

Metal One-touch Fittings

Applicable Tubing: Metric Size, Connection Thread: G*1

KQB2-F Series

*1 ISO 16030 compliant



Applicable Tubing

Tubing material*1	FEP, PFA, Nylon, Soft nylon, Polyurethane, Polyolefin
Tubing O.D.	ø4, ø6, ø8, ø10, ø12, ø16

*1 Considering the product application, FDA-compliant products are recommended.

Specifications

Fluid	Air, Water*1
Operating pressure range*2	-100 kPa to 1 MPa*3
Proof pressure	3.0 MPa
Ambient and fluid temperatures*4	-5 to 150°C (No freezing)*3
Lubricant	NSF H1 grease
Seal on the threads	O-ring seal

*1 Deionized water is not recommended for use as it may affect the material used in the fittings. In addition, it is known to degrade the water quality.

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

*3 Check the operating pressure range and operating temperature range of the tubing.

*4 It is recommended that you use the inner sleeve in the following conditions.
 · When using in an environment where the fluid temperature changes drastically
 · When using at a high temperature

* Temperature Condition of Mounting the Inner Sleeve

Tubing	Temperature
FEP tubing/TH series	80°C or more
Super PFA tubing/TL series	120°C or more

Spare Parts

Description	Tubing O.D.	Part no.	Material
Bulkhead nut	ø4	KQB223-P01-F	C3604 (Electroless nickel plating)
	ø6	KQB206-P01-F	
	ø8	KQB208-P01-F	
	ø10	KQB210-P01-F	
	ø12	KQB212-P01-F	
	ø16	KQB216-P01-F	

Description	Thread size	Part no.	Material
G thread O-ring	G1/8	KQB2-G01-F	FDA compliant FKM
	G1/4	KQB2-G02-F	
	G3/8	KQB2-G03-F	
	G1/2	KQB2-G04-F	

Cross Reference Table of the Inner Sleeve

Tubing O.D.	Tubing material			Applicable inner sleeve	
	TUS (Soft polyurethane)	TH/TH (FEP)	TL/TIL (Super PFA)	Part no.	Length
ø4	—	TH0402	—	TJG-0402	18
	TUS0425	TH0425	—	TJG-0425	18
	—	—	TL0403	TJG-0403	18
ø6	TUS0604	TH0604	TL0604	TJG-0604	19
	TUS0805	—	—	TJG-0805	20.5
ø8	—	TH0806	TL0806	TJG-0806	20.5
	TUS1065	—	—	TJG-1065	23
ø10	—	TH1075	—	TJG-1075	23
	—	TH1008	TL1008	TJG-1008	23
	TUS1208	—	—	TJG-1008	24
ø12	—	TH1209	—	TJG-1209	24
	—	TH1210	TL1210	TJG-1210	24

* Stainless steel 316 is used for the TJG series.

EHEDG Compliant

Metric M, G KFG2H-E

Clean Design

Metric M, G KFG2H-C

FDA Compliant

Metric M, R, Rc KQG2-F

Inch UNF, NPT KQG2-F

Metric G KQG2-F

Metric M, R, Rc KQB2-F

Inch UNF, NPT KQB2-F

Metric G KQB2-F

Metric R, Rc KFG2-F

Inch NPT KFG2-F

Metric G KFG2-F

Precautions

KQB2-F Series

Applicable Tubing: Metric Size, Connection Thread: G

How to Order

KQB2 H 04 - G 02 - F

• Body type

Symbol	Model
H	Male connector
S	Hexagon socket head male connector
L	Male elbow
T	Male branch tee
E	Bulkhead connector
W	Extended male elbow
F	Female connector

• FDA compliant

• Thread size

Symbol	Size
01	G1/8
02	G1/4
03	G3/8
04	G1/2

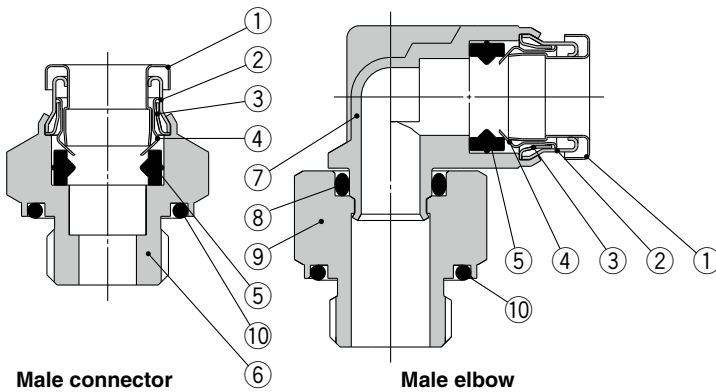
• Tubing size (Metric)

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

• Thread type

Symbol	Type
G	G

Construction



Component Parts

No.	Description	Material
1	Release button	Stainless steel 304
2	Guide 1	Stainless steel 304
3	Guide 2	Stainless steel 304
4	Chuck	Stainless steel 304
5	Seal	FDA compliant FKM (NSF H1 grease)
6	Male connector body	C3604 (Electroless nickel plating)
7	Male elbow body	Stainless steel 316
8	O-ring	FDA compliant FKM (NSF H1 grease)
9	Stud	C3604 (Electroless nickel plating)
10	G thread O-ring	FDA compliant FKM

Metal One-touch Fittings **KQB2-F Series**

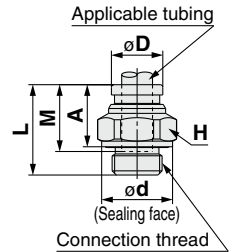
Applicable Tubing: Metric Size, Connection Thread: G

Dimensions

Male Connector: KQB2H



Applicable tubing O.D. [mm]	Connection thread G	Model	H (Width across flats)	øD	ød	L	A	M	Effective area [mm ²] ^{*1}	Weight [g]
ø4	1/8	KQB2H04-G01-F	14	—	13.8	16.6	11.1	12.6	5.6	9.2
	1/4	KQB2H04-G02-F	19		17.8	20.6	14.1			23.6
ø6	1/8	KQB2H06-G01-F	14	—	13.8	17.6	12.1	13.6	13.1	8.9
	1/4	KQB2H06-G02-F	19		17.8	20.5	14			21.6
ø6	3/8	KQB2H06-G03-F	22	—	21.8	23.4	15.9	16.1	26.1	38.3
	1/8	KQB2H08-G01-F	14		13.8	23.9	18.4			13.2
ø8	1/4	KQB2H08-G02-F	19	—	17.8	21.2	14.7	17	41.5	19.1
	3/8	KQB2H08-G03-F	22		21.8	24	16.5			35.2
ø10	1/8	KQB2H10-G01-F	17	—	13.8	25.1	19.6	18.6	58.3	19.9
	1/4	KQB2H10-G02-F	19		17.8	24.9	18.4			24.8
	3/8	KQB2H10-G03-F	22		21.8	23.3	15.8			30.9
ø10	1/2	KQB2H10-G04-F	27	—	26.5	27.7	18.7	20.8	81	64.4
	1/4	KQB2H12-G02-F	19		17.8	27.7	21.2			26.3
	3/8	KQB2H12-G03-F	22		21.8	23.5	16			25.5
ø12	1/2	KQB2H12-G04-F	27	—	26.5	27.9	18.9	20.8	113	58
	3/8	KQB2H16-G03-F	24		24.6	21.8	31.3			23.8
ø16	1/2	KQB2H16-G04-F	27	26.5		27.3	18.3	20.8	113	43

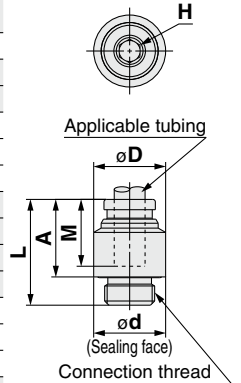


*1 Value of FEP tubing
Value of nylon tubing for ø16 only

Hexagon Socket Head Male Connector: KQB2S



Applicable tubing O.D. [mm]	Connection thread G	Model	H (Width across flats)	øD	ød	L	A	M	Effective area [mm ²] ^{*1}	Weight [g]
ø4	1/8	KQB2S04-G01-F	3	14	14	20.4	14.9	12.6	4.1	13.5
ø6	1/8	KQB2S06-G01-F	4	14	14	20.6	15.1	13.6	10	12.1
	1/4	KQB2S06-G02-F		18	18		14.1		10.7	19.9
ø8	1/8	KQB2S08-G01-F	5	14	14	23.9	18.4	16.1	17.2	12.5
	1/4	KQB2S08-G02-F	6	18	18	22.9	16.4		20.1	
ø8	3/8	KQB2S08-G03-F		22	22	23.1	15.6	17	23.3	31.1
	1/8	KQB2S10-G01-F	5	17	14	25.1	19.6		17.2	18.5
ø10	1/4	KQB2S10-G02-F	8	18	18	24.9	18.4	18.6	46	20.4
	3/8	KQB2S10-G03-F		22	22	16.5	31.2			
ø10	1/2	KQB2S10-G04-F	27	26.5	24	15	20.8	113	45.3	
	1/4	KQB2S12-G02-F	8	19	18	27.7			21.2	23.6
ø12	3/8	KQB2S12-G03-F	10	22	22	24.9	17.4	18.6	60	27.4
	1/2	KQB2S12-G04-F		27	26.5		15.9			42.6
ø16	3/8	KQB2S16-G03-F	10	24.6	22	31.3	23.8	20.8	113	41
	1/2	KQB2S16-G04-F	12	27	26.5	27.8	18.8			42.9



*1 Value of FEP tubing
Value of nylon tubing for ø16 only

EHDG Compliant

Metric M, G
KFG2H□-E

Clean Design

Metric M, G
KFG2H□-C

FDA Compliant

Metric M, R, Rc
KQG2-F

Inch UNF, NPT
KQG2-F

Metric G
KQG2-F

Metric M, R, Rc
KQB2-F

Inch UNF, NPT
KQB2-F

Metric G
KQB2-F

Metric R, Rc
KFG2-F

Inch NPT
KFG2-F

Metric G
KFG2-F

Precautions

KQB2-F Series

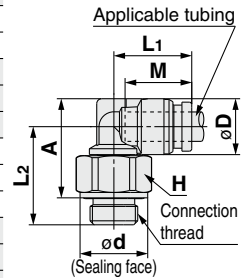
Applicable Tubing: Metric Size, Connection Thread: G

Dimensions

Male Elbow: KQB2L



Applicable tubing O.D. (mm)	Connection thread G	Model	H (Width across flats)	øD*1	ød	L1	L2	A	M	Effective area [mm ²]*2	Weight [g]	
ø4	1/8	KQB2L04-G01-F	14	9.1	13.8	14.4	18.9	17.9	12.6	4.2	15.6	
	1/4	KQB2L04-G02-F	19		17.8		22.3	20.3			33	
ø6	1/8	KQB2L06-G01-F	14	11.4	13.8	15.9	20	20.2	13.6	11.4	17.2	
	1/4	KQB2L06-G02-F	19		17.8		23.4	22.6			34.6	
	3/8	KQB2L06-G03-F	22		21.8		25.9	24.1			54.5	
ø8	1/8	KQB2L08-G01-F	14	13.7	13.8	18.6	21.3	22.6	16.1	21.6	20.2	
	1/4	KQB2L08-G02-F	19		17.8		24.7	25			36	
	3/8	KQB2L08-G03-F	22		21.8		27.2	26.5			55.6	
ø10	1/8	KQB2L10-G01-F	14	16.6	13.8	20	22.7	25.5	17	21.6	25.7	
	1/4	KQB2L10-G02-F	19		17.8		26.1	27.9			38.2	
	3/8	KQB2L10-G03-F	22		21.8		21	28.6		29.4	56.2	
	1/2	KQB2L10-G04-F	27		26.5		32.6	31.9		97.9		
ø12	1/4	KQB2L12-G02-F	19	18.7	17.8	22.6	27.2	30	18.6	50.2	41.9	
	3/8	KQB2L12-G03-F	22		21.8		23.6	29.6			31.4	54.3
	1/2	KQB2L12-G04-F	27		26.5		33.6	33.9			94.6	
ø16	3/8	KQB2L16-G03-F	22	24.6	21.8	26.3	32.4	36.5	20.8	71	64.7	
	1/2	KQB2L16-G04-F	27		26.5		27.3	36.4			39	100



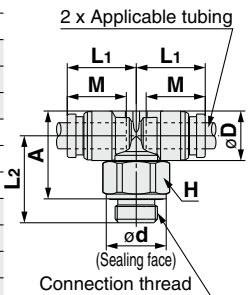
*1 For the ø16, this dimension refers to the O.D. of the release button.

*2 Value of FEP tubing
Value of nylon tubing for ø16 only

Male Branch Tee: KQB2T



Applicable tubing O.D. (mm)	Connection thread G	Model	H (Width across flats)	øD*1	ød	L1	L2	A	M	Effective area [mm ²]*2	Weight [g]	
ø4	1/8	KQB2T04-G01-F	14	9.1	13.8	14.4	18.9	17.9	12.6	6	17.5	
	1/4	KQB2T04-G02-F	19		17.8		22.3	20.3			34.9	
ø6	1/8	KQB2T06-G01-F	14	11.4	13.8	15.9	20	20.2	13.6	13.9	21	
	1/4	KQB2T06-G02-F	19		17.8		23.4	22.6			38	
	3/8	KQB2T06-G03-F	22		21.8		25.9	24.1			57.9	
ø8	1/8	KQB2T08-G01-F	14	13.7	13.8	18.6	21.3	22.6	16.1	26.3	25.6	
	1/4	KQB2T08-G02-F	19		17.8		24.7	25			41.2	
	3/8	KQB2T08-G03-F	22		21.8		27.2	26.5			60.8	
ø10	1/8	KQB2T10-G01-F	14	16.6	13.8	20	22.7	25.5	17	40.8	34	
	1/4	KQB2T10-G02-F	19		17.8		26.1	27.9			46	
	3/8	KQB2T10-G03-F	22		21.8		21	28.6		29.4	64	
	1/2	KQB2T10-G04-F	27		26.5		32.6	31.9		105.8		
ø12	1/4	KQB2T12-G02-F	19	18.7	17.8	22.6	27.2	30	18.6	57.2	53	
	3/8	KQB2T12-G03-F	22		21.8		23.6	29.6			31.4	54.3
	1/2	KQB2T12-G04-F	27		26.5		33.6	33.9			105	
ø16	3/8	KQB2T16-G03-F	22	24.6	21.8	26.3	32.4	36.5	20.8	71	82.2	
	1/2	KQB2T16-G04-F	27		26.5		27.3	36.4			39	100



*1 For the ø16, this dimension refers to the O.D. of the release button.

*2 Value of FEP tubing
Value of nylon tubing for ø16 only

Metal One-touch Fittings **KQB2-F Series**

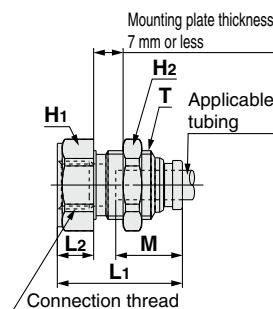
Applicable Tubing: Metric Size, Connection Thread: G

Dimensions

Bulkhead Connector: KQB2E



Applicable tubing O.D. [mm]	Connection thread G	Model	T (M)	Width across flats		L1	L2	Mounting hole	M	Effective area ^{*1} [mm ²]	Weight [g]
				H1	H2						
ø4	1/8	KQB2E04-G01-F	M10 x 1	17	12	27.1	11	11	12.6	5.6	25.1
	1/4	KQB2E04-G02-F		19	17	32.7	16.6				36.9
ø6	1/8	KQB2E06-G01-F	M14 x 1	17	12	25.5	7.4	15	13.6	13.1	26.8
	1/4	KQB2E06-G02-F		19	17	33.5	15.4				42.7
ø6	3/8	KQB2E06-G03-F	M14 x 1	24	17	35	16.9	15	13.6	13.1	62
	1/8	KQB2E08-G01-F		17	12	27.6	8.2				30.4
ø8	1/4	KQB2E08-G02-F	M15 x 1	19	19	34.5	15.1	16	16.1	26.1	43.9
	3/8	KQB2E08-G03-F		24	19	36	16.6				66.2
ø10	1/4	KQB2E10-G02-F	M18 x 1	19	21	33.5	13.5	19	17	41.5	46.8
	3/8	KQB2E10-G03-F		24	21	35.6	15.6				65.4
ø12	3/8	KQB2E12-G03-F	M20 x 1	24	24	35.9	14.7	21	18.6	58.3	119.2
	1/2	KQB2E12-G04-F		27	24	42.2	21				91.9
ø16	3/8	KQB2E16-G03-F	M27 x 1	29	30	37.2	13.1	28	20.8	96	118.2
	1/2	KQB2E16-G04-F		43.1	19	113	128.7				

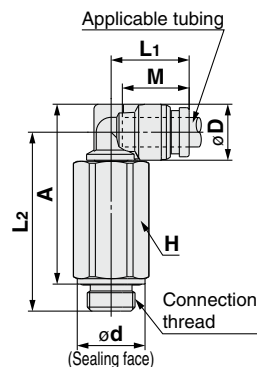


*1 Value of FEP tubing
Value of nylon tubing for ø16 only

Extended Male Elbow: KQB2W



Applicable tubing O.D. [mm]	Connection thread G	Model	H (Width across flats)	øD ^{*1}	ød	L1	L2	A	M	Effective area ^{*2} [mm ²]	Weight [g]
1/4	KQB2W04-G02-F	19	17.8	38.7	36.7	70.6					
ø6	1/8	KQB2W06-G01-F	14	11.4	13.8	15.9	36.4	36.6	13.6	10.9	36.1
	1/4	KQB2W06-G02-F	19		17.8	15.9	39.8	39			72.2
ø6	3/8	KQB2W06-G03-F	22	11.4	21.8	15.9	42.3	40.5	13.6	10.9	106.7
	1/8	KQB2W08-G01-F	14		13.8	18.6	40	41.3			41.3
ø8	1/4	KQB2W08-G02-F	19	13.7	17.8	19.1	43.4	43.7	16.1	20.5	76.7
	3/8	KQB2W08-G03-F	22		21.8	19.1	45.9	45.2			112.9
ø10	1/4	KQB2W10-G02-F	19	16.6	17.8	21	49.8	51.6	17	33.5	84.8
	3/8	KQB2W10-G03-F	22		21.8	21	50.2	51			116.6
ø10	1/2	KQB2W10-G04-F	27	16.6	26.5	21	54.2	53.5	17	33.5	196.6
	1/4	KQB2W12-G02-F	19		17.8	22.6	50.9	53.7			88.7
ø12	3/8	KQB2W12-G03-F	22	18.7	21.8	23.6	53.3	55.1	18.6	47.7	111.6
	1/2	KQB2W12-G04-F	27		26.5	23.6	57.3	57.6			193.8
ø16	3/8	KQB2W16-G03-F	22	24.6	21.8	26.3	62	66.1	20.8	71	133.6
	1/2	KQB2W16-G04-F	27		26.5	27.3	66	68.6			100

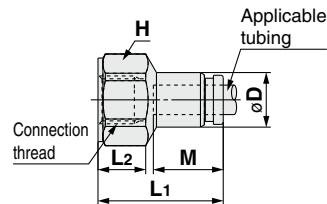


*1 For the ø16, this dimension refers to the O.D. of the release button.
*2 Value of FEP tubing
Value of nylon tubing for ø16 only

Female Connector: KQB2F



Applicable tubing O.D. [mm]	Connection thread G	Model	H1 (Width across flats)	øD ^{*1}	L1	L2	M	Effective area ^{*2} [mm ²]	Weight [g]
1/4	KQB2F04-G02-F	19	30.6	14.5	32				
ø6	1/8	KQB2F06-G01-F	17	11.1	25.5	9.7	13.6	13.1	22.6
	1/4	KQB2F06-G02-F	19		31.1	14.7			33
ø6	3/8	KQB2F06-G03-F	24	11.1	32.6	14.6	13.6	13.1	51.1
	1/8	KQB2F08-G01-F	17		27.6	10			25.1
ø8	1/4	KQB2F08-G02-F	19	13.4	33.2	14.9	16.1	26.1	36.3
	3/8	KQB2F08-G03-F	24		34.6	14.7			53.8
ø10	1/4	KQB2F10-G02-F	19	16.4	33.5	15.2	17	41.5	39.9
	3/8	KQB2F10-G03-F	24		34.9	15			57.7
ø12	1/4	KQB2F12-G02-F	19	18.5	34.5	15.2	18.6	58.3	41.8
	3/8	KQB2F12-G03-F	24		35.9	15			59.7
ø12	1/2	KQB2F12-G04-F	27	18.5	41.8	19.9	18.6	58.3	81.6
	3/8	KQB2F16-G03-F	24		24.6	37.2			15.4
1/2	KQB2F16-G04-F	27	43.1	20.4		113	89.1		



*1 For the ø10, ø12, and ø16, this dimension refers to the O.D. of the release button.
*2 Value of FEP tubing
Value of nylon tubing for ø16 only

EHDG
Compliant

Metric M, G
KFG2H□-E

Clean
Design

Metric M, G
KFG2H□-C

FDA
Compliant

Metric M, R, Rc
KQG2-F

Inch UNF, NPT
KQG2-F

Metric G
KQG2-F

Metric M, R, Rc
KQB2-F

Inch UNF, NPT
KQB2-F

Metric G
KQB2-F

Metric R, Rc
KFG2-F

Inch NPT
KFG2-F

Metric G
KFG2-F

Precautions

Specific Product Precautions

Be sure to read this before handling the products. Refer to the back cover for safety instructions and pages 75 to 79 for fittings & tubing precautions.



Selection

⚠ Caution

1. The surge pressure must be under the maximum operating pressure. If the surge pressure exceeds the maximum operating pressure, it will result in damage to fittings and tubing or the tubing may result in being fallen out.
2. If using a fluororesin tubing in an environment where the fluid temperature changes drastically, it is recommended to use an inner sleeve. Otherwise, air leakage may occur or the tube may release from fitting due to deformation of the tubing.
3. The particle generation of the KQB2-F series depends on the operating conditions and operating environment. If you are concerned about the effects on machinery and equipment, check the particle generation with your machine before use.

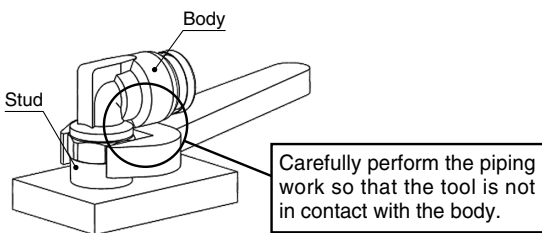
The components of the KQB2-F series may slide due to changes in the internal pressure, which may generate particles. When using male elbow, male branch tee, and extended male elbow fittings, particles may be generated by rotation for positioning after connecting.

Mounting

⚠ Caution

1. When performing the piping work, turn the tightening tool in the horizontal direction to the hexagon across flats of the stud so that any moment is not applied to the body.

If the tool is in contact with the body, this may cause the stud to come off.



2. The union elbow, union tee, union "Y", different diameter tee and different diameter union "Y" should be fixed through the mounting hole.

Otherwise, air leakage or breaking can occur due to a pulling force or moment load created by the product's weight.

3. The male elbow, male branch tee, and extended male elbow can be turned for positioning after connecting, but they cannot be used while turning them.

Doing so may cause worn out metallic particles to enter the fluid or the fitting to break.

4. If the connection tube oscillates or turns, do not use this product.

Doing so may cause the fitting to break. In particular, for the product with the stud, this may cause the stud to come off.

Cleaning Method

⚠ Warning

1. Check the connection before cleaning.
Clean the fittings with the tube and plug connected and the screw tightened.
2. Review the conditions before cleaning.
Make sure that the fitting material is not affected or damaged by chemical solution, temperature, and water pressure before use.
3. Do not use a metal brush or tool that may damage or scratch the fitting.

Operating Environment

⚠ Caution

1. The table below shows material of parts. Please refer to the relevant standards for parts when determining suitability in applications and operating conditions.

Item	Material	Compliant standards
Pressing parts	Stainless steel	AISI304
Cutting parts	Brass	The NSF/ANSI 51 lead content requirement is satisfied.
Surface treatment	Electroless nickel plating	ASTM corrosion resistance, Intermediate Grade
MIM parts	Stainless steel	AISI316L equivalent
Rubber parts	Fluoropolymer	FDA 21CFR 177.2600
Grease	Paraffin oil	NSF H1

Installation and Removal of Tubing

⚠ Caution

1. Removal of tubing
1) For tubing used at a high temperature or for an extended period of time, there is a possibility that it will not fit into a One-touch fitting again due to an enlarged O.D. Dispose of the tubing and replace it with a new one.

Proper Tightening Torque of Fittings

⚠ Caution

1. Connection thread tightening method: M5, 10-32UNF
Tighten fittings with a tightening torque of 1 to 1.5 N·m.
2. Connection thread tightening method: G
Tighten fittings with sealant using the proper tightening torques in the table below. If tightened using a torque exceeding the proper torque level, this may cause the fitting to break. In particular, for the product with the stud, the stud may come off.

G Thread Proper Tightening Torque

Connection thread size	Proper tightening torque [N·m]
G1/8	2.9 to 3.2
G1/4	5.7 to 6.3
G3/8	9.5 to 10.5
G1/2	14.3 to 15.8

Variations

Male Connector

KFG2H

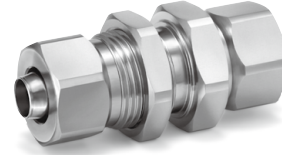
Metric	p. 61
Inch	p. 67



Bulkhead Union

KFG2E

Metric	p. 63
Inch	p. 68



Male Elbow

KFG2L

Metric	p. 61
Inch	p. 67



Union Elbow

KFG2L

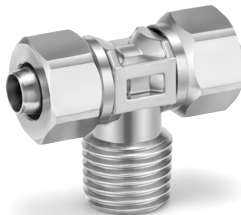
Metric	p. 63
Inch	p. 68



Male Branch Tee

KFG2T

Metric	p. 62
Inch	p. 67



Swivel Elbow

KFG2V

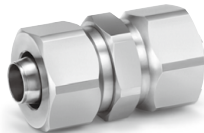
Metric	R thread	p. 63
	G thread	p. 72
Inch		p. 69



Straight Union

KFG2H

Metric	p. 62
Inch	p. 68



Female Connector

KFG2F

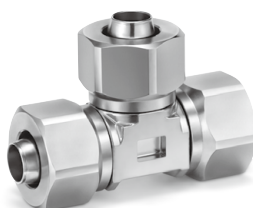
Metric	p. 64
Inch	p. 69



Union Tee

KFG2T

Metric	p. 62
Inch	p. 68



Union Nut

KFG2N

Metric	p. 64
Inch	p. 69



EHDG
Compliant

Metric M, G
KFG2H□-E

Clean
Design

Metric M, G
KFG2H□-C

FDA
Compliant

Metric M, R, Rc
KQG2-F

Inch UNF, NPT
KQG2-F

Metric G
KQG2-F

Metric M, R, Rc
KQB2-F

Inch UNF, NPT
KQB2-F

Metric G
KQB2-F

Metric R, Rc
KFG2-F

Inch NPT
KFG2-F

Metric G
KFG2-F

Precautions