

# S Couplers

## Series *KK/*KK13





## Series KK

### Male thread type

| Series | Body size | Connection thread size R |     |     |     |     |
|--------|-----------|--------------------------|-----|-----|-----|-----|
|        |           | 1/8                      | 1/4 | 3/8 | 1/2 | 3/4 |
| KK3    | 1/8       | ●                        | ●   |     |     |     |
| KK4    | 1/4       | ●                        | ●   | ●   | ●   |     |
| KK6    | 1/2       |                          |     | ●   | ●   | ●   |



### Female thread type

| Series | Body size | Connection thread size Rc |     |     |     |
|--------|-----------|---------------------------|-----|-----|-----|
|        |           | 1/8                       | 1/4 | 3/8 | 1/2 |
| KK3    | 1/8       | ●                         |     |     |     |
| KK4    | 1/4       |                           | ●   | ●   |     |
| KK6    | 1/2       |                           |     | ●   | ●   |



### Nut fitting type

| Series | Body size | Applicable hose I.D./O.D. mm |     |        |      |          |       |
|--------|-----------|------------------------------|-----|--------|------|----------|-------|
|        |           | 5/8                          | 6/9 | 6.5/10 | 8/12 | 8.5/12.5 | 11/16 |
| KK3    | 1/8       | ●                            | ●   | ●      |      |          |       |
| KK4    | 1/4       | ●                            | ●   | ●      | ●    | ●        |       |
| KK6    | 1/2       |                              |     |        | ●    | ●        | ●     |



### One-touch fitting type

| Series | Body size | Applicable tubing O.D. mm |   |   |    |    |    |
|--------|-----------|---------------------------|---|---|----|----|----|
|        |           | 4                         | 6 | 8 | 10 | 12 | 16 |
| KK3    | 1/8       | ●                         | ● | ● | ●  |    |    |
| KK4    | 1/4       |                           | ● | ● | ●  | ●  | ●  |
| KK6    | 1/2       |                           |   |   |    | ●  | ●  |



Manufactured by Rectus

## Series KK13



| Series | Connection type    | Connection thread size R, Rc |     |     |     | Applicable hose I.D. |       |      |      |
|--------|--------------------|------------------------------|-----|-----|-----|----------------------|-------|------|------|
|        |                    | 1/8                          | 1/4 | 3/8 | 1/2 | 1/4"                 | 5/16" | 3/8" | 1/2" |
| KK13   | Male thread type   | ●                            | ●   | ●   | ●   |                      |       |      |      |
|        | Female thread type |                              | ●*  | ●   | ●   |                      |       |      |      |
|        | Barb fitting type  |                              |     |     |     | ●                    | ●     | ●    | ●    |

\* Also available with G threads.



# Compact with High Flow Rate

## S Couplers

# Series KK



### Employs a unique connection method

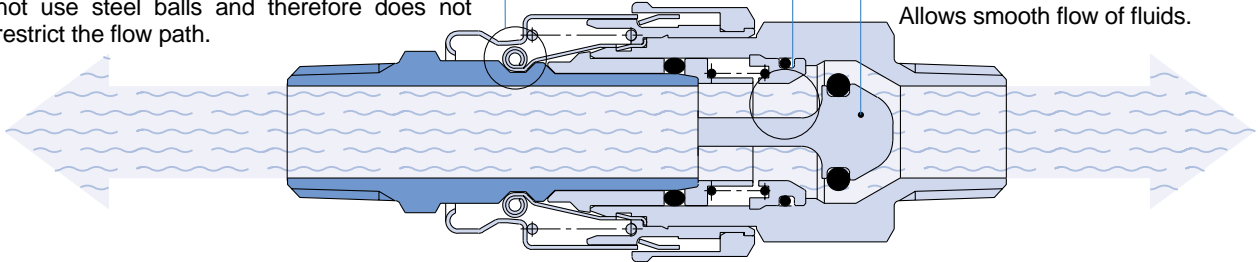
A slim body design and large effective area are achieved with a construction that does not use steel balls and therefore does not restrict the flow path.

### No spring located in the flow path

Loss of effective area is minimized because there is no valve spring to block the flow path.

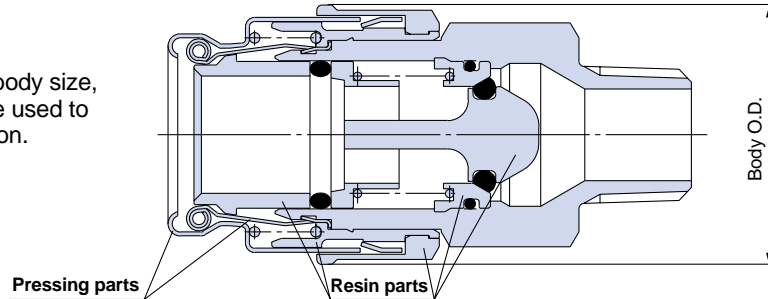
### Check valve end configuration facilitates rectifying effect

Allows smooth flow of fluids.



### Light weight

Together with a reduction of the body size, pressing parts and resin parts are used to achieve an overall weight reduction.



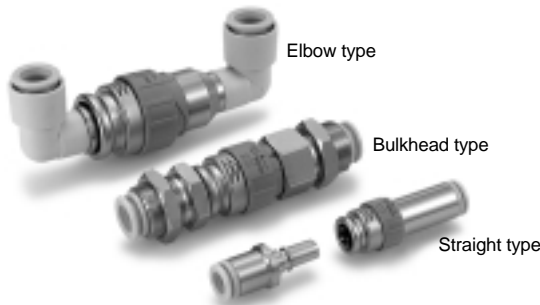
| Series            | Plug no.  | Socket no. | Effective area mm <sup>2</sup> Note 1) | Body O.D. mm | Weight g Note 2) |
|-------------------|-----------|------------|--|--------------|------------------|
| Series <b>KK3</b> | KK3P-01MS | KK3S-01MS  | 20                                     | ø18.2        | 18.9             |
| Series <b>KK4</b> | KK4P-02MS | KK4S-02MS  | 39                                     | ø25.4        | 41.3             |
| Series <b>KK6</b> | KK6P-04MS | KK6S-04MS  | 82                                     | ø31.2        | 87.7             |

Note 1) Values when plug and socket are connected.

Note 2) Values for socket only.

### One-touch fitting type standardized

Three types from ø4 to ø16 added to series.

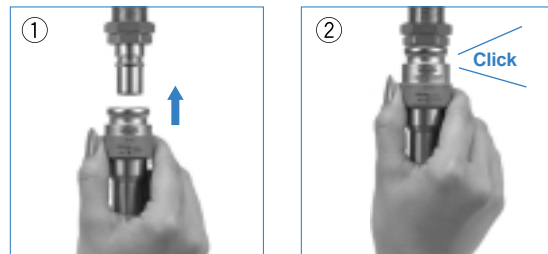


### Flow is possible from the plug side or socket side.

### Fluids: Air and Water

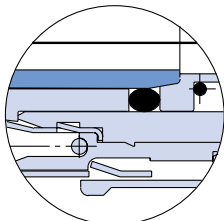
### One-touch connection

Simple connection with one hand simplifies work.



### Low leakage seal construction

Reliable sealing is achieved by surface contact.



### Sleeve lock mechanism

Prevents accidents caused by unexpected separation.




## Variations

### Plug (P)


#### Male thread type

| Body size | Port size | Part no.         |
|-----------|-----------|------------------|
| 1/8       | R 1/8     | <b>KK3P-01MS</b> |
|           | R 1/4     | <b>-02MS</b>     |
| 1/4       | R 1/8     | <b>KK4P-01MS</b> |
|           | R 1/4     | <b>-02MS</b>     |
|           | R 3/8     | <b>-03MS</b>     |
|           | R 1/2     | <b>-04MS</b>     |
| 1/2       | R 3/8     | <b>KK6P-03MS</b> |
|           | R 1/2     | <b>-04MS</b>     |
|           | R 3/4     | <b>-06MS</b>     |




#### Female thread type

| Body size | Port size | Part no.        |
|-----------|-----------|-----------------|
| 1/8       | Rc 1/8    | <b>KK3P-01F</b> |
| 1/4       | Rc 1/4    | <b>KK4P-02F</b> |
|           | Rc 3/8    | <b>-03F</b>     |
| 1/2       | Rc 3/8    | <b>KK6P-03F</b> |
|           | Rc 1/2    | <b>-04F</b>     |




#### Nut fitting type (for fiber reinforced urethane hose)

| Body size | Applicable hose I.D./O.D. mm | Part no.        |
|-----------|------------------------------|-----------------|
| 1/8       | 5/8                          | <b>KK3P-50N</b> |
|           | 6/9                          | <b>-60N</b>     |
|           | 6.5/10                       | <b>-65N</b>     |
| 1/4       | 5/8                          | <b>KK4P-50N</b> |
|           | 6/9                          | <b>-60N</b>     |
|           | 6.5/10                       | <b>-65N</b>     |
|           | 8/12                         | <b>-80N</b>     |
|           | 8.5/12.5                     | <b>-85N</b>     |
| 1/2       | 8/12                         | <b>KK6P-80N</b> |
|           | 8.5/12.5                     | <b>-85N</b>     |
|           | 11/16                        | <b>-110N</b>    |




#### Straight type with One-touch fitting

| Body size | Applicable tubing O.D. mm | Part no.        |
|-----------|---------------------------|-----------------|
| 1/8       | 4                         | <b>KK3P-04H</b> |
|           | 6                         | <b>-06H</b>     |
|           | 8                         | <b>-08H</b>     |
|           | 10                        | <b>-10H</b>     |
| 1/4       | 6                         | <b>KK4P-06H</b> |
|           | 8                         | <b>-08H</b>     |
|           | 10                        | <b>-10H</b>     |
|           | 12                        | <b>-12H</b>     |
| 1/2       | 12                        | <b>KK6P-12H</b> |
|           | 16                        | <b>-16H</b>     |




#### Elbow type with One-touch fitting

| Body size | Applicable tubing O.D. mm | Part no.        |
|-----------|---------------------------|-----------------|
| 1/8       | 4                         | <b>KK3P-04L</b> |
|           | 6                         | <b>-06L</b>     |
|           | 8                         | <b>-08L</b>     |
|           | 10                        | <b>-10L</b>     |
| 1/4       | 6                         | <b>KK4P-06L</b> |
|           | 8                         | <b>-08L</b>     |
|           | 10                        | <b>-10L</b>     |
| 1/2       | 12                        | <b>KK6P-12L</b> |
|           | 16                        | <b>-16L</b>     |



#### Bulkhead type with One-touch fitting


| Body size | Applicable tubing O.D. mm | Part no.        |
|-----------|---------------------------|-----------------|
| 1/8       | 4                         | <b>KK3P-04E</b> |
|           | 6                         | <b>-06E</b>     |
|           | 8                         | <b>-08E</b>     |
|           | 10                        | <b>-10E</b>     |
| 1/4       | 6                         | <b>KK4P-06E</b> |
|           | 8                         | <b>-08E</b>     |
|           | 10                        | <b>-10E</b>     |
| 1/2       | 12                        | <b>KK6P-12E</b> |
|           | 16                        | <b>-16E</b>     |



### Socket (S)


#### Male thread type

| Body size | Port size | Part no.         |
|-----------|-----------|------------------|
| 1/8       | R 1/8     | <b>KK3S-01MS</b> |
|           | R 1/4     | <b>-02MS</b>     |
| 1/4       | R 1/8     | <b>KK4S-01MS</b> |
|           | R 1/4     | <b>-02MS</b>     |
|           | R 3/8     | <b>-03MS</b>     |
|           | R 1/2     | <b>-04MS</b>     |
| 1/2       | R 3/8     | <b>KK6S-03MS</b> |
|           | R 1/2     | <b>-04MS</b>     |
|           | R 3/4     | <b>-06MS</b>     |




#### Female thread type

| Body size | Port size | Part no.        |
|-----------|-----------|-----------------|
| 1/8       | Rc 1/8    | <b>KK3S-01F</b> |
| 1/4       | Rc 1/4    | <b>KK4S-02F</b> |
|           | Rc 3/8    | <b>-03F</b>     |
| 1/2       | Rc 3/8    | <b>KK6S-03F</b> |
|           | Rc 1/2    | <b>-04F</b>     |




#### Nut fitting type (for fiber reinforced urethane hose)

| Body size | Applicable hose I.D./O.D. mm | Part no.        |
|-----------|------------------------------|-----------------|
| 1/8       | 5/8                          | <b>KK3S-50N</b> |
|           | 6/9                          | <b>-60N</b>     |
|           | 6.5/10                       | <b>-65N</b>     |
| 1/4       | 5/8                          | <b>KK4S-50N</b> |
|           | 6/9                          | <b>-60N</b>     |
|           | 6.5/10                       | <b>-65N</b>     |
|           | 8/12                         | <b>-80N</b>     |
|           | 8.5/12.5                     | <b>-85N</b>     |
| 1/2       | 8/12                         | <b>KK6S-80N</b> |
|           | 8.5/12.5                     | <b>-85N</b>     |
|           | 11/16                        | <b>-110N</b>    |




#### Straight type with One-touch fitting

| Body size | Applicable tubing O.D. mm | Part no.        |
|-----------|---------------------------|-----------------|
| 1/8       | 4                         | <b>KK3S-04H</b> |
|           | 6                         | <b>-06H</b>     |
|           | 8                         | <b>-08H</b>     |
|           | 10                        | <b>-10H</b>     |
| 1/4       | 6                         | <b>KK4S-06H</b> |
|           | 8                         | <b>-08H</b>     |
|           | 10                        | <b>-10H</b>     |
|           | 12                        | <b>-12H</b>     |
| 1/2       | 12                        | <b>KK6S-12H</b> |
|           | 16                        | <b>-16H</b>     |



#### Elbow type with One-touch fitting

| Body size | Applicable tubing O.D. mm | Part no.        |
|-----------|---------------------------|-----------------|
| 1/8       | 4                         | <b>KK3S-04L</b> |
|           | 6                         | <b>-06L</b>     |
|           | 8                         | <b>-08L</b>     |
|           | 10                        | <b>-10L</b>     |
| 1/4       | 6                         | <b>KK4S-06L</b> |
|           | 8                         | <b>-08L</b>     |
|           | 10                        | <b>-10L</b>     |
| 1/2       | 12                        | <b>KK6S-12L</b> |
|           | 16                        | <b>-16L</b>     |



#### Bulkhead type with One-touch fitting

| Body size | Applicable tubing O.D. mm | Part no.        |
|-----------|---------------------------|-----------------|
| 1/8       | 4                         | <b>KK3S-04E</b> |
|           | 6                         | <b>-06E</b>     |
|           | 8                         | <b>-08E</b>     |
|           | 10                        | <b>-10E</b>     |
| 1/4       | 6                         | <b>KK4S-06E</b> |
|           | 8                         | <b>-08E</b>     |
|           | 10                        | <b>-10E</b>     |
| 1/2       | 12                        | <b>KK6S-12E</b> |
|           | 16                        | <b>-16E</b>     |



# S Couplers

# Series *KK*



## Specifications

|                                      |   |
|--------------------------------------|---|
| <b>Fluid</b>                         | Air, Water (standard industrial water)  |
| <b>Operating pressure range</b>      | 0 to 1.0MPa   |
| <b>Proof pressure</b>                | 1.5MPa  |
| <b>Ambient and fluid temperature</b> | -5 to 60°C  |
| <b>Plating, Sealant</b>              | Electroless nickel plated (copper-free application), With male thread sealant |

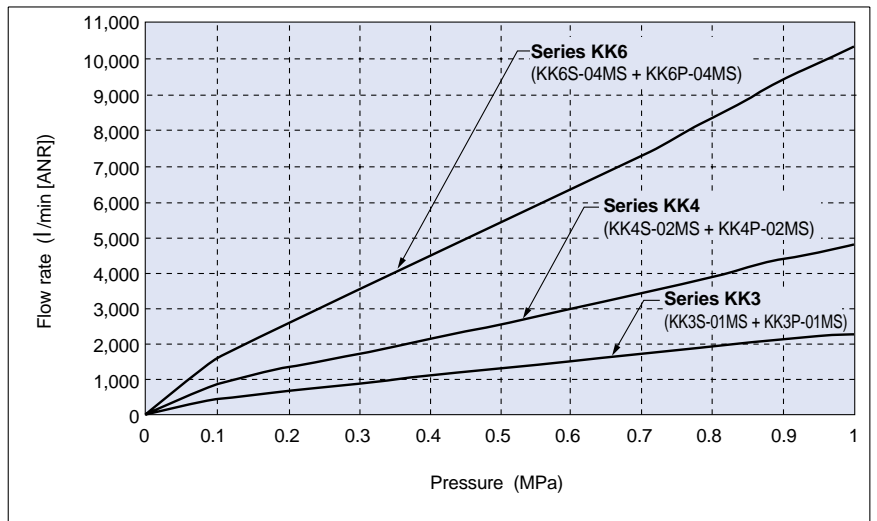
## Performance

|                                   |   |
|-----------------------------------|---|
| <b>Plug and socket connection</b> | One-touch connection and release        |
| <b>Check valve</b>                | Socket: Built-in check valve (standard) |
| <b>Sleeve lock mechanism</b>      | Manual locking type (standard)          |

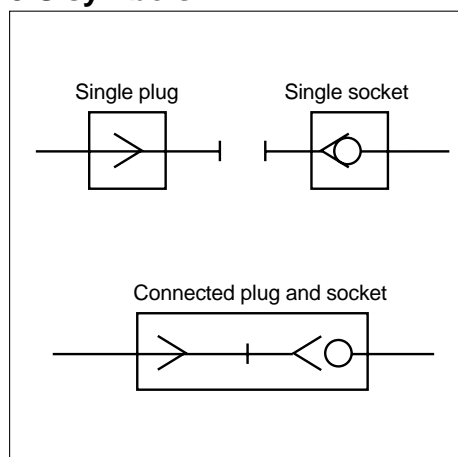
## Effective Area

| Body size | Plug      | Socket    | Effective area mm <sup>2</sup> |
|-----------|-----------|-----------|--------------------------------|
| 1/8       | KK3P-01MS | KK3S-01MS | 20                             |
| 1/4       | KK4P-02MS | KK4S-02MS | 39                             |
| 1/2       | KK6P-04MS | KK6S-04MS | 82                             |

## Flow Characteristics



## JIS symbols



How to Order

**KK 4 S-02 M S**

● Body size
● With sealant (male thread)

|   |     |
|---|-----|
| 3 | 1/8 |
| 4 | 1/4 |
| 6 | 1/2 |

● Socket/Plug designation

|   |        |
|---|--------|
| S | Socket |
| P | Plug   |

● Connection type

| Symbol | Type                            |
|--------|---------------------------------|
| M      | Male thread                     |
| F      | Female thread                   |
| N      | With nut fitting                |
| H      | Straight with One-touch fitting |
| L      | Elbow with One-touch fitting    |
| E      | Bulkhead with One-touch fitting |

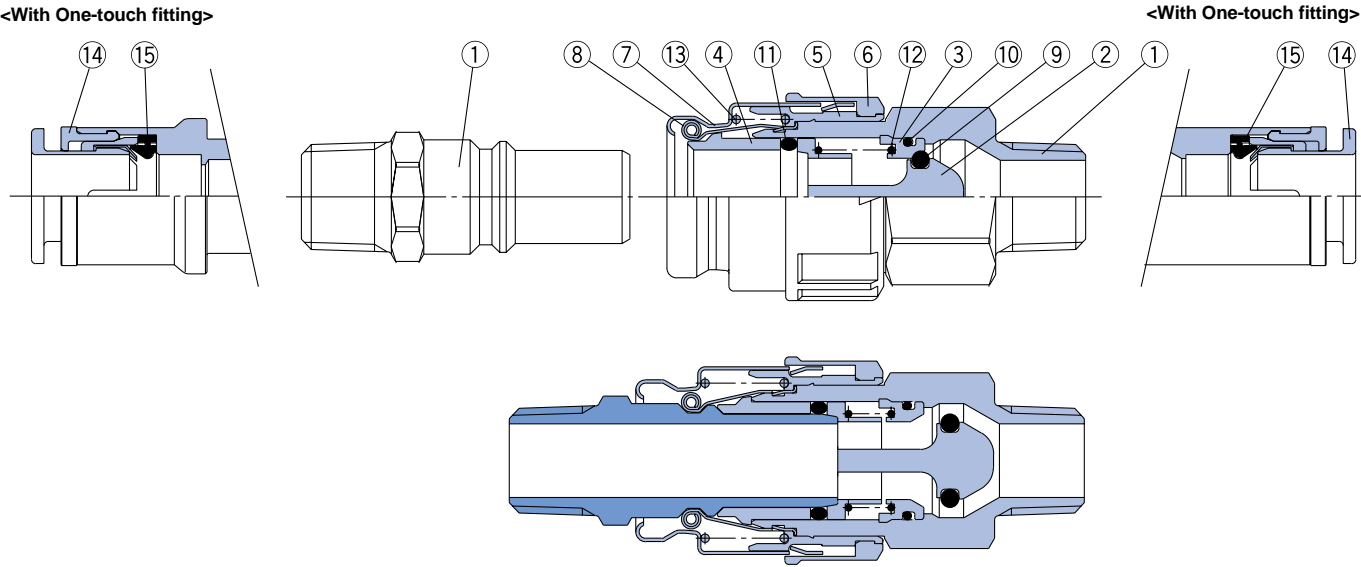
● Piping port size variation

| Male/Female thread type |             |
|-------------------------|-------------|
| Symbol                  | Thread size |
| 01                      | R, Rc 1/8   |
| 02                      | R, Rc 1/4   |
| 03                      | R, Rc 3/8   |
| 04                      | R, Rc 1/2   |
| 06                      | R, Rc 3/4   |

| One-touch fitting type |                |
|------------------------|----------------|
| Symbol                 | Tubing O.D. mm |
| 04                     | ø4             |
| 06                     | ø6             |
| 08                     | ø8             |
| 10                     | ø10            |
| 12                     | ø12            |
| 16                     | ø16            |

| Nut fitting type |                   |
|------------------|-------------------|
| Symbol           | Hose O.D./I.D. mm |
| 50               | 8/5               |
| 60               | 9/6               |
| 65               | 10/6.5            |
| 80               | 12/8              |
| 85               | 12.5/8.5          |
| 110              | 16/11             |

Construction



Plug

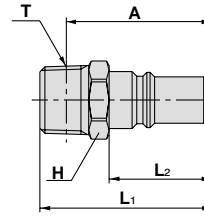
| No. | Description | Material | Note                      |
|-----|-------------|----------|---------------------------|
| 1   | Stem        | Brass    | Electroless nickel plated |
| 14  | Cassette    | —        |                           |
| 15  | Seal        | NBR      |                           |

Socket

| No. | Description       | Material                       | Note                      |
|-----|-------------------|--------------------------------|---------------------------|
| 1   | Body              | Brass                          | Electroless nickel plated |
| 2   | Valve             | PBT                            |                           |
| 3   | Valve seat        | PBT                            |                           |
| 4   | Collar            | PBT                            |                           |
| 5   | Spacer            | PBT                            |                           |
| 6   | Lock ring         | PBT                            |                           |
| 7   | Sleeve            | Cold rolled carbon steel sheet | Electroless nickel plated |
| 8   | Chuck             | Stainless steel                |                           |
| 9   | Valve O-ring      | FPM                            |                           |
| 10  | Valve seat O-ring | NBR                            |                           |
| 11  | Plug O-ring       | NBR                            |                           |
| 12  | Valve spring      | Stainless steel                |                           |
| 13  | Sleeve spring     | Stainless steel                |                           |
| 14  | Cassette          | —                              |                           |
| 15  | Seal              | NBR                            |                           |

## Dimensions/Plug (P)

### Male thread type

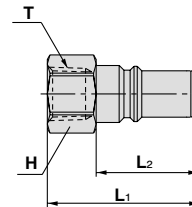


(mm)

| Body size | Model     | T<br>Connection<br>male thread | H<br>Width<br>across flats | L <sub>1</sub> | L <sub>2</sub> | A*   | Min. bore | Effective<br>area<br>mm <sup>2</sup> | Weight<br>g |
|-----------|-----------|--------------------------------|----------------------------|----------------|----------------|------|-----------|--------------------------------------|-------------|
| 1/8       | KK3P-01MS | R 1/8                          | 10                         | 30.4           | 18.4           | 26.4 | 6         | 22.6                                 | 8.4         |
|           | -02MS     | R 1/4                          |                            | 33.4           |                | 27.4 |           |                                      | 14.2        |
| 1/4       | KK4P-01MS | R 1/8                          | 14                         | 37             | 25.2           | 33   | 9         | 50.9                                 | 17          |
|           | -02MS     | R 1/4                          |                            | 40.2           |                | 34.2 |           |                                      | 20.2        |
|           | -03MS     | R 3/8                          | 17                         | 42.2           |                | 35.7 |           |                                      | 32.5        |
|           | -04MS     | R 1/2                          | 22                         | 46.2           |                | 38.2 |           |                                      | 57.4        |
| 1/2       | KK6P-03MS | R 3/8                          | 19                         | 48             | 31             | 41.5 | 11        | 76.0                                 | 44.7        |
|           | -04MS     | R 1/2                          | 22                         | 52             |                | 44   | 13        | 106.2                                | 53.7        |
|           | -06MS     | R 3/4                          | 27                         | 55             |                | 45.5 |           |                                      | 94.4        |

\* Reference dimension for R threads after installation.

### Female thread type

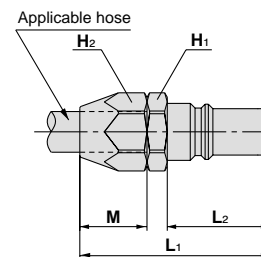


(mm)

| Body size | Model    | T<br>Connection<br>female thread | H<br>Width<br>across flats | L <sub>1</sub> | L <sub>2</sub> | Min. bore | Effective<br>area<br>mm <sup>2</sup> | Weight<br>g |
|-----------|----------|----------------------------------|----------------------------|----------------|----------------|-----------|--------------------------------------|-------------|
| 1/8       | KK3P-01F | Rc 1/8                           | 14                         | 28.3           | 18.4           | 6         | 22.6                                 | 10.4        |
| 1/4       | KK4P-02F | Rc 1/4                           | 17                         | 37.2           | 25.2           | 9         | 50.9                                 | 23.9        |
|           | -03F     | Rc 3/8                           | 19                         | 39.8           |                |           |                                      | 24.6        |
| 1/2       | KK6P-03F | Rc 3/8                           | 19                         | 43.3           | 31             | 13        | 106.2                                | 28.6        |
|           | -04F     | Rc 1/2                           | 24                         | 50.2           |                |           |                                      | 43.9        |

### Nut fitting type

(for urethane hose with fiber reinforcement)

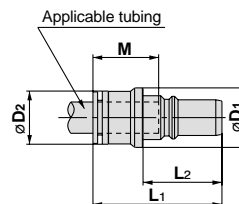


(mm)

| Body size | Model    | Applicable<br>hose<br>I.D./O.D. mm | H <sub>1</sub><br>Width<br>across flats | H <sub>2</sub><br>Width<br>across flats | L <sub>1</sub> | L <sub>2</sub> | M    | Min. bore | Effective<br>area<br>mm <sup>2</sup> | Weight<br>g |      |
|-----------|----------|------------------------------------|---|---|----------------|----------------|------|-----------|--------------------------------------|-------------|------|
| 1/8       | KK3P-50N | 5/8                                | 14                                      | 14                                      | 36.1           | 18.4           | 13.7 | 4.5       | 12.7                                 | 21.4        |      |
|           | -60N     | 6/9                                |   | 17                                      |                |                | 39.9 | 16.5      | 5.4                                  | 18.3        | 38.8 |
|           | -65N     | 6.5/10                             |   |   |                |                |      |           | 5.9                                  | 21.9        | 35.9 |
| 1/4       | KK4P-50N | 5/8                                | 17                                      | 14                                      | 43.9           | 25.2           | 13.7 | 4.5       | 12.7                                 | 34.7        |      |
|           | -60N     | 6/9                                |   | 17                                      |                |                | 46.7 | 16.5      | 5.4                                  | 18.3        | 48.4 |
|           | -65N     | 6.5/10                             |   |   |                |                |      | 5.9       | 21.9                                 | 45.1        |      |
|           | -80N     | 8/12                               |   |   |                |                |      | 7.4       | 34.4                                 | 53.2        |      |
|           | -85N     | 8.5/12.5                           |   |   |                |                |      | 7.8       | 38.2                                 | 55.6        |      |
| 1/2       | KK6P-80N | 8/12                               | 19                                      | 19                                      | 53.4           | 31             | 17.4 | 7.4       | 34.4                                 | 60.5        |      |
|           | -85N     | 8.5/12.5                           |   |   |                |                |      |           | 7.8                                  | 38.2        | 62.8 |
|           | -110N    | 11/16                              | 24                                      | 24                                      |                |                | 57.2 | 20.1      | 10.2                                 | 65.4        | 96.5 |



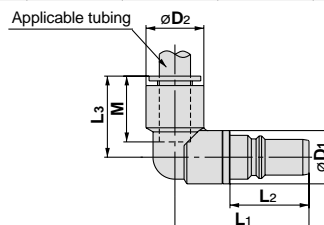
## Straight type with One-touch fitting



(mm)

| Body size | Model    | Applicable tubing O.D. mm | $\phi D_1$ | $\phi D_2$ | L <sub>1</sub> | L <sub>2</sub> | M         | Min. bore | Effective area mm <sup>2</sup> |              | Weight g |
|-----------|----------|---------------------------|------------|------------|----------------|----------------|-----------|-----------|--------------------------------|--------------|----------|
|           |          |                           |            |            |                |                |           |           | Urethane tubing                | Nylon tubing |          |
| 1/8       | KK3P-04H | $\phi 4$                  | 12         | 10         | 35.4           | 18.4           | 16        | 3.2       | 3.9                            | 5.6          | 7.9      |
|           | -06H     | $\phi 6$                  | 14         | 12         |                |                | 17        | 4.7       | 10.1                           | 12.8         | 9.1      |
|           | -08H     | $\phi 8$                  | 16         | 14         | 38.6           |                | 6         | 18.5      | 15.7                           | 22.6         | 13.2     |
|           | -10H     | $\phi 10$                 | 19         | 17         | 39.7           |                |           | 21        | 22.6                           |              | 17.6     |
| 1/4       | KK4P-06H | $\phi 6$                  | 14         | 12         | 46.2           | 25.2           | 17        | 4.7       | 10.1                           | 12.8         | 22.3     |
|           | -08H     | $\phi 8$                  | 16         | 14         |                |                | 18.5      | 6.2       | 19.8                           | 22.6         | 23.0     |
|           | -10H     | $\phi 10$                 | 19         | 17         | 21             |                | 7.7       | 27.6      | 35.3                           | 27.1         |          |
|           | -12H     | $\phi 12$                 | 21         | 19         | 47.5           |                | 9         | 40.2      | 50.9                           | 30.0         |          |
| 1/2       | KK6P-12H | $\phi 12$                 | 21         | 19         | 56.1           | 31             | 22        | 9.2       |                                | 41.2         | 44.4     |
|           | -16H     |                           |            |            |                |                | $\phi 16$ | 26        | 25.7                           | 25           | 13       |

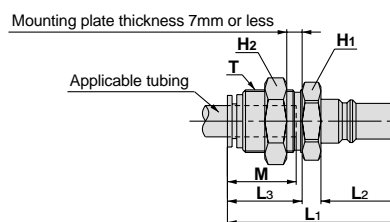
## Elbow type with One-touch fitting



(mm)

| Body size | Model    | Applicable tubing O.D. mm | $\phi D_1$ | $\phi D_2$ | L <sub>1</sub> | L <sub>2</sub> | L <sub>3</sub> | M    | Min. bore | Effective area mm <sup>2</sup> |              | Weight g |
|-----------|----------|---------------------------|------------|------------|----------------|----------------|----------------|------|-----------|--------------------------------|--------------|----------|
|           |          |                           |            |            |                |                |                |      |           | Urethane tubing                | Nylon tubing |          |
| 1/8       | KK3P-04L | $\phi 4$                  | 10         | 10.4       | 31.6           | 18.4           | 18             | 16   | 3         | 3.7                            | 5.3          | 7.2      |
|           | -06L     | $\phi 6$                  |            | 12.8       | 32.8           |                | 20             | 17   | 4.5       | 10.1                           | 11.4         | 8.0      |
|           | -08L     | $\phi 8$                  | 15.2       | 34         | 6              |                | 23             | 18.5 | 15.0      | 16.8                           | 9.7          |          |
|           | -10L     | $\phi 10$                 | 17         | 18.5       |                |                | 36             | 26.5 | 21        | 18.0                           | 18.5         | 23.0     |
| 1/4       | KK4P-06L | $\phi 6$                  | 14         | 12.8       | 40.2           | 25.2           | 20             | 17   | 4.5       | 10.1                           | 11.4         | 19.6     |
|           | -08L     | $\phi 8$                  |            | 15.2       | 41.4           |                | 23             | 18.5 | 6         | 17.5                           | 19.8         | 21.3     |
|           | -10L     | $\phi 10$                 | 18.5       | 42.8       | 7.5            |                | 26.5           | 21   | 24.7      | 27.5                           | 25.7         |          |
|           | -12L     | $\phi 12$                 | 17         | 44         |                |                | 28.5           | 22   | 9         | 29.0                           | 29.6         | 28.0     |
| 1/2       | KK6P-12L | $\phi 12$                 | 19         | 20.9       | 49.9           | 31             | 34             | 25   | 13        | 38.1                           | 39.7         | 40.3     |
|           | -16L     | $\phi 16$                 | 21         | 26.5       | 53.5           |                |                |      |           | —                              | 58.7         | 48.7     |

## Bulkhead type with One-touch fitting

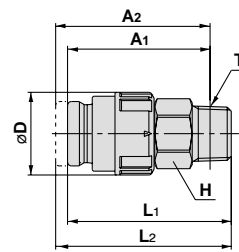


(mm)

| Body size | Model    | Applicable tubing O.D. mm | T Threads | H <sub>1</sub> Width across flats | H <sub>2</sub> Width across flats | L <sub>1</sub> | L <sub>2</sub> | L <sub>3</sub> | M    | Min. bore | Effective area mm <sup>2</sup> |              | Weight g |
|-----------|----------|---------------------------|-----------|-----------------------------------|-----------------------------------|----------------|----------------|----------------|------|-----------|--------------------------------|--------------|----------|
|           |          |                           |           |                                   |                                   |                |                |                |      |           | Urethane tubing                | Nylon tubing |          |
| 1/8       | KK3P-04E | $\phi 4$                  | M12 x 1   | 14                                | 14                                | 39.3           | 18.4           | 16.9           | 16   | 3.2       | 3.9                            | 5.6          | 16.6     |
|           | -06E     | $\phi 6$                  | M14 x 1   | 17                                | 17                                | 40.2           |                | 16.8           | 17   | 4.7       | 10.1                           | 12.8         | 22.3     |
|           | -08E     | $\phi 8$                  | M16 x 1   |                                   | 19                                | 43.4           |                | 6              | 20   | 18.5      | 15.7                           | 22.6         | 30.2     |
|           | -10E     | $\phi 10$                 | M20 x 1   | 22                                | 24                                | 46.4           |                |                | 22   | 21        | 22.6                           |              | 54.7     |
| 1/4       | KK4P-06E | $\phi 6$                  | M14 x 1   | 17                                | 17                                | 47             | 25.2           | 16.8           | 17   | 4.7       | 10.1                           | 12.8         | 30.6     |
|           | -08E     | $\phi 8$                  | M16 x 1   |                                   | 19                                | 50.2           |                | 20             | 18.5 | 6.2       | 19.8                           | 22.6         | 38.2     |
|           | -10E     | $\phi 10$                 | M20 x 1   | 22                                | 24                                | 53.2           |                | 7.7            | 22   | 21        | 27.6                           | 35.3         | 61.4     |
|           | -12E     | $\phi 12$                 | M22 x 1   | 24                                | 27                                | 54.2           |                |                | 9    | 40.2      | 75.2                           |              |          |
| 1/2       | KK6P-12E | $\phi 12$                 | M22 x 1   | 24                                | 27                                | 60.1           | 31             | 23             | 22   | 9.2       | 41.2                           | 50.9         | 86.1     |
|           | -16E     | $\phi 16$                 | M28 x 1.5 | 30                                | 32                                | 62.6           |                |                |      |           |                                |              |          |

## Dimensions/Socket (S)

### Male thread type

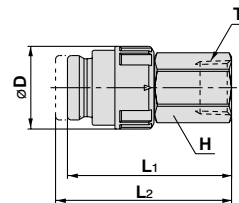


(mm)

| Body size | Model     | T Connection male thread | H Width across flats | $\phi D$ | L <sub>1</sub> | L <sub>2</sub> When connected | A <sub>1</sub> * | A <sub>2</sub> * When connected | Min. bore | Effective area mm <sup>2</sup> | Weight g |
|-----------|-----------|--------------------------|----------------------|----------|----------------|-------------------------------|------------------|---------------------------------|-----------|--------------------------------|----------|
| 1/8       | KK3S-01MS | R 1/8                    | 14                   | 18.2     | 37.5           | 40                            | 33.5             | 36                              | 6         | 19.1                           | 18.9     |
|           | -02MS     | R 1/4                    |                      |          |                |                               | 31.5             | 34                              | 9         | 21.1                           | 18.0     |
| 1/4       | KK4S-01MS | R 1/8                    | 19                   | 25.4     | 50.4           | 54.1                          | 46.4             | 50.1                            | 6         | 22.9                           | 44.7     |
|           | -02MS     | R 1/4                    |                      |          | 51             | 54.7                          | 45               | 48.7                            | 9         | 35.9                           | 41.3     |
|           | -03MS     | R 3/8                    | 50                   |          | 53.7           | 43.5                          | 47.2             | 11                              | 40.4      | 48.1                           |          |
|           | -04MS     | R 1/2                    | 49.7                 |          | 53.4           | 41.7                          | 45.4             | 13                              | 42.7      | 58.4                           |          |
| 1/2       | KK6S-03MS | R 3/8                    | 24                   | 31.2     | 60.2           | 65.5                          | 53.7             | 59                              | 11        | 71.7                           | 85.5     |
|           | -04MS     | R 1/2                    |                      |          |                |                               | 52.2             | 57.5                            | 13        | 80.1                           | 87.7     |
|           | -06MS     | R 3/4                    | 27                   |          |                |                               | 50.7             | 56                              | 15        | 81.6                           | 110.9    |

\* Reference dimension for R threads after installation.

### Female thread type

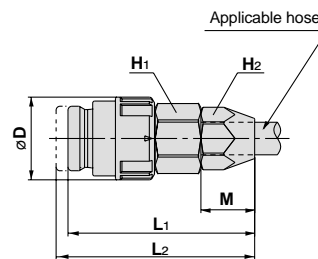


(mm)

| Body size | Model    | T Connection female thread | H Width across flats | $\phi D$ | L <sub>1</sub> | L <sub>2</sub> When connected | Min. bore | Effective area mm <sup>2</sup> | Weight g |
|-----------|----------|----------------------------|----------------------|----------|----------------|-------------------------------|-----------|--------------------------------|----------|
| 1/8       | KK3S-01F | Rc 1/8                     | 14                   | 18.2     | 36             | 38.5                          | 8.2       | 20.6                           | 22.4     |
| 1/4       | KK4S-02F | Rc 1/4                     | 19                   | 25.4     | 50.4           | 54.1                          | 10.9      | 36.6                           | 54.1     |
|           | -03F     | Rc 3/8                     |                      |          | 51.1           | 54.8                          | 14.4      | 42.7                           | 43.4     |
| 1/2       | KK6S-03F | Rc 3/8                     | 24                   | 31.2     | 58.6           | 63.9                          | 14.4      | 80.9                           | 91.2     |
|           | -04F     | Rc 1/2                     |                      |          | 61             | 66.3                          | 18        | 81.6                           | 85.0     |

### Nut fitting type

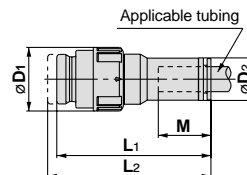
(for urethane hose with fiber reinforcement)



(mm)

| Body size | Model    | Applicable hose I.D./O.D. mm | H <sub>1</sub> Width across flats | H <sub>2</sub> Width across flats | $\phi D$ | L <sub>1</sub> | L <sub>2</sub> When connected | M     | Min. bore | Effective area mm <sup>2</sup> | Weight g |
|-----------|----------|------------------------------|-----------------------------------|-----------------------------------|----------|----------------|-------------------------------|-------|-----------|--------------------------------|----------|
| 1/8       | KK3S-50N | 5/8                          | 14                                | 14                                | 18.2     | 42.6           | 45.1                          | 13.7  | 4.5       | 12.2                           | 30.9     |
|           | -60N     | 6/9                          | 17                                | 17                                |          | 44.4           | 46.9                          | 16.5  | 5.4       | 18.3                           | 47.5     |
|           | -65N     | 6.5/10                       |                                   |                                   |          | 5.9            | 19.2                          | 45.2  |           |                                |          |
| 1/4       | KK4S-50N | 5/8                          | 19                                | 14                                | 25.4     | 54.1           | 57.8                          | 13.7  | 4.5       | 12.2                           | 53.0     |
|           | -60N     | 6/9                          |                                   | 17                                |          | 56.8           | 60.5                          | 16.5  | 5.4       | 20.4                           | 66.5     |
|           | -65N     | 6.5/10                       |                                   |                                   |          | 19             | 55.4                          | 59.1  | 17.4      | 7.4                            | 35.1     |
|           | -80N     | 8/12                         |                                   | 7.8                               |          |                | 7.8                           | 36.6  |           | 68.3                           |          |
|           | -85N     | 8.5/12.5                     |                                   |                                   |          |                | 7.4                           | 105.1 |           |                                |          |
| 1/2       | KK6S-80N | 8/12                         | 24                                | 19                                | 31.2     | 66             | 71.3                          | 20.1  | 7.8       | 41.2                           | 107.8    |
|           | -85N     | 8.5/12.5                     |                                   |                                   |          | 7.8            | 41.2                          |       | 107.8     |                                |          |
|           | -110N    | 11/16                        |                                   |                                   |          |                |                               |       |           | 10.2                           | 68.4     |

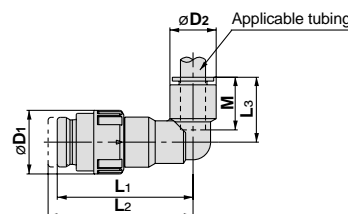
## Straight type with One-touch fitting



(mm)

| Body size | Model    | Applicable tubing O.D. mm | $\phi D_1$ | $\phi D_2$ | $L_1$ | $L_2$ When connected | M    | Min. bore | Effective area mm <sup>2</sup> |              | Weight g |
|-----------|----------|---------------------------|------------|------------|-------|----------------------|------|-----------|--------------------------------|--------------|----------|
|           |          |                           |            |            |       |                      |      |           | Urethane tubing                | Nylon tubing |          |
| 1/8       | KK3S-04H | $\phi 4$                  | 18.2       | 10         | 46.6  | 49.1                 | 16   | 3.2       | 3.8                            | 5.8          | 21.3     |
|           | -06H     | $\phi 6$                  |            | 12         | 47.1  | 49.6                 | 17   | 4.7       | 10.4                           | 13.4         | 23.2     |
|           | -08H     | $\phi 8$                  |            | 14         | 48.9  | 51.4                 | 18.5 | 6.2       | 16.8                           | 18.9         | 26.1     |
|           | -10H     | $\phi 10$                 |            | 17         | 49.9  | 52.4                 | 21   | 7.7       | 19.1                           | 19.1         | 35.9     |
| 1/4       | KK4S-06H | $\phi 6$                  | 25.4       | 12         | 58.2  | 61.9                 | 17   | 4.7       | 10.4                           | 13.4         | 48.6     |
|           | -08H     | $\phi 8$                  |            | 14         | 60.1  | 63.8                 | 18.5 | 6.2       | 18.3                           | 21.8         | 48.5     |
|           | -10H     | $\phi 10$                 |            | 17         | 61.5  | 65.2                 | 21   | 7.7       | 27.0                           | 29.4         | 52.0     |
|           | -12H     | $\phi 12$                 |            | 19         | 62.5  | 66.2                 | 22   | 9.2       | 30.5                           | 32.0         | 56.6     |
| 1/2       | KK6S-12H | $\phi 12$                 | 31.2       | 19         | 70.1  | 75.4                 | 22   | 9.2       | 42.7                           | 48.8         | 81.7     |
|           | -16H     | $\phi 16$                 |            | 25.7       | 72.3  | 77.6                 | 25   | 13.2      | 53.4                           | 62.5         | 97.5     |

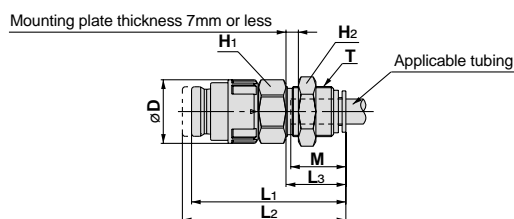
## Elbow type with One-touch fitting



(mm)

| Body size | Model    | Applicable tubing O.D. mm | $\phi D_1$ | $\phi D_2$ | $L_1$ | $L_2$ When connected | $L_3$ | M    | Min. bore | Effective area mm <sup>2</sup> |              | Weight g |
|-----------|----------|---------------------------|------------|------------|-------|----------------------|-------|------|-----------|--------------------------------|--------------|----------|
|           |          |                           |            |            |       |                      |       |      |           | Urethane tubing                | Nylon tubing |          |
| 1/8       | KK3S-04L | $\phi 4$                  | 18.2       | 10.4       | 41.7  | 44.2                 | 18    | 16   | 3         | 3.7                            | 5.3          | 22.0     |
|           | -06L     | $\phi 6$                  |            | 12.8       | 42.9  | 45.4                 | 20    | 17   | 4.5       | 10.1                           | 11.4         | 22.8     |
|           | -08L     | $\phi 8$                  |            | 15.2       | 43.1  | 45.6                 | 23    | 18.5 | 6         | 15.0                           | 16.8         | 23.8     |
|           | -10L     | $\phi 10$                 |            | 18.5       | 42.9  | 45.4                 | 26.5  | 21   | 7.5       | 18.0                           | 18.5         | 33.2     |
| 1/4       | KK4S-06L | $\phi 6$                  | 25.4       | 12.8       | 54.3  | 58                   | 20    | 17   | 4.5       | 10.1                           | 11.4         | 50.7     |
|           | -08L     | $\phi 8$                  |            | 15.2       | 55.5  | 59.2                 | 23    | 18.5 | 6         | 17.5                           | 19.8         | 50.3     |
|           | -10L     | $\phi 10$                 |            | 18.5       | 54.2  | 57.9                 | 26.5  | 21   | 7.5       | 24.7                           | 27.5         | 51.9     |
|           | -12L     | $\phi 12$                 |            | 20.9       | 55.4  | 59.1                 | 28.5  | 22   | 9         | 29.0                           | 29.6         | 54.2     |
| 1/2       | KK6S-12L | $\phi 12$                 | 31.2       | 20.9       | 66.3  | 71.6                 | 28.5  | 22   | 9         | 38.1                           | 39.7         | 89.0     |
|           | -16L     | $\phi 16$                 |            | 26.5       | 66.9  | 72.2                 | 34    | 25   | 13        | 50.3                           | 58.7         | 91.1     |

## Bulkhead type with One-touch fitting

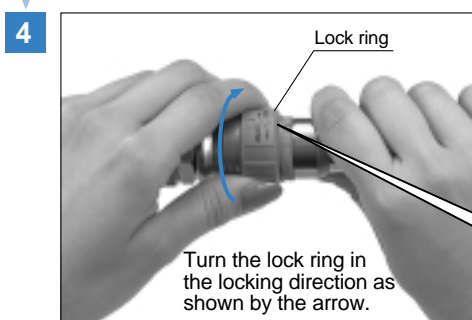
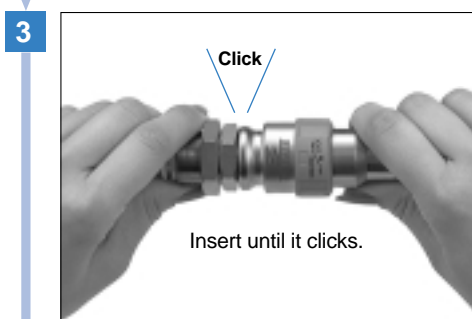
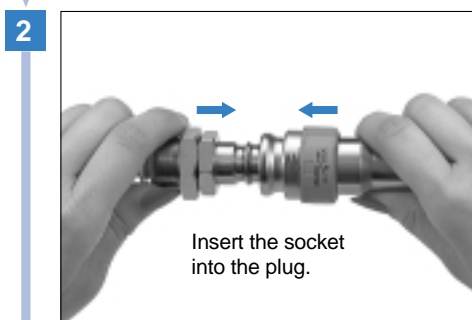
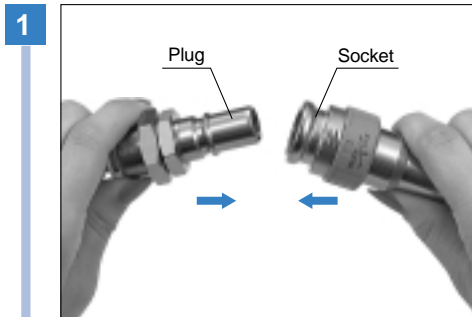


(mm)

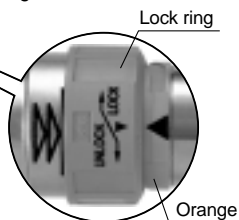
| Body size | Model    | Applicable tubing O.D. mm | T Threads | $H_1$ Width across flats | $H_2$ Width across flats | $\phi D$ | $L_1$ | $L_2$ When connected | $L_3$ | M    | Min. bore | Effective area mm <sup>2</sup> |              | Weight g |
|-----------|----------|---------------------------|-----------|--------------------------|--------------------------|----------|-------|----------------------|-------|------|-----------|--------------------------------|--------------|----------|
|           |          |                           |           |                          |                          |          |       |                      |       |      |           | Urethane tubing                | Nylon tubing |          |
| 1/8       | KK3S-04E | $\phi 4$                  | M12 x 1   | 14                       | 14                       | 18.2     | 46.6  | 49.1                 | 16.9  | 16   | 3.2       | 3.8                            | 5.8          | 27.8     |
|           | -06E     | $\phi 6$                  | M14 x 1   | 17                       | 17                       |          | 47.1  | 49.6                 | 16.8  | 17   | 4.7       | 10.4                           | 13.4         | 38.2     |
|           | -08E     | $\phi 8$                  | M16 x 1   | 19                       | 19                       |          | 49    | 51.5                 | 20    | 18.5 | 6.2       | 16.8                           | 18.9         | 42.2     |
|           | -10E     | $\phi 10$                 | M20 x 1   | 22                       | 24                       |          | 49.9  | 52.4                 | 22    | 21   | 7.7       | 19.1                           | 19.1         | 67.1     |
| 1/4       | KK4S-06E | $\phi 6$                  | M14 x 1   | 19                       | 17                       | 25.4     | 58.2  | 61.9                 | 16.8  | 17   | 4.7       | 10.4                           | 13.4         | 54.4     |
|           | -08E     | $\phi 8$                  | M16 x 1   | 19                       | 19                       |          | 60.1  | 63.8                 | 20    | 18.5 | 6.2       | 18.3                           | 21.8         | 57.8     |
|           | -10E     | $\phi 10$                 | M20 x 1   | 22                       | 24                       |          | 61.7  | 65.4                 | 22    | 21   | 7.7       | 27.0                           | 29.4         | 84.0     |
|           | -12E     | $\phi 12$                 | M22 x 1   | 24                       | 27                       |          | 62.7  | 66.4                 | 23    | 22   | 9.2       | 30.5                           | 32.0         | 102.9    |
| 1/2       | KK6S-12E | $\phi 12$                 | M22 x 1   | 24                       | 27                       | 31.2     | 70.1  | 75.4                 | 23    | 22   | 9.2       | 42.7                           | 48.8         | 113.6    |
|           | -16E     | $\phi 16$                 | M28 x 1.5 | 30                       | 32                       |          | 72.5  | 77.8                 | 24.5  | 25   | 13.2      | 53.4                           | 62.5         | 180.8    |

## Operating Procedure

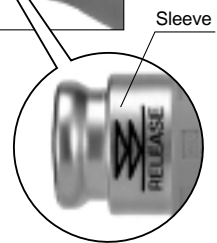
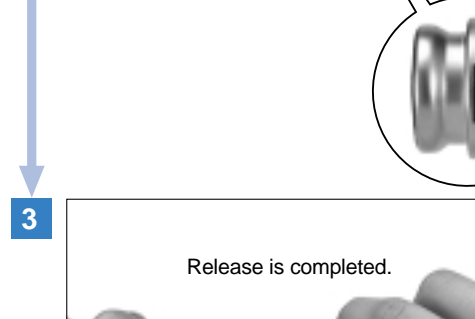
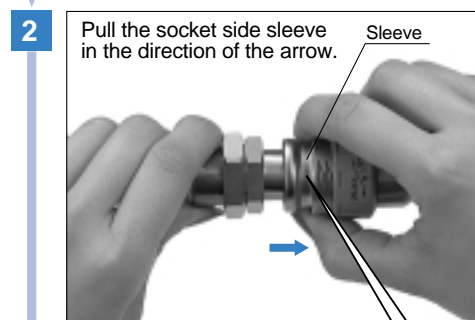
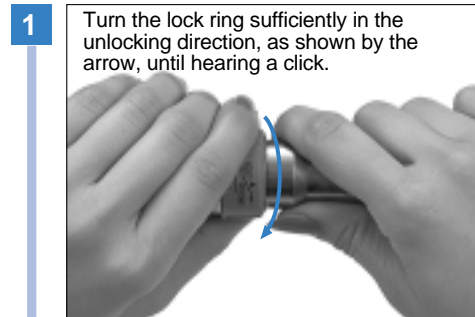
### <Connection>



When the two ► marks face each other, the plug and the socket are locked. The locked condition can be confirmed with the visible orange section.

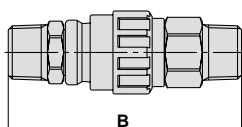


### <Release>



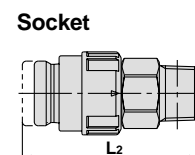
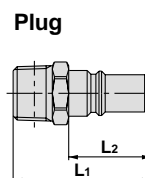
## Calculation of Connected Plug and Socket Dimension

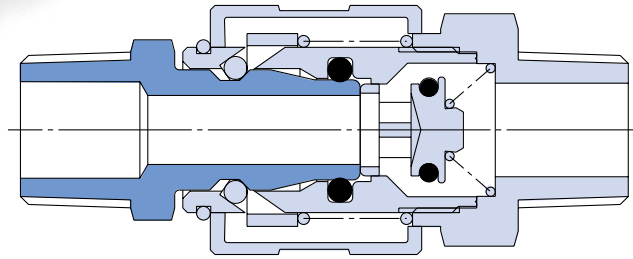
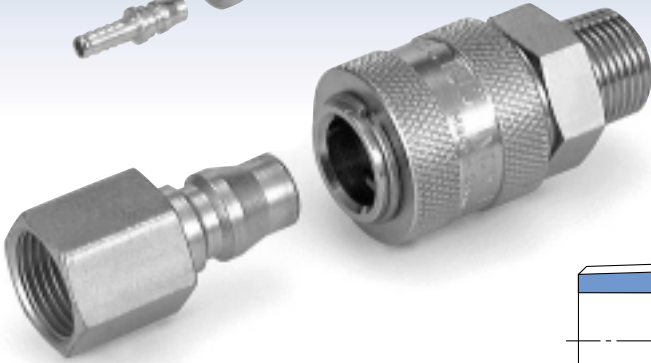
Overall length of connected plug and socket  $B = \text{Plug } (L_1 - L_2) + \text{Socket } (L_2) + 0.5$



Example)  
Overall length of KK3P-01MS (plug) and KK3S-01MS (socket) when they are connected.

Plug (30.4 - 18.4) + Socket (39.4) + 0.5 = 51.9mm





## One-touch connection

- Can be connected by simply pushing the plug into the socket.
- Manipulation with one hand improves work efficiency.

Flow is possible from the plug side or socket side.


O-ring seal construction for outstanding air tightness and durability

## Variations




Plug P


### Male thread type

| Port size | Part no.  |  |
|-----------|-----------|---|
| R 1/8     | KK13P-01M |   |
| R 1/4     | -02M      |   |
| R 3/8     | -03M      |   |
| R 1/2     | -04M      |   |

### Female thread type

| Port size | Part no.  |  |
|-----------|-----------|---|
| Rc 1/4    | KK13P-02F |   |
| Rc 3/8    | -03F      |   |
| Rc 1/2    | -04F      |   |
| G1/4      | -G02F     |   |


### Barb fitting type

| Applicable hose I.D. | Part no.  |  |
|----------------------|-----------|---|
| 1/4"                 | KK13P-07B |   |
| 5/16"                | -09B      |   |
| 3/8"                 | -11B      |   |
| 1/2"                 | -13B      |   |

Socket S




### Male thread type

|  | Port size | Part no.  |
|--|-----------|-----------|
|  | R 1/8     | KK13S-01M |
|  | R 1/4     | -02M      |
|  | R 3/8     | -03M      |
|  | R 1/2     | -04M      |

### Female thread type

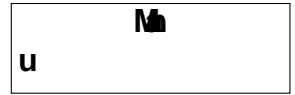
|  | Port size | Part no.  |
|--|-----------|-----------|
|  | Rc 1/4    | KK13S-02F |
|  | Rc 3/8    | -03F      |
|  | Rc 1/2    | -04F      |

### Barb fitting type

|  | Applicable hose I.D. | Part no.  |
|--|----------------------|-----------|
|  | 1/4"                 | KK13S-07B |
|  | 5/16"                | 09B       |
|  | 3/8"                 | -11B      |
|  | 1/2"                 | -13B      |

# S Couplers

# Series *KK13*



## Specifications

|                               |                                    |
|-------------------------------|------------------------------------|
| Fluid                         | Air Note 1)                        |
| Operating pressure range      | 0 to 1.5MPa                        |
| Proof pressure                | 2MPa                               |
| Ambient and fluid temperature | -5 to 60°C                         |
| Plating                       | Nickel plated external metal parts |

Note 1) Cannot be used with water.

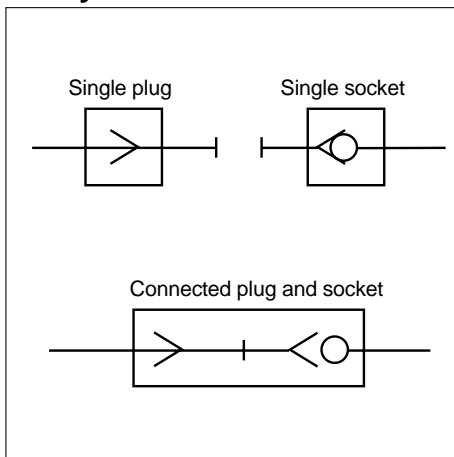
## Performance

|                            |   |
|----------------------------|---|
| Plug and socket connection | One-touch connection and release        |
| Check valve                | Socket: Built-in check valve (standard) |

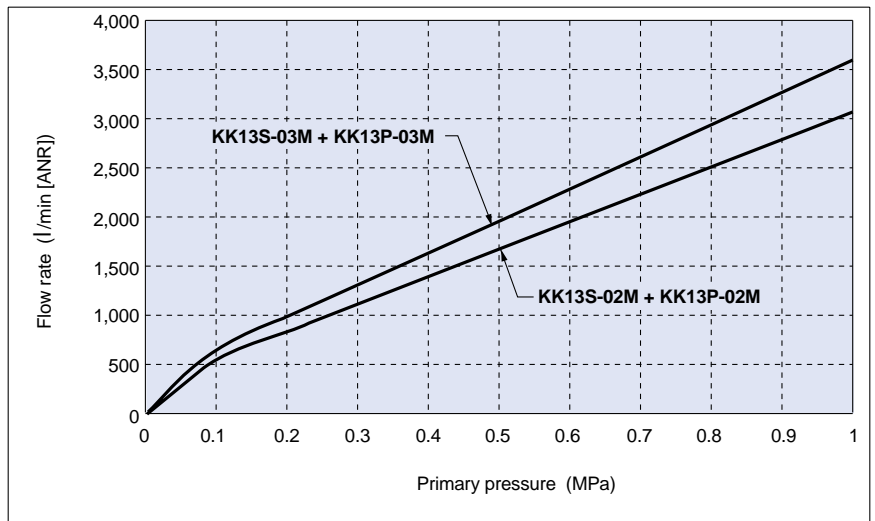
## Effective Area

| Body size | Plug      | Socket    | Effective area mm <sup>2</sup> |
|-----------|-----------|-----------|--------------------------------|
| 1/4       | KK13P-02M | KK13S-02M | 24.1                           |
|           | KK13P-03M | KK13S-03M | 31.1                           |

## JIS symbols



## Flow Characteristics



## How to Order

**KK 13 S-02 M**

Series 13

Socket/Plug designation

|          |        |
|----------|--------|
| <b>S</b> | Socket |
| <b>P</b> | Plug   |

Connection type

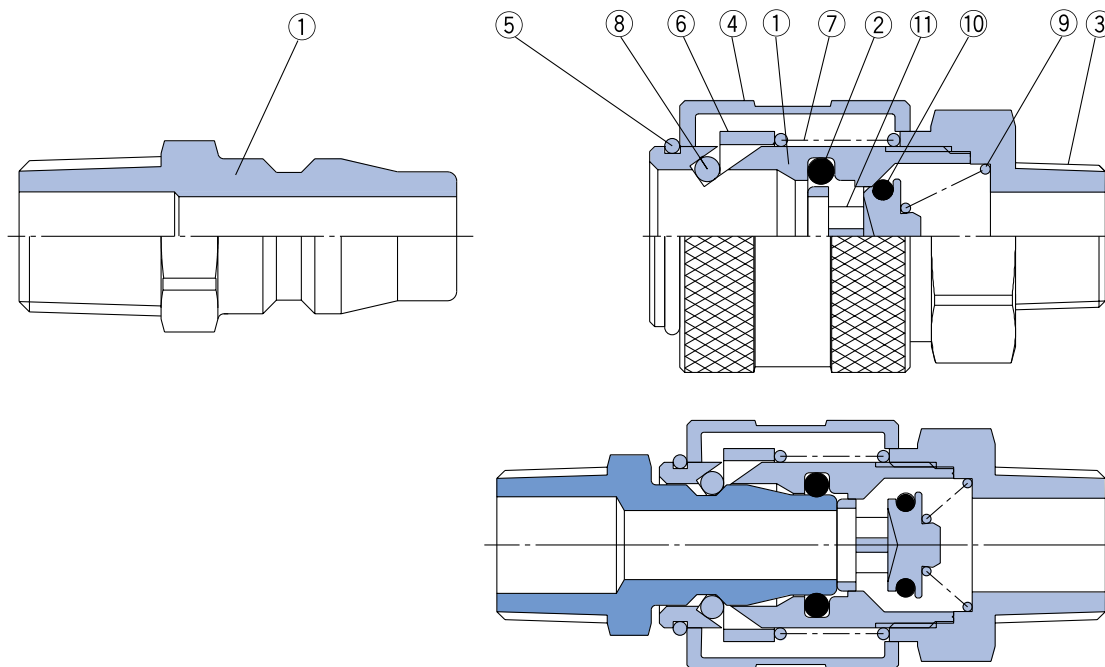
|          |                   |
|----------|-------------------|
| <b>M</b> | Male thread       |
| <b>F</b> | Female thread     |
| <b>B</b> | With barb fitting |

Port size variation

| Symbol     | Thread size |
|------------|-------------|
| <b>01</b>  | R, Rc 1/8   |
| <b>02</b>  | R, Rc 1/4   |
| <b>03</b>  | R, Rc 3/8   |
| <b>04</b>  | R, Rc 1/2   |
| <b>G02</b> | G1/4        |

| Symbol    | Hose I.D. |
|-----------|-----------|
| <b>07</b> | 1/4"      |
| <b>09</b> | 5/16"     |
| <b>11</b> | 3/8"      |
| <b>13</b> | 1/2"      |

## Construction



### Plug

| No. | Description | Material | Note          |
|-----|-------------|----------|---------------|
| 1   | Stem        | Steel    | Nickel plated |

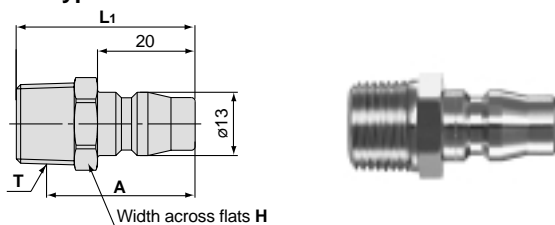
### Socket

| No. | Description   | Material        | Note          |
|-----|---------------|-----------------|---------------|
| 1   | Coupling body | Brass           | Nickel plated |
| 2   | Plug O-ring   | NBR             |               |
| 3   | Body          | Brass           | Nickel plated |
| 4   | Sleeve        | Brass           | Nickel plated |
| 5   | Snap ring     | Stainless steel |               |
| 6   | Collar        | Brass           |               |
| 7   | Sleeve spring | Stainless steel |               |
| 8   | Locking pin   | Stainless steel |               |
| 9   | Valve spring  | Stainless steel |               |
| 10  | Valve O-ring  | NBR             |               |
| 11  | Valve         | Brass           |               |

## Dimensions

### Plug (P)

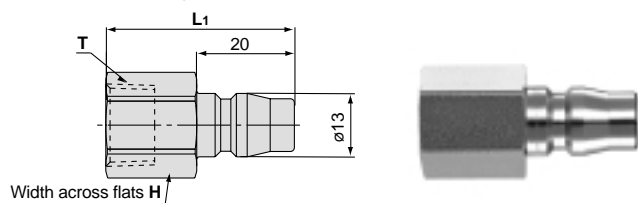
#### Male thread type



| Model     | T<br>Connection<br>male threads | H<br>Width<br>across<br>flats | L <sub>1</sub> | A*   | Min.<br>bore | Effective<br>area<br>mm <sup>2</sup> | Weight<br>g |
|-----------|---------------------------------|-------------------------------|----------------|------|--------------|--------------------------------------|-------------|
| KK13P-01M | R 1/8                           | 14                            | 34             | 30   | 6            | 22.6                                 | 18          |
| -02M      | R 1/4                           |                               | 37             | 31   |              |                                      | 22          |
| -03M      | R 3/8                           | 17                            |                | 30.6 | 7.5          | 35.3                                 | 27          |
| -04M      | R 1/2                           | 22                            | 44             | 35.8 |              |                                      | 51          |

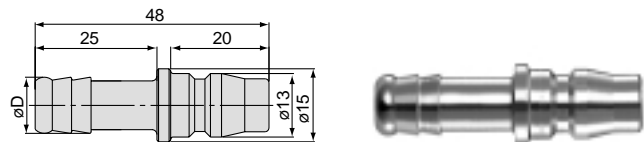
\* Reference dimension after installation.

#### Female thread type



| Model     | T<br>Connection<br>female threads | H<br>Width<br>across<br>flats | L <sub>1</sub> | Min.<br>bore | Effective<br>area<br>mm <sup>2</sup> | Weight<br>g |
|-----------|-----------------------------------|-------------------------------|----------------|--------------|--------------------------------------|-------------|
| KK13P-02F | Rc 1/4                            | 17                            | 35.5           |              |                                      | 27          |
| -03F      | Rc 3/8                            | 19                            | 39             | 7.5          | 35.3                                 | 32          |
| -04F      | Rc 1/4                            | 24                            | 42.5           |              |                                      | 51          |
| -G02F     | G 1/4                             | 17                            | 32             |              |                                      | 27          |

#### Barb fitting type (for rubber hose)

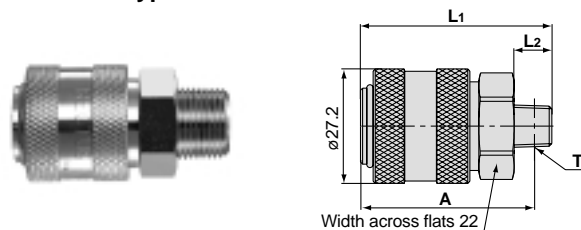


| Model     | Applicable<br>hose<br>I.D. | øD   | Min. bore | Effective<br>area<br>mm <sup>2</sup> | Weight<br>g |
|-----------|----------------------------|------|-----------|--------------------------------------|-------------|
| KK13P-07B | 1/4"                       | 7.5  | 4.1       | 10.6                                 | 17          |
| -09B      | 5/16"                      | 9.4  | 6         | 22.6                                 | 18          |
| -11B      | 3/8"                       | 11.5 | 7.5       | 35.3                                 | 21          |
| -13B      | 1/2"                       | 14.5 |           |                                      | 25          |

Refer to page 9 for calculation of the connected plug and socket dimension.

### Socket (S)

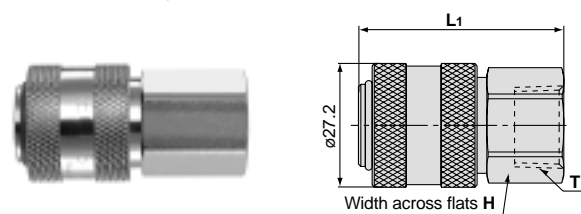
#### Male thread type



| Model     | T<br>Connection<br>male threads | L <sub>1</sub> | A*   | Min.<br>bore | Effective<br>area<br>mm <sup>2</sup> | Weight<br>g |
|-----------|---------------------------------|----------------|------|--------------|--------------------------------------|-------------|
| KK13S-01M | R 1/8                           | 45.5           | 41.5 | 6            | 19.0                                 | 81          |
| -02M      | R 1/4                           | 48.5           | 42.5 | 7            | 24.1                                 | 86          |
| -03M      | R 3/8                           |                | 42.1 | 10.2         | 31.1                                 | 89          |
| -04M      | R 1/2                           | 53             | 44.8 |              | 32.1                                 | 108         |

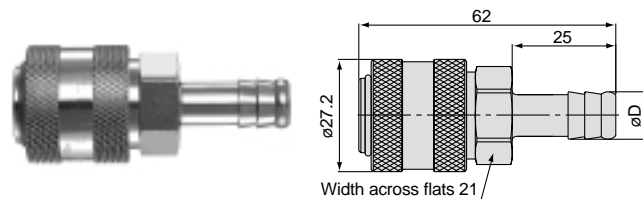
\* Reference dimension after installation.

#### Female thread type



| Model     | T<br>Connection<br>female threads | H<br>Width<br>across<br>flats | L <sub>1</sub> | Min.<br>bore | Effective<br>area<br>mm <sup>2</sup> | Weight<br>g |
|-----------|-----------------------------------|-------------------------------|----------------|--------------|--------------------------------------|-------------|
| KK13S-02F | Rc 1/4                            |                               | 47             | 10.5         | 25.7                                 | 103         |
| -03F      | Rc 3/8                            | 22                            | 52             | 10.2         | 31.1                                 | 107         |
| -04F      | Rc 1/2                            | 24                            | 55.5           |              | 32.1                                 | 117         |

#### Barb fitting type (for rubber hose)



| Model     | Applicable<br>hose<br>I.D. | øD   | Min. bore | Effective<br>area<br>mm <sup>2</sup> | Weight<br>g |
|-----------|----------------------------|------|-----------|--------------------------------------|-------------|
| KK13S-07B | 1/4"                       | 7.5  | 4.1       | 8.0                                  | 81          |
| -09B      | 5/16"                      | 9.5  | 6         | 16.1                                 | 83          |
| -11B      | 3/8"                       | 11.5 | 8         | 25.4                                 | 88          |
| -13B      | 1/2"                       | 14.5 | 10.2      | 31.9                                 | 88          |



# Related Equipment

## Tube Couplers

### Series *KC*

**One-touch fitting stops the air flow when tubing is removed.**

(Built-in self seal mechanism)

**Copper-free specification**

(Electroless nickel plated)



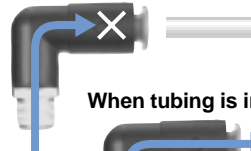
### Applicable Tubing

|                 |                                 |
|-----------------|---------------------------------|
| Tubing material | Nylon, Soft nylon, Polyurethane |
| Tubing O.D. mm  | ø4, ø6, ø8, ø10, ø12            |

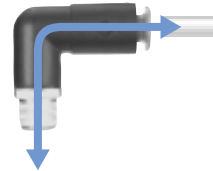
### Specifications

|                                      |   |  |
|--------------------------------------|---|--|
| Fluid                                | Air                                       |  |
| Maximum operating pressure           | 1.0MPa                                    |  |
| Proof pressure                       | 3.0MPa                                    |  |
| Ambient and fluid temperature        | -5 to 60°C (with no freezing)             |  |
| Threads                              | Mounting section                          | JIS B0203 (taper threads for piping)           |
|                                      | Nut section                               | JIS B0211, Class 2 (metric fine screw threads) |
| Thread sealant (standard)            | With sealant                              |  |
| Copper-free specification (standard) | All brass parts electroless nickel plated |  |

When tubing is removed



When tubing is installed








## Series *KK/KK13*

# Safety Instructions

These safety instructions are intended to prevent a hazardous situation and/or equipment damage. These instructions indicate the level of potential hazard by a label of "**Caution**", "**Warning**" or "**Danger**". To ensure safety, be sure to observe ISO 4414 Note 1), JIS B 8370 Note 2) and other safety practices.

 **Caution** : Operator error could result in injury or equipment damage.

 **Warning** : Operator error could result in serious injury or loss of life.

 **Danger** : In extreme conditions, there is a possible result of serious injury or loss of life.

Note 1) ISO 4414: Pneumatic fluid power – Recommendations for the application of equipment to transmission and control systems

Note 2) JIS B 8370: General Rules for Pneumatic Equipment

### **Warning**

**1. The compatibility of pneumatic equipment is the responsibility of the person who designs the pneumatic system or decides its specifications.**

Since the products specified here are used in various operating conditions, their compatibility for the specific pneumatic system must be based on specifications or after analysis and/or tests to meet your specific requirements.

**2. Only trained personnel should operate pneumatically operated machinery and equipment.**

Compressed air can be dangerous if handled incorrectly. Assembly, handling or repair of pneumatic systems should be performed by trained and experienced operators.

**3. Do not service machinery/equipment or attempt to remove components until safety is confirmed.**

1. Inspection and maintenance of machinery/equipment should only be performed after confirmation of safe locked-out control positions.
2. When equipment is to be removed, confirm the safety process as mentioned above. Cut the supply pressure for this equipment and exhaust all residual compressed air in the system.
3. Before machinery/equipment is restarted, take measures to prevent shooting-out of cylinder piston rod, etc. (Bleed air into the system gradually to create back pressure.)

**4. Contact SMC if the product is to be used in any of the following conditions:**

1. Conditions and environments beyond the given specifications, or if product is used outdoors.
2. Installation on equipment in conjunction with atomic energy, railway, air navigation, vehicles, medical equipment, food and beverages, recreation equipment, emergency stop circuits, press applications, or safety equipment.
3. An application which has the possibility of having negative effects on people, property, or animals, requiring special safety analysis.



## Series KK/KK13

# Common Precautions 1

Be sure to read before handling.

### Selection

#### ⚠ Warning

1. Cannot be used as a stop valve that requires zero leakage. A certain amount of leakage is allowed during operation.
2. Cannot be connected to quick couplers from other manufacturers. This will cause leakage, damage, and disconnection of the plug. With series KK13, manufactured by Rectus, verify the manufacturer of applicable couplers before use.

#### ⚠ Caution

1. For a plug and socket connection, select a plug and socket with the same body size. If their body sizes are different, they cannot be connected. This will cause leakage, damage, and disconnection of the plug.
2. Do not use in locations where the connecting threads and tubing connection will slide or rotate. The connecting threads and tubing connection will come apart under these conditions.
3. Use tubing at or above the minimum bending radius. Using below the minimum bending radius can cause breakage or flattening of the tube.
4. Do not use couplers with flammable, explosive, or toxic substances, such as gas, gas fuel, and refrigerant. They may leak from inside the tubing to the outside.
5. Can be used with standard industrial water. When using with other liquids, consult SMC.  
Also, operate with a surge pressure of no more than the maximum operating pressure. If the surge pressure exceeds the maximum operating pressure, it will cause damage to couplers and tubing.

### Mounting

#### ⚠ Warning

1. Do not use couplers where rotation normally occurs. The couplers may be damaged.
2. When mounting a coupler on equipment where impact and vibration occur, install a hose with a length of 300mm or more between the equipment and the coupler.
3. To prevent an unexpected disconnection of the coupler, operate with the sleeve lock mechanism in the locked condition.
4. Install a stop valve at the supply pressure side of the socket. Emergency shutdown may not be possible without it.

### Mounting

#### ⚠ Caution

1. Before mounting confirm the model and size, etc. Also, confirm that there are no blemishes, nicks or cracks in the product.
2. When connecting a tube, consider factors such as changes in the tubing length due to pressure, and allow sufficient leeway.
3. Mount so that couplers and tubing are not subjected to twisting, pulling or moment loads. This can cause damage to couplers and flattening, bursting or disconnection of tubing, etc.
4. Mount so that tubing is not damaged due to tangling and abrasion. This can cause flattening, bursting or disconnection of tubing, etc.

### Operating Environment

#### ⚠ Warning

1. Do not use in locations where static electric charges will be a problem. Consult SMC regarding use in this kind of environment.
2. Do not use in locations where spatter occurs.  
There is a danger of spatter causing a fire. Consult SMC regarding use in this kind of environment.
3. Do not use in environments where there is direct contact with liquids such as cutting oil, lubricating oil or coolant oil, etc. Contact SMC regarding use in environments where there will be direct contact with cutting oil, lubricating oil or coolant oil, etc.

### Maintenance

#### ⚠ Caution

1. Check for the following during regular maintenance, and replace components as necessary.
  - a) Scratches, gouges, abrasion, corrosion
  - b) Leakage
  - c) Twisting, flattening or distortion of tubing
  - d) Hardening, deterioration or softness of tubing
2. Do not repair or patch the replaced tubing or couplers for reuse.

### Handling

#### ⚠ Warning

1. When connecting a plug, hold it securely. The plug may slip out due to the reaction when connecting.
2. When disconnecting a plug, hold it securely. The tubing may move due to the reaction when disconnecting or due to residual pressure at the plug side.



# Series KK/KK13

## Common Precautions 2

Be sure to read before handling.

### Handling of One-touch Fittings

#### ⚠ Caution

1. Tube attachment/detachment for One-touch fittings
  - 1) Attaching of tube
    1. Take a tube having no flaws on its periphery and cut it off at a right angle. When cutting the tube, use tube cutters TK-1, 2 or 3. Do not use pinchers, nippers or scissors, etc. If cutting is done with tools other than tube cutters, the tube may be cut diagonally or become flattened, etc. This can make a secure installation impossible, and cause problems such as the tube pulling out after installation or air leakage. Allow some extra length in the tube.
    2. Grasp the tube and push it in slowly, inserting it securely all the way into the fitting.
    3. After inserting the tube, pull on it lightly to confirm that it will not come out. If it is not installed securely all the way into the fitting, this can cause problems such as air leakage or the tube pulling out.
  - 2) Detaching of tube
    1. Push in the release bushing sufficiently. When doing this, push the collar evenly.
    2. Pull out the tube while holding down the release bushing so that it does not come out. If the release bushing is not pressed down sufficiently, there will be increased bite on the tube and it will become more difficult to pull it out.
    3. When the removed tube is to be used again, cut off the portion which has been chewed before reusing it. If the chewed portion of the tube is used as is, this can cause trouble such as air leakage or difficulty in removing the tube.
2. When mounting a One-touch fitting, use a suitable wrench to tighten the hexagonal flats of the fitting. Moreover, position the wrench at the lower part of the hexagonal flats as close to the threads as possible. When a wrench of the proper size for the hexagonal flats is not used, it will cause the hexagonal flats to wear down.
3. Tightening of M3, M5, and M6 screws
  - 1) M3  
After tightening by hand, tighten an additional 1/4 rotation with a tool.
  - 2) M5 and M6  
After tightening by hand, tighten an additional 1/6 rotation with a tool.

Over tightening can cause damage to the threads and/or air leakage due to deformation of the gasket. Under tightening can cause loose threads and air leakage, etc.

### Handling of Barb Fittings and Nut Fittings

#### ⚠ Caution

1. When using a nut fitting, insert the hose all the way to the end and securely tighten it with the nut. When the insertion of the hose or the tightening of the nut are not sufficient, the hose may slip out.
2. Disconnection may occur depending on the material or the O.D. accuracy of the hose; therefore be sure to confirm the applicability of the hose.

### Handling of Fittings with Sealant

#### ⚠ Caution

1. Tighten fittings with sealant using the proper tightening torques in the table below. As a rule, they should be tightened 2 to 3 turns with a tool after first tightening by hand.

| Connection thread size | Proper tightening torque N·m |
|------------------------|------------------------------|
| NPT, 1/16, NPT, R1/8   | 7 to 9                       |
| NPT, R1/4              | 12 to 14                     |
| NPT, R3/8              | 22 to 24                     |
| NPT, R1/2              | 28 to 30                     |

2. When a fitting is over tightened, more of the sealant material is squeezed out. Remove the squeezed out sealant material.
3. When tightening is not sufficient, it will cause sealant failure or a loose fitting.
4. Re-using
  - 1) Normally, a fitting with sealant can be re-used 2 to 3 times.
  - 2) Remove the sealant material that is separated and adhering to a removed fitting with air blow, etc. If the separated sealant enters into nearby equipment, it will cause air leakage or malfunction.
  - 3) When the sealant is no longer effective, wrap sealant tape over the sealant material and re-use the fitting. Do not use a sealant material other than sealant tape.
5. In cases where positioning is required, turning the fitting in the reverse direction after tightening will cause air leakage.

### Precautions on Other Tube Brands

#### ⚠ Caution

1. When using tubing brands other than SMC, confirm that the tubing outside diameter tolerances satisfy the following specifications.
  - 1) Nylon tubing within  $\pm 0.1\text{mm}$
  - 2) Soft nylon tubing within  $\pm 0.1\text{mm}$
  - 3) Polyurethane tubing within  $+0.15\text{mm}$  within  $-0.2\text{mm}$

Do not use tubing if the outside diameter tolerance is not satisfied. It may not be possible to connect the tubing, or leakage or disconnection may occur after connection.

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