

Metric Size One-touch Fittings

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

KQ2 Series

Guide

Chuck

Suitable for use with nylon and urethane. Large retaining force.

The chuck provides secure retention and the collet increases the holding force on the tube.

Seal

Can be used for a wide range of pressures from a low vacuum up to a pressure of 1 MPa.

The use of a special profile ensures sealing and reduces resistance when the tube is inserted.

Guide

Chuck

Body

Release button (Light gray)

Requires little force for removal.

Releases the chuck collet to remove the tube as well as to prevent the chuck from biting too deeply into the tubing.

Body

O-ring

Stud

Effective when piping in a confined space.

Body part rotates allowing for positioning.

Connection thread

M, R, Rc

Release button (Light gray)

Seal

* Fittings without thread portion, and with all resin body material are copper free specification.

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

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

* ☐: A, N

Port size/Applicable tubing O.D.

Symbol	Size
Tubing connection	00*1 Same dia. tubing
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
U	Union "Y"
	Plug-in "Y"
	Different diameter union "Y"
UD	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
00	Same diameter tubing
99	Same diameter rod
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
KQ2C	Reducer nipple
KQ2P	Tube cap
	Plug

Metric Size One-touch Fittings

Round Type Variations

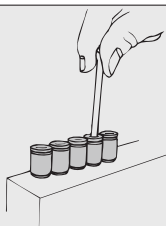
Hexagon socket head male connector

KQ2S

P.107



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



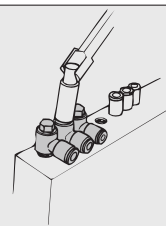
Universal male elbow

KQ2V

P.112



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



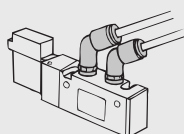
45° male elbow

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.



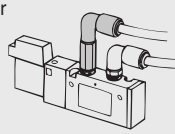
Extended male elbow

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.



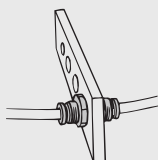
Bulkhead union

KQ2E

P.128



Use to connect tubing through a panel, etc.



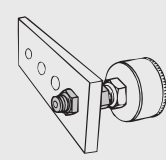
Bulkhead connector

KQ2E

P.128



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



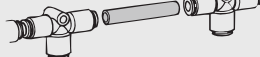
Nipple

KQ2N

P.130



Use to connect One-touch fittings.



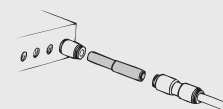
Reducer nipple

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.

Metric Size One-touch Fittings **KQ2 Series**

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

Dimensions

Triple Universal Male Elbow: KQ2VT (Sealant)

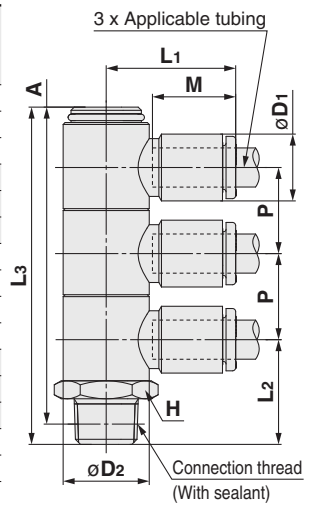


Applicable tubing O.D. [mm]	Connection thread R	Model	H (Width across flats)	*1 øD1	øD2	L1	L2	L3	A*2	M	P	Effective area [mm ²]		Min. port size	Weight [g]
												Nylon	Urethane		
ø4	1/8	KQ2VT04-01□S	14	8.2	13.4	19.3	16.3	52.5	49.4	13.3	13.4	2.9	2.9	3	25.3
	1/4	KQ2VT04-02□S	14	8.2	13.4	19.3	20.7	56.9	52.2	13.3	13.4	2.9	2.9	3	32.9
	3/8	KQ2VT04-03□S	17	8.2	13.4	19.3	22.1	58.3	53.2	13.3	13.4	2.9	2.9	3	44.8
ø6	1/8	KQ2VT06-01□S	14	10.4	13.4	20.5	16.3	52.5	49.4	13.3	13.4	7.5	5.9	4.5	26.2
	1/4	KQ2VT06-02□S	14	10.4	13.4	20.5	20.7	56.9	52.2	13.3	13.4	7.5	5.9	4.5	33.9
	3/8	KQ2VT06-03□S	17	10.4	13.4	20.5	22.1	58.3	53.2	13.3	13.4	7.5	5.9	4.5	45.8
ø8	1/8	KQ2VT08-01□S	19	13.2	17.6	23.7	19	61.8	58.7	14.2	15.9	16	11.2	6	59.6
	1/4	KQ2VT08-02□S	19	13.2	17.6	23.7	22.4	65.2	60.5	14.2	15.9	16	11.2	6	66.8
	3/8	KQ2VT08-03□S	19	13.2	17.6	23.7	23	65.8	60.7	14.2	15.9	16	11.2	6	64.9
ø10	1/2	KQ2VT08-04□S	22	13.2	17.6	23.7	27.2	70	63.6	14.2	15.9	16	11.2	6	91.5
	1/4	KQ2VT10-02□S	21	15.9	20.6	25.7	24.3	75.5	70.8	15.6	19.2	27	20.3	7.5	82
	3/8	KQ2VT10-03□S	21	15.9	20.6	25.7	24.7	75.9	70.8	15.6	19.2	27	20.3	7.5	81.9
ø12	1/2	KQ2VT10-04□S	22	15.9	20.6	25.7	28.7	79.9	73.5	15.6	19.2	27	20.3	7.5	103.9
	1/4	KQ2VT12-02□S	26	18.5	25.2	28.9	26.5	84.1	79.4	17	21.6	39	30.8	9	139.3
	3/8	KQ2VT12-03□S	26	18.5	25.2	28.9	26.9	84.5	79.4	17	21.6	39	30.8	9	129.7
	1/2	KQ2VT12-04□S	26	18.5	25.2	28.9	30.1	87.7	81.3	17	21.6	39	30.8	9	142.2

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

*1 øD1 is maximum diameter.

*2 Reference dimensions after installation of R thread



Double Universal Male Elbow: KQ2VD (Sealant)

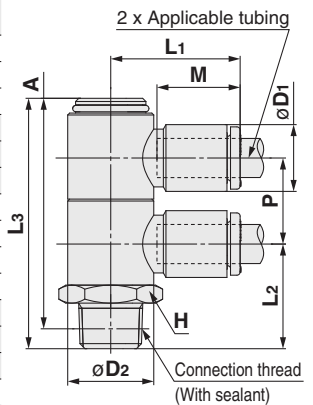


Applicable tubing O.D. [mm]	Connection thread R	Model	H (Width across flats)	*1 øD1	øD2	L1	L2	L3	A*2	M	P	Effective area [mm ²]		Min. port size	Weight [g]
												Nylon	Urethane		
ø4	1/8	KQ2VD04-01□S	14	8.2	13.4	19.3	16.3	39	35.9	13.3	13.4	2.9	2.9	3	19.7
	1/4	KQ2VD04-02□S	14	8.2	13.4	19.3	20.7	43.4	38.7	13.3	13.4	2.9	2.9	3	27.4
	3/8	KQ2VD04-03□S	17	8.2	13.4	19.3	22.1	44.8	39.7	13.3	13.4	2.9	2.9	3	39.3
ø6	1/8	KQ2VD06-01□S	14	10.4	13.4	20.5	16.3	39	35.9	13.3	13.4	7.5	5.9	4.5	20.3
	1/4	KQ2VD06-02□S	14	10.4	13.4	20.5	20.7	43.4	38.7	13.3	13.4	7.5	5.9	4.5	28
	3/8	KQ2VD06-03□S	17	10.4	13.4	20.5	22.1	44.8	39.7	13.3	13.4	7.5	5.9	4.5	39.9
ø8	1/8	KQ2VD08-01□S	19	13.2	17.6	23.7	19	45.8	42.7	14.2	15.9	16	11.2	6	45.1
	1/4	KQ2VD08-02□S	19	13.2	17.6	23.7	22.4	49.2	44.5	14.2	15.9	16	11.2	6	44.3
	3/8	KQ2VD08-03□S	19	13.2	17.6	23.7	23	49.8	44.7	14.2	15.9	16	11.2	6	52.3
ø10	1/2	KQ2VD08-04□S	22	13.2	17.6	23.7	27.2	54	47.6	14.2	15.9	16	11.2	6	78.4
	1/4	KQ2VD10-02□S	21	15.9	20.6	25.7	24.3	56.2	51.5	15.6	19.2	27	20.3	7.5	63.1
	3/8	KQ2VD10-03□S	21	15.9	20.6	25.7	24.7	56.6	51.5	15.6	19.2	27	20.3	7.5	65.1
ø12	1/2	KQ2VD10-04□S	22	15.9	20.6	25.7	28.7	60.6	54.2	15.6	19.2	27	20.3	7.5	87
	1/4	KQ2VD12-02□S	26	18.5	25.2	28.9	26.5	62.4	57.7	17	21.6	39	30.8	9	107
	3/8	KQ2VD12-03□S	26	18.5	25.2	28.9	26.9	62.8	57.7	17	21.6	39	30.8	9	102.1
	1/2	KQ2VD12-04□S	26	18.5	25.2	28.9	30.1	66	59.6	17	21.6	39	30.8	9	116.1

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

*1 øD1 is maximum diameter.

*2 Reference dimensions after installation of R thread



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

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
X12	Lubricant: White vaseline, Release button color: White
X35 *1	Body color: Black, Release button color: Light gray
X41	With fixed orifice*2
KQ2□08-01□□	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) KQ2L08-01AQS

*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

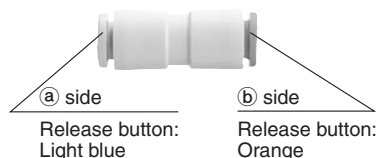
*2 Please contact SMC for availability.

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

Symbol	Specifications
X17	Grease-free Rubber material: NBR (With fluorine coating) Release button color: Light blue
X29	Grease-free Rubber material: NBR (With fluorine coating) Release button color: Light blue Copper-free (With electroless nickel plating)
X34	Rubber material: FKM
X39	Grease-free Rubber material: NBR (With fluorine coating) Release button color: Light blue Clean (Copper-free, air blow, double packaging, resin body: white)
X94	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"	KQ2H06-07A-X562
ø10	ø3/8"	KQ2H10-11A-X562
ø12	ø1/2"	KQ2H12-13A-X562

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
10-	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	M-3G2	M3
	M-5G2	M5
	M-6G	M6

Brass

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

Brass + Electroless nickel plating

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

Color Cap

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