

# One-touch Fittings

## Series KQ2

Applicable Tubing: Metric Size  
Connection Thread: M, R, Rc

### How to Order

**KQ 2 H 06 01 S**

One-touch fittings

Product's color

| Symbol | Body  | Release button |
|--------|-------|----------------|
| 2      | White | Light gray     |
| Nil    | Black | Blue           |

Applicable tubing O.D.

| 23 | ø3.2 |
|----|------|
| 04 | ø4   |
| 06 | ø6   |
| 08 | ø8   |
| 10 | ø10  |
| 12 | ø12  |
| 16 | ø16  |

Port size/Applicable tubing O.D.

| Thread connection |                  |                                    |
|-------------------|------------------|------------------------------------|
| M5                | M5 x 0.8         |                                    |
| M6                | M6 x 1.0         |                                    |
| 01                | R 1/8, Rc 1/8    |                                    |
| 02                | R 1/4, Rc 1/4    |                                    |
| 03                | R 3/8, Rc 3/8    |                                    |
| 04                | R 1/2, Rc 1/2    |                                    |
| 00                | Same dia. tubing |                                    |
| 04                | ø4               | (Reducer)<br>Different dia. tubing |
| 06                | ø6               |                                    |
| 08                | ø8               |                                    |
| 10                | ø10              |                                    |
| 12                | ø12              |                                    |
| 16                | ø16              |                                    |
| 99                | Same dia. rod    |                                    |

With thread seal

| Nil | None             |
|-----|------------------|
| S   | With thread seal |

Note) Port size with seal: Only  
R 1/8  
R 1/4  
R 3/8  
R 1/2

#### Model

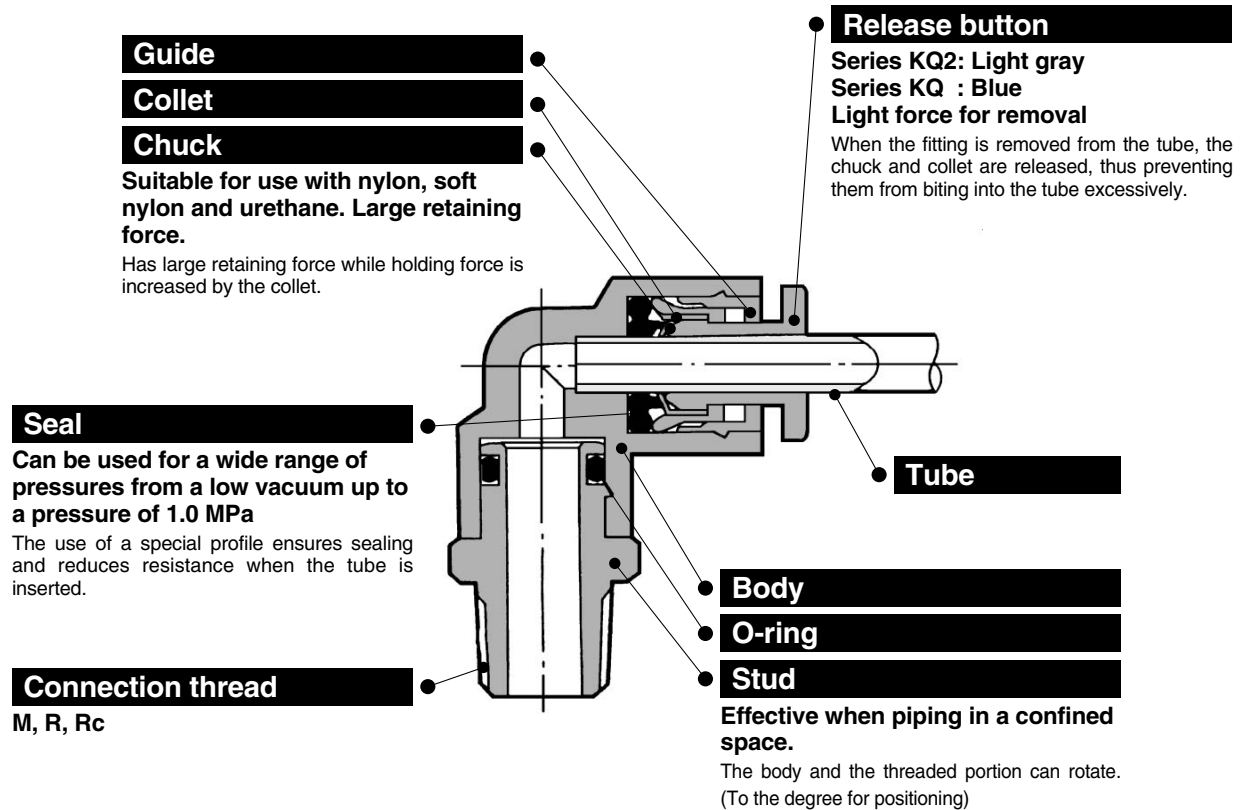
|    |                                          |    |                                 |
|----|------------------------------------------|----|---------------------------------|
| H  | Male connector                           | T  | Male branch tee                 |
|    | Straight union                           |    | Union tee                       |
|    | Different diameter straight              |    | Different diameter tee * Note)  |
| S  | Hex. socket head male connector          | TW | Cross*                          |
| F  | Female connector                         | TX | Different diameter cross*       |
| L  | Male elbow                               | TY | Different diameter cross*       |
|    | Union elbow                              | Y  | Male run tee                    |
|    | Plug-in elbow                            | D  | Male delta union                |
| LU | Male branch connector                    | U  | Branch                          |
|    | Branch union elbow                       |    | Union "Y"                       |
| K  | 45° male elbow                           |    | Different dia. union "Y"        |
| V  | Universal male elbow                     |    | Plug-in "Y"                     |
| VS | Hexagon socket head universal male elbow | UD | Delta branch                    |
| VF | Universal female elbow                   |    | Different dia. double union "Y" |
| LF | Female elbow                             | XD | Double plug-in "Y"              |
| VD | Double universal male elbow              | X  | Different diameter plug-in "Y"  |
| VT | Triple universal male elbow              | R  | Plug-in reducer                 |
| Z  | Branch universal male elbow              | E  | Bulkhead union                  |
| ZF | Branch universal female elbow            |    | Bulkhead connector              |
| ZD | Double branch universal male elbow       | LE | Bulkhead male elbow             |
| ZT | Triple branch universal male elbow       |    |                                 |
| W  | Extended plug-in elbow                   |    |                                 |
|    | Extended male elbow                      |    |                                 |

| Accessory |                |
|-----------|----------------|
| Symbol    | Name           |
| KQ2N      | Nipple         |
|           | Reducer nipple |
|           | Adaptor        |
| KQ2C      | Tube cap       |
| KQ2C      | Color cap      |
| KQ2P      | Plug (White)   |
| KQP       | Plug (Blue)    |

Use the below part number to order the gasket for M5 and M6 threads.  
Gasket for M5 thread: M-5G2  
Gasket for M6 thread: M-6G

\* Available only for white color body.  
Note) KQT06-04, KQT08-06, KQT10-08, and KQT12-10 are available as made to order.

Series KQ2: White body  
Series KQ : Black body



PAT.

**One-touch IN/OUT connection.**  
**Possible to use in vacuum to -100 kPa**

• **Applications for metric size tubing**

• **Applicable tubing material—Nylon, Soft nylon, Polyurethane**

## Applicable Tubing

|                 |                                 |
|-----------------|---------------------------------|
| Tubing material | Nylon, Soft nylon, Polyurethane |
| Tubing O.D.     | ø3.2, ø4, ø6, ø8, ø10, ø12, ø16 |

## Product's Color

| Series            | Body  | Release button |
|-------------------|-------|----------------|
| <b>Series KQ2</b> | White | Light gray     |
| <b>Series KQ</b>  | Black | Blue           |

## Specifications

|                               |                                            |                                                                                   |
|-------------------------------|--------------------------------------------|-----------------------------------------------------------------------------------|
| Fluid                         | Air/Water <sup>Note)</sup>                 |                                                                                   |
| Maximum operating pressure    | 1.0 MPa                                    |                                                                                   |
| Operating vacuum pressure     | -100 kPa                                   |                                                                                   |
| Proof pressure                | 3.0 MPa                                    |                                                                                   |
| Ambient and fluid temperature | -5 to 60°C, Water: 0 to 40°C (No freezing) |                                                                                   |
| Thread                        | Mounting section                           | JIS B 0203 (Taper thread for piping)<br>JIS B 0209 Class 2 (Metric coarse thread) |
|                               | Nut section                                | JIS B 0211 Class 2 (Metric fine thread)                                           |
| Seal (Thread portion)         |                                            | With seal or none                                                                 |

Note) Applicable for general industrial water. Please consult with SMC if using for other kinds of fluid. Also, the surge pressure must be under the maximum operating pressure.

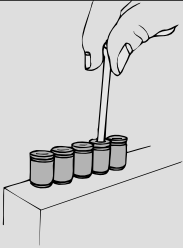
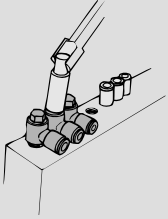
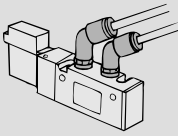
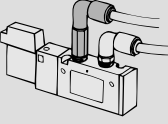
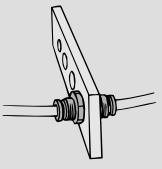
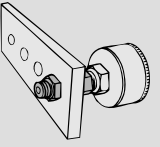
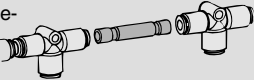
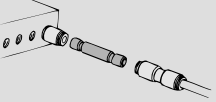
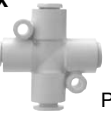
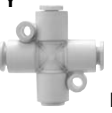
## Principal Parts Material

|                        |                                   |
|------------------------|-----------------------------------|
| Body                   | C3604BD, PBT, PP                  |
| Stud                   | C3604BD (Thread portion)          |
| Chuck                  | Stainless steel 304               |
| Guide                  | Stainless steel 304, C3604BD, POM |
| Collet, Release button | POM                               |
| Seal, O-ring           | NBR                               |
| Gasket                 | Stainless steel 304, NBR          |



P. 15-2-30

# Series KQ2

| Model                                  |       |                                                                                                                                                                                |                                                                                       |
|----------------------------------------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>Hex. socket head male connector</b> |       |                                                                                                                                                                                |                                                                                       |
| <b>KQ2S</b>                            | P. 14 | Internal hex. allows thread connection by using an allen wrench for confined spaces.                                                                                           |      |
| <b>Universal male elbow</b>            |       |                                                                                                                                                                                |                                                                                       |
| <b>KQ2V</b>                            | P. 17 | Universal male elbow allows thread connection by using a socket wrench for confined spaces.                                                                                    |    |
| <b>45° male elbow</b>                  |       |                                                                                                                                                                                |                                                                                       |
| <b>KQ2K</b>                            | P. 16 | Use to pipe in 45° direction from female thread. Model in-between of male connector and male elbow.                                                                            |      |
| <b>Extended male elbow</b>             |       |                                                                                                                                                                                |                                                                                       |
| <b>KQ2W</b>                            | P. 22 | Basically, it is used together with male elbow. Different point is that it is used for with fittings to avoid from interfering with each other by making the piping two-level. |    |
| <b>Bulkhead union</b>                  |       |                                                                                                                                                                                |                                                                                       |
| <b>KQ2E</b>                            | P. 28 | Use to connect tubes through a panel.                                                                                                                                          |      |
| <b>Bulkhead connector</b>              |       |                                                                                                                                                                                |                                                                                       |
| <b>KQ2E</b>                            | P. 28 | Use to connect male thread and tube through a panel.                                                                                                                           |    |
| <b>Nipple</b>                          |       |                                                                                                                                                                                |                                                                                       |
| <b>KQ2N</b>                            | P. 29 | Use to connect One-touch fittings.                                                                                                                                             |    |
| <b>Reducer nipple</b>                  |       |                                                                                                                                                                                |                                                                                       |
| <b>KQ2N</b>                            | P. 29 | Use to connect One-touch fittings that are different tubing O.D.s.                                                                                                             |  |
| <b>Male connector</b>                  |       |                                                                                                                                                                                |                                                                                       |
| <b>KQ2H</b>                            | P. 14 | Use to pipe in the same direction from female thread. Most general style.                                                                                                      |    |
| <b>Male elbow</b>                      |       |                                                                                                                                                                                |                                                                                       |
| <b>KQ2L</b>                            | P. 15 | Use to pipe at right angles to female thread. Most general style.                                                                                                              |    |
| <b>Male branch tee</b>                 |       |                                                                                                                                                                                |                                                                                       |
| <b>KQ2T</b>                            | P. 22 | Use to branch line from female thread in both 90° directions.                                                                                                                  |  |
| <b>Female connector</b>                |       |                                                                                                                                                                                |                                                                                       |
| <b>KQ2F</b>                            | P. 14 | Use to pipe from male thread such as pressure gauge.                                                                                                                           |    |
| <b>Union elbow</b>                     |       |                                                                                                                                                                                |                                                                                       |
| <b>KQ2L</b>                            | P. 20 | Use to connect tubes at right angles.                                                                                                                                          |    |
| <b>Union tee</b>                       |       |                                                                                                                                                                                |                                                                                       |
| <b>KQ2T</b>                            | P. 23 | Use to connect tubes in both 90° directions.                                                                                                                                   |  |
| <b>Straight union</b>                  |       |                                                                                                                                                                                |                                                                                       |
| <b>KQ2H</b>                            | P. 15 | Use to connect tubes in the same direction.                                                                                                                                    |    |
| <b>Plug-in elbow</b>                   |       |                                                                                                                                                                                |                                                                                       |
| <b>KQ2L</b>                            | P. 21 | Use to change by 90° in a tube fetching from One-touch direction fittings.                                                                                                     |    |
| <b>Different diameter tee</b>          |       |                                                                                                                                                                                |                                                                                       |
| <b>KQ2T</b>                            | P. 23 | Use to connect tubes with size down in both 90° directions.                                                                                                                    |  |
| <b>Different diameter straight</b>     |       |                                                                                                                                                                                |                                                                                       |
| <b>KQ2H</b>                            | P. 15 | Use to connect different sized tubes.                                                                                                                                          |    |
| <b>Reducer elbow</b>                   |       |                                                                                                                                                                                |                                                                                       |
| <b>KQ2L</b>                            | P. 21 | Use to change by 90° in a tube fetching direction from One touch fittings and to size down.                                                                                    |    |
| <b>Different diameter tee</b>          |       |                                                                                                                                                                                |                                                                                       |
| <b>KQ2T</b>                            | P. 23 | Use to branch line with size down in both side 90° direction.                                                                                                                  |  |
| <b>Cross</b>                           |       |                                                                                                                                                                                |                                                                                       |
| <b>KQ2TW</b>                           | P. 23 | Use to four-branch line.                                                                                                                                                       |    |
| <b>Different diameter cross</b>        |       |                                                                                                                                                                                |                                                                                       |
| <b>KQ2TX</b>                           | P. 23 | Use to connect tubes with size down in all 90° directions.                                                                                                                     |    |
| <b>Different diameter cross</b>        |       |                                                                                                                                                                                |                                                                                       |
| <b>KQ2TY</b>                           | P. 24 | Use to branch line with size down in three directions.                                                                                                                         |  |

## Hexagon socket head universal male elbow

KQ2VS P. 17



Hex. on the top allows thread connection by using an allen wrench for confined spaces.

## Triple branch universal male elbow

KQ2ZT P. 20



Use to six-branch line at right angles from female thread. Three individual parts rotate 360°.

## Union "Y"

KQ2U P. 26



Use to branch line in the same direction.

## Male branch connector

KQ2LU P. 16



Use to branch piping at right angles to female thread.

## Branch union elbow

KQ2LU P. 21



Use to branch line at right angles.

## Different dia. union "Y"

KQ2U P. 26



Use to branch line with size down in the same direction.

## Universal female elbow

KQ2VF P. 18



Use to branch line in the same direction or at the right angles from male or female thread. Multiplex connection possible.

## Extended plug-in elbow

KQ2W P. 21



When the elbow extends over a standard elbow for ease of connection/disconnection of tube.

## Plug-in "Y"

KQ2U P. 27



Use to branch line in the same direction from One-touch fittings.

## Female elbow

KQ2LF P. 18



Use to pipe at right angles to male thread.

## Male delta union

KQ2D P. 25



Use to branch line in 90° direction from female thread.

## Branch "Y"

KQ2U P. 25



Use to branch line in the same direction from female thread.

## Double universal male elbow

KQ2VD P. 18



Use to branch line at right angles to female thread. Two individual parts rotate 360°.

## Delta union

KQ2D P. 25



Use to branch in tripple 90° direction.

## Plug-in reducer

KQ2R P. 28



Use to change size of One-touch fittings.

## Triple universal male elbow

KQ2VT P. 19



Use to three-branch line at right angles from female thread. Three individual parts rotate 360°.

## Delta branch

KQ2UD P. 26



Use to four-branch line in the same direction from female thread.

## Bulkhead male elbow

KQ2LE P. 28



Use to connect tubes through a panel, changing by 90° in a tube fetching direction.

## Branch universal male elbow

KQ2Z P. 19



Hexagonal head allows thread connection by using a box wrench. Use for branch connection.

## Different dia. double union "Y"

KQ2UD P. 26



Use to four-branch line in the same direction with size down.

## Adaptor

KQ2N P. 28



Use to connect fitting and R female thread.

## Branch universal female elbow

KQ2ZF P. 19



Use to branch line in the same direction or at right angles from male or female thread. Multiplex connection possible.

## Different diameter plug-in "Y"

KQ2X P. 27



Use to branch line from One-touch fitting with size down.

## Tube cap

KQ2C P. 29



Use to plug unused tube.

## Double branch universal male elbow

KQ2ZD P. 20



Use to four-branch line at right angles from female thread. Two individual parts rotate 360°.

## Double plug-in "Y"

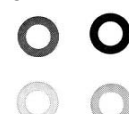
KQ2XD P. 27



Use to four-branch line from One-touch fitting.

## Color cap

KQ2C P. 29



Mounted on the release button corresponding to its applications. Distinguished by color.

## Male run tee

KQ2Y P. 24



Use to branch line in the same direction from female thread and in 90° direction.

## Gasket/Seal for M5 and M6 thread

Part no.: M-5G2 (For M5 thread)  
M-6G (For M6 thread)  
Material: Stainless steel 304, NBR

## Plug

KQ2P, KQP P. 29



Use to plug unused One-touch fittings. KQP (Blue) KQ2P (White)

K□

M□

H□

D□

MS

T□

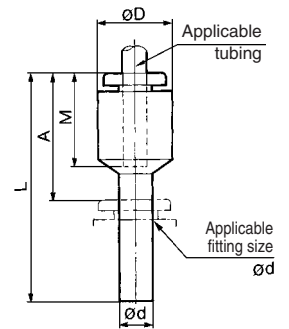
VMG

# Series KQ2

## Plug-in Reducer: KQ2R



| Applicable tubing O.D. (mm) | Applicable fitting size $\phi d$ | Model     | $\phi D^{(1)}$ | L    | A    | M    | Effective area <sup>(2)</sup> (mm <sup>2</sup> ) |          | Weight (g) |
|-----------------------------|----------------------------------|-----------|----------------|------|------|------|--------------------------------------------------|----------|------------|
|                             |                                  |           |                |      |      |      | Nylon                                            | Urethane |            |
| 3.2                         | 4                                | KQ2R23-04 | 9.6            | 33.5 | 18.5 | 15.5 | 3.4                                              | 2.9      | 2          |
| 4                           | 6                                | KQ2R04-06 | 10.4           | 34.5 | 17.5 | 16   | 5.6                                              | 4        | 1.8        |
|                             | 8                                | KQ2R04-08 |                | 36.5 | 18   |      |                                                  |          | 2.0        |
|                             | 10                               | KQ2R04-10 | 12.8           | 39.5 | 18.5 |      |                                                  |          | 3.3        |
| 6                           | 4                                | KQ2R06-04 | 12.8           | 37   | 21   | 17   | 4                                                | 4        | 2.5        |
|                             | 8                                | KQ2R06-08 | 12.8           | 37   | 18.5 |      | 13.1                                             | 10.4     | 2.5        |
|                             | 10                               | KQ2R06-10 |                | 39.5 | 18.5 |      |                                                  |          | 3          |
|                             | 12                               | KQ2R06-12 | 15.2           | 42   | 20   |      |                                                  |          | 4.7        |
| 8                           | 10                               | KQ2R08-10 | 15.2           | 41   | 20   | 18.5 | 26.1                                             | 18.0     | 4.0        |
|                             | 12                               | KQ2R08-12 |                | 42   |      |      |                                                  |          | 4.6        |
| 10                          | 12                               | KQ2R10-12 | 18.5           | 44.5 | 23   | 21   | 41.5                                             | 32.8     | 33         |
|                             | 16                               | KQ2R10-16 | 20.9           | 50.5 | 25.5 |      |                                                  | (29.5)   | 42         |
| 12                          | 16                               | KQ2R12-16 | 20.9           | 50.5 | 25.5 | 22   | 58.3                                             | (46.1)   | 37         |



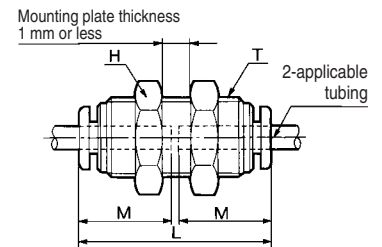
Note 1)  $\phi D$ : Max. diameter

Note 2) ( ): Values for soft nylon.

## Bulkhead Union: KQ2E



| Applicable tubing O.D. (mm) | Model     | T (M)     | H (width across flats) | L    | Mounting hole | M    | Effective area <sup>Note)</sup> (mm <sup>2</sup> ) |          | Weight (g) |
|-----------------------------|-----------|-----------|------------------------|------|---------------|------|----------------------------------------------------|----------|------------|
|                             |           |           |                        |      |               |      | Nylon                                              | Urethane |            |
| 3.2                         | KQ2E23-00 | M12 x 1   | 14                     | 31.5 | 13            | 15.5 | 3.4                                                | 2.9      | 26         |
| 4                           | KQ2E04-00 | M12 x 1   | 14                     | 32.5 | 13            | 16   | 5.6                                                | 4        | 26         |
| 6                           | KQ2E06-00 | M14 x 1   | 17                     | 34.5 | 15            | 17   | 13.1                                               | 10.4     | 33         |
| 8                           | KQ2E08-00 | M16 x 1   | 19                     | 38   | 17            | 18.5 | 26.1                                               | 18.0     | 52         |
| 10                          | KQ2E10-00 | M20 x 1   | 24                     | 42.5 | 21            | 21   | 41.5                                               | 29.5     | 70         |
| 12                          | KQ2E12-00 | M22 x 1   | 27                     | 44   | 23            | 22   | 58.3                                               | 46.1     | 90         |
| 16                          | KQ2E16-00 | M28 x 1.5 | 32                     | 51   | 29            | 25   | 113                                                | (96)     | 115        |

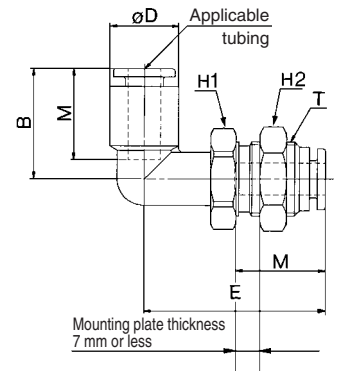


Note) ( ): Values for soft nylon.

## Bulkhead Male Elbow: KQ2LE



| Applicable tubing O.D. (mm) | Model      | T       | H1 (Hex. across flats) | H2 (Hex. across flats) | B    | E    | Note)<br>øD | Mounting hole | M    | Effective area (mm <sup>2</sup> ) |          | Weight (g) |
|-----------------------------|------------|---------|------------------------|------------------------|------|------|-------------|---------------|------|-----------------------------------|----------|------------|
|                             |            |         |                        |                        |      |      |             |               |      | Nylon                             | Urethane |            |
| 4                           | KQ2LE04-00 | M12 x 1 | 14                     | 14                     | 18.5 | 31   | 10.4        | 13            | 16   | 4.2                               | 4.2      | 18         |
| 6                           | KQ2LE06-00 | M14 x 1 | 17                     | 17                     | 20.5 | 34   | 12.8        | 15            | 17   | 11.4                              | 9.0      | 25         |
| 8                           | KQ2LE08-00 | M16 x 1 | 17                     | 19                     | 23.5 | 38.5 | 15.2        | 17            | 18.5 | 21.6                              | 14.9     | 33         |
| 10                          | KQ2LE10-00 | M20 x 1 | 22                     | 24                     | 26.5 | 43.5 | 18.5        | 21            | 21   | 35.2                              | 25.0     | 63         |
| 12                          | KQ2LE12-00 | M22 x 1 | 24                     | 27                     | 28.5 | 45.5 | 20.9        | 23            | 22   | 50.2                              | 39.7     | 77         |

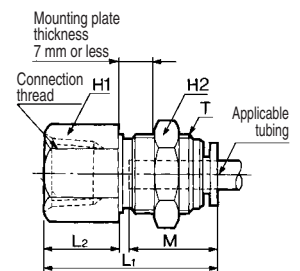


Note)  $\phi D$ : Max. diameter

## Bulkhead Connector: KQ2E



| Applicable tubing O.D. (mm) | Connection thread Rc | Model     | T (M)     | H1 (Hex. across flats) | H2 (Hex. across flats) | L1   | L2   | Mounting hole | M    | Effective area <sup>Note)</sup> (mm <sup>2</sup> ) |          | Weight (g) |
|-----------------------------|----------------------|-----------|-----------|------------------------|------------------------|------|------|---------------|------|----------------------------------------------------|----------|------------|
|                             |                      |           |           |                        |                        |      |      |               |      | Nylon                                              | Urethane |            |
| 3.2                         | 1/4                  | KQ2E23-02 | M12 x 1   | 17                     | 14                     | 31.5 | 15   | 13            | 15.5 | 3.4                                                | 2.9      | 13         |
| 4                           | 1/8                  | KQ2E04-01 | M12 x 1   | 14                     | 14                     | 27.5 | 11   | 13            | 16   | 5.6                                                | 4        | 16         |
|                             | 1/4                  | KQ2E04-02 |           | 17                     |                        | 31   | 15   |               |      |                                                    |          | 35         |
| 6                           | 1/8                  | KQ2E06-01 | M14 x 1   | 17                     | 17                     | 28   | 11   | 15            | 17   | 13.1                                               | 10.4     | 25         |
|                             | 1/4                  | KQ2E06-02 |           |                        |                        | 31.5 | 15   |               |      |                                                    |          | 40         |
|                             | 3/8                  | KQ2E06-03 |           |                        |                        | 33.5 | 17   |               |      |                                                    |          | 29         |
| 8                           | 1/8                  | KQ2E08-01 | M16 x 1   | 17                     | 19                     | 27.5 | 7.5  | 17            | 18.5 | 26.1                                               | 18.0     | 28         |
|                             | 1/4                  | KQ2E08-02 |           |                        |                        | 33   | 13   |               |      |                                                    |          | 27         |
|                             | 3/8                  | KQ2E08-03 |           |                        |                        | 35   | 15   |               |      |                                                    |          | 48         |
| 10                          | 1/4                  | KQ2E10-02 | M20 x 1   | 22                     | 24                     | 34.5 | 12.5 | 21            | 21   | 41.5                                               | 29.5     | 53         |
|                             | 3/8                  | KQ2E10-03 |           |                        |                        | 36.5 | 15   |               |      |                                                    |          | 67         |
| 12                          | 3/8                  | KQ2E12-03 | M22 x 1   | 24                     | 27                     | 37   | 14   | 23            | 22   | 58.3                                               | 46.1     | 92         |
|                             | 1/2                  | KQ2E12-04 |           |                        |                        | 41   | 18   |               |      |                                                    |          | 59         |
| 16                          | 3/8                  | KQ2E16-03 | M28 x 1.5 | 30                     | 32                     | 40   | 14   | 29            | 25   | 96                                                 | (96)     | 127        |
|                             | 1/2                  | KQ2E16-04 |           |                        |                        | 44   | 18   |               |      | 113                                                |          | 132        |



Note) ( ): Values for soft nylon.