

# Check Valve with One-touch Fitting Series *AKH/AKB*

## How to Order

**Straight type** **AKH** **04** — **00**

**Male connector type** **AKH** **04** **A** — **01** **S**

**Applicable tubing O.D.**

| Metric size         | Inch size             |
|---------------------|-----------------------|
| <b>04</b> $\phi 4$  | <b>03</b> $\phi 5/32$ |
| <b>06</b> $\phi 6$  | <b>07</b> $\phi 1/4$  |
| <b>08</b> $\phi 8$  | <b>09</b> $\phi 5/16$ |
| <b>10</b> $\phi 10$ | <b>11</b> $\phi 3/8$  |
| <b>12</b> $\phi 12$ | <b>13</b> $\phi 1/2$  |

• **With seal (Standard)**  
\* M5 and 10-32 UNF types are not required.

• **Thread type**

|            |                            |
|------------|----------------------------|
| <b>Nil</b> | Metric thread (M5)         |
|            | Unified thread (10-32 UNF) |
|            | R                          |
| <b>N</b>   | NPT                        |

• **Port size**

|               |           |
|---------------|-----------|
| <b>M5</b>     | M5 x 0.8  |
| <b>U10/32</b> | 10-32 UNF |
| <b>01</b>     | 1/8       |
| <b>02</b>     | 1/4       |
| <b>03</b>     | 3/8       |
| <b>04</b>     | 1/2       |

• **Check valve free flow direction**

|          |                                       |  |
|----------|---------------------------------------|--|
| <b>A</b> | From male thread to One-touch fitting |  |
| <b>B</b> | From One-touch fitting to male thread |  |

## Applicable Tubing O.D./Port Size Combinations

**Metric size**

| Model          | Applicable tubing O.D. | R thread |     |     |     |     |
|----------------|------------------------|----------|-----|-----|-----|-----|
|                |                        | M5       | 1/8 | 1/4 | 3/8 | 1/2 |
| <b>AKH04</b> □ | $\phi 4$               | ●        | ●   |     |     |     |
| <b>AKH06</b> □ | $\phi 6$               | ●        | ●   | ●   |     |     |
| <b>AKH08</b> □ | $\phi 8$               |          | ●   | ●   | ●   |     |
| <b>AKH10</b> □ | $\phi 10$              |          |     | ●   | ●   | ●   |
| <b>AKH12</b> □ | $\phi 12$              |          |     |     | ●   | ●   |

**Inch size**

| Model          | Applicable tubing O.D. | NPT thread |     |     |     |     |
|----------------|------------------------|------------|-----|-----|-----|-----|
|                |                        | 10-32 UNF  | 1/8 | 1/4 | 3/8 | 1/2 |
| <b>AKH03</b> □ | $\phi 5/32$            | ●          | ●   |     |     |     |
| <b>AKH07</b> □ | $\phi 1/4$             | ●          | ●   | ●   |     |     |
| <b>AKH09</b> □ | $\phi 5/16$            |            | ●   | ●   | ●   |     |
| <b>AKH11</b> □ | $\phi 3/8$             |            |     | ●   | ●   | ●   |
| <b>AKH13</b> □ | $\phi 1/2$             |            |     |     | ●   | ●   |

**Bushing type** **AKB** **01** **A** — **01** **S**

• **Body size**

|           |     |
|-----------|-----|
| <b>01</b> | 1/8 |
| <b>02</b> | 1/4 |
| <b>03</b> | 3/8 |
| <b>04</b> | 1/2 |

• **With seal (Standard)**

• **Port size**

|           |     |
|-----------|-----|
| <b>01</b> | 1/8 |
| <b>02</b> | 1/4 |
| <b>03</b> | 3/8 |
| <b>04</b> | 1/2 |

• **Thread type**

|            |     |
|------------|-----|
| <b>Nil</b> | R   |
| <b>N</b>   | NPT |

• **Check valve free flow direction**

|          |                            |  |
|----------|----------------------------|--|
| <b>A</b> | From male to female thread |  |
| <b>B</b> | From female to male thread |  |

## Female/Male Threads Combinations

**R thread**

| Model          | Female thread Rc | Male thread R |     |     |     |
|----------------|------------------|---------------|-----|-----|-----|
|                |                  | 1/8           | 1/4 | 3/8 | 1/2 |
| <b>AKB01</b> □ | 1/8              | ●             |     |     |     |
| <b>AKB02</b> □ | 1/4              |               | ●   |     |     |
| <b>AKB03</b> □ | 3/8              |               |     | ●   |     |
| <b>AKB04</b> □ | 1/2              |               |     |     | ●   |

**NPT thread**

| Model          | Female thread NPT | Male thread NPT |     |     |     |
|----------------|-------------------|-----------------|-----|-----|-----|
|                |                   | 1/8             | 1/4 | 3/8 | 1/2 |
| <b>AKB01</b> □ | 1/8               | ●               |     |     |     |
| <b>AKB02</b> □ | 1/4               |                 | ●   |     |     |
| <b>AKB03</b> □ | 3/8               |                 |     | ●   |     |
| <b>AKB04</b> □ | 1/2               |                 |     |     | ●   |



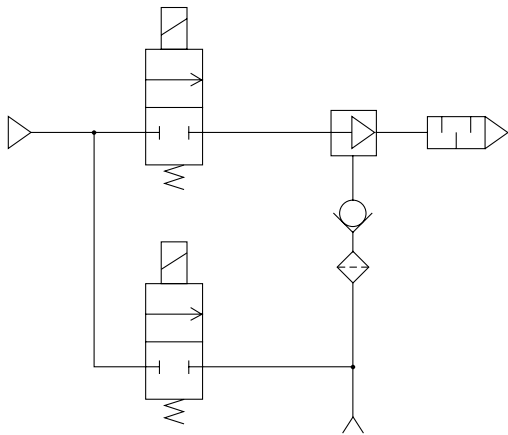
**Specifications**

|                                                     |                                 |
|-----------------------------------------------------|---------------------------------|
| Fluid                                               | Air                             |
| Proof pressure                                      | 1.5 MPa                         |
| Operating pressure range                            | -100 kPa to 1 MPa               |
| Cracking pressure                                   | 0.005 MPa                       |
| Ambient temperature and operating fluid temperature | -5 to 60°C (No freezing)        |
| Applicable tubing material <sup>Note)</sup>         | Nylon, Soft nylon, Polyurethane |

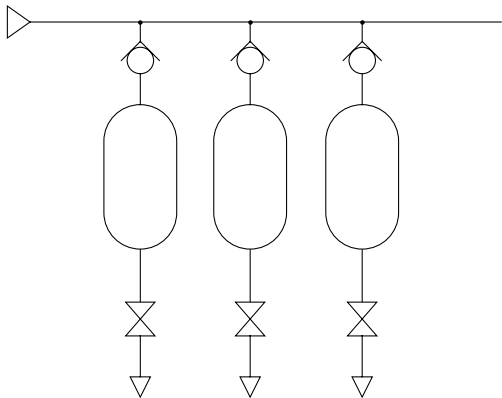
Note) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used.  
(Refer to pages 15-6-3 to 15-6-5 for details.)

**Application Example for Check Valve with One-touch Fitting**

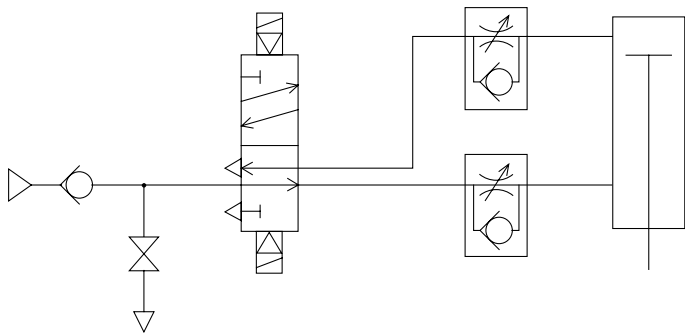
**Prevention of reverse flow to vacuum source \***  
(Simple vacuum holding)



**Tank pressure reverse flow prevention**



**Drop prevention \***



\* A certain amount of leakage is allowed in the specifications of this product.  
Please note that it is not suitable for holding over an extended period of time.

**⚠ Caution**

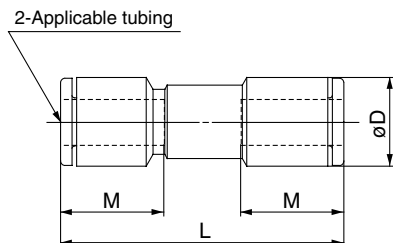
Be sure to read before handling. Refer to pages 15-18-3 to 15-18-4 for Safety Instructions and Common Precautions on the products mentioned in this catalog, and refer to pages 15-8-6 to 15-8-8 for Precautions on every series.

- AS
- ASP
- ASN
- AQ
- ASV
- AK**
- ASS
- ASR
- ASF

# Series AKH/AKB

## Dimensions

### Straight type: AKH



### Metric Size

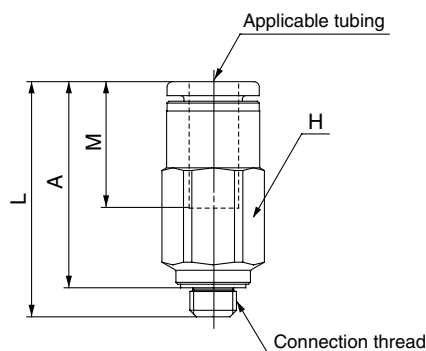
| Applicable tubing O.D. | Model    | øD   | L    | M    | Effective area (mm <sup>2</sup> ) | Weight (g) |
|------------------------|----------|------|------|------|-----------------------------------|------------|
| 4                      | AKH04-00 | 9.3  | 33.5 | 12.7 | 2.8                               | 3          |
| 6                      | AKH06-00 | 11.6 | 37.1 | 13.5 | 6.5                               | 5          |
| 8                      | AKH08-00 | 15.2 | 53.3 | 18.5 | 14                                | 10         |
| 10                     | AKH10-00 | 18.5 | 63.6 | 21   | 24                                | 17         |
| 12                     | AKH12-00 | 21.7 | 70.2 | 22   | 34                                | 25         |

### Inch Size

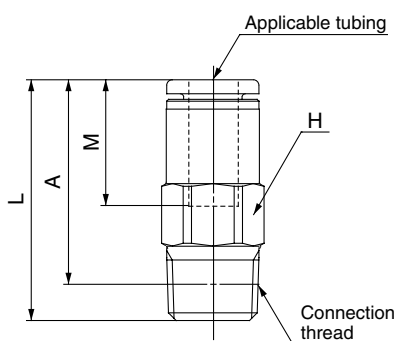
| Applicable tubing O.D. | Model    | øD   | L    | M    | Effective area (mm <sup>2</sup> ) | Weight (g) |
|------------------------|----------|------|------|------|-----------------------------------|------------|
| 5/32                   | AKH03-00 | 9.3  | 33.5 | 12.7 | 2.8                               | 3          |
| 1/4                    | AKH07-00 | 12   | 39   | 13.6 | 6.5                               | 6          |
| 5/16                   | AKH09-00 | 15.2 | 53.3 | 18.5 | 14                                | 10         |
| 3/8                    | AKH11-00 | 18.5 | 63.6 | 21   | 24                                | 17         |
| 1/2                    | AKH13-00 | 21.7 | 70.2 | 22   | 34                                | 24         |

### Male connector type: AKH

<For M5, UNF10-32>



<For R, NPT>



### Metric Size

| Applicable tubing O.D. | Connection thread R | Model      | H<br>(Hexagon width across flats) | L    | A *  | M    | Effective area (mm <sup>2</sup> ) | Weight (g) |
|------------------------|---------------------|------------|-----------------------------------|------|------|------|-----------------------------------|------------|
| 4                      | M5 x 0.8            | AKH04□-M5  | 8                                 | 24.3 | 21.2 | 12.7 | 2.8                               | 5          |
|                        | 1/8                 | AKH04□-01S | 10                                | 24.6 | 20.6 |      |                                   | 10         |
| 6                      | M5 x 0.8            | AKH06□-M5  | 10                                | 25.8 | 22.2 | 13.5 | 2.8                               | 8          |
|                        | 1/8                 | AKH06□-01S | 10                                | 26.9 | 22.9 |      | 6.5                               |            |
|                        | 1/4                 | AKH06□-02S | 14                                | 30   | 24   |      | 6.5                               | 22         |
| 8                      | 1/8                 | AKH08□-01S | 14                                | 31.7 | 27.7 | 18.5 | 6.5                               | 16         |
|                        | 1/4                 | AKH08□-02S | 14                                | 42   | 36   |      |                                   | 24         |
|                        | 3/8                 | AKH08□-03S | 17                                | 42   | 35.5 |      |                                   | 43         |
| 10                     | 1/4                 | AKH10□-02S | 17                                | 54.3 | 48.3 | 21   | 24                                | 45         |
|                        | 3/8                 | AKH10□-03S | 17                                | 47.3 | 40.8 |      |                                   | 39         |
|                        | 1/2                 | AKH10□-04S | 22                                | 49.3 | 41.3 |      |                                   | 80         |
| 12                     | 3/8                 | AKH12□-03S | 19                                | 60.5 | 54   | 22   | 34                                | 62         |
|                        | 1/2                 | AKH12□-04S | 22                                | 54.5 | 46.5 |      |                                   | 80         |

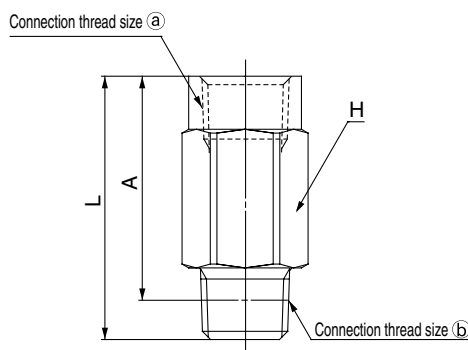
\* Reference dimensions of R thread after installation.

### Inch Size

| Applicable tubing O.D. | Connection thread NPT | Model         | H<br>(Hexagon width across flats) | L    | A *  | M    | Effective area (mm <sup>2</sup> ) | Weight (g) |
|------------------------|-----------------------|---------------|-----------------------------------|------|------|------|-----------------------------------|------------|
| 5/32                   | 10-32 UNF             | AKH03□-U10/32 | 8                                 | 24.3 | 21.2 | 12.7 | 2.8                               | 5          |
|                        | 1/8                   | AKH03□-N01S   | 11.11                             | 24.6 | 20.6 |      |                                   | 10         |
| 1/4                    | 10-32 UNF             | AKH07□-U10/32 | 11.11                             | 25.8 | 22.7 | 13.6 | 2.8                               | 10         |
|                        | 1/8                   | AKH07□-N01S   | 11.11                             | 26.9 | 22.9 |      | 6.5                               | 11         |
|                        | 1/4                   | AKH07□-N02S   | 14.29                             | 31   | 25   |      | 6.5                               | 18         |
| 5/16                   | 1/8                   | AKH09□-N01S   | 14.29                             | 31.7 | 27.7 | 18.5 | 6.5                               | 16         |
|                        | 1/4                   | AKH09□-N02S   | 14.29                             | 42   | 36   |      |                                   | 24         |
|                        | 3/8                   | AKH09□-N03S   | 17.46                             | 42   | 35.5 |      |                                   | 43         |
| 3/8                    | 1/4                   | AKH11□-N02S   | 17.46                             | 54.2 | 48.3 | 21   | 24                                | 47         |
|                        | 3/8                   | AKH11□-N03S   | 17.46                             | 47.2 | 40.7 |      |                                   | 40         |
|                        | 1/2                   | AKH11□-N04S   | 22.23                             | 49.2 | 41.2 |      |                                   | 79         |
| 1/2                    | 3/8                   | AKH13□-N03S   | 22.23                             | 60.5 | 54   | 22   | 34                                | 87         |
|                        | 1/2                   | AKH13□-N04S   | 22.23                             | 54.5 | 46.5 |      |                                   | 85         |

\* Reference dimensions of NPT thread after installation.

### Bushing type: AKB



### Metric Size

| Connection thread size R |     | Model      | H  | L    | A *  | Effective area (mm <sup>2</sup> ) | Weight (g) |
|--------------------------|-----|------------|----|------|------|-----------------------------------|------------|
| (a)                      | (b) |            |    |      |      |                                   |            |
| 1/8                      | 1/8 | AKB01□-01S | 14 | 23.7 | 19.7 | 6.5                               | 18         |
| 1/4                      | 1/4 | AKB02□-02S | 17 | 39.8 | 33.8 | 14                                | 44         |
| 3/8                      | 3/8 | AKB03□-03S | 22 | 45.2 | 38.7 | 24                                | 86         |
| 1/2                      | 1/2 | AKB04□-04S | 24 | 56.2 | 48.2 | 34                                | 113        |

\* Reference dimensions of R thread after installation.

### Inch Size

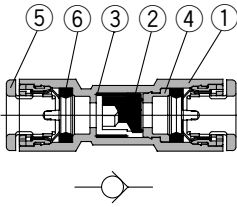
| Connection thread size NPT |     | Model       | H     | L    | A *  | Effective area (mm <sup>2</sup> ) | Weight (g) |
|----------------------------|-----|-------------|-------|------|------|-----------------------------------|------------|
| (a)                        | (b) |             |       |      |      |                                   |            |
| 1/8                        | 1/8 | AKB01□-N01S | 14.29 | 24.2 | 20.2 | 6.5                               | 18         |
| 1/4                        | 1/4 | AKB02□-N02S | 17.46 | 40   | 34   | 14                                | 44         |
| 3/8                        | 3/8 | AKB03□-N03S | 22.23 | 44.9 | 38.4 | 24                                | 86         |
| 1/2                        | 1/2 | AKB04□-N04S | 23.81 | 55.5 | 47.5 | 34                                | 113        |

\* Reference dimensions of NPT thread after installation.

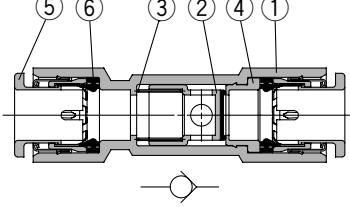
## Construction

### Straight type: AKH

ø4, ø6  
ø5/32, ø1/4



ø8, ø10, ø12  
ø5/16, ø3/8, ø1/2



### Component Parts

| No. | Description | Material            | Note                      |
|-----|-------------|---------------------|---------------------------|
| ①   | Body        | PBT                 |                           |
| ②   | Valve       | NBR, Aluminum alloy |                           |
| ③   | Spring      | Stainless steel     |                           |
| ④   | Spacer      | Brass               | Electroless nickel plated |
| ⑤   | Cassette    | —                   |                           |
| ⑥   | Seal        | NBR                 |                           |

### Male connector type: AKH

|                                                          | M5 type<br>U10/32 | ø4, ø6<br>ø8 × R 1/8<br>ø5/32, ø1/4<br>ø5/16 × NPT 1/8 | ø8, ø10, ø12<br>ø5/16, ø3/8, ø1/2 |
|----------------------------------------------------------|-------------------|--------------------------------------------------------|-----------------------------------|
| Free flow<br>One-touch<br>fitting<br>↓<br>Male<br>thread |                   |                                                        |                                   |
| Free flow<br>One-touch<br>fitting<br>↓<br>Male<br>thread |                   |                                                        |                                   |

### Component Parts

| No. | Description | Material              | Note                      |
|-----|-------------|-----------------------|---------------------------|
| ①   | Body        | Brass                 | Electroless nickel plated |
| ②   | Valve       | NBR, Aluminum alloy   |                           |
| ③   | Spring      | Stainless steel       |                           |
| ④   | Spacer      | Brass                 | Electroless nickel plated |
| ⑤   | Stopper     | Stainless steel       |                           |
| ⑥   | O-ring      | NBR                   |                           |
| ⑦   | Cassette    | —                     |                           |
| ⑧   | Seal        | NBR                   |                           |
| ⑨   | Gasket      | Stainless steel + NBR |                           |

### Bushing type: AKB

|                                                      | R 1/8<br>NPT 1/8 | R 1/4, 3/8, 1/2<br>NPT 1/4, 3/8, 1/2 |
|------------------------------------------------------|------------------|--------------------------------------|
| Free flow<br>Female<br>thread<br>↑<br>Male<br>thread |                  |                                      |
| Free flow<br>Female<br>thread<br>↓<br>Male<br>thread |                  |                                      |

### Component Parts

| No. | Description | Material            | Note                      |
|-----|-------------|---------------------|---------------------------|
| ①   | Body        | Brass               | Electroless nickel plated |
| ②   | Valve       | NBR, Aluminum alloy |                           |
| ③   | Spring      | Stainless steel     |                           |
| ④   | Spacer      | Brass               | Electroless nickel plated |
| ⑤   | Stopper     | Stainless steel     |                           |
| ⑥   | O-ring      | NBR                 |                           |

AS

ASP

ASN

AQ

ASV

AK

ASS

ASR

ASF