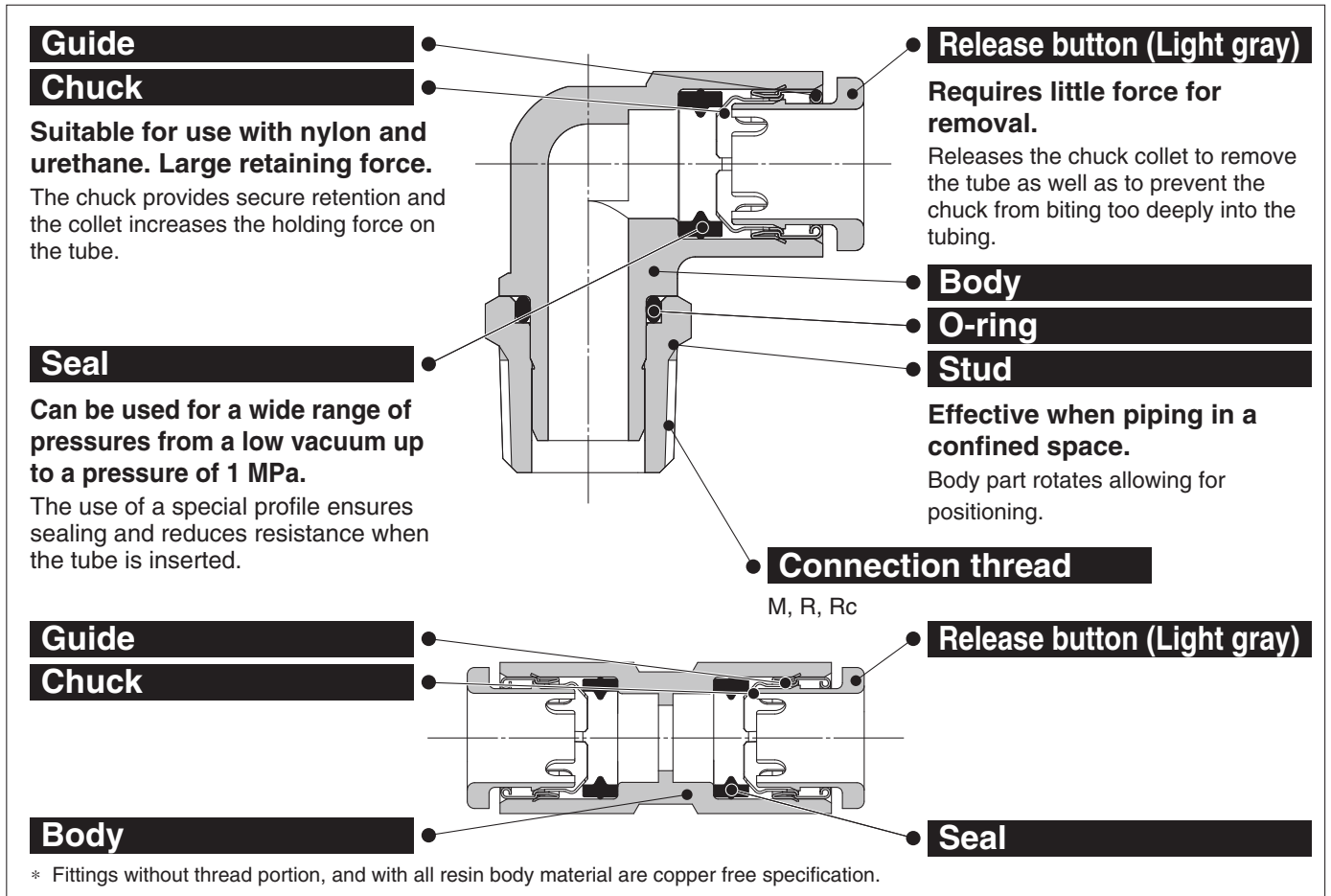


# Metric Size One-touch Fittings

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

## KQ2 Series



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



**Made to Order**  
(Refer to page 131 for details.)

### Applicable Tubing

Tubing material	FEP, PFA, Nylon, Soft nylon, Polyurethane
Tubing O.D.	ø2, ø3.2, ø4, ø6, ø8, ø10, ø12, ø16

### Specifications

<b>Fluid</b>		Air, Water*1
<b>Operating pressure range*2</b>		-100 kPa to 1 MPa
<b>Proof pressure (at 23°C)</b>		3 MPa
<b>Ambient and fluid temperature</b>		-5 to 60°C, Water: 0 to 40°C (No freezing)
<b>Thread</b>	<b>Mounting section</b>	JIS B0203 (Taper thread for piping) JIS B0205 (Metric coarse thread)
	<b>Nut section</b>	JIS B0205 (Metric fine thread)
<b>Seal on the threads</b>		With sealant

\*1 The surge pressure must be under the maximum operating pressure.

\*2 Do not use the fittings with a leak tester or for vacuum retention because they are not guaranteed for zero leakage.

### Principal Parts Material

Body	C3604, PBT, PP, Stainless steel 303
Stud	C3604 (Thread portion), Stainless steel 303 (Thread portion)
Chuck	Stainless steel 304
Guide	Stainless steel 304
Release button	POM
Seal, O-ring	NBR
Gasket	Stainless steel 304, NBR

## How to Order

### Threaded Type

**KQ2 H 06 - 01 A S**

One-touch fittings

Model

Symbol	Model
H	Male connector
S	Hexagon socket head male connector
F	Female connector
L	Male elbow
LU	Branch male elbow
K	45° male elbow
V	Universal male elbow
VS	Hexagon socket head universal male elbow
VF	Universal female elbow
LF	Female elbow
VD	Double universal male elbow
VT	Triple universal male elbow
Z	Branch universal male elbow
ZF	Branch universal female elbow
ZD	Double branch universal male elbow
ZT	Triple branch universal male elbow
W	Extended male elbow
T	Male branch tee
Y	Male run tee
D	Male delta union
U	Branch "Y"
UD	Double branch "Y"
E	Bulkhead union
	Bulkhead connector
LE	Bulkhead male elbow
N	Adapter

Male thread seal method

Symbol	Seal method
Nil	None
S	With thread sealant

Thread material/Surface treatment

Symbol	Thread material/Surface treatment
A	Brass
N	Brass + Electroless nickel plating
G	Stainless steel 303 (Connection thread: Only male thread and M3)
Bulkhead union	<input type="checkbox"/> J Interchangeable with KJE

\* : A, N

Port size/Applicable tubing O.D.

Symbol	Size
Tubing connection	00*1 Same dia. tubing
Thread connection	M3 M3 x 0.5
	M5 M5 x 0.8
	M6 M6 x 1.0
	01 R1/8, Rc1/8
	02 R1/4, Rc1/4
	03 R3/8, Rc3/8
04 R1/2, Rc1/2	

\*1 Only for "Bulkhead union" and "Bulkhead male elbow".

Applicable tubing O.D.

Symbol	Size
02	ø2
23	ø3.2
04	ø4
06	ø6
08	ø8
10	ø10
12	ø12
16	ø16

### Spare Parts

Use the part number below to order the gasket for M3, M5, and M6 threads.

Gasket for M3 thread: M-3G2  
Gasket for M5 thread: M-5G2  
Gasket for M6 thread: M-6G

For details on applicable tubing O.D. and port size combinations for each model, refer to the charts on the Dimensions page.

### Tube - Tube Type

**KQ2 H 06 - 00 A**

One-touch fittings

Model

Symbol	Model
H	Straight union
	Different diameter straight
L	Union elbow
	Plug-in elbow
	Reducer elbow
LU	Branch union elbow
W	Extended plug-in elbow
T	Union tee
	Different diameter tee
TW	Cross
TX	Different diameter cross
TY	Different diameter cross
D	Delta union
	Union "Y"
	Plug-in "Y"
U	Different diameter union "Y"
	Different diameter double union "Y"
X	Different diameter plug-in "Y"
R	Plug-in reducer
XD	Double plug-in "Y"

Port size/Applicable tubing O.D.

Symbol	Size	
Tubing (Rod) connection	00 Same diameter tubing	
	99 Same diameter rod	
	Different dia. tubing (Reducer)	23 ø3.2
		04 ø4
		06 ø6
		08 ø8
		10 ø10
		12 ø12
		16 ø16

Applicable tubing O.D.

Symbol	Size
02	ø2
23	ø3.2
04	ø4
06	ø6
08	ø8
10	ø10
12	ø12
16	ø16

### Accessories

Symbol	Name
KQ2N	Nipple
	Reducer nipple
KQ2C	Tube cap
KQ2P	Plug

Round Type



Metric Size M, R, Rc

Sealant/Gasket Seal

Inch Size UNF, NPT

Inch Size M, R, Rc

Metric Size G

Face Seal

Metric Size R, Rc

Inch Size NPT

Inch Size R

Gasket Seal

Metric Size Uni

Inch Size Uni

# Metric Size One-touch Fittings

## Round Type Variations

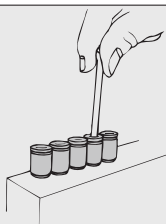
### Hexagon socket head male connector

KQ2S

P.107



Internal hexagon socket allows tightening with a hexagon wrench in confined spaces.



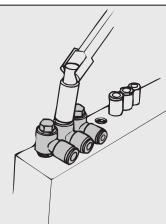
### Universal male elbow

KQ2V

P.112



Hexagon head of the body allows tightening with a box wrench in confined spaces.



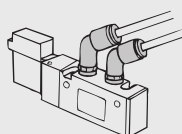
### 45° male elbow

KQ2K

P.111



Use to pipe a female thread at a 45° angle. Its direction is in-between that of the male connector and male elbow.



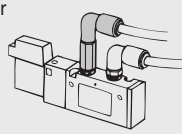
### Extended male elbow

KQ2W

P.118



Basically, it is used together with a male elbow. Its extended height allows for multi-leveled piping and prevents interference among fittings.



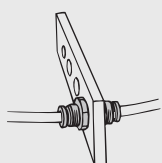
### Bulkhead union

KQ2E

P.128



Use to connect tubing through a panel, etc.



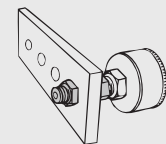
### Bulkhead connector

KQ2E

P.128



Use to connect a male thread and tubing through a panel, etc.



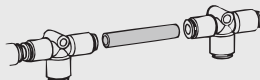
### Nipple

KQ2N

P.130



Use to connect One-touch fittings.



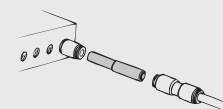
### Reducer nipple

KQ2N

P.130



Use to connect One-touch fittings of different sizes.



### Universal female elbow

KQ2VF

P.113



Use to branch a male or female thread in the same direction and at a 90° angle. Multiple connections possible.

### Branch universal female elbow

KQ2ZF

P.115



Use to two-branch a male or female thread in the same direction and at a 90° angle. Multiple connections possible.

### Male connector

KQ2H

P.105



Use to pipe a female thread in the same direction. Most general model.

### Cross

KQ2TW

P.121



Use to four-branch a line.

### Reducer elbow

KQ2L

P.109



Use to change the tube direction of One-touch fittings by 90° and connect tubing of reduced size.

### Female connector

KQ2F

P.106



Use to pipe a male thread of a pressure gauge, etc.

### Male elbow

KQ2L

P.108



Use to pipe a female thread at right angles. Most general model.

### Different diameter cross

KQ2TX

P.121



Use to four-branch a line and connect tubing of reduced size at both 90° angles.

### Straight union

KQ2H

P.105



Use to connect tubing in the same direction.

### Union elbow

KQ2L

P.109



Use to connect tubing at right angles.

### Male branch tee

KQ2T

P.119



Use to branch a female thread at both 90° angles.

### Different diameter straight

KQ2H

P.106



Use to connect tubing of different sizes.

### Plug-in elbow

KQ2L

P.109



Use to change the tube direction of One-touch fittings by 90°.

### Union tee

KQ2T

P.120



Use to branch tubing at both 90° angles.

**Different diameter tee**

**KQ2T** P.120



Use to connect tubing of reduced size for branching at both 90° angles.

**Different diameter tee**

**KQ2T** P.120



Use to connect tubing of reduced size for branching at a 90° angle from two pipes running in the same direction.

**Different diameter cross**

**KQ2TY** P.121



Use to connect tubing of reduced size for branching in three directions.

**Hexagon socket head universal male elbow**

**KQ2VS** P.112



Hexagon socket on the top allows tightening with a hexagon wrench in confined spaces.

**Branch male elbow**

**KQ2LU** P.110



Use to two-branch a female thread at right angles.

**Female elbow**

**KQ2LF** P.117



Use to pipe a male thread at right angles.

**Double universal male elbow**

**KQ2VD** P.114



Use to two-branch a female thread at right angles. Two individual parts rotate 360°.

**Triple universal male elbow**

**KQ2VT** P.114



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

**Branch universal male elbow**

**KQ2Z** P.115



Hexagon head of the body allows tightening with a box wrench. Use for branch connections.

**Double branch universal male elbow**

**KQ2ZD** P.116



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

**Male run tee**

**KQ2Y** P.122



Use to branch a female thread in the same direction and at a 90° angle.

**Triple branch universal male elbow**

**KQ2ZT** P.116



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

**Branch union elbow**

**KQ2LU** P.109



Use to branch tubing at right angles.

**Extended plug-in elbow**

**KQ2W** P.117



Use to change the tube direction of One-touch fittings by 90°. Multi-leveled piping is also possible with the plug-in elbow.

**Male delta union**

**KQ2D** P.123



Use to branch a female thread at two right angles.

**Delta union**

**KQ2D** P.124



Use to branch tubing at three right angles.

**Double branch "Y"**

**KQ2UD** P.126



Use to four-branch a female thread.

**Different diameter double union "Y"**

**KQ2UD** P.126



Use to connect tubing of reduced size for four-branching in the same direction.

**Different diameter plug-in "Y"**

**KQ2X** P.127



Use to branch One-touch fittings and connect tubing of reduced size in the same direction.

**Double plug-in "Y"**

**KQ2XD** P.127



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

**Union "Y"**

**KQ2U** P.125



Use to branch tubing in the same direction.

**Different diameter union "Y"**

**KQ2U** P.125



Use to connect tubing of reduced size for branching in the same direction.

**Plug-in "Y"**

**KQ2U** P.125



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

**Branch "Y"**

**KQ2U** P.124



Use to branch a female thread in the same direction.

**Plug-in reducer**

**KQ2R** P.128



Use to change size of One-touch fittings.

**Bulkhead male elbow**

**KQ2LE** P.129



Use to connect tubing through a panel, etc. and to change the tube direction by 90°.

**Adapter**

**KQ2N** P.129



Use to connect One-touch fittings and R female threads.

**Tube cap**

**KQ2C** P.130



Use to plug unused tubing.

**Color cap**

**KQ2C** P.130



Mount onto the release button and use different colors for piping according to applications.

**Plug**

**KQ2P** P.129



Use to plug unused One-touch fittings.

Round Type



Metric Size M, R, Rc

Inch Size UNF, NPT

Inch Size M, R, Rc

Metric Size G

Metric Size R, Rc

Inch Size NPT

Inch Size R

Metric Size Uni

Inch Size Uni

Inch Size Uni

# KQ2 Series

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

## Dimensions

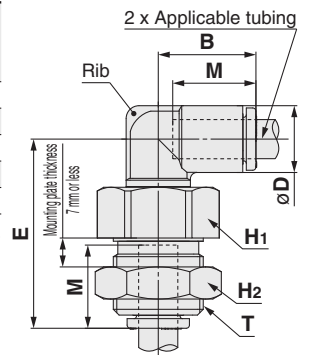
### Bulkhead Male Elbow: KQ2LE



Applicable tubing O.D. [mm]	Model	T (M)	H1 (Width across flats)	H2 (Width across flats)	B	E	*1 øD	Mounting hole	M	Effective area [mm <sup>2</sup> ]		Min. port size	Weight [g]	With a rib
										Nylon	Urethane			
ø4	KQ2LE04-00□	M12 x 1	14	14	14.8	28.5	8.2	13	13.3	4.2	4.2	3	21.2	●
ø6	KQ2LE06-00□	M14 x 1	17	17	15.5	29.6	10.4	15	13.3	11.4	9	4.5	29.4	—
ø8	KQ2LE08-00□	M16 x 1	17	19	17.2	32.3	13.2	17	14.2	21.6	14.9	6	30.4	●
ø10	KQ2LE10-00□	M20 x 1	22	24	19.3	37.9	15.9	21	15.6	35.2	25	7.5	53.5	●
ø12	KQ2LE12-00□	M22 x 1	24	27	21.5	40.8	18.5	23	17	50.2	39.7	9	61	●

□: A (Brass), N (Brass + Electroless nickel plating)

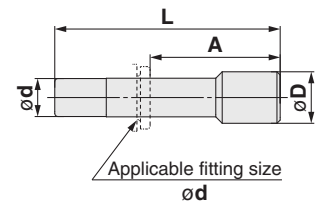
\*1 øD is maximum diameter.



### Plug: KQ2P



Applicable fitting size ød	Model	øD	L	A	Weight [g]
ø2	KJP-02	3	17	5.1	0.1
ø3.2	KQ2P-23	5	31.5	18.2	1
ø4	KQ2P-04	6	32	18.7	1
ø6	KQ2P-06	8	35	21.7	1
ø8	KQ2P-08	10	39	24.8	2
ø10	KQ2P-10	12	43	27.4	3.5
ø12	KQ2P-12	14	45.5	28.5	5
ø16	KQ2P-16	20.9	47	26.4	8

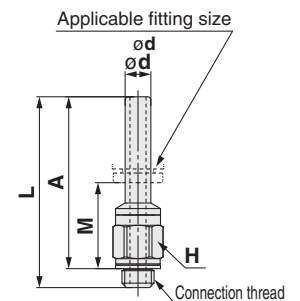


### Adapter: KQ2N (Gasket seal)



Applicable fitting size ød	Connection thread M	Model	H (Width across flats)	L	A	M	Min. port size	Weight [g]
ø4	M5 x 0.8	KQ2N04-M5□	7	29.7	26.7	13.4	2.5	2.4
ø6	M5 x 0.8	KQ2N06-M5□	7	29.7	26.7	13.4	2.5	2.6

□: A (Brass), N (Brass + Electroless nickel plating)



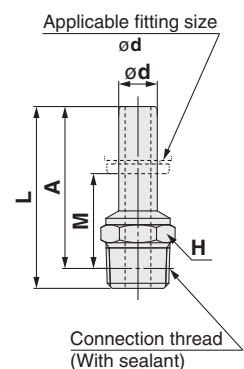
### Adapter: KQ2N (Sealant)



Applicable fitting size ød	Connection thread R	Model	H (Width across flats)	L	A*1	M	Min. port size	Weight [g]
ø4	1/8	KQ2N04-01□S	10	28.3	25.2	11.9	2.5	4
	1/4	KQ2N04-02□S	10	28.3	25.2	11.9	4	4.1
ø6	1/8	KQ2N06-01□S	14	32.8	28.1	14.8	4	13.6
	1/4	KQ2N06-02□S	14	35.9	31.2	17	6	15.7
ø8	3/8	KQ2N08-03□S	17	36	30.9	16.7	6	22.7
	3/8	KQ2N10-03□S	17	40.6	35.5	19.9	7.5	19.1

□: A (Brass), N (Brass + Electroless nickel plating)

\*1 Reference dimensions after installation of R thread



# KQ2 Series

# Made to Order/Clean Series/Spare Parts

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

## 1 Made to Order

Symbol	Specifications
<b>X12</b>	Lubricant: White vaseline, Release button color: White
<b>X35</b> *1	Body color: Black, Release button color: Light gray
<b>X41</b>	With fixed orifice*2
<b>KQ2□08-01□□</b>	Effective area is interchangeable with the current product (KQ series). Applicable model: Male elbow, 45° male elbow, Female elbow, Extended male elbow, Male branch tee, Male run tee Applicable tubing O.D./Port size: ø8/R1/8 Thread material/Surface treatment: Brass, Brass + Electroless nickel plating Example) <b>KQ2L08-01AQS</b>

\*1 The following models are not available as made-to-order: Hexagon socket head male connector/KQ2S, Bulkhead union/KQ2E, Bulkhead connector/KQ2E, Nipple/KQ2N, Reducer nipple/KQ2N, Male connector/KQ2H, Female connector/KQ2F, Color cap/KQ2C, Plug/KQ2P

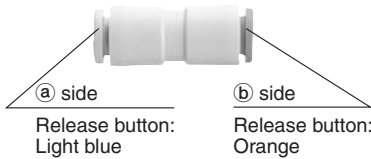
\*2 Please contact SMC for availability.

The following made-to-order products will be provided based on previous models (KQ2 series). Please contact SMC separately.

Symbol	Specifications
<b>X17</b>	Grease-free Rubber material: NBR (With fluorine coating) Release button color: Light blue
<b>X29</b>	Grease-free Rubber material: NBR (With fluorine coating) Release button color: Light blue Copper-free (With electroless nickel plating)
<b>X34</b>	Rubber material: FKM
<b>X39</b>	Grease-free Rubber material: NBR (With fluorine coating) Release button color: Light blue Clean (Copper-free, air blow, double packaging, resin body: white)
<b>X94</b>	Grease-free Rubber material: FKM (With fluorine coating) Release button color: Light blue

## 2 Metric/Inch Conversion Fittings

Allows for the metric ↔ inch conversion of tubing



Applicable tubing O.D. [mm]		Model
(a)	(b)	
ø6	ø1/4"	<b>KQ2H06-07A-X562</b>
ø10	ø3/8"	<b>KQ2H10-11A-X562</b>
ø12	ø1/2"	<b>KQ2H12-13A-X562</b>

### Variations

		Inch size						
		ø1/8 (Metric nominal size: ø3.2)	ø5/32 (Metric nominal size: ø4)	ø3/16	ø1/4	ø5/16 (Metric nominal size: ø8)	ø3/8	ø1/2
Metric size	ø2	KQ2H02-23A	KQ2H02-04A					
	ø3.2 (Inch nominal size: ø1/8)	Straight type (KQ2H23-00A/ KQ2H01-00A)	KQ2H01-03A KQ2H23-04A		KQ2H01-07A			
	ø4 (Inch nominal size: ø5/32)	KQ2H01-03A KQ2H23-04A	Straight type (KQ2H04-00A/ KQ2H03-00A)	KQ2H03-05A	KQ2H03-07A			
	ø6	KQ2H23-06A	KQ2H04-06A		KQ2H06-07A-X562 (Made to Order)	KQ2H06-08A		
	ø8 (Inch nominal size: ø5/16)				KQ2H07-09A	Straight type (KQ2H08-00A/ KQ2H09-00A)	KQ2H09-11A	KQ2H09-13A
	ø10					KQ2H08-10A	KQ2H10-11A-X562 (Made to Order)	
	ø12							KQ2H12-13A-X562 (Made to Order)

## 3 Clean Series

Symbol	Specifications
<b>10-</b>	Brass parts: With electroless nickel plating Lubricant: Fluorine grease Air blow in a clean room Double packaging Resin body, Release button color: White

Example) **10-KQ2H06-02NS** (With thread)

**10-KQ2H06-00A** (Without thread)

## 4 Spare Parts

Description	Part no.	Applicable thread
Gasket	<b>M-3G2</b>	M3
	<b>M-5G2</b>	M5
	<b>M-6G</b>	M6

### Brass

Description	Part no.	Applicable model
Pipe nut	<b>KQ02-P01AJ</b>	KQ2E02-00AJ
	<b>KQ23-P01AJ</b>	KQ2E23-00AJ
	<b>KQ04-P01AJ</b>	KQ2E04-00AJ
	<b>KQ06-P01AJ</b>	KQ2E06-00AJ
	<b>KQ04-P01A</b>	KQ2E23-00A, KQ2E04-00A, KQ2E23-02A KQ2E04-01A, KQ2E04-02A, KQ2LE04-00A
	<b>KQ06-P01A</b>	KQ2E06-00A, KQ2E06-01A, KQ2E06-02A KQ2E06-03A, KQ2LE06-00A
	<b>KQ08-P01A</b>	KQ2E08-00A, KQ2E08-01A, KQ2E08-02A KQ2E08-03A, KQ2LE08-00A
	<b>KQ10-P01A</b>	KQ2E10-00A, KQ2E10-02A, KQ2E10-03A KQ2LE10-00A
	<b>KQ12-P01A</b>	KQ2E12-00A, KQ2E12-03A, KQ2E12-04A KQ2LE12-00A
	<b>KQ16-P01A</b>	KQ2E16-00A KQ2E16-03A, KQ2E16-04A

### Brass + Electroless nickel plating

Description	Part no.	Applicable model
Pipe nut	<b>KQ02-P01NJ</b>	KQ2E02-00NJ
	<b>KQ23-P01NJ</b>	KQ2E23-00NJ
	<b>KQ04-P01NJ</b>	KQ2E04-00NJ
	<b>KQ06-P01NJ</b>	KQ2E06-00NJ
	<b>KQ04-P01N</b>	KQ2E23-00N, KQ2E04-00N, KQ2E23-02N KQ2E04-01N, KQ2E04-02N, KQ2LE04-00N
	<b>KQ06-P01N</b>	KQ2E06-00N, KQ2E06-01N, KQ2E06-02N KQ2E06-03N, KQ2LE06-00N
	<b>KQ08-P01N</b>	KQ2E08-00N, KQ2E08-01N, KQ2E08-02N KQ2E08-03N, KQ2LE08-00N
	<b>KQ10-P01N</b>	KQ2E10-00N, KQ2E10-02N, KQ2E10-03N KQ2LE10-00N
	<b>KQ12-P01N</b>	KQ2E12-00N, KQ2E12-03N, KQ2E12-04N KQ2LE12-00N
	<b>KQ16-P01N</b>	KQ2E16-00N KQ2E16-03N, KQ2E16-04N

### Color Cap

Applicable tubing O.D. [mm]	Model	øD1	øD2	L	Weight [g]	Note
ø8	<b>KQ2C-08□A</b>	12.8	9.2	2.6	0.1	Applicable for products before enlargement of outside diameter of release button
ø10	<b>KQ2C-10□A</b>	15.2	11.2	2.7	0.1	
ø12	<b>KQ2C-12□A</b>	17.6	13.2	2.7	0.1	
ø16	<b>KQ2C-16□A</b>	22.4	17.2	3.2	0.2	

□: B (Black), R (Red), YR (Orange), BR (Brown), Y (Yellow), G (Green), CB (Sky blue), GR (Gray), W (White), BU (Blue)

Round Type



Metric Size M, R, Rc

Sealant/Gasket Seal

Inch Size UNF, NPT

Inch Size M, R, Rc

Metric Size G

Face Seal

Metric Size R, Rc

Inch Size NPT

Inch Size R

Gasket Seal

Metric Size Uni

Inch Size Uni