.6 | 0.08 | 40 | 60 | | 19 | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 | | | |
| 10 | 1/4 | VHK□A-10F-02S | 22 | 46 | 73.8 | 30.5 | 44.3 | 21.5 | 4 | 20.8 | 14 | 3.1 | 0.15 | 0.65 | 0.67 | 0.6 | 0.21 | 49 | 68 | 19 | VHK-B2A | 49 | 17 | 1 | 30 | 25 | 21.5 | 31 | | | | |
| | 3/8 | VHK□A-10F-03S | 74.8 | 56.9 | 24.3 | 36.1 | 38.1 | 32.6 | 16.5 | 3.5 | 16.8 | 11 | 3.1 | 0.15 | 0.65 | 0.67 | 0.6 | 0.21 | 51 | 69 | | 22 | 49 | 17 | 1 | 30 | 25 | 21.5 | 31 | | | |
| | 1/2 | VHK□A-10F-04S | 78.2 | 56.9 | 24.3 | 36.1 | 38.1 | 32.6 | 16.5 | 3.5 | 16.8 | 11 | 3.1 | 0.15 | 0.65 | 0.67 | 0.6 | 0.21 | 72 | 70 | | 22 | 49 | 17 | 1 | 30 | 25 | 21.5 | 31 | | | |
| 12 | 1/4 | VHK□A-12F-02S | 22 | 46 | 76.3 | 31.5 | 45.8 | 21.5 | 4 | 21.8 | 14 | 3.4 | 0.15 | 0.70 | 0.67 | 0.6 | 0.21 | 63 | 70 | 22 | VHK-B2A | 49 | 17 | 1 | 30 | 25 | 21.5 | 31 | | | | |
| | 3/8 | VHK□A-12F-03S | 77.3 | 56.9 | 24.3 | 36.1 | 38.1 | 32.6 | 16.5 | 3.5 | 16.8 | 11 | 3.4 | 0.15 | 0.70 | 0.67 | 0.6 | 0.21 | 64 | 71 | | 22 | 49 | 17 | 1 | 30 | 25 | 21.5 | 31 | | | |
| | 1/2 | VHK□A-12F-04S | 80.2 | 56.9 | 24.3 | 36.1 | 38.1 | 32.6 | 16.5 | 3.5 | 16.8 | 11 | 3.4 | 0.15 | 0.70 | 0.67 | 0.6 | 0.21 | 70 | 72 | | 22 | 49 | 17 | 1 | 30 | 25 | 21.5 | 31 | | | |

*1 3-port valve *2 Reference dimensions after insertion of R thread.

1(P)/2(A): Male Thread

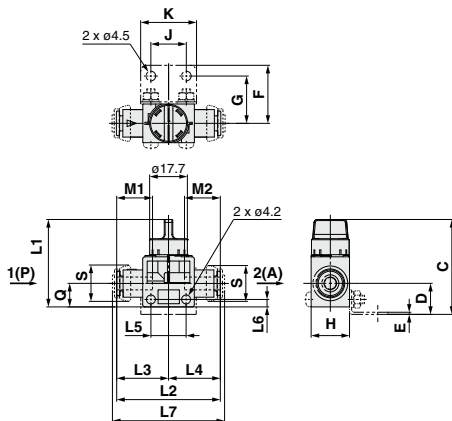
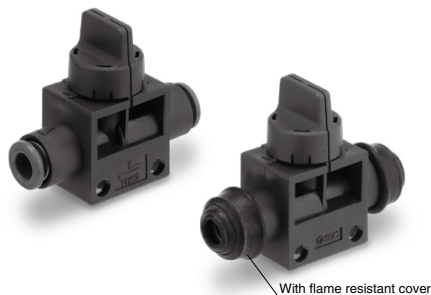


| Connection thread R | 2(A) | Model | H | L1 | L2 | L3 | L4 | L5 | L6 | Q | Flow rate characteristics | | | | | | Weight (g) | +2 B | S (Width across flats) | T (Width across flats) | Bracket mounting dimensions | | | | | | | | | | | |
|------------------------|------|---------------|------|------|------|------|------|------|------|-----|---------------------------|------|------|--------------------------|------|------|---------------|---------|---------------------------------|---------------------------------|-----------------------------|---------|------|------|----|----|------|------|----|---|---|---|
| | | | | | | | | | | | 1(P)→2(A) | | | 2(A)→3(R)*1 | | | | | | | Cv | b | Cv | b | Cv | C | D | E | F | G | J | K |
| | | | | | | | | | | | Q _{min} (l/min) | b | Cv | Q _{min} (l/min) | b | Cv | | | | | | | | | | | | | | | | |
| M5 | M5 | VHK□A-M5-M5 | 18 | 41 | 58.2 | 29.1 | 29.1 | 16.5 | 3.5 | 11 | 0.4 | 0.15 | 0.08 | 0.25 | 0.6 | 0.06 | 23 | 51 | 11 | 11 | VHK-B1A | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 | | | | |
| 1/8 | M5 | VHK□A-01S-M5 | 61.6 | 55.4 | 32.6 | 29 | 32.6 | 16.5 | 3.5 | 11 | 0.4 | 0.15 | 0.08 | 0.25 | 0.6 | 0.06 | 26 | 54 | 13 | 11 | | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 | | | | |
| | 1/8 | VHK□A-01S-01S | 65.2 | 53.9 | 32.6 | 29 | 32.6 | 16.5 | 3.5 | 11 | 1.6 | 0.15 | 0.35 | 0.25 | 0.6 | 0.06 | 30 | 57 | 13 | 13 | | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 | | | | |
| 1/4 | 1/8 | VHK□A-02S-01S | 18 | 41 | 71.6 | 39 | 39 | 16.5 | 3.5 | 11 | 1.8 | 0.15 | 0.37 | 0.25 | 0.6 | 0.06 | 39 | 62 | 17 | 13 | VHK-B1A | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 | | | | |
| | 1/4 | VHK□A-02S-02S | 78 | 56.9 | 24.3 | 36.1 | 38.1 | 32.6 | 16.5 | 3.5 | 16.8 | 11 | 1.9 | 0.15 | 0.39 | 0.25 | 0.6 | 0.06 | 47 | 66 | | 17 | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 | | | |
| 3/8 | 1/4 | VHK□A-03S-02S | 22 | 46 | 85.1 | 40.8 | 44.3 | 21.5 | 4 | 14 | 2.7 | 0.15 | 0.56 | 0.67 | 0.6 | 0.16 | 65 | 73 | 19 | 17 | | VHK-B2A | 49 | 17 | 1 | 30 | 25 | 21.5 | 31 | | | |
| | 3/8 | VHK□A-03S-03S | 88.6 | 56.9 | 24.3 | 36.1 | 38.1 | 32.6 | 16.5 | 3.5 | 16.8 | 11 | 3.1 | 0.15 | 0.66 | 0.67 | 0.6 | 0.16 | 72 | 76 | 19 | | 49 | 17 | 1 | 30 | 25 | 21.5 | 31 | | | |
| 1/2 | 3/8 | VHK□A-04S-03S | 22 | 46 | 93 | 48.7 | 44.3 | 21.5 | 4 | 14 | 2.8 | 0.15 | 0.61 | 0.67 | 0.6 | 0.16 | 90 | 79 | 19 | 19 | VHK-B2A | | 49 | 17 | 1 | 30 | 25 | 21.5 | 31 | | | |
| | 1/2 | VHK□A-04S-04S | 97.4 | 56.9 | 24.3 | 36.1 | 38.1 | 32.6 | 16.5 | 3.5 | 16.8 | 11 | 3.4 | 0.15 | 0.71 | 0.67 | 0.6 | 0.16 | 101 | 81 | | 22 | 49 | 17 | 1 | 30 | 25 | 21.5 | 31 | | | |

*1 3-port valve *2 Reference dimensions after insertion of R thread.

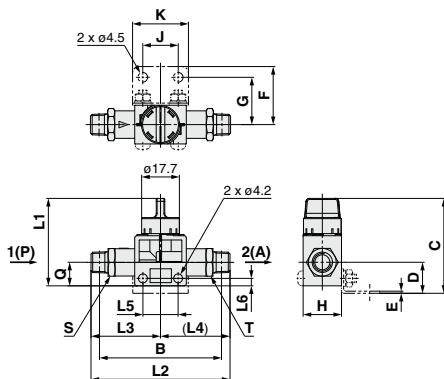
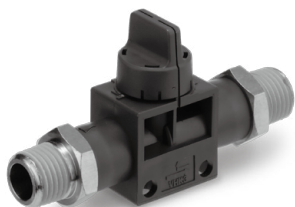
VHK-A Series

Flame Resistant Type: 1(P)/2(A): One-touch Fitting



| Applicable tubing O.D. (mm) | | Model | H | L1 | L2 | L3 | L4 | L5 | L6 | L7 | Q | M1 | M2 | Flow rate characteristics | | | | | | Weight (g) | S | Bracket mounting dimensions | | | | | | | |
|--------------------------------|------|----------------|----|----|------|------|------|------|-----|------|----|------|------|---------------------------|------|------|-------------|-----|------|---------------|-------|-----------------------------|------|------|---|----|----|------|----|
| 1(P) | 2(A) | | | | | | | | | | | | | 1(P) → 2(A) | | | 2(A) → 3(R) | | | | | Bracket assembly no. | | | | | | | |
| | | | | | | | | | | | | | | C | b | Cv | C | b | Cv | | C | D | E | F | G | J | K | | |
| 4 | 4 | VHK□AR-04F-04F | 18 | 41 | 47.6 | 23.8 | 23.8 | 16.5 | 3.5 | 51.6 | 11 | 15.8 | 15.8 | 0.4 | 0.15 | 0.14 | 0.25 | 0.6 | 0.08 | 15 | ø14.4 | VHK-B1A | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 |
| 6 | 6 | VHK□AR-06F-06F | 18 | 41 | 48.6 | 24.3 | 24.3 | 16.5 | 3.5 | 52.6 | 11 | 16.8 | 16.8 | 1.4 | 0.15 | 0.35 | 0.25 | 0.6 | 0.08 | 16 | ø16.8 | VHK-B1A | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 |
| 8 | 8 | VHK□AR-08F-08F | 18 | 41 | 52.4 | 26.2 | 26.2 | 16.5 | 3.5 | 56.4 | 11 | 18.7 | 18.7 | 1.9 | 0.15 | 0.39 | 0.25 | 0.6 | 0.08 | 17 | ø19.2 | VHK-B1A | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 |
| 10 | 10 | VHK□AR-10F-10F | 22 | 46 | 61 | 30.5 | 30.5 | 21.5 | 4 | 65 | 14 | 20.8 | 20.8 | 3.1 | 0.15 | 0.65 | 0.67 | 0.6 | 0.21 | 29 | ø23.3 | VHK-B2A | 49 | 17 | 1 | 30 | 25 | 21.5 | 31 |
| 12 | 12 | VHK□AR-12F-12F | 22 | 46 | 63 | 31.5 | 31.5 | 21.5 | 4 | 67 | 14 | 21.8 | 21.8 | 3.4 | 0.15 | 0.70 | 0.67 | 0.6 | 0.21 | 32 | ø25.7 | VHK-B2A | 49 | 17 | 1 | 30 | 25 | 21.5 | 31 |

Flame Resistant Type: 1(P)/2(A): Male Thread



| Connection thread R | | Model | H | L1 | L2 | L3 | L4 | L5 | L6 | Q | B* | M1 | M2 | Flow rate characteristics | | | | | | Weight (g) | S (Width across flats) | T (Width across flats) | Bracket mounting dimensions | | | | | | |
|------------------------|------|----------------|----|----|------|------|------|------|-----|----|----|-----|------|---------------------------|------|-----|-------------|-----|----|---------------|---------------------------------|---------------------------------|-----------------------------|---|----|----|------|----|--|
| 1(P) | 2(A) | | | | | | | | | | | | | 1(P) → 2(A) | | | 2(A) → 3(R) | | | | | | Bracket assembly no. | | | | | | |
| | | | | | | | | | | | | | | C | b | Cv | C | b | Cv | | C | D | E | F | G | J | K | | |
| 1/6 | 1/8 | VHK□AR-01S-01S | 18 | 41 | 65.2 | 32.6 | 32.6 | 16.5 | 3.5 | 11 | 57 | 1.6 | 0.15 | 0.35 | 0.25 | 0.6 | 0.08 | 30 | 13 | 13 | VHK-B1A | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 | |
| 1/4 | 1/4 | VHK□AR-02S-02S | 18 | 41 | 78 | 39 | 39 | 16.5 | 3.5 | 11 | 66 | 1.9 | 0.15 | 0.39 | 0.25 | 0.6 | 0.08 | 47 | 17 | 17 | VHK-B1A | 44.5 | 14.5 | 1 | 27 | 22 | 16.5 | 26 | |
| 3/8 | 3/8 | VHK□AR-03S-03S | 22 | 46 | 88.6 | 44.3 | 44.3 | 21.5 | 4 | 14 | 76 | 3.1 | 0.15 | 0.66 | 0.67 | 0.6 | 0.21 | 72 | 19 | 19 | VHK-B2A | 49 | 17 | 1 | 30 | 25 | 21.5 | 31 | |
| 1/2 | 1/2 | VHK□AR-04S-04S | 22 | 46 | 97.4 | 48.7 | 48.7 | 21.5 | 4 | 14 | 81 | 3.4 | 0.15 | 0.71 | 0.67 | 0.6 | 0.21 | 101 | 22 | 22 | VHK-B2A | 49 | 17 | 1 | 30 | 25 | 21.5 | 31 | |

* Reference dimensions after insertion of R thread

VHK-A Series

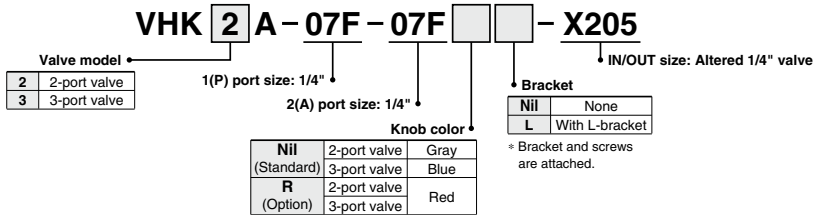
Made to Order

Please contact SMC for detailed dimensions, specifications, and lead times.



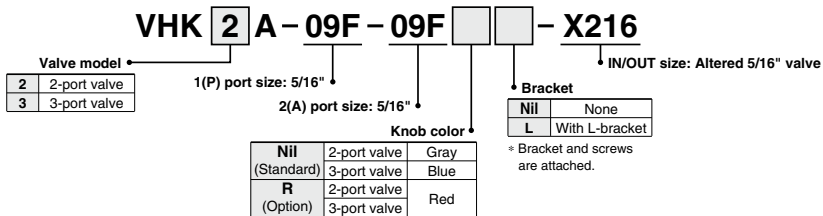
1 IN/OUT Size: Altered 1/4" Valve

X205



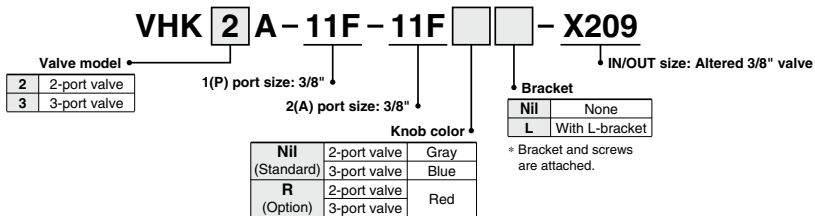
2 IN/OUT Size: Altered 5/16" Valve

X216



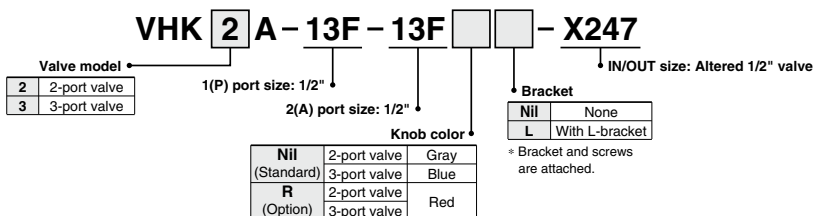
3 IN/OUT Size: Altered 3/8" Valve

X209



4 IN/OUT Size: Altered 1/2" Valve

X247



- VM
- VMG
- VR
- VR51
- VHK
- VH
- VHS
- VHS



VHK-A Series/Precautions

Be sure to read this before handling the products.
Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

Design

⚠ Warning

1. Please contact SMC when fluids other than air are used.
2. Do not supply air pressure from 2(A) port. The air will leak out from 1(P) port.
3. Since the valve allows a small volume of air leakage, it may not be suitable for holding pressure in a pressure vessel.

Selection

⚠ Caution

Operation method:

The valve must be switched to OPEN or SHUT instantly and securely. Stopping the handle halfway between the extreme positions may cause malfunction.

Mounting

⚠ Caution

L type bracket mounting:

Apply a tightening torque of 0.5 to 0.6 N-m to the bolts when the bracket is mounted on the body.

Piping

⚠ Caution

Precautions for handling the male threads of the R pipe fitting with 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, more sealing agent will be forced out. Therefore, make sure to remove the extra sealing agent.
3. Re-use of fittings:
 - 1) Ordinarily, the fitting can be reused 2 to 3 times.
 - 2) Before reusing the fitting, clear off the sealing agent that remains on the removed pipe fitting using an air blower. If the sealing agent is peeled off and enters the peripheral equipment, it can cause air leakage.
 - 3) If the sealing effect has been lost, wrap a seal tape over the sealing agent to reuse the fitting. Do not use any sealing agent other than seal tape.

One-touch Fitting

⚠ Caution

1. When tubing of brands other than SMC's are used, verify that the tubing O.D. satisfies the following accuracy;

- Nylon tubing Within ± 0.1 mm
- Soft nylon tubing Within ± 0.1 mm
- Polyurethane tubing Within $+0.1$ mm, -0.2 mm

If the tube's external accuracy is not satisfied, it may not be possible to connect the tube. Even if it is connected, air leakage or tube disconnection may result.

VM

VMG

VR

VR51

VHK

VH

VHS□

VHS