Stainless Steel 316 Fittings

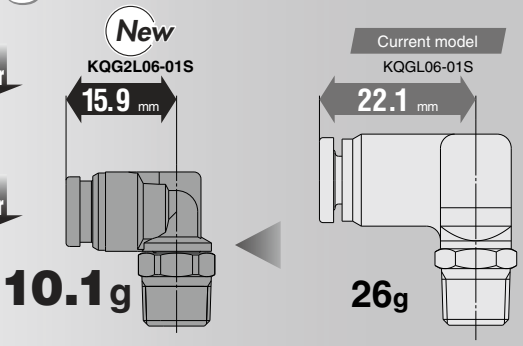
KQG2 Series

RoHS

Compact and Light

Dimensions Approx. **30%** Shorter
* KQG2L06-01S

Weight Approx. **62%** Lighter
* KQG2L06-01S



Material

Stainless steel 316

- Grease-free/Can be used with steam.
- Certified to meet current Japan Food Sanitation Law standards.
  (Component materials have met apparatuses and container-packages standards.)

Fluid temperature

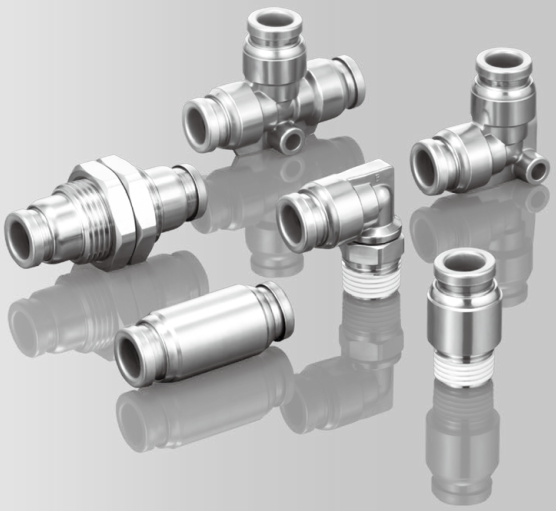
−5 to 150°C

Applicable tubing

Metric size, Inch size

Connection thread

M, R, Rc, UNF, NPT



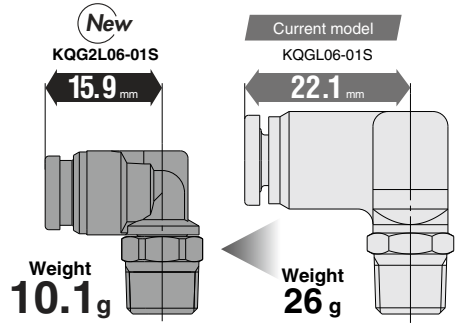
Stainless Steel 316 One-touch Fittings *KQG2 Series*

Compact and light

Dimensions: Approx. 30% shorter

Weight: Approx. 62% lighter

∗ Comparison with KQGL06-01S



Material

Metal parts: **Stainless steel 316**

Seal parts: Special **FKM**

Applicable tubing material

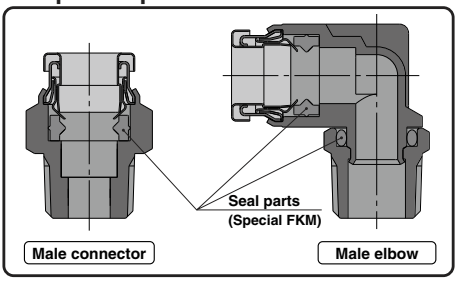
FEP • PFA • Nylon • Soft nylon
Polyurethane • Polyolefin

Fluid temperature: –5 to 150°C

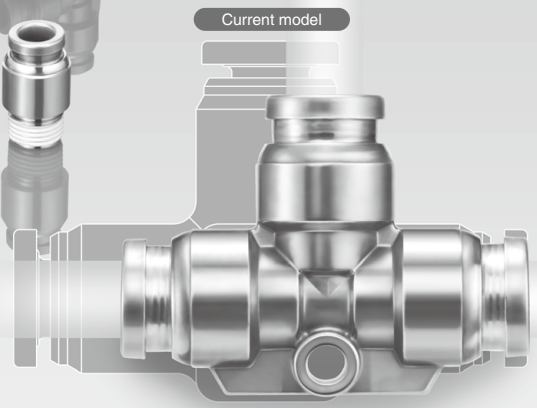
Grease-free

Can be used with steam.

All Stainless steel 316
except seal parts



Applicable tubing	Connection thread	Page
Metric size	M, R, Rc	P.400 to 405
Inch size	UNF, NPT	P.406 to 411



Certified to meet current Japan Food Sanitation Law standards.
(Component materials have met apparatuses and container-packages standards.)

SMC

Variations

Male Connector KQG2H

Metric ····· P. 401
Inch ····· P. 407

Hexagon Socket Head Male Connector KQG2S

Metric ····· P. 401
Inch ····· P. 407

Straight Union KQG2H

Metric ····· P. 401
Inch ····· P. 407

Male Elbow KQG2L

Metric ····· P. 402
Inch ····· P. 408

Male Branch Tee KQG2T

Metric ····· P. 402
Inch ····· P. 408

Union Elbow KQG2L

Metric ····· P. 402
Inch ····· P. 408

Bulkhead Union KQG2E

Metric ····· P. 403
Inch ····· P. 409

Union Tee KQG2T

Metric ····· P. 403
Inch ····· P. 409

Union "Y" KQG2U

Metric ····· P. 403
Inch ····· P. 409

Different Diameter Tee KQG2T

Metric ····· P. 403
Inch ····· P. 409

Plug-in Reducer KQG2R

Metric ····· P. 403
Inch ····· P. 409

Different Diameter Straight KQG2H

Metric ····· P. 404
Inch ····· P. 410

Different Diameter Union "Y" KQG2U

Metric ····· P. 404
Inch ····· P. 410

Bulkhead Connector KQG2E

Metric ····· P. 404
Inch ····· P. 410

Extended Male Elbow KQG2W

Metric ····· P. 405
Inch ····· P. 410

Female Connector KQG2F

Metric ····· P. 405
Inch ····· P. 411

Plug KQG2P

Metric ····· P. 405
Inch ····· P. 411

Stainless Steel 316 One-touch Fittings

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

KQG2 Series

RoHS

Applicable Tubing

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

Specifications

Fluid	Air, N_2, Water, Steam Note 1) Note 2)
Operating pressure range Note 3)	–100 kPa to 1 MPa Note 4)
Proof pressure	3.0 MPa
Ambient and fluid temperature Note 5)	–5 to 150°C (No freezing) Note 4)
Lubricant	Grease-free specification
Seal on the threads	With sealant

Note 1) Consult with SMC regarding applicable tube separately.
Note 2) Using special FKM that is resistant even when steam is used.
Note 3) Avoid using in a vacuum holding application such as a leak tester, since there is leakage.
Note 4) Check the operating pressure range and operating temperature range of the tubing.
Note 5) 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

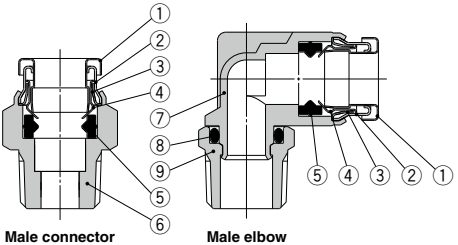
Description	Tubing O.D.	Part no.	Material
Gasket	—	**M-5G3**	Stainless steel 316, Special FKM
Bulkhead nut	ø3.2, ø4	**KQG223-P01**	Stainless steel 316
	ø6	**KQG206-P01**	
	ø8	**KQG208-P01**	
	ø10	**KQG210-P01**	
	ø12	**KQG212-P01**	
	ø16	**KQG216-P01**	

Cross Reference Table of the Inner Sleeve

Tubing O.D.	Tubing material			Applicable inner sleeve	
	TUS (Soft polyurethane)	**TH/TIH** (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
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**	23
ø12	TUS1208	—	—	**TJG-1208**	24
	—	TH1209	—	**TJG-1209**	24
	—	TH1210	TL1210	**TJG-1210**	24

∗ Stainless steel 316 is used for the TJG series.

Construction



Male connector Male elbow

Component Parts

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

Dimensions

Male Connector: KQG2H

Applicable tubing O.D. (mm)	Connection thread R, M	Model	H (Width across flat)	øD	L	A*	M	Note) Effective area (mm²)	Weight (g)
ø3.2	M5 x 0.8	KQG2H23-M5	8	—	16.5	13.5	12	3	3.3
	1/8	KQG2H23-01S	10		15.4	12.3		3.4	5.7
	1/4	KQG2H23-02S	14		21	16.3			16.9
ø4	M5 x 0.8	KQG2H04-M5	10	—	17.1	14.1	12.6	4	5
	1/8	KQG2H04-01S			15.3	12.2		5.6	4.7
	1/4	KQG2H04-02S	14		20.9	16.2			15.8
ø6	M5 x 0.8	KQG2H06-M5	12	—	19.1	16.1	13.6	4	7.7
	1/8	KQG2H06-01S			18.1	15		13.1	7
	1/4	KQG2H06-02S	14		20.8	16.1			14.5
	3/8	KQG2H06-03S	17		23	17.9			27.3
ø8	1/8	KQG2H08-01S	14	—	24.5	21.4	16.1	26.1	12.8
	1/4	KQG2H08-02S			22.3	17.6			12.9
	3/8	KQG2H08-03S	17		23.7	18.6			24.7
ø10	1/8	KQG2H10-01S	17	—	25.5	22.4	17	26.1	18.9
	1/4	KQG2H10-02S			27.9	23.2		41.5	21.6
	3/8	KQG2H10-03S			23	17.9			20.6
	1/2	KQG2H10-04S	22		28.6	22.2			51.1
ø12	1/4	KQG2H12-02S	19	—	30.5	25.8	18.6	58.3	27.4
	3/8	KQG2H12-03S			24.7	19.6			20.5
	1/2	KQG2H12-04S	22		28.7	22.3			44.6
ø16	3/8	KQG2H16-03S	24	24.6	33.6	28.5	20.8	81	46
	1/2	KQG2H16-04S			29.5	23.1		113	37.4

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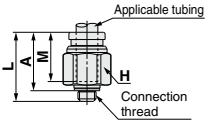

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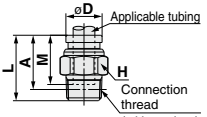

∗ Reference dimensions after installation for R thread
Note) Value of FEP tubing.
Value of nylon tubing for ø16 only.

Hexagon Socket Head Male Connector: KQG2S

Applicable tubing O.D. (mm)	Connection thread R, M	Model	H (Width across flat)	Note 1) øD	L	A*	M	Note 2) Effective area (mm²)	Weight (g)
ø3.2	M5 x 0.8	KQG2S23-M5	2	9	16.5	13.5	12	3	3.8
ø4	M5 x 0.8	KQG2S04-M5	2	9	17.1	14.1	12.6	4	3.7
	1/8	KQG2S04-01S	3	10	19.6	16.5		4.1	7.6
ø6	M5 x 0.8	KQG2S06-M5	2	12	19.6	16.6	13.6	4	7.4
	1/8	KQG2S06-01S	4		20.6	17.5		10	8.7
	1/4	KQG2S06-02S		14		15.9		10.7	14
ø8	1/8	KQG2S08-01S	5	14	24.7	21.6	16.1	17.2	12.3
	1/4	KQG2S08-02S	6		22.9	18.2		23.3	12.8
	3/8	KQG2S08-03S		17	23.1	18			22.8
ø10	1/8	KQG2S10-01S	5	17	25.6	22.5	17	17.2	17.7
	1/4	KQG2S10-02S	8		27.5	22.8		39	19.1
	3/8	KQG2S10-03S		24		18.9			20.9
	1/2	KQG2S10-04S		22		17.6			37.2
ø12	1/4	KQG2S12-02S	8	19	30.6	25.9	18.6	46	24.8
	3/8	KQG2S12-03S	10		24.9	19.8		60	19.3
	1/2	KQG2S12-04S		22		18.5			33.6
ø16	3/8	KQG2S16-03S	10	24.6	33.2	28.1	20.8	81	41.6
	1/2	KQG2S16-04S	12		29.4	23		113	38.4

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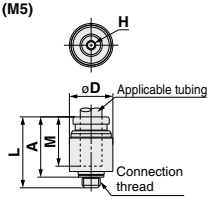

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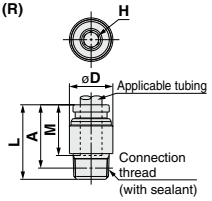
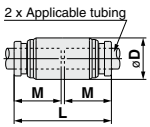


∗ Reference dimensions after installation for R thread
Note 1) For the ø16, this dimension refers to the O.D. of the release button.
Note 2) Value of FEP tubing.
Value of nylon tubing for ø16 only.

Straight Union: KQG2H

Applicable tubing O.D. (mm)	Model	øD Note 1)	L	M	Note 2) Effective area (mm²)	Weight (g)
ø3.2	KQG2H23-00	9	25	12	3.4	6.5
ø4	KQG2H04-00	9	26.2	12.6	5.6	6.5
ø6	KQG2H06-00	12	28.2	13.6	13.1	11.5
ø8	KQG2H08-00	14	33.2	16.1	26.1	16.6
ø10	KQG2H10-00	17	35	17	41.5	26
ø12	KQG2H12-00	19	38.2	18.6	58.3	32.2
ø16	KQG2H16-00	24.6	42.6	20.8	113	53.7



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

Dimensions

Male Elbow: KQG2L

Applicable tubing O.D. (mm)	Connection thread R, M	Model	H (Width across flat)	Note 1) øD	L1	L2	A*	M	Note 2) Effective area (mm²)	Weight (g)
ø3.2	M5 x 0.8	KQG2L23-M5	8	8.3	13.1	14.8	16	12	2.6	6.3
	1/8	KQG2L23-01S	10		13.6	14.9	15.9		3	7.6
	1/4	KQG2L23-02S	14			18.7	18.1			16
ø4	M5 x 0.8	KQG2L04-M5	8	9.1	13.7	15.2	16.8	12.6	3.5	6.9
	1/8	KQG2L04-01S	10		14.4	15.3	16.7		4.2	8.5
	1/4	KQG2L04-02S	14			19.1	18.9			16.8
ø6	M5 x 0.8	KQG2L06-M5	8	11.4	14.7	16.3	19	13.6	3.5	8.8
	1/8	KQG2L06-01S	10		15.9	16.4			11.4	10.1
	1/4	KQG2L06-02S	14			20.2	21.2			18.4
	3/8	KQG2L06-03S	17			21.6	22.2			29.9
ø8	1/8	KQG2L08-01S	12	13.7	18.6	18.3	22	16.1	21.6	14.6
	1/4	KQG2L08-02S	14		19.1	21.5	23.6			20.3
	3/8	KQG2L08-03S	17			22.9	24.6			31.6
ø10	1/8	KQG2L10-01S	12	16.6	20	19.7	24.9	17	21.6	20.2
	1/4	KQG2L10-02S	14		21	22.9	26.5		35.2	23.3
	3/8	KQG2L10-03S	17			24.3	27.5			33.6
	1/2	KQG2L10-04S	22			28.5	30.4			60.1
ø12	1/4	KQG2L12-02S	14	18.7	22.6	24	28.6	18.6	50.2	27.1
	3/8	KQG2L12-03S	17		23.6	25.3	29.5			33.7
	1/2	KQG2L12-04S	22			29.5	32.4			58.7
ø16	3/8	KQG2L16-03S	19	24.6	26.3	28	34.5	20.8	71	46.3
	1/2	KQG2L16-04S	22		27.3	31.8	37		100	61.3

∗ Reference dimensions after installation for R thread
Note 1) For the ø16, this dimension refers to the O.D. of the release button.
Note 2) Value of FEP tubing. Value of nylon tubing for ø16 only.

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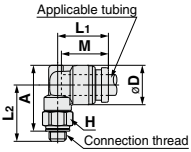

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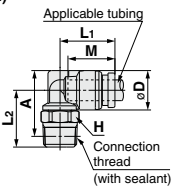

Male Branch Tee: KQG2T

Applicable tubing O.D. (mm)	Connection thread R, M	Model	H (Width across flat)	Note 1) øD	L1	L2	A*	M	Note 2) Effective area (mm²)	Weight (g)
ø3.2	M5 x 0.8	KQG2T23-M5	8	8.3	13.1	14.8	16	12	3.2	8.1
	1/8	KQG2T23-01S	10		13.6	14.9	15.9		3.4	9.4
	1/4	KQG2T23-02S	14			18.7	18.1			17.7
ø4	M5 x 0.8	KQG2T04-M5	8	9.1	13.7	15.2	16.8	12.6	4.5	9
	1/8	KQG2T04-01S	10		14.4	15.3	16.7		6	10.4
	1/4	KQG2T04-02S	14			19.1	18.9			18.8
ø6	M5 x 0.8	KQG2T06-M5	8	11.4	14.7	16.3	19	13.6	4.5	11.9
	1/8	KQG2T06-01S	10		15.9	16.4			13.9	13.4
	1/4	KQG2T06-02S	14			20.2	21.2			21.8
	3/8	KQG2T06-03S	17			21.6	22.2			33.3
ø8	1/8	KQG2T08-01S	12	13.7	18.6	18.3	22	16.1	26.3	20
	1/4	KQG2T08-02S	14		19.1	21.5	23.6			25.5
	3/8	KQG2T08-03S	17			22.9	24.6			36.8
ø10	1/8	KQG2T10-01S	12	16.6	20	19.7	24.9	17	40.8	28.4
	1/4	KQG2T10-02S	14		21	22.9	26.5			31.1
	3/8	KQG2T10-03S	17			24.3	27.5			41.4
	1/2	KQG2T10-04S	22			28.5	30.4			68
ø12	1/4	KQG2T12-02S	14	18.7	22.6	24	28.6	18.6	57.2	37.8
	3/8	KQG2T12-03S	17		23.6	25.3	29.5			39.3
	1/2	KQG2T12-04S	22			29.5	32.4			68.8
ø16	3/8	KQG2T16-03S	19	24.6	26.3	28	34.5	20.8	71	63.7
	1/2	KQG2T16-04S	22		27.3	31.8	37		100	77.6

∗ Reference dimensions after installation for R thread
Note 1) For the ø16, this dimension refers to the O.D. of the release button.
Note 2) Value of FEP tubing. Value of nylon tubing for ø16 only.

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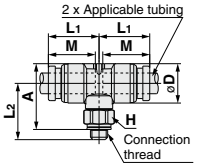

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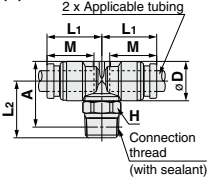
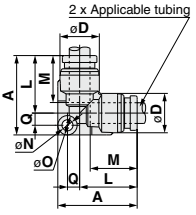


Union Elbow: KQG2L

Applicable tubing O.D. (mm)	Model	Note 1) øD	L	A	Q	M	øN	øO	Note 2) Effective area (mm²)	Weight (g)
ø3.2	KQG2L23-00	8.3	13.6	19.3	2.9	12	3.2	5.6	3	6.3
ø4	KQG2L04-00	9.1	14.6	20.5	3.1	12.6	3.2	5.6	4.2	7.4
ø6	KQG2L06-00	11.4	16.6	23	3.6	13.6	3.2	5.6	11.4	11
ø8	KQG2L08-00	13.7	20.1	29.1	5	16.1	4.2	8	21.6	20.2
ø10	KQG2L10-00	16.6	22	31.7	5.7	17	4.2	8	35.2	29.6
ø12	KQG2L12-00	18.7	24.6	35	6.4	18.6	4.2	8	50.2	37.1
ø16	KQG2L16-00	24.6	28.8	40.5	7.7	20.8	4.2	8	100	59.7

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

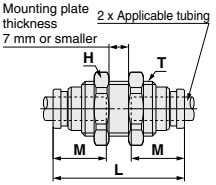


Dimensions

Bulkhead Union: KQG2E

Applicable tubing O.D. (mm)	Model	T (M)	H (Width across flat)	L	Mounting hole	M	Note 2) Effective area (mm²)	Weight (g)
ø3.2	KQG2E23-00	M10 x 1	12	32.2	11	12	3.4	14
ø4	KQG2E04-00	M10 x 1	12	32.4	11	12.6	5.6	14
ø6	KQG2E06-00	M14 x 1	17	33.6	15	13.6	13.1	25.8
ø8	KQG2E08-00	M15 x 1	19	36.4	16	16.1	26.1	30.4
ø10	KQG2E10-00	M18 x 1	21	37.2	19	17	41.5	40.3
ø12	KQG2E12-00	M20 x 1	24	39.2	21	18.6	58.3	49.9
ø16	KQG2E16-00	M27 x 1	30	42.6	28	20.8	113	87.3

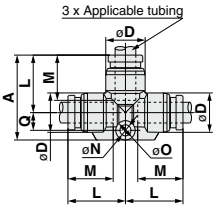
Note) Value of FEP tubing.
Value of nylon tubing for ø16 only.



Union Tee: KQG2T

Applicable tubing O.D. (mm)	Model	Note 1) øD	L	A	Q	M	øN	øO	Note 2) Effective area (mm²)	Weight (g)
ø3.2	KQG2T23-00	8.3	13.6	20.5	4.1	12	3.2	5.6	3.4	7.9
ø4	KQG2T04-00	9.1	14.6	21.8	4.4	12.6	3.2	5.6	6.4	9.5
ø6	KQG2T06-00	11.4	16.6	24.6	5.2	13.6	3.2	5.6	13.4	14.2
ø8	KQG2T08-00	13.7	20.1	31.1	7	16.1	4.2	8	25.6	24.4
ø10	KQG2T10-00	16.6	22	34	8	17	4.2	8	40	36.8
ø12	KQG2T12-00	18.7	24.6	37.7	9.1	18.6	4.2	8	57.4	46.9
ø16	KQG2T16-00	24.6	28.8	43.4	10.6	20.8	4.2	8	100	75.5

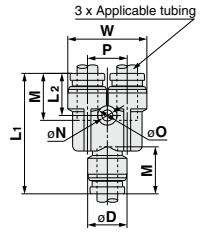
Note 1) For the ø16, this dimension refers to the O.D. of the release button.
Note 2) Value of FEP tubing.
Value of nylon tubing for ø16 only.



Union "Y": KQG2U

Applicable tubing O.D. (mm)	Model	Note 1) øD	W	L1	L2	P	M	øN	øO	Note 2) Effective area (mm²)	Weight (g)
ø3.2	KQG2U23-00	8.3	16.4	29	11	8.1	12	3.2	5.6	3.4	9.2
ø4	KQG2U04-00	9.1	18.2	30.4	11.3	9.1	12.6	3.2	5.6	4.2	11.1
ø6	KQG2U06-00	11.4	22.9	34.9	12.2	11.5	13.6	3.2	5.6	13.4	18.8
ø8	KQG2U08-00	13.7	28.3	40.1	14.1	14.6	16.1	4.2	8	25.6	29.7
ø10	KQG2U10-00	16.6	34.2	44	14.4	17.6	17	4.2	8	40	47.4
ø12	KQG2U12-00	18.7	38.5	48.4	15.8	19.8	18.6	4.2	8	57.4	62.1
ø16	KQG2U16-00	24.6	49.3	56.6	17.3	26	20.8	4.2	8	113	110.2

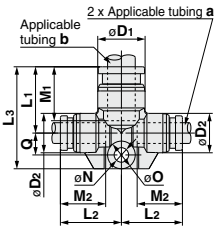
Note 1) For the ø16, this dimension refers to the O.D. of the release button.
Note 2) Value of FEP tubing.
Value of nylon tubing for ø16 only.



Different Diameter Tee: KQG2T

Applicable tubing O.D. (mm) a	Applicable tubing O.D. (mm) b	Model	Note 1) øD1	Note 1) øD2	L1	L2	L3	Q	M1	M2	øN	øO	Note 2) Effective area (mm²)	Weight (g)
ø3.2	ø4	KQG2T23-04	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	KQG2T04-06	11.4	9.1	15.6	15.7	22.8	4.4	13.6	12.6	3.2	5.6	7.1	11.5
ø6	ø8	KQG2T06-08	13.7	11.4	19.1	17.7	29.5	6.4	16.1	13.6	4.2	8	16.4	20
ø8	ø10	KQG2T08-10	16.6	13.7	21	21.2	32.1	7.1	17	16.1	4.2	8	36	29.8
ø10	ø12	KQG2T10-12	18.7	16.6	23.6	23.1	35.7	8.1	18.6	17	4.2	8	56	41.3
ø12	ø16	KQG2T12-16	24.6	18.7	26.8	26.7	39.9	9.1	20.8	18.6	4.2	8	108.5	58

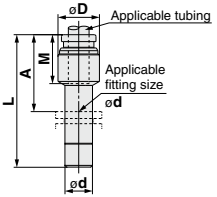
Note 1) For the ø16, this dimension refers to the O.D. of the release button.
Note 2) Value of FEP tubing.



Plug-in Reducer: KQG2R

Applicable tubing O.D. (mm)	Applicable fitting size ød	Model	øD	L	A	M	Note) Effective area (mm²)	Weight (g)
ø3.2	ø4	KQG2R23-04	9	32.9	20.3	12	3.4	4.7
ø4	ø6	KQG2R04-06	9	34.4	20.8	12.6	5.6	6.7
ø6	ø8	KQG2R06-08	12	38.4	22.3	13.6	13.1	12.1
ø8	ø10	KQG2R08-10	14	41.9	24.9	16.1	26.1	18.3
ø10	ø12	KQG2R10-12	17	44.8	26.2	17	41.5	26.5
ø12	ø16	KQG2R12-16	19	42.9	22.1	18.6	58.3	35.4

Note) Value of FEP tubing.

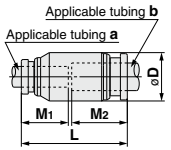


Dimensions

Different Diameter Straight: KQG2H

Applicable tubing O.D. (mm)		Model	Note 1) ø**D**	**L**	**M1**	**M2**	Note 2) Effective area (mm²)	Weight (g)
a	**b**							
ø**3.2**	ø**4**	**KQG2H23-04**	9	25.6	12	12.6	3.4	6.5
ø**4**	ø**6**	**KQG2H04-06**	12	27.2	12.6	13.6	5.6	11.6
ø**6**	ø**8**	**KQG2H06-08**	14	30.7	13.6	16.1	13.1	16.3
ø**8**	ø**10**	**KQG2H08-10**	17	34.1	16.1	17	26.1	26
ø**10**	ø**12**	**KQG2H10-12**	19	36.6	17	18.6	41.5	33.3
ø**12**	ø**16**	**KQG2H12-16**	24.6	40.4	18.6	20.8	58.3	54.7

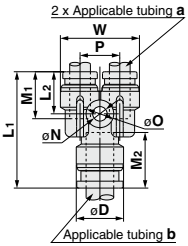
Note 1) For the ø16, this dimension refers to the O.D. of the release button.
Note 2) Value of FEP tubing.



Different Diameter Union "Y": KQG2U

Applicable tubing O.D. (mm)		Model	Note 1) ø**D**	**L1**	**L2**	**P**	**W**	**M1**	**M2**	ø**N**	ø**O**	Note 2) Effective area (mm²)	Weight (g)
a	**b**												
ø**3.2**	ø**4**	**KQG2U23-04**	9.1	27	10.8	8.1	16.4	12	12.6	3.2	5.6	3.2	8.5
ø**4**	ø**6**	**KQG2U04-06**	11.4	29.3	11.2	9.1	18.2	12.6	13.6	3.2	5.6	4.2	11.9
ø**6**	ø**8**	**KQG2U06-08**	13.7	33.7	12.2	11.5	22.9	13.6	16.1	4.2	8	13.4	19.3
ø**8**	ø**10**	**KQG2U08-10**	16.6	38.3	13.8	14.6	28.3	16.1	17	4.2	8	25.6	31.6
ø**10**	ø**12**	**KQG2U10-12**	18.7	43	14	17.6	34.2	17	18.6	4.2	8	40	47.6
ø**12**	ø**16**	**KQG2U12-16**	24.6	47.4	15.6	19.8	38.5	18.6	20.8	4.2	8	57.4	67.6

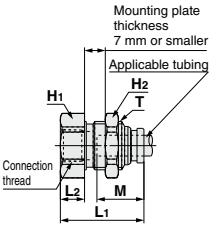
Note 1) For the ø16, this dimension refers to the O.D. of the release button.
Note 2) Value of FEP tubing.



Bulkhead Connector: KQG2E

Applicable tubing O.D. (mm)	Connection thread Rc	Model	**T** (M)	Width across flat **H1**	Width across flat **H2**	**L1**	**L2**	Mounting hole	**M**	Note 2) Effective area (mm²)	Weight (g)
ø**3.2**	1/4	**KQG2E23-02**	M10 x 1	17	12	31	14.8	11	12	3.4	26.1
ø**4**	1/8	**KQG2E04-01**	M10 x 1	14	12	25.8	9.7	11	12.6	5.6	16
	1/4	**KQG2E04-02**		17		30.9	14.8				25.6
ø**6**	1/8	**KQG2E06-01**	M14 x 1	17	17	24.2	7	15	13.6	13.1	24.4
	1/4	**KQG2E06-02**				30.9	13.7				30.9
	3/8	**KQG2E06-03**		19		32.1	14.9				32
ø**8**	1/8	**KQG2E08-01**	M15 x 1	17	19	26.3	8.1	16	16.1	26.1	28
	1/4	**KQG2E08-02**				31.3	13.1				31.2
	3/8	**KQG2E08-03**		19		32.8	14.6				32.7
ø**10**	1/4	**KQG2E10-02**	M18 x 1	19	21	31.6	13	19	17	41.5	42.8
	3/8	**KQG2E10-03**				33	14.4				37.5
ø**12**	3/8	**KQG2E12-03**	M20 x 1	21	24	34	14.4	21	18.6	58.3	50.3
	1/2	**KQG2E12-04**		24		39.3	19.7				60.7
ø**16**	3/8	**KQG2E16-03**	M27 x 1	29	30	35.3	13.3	28	20.8	96	107.8
	1/2	**KQG2E16-04**				40.6	18.6			113	114.6

Note) Value of FEP tubing.
Value of nylon tubing for ø16 only.



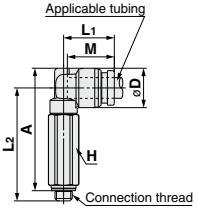
Dimensions

Extended Male Elbow: KQG2W

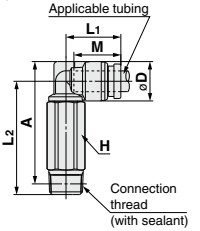
Applicable tubing O.D. (mm)	Connection thread R, M	Model	H (Width across flat)	Note 1) øD	L1	L2	A*	M	Note 2) Effective area (mm²)	Weight (g)
ø3.2	M5 x 0.8	KQG2W23-M5	8	8.3	13.1	31.2	32.4	12	2.8	13
	1/8	KQG2W23-01S	10		13.6	31.3	32.3			14.7
	1/4	KQG2W23-02S	14			35.1	34.5			33.1
ø4	M5 x 0.8	KQG2W04-M5	8	9.1	13.7	31.6	33.2	12.6	3	13.6
	1/8	KQG2W04-01S	10		14.4	31.7	33.1		4	15.6
	1/4	KQG2W04-02S	14			35.5	35.3			33.9
ø6	M5 x 0.8	KQG2W06-M5	8	11.4	14.7	32.7	35.4	13.6	3	15.5
	1/8	KQG2W06-01S	10		15.9	32.8			10.9	17.2
	1/4	KQG2W06-02S	14			36.6	37.6			35.5
	3/8	KQG2W06-03S	17			38	38.6			57.4
ø8	1/8	KQG2W08-01S	12	13.7	18.6	37	40.7	16.1	20.5	28
	1/4	KQG2W08-02S	14		19.1	40.2	42.3			37.7
	3/8	KQG2W08-03S	17			41.6	43.3			60.9
ø10	1/4	KQG2W10-02S	14	16.6	21	46.6	50.2	17	33.5	40.7
	3/8	KQG2W10-03S	17			45.9	49.1			61.9
	1/2	KQG2W10-04S	22			50.1	52			117.3
ø12	1/4	KQG2W12-02S	14	18.7	22.6	47.7	52.3	18.6	47.7	44.6
	3/8	KQG2W12-03S	17		23.6	49	53.2			56.3
	1/2	KQG2W12-04S	22			53.2	56.1			112.9
ø16	3/8	KQG2W16-03S	19	24.6	26.3	57.6	64.1	20.8	71	86.6
	1/2	KQG2W16-04S	22		27.3	61.4	66.6		100	111.8

∗ Reference dimensions after installation for R thread
Note 1) For the ø16, this dimension refers to the O.D. of the release button.
Note 2) Value of FEP tubing.
Value of nylon tubing for ø16 only.

(M5)

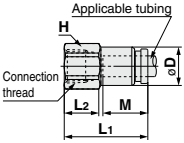


(R)



Female Connector: KQG2F

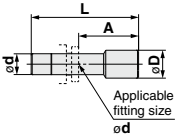
Applicable tubing O.D. (mm)	Connection thread Rc	Model	H (Width across flat)	Note 1) øD	L1	L2	M	Note 2) Effective area (mm²)	Weight (g)
ø3.2	1/8	KQG2F23-01	12	8	23.3	9.8	12	3.4	8.9
ø4	1/8	KQG2F04-01	12	8.7	23.7	9.8	12.6	5.6	9.2
	1/4	KQG2F04-02	17		28.7	13.2			21.6
ø6	1/8	KQG2F06-01	12	11.1	24.2	10	13.6	13.1	10.5
	1/4	KQG2F06-02	17		29.2	13.4			23.1
	3/8	KQG2F06-03	19		30.6	14.2			24.5
ø8	1/8	KQG2F08-01	14	13.4	26.3	9.6	16.1	26.1	16.3
	1/4	KQG2F08-02	17		31.3	13.7			25.5
	3/8	KQG2F08-03	19		32.7	14.4			27
ø10	1/4	KQG2F10-02	17	16.4	31.6	13.9	17	41.5	28.8
	3/8	KQG2F10-03	19		33	14.7			30.4
ø12	1/4	KQG2F12-02	19	18.5	32.6	13.3	18.6	58.3	37.5
	3/8	KQG2F12-03			34	14.7			32.3
	1/2	KQG2F12-04	24		39.3	18.4			50.2
ø16	3/8	KQG2F16-03	24	24.6	35.3	13.5	20.8	81	59.7
	1/2	KQG2F16-04			40.6	18.8		113	57



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

Plug: KQG2P

Applicable fitting size ød	Model	øD	L	A	Weight (g)
ø3.2	KQG2P-23	5	28.9	16.9	2.7
ø4	KQG2P-04	6	29.6	17	4.1
ø6	KQG2P-06	8	30.8	17.2	8.5
ø8	KQG2P-08	10	33.7	17.6	15.5
ø10	KQG2P-10	12	34.6	17.6	24.1
ø12	KQG2P-12	14	36.5	17.9	35.8
ø16	KQG2P-16	18	38.6	17.8	65.5



Related Equipment

Spatter cover
(Applicable tubing: FR soft nylon, FR double layer, FR three-layer)

Applicable tubing O.D. (mm)	Model
ø6	KQB2-06C-X1124
ø8	KQB2-08C-X1124
ø10	KQB2-10C-X1124

∗ Since the spatter cover is designed for multi-layer (double layer, three-layer) tubing, sufficient effects cannot be obtained in foreign matter flow-in or followability for singlelayer tubing.
∗ The cover can be attached regardless of the single-layer/multi-layer tubing.
∗ Cannot be used for union "Y" (KQG2U) 2-port side.

Stainless Steel 316 One-touch Fittings

Applicable Tubing: Inch Size, Connection Thread: UNF, NPT

KQG2 Series

RoHS

Applicable Tubing

Tubing material	FEP, PFA, Nylon, Soft nylon, Polyurethane, Polyolefin
Tubing O.D.	ø1/8", ø5/32", ø1/4", ø5/16", ø3/8", ø1/2"

Specifications

Fluid	Air, N_2, Water, Steam Note 1) Note 2)
Operating pressure range Note 3)	–100 kPa to 1 MPa Note 4)
Proof pressure	3.0 MPa
Ambient and fluid temperature Note 5)	–5 to 150°C (No freezing) Note 4)
Lubricant	Grease-free specification
Seal on the threads	With sealant

Note 1) Consult with SMC regarding applicable tubing separately.
Note 2) Using special FKM that is resistant even when steam is used.
Note 3) Avoid using in a vacuum holding application such as a leak tester, since there is leakage.
Note 4) Check the operating pressure range and operating temperature range of the tubing.
Note 5) It is recommended that you use the inner sleeve in the following conditions (Except ø1/8"):
- 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

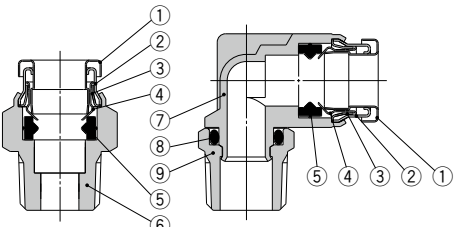
Description	Tubing O.D.	Part no.	Material
Gasket	—	**M-5G3**	Stainless steel 316, Special FKM
Bulkhead nut	ø1/8", ø5/32"	**KQG201-P01**	Stainless steel 316
	ø1/4"	**KQG207-P01**	
	ø5/16"	**KQG209-P01**	
	ø3/8"	**KQG211-P01**	
	ø1/2"	**KQG213-P01**	

Cross Reference Table of the Inner Sleeve

Tubing O.D.	Tubing material		Applicable inner sleeve	
	TH/TIH (FEP)	**TL/TIL** (Super PFA)	Part no.	Length
ø5/32"	TH0402	—	**TJG-0402**	18
	TH0425	—	**TJG-0425**	18
	—	TL0403	**TJG-0403**	18
ø1/4"	TIHB07	TIL07	**TJG-0604**	19
	TIHA07	—	**TJG-0746**	19
ø5/16"	TH0806	TL0806	**TJG-0806**	20.5
ø3/8"	TIHB11	TIL11	**TJG-1065**	23
	TIHA11	—	**TJG-1107**	23
ø1/2"	TIH13	TIL13	**TJG-1395**	24

∗ Stainless steel 316 is used for the TJG series.

Construction



Male connector Male elbow

Component Parts

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

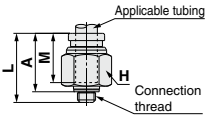
Dimensions

Male Connector: KQG2H

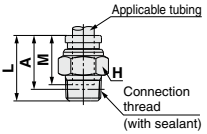
Applicable tubing O.D. (inch)	Connection thread UNF, NPT	Model	H (Width across flat)	L	A*	M	Note) Effective area (mm²)	Weight (g)
ø1/8"	10-32UNF	**KQG2H01-32**	8	16.5	13.5	12	3	3.3
	1/8	**KQG2H01-N01S**	12	17.1	13.9		3.4	8.1
	1/4	**KQG2H01-N02S**	14	20.9	16.5			16.9
ø5/32"	10-32UNF	**KQG2H03-32**	10	17.1	14.1	12.6	4	5
	1/8	**KQG2H03-N01S**	12	17	13.8		5.6	7.6
	1/4	**KQG2H03-N02S**	14	20.9	16.5			16.4
ø1/4"	10-32UNF	**KQG2H07-32**	12	19	16	13.5	4	7.5
	1/8	**KQG2H07-N01S**		20	16.8		13.1	8.6
	1/4	**KQG2H07-N02S**	14	20.6	16.2			14.2
	3/8	**KQG2H07-N03S**	19	23.8	19.1			31.4
ø5/16"	1/8	**KQG2H09-N01S**	14	24.2	21	16.1	26.1	12.6
	1/4	**KQG2H09-N02S**		23.1	18.7			13.9
	3/8	**KQG2H09-N03S**	19	24.6	19.9			28.9
ø3/8"	1/8	**KQG2H11-N01S**	17	25	21.8	16.6	26.1	19.4
	1/4	**KQG2H11-N02S**		26.3	21.9		41.5	20.3
	3/8	**KQG2H11-N03S**	19	23.6	18.9			25.2
	1/2	**KQG2H11-N04S**	22	28.3	21.9			51.8
ø1/2"	1/4	**KQG2H13-N02S**	22	30.5	26.1	18.5	58.3	36.7
	3/8	**KQG2H13-N03S**		28.4	23.7			34.4
	1/2	**KQG2H13-N04S**			22			43.4

∗ Reference dimensions after installation for NPT thread
Note) Value of FEP tubing.

(10-32UNF)



(NPT)

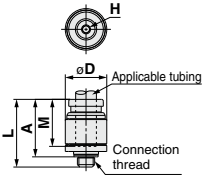


Hexagon Socket Head Male Connector: KQG2S

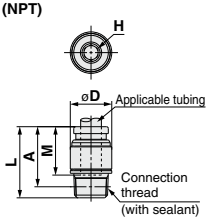
Applicable tubing O.D. (inch)	Connection thread UNF, NPT	Model	H (Width across flat)	øD	L	A*	M	Note) Effective area (mm²)	Weight (g)
ø1/8"	10-32UNF	**KQG2S01-32**	2	9	16.5	13.5	12	3	3.8
ø5/32"	10-32UNF	**KQG2S03-32**	2	9	17.1	14.1	12.6	4	3.7
	1/8	**KQG2S03-N01S**	2.78	11	19.6	16.4		4.1	8.5
ø1/4"	10-32UNF	**KQG2S07-32**	2	12	19.5	16.5	13.5	4	7.2
	1/8	**KQG2S07-N01S**	4.76		20.5	17.3		10	8.1
	1/4	**KQG2S07-N02S**		14		16.1		10.7	13.4
	3/8	**KQG2S07-N03S**		18		15.8			22.6
ø5/16"	1/8	**KQG2S09-N01S**	5.56	14	24.7	21.5	16.1	17.2	12
	1/4	**KQG2S09-N02S**	6.35		23.1	18.7		23.3	12.8
	3/8	**KQG2S09-N03S**		18		18.4			23.5
ø3/8"	1/8	**KQG2S11-N01S**	5.56	17	25.2	22	16.6	17.2	17.8
	1/4	**KQG2S11-N02S**	6.35		27.1	22.7		39	21.2
	3/8	**KQG2S11-N03S**		18	23.6	18.9			23.8
	1/2	**KQG2S11-N04S**		22		17.2			38.6
ø1/2"	1/4	**KQG2S13-N02S**	8	20	30.5	26.1	18.5	46	26.6
	3/8	**KQG2S13-N03S**	9.53		29.4	24.7		60	29
	1/2	**KQG2S13-N04S**		22	25.5	19.1			34.8

∗ Reference dimensions after installation for NPT thread
Note) Value of FEP tubing.

(10-32UNF)



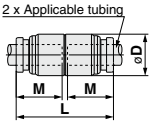
(NPT)



Straight Union: KQG2H

Applicable tubing O.D. (inch)	Model	øD	L	M	Note) Effective area (mm²)	Weight (g)
ø1/8"	**KQG2H01-00**	9	25	12	3.4	6.5
ø5/32"	**KQG2H03-00**	9	26.2	12.6	5.6	6.5
ø1/4"	**KQG2H07-00**	12	28	13.5	13.1	11
ø5/16"	**KQG2H09-00**	14	33.2	16.1	26.1	16.6
ø3/8"	**KQG2H11-00**	16	34.2	16.6	41.5	22.7
ø1/2"	**KQG2H13-00**	20	38	18.5	58.3	35.5

Note) Value of FEP tubing.



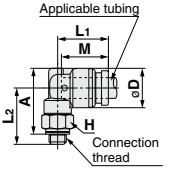
Dimensions

Male Elbow: KQG2L

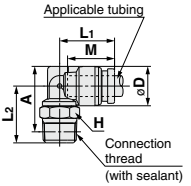
Applicable tubing O.D. (inch)	Connection thread UNF, NPT	Model	H (Width across flat)	øD	L1	L2	A*	M	Note) Effective area (mm²)	Weight (g)
ø1/8"	10-32UNF	**KQG2L01-32**	8	8.3	13.1	14.8	16	12	2.6	6.3
	1/8	**KQG2L01-N01S**	12		13.6	14.9	15.8		3	9
	1/4	**KQG2L01-N02S**	14			18.7	18.4			16.7
ø5/32"	10-32UNF	**KQG2L03-32**	8	9.1	13.7	15.2	16.8	12.6	3.5	6.9
	1/8	**KQG2L03-N01S**	12		14.4	15.3	16.6		4.2	9.9
	1/4	**KQG2L03-N02S**	14			19.1	19.2			17.6
ø1/4"	10-32UNF	**KQG2L07-32**	8	11.7	14.7	16.5	19.3	13.5	3.5	8.9
	1/8	**KQG2L07-N01S**	12		15.9	16.6	19.2		11.4	11.7
	1/4	**KQG2L07-N02S**	14			20.4	21.8			19.4
	3/8	**KQG2L07-N03S**	19			22.2	23.3			34.2
ø5/16"	1/8	**KQG2L09-N01S**	12	13.7	18.6	18.3	21.9	16.1	21.6	15.1
	1/4	**KQG2L09-N02S**	14		19.1	21.5	23.9			21.1
	3/8	**KQG2L09-N03S**	19			23.3	25.4			35.7
ø3/8"	1/8	**KQG2L11-N01S**	12	16	20	19.4	24.2	16.6	21.6	19.7
	1/4	**KQG2L11-N02S**	14		21	22.6	26.2		35.2	23.2
	3/8	**KQG2L11-N03S**	19			24.4	27.7			36.7
	1/2	**KQG2L11-N04S**	22			28.2	29.8			60.2
ø1/2"	1/4	**KQG2L13-N02S**	14	19.6	22.7	24.4	29.8	18.5	50.2	29.4
	3/8	**KQG2L13-N03S**	19		23.7	26.1	31.2			39.2
	1/2	**KQG2L13-N04S**	22			29.9	33.3			61.3

∗ Reference dimensions after installation for NPT thread
Note) Value of FEP tubing.

(10-32UNF)



(NPT)

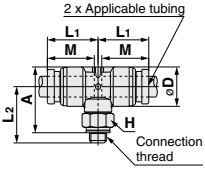


Male Branch Tee: KQG2T

Applicable tubing O.D. (inch)	Connection thread UNF, NPT	Model	H (Width across flat)	øD	L1	L2	A*	M	Note) Effective area (mm²)	Weight (g)
ø1/8"	10-32UNF	**KQG2T01-32**	8	8.3	13.1	14.8	16	12	3.2	8.1
	1/8	**KQG2T01-N01S**	12		13.6	14.9	15.8		3.4	10.8
	1/4	**KQG2T01-N02S**	14			18.7	18.4			18.5
ø5/32"	10-32UNF	**KQG2T03-32**	8	9.1	13.7	15.2	16.8	12.6	4.5	9
	1/8	**KQG2T03-N01S**	12		14.4	15.3	16.6		6	11.8
	1/4	**KQG2T03-N02S**	14			19.1	19.2			19.5
ø1/4"	10-32UNF	**KQG2T07-32**	8	11.7	14.7	16.5	19.3	13.5	4.5	12.1
	1/8	**KQG2T07-N01S**	12		15.9	16.6	19.2		13.9	15.1
	1/4	**KQG2T07-N02S**	14			20.4	21.8			22.8
	3/8	**KQG2T07-N03S**	19			22.2	23.3			37.7
ø5/16"	1/8	**KQG2T09-N01S**	12	13.7	18.6	18.3	21.9	16.1	26.3	20.4
	1/4	**KQG2T09-N02S**	14		19.1	21.5	23.9			26.3
	3/8	**KQG2T09-N03S**	19			23.3	25.4			41
ø3/8"	1/8	**KQG2T11-N01S**	12	16	20	19.4	24.2	16.6	40.8	27.3
	1/4	**KQG2T11-N02S**	14		21	22.6	26.2			30.5
	3/8	**KQG2T11-N03S**	19			24.4	27.7			44
	1/2	**KQG2T11-N04S**	22			28.2	29.8			67.4
ø1/2"	1/4	**KQG2T13-N02S**	14	19.6	22.7	24.4	29.8	18.5	57.2	41.1
	3/8	**KQG2T13-N03S**	19		23.7	26.1	31.2			50.2
	1/2	**KQG2T13-N04S**	22			29.9	33.3			72.3

∗ Reference dimensions after installation for NPT thread
Note) Value of FEP tubing.

(10-32UNF)



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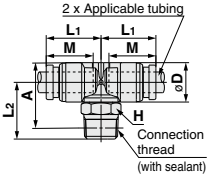
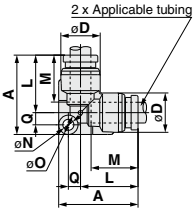


Union Elbow: KQG2L

Applicable tubing O.D. (inch)	Model	øD	L	A	Q	M	øN	øO	Note) Effective area (mm²)	Weight (g)
ø1/8"	**KQG2L01-00**	8.3	13.6	19.3	2.9	12	3.2	5.6	3	6.3
ø5/32"	**KQG2L03-00**	9.1	14.6	20.5	3.1	12.6	3.2	5.6	4.2	7.4
ø1/4"	**KQG2L07-00**	11.7	16.7	23.2	3.7	13.5	3.2	5.6	11.4	11.5
ø5/16"	**KQG2L09-00**	13.7	20.1	29.1	5	16.1	4.2	8	21.6	20.2
ø3/8"	**KQG2L11-00**	16	21.4	31.1	5.7	16.6	4.2	8	35.2	28.2
ø1/2"	**KQG2L13-00**	19.6	24.9	35.3	6.4	18.5	4.2	8	50.2	41.7

Note) Value of FEP tubing.

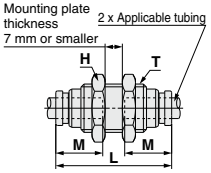


Dimensions

Bulkhead Union: KQG2E

Applicable tubing O.D. (inch)	Model	T (UNF)	H (Width across flat)	L	Mounting hole	M	Note) Effective area (mm²)	Weight (g)
ø1/8"	**KQG2E01-00**	7/16-20UNF	14	34.2	12.5	12	3.4	20.7
ø5/32"	**KQG2E03-00**	7/16-20UNF	14	34.4	12.5	12.6	5.6	20.5
ø1/4"	**KQG2E07-00**	1/2-20UNF	17	35.4	14	13.5	13.1	28
ø5/16"	**KQG2E09-00**	5/8-18UNF	19	39.6	17	16.1	26.1	39.5
ø3/8"	**KQG2E11-00**	3/4-16UNF	22	40.4	20.5	16.6	41.5	57.3
ø1/2"	**KQG2E13-00**	7/8-14UNF	26	44.4	23.5	18.5	58.3	83.2

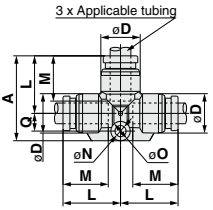
Note) Value of FEP tubing.



Union Tee: KQG2T

Applicable tubing O.D. (inch)	Model	øD	L	A	Q	M	øN	øO	Note) Effective area (mm²)	Weight (g)
ø1/8"	**KQG2T01-00**	8.3	13.6	20.5	4.1	12	3.2	5.6	3.4	7.9
ø5/32"	**KQG2T03-00**	9.1	14.6	21.8	4.4	12.6	3.2	5.6	6.4	9.5
ø1/4"	**KQG2T07-00**	11.7	16.7	24.7	5.2	13.5	3.2	5.6	13.4	14.7
ø5/16"	**KQG2T09-00**	13.7	20.1	31.1	7	16.1	4.2	8	25.6	24.4
ø3/8"	**KQG2T11-00**	16	21.4	33.4	8	16.6	4.2	8	40	34.7
ø1/2"	**KQG2T13-00**	19.6	24.9	37.9	9	18.5	4.2	8	57.4	52.3

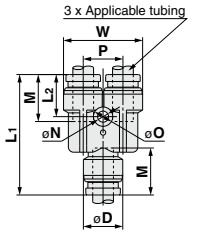
Note) Value of FEP tubing.



Union "Y": KQG2U

Applicable tubing O.D. (inch)	Model	øD	W	L_1	L_2	P	M	øN	øO	Note) Effective area (mm²)	Weight (g)
ø1/8"	**KQG2U01-00**	8.3	16.4	29	11	8.1	12	3.2	5.6	3.4	9.2
ø5/32"	**KQG2U03-00**	9.1	18.2	30.4	11.3	9.1	12.6	3.2	5.6	4.2	11.1
ø1/4"	**KQG2U07-00**	11.7	23.9	34.5	12.1	12.2	13.5	3.2	5.6	13.4	19.6
ø5/16"	**KQG2U09-00**	13.7	28.3	40.1	14.1	14.6	16.1	4.2	8	25.6	29.7
ø3/8"	**KQG2U11-00**	16	33.2	42.2	14	17.2	16.6	4.2	8	40	43.1
ø1/2"	**KQG2U13-00**	19.6	40.2	47.3	15.8	20.6	18.5	4.2	8	57.4	66.4

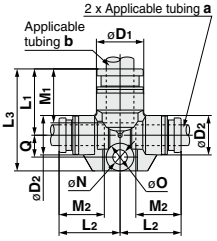
Note) Value of FEP tubing.



Different Diameter Tee: KQG2T

Applicable tubing O.D. (inch) a	Applicable tubing O.D. (inch) b	Model	$øD_1$	$øD_2$	L_1	L_2	L_3	Q	M_1	M_2	øN	øO	Note) Effective area (mm²)	Weight (g)
ø1/8"	ø5/32"	**KQG2T01-03**	9.1	8.3	14.2	14.1	21.1	4.1	12.6	12	3.2	5.6	3.8	8.5
ø5/32"	ø1/4"	**KQG2T03-07**	11.7	9.1	15.5	15.9	22.7	4.4	13.5	12.6	3.2	5.6	7.1	11.7
ø1/4"	ø5/16"	**KQG2T07-09**	13.7	11.7	19.3	17.6	29.6	6.3	16.1	13.5	4.2	8	16.4	20.2
ø5/16"	ø3/8"	**KQG2T09-11**	16	13.7	20.6	21	31.7	7.1	16.6	16.1	4.2	8	36	28.9
ø3/8"	ø1/2"	**KQG2T11-13**	19.6	16	23.3	23	35.4	8.1	18.5	16.6	4.2	8	56	41.8

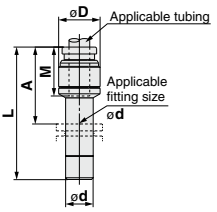
Note) Value of FEP tubing.



Plug-in Reducer: KQG2R

Applicable tubing O.D. (inch)	Applicable fitting size ød	Model	øD	L	A	M	Note) Effective area (mm²)	Weight (g)
ø1/8"	ø5/32"	**KQG2R01-03**	9	32.9	20.3	12	3.4	4.7
ø5/32"	ø1/4"	**KQG2R03-07**	9	33.7	20.2	12.6	5.6	7.1
ø1/4"	ø5/16"	**KQG2R07-09**	12	38.4	22.3	13.5	13.1	11.9
ø5/16"	ø3/8"	**KQG2R09-11**	14	41.6	25	16.1	26.1	16.8
ø3/8"	ø1/2"	**KQG2R11-13**	17	39.8	21.3	16.6	41.5	23.5

Note) Value of FEP tubing.

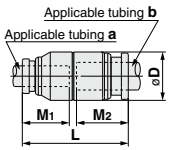


Dimensions

Different Diameter Straight: KQG2H

Applicable tubing O.D. (inch)		Model	ø**D**	**L**	**M**1	**M**2	Note) Effective area (mm²)	Weight (g)
a	**b**							
ø1/8"	ø5/32"	**KQG2H01-03**	9	25.6	12	12.6	3.4	6.5
ø5/32"	ø1/4"	**KQG2H03-07**	12	27.1	12.6	13.5	5.6	11.3
ø1/4"	ø5/16"	**KQG2H07-09**	14	30.6	13.5	16.1	13.1	16.1
ø5/16"	ø3/8"	**KQG2H09-11**	16	33.7	16.1	16.6	26.1	22.8
ø3/8"	ø1/2"	**KQG2H11-13**	20	36.1	16.6	18.5	41.5	37.1

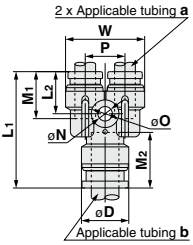
Note) Value of FEP tubing.



Different Diameter Union "Y": KQG2U

Applicable tubing O.D. (inch)		Model	ø**D**	**L**1	**L**2	**P**	**W**	**M**1	**M**2	ø**N**	ø**O**	Note) Effective area (mm²)	Weight (g)
a	**b**												
ø1/8"	ø5/32"	**KQG2U01-03**	9.1	27	10.8	8.1	16.4	12	12.6	3.2	5.6	3.2	8.5
ø5/32"	ø1/4"	**KQG2U03-07**	11.7	28.8	11.4	9.1	18.2	12.6	13.5	3.2	5.6	4.2	11.8
ø1/4"	ø5/16"	**KQG2U07-09**	13.7	33.8	12	12.2	23.9	13.5	16.1	4.2	8	13.4	20
ø5/16"	ø3/8"	**KQG2U09-11**	16	38.3	13.8	14.6	28.3	16.1	16.6	4.2	8	25.6	31
ø3/8"	ø1/2"	**KQG2U11-13**	19.6	40.5	13.7	17.2	33.2	16.6	18.5	4.2	8	40	45

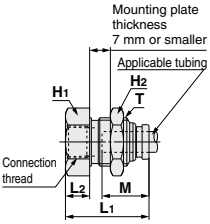
Note) Value of FEP tubing.



Bulkhead Connector: KQG2E

Applicable tubing O.D. (inch)	Connection thread NPT	Model	**T** (UNF)	Width across flat **H**1	Width across flat **H**2	**L**1	**L**2	Mounting hole	**M**	Note) Effective area (mm²)	Weight (g)
ø1/8"	1/4	**KQG2E01-N02**	7/16-20UNF	17	14	32.8	15.3	12.5	12	3.4	30.6
ø5/32"	1/4	**KQG2E03-N02**	7/16-20UNF	17	14	32.6	15.3	12.5	12.6	5.6	30.1
ø1/4"	1/4	**KQG2E07-N02**	1/2-20UNF	17	17	32.7	14.8	14	13.5	13.1	32.6
ø5/16"	3/8	**KQG2E09-N03**	5/8-18UNF	19	19	35	15.1	17	16.1	26.1	38.2
ø3/8"	3/8	**KQG2E11-N03**	3/4-16UNF	21	22	33.8	13.3	20.5	16.6	41.5	51.7
ø1/2"	3/8	**KQG2E13-N03**	7/8-14UNF	24	26	34.6	12.3	23.5	18.5	58.3	73.2
	1/2	**KQG2E13-N04**				41.4	19.1				74.7

Note) Value of FEP tubing.

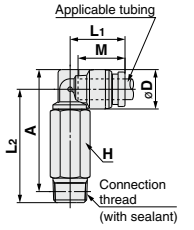


Extended Male Elbow: KQG2W

Applicable tubing O.D. (inch)	Connection thread NPT	Model	**H** (Width across flat)	ø**D**	**L**1	**L**2	**A***	**M**	Note) Effective area (mm²)	Weight (g)
ø1/8"	1/8	**KQG2W01-N01S**	12	8.3	13.6	31.6	32.5	12	2.8	21.5
	1/4	**KQG2W01-N02S**	14			35.4	35.1			34.4
ø5/32"	1/8	**KQG2W03-N01S**	12	9.1	14.4	32	33.3	12.6	4	22.4
	1/4	**KQG2W03-N02S**	14			35.8	35.9			35.2
ø1/4"	1/8	**KQG2W07-N01S**	12	11.7	15.9	33.3	35.9	13.5	10.9	24.1
	1/4	**KQG2W07-N02S**	14			37.1	38.5			37
	3/8	**KQG2W07-N03S**	19			38.9	40			70.9
ø5/16"	1/8	**KQG2W09-N01S**	12	13.7	18.6	34.7	38.3	16.1	20.5	26.9
	1/4	**KQG2W09-N02S**	14		19.1	40.2	42.6			38.7
	3/8	**KQG2W09-N03S**	19			42	44.1			74.7
ø3/8"	1/4	**KQG2W11-N02S**	14	16	21	47.2	50.8	16.6	33.5	41.8
	3/8	**KQG2W11-N03S**	19			45.4	48.7			75.2
	1/2	**KQG2W11-N04S**	22			49.2	50.8			116.5
ø1/2"	1/4	**KQG2W13-N02S**	14	19.6	22.7	49	54.4	18.5	47.7	47.9
	3/8	**KQG2W13-N03S**	19		23.7	50.7	55.8			75.3
	1/2	**KQG2W13-N04S**	22			54.5	57.9			118.3

∗ Reference dimensions after installation of NPT thread

Note) Value of FEP tubing.

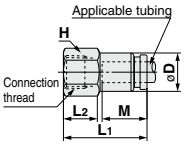


Dimensions

Female Connector: KQG2F

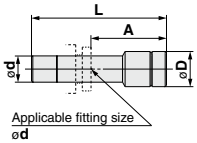
Applicable tubing O.D. (inch)	Connection thread NPT	Model	H (Width across flat)	Note 1) øD	L_1	L_2	M	Note 2) Effective area (mm²)	Weight (g)
ø1/8"	1/8	**KQG2F01-N01**	12	8	24.1	10.4	12	3.4	9.4
	1/4	**KQG2F01-N02**	17		29.1	13.7			22.5
ø5/32"	1/8	**KQG2F03-N01**	12	8.7	24.6	10.5	12.6	5.6	9.9
	1/4	**KQG2F03-N02**	17		29.6	13.8			23
ø1/4"	1/8	**KQG2F07-N01**	12	11.2	25	10.7	13.5	13.1	11.1
	1/4	**KQG2F07-N02**	17		30	14.1			24.5
	3/8	**KQG2F07-N03**	19		31.2	14.6			25.5
ø5/16"	1/8	**KQG2F09-N01**	14	13.4	27.2	10.3	16.1	26.1	17.3
	1/4	**KQG2F09-N02**	17		32.2	14.3			26.9
	3/8	**KQG2F09-N03**	19		33.4	14.8			28.1
ø3/8"	1/4	**KQG2F11-N02**	17	16	32.1	14.4	16.6	41.5	29.7
	3/8	**KQG2F11-N03**	19		33.3	14.9			30.9
	1/2	**KQG2F11-N04**	24		38.6	18.6			49.1
ø1/2"	3/8	**KQG2F13-N03**	21	19.3	34.6	14.7	18.5	58.3	43.3
	1/2	**KQG2F13-N04**	24		39.9	18.8			53.5

Note 1) For the ø3/8", this dimension refers to the O.D. of the release button.
Note 2) Value of FEP tubing.



Plug: KQG2P

Applicable fitting size ød	Model	øD	L	A	Weight (g)
ø1/8"	**KQG2P-01**	5	28.9	16.9	2.7
ø5/32"	**KQG2P-03**	6	29.6	17	4.1
ø1/4"	**KQG2P-07**	8	30.3	16.8	8.9
ø5/16"	**KQG2P-09**	10	33.7	17.6	15.5
ø3/8"	**KQG2P-11**	11	34.1	17.5	21
ø1/2"	**KQG2P-13**	14	36.4	17.9	38.5



KQG2 Series
Applicable Fluid List

How to Read the Table
◎: Completely unaffected or largely unaffected.
○: May be slightly affected, but, dependent upon condition, can sufficiently withstand.
△: Advisable to use as little as possible.
×: Not applicable, as substantially affected.
—: No data is available.

Compatibility Checklist for Used Materials and Fluids

Chemical	Body	Seal
	Stainless steel 316	Special FKM
Acrylonitrile	◎	×
Acetamide	○	○
Acetaldehyde	◎	×
Acetone	◎	×
Aniline	○	◎
Amylene	◎	—
Sulphurous acid gas (Humid gas)	◎	—
Sodium bisulfite [50%]	◎	—
Allyl alcohol	◎	—
Benzoic acid	◎	—
Ammonia (Compressed gas)	◎	×
Isopropyl alcohol	○	◎
Isophorone	×	—
Ethyl alcohol	◎	○
Ethyl ether	○	×
Ethylene	◎	—
Ethylene glycol	○	◎
Ethylene diamine	◎	—
Ethylene dichloride	◎	—
Epichlorohydrine	◎	×
Methyl tertiary butyl ether	—	×
Allyl chloride	×	—
Ammonium chloride	◎	—
Calcium chloride	◎	—
Iron(II) chloride [5%]	×	—
Sodium chloride	○	—
Magnesium chloride	◎	—
Hydrochloric acid [5%]	×	—
Chlorine gas (Humid gas)	×	—
Carbitol	×	—
Formic acid [50%]	○	×
o-Xylene	△	△
p-Xylene	△	△
Citric acid	◎	—
Cumene	×	—
Glycerin	◎	◎
Cresol	◎	△

Chemical	Body	Seal
	Stainless steel 316	Special FKM
Chromic acid [10%]	◎	—
Chlorosulfonic acid	○	×
Chlorofluorocarbon (CFC) 11	—	×
Chlorofluorocarbon (CFC) 113	—	×
Chlorofluorocarbon (CFC) 12	○	×
Chlorofluorocarbon (CFC) 13B1	—	×
Chlorofluorocarbon (CFC) 14	—	◎
Chlorofluorocarbon (CFC) 22	○	×
Chlorobenzene	×	○
Chloroform (Trichloromethane)	○	○
Acetic acid	○	×
Amyl acetate	◎	×
Isopropyl acetate [20%]	◎	×
Ethyl acetate	×	×
Butyl acetate	×	×
Methyl acetate	◎	×
Calcium hypochlorite	◎	—
Sodium hypochlorite [5%]	◎	◎
Potassium cyanide [50%]	◎	—
Copper cyanide	◎	—
Diisobutyl ketone	◎	—
Diisobutylene	—	◎
Diethanolamine	◎	—
Diethylamine	×	×
Diethylene glycol	◎	—
Carbon tetrachloride	◎	◎
Cyclohexanol	×	—
Cyclohexanone	×	×
Cyclohexane	×	○
Dichloroethylene	—	△
Dichlorobenzene	—	△
Dichloromethane (Methylene chloride)	△	△
Ethylene bromide	×	—
Potassium bromide [30%]	◎	—
Potassium dichromate [25%]	◎	—
Oxalic acid	◎	—
Bromine gas	×	—

Chemical	Body	Seal
	Stainless steel 316	Special FKM
Tartaric acid	◎	—
Nitric acid [65%]	◎	◎
Ammonium nitrate	◎	—
Ammonium hydroxide	—	○
Calcium hydroxide	◎	—
Sodium hydroxide [50%]	◎	○
Barium hydroxide	◎	—
Solvent naphtha	◎	—
Carbonic acid (Humid gas and aqueous solution)	◎	—
Tetrachloroethylene	×	◎
Tetrahydrofuran	—	×
Dodecylbenzene	◎	—
Trichloroethane	△	—
Trichloroethylene	◎	○
Trichloroacetic acid	—	—
Toluene	◎	◎
Naphtha	○	○
Naphthenic acid	◎	—
Lactic acid	◎	—
Carbon disulfide	○	◎
Picric acid	◎	—
Pyridine	×	×
Phenol	×	○
Butyl phthalate	×	—
Butyl alcohol	△	—
Hydrofluoric acid [50%]	◎	—
Furfurol	×	×
n-Propyl alcohol	◎	—
Propylene glycol	◎	—
Bromochloroethane	—	×
n-Hexane	○	◎
n-Hexyl alcohol	◎	—
n-Heptane	◎	—
Benzene	×	×
n-Pentane	×	—
Boric acid	◎	—
Gallic acid	◎	—

Chemical	Body	Seal
	Stainless steel 316	Special FKM
Formic aldehyde	◎	×
Methyl methacrylate	×	×
Methyl alcohol	◎	○
Methyl isobutyl ketone	×	×
Methyl ethyl ketone	×	×
Ethyleneglycol monomethyl ether	×	—
Monoethanolamine	◎	—
Morpholine	◎	—
Butyric acid	◎	—
Hydrogen sulfide (Humid gas and aqueous solution)	◎	×
Sulphuric acid [10%]	◎	◎
Ammonium sulfate	◎	×
Sodium bisulfate [10%]	◎	—
Iron(II) sulfate	○	—
Sodium sulfate	◎	—
Phosphoric acid [85%]	◎	—

Note 1) [ ] denotes the concentration. Aqueous solutions without condensation notes are in a saturated state.
Note 2) The above data is based on a room temperature of 20°C. Note that you may obtain different figures, depending on temperature conditions.
Note 3) The above data shows compatibility guidelines based upon component parts. Therefore, it is no guarantee of product performance. In addition, using fluids other than those specified in the catalog are not covered by the product's warranty.

KQG2 Series
Specific Product Precautions

Be sure to read this before handling the products.
Refer to page 11 for safety instructions and pages 14 to 18 for fittings and 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 KQG2 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.

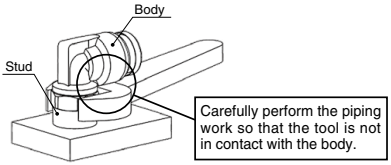
The components of the KQG2 series may slide due to changes in the internal pressure, which may generate particles. When using male elbow, male branch tee, and extended male elbow fittings, particles may be generated by rotation for positioning after connecting.

Mounting

⚠Caution

1. When performing the piping work, turn the tightening tool in the horizontal direction to the hex. 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 fee, 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 elbow union, branch tee, and long elbow union 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.

Operating Environment

⚠Warning

1. Avoid installing and using fittings inside a food zone.

Not installable

Food zone ..... An environment where food which will be sold as merchandize, directly touches the fitting components.

Installable

Splash zone ..... An environment where food which will not be sold as merchandize, directly touches the fitting components.

Non-food zone ..... An environment where there is no contact with food.

Installation and Removal of Tubing

⚠Caution

1. Installation of tubing

1) Grease is not used for the KQG2 series, therefore a greater insertion force is required when the tube 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 tube.

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.

Proper Tightening Torque of Fittings

⚠Caution

1. Tighten fittings with sealant using the proper tightening torques in the table below. As a rule, they should be tightened 2 to 3 turns with a tool after first tightening by hand.

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.

Connection thread size	Proper tightening torque N·m
NPT, R1/8	3 to 5
NPT, R1/4	8 to 12
NPT, R3/8	15 to 20
NPT, R1/2	20 to 25

Stainless steel

Metal exists in nature as ore (like oxide or sulfide). This means that oxide or sulfide is more stable than pure metal. Accordingly, metallic material chemically oxidizes (metallic constituent becomes ion and melts out). It corrodes in the natural environment.
Even though corrosion of metal easily occurs in an environment where oxidizing tendency is stronger, some kinds of metal have a characteristic for which corrosion never happens if the level of oxidizing goes higher than a specific point. In such a case, it is called "metal in passive state".
Stainless steel has corrosion resistance because of a thin coat of passive state on its surface. However, there does not exist stainless steel with absolute corrosion resistance; therefore, many types of stainless steel have been developed for improved corrosion resistance performance.