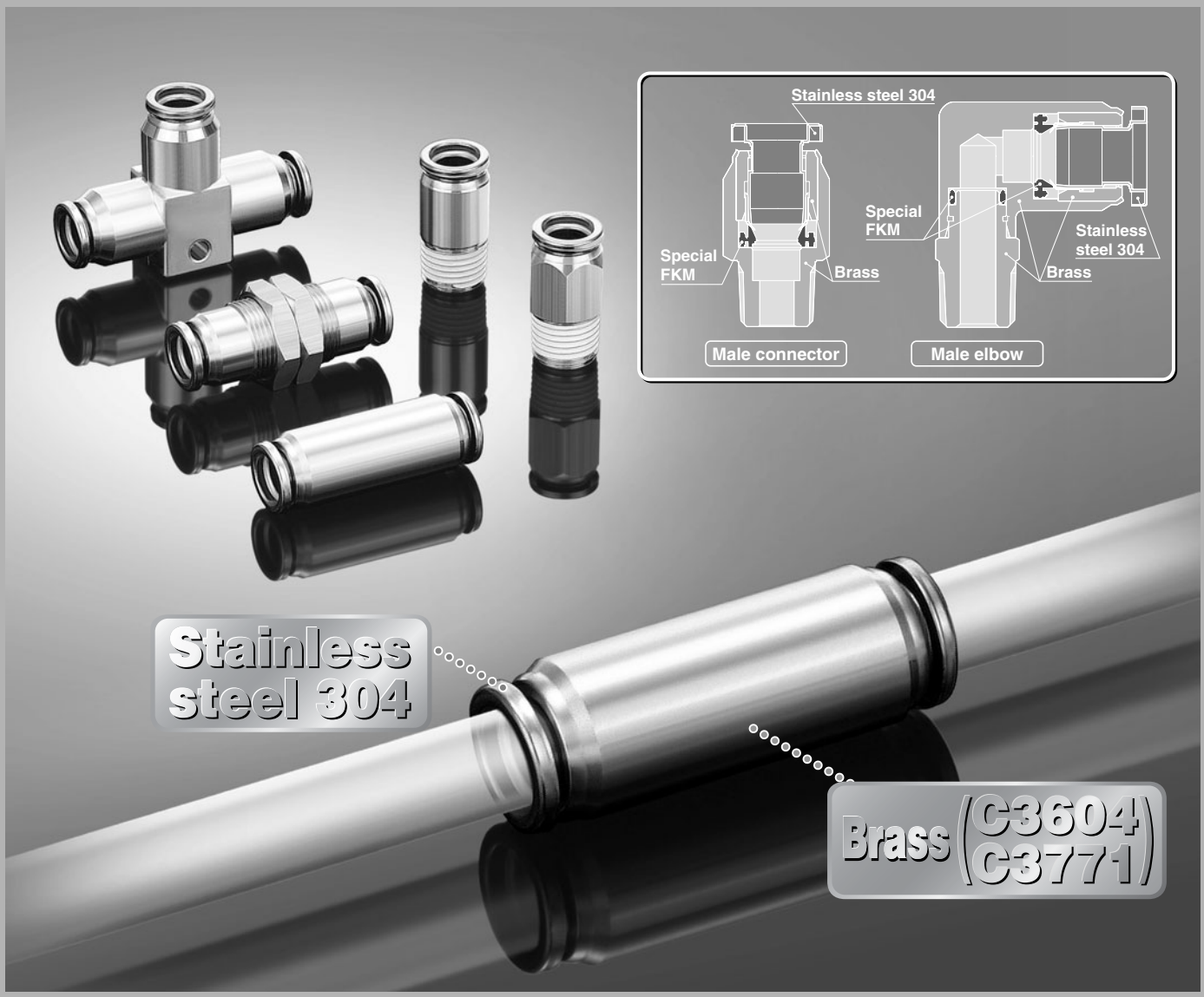
Brass One-touch Fittings

Series KQB

- Fluid temperature: **–5 to 150°C**
- **Grease-free**
- Applicable tubing material: **• FEP • PFA • Nylon • Soft nylon • Polyurethane • Polyolefin**
- Electroless nickel plated (Brass parts): **Made to Order (-X2)**



Male Connector

Applicable tubing O.D. (mm)	Connection thread	Model
ø4	M5	**KQBH04-M5**
	R1/8	**KQBH04-01S**
ø6	M5	**KQBH06-M5**
	R1/8	**KQBH06-01S**
	R1/4	**KQBH06-02S**
ø8	R1/8	**KQBH08-01S**
	R1/4	**KQBH08-02S**
	R3/8	**KQBH08-03S**
ø10	R1/4	**KQBH10-02S**
	R3/8	**KQBH10-03S**
ø12	R3/8	**KQBH12-03S**
	R1/2	**KQBH12-04S**

Hexagon Socket Head Male Connector

Applicable tubing O.D. (mm)	Connection thread	Model
ø4	M5	**KQBS04-M5**
	R1/8	**KQBS04-01S**
ø6	M5	**KQBS06-M5**
	R1/8	**KQBS06-01S**
	R1/4	**KQBS06-02S**
ø8	R1/8	**KQBS08-01S**
	R1/4	**KQBS08-02S**
	R3/8	**KQBS08-03S**
ø10	R1/4	**KQBS10-02S**
	R3/8	**KQBS10-03S**
ø12	R3/8	**KQBS12-03S**
	R1/2	**KQBS12-04S**

Straight Union

Applicable tubing O.D. (mm)	Model
ø4	**KQBH04-00**
ø6	**KQBH06-00**
ø8	**KQBH08-00**
ø10	**KQBH10-00**
ø12	**KQBH12-00**

Male Elbow

Applicable tubing O.D. (mm)	Connection thread	Model
ø4	M5	**KQBL04-M5**
	R1/8	**KQBL04-01S**
ø6	M5	**KQBL06-M5**
	R1/8	**KQBL06-01S**
	R1/4	**KQBL06-02S**
ø8	R1/8	**KQBL08-01S**
	R1/4	**KQBL08-02S**
	R3/8	**KQBL08-03S**
ø10	R1/4	**KQBL10-02S**
	R3/8	**KQBL10-03S**
ø12	R3/8	**KQBL12-03S**
	R1/2	**KQBL12-04S**

Union Elbow

Applicable tubing O.D. (mm)	Model
ø4	**KQBL04-00**
ø6	**KQBL06-00**
ø8	**KQBL08-00**
ø10	**KQBL10-00**
ø12	**KQBL12-00**

Male Branch Tee

Applicable tubing O.D. (mm)	Connection thread	Model
ø4	M5	**KQBT04-M5**
	R1/8	**KQBT04-01S**
ø6	M5	**KQBT06-M5**
	R1/8	**KQBT06-01S**
	R1/4	**KQBT06-02S**
ø8	R1/8	**KQBT08-01S**
	R1/4	**KQBT08-02S**
	R3/8	**KQBT08-03S**
ø10	R1/4	**KQBT10-02S**
	R3/8	**KQBT10-03S**
ø12	R3/8	**KQBT12-03S**
	R1/2	**KQBT12-04S**

Union Tee

Applicable tubing O.D. (mm)	Model
ø4	**KQBT04-00**
ø6	**KQBT06-00**
ø8	**KQBT08-00**
ø10	**KQBT10-00**
ø12	**KQBT12-00**

Union "Y"

Applicable tubing O.D. (mm)	Model
ø4	**KQBU04-00**
ø6	**KQBU06-00**
ø8	**KQBU08-00**
ø10	**KQBU10-00**
ø12	**KQBU12-00**

Bulkhead Union

Applicable tubing O.D. (mm)	Model
ø4	**KQBE04-00**
ø6	**KQBE06-00**
ø8	**KQBE08-00**
ø10	**KQBE10-00**
ø12	**KQBE12-00**

Brass One-touch Fittings
Series KQB

RoHS

Applicable Tubing

Tubing material	FEP, PFA, Nylon, Soft nylon Note 1), Polyurethane Note 2) Note 3), Polyolefin
Tubing O.D.	ø4, ø6, ø8, ø10, ø12

Specifications

Fluid	Air, Water
Operating pressure range Note 1)	–100 kPa to 1 MPa
Proof pressure	3.0 MPa
Ambient and fluid temperature Note 2)	–5 to 150°C (No freezing)
Lubricant	Grease-free specification
Seal on the threads	With sealant

Note 1) For soft nylon tubing, water cannot be used.
Note 2) The pulling strength of polyurethane tube is as follows. The pulling load of the tube used for verifying the mounting of the tube within the fitting should be the values as shown or less in the table below. As reference, the thrust force occurring between the tube and the fitting at 0.8 MPa is shown on the table below.

Pulling Strength

Model	TU0425	TU0604	TU0805	TU1065	TU1208
Without inner sleeve	50 N	80 N	110 N	140 N	140 N
With inner sleeve	160 N	180 N	250 N	450 N	500 N

Reference: Thrust Force Occurring at 0.8 MPa

Model	TU0425	TU0604	TU0805	TU1065	TU1208
Load	10 N	25 N	40 N	65 N	90 N

Note 3) Please consult with SMC regarding applicable tube separately.
Note 4) Please avoid using in a vacuum holding application such as a leak tester, since there is leakage.
Note 5) 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 Conditions

Operating tube	Temperature
FEP tubing/TH series	80°C or more
PFA tubing/TL series	120°C or more

Made to Order

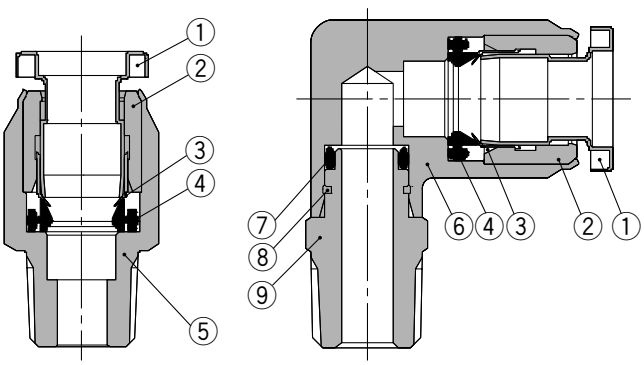
Made to Order
(Refer to page 104 for details.)

Spare Parts

Description	Model	Material
Gasket	**M-5G3**	Stainless steel 316, Special FKM
Bulkhead nut	**KQB04-P01**	C3604
	KQB06-P01	
	KQB08-P01	
	KQB10-P01	
	KQB12-P01	

Tube size		Tubing model (Material)				Applicable inner sleeve	
O.D.	Model	**TU** (Polyurethane)	**TUS** (Soft polyurethane)	**TH** (FEP)	**TL** (PFA)	Model	Length (mm)
ø4	0402	—	—	●	—	**TJ-0402**	18
	0425	●	●	●	—	**TJ-0425**	18
	0403	—	—	—	●	**TJ-0403**	18
ø6	0604	●	●	●	●	**TJ-0604**	19
ø8	0805	●	●	—	—	**TJ-0805**	20.5
	0806	—	—	●	●	**TJ-0806**	20.5
ø10	1065	●	●	—	—	**TJ-1065**	23
	1075	—	—	●	—	**TJ-1075**	23
	1008	—	—	●	●	**TJ-1208**	24
ø12	1208	●	●	—	—		
	1209	—	—	●	—	**TJ-1209**	24
	1210	—	—	●	●	**TJ-1210**	24

Construction



No.	Description	Material	Note
1	**Release button**	Stainless steel 304	
2	**Guide**	C3604	
3	**Chuck**	Stainless steel 304	
4	**Seal**	Special FKM	Fluoro coated
5	**Male connector body**	C3604	
6	**Male elbow body**	C3771	
7	**O-ring**	Special FKM	Fluoro coated
8	**Stopper ring**	Stainless steel 316	
9	**Stud**	C3604	

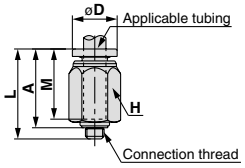
Dimensions

Male Connector: KQBH

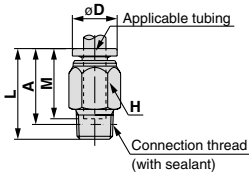
Applicable tubing O.D. (mm)	Connection thread R	Model	H (Width across flats)	Note 1) øD	L	A*	M	Effective area Note 2) (mm²)	Mass (g)
ø4	M5	KQBH04-M5	10	10	22.3	19.3	18	4	7.7
	1/8	KQBH04-01S			24	20		5.6	10
ø6	M5	KQBH06-M5	12	12	24.1	21.1	18.8	4	12
	1/8	KQBH06-01S			24.3	20.3		10.4	12
	1/4	KQBH06-02S			25.8	19.8			19
ø8	1/8	KQBH08-01S	14	14	30.5	26.5	20.9	26.1	19
	1/4	KQBH08-02S			28.5	22.5			19
	3/8	KQBH08-03S			24	17.7			25
ø10	1/4	KQBH10-02S	17	17	35.5	29.5	23	41.5	30
	3/8	KQBH10-03S			31	24.7			30
ø12	3/8	KQBH12-03S	19	19	32.8	26.5	24.8	58.3	32
	1/2	KQBH12-04S	22			24.6			53

∗ Reference dimensions after installation of R thread
Note 1) øD is maximum diameter.
Note 2) Figures shown when using FEP tubing

(In case of M5)



(In case of R)

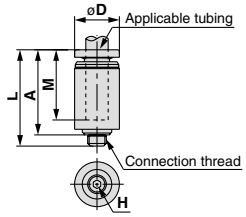


Hexagon Socket Head Male Connector: KQBS

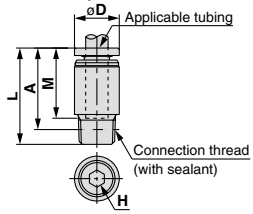
Applicable tubing O.D. (mm)	Connection thread R	Model	H (Width across flats)	Note 1) øD	L	A*	M	Effective area Note 2) (mm²)	Mass (g)
ø4	M5	KQBS04-M5	2	10	25	22	18	4	9
	1/8	KQBS04-01S	3			21		4.1	10
ø6	M5	KQBS06-M5	2	12	25.8	22.8	18.8	4	13
	1/8	KQBS06-01S	4			21.8		9.9	13
	1/4	KQBS06-02S				19.8		10	21
ø8	1/8	KQBS08-01S	5	14	30.5	26.5	20.9	17.2	18
	1/4	KQBS08-02S	6		28.5	22.5		23.3	19
	3/8	KQBS08-03S			30.1	23.8			37
ø10	1/4	KQBS10-02S	8	17	35.5	29.5	23	39	29
	3/8	KQBS10-03S			31	24.7			30
ø12	3/8	KQBS12-03S	10	19	32.8	26.5	24.8	60	31
	1/2	KQBS12-04S		22		24.6			56

∗ Reference dimensions after installation of R thread
Note 1) øD is maximum diameter.
Note 2) Figures shown when using FEP tubing

(In case of M5)



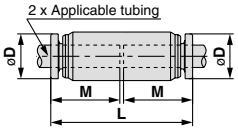
(In case of R)



Straight Union: KQBH

Applicable tubing O.D. (mm)	Model	Note 1) øD	L	M	Effective area Note 2) (mm²)	Mass (g)
ø4	KQBH04-00	11	37	18	5.6	17
ø6	KQBH06-00	13	38.6	18.8	13.1	23
ø8	KQBH08-00	15	42.8	20.9	26.1	32
ø10	KQBH10-00	19	47	23	41.5	56
ø12	KQBH12-00	21	50.6	24.8	58.3	69

Note 1) øD is maximum diameter.
Note 2) Figures shown when using FEP tubing

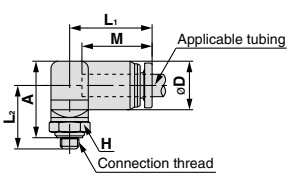


Male Elbow: KQBL

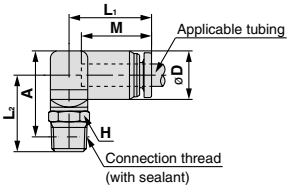
Applicable tubing O.D. (mm)	Connection thread R	Model	H (Width across flats)	Note 1) øD	L1	L2	A*	M	Effective area Note 2) (mm²)	Mass (g)
ø4	M5	KQBL04-M5	10	11.6	20.5	16	18.8	18	3.5	19
	1/8	KQBL04-01S				19.5	21.3		4.2	21
ø6	M5	KQBL06-M5		14	22.1	17	21	18.8	3.5	26
	1/8	KQBL06-01S				20.5	23.5		9	27
	1/4	KQBL06-02S	14			24.5	25.5			37
ø8	1/8	KQBL08-01S	12	15	24.9	21.9	25.7	20.9	21.6	39
	1/4	KQBL08-02S	14			25.9	27.7			47
	3/8	KQBL08-03S				27.9	29.4			59
ø10	1/4	KQBL10-02S	17	18	27.8	27.7	30.9	23	35.2	72
	3/8	KQBL10-03S				29.7	32.6			76
ø12	3/8	KQBL12-03S	22	20.8	31.3	30.7	35.3	24.8	50.2	98
	1/2	KQBL12-04S				34.7	37.4			127

∗ Reference dimensions after installation of R thread
Note 1) øD is maximum diameter.
Note 2) Figures shown when using FEP tubing

(In case of M5)



(In case of R)

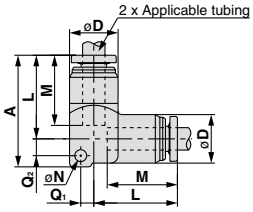


Dimensions

Union Elbow: KQBL

Applicable tubing O.D. (mm)	Model	Note 1) øD	L	A	Q_1	Q_2	M	øN	Effective area Note 2) (mm^2)	Mass (g)
ø4	**KQBL04-00**	11.6	20.6	27.3	2.8	3.7	18	3.2	4.2	22
ø6	**KQBL06-00**	14	22.4	29.4	4	4	18.8		9	33
ø8	**KQBL08-00**	15.6	25.5	35.1	3.8	5.6	20.9		21.6	51
ø10	**KQBL10-00**	18.4	28.6	38.8	5.2	6.2	23	4.2	35.2	79
ø12	**KQBL12-00**	21.2	31.4	42	6.6	6.6	24.8		50.2	113

Note 1) øD is maximum diameter.
Note 2) Figures shown when using FEP tubing

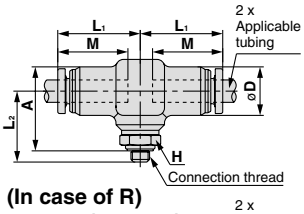


Male Branch Tee: KQBT

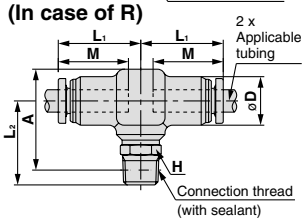
Applicable tubing O.D. (mm)	Connection thread R	Model	H (Width across flats)	Note 1) øD	L_1	L_2	A*	M	Effective area Note 2) (mm^2)	Mass (g)
ø4	M5	**KQBT04-M5**	10	11.6	20.5	18	23.1	18	4.5	27
	1/8	**KQBT04-01S**				21.5	25.6		6	28
ø6	M5	**KQBT06-M5**		14	22.1	19	25	18.8	4.5	41
	1/8	**KQBT06-01S**				22.5	27.5		11	43
	1/4	**KQBT06-02S**	14			26.5	29.5			52
ø8	1/8	**KQBT08-01S**	12	15.6	24.9	23.9	30.7	20.9	26.3	64
	1/4	**KQBT08-02S**	14			27.9	32.7			73
	3/8	**KQBT08-03S**				29.9	34.4			87
ø10	1/4	**KQBT10-02S**	17	18.4	27.8	29.7	35.7	23	40.8	101
	3/8	**KQBT10-03S**				31.7	37.4			106
ø12	3/8	**KQBT12-03S**		21.2	31.3	32.7	39.5	24.8	57.2	139
	1/2	**KQBT12-04S**	22			36.7	41.6			166

∗ Reference dimensions after installation of R thread
Note 1) øD is maximum diameter.
Note 2) Figures shown when using FEP tubing

(In case of M5)



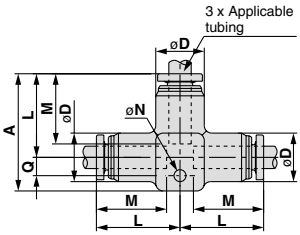
(In case of R)



Union Tee: KQBT

Applicable tubing O.D. (mm)	Model	Note 1) øD	L	A	Q	M	øN	Effective area Note 2) (mm^2)	Mass (g)
ø4	**KQBT04-00**	11.6	20.6	28.7	4.1	18	3.2	6.4	29
ø6	**KQBT06-00**	14	22.4	31.4	4.9	18.8		10.6	44
ø8	**KQBT08-00**	15.6	25.5	36.3	6.1	20.9		25.6	60
ø10	**KQBT10-00**	18.4	28.6	40.6	7.1	23	4.2	40	99
ø12	**KQBT12-00**	21.2	31.4	44.5	8.1	24.8		57.4	135

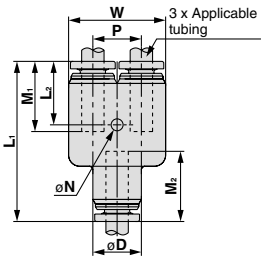
Note 1) øD is maximum diameter.
Note 2) Figures shown when using FEP tubing



Union "Y": KQBU

Applicable tubing O.D. (mm)	Model	Note 1) øD	W	L_1	L_2	P	M_1	M_2	øN	Effective area Note 2) (mm^2)	Mass (g)
ø4	**KQBU04-00**	11.6	22.2	41.2	16.8	10.6	18	17	3.2	2.9	37
ø6	**KQBU06-00**	14	27	43.1	17	13	18.8	17.8		7.4	56
ø8	**KQBU08-00**	15.6	30.6	47.9	18.7	15	20.9	19.9	4.2	17.9	78
ø10	**KQBU10-00**	18.4	36.4	53	20.5	18	23	22		28	119
ø12	**KQBU12-00**	21.2	42.2	58	21.9	21	24.8	23.8		40.2	183

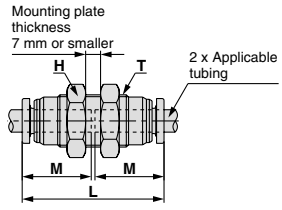
Note 1) øD is maximum diameter.
Note 2) Figures shown when using FEP tubing



Bulkhead Union: KQBE

Applicable tubing O.D. (mm)	Model	T (M)	H (Width across flats)	L	Mounting hole	M	Effective area Note) (mm^2)	Mass (g)
ø4	**KQBE04-00**	M12X1	14	37	13	18	5.6	22
ø6	**KQBE06-00**	M14X1	17	38.6	15	18.8	10.4	30
ø8	**KQBE08-00**	M16X1	19	42.8	17	20.9	26.1	42
ø10	**KQBE10-00**	M20X1	24	47	21	23	41.5	74
ø12	**KQBE12-00**	M22X1	27	50.6	23	24.8	58.3	99

Note) Figures shown when using FEP tubing



Series KQB
Made to Order

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

1 Electroless Nickel Plated

Symbol **-X2**

All brass parts are electroless nickel plated.

Example) **KQBH04-01S-X2**

Electroless nickel plated

Series KQB
Specific Product Precautions

Be sure to read before handling. Refer to front matters 58 and 59 for Safety Instructions and pages 13 to 16 for Fittings and Tubing Precautions.

Selection

⚠ Caution

1. The pulling strength of polyurethane tube is as follows. The pulling load of the tube used for verifying the mounting of the tube within the fitting should be the values as shown or less in the table below. As reference, the thrust force occurring between the tube and the fitting at 0.8 MPa is shown on the table below.

Pulling Strength

Model	TU0425	TU0604	TU0805	TU1065	TU1208
Without inner sleeve	50 N	80 N	110 N	140 N	140 N
With inner sleeve	160 N	180 N	250 N	450 N	500 N

Reference: Thrust Force Occurring at 0.8 MPa

Model	TU0425	TU0604	TU0805	TU1065	TU1208
Load	10 N	25 N	40 N	65 N	90 N

2. If using water, it is recommended to use an inner sleeve. (Tube may release due to pressure pulsation or water hammer effect.)

3. If using a fluoro-resin tube 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 tube.

Mounting

⚠ Caution

1. The union elbow, union fee and 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.

Installation and Removal of Tubing

⚠ Caution

1. Installation of tubing

1) Grease is not used for the KQB series, therefore a greater insertion force is required when the tubing is installed. In particular, polyurethane tubing may fold when inserted due to its softness. Hold the end of the tubing, and insert it all the way in slowly and securely. Refer to dimension "M" in the dimension drawings for guidance on the insertion depth of tubing.

2. 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.