

For Food Industry

EHEDG Compliant/Clean Design/ FDA Compliant Fittings

New

RoHS

- Hygienic design prevents liquid from accumulating after cleaning
- FDA compliant materials

EHEDG Compliant Fittings

p. 7

EHEDG Compliant

IP69K

Hygienic Design

FDA Compliant

Stainless Steel 316 Insert Fittings

KFG2H□-E Series



Clean Design Fittings

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Hygienic Design

FDA Compliant

Stainless Steel 316 Insert Fittings

KFG2H□-C Series



FDA Compliant Fittings

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FDA Compliant



Stainless Steel 316 One-touch Fittings

KQG2-F Series



Metal One-touch Fittings

KQB2-F Series



Stainless Steel 316 Insert Fittings

KFG2-F Series

KFG2H-E/KFG2H-C/KQ_B2-F KFG2-F Series



CAT.ES50-41A

EHEDG Compliant Fittings

EHEDG Compliant

IP69K

Hygienic Design

FDA Compliant

KFG2H□-E Series

p. 7



EHEDG Certification

This series satisfies EHEDG guidelines (hygienic design standards), preventing liquid and foreign matter from entering, and is easy to wash.

Design for less residual liquid accumulation



EHEDG compliant fitting

Design for better liquid flow and less residual liquid accumulation

Existing KFG2 model

Design for poor liquid flow and more residual liquid accumulation

Achieved IP69K rating

Rubber parts

The material used is a special FKM that is compliant with the Food and Drug Administration (FDA) §177.2600. They are colored in blue for superior visibility.

Body type: Male connector

Connection thread: M, G^{*1}

*1 ISO 16030 compliant

Fluid temperature

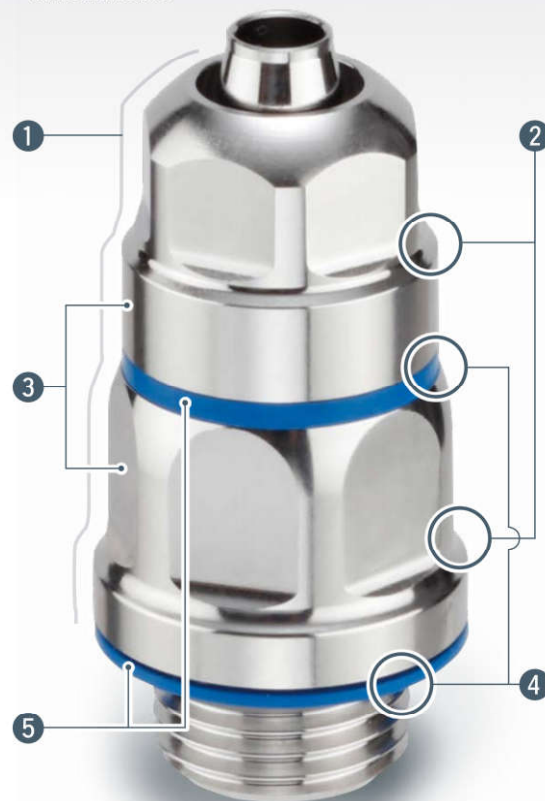
-5 to 150°C

EHEDG design standards

- 1 External surface roughness:
Ra 0.8 µm or less
- 2 Corners of radius 3 mm or more or with an internal angle of 135°
- 3 Stainless material with high anti-corrosion performance: Stainless steel 316
- 4 No direct contact of external metal parts
- 5 Gasket seals made of FDA-compliant rubber materials



EHEDG Certificate of Compliance



Clean Design Fittings

Hygienic
Design

FDA
Compliant

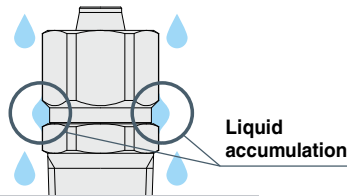
KFG2H□-C Series

p. 11

Design for less residual liquid accumulation



Clean design fitting
Rounded design for less residual liquid accumulation



Existing KFG2 model
Design for poor liquid flow and more residual liquid accumulation

Metal parts: Stainless steel 316

Rubber parts

The material used is a special FKM that is compliant with the Food and Drug Administration (FDA) §177.2600. They are colored in blue for superior visibility.

Body type: Male connector

Connection thread: M, G^{*1}

*1 ISO 16030 compliant

Fluid temperature

-5 to 150°C



FDA Compliant Fittings

FDA
Compliant

KQG2-F/KQB2-F/KFG2-F Series

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Rubber parts

The material used is a special FKM that is compliant with the Food and Drug Administration (FDA) §177.2600.

Grease

NSF H1-compliant paraffin grease is used.

Stainless Steel 316 One-touch Fittings KQG2-F Series

Applicable tubing: Metric size
Connection thread: M, R, Rc, UNF, NPT, G*¹

*1 ISO 16030 compliant



Metal One-touch Fittings KQB2-F Series

Applicable tubing: Metric size
Connection thread: M, R, Rc, UNF, NPT, G*¹

*1 ISO 16030 compliant



Stainless Steel 316 Insert Fittings KFG2-F Series

Applicable tubing: Metric size
Connection thread: R, Rc, NPT, G*^{1,2}

*1 Swivel elbow only
*2 ISO 16030 compliant



FDA (U.S. Food and Drug Administration) Compliant Tubing

Polyurethane Tubing

TU-X214



- Complies with the FDA (U.S. Food and Drug Administration) § 177.2600 dissolution test
- Complies with the EU No 10/2011 dissolution test
- Max. operating pressure: 0.8 MPa (at 20°C)

Tubing O.D.		Color	Fluid
Metric size	Inch size		
ø4, ø6, ø8, ø10, ø12		Black, White, Red, Blue, Yellow, Green, Clear, Orange	Air, Water

Fluoropolymer Tubing

TL/TIL



- Complies with the FDA (U.S. Food and Drug Administration) § 177.1550 dissolution test
- Food Sanitation Law compliant*1
- Max. operating pressure: 1.0 MPa (at 20°C)
- Operating temperature (Fixed usage): -65 to 260°C

Tubing O.D.		Color
Metric size	Inch size	
ø4, ø6, ø8, ø10, ø12, ø19	ø1/8", ø3/16", ø1/4", ø3/8", ø1/2", ø3/4", ø1"	Translucent

Fluoropolymer Tubing (PFA)

TLM/TILM



- Complies with the FDA (U.S. Food and Drug Administration) § 177.1550 dissolution test
- Food Sanitation Law compliant*1
- Operating temperature (Fixed usage): Air, Inert gas: -65 to 260°C Water: 0 to 100°C (No freezing)

Tubing O.D.		Color
Metric size	Inch size	
ø2, ø3, ø4, ø6, ø8, ø10, ø12, ø16, ø19, ø25	ø1/8", ø3/16", ø1/4", ø3/8", ø1/2", ø3/4", ø1", ø1 1/4"	Translucent, Black, Red, Blue

FEP Tubing (Fluoropolymer)

TH/THH



- Complies with the FDA (U.S. Food and Drug Administration) § 177.1550 dissolution test
- Food Sanitation Law compliant*1
- Max. operating pressure: 2.3 MPa (at 20°C)*2
- *2 This may vary according to size.
- Operating temperature (Fixed usage): Air, Inert gas: -65 to 200°C Water: 0 to 100°C (No freezing)
- Longer length reel (500 m): -X64

Tubing O.D.		Color
Metric size	Inch size	
ø4, ø6, ø8, ø10, ø12	ø1/8", ø3/16", ø1/4", ø3/8", ø1/2", ø3/4"	Translucent, Black, Red, Blue

Soft Fluoropolymer Tubing

TD/TID



- Complies with the FDA (U.S. Food and Drug Administration) § 177.1550 dissolution test
- Food Sanitation Law compliant*1
- Max. operating pressure: 1.6 MPa (at 20°C)*2
- *2 This may vary according to size.
- Operating temperature (Fixed usage): Air, Inert gas: -65 to 260°C Water: 0 to 100°C (No freezing)

Tubing O.D.		Color
Metric size	Inch size	
ø4, ø6, ø8, ø10, ø12	ø1/8", ø3/16", ø1/4", ø3/8", ø1/2"	Translucent

Polyolefin Tubing

TPH



- Complies with the FDA (U.S. Food and Drug Administration) § 175.300 dissolution test
- Max. operating pressure (at 20°C): 1.0 MPa (ø4, ø6), 0.7 MPa (ø8, ø10, ø12)
- Longer length reel (500 m): -X40

Applicable tubing O.D.	Color	Fluid
ø4, ø6, ø8, ø10, ø12	White, Blue, Yellow	Air, Water, etc.

Soft Polyolefin Tubing

TPS



- Complies with the FDA (U.S. Food and Drug Administration) § 175.300 dissolution test
- Max. operating pressure (at 20°C): 0.7 MPa (ø4 to ø12)

Applicable tubing O.D.	Color	Fluid
ø4, ø6, ø8, ø10, ø12	White, Blue, Yellow	Air, Water, etc.

*1 Testing in compliance with Japan's Food Sanitation Law based on the 370th notice given by the Ministry of Health and Welfare in 1959

Variations

Male Connector KQB2H

Metric	R thread	p. 39
	G thread	p. 54
Inch		p. 47



Bulkhead Union KQB2E

Metric	p. 41
Inch	p. 49



Different Diameter Union "Y" KQB2U

Metric	p. 42
Inch	p. 50



Hexagon Socket Head Male Connector KQB2S

Metric	R thread	p. 39
	G thread	p. 54
Inch		p. 47



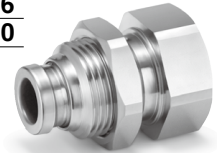
Union Tee KQB2T

Metric	p. 41
Inch	p. 49



Bulkhead Connector KQB2E

Metric	Rc thread	p. 43
	G thread	p. 56
Inch		p. 50



Straight Union KQB2H

Metric	p. 39
Inch	p. 47



Union "Y" KQB2U

Metric	p. 41
Inch	p. 49



Extended Male Elbow KQB2W

Metric	R thread	p. 43
	G thread	p. 56
Inch		p. 50



Male Elbow KQB2L

Metric	R thread	p. 40
	G thread	p. 55
Inch		p. 48



Different Diameter Tee KQB2T

Metric	p. 42
Inch	p. 49



Female Connector KQB2F

Metric	Rc thread	p. 44
	G thread	p. 56
Inch		p. 51



Male Branch Tee KQB2T

Metric	R thread	p. 40
	G thread	p. 55
Inch		p. 48



Plug-in Reducer KQB2R

Metric	p. 42
Inch	p. 49



Plug KQB2P

Metric	p. 44
Inch	p. 51



Union Elbow KQB2L

Metric	p. 41
Inch	p. 48



Different Diameter Straight KQB2H

Metric	p. 42
Inch	p. 50



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

FDA Compliant Fittings

Metal One-touch Fittings

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

KQB2-F Series

RoHS



Applicable Tubing

Tubing material*1	FEP, PFA, Nylon, Soft nylon, Polyurethane, Polyolefin
Tubing O.D.	ø3.2, 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	Without sealant

*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. (Except ø3.2)

- 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
O-ring	—	M-5-F	FDA compliant FKM
Bulkhead nut	ø3.2 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	

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
ø6	—	—	TL0403	TJG-0403	18
	TUS0604	TH0604	TL0604	TJG-0604	19
ø8	TUS0805	—	—	TJG-0805	20.5
	—	TH0806	TL0806	TJG-0806	20.5
ø10	TUS1065	—	—	TJG-1065	23
	—	TH1075	—	TJG-1075	23
	—	TH1008	TL1008	TJG-1008	24
ø12	TUS1208	—	—	TJG-1208	24
	—	TH1209	—	TJG-1209	24
	—	TH1210	TL1210	TJG-1210	24

* Stainless steel 316 is used for the TJG series.

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

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

How to Order

KQB2 **H** **04** - **02** - **F**

Body type

Symbol	Model
H	Male connector, Straight union, Different diameter straight
S	Hexagon socket head male connector
L	Male elbow, Union elbow
T	Male branch tee, Union tee, Different diameter tee
E	Bulkhead union, Bulkhead connector
U	Union "Y", Different diameter union "Y"
R	Plug-in reducer
W	Extended male elbow
F	Female connector
P	Plug

Tubing size (Metric)

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

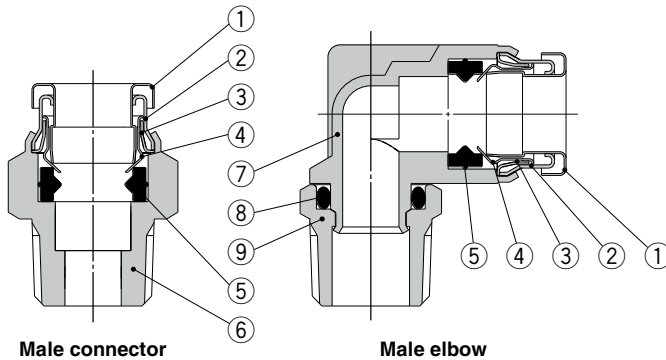
FDA compliant

Thread size, Tubing size

Symbol	Size	
M5	M5 x 0.8	Thread size
01	R1/8, Rc1/8	
02	R1/4, Rc1/4	
03	R3/8, Rc3/8	
04	R1/2, Rc1/2	
00	Same tubing O.D.	Tubing size
04	ø4	
06	ø6	
08	ø8	
10	ø10	
12	ø12	
16	ø16	

* Sealant is unavailable for this product as no FDA-compliant material is available.

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)

EHEDG
Metric M, G
KFG2H-E
Compliant

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
Metric G
KQB2-F

Inch UNF, NPT
KQB2-F
Metric G
KQB2-F

Metric R, Rc
KFG2-F
Metric G
KFG2-F

Inch NPT
KFG2-F
Metric G
KFG2-F

Metric G
KFG2-F
Metric G
KFG2-F

Inch NPT
KFG2-F
Metric G
KFG2-F

Metric G
KFG2-F
Metric G
KFG2-F

Inch NPT
KFG2-F
Metric G
KFG2-F

Metric G
KFG2-F
Metric G
KFG2-F

Inch NPT
KFG2-F
Metric G
KFG2-F

Precautions

KQB2-F Series

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

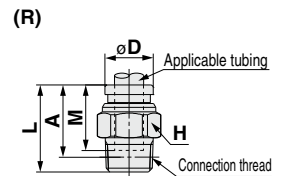
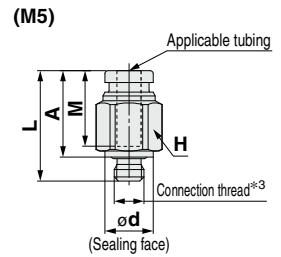
Dimensions

Male Connector: KQB2H



Applicable tubing O.D. [mm]	Connection thread R, M	Model	H (Width across flats)	øD	ød	L	A*1	M	Effective area [mm ²]*2	Weight [g]			
ø3.2	M5 x 0.8	KQB2H23-M5-F	8	—	8	17.8	13.8	12	3	3.7			
	1/8	KQB2H23-01-F	10								15.4	13.6	6
	1/4	KQB2H23-02-F	14								21	17.6	17.8
ø4	M5 x 0.8	KQB2H04-M5-F	10	—	8	18.4	14.4	12.6	4	5.7			
	1/8	KQB2H04-01-F	14								15.3	13.5	5.6
	1/4	KQB2H04-02-F	14								20.9	17.5	17.2
ø6	M5 x 0.8	KQB2H06-M5-F	12	—	8	19.6	15.6	13.6	4	7.8			
	1/8	KQB2H06-01-F	14								18.1	16.3	7.3
	1/4	KQB2H06-02-F	14								20.8	17.4	15.2
	3/8	KQB2H06-03-F	17								23	19.2	28.8
ø8	1/8	KQB2H08-01-F	14	—	—	24.5	22.7	16.1	26.1	13.5			
	1/4	KQB2H08-02-F	14								22.3	18.9	26
	3/8	KQB2H08-03-F	17								23.7	19.9	26
ø10	1/8	KQB2H10-01-F	17	—	—	25.5	23.7	17	26.1	19.8			
	1/4	KQB2H10-02-F	17								27.9	24.5	22.7
	3/8	KQB2H10-03-F	17								23	19.2	21.6
	1/2	KQB2H10-04-F	22								28.6	23.5	53.9
ø12	1/4	KQB2H12-02-F	19	—	—	30.5	27.1	18.6	58.3	21.5			
	3/8	KQB2H12-03-F	19								24.7	20.9	47
	1/2	KQB2H12-04-F	22								28.7	23.6	47
ø16	3/8	KQB2H16-03-F	24	24.6	—	33.6	29.8	20.8	81	48.3			
	1/2	KQB2H16-04-F	24								29.5	24.4	113

*1 Reference dimensions after installation for R thread
 *2 Value of FEP tubing
 Value of nylon tubing for ø16 only
 *3 In the case of M5, the screw length (L - A) is longer than that of the KQB2 series.

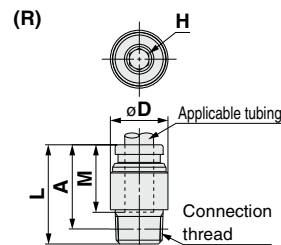
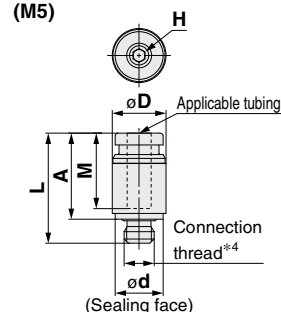


Hexagon Socket Head Male Connector: KQB2S



Applicable tubing O.D. [mm]	Connection thread R, M	Model	H (Width across flats)	øD*1	ød	L	A*2	M	Effective area [mm ²]*3	Weight [g]					
ø3.2	M5 x 0.8	KQB2S23-M5-F	2	9	8	17.8	13.8	12	3	4.3					
ø4	M5 x 0.8	KQB2S04-M5-F	2	9	8	18.4	14.4	12.6	4	4.2					
	1/8	KQB2S04-01-F	3	10	—	20.4	18.6				4.1	7.9			
ø6	M5 x 0.8	KQB2S06-M5-F	2	12	8	20.1	16.1	13.6	4	7.7					
	1/8	KQB2S06-01-F	4								—	20.6	18.8	10	9.1
	1/4	KQB2S06-02-F	4								14	—	17.2	13	10.7
ø8	1/8	KQB2S08-01-F	5	14	—	24.7	22.9	16.1	23.3	13.5					
	1/4	KQB2S08-02-F	5								—	22.9	19.5	24	
	3/8	KQB2S08-03-F	6								17	—	23.1	19.3	24
ø10	1/8	KQB2S10-01-F	5	17	—	25.6	23.8	17	17.2	18.6					
	1/4	KQB2S10-02-F	8								—	27.5	24.1	20	
	3/8	KQB2S10-03-F	8								—	20.2	20.2	22	
	1/2	KQB2S10-04-F	22								24	18.9	39.2		
ø12	1/4	KQB2S12-02-F	8	19	—	30.6	27.2	18.6	46	26					
	3/8	KQB2S12-03-F	10								—	24.9	21.1	20.2	
	1/2	KQB2S12-04-F	10								22	—	19.8	35.3	
ø16	3/8	KQB2S16-03-F	10	24.6	—	33.2	29.4	20.8	81	43.6					
	1/2	KQB2S16-04-F	12								—	29.4	24.3	113	40.3

*1 For the ø16, this dimension refers to the O.D. of the release button.
 *2 Reference dimensions after installation for R thread
 *3 Value of FEP tubing
 Value of nylon tubing for ø16 only
 *4 In the case of M5, the screw length (L - A) is longer than that of the KQB2 series.

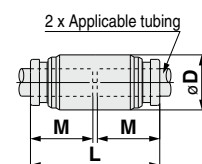


Straight Union: KQB2H



Applicable tubing O.D. [mm]	Model	øD*1	L	M	Effective area [mm ²]*2	Weight [g]
ø3.2	KQB2H23-00-F	9	25	12	3.4	6.8
ø4	KQB2H04-00-F	9	26.2	12.6	5.6	6.8
ø6	KQB2H06-00-F	12	28.2	13.6	13.1	12
ø8	KQB2H08-00-F	14	33.2	16.1	26.1	17.4
ø10	KQB2H10-00-F	17	35	17	41.5	27.2
ø12	KQB2H12-00-F	19	38.2	18.6	58.3	33.7
ø16	KQB2H16-00-F	24.6	42.6	20.8	113	56.1

*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



KQB2-F Series

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

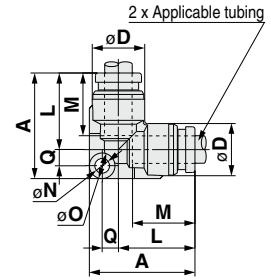
Dimensions

Union Elbow: KQB2L



Applicable tubing O.D. [mm]	Model	øD ^{*1}	L	A	Q	M	øN	øO	Effective area [mm ²] ^{*2}	Weight [g]
ø3.2	KQB2L23-00-F	8.3	13.6	19.3	2.9	12	3.2	5.6	3	6.3
ø4	KQB2L04-00-F	9.1	14.6	20.5	3.1	12.6	3.2	5.6	4.2	7.4
ø6	KQB2L06-00-F	11.4	16.6	23	3.6	13.6	3.2	5.6	11.4	11
ø8	KQB2L08-00-F	13.7	20.1	29.1	5	16.1	4.2	8	21.6	20.2
ø10	KQB2L10-00-F	16.6	22	31.7	5.7	17	4.2	8	35.2	29.6
ø12	KQB2L12-00-F	18.7	24.6	35	6.4	18.6	4.2	8	50.2	37.1
ø16	KQB2L16-00-F	24.6	28.8	40.5	7.7	20.8	4.2	8	100	59.7

*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

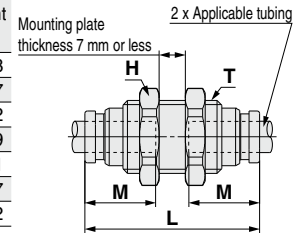


Bulkhead Union: KQB2E



Applicable tubing O.D. [mm]	Model	T (M)	H (Width across flats)	L	Mounting hole	M	Effective area [mm ²] ^{*1}	Weight [g]
ø3.2	KQB2E23-00-F	M10 x 1	12	32.2	11	12	3.4	14.8
ø4	KQB2E04-00-F	M10 x 1	12	32.4	11	12.6	5.6	14.7
ø6	KQB2E06-00-F	M14 x 1	17	35.4	15	13.6	13.1	29.2
ø8	KQB2E08-00-F	M15 x 1	19	38.8	16	16.1	26.1	34.9
ø10	KQB2E10-00-F	M18 x 1	21	40	19	17	41.5	47.1
ø12	KQB2E12-00-F	M20 x 1	24	42.4	21	18.6	58.3	58.7
ø16	KQB2E16-00-F	M27 x 1	30	46.8	28	20.8	113	107.2

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

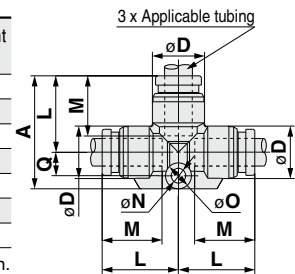


Union Tee: KQB2T



Applicable tubing O.D. [mm]	Model	øD ^{*1}	L	A	Q	M	øN	øO	Effective area [mm ²] ^{*2}	Weight [g]
ø3.2	KQB2T23-00-F	8.3	13.6	20.5	4.1	12	3.2	5.6	3.4	7.9
ø4	KQB2T04-00-F	9.1	14.6	21.8	4.4	12.6	3.2	5.6	6.4	9.5
ø6	KQB2T06-00-F	11.4	16.6	24.6	5.2	13.6	3.2	5.6	13.4	14.2
ø8	KQB2T08-00-F	13.7	20.1	31.1	7	16.1	4.2	8	25.6	24.4
ø10	KQB2T10-00-F	16.6	22	34	8	17	4.2	8	40	36.8
ø12	KQB2T12-00-F	18.7	24.6	37.7	9.1	18.6	4.2	8	57.4	47
ø16	KQB2T16-00-F	24.6	28.8	43.4	10.6	20.8	4.2	8	100	75.5

*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

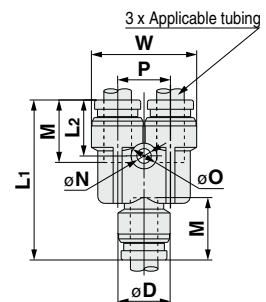


Union "Y": KQB2U



Applicable tubing O.D. [mm]	Model	øD ^{*1}	W	L ₁	L ₂	P	M	øN	øO	Effective area [mm ²] ^{*2}	Weight [g]
ø3.2	KQB2U23-00-F	8.3	16.4	29	11	8.1	12	3.2	5.6	3.4	9.2
ø4	KQB2U04-00-F	9.1	18.2	30.4	11.3	9.1	12.6	3.2	5.6	4.2	11.1
ø6	KQB2U06-00-F	11.4	22.9	34.9	12.2	11.5	13.6	3.2	5.6	13.4	18.8
ø8	KQB2U08-00-F	13.7	28.3	40.1	14.1	14.6	16.1	4.2	8	25.6	29.7
ø10	KQB2U10-00-F	16.6	34.2	44	14.4	17.6	17	4.2	8	40	47.4
ø12	KQB2U12-00-F	18.7	38.5	48.4	15.8	19.8	18.6	4.2	8	57.4	62.1
ø16	KQB2U16-00-F	24.6	49.3	56.6	17.3	26	20.8	4.2	8	113	110.2

*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: M, R, Rc

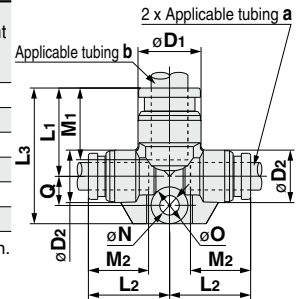
Dimensions

Different Diameter Tee: KQB2T



Applicable tubing O.D. [mm]		Model	*1					Q	M1	M2	øN	øO	Effective area [mm ²]*2	Weight [g]
a	b		øD1	øD2	L1	L2	L3							
ø3.2	ø4	KQB2T23-04-F	9.1	8.3	14.2	14.1	21.1	4.1	12.6	12	3.2	5.6	3.8	8.5
ø4	ø6	KQB2T04-06-F	11.4	9.1	15.6	15.7	22.8	4.4	13.6	12.6	3.2	5.6	7.1	11
ø6	ø8	KQB2T06-08-F	13.7	11.4	19.1	17.7	29.5	6.4	16.1	13.6	4.2	8	16.4	20
ø8	ø10	KQB2T08-10-F	16.6	13.7	21	21.2	32.1	7.1	17	16.1	4.2	8	36	29.8
ø10	ø12	KQB2T10-12-F	18.7	16.6	23.6	23.1	35.7	8.1	18.6	17	4.2	8	56	41.3
ø12	ø16	KQB2T12-16-F	24.6	18.7	26.8	26.7	39.9	9.1	20.8	18.6	4.2	8	108.5	58

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

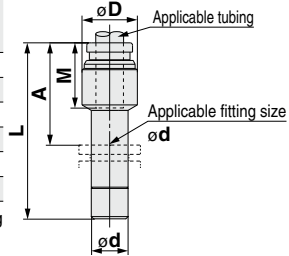


Plug-in Reducer: KQB2R



Applicable tubing O.D. [mm]	Applicable fitting size ød	Model	øD	L	A	M	Effective area [mm ²]*1	Weight [g]
ø3.2	ø4	KQB2R23-04-F	9	32.9	20.3	12	3.4	4.9
ø4	ø6	KQB2R04-06-F	9	34.4	20.8	12.6	5.6	7
ø6	ø8	KQB2R06-08-F	12	38.4	22.3	13.6	13.1	12.7
ø8	ø10	KQB2R08-10-F	14	41.9	24.9	16.1	26.1	19.2
ø10	ø12	KQB2R10-12-F	17	44.8	26.2	17	41.5	27.8
ø12	ø16	KQB2R12-16-F	19	42.9	22.1	18.6	58.3	37.2

*1 Value of FEP tubing

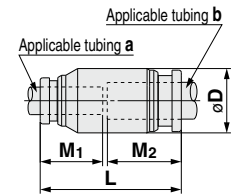


Different Diameter Straight: KQB2H



Applicable tubing O.D. [mm]		Model	øD*1	L	M1	M2	Effective area [mm ²]*2	Weight [g]
a	b							
ø3.2	ø4	KQB2H23-04-F	9	25.6	12	12.6	3.4	6.8
ø4	ø6	KQB2H04-06-F	12	27.2	12.6	13.6	5.6	12.1
ø6	ø8	KQB2H06-08-F	14	30.7	13.6	16.1	13.1	17.1
ø8	ø10	KQB2H08-10-F	17	34.1	16.1	17	26.1	27.2
ø10	ø12	KQB2H10-12-F	19	36.6	17	18.6	41.5	34.8
ø12	ø16	KQB2H12-16-F	24.6	40.4	18.6	20.8	58.3	57.3

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

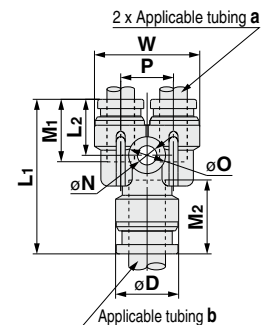


Different Diameter Union "Y": KQB2U



Applicable tubing O.D. [mm]		Model	*1					M1	M2	øN	øO	Effective area [mm ²]*2	Weight [g]
a	b		øD	L1	L2	P	W						
ø3.2	ø4	KQB2U23-04-F	9.1	27	10.8	8.1	16.4	12	12.6	3.2	5.6	3.2	8.5
ø4	ø6	KQB2U04-06-F	11.4	29.3	11.2	9.1	18.2	12.6	13.6	3.2	5.6	4.2	11.9
ø6	ø8	KQB2U06-08-F	13.7	33.7	12.2	11.5	22.9	13.6	16.1	4.2	8	13.4	19.3
ø8	ø10	KQB2U08-10-F	16.6	38.3	13.8	14.6	28.3	16.1	17	4.2	8	25.6	32
ø10	ø12	KQB2U10-12-F	18.7	43	14	17.6	34.2	17	18.6	4.2	8	40	47.6
ø12	ø16	KQB2U12-16-F	24.6	47.4	15.6	19.8	38.5	18.6	20.8	4.2	8	57.4	67.6

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



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

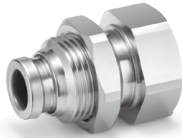
Precautions

KQB2-F Series

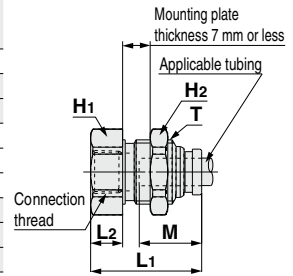
Applicable Tubing: Metric Size, Connection Thread: M, R, Rc

Dimensions

Bulkhead Connector: KQB2E



Applicable tubing O.D. [mm]	Connection thread Rc	Model	T (M)	Width across flats		L1	L2	Mounting hole	M	Effective area [mm ²] ^{*1}	Weight [g]
				H1	H2						
ø3.2	1/4	KQB2E23-02-F	M10 x 1	17	12	31	14.8	11	12	3.4	27.5
	1/8	KQB2E04-01-F	M10 x 1	14	12	25.8	9.7	11	12.6	5.6	16.9
ø4	1/4	KQB2E04-02-F		17		30.9	14.8				
	ø6	1/8	KQB2E06-01-F	M14 x 1	17	17	24.2	6.1	15	13.6	13.1
1/4		KQB2E06-02-F	31.6		13.5		33.2				
ø8	3/8	KQB2E06-03-F	M15 x 1	19	19	33	14.9	16	16.1	26.1	34.8
	1/8	KQB2E08-01-F		26.3		6.9	28.7				
ø10	1/4	KQB2E08-02-F	M15 x 1	17	19	32.4	13	16	16.1	26.1	34.2
	3/8	KQB2E08-03-F		34		14.6	35.9				
ø12	1/4	KQB2E10-02-F	M18 x 1	19	21	31.6	11.6	19	17	41.5	44
	3/8	KQB2E10-03-F		33.6		13.6	40.2				
ø16	3/8	KQB2E12-03-F	M20 x 1	21	24	34	12.8	21	18.6	58.3	52
	1/2	KQB2E12-04-F		39.6		18.4	62.5				
ø16	3/8	KQB2E16-03-F	M27 x 1	29	30	35.3	11.2	28	20.8	96	111
	1/2	KQB2E16-04-F		40.6		16.5	113				118.2

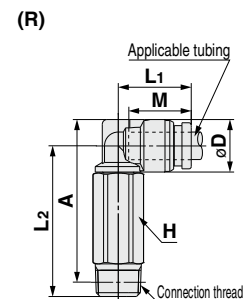
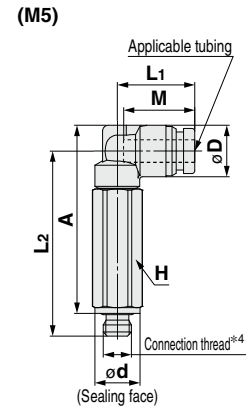


*1 Value of FEP tubing
Value of nylon tubing for ø16 only

Extended Male Elbow: KQB2W



Applicable tubing O.D. [mm]	Connection thread R, M	Model	H (Width across flats)	øD ^{*1}	ød	L1	L2	A ^{*2}	M	Effective area [mm ²] ^{*3}	Weight [g]
1/8	KQB2W23-01-F	10	—	13.6	31.3	33.6	15.3				
1/4	KQB2W23-02-F	14	—	—	35.1	35.8	34.7				
ø4	M5 x 0.8	KQB2W04-M5-F	8	9.1	8	13.7	32.7	33.3	12.6	3	14.3
	1/8	KQB2W04-01-F	10		—	—	31.7	34.4			16.2
	1/4	KQB2W04-02-F	14		—	—	35.5	36.6			35.6
ø6	M5 x 0.8	KQB2W06-M5-F	8	11.4	8	14.7	33.8	35.5	13.6	10.9	16.2
	1/8	KQB2W06-01-F	10		—	—	32.8	36.7			17.8
	1/4	KQB2W06-02-F	14		—	—	36.6	38.9			37.2
ø8	3/8	KQB2W06-03-F	17	13.7	—	—	38	39.9	16.1	20.5	60.3
	1/8	KQB2W08-01-F	12		—	18.6	37	42			28.9
	1/4	KQB2W08-02-F	14		—	19.1	40.2	43.6			39.2
ø10	3/8	KQB2W08-03-F	17	16.6	—	—	41.6	44.6	17	33.5	63.7
	1/4	KQB2W10-02-F	14		—	21	46.6	51.5			42.1
	1/2	KQB2W10-04-F	22		—	—	50.1	53.3			123
ø12	1/4	KQB2W12-02-F	14	18.7	—	—	22.6	47.7	18.6	47.7	46
	3/8	KQB2W12-03-F	17		—	23.6	49	54.5			58.2
	1/2	KQB2W12-04-F	22		—	—	53.2	57.4			118
ø16	3/8	KQB2W16-03-F	19	24.6	—	—	26.3	57.6	20.8	71	89.6
	1/2	KQB2W16-04-F	22		—	—	27.3	61.4			67.9



*1 For the ø16, this dimension refers to the O.D. of the release button.
*2 Reference dimensions after installation for R thread
*3 Value of FEP tubing
Value of nylon tubing for ø16 only
*4 In the case of M5, the screw length (øD/2 + L2 - A) is longer than that of the KQB2 series.

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

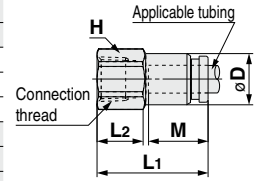
Applicable Tubing: Metric Size, Connection Thread: M, R, Rc

Dimensions

Female Connector: KQB2F



Applicable tubing O.D. [mm]	Connection thread Rc	Model	H (Width across flats)	øD ^{*1}	L1	L2	M	Effective area [mm ²] ^{*2}	Weight [g]
ø3.2	1/8	KQB2F23-01-F	12	8	23.3	9.8	12	3.4	9.3
	1/4	KQB2F04-01-F	12		23.7	9.8			9.7
ø4	1/4	KQB2F04-02-F	17	8.7	28.7	13.2	12.6	5.6	22.7
	1/8	KQB2F06-01-F	12		24.2	10			11.1
ø6	1/4	KQB2F06-02-F	17	11.1	29.2	13.4	13.6	13.1	24.3
	3/8	KQB2F06-03-F	19		30.6	14.2			25.8
ø8	1/8	KQB2F08-01-F	14	13.4	26.3	9.6	16.1	26.1	17.1
	1/4	KQB2F08-02-F	17		31.3	13.7			26.8
	3/8	KQB2F08-03-F	19		32.7	14.4			28.4
ø10	1/4	KQB2F10-02-F	17	16.4	31.6	13.9	17	41.5	30.3
	3/8	KQB2F10-03-F	19		33	14.7			32
ø12	1/4	KQB2F12-02-F	19	18.5	32.6	13.3	18.6	58.3	39.4
	3/8	KQB2F12-03-F	19		34	14.7			33.9
	1/2	KQB2F12-04-F	24		39.3	18.4			52.9
ø16	3/8	KQB2F16-03-F	24	24.6	35.3	13.5	20.8	81	62.8
	1/2	KQB2F16-04-F	24		40.6	18.8			113

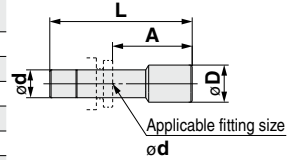


*1 For the ø10, ø12, and ø16, this dimension refers to the O.D. of the release button.
 *2 Value of FEP tubing
 Value of nylon tubing for ø16 only

Plug: KQB2P



Applicable fitting size ød	Model	øD	L	A	Weight [g]
ø3.2	KQB2P-23-F	5	28.9	16.9	2.8
ø4	KQB2P-04-F	6	29.6	17	4.3
ø6	KQB2P-06-F	8	30.8	17.2	9
ø8	KQB2P-08-F	10	33.7	17.6	16.3
ø10	KQB2P-10-F	12	34.6	17.6	25.4
ø12	KQB2P-12-F	14	36.5	17.9	37.8
ø16	KQB2P-16-F	18	38.6	17.8	69.2



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



FDA Compliant Fittings

KQB2-F Series

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.

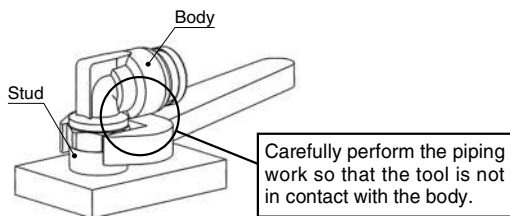
The components of the KQB2-F series may slide due to changes in the internal pressure, which may generate particles. When using male elbow, male branch tee, and extended male elbow fittings, particles may be generated by rotation for positioning after connecting.

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