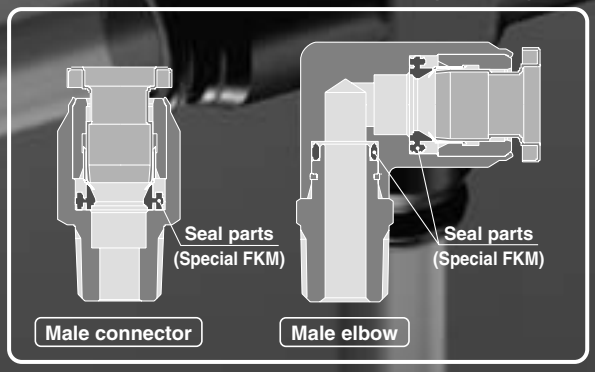
Stainless Steel 316 One-touch Fittings

Series ***KQG***

- Material
  Metal parts: **Stainless steel 316**
  Seal parts: **Special FKM**
- **Grease-free**
- Fluid temperature
  –5 to 150°C
- **Can be used with steam.**

- ***Applicable tubing material***
  - ***FEP, PFA, Nylon, Soft nylon, Polyurethane***
  - ***Polyolefin***

All stainless steel 316 except seal parts



- **Certified to meet current Food Sanitation Law standards.**
  (Component materials have met apparatuses and container-packages standards, based on Directive 85 of the Japanese Ministry of Health and Safety in 1986.)

Stainless Steel 316 One-touch Fittings

Applicable tubing: Metric size/Connection thread: M, R

Series KQG

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, Steam Note 3) Note 4)
Operating pressure range Note 5)	–100 kPa to 1 MPa
Proof pressure	3.0 MPa
Ambient and fluid temperature Note 6)	–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) Special FKM that is resistant even when steam is used.
Note 5) Please avoid using in a vacuum holding application such as a leak tester, since there is leakage.
Note 6) 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

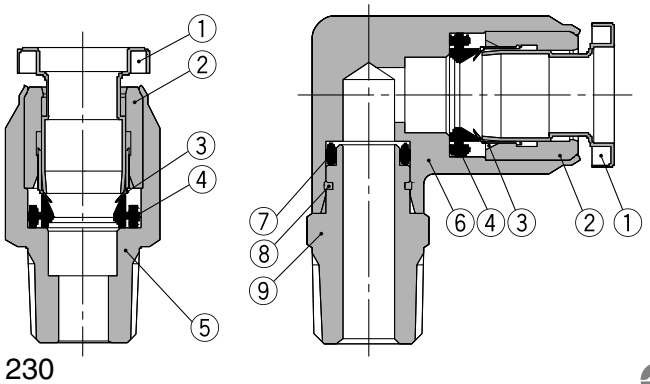
Tube size		Tubing model (Material)				Applicable inner sleeve	
O.D.	Model	**TU** (Polyurethane)	**TUS** (Soft polyurethane)	**TH** (FEP)	**TL** (PFA)	Model	Length (mm)
ø4	0402	—	—	●	—	**TJG-0402**	18
	0425	●	●	●	—	**TJG-0425**	18
	0403	—	—	—	●	**TJG-0403**	18
ø6	0604	●	●	●	●	**TJG-0604**	19
ø8	0805	●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

∗ Material for the TJG series is stainless steel 316.

Spare Parts

Description	Model	Material
Gasket	**M-5G3**	Stainless steel 316, Special FKM
Bulkhead nut	**KQG04-P01**	Stainless steel 316
	KQG06-P01	
	KQG08-P01	
	KQG10-P01	
	KQG12-P01	

Construction



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

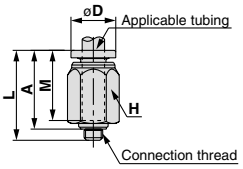
Dimensions

Male Connector: KQGH

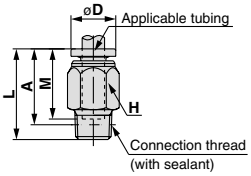
Applicable tubing O.D. (mm)	Connection thread R	Model	H (Width across flats)	Note 1) øD	L	A*	M	Effective area Note 2) (mm²)	Mass (g)
ø4	M5 x 0.8	KQGH04-M5	10	10	22.3	19.3	18	4	7.4
	1/8	KQGH04-01S			24	20		5.6	9.4
ø6	M5 x 0.8	KQGH06-M5	12	12	24.1	21.1	18.8	4	11
	1/8	KQGH06-01S			24.3	20.3		10.4	11
	1/4	KQGH06-02S			25.8	19.8			18
ø8	1/8	KQGH08-01S	14	14	30.5	26.5	20.9	26.1	18
	1/4	KQGH08-02S			28.5	22.5			18
	3/8	KQGH08-03S			24	17.7			24
ø10	1/4	KQGH10-02S	17	17	35.5	29.5	23	41.5	29
	3/8	KQGH10-03S			31	24.7			29
ø12	3/8	KQGH12-03S	19	19	32.8	26.5	24.8	58.3	31
	1/2	KQGH12-04S	22			24.6			51

∗ 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)

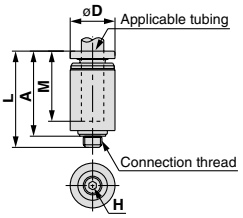


Hexagon Socket Head Male Connector: KQGS

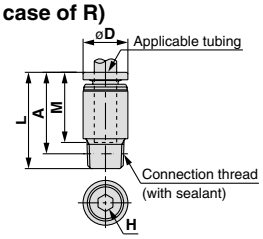
Applicable tubing O.D. (mm)	Connection thread R	Model	H (Width across flats)	Note 1) øD	L	A*	M	Effective area Note 2) (mm²)	Mass (g)
ø4	M5 x 0.8	KQGS04-M5	2	10	25	22	18	4	8.6
	1/8	KQGS04-01S	3			21		4.1	9.8
ø6	M5 x 0.8	KQGS06-M5	2	12	25.8	22.8	18.8	4	12
	1/8	KQGS06-01S	4			21.8		9.9	12
	1/4	KQGS06-02S				19.8		10	20
ø8	1/8	KQGS08-01S	5	14	30.5	26.5	20.9	17.2	17
	1/4	KQGS08-02S	6		28.5	22.5		23.3	18
	3/8	KQGS08-03S			30.1	23.8			35
ø10	1/4	KQGS10-02S	8	17	35.5	29.5	23	39	28
	3/8	KQGS10-03S			31	24.7			29
ø12	3/8	KQGS12-03S	10	19	32.8	26.5	24.8	60	30
	1/2	KQGS12-04S		22		24.6			54

∗ 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)



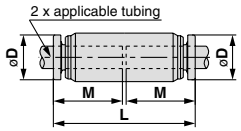
(In case of R)



Straight Union: KQGH

Applicable tubing O.D. (mm)	Model	Note 1) øD	L	M	Effective area Note 2) (mm²)	Mass (g)
ø4	KQGH04-00	11	37	18	5.6	16
ø6	KQGH06-00	13	38	18.5	13.1	22
ø8	KQGH08-00	15	42.8	20.9	26.1	31
ø10	KQGH10-00	19	47	23	41.5	54
ø12	KQGH12-00	21	50.6	24.8	58.3	66

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

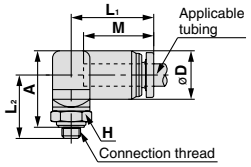


Male Elbow: KQGL

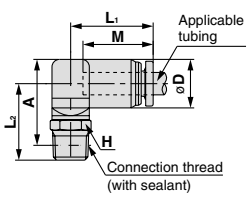
Applicable tubing O.D. (mm)	Connection thread R	Model	H (Width across flats)	Note 1) øD	L1	L2	A*	M	Effective area Note 2) (mm²)	Mass (g)
ø4	M5 x 0.8	KQGL04-M5	10	10.6	20.5	16	18.3	18	3.5	18
	1/8	KQGL04-01S				19.5	20.8		4.2	20
ø6	M5 x 0.8	KQGL06-M5		13	22.1	17	20.5	18.8	3.5	25
	1/8	KQGL06-01S				20.5	23		9	26
	1/4	KQGL06-02S	14			24.5	25			35
ø8	1/8	KQGL08-01S	12	15	24.9	21.9	25.4	20.9	21.6	37
	1/4	KQGL08-02S	14			25.9	27.4			45
	3/8	KQGL08-03S				27.9	29.1			56
ø10	1/4	KQGL10-02S	17	18	27.8	27.7	30.7	23	35.2	69
	3/8	KQGL10-03S				29.7	32.4			73
ø12	3/8	KQGL12-03S		20.8	31.3	30.7	35.1	24.8	50.2	94
	1/2	KQGL12-04S	22			34.7	37.2			121

∗ 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)

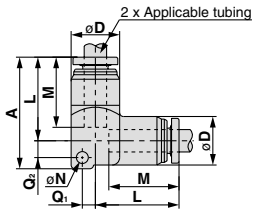


Dimensions

Union Elbow: KQGL

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	KQGL04-00	10.6	20.6	27.3	2.3	3.7	18	3.2	4.2	21
ø6	KQGL06-00	13	22.4	28.9	3.5	3.5	18.8		9	32
ø8	KQGL08-00	15	25.5	35.1		5.6	20.9		21.6	49
ø10	KQGL10-00	18	28.6	38.2	5		23	4.2	35.2	76
ø12	KQGL12-00	20.8	31.4	41.8	6.4	6.4	24.8		50.2	108

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

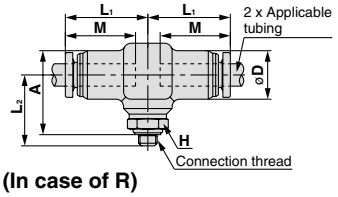


Male Branch Tee: KQGT

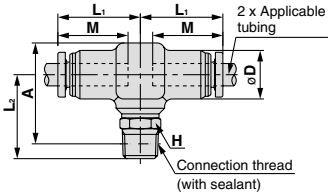
Applicable tubing O.D. (mm)	Connection thread R	Model	H (Width across flats)	Note 1) øD	L_1	L_2	A*	M	Effective area Note 2) (mm^2)	Mass (g)
ø4	M5 x 0.8	KQGT04-M5	10	10.6	20.5	18	23.1	18	4.5	26
	1/8	KQGT04-01S				21.5	25.6		6	27
ø6	M5 x 0.8	KQGT06-M5		13	22.1	19	25	18.8	4.5	39
	1/8	KQGT06-01S				22.5	27.5		11	41
	1/4	KQGT06-02S	14			26.5	29.5			50
ø8	1/8	KQGT08-01S	12	15	24.9	23.9	30.7	20.9	26.3	61
	1/4	KQGT08-02S	14			27.9	32.7			70
	3/8	KQGT08-03S				29.9	34.4			83
ø10	1/4	KQGT10-02S	17	18	27.8	29.7	35.7	23	40.8	97
	3/8	KQGT10-03S				31.7	37.4			101
ø12	3/8	KQGT12-03S		20.8	31.3	32.7	39.5	24.8	57.2	133
	1/2	KQGT12-04S	22			36.7	41.6			159

∗ 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)



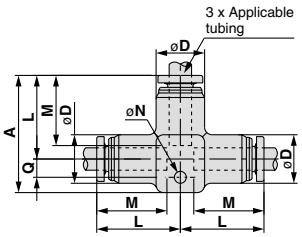
(In case of R)



Union Tee: KQGT

Applicable tubing O.D. (mm)	Model	Note 1) øD	L	A	Q	M	øN	Effective area Note 2) (mm^2)	Mass (g)
ø4	KQGT04-00	10.6	20.6	28.7	4.1	18	3.2	6.4	28
ø6	KQGT06-00	13	22.4	31.4	4.9	18.8		10.6	42
ø8	KQGT08-00	15	25.5	36.3	6.1	20.9		25.6	57
ø10	KQGT10-00	18	28.6	40.6	7.1	23	4.2	40	95
ø12	KQGT12-00	20.8	31.4	44.5	8.1	24.8		57.4	129

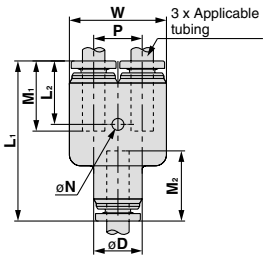
Note 1) øD is maximum diameter.
Note 2) Figures shown when using FEP tubing



Union "Y": KQGU

Applicable tubing O.D. (mm)	Model	Note 1) øD	W	L_1	L_2	P	M_1	M_2	Effective area Note 2) (mm^2)	Mass (g)
ø4	KQGU04-00	10.6	21.2	41	16.8	10.6	18	17	4.2	35
ø6	KQGU06-00	13	26	42.9	17	13	18.8	17.8	10.6	54
ø8	KQGU08-00	15	30	47.7	18.7	15	20.9	19.9	25.6	75
ø10	KQGU10-00	18	36	52.8	20.5	18	23	22	40	114
ø12	KQGU12-00	20.8	41.6	57.8	21.9	21	24.8	23.8	57.4	175

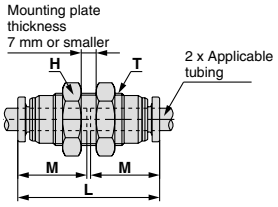
Note 1) øD is maximum diameter.
Note 2) Figures shown when using FEP tubing



Bulkhead Union: KQGE

Applicable tubing O.D. (mm)	Model	T (M)	H (Width across flats)	L	Mounting hole	M	Effective area Note) (mm^2)	Mass (g)
ø4	KQGE04-00	M12X1	14	37	13	18	5.6	21
ø6	KQGE06-00	M14X1	17	38	15	18.5	10.4	29
ø8	KQGE08-00	M16X1	19	42.8	17	20.9	26.1	40
ø10	KQGE10-00	M20X1	24	47	21	23	41.5	71
ø12	KQGE12-00	M22X1	27	50.6	23	24.8	58.3	95

Note) Figures shown when using FEP tubing



Stainless Steel 316 One-touch Fittings

Applicable tubing: Inch size/Connection thread: UNF, NPT

Series KQG

Applicable Tubing

Tubing material	FEP, PFA, Nylon, Soft nylon [Note 1)], Polyurethane [Note 2)], Polyolefin
Tubing O.D.	ø5/32", ø1/4", ø5/16", ø3/8", ø1/2"

Specifications

Fluid	Air, Water, Steam [Note 3) Note 4)]
Operating pressure range [Note 5)]	–100 kPa to 1 MPa
Proof pressure	3.0 MPa
Ambient and fluid temperature [Note 6)]	–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	TIUB07	TU0805	TIUB11	TIUB13
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	TIUB07	TU0805	TIUB11	TIUB13
Load	10 N	25 N	40 N	65 N	90 N

Note 3) Please consult with SMC regarding applicable tube separately.
Note 4) Special FKM that is resistant even when steam is used.
Note 5) Please avoid using in a vacuum holding application such as a leak tester, since there is leakage.
Note 6) 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

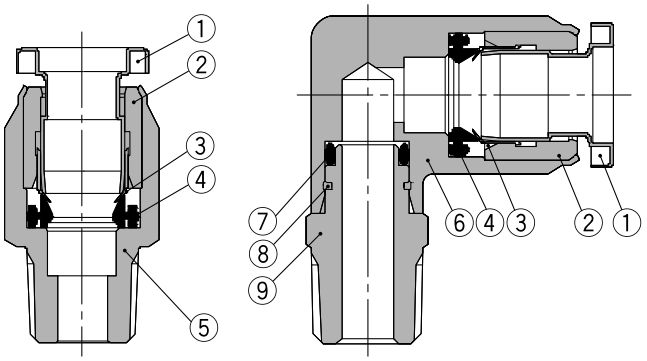
Operating tube	Temperature
FEP tubing/TH series	80°C or more
PFA tubing/TL series	120°C or more

Tubing O.D.	Tubing model (Material)			Applicable inner sleeve	
	TU/TIU (Polyurethane)	**TH/TIH** (FEP)	**TL/TIL** (PFA)	Model	Length (mm)
ø5/32"	—	TH0402	—	**TJG-0402**	18
	TU0425	TH0425	—	**TJG-0425**	18
	—	—	TL0403	**TJG-0403**	18
ø1/4"	—	TIHB07	TIL07	**TJG-0604**	19
	TIUB07	—	—	**TJG-0742**	19
	—	TIHA07	—	**TJG-0746**	19
ø5/16"	TU0805	—	—	**TJG-0805**	20.5
	—	TH0806	TL0806	**TJG-0806**	20.5
ø3/8"	TIUB11	TIHB11	TIL11	**TJG-1065**	23
	—	TIHA11	—	**TJG-1107**	23
ø1/2"	TIUB13	—	—	**TJG-1384**	24
	—	TIH13	TIL13	**TJG-1395**	24

Spare Parts

Description	Model	Material
Gasket	**M-5G3**	Stainless steel 316, Special FKM
Bulkhead nut	**KQG03-P01**	Stainless steel 316
	KQG07-P01	
	KQG09-P01	
	KQG11-P01	
	KQG13-P01	

Construction



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

Dimensions

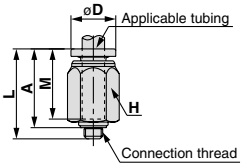
Male Connector: KQGH

Applicable tubing O.D. (inch)	Connection thread NPT	Model	H (Width across flats)	Note 1) øD	L	A*	M	Effective area Note 2) (mm^2)	Mass (g)
5/32	10-32UNF	**KQGH03-32**	10	10	22.3	19.3	18	4	7.4
	NPT1/8	**KQGH03-N01S**	12		24	19.9		5.6	10
1/4	10-32UNF	**KQGH07-32**	13	12	24.1	21.1	18.8	4	12
	NPT1/8	**KQGH07-N01S**			24.3	20.2		10.4	12
	NPT1/4	**KQGH07-N02S**			25.8	20			18
5/16	NPT1/8	**KQGH09-N01S**	14	14	30.5	26.4	20.9	26.1	18
	NPT1/4	**KQGH09-N02S**			28.5	22.7			18
	NPT3/8	**KQGH09-N03S**			24	17.9			24
3/8	NPT1/4	**KQGH11-N02S**	19	17	35.5	29.7	23	41.5	31
	NPT3/8	**KQGH11-N03S**			31	24.9			31
1/2	NPT3/8	**KQGH13-N03S**	22	19	32.8	26.7	24.8	58.3	37
	NPT1/2	**KQGH13-N04S**				24.7			51

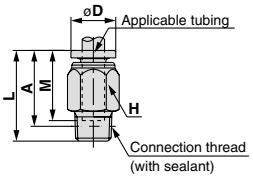
∗ Reference dimensions after installation of NPT thread

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

(In case of M5)



(In case of R)



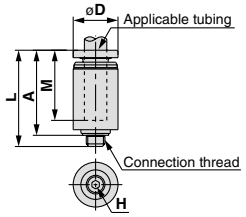
Hexagon Socket Head Male Connector: KQGS

Applicable tubing O.D. (inch)	Connection thread NPT	Model	H (Width across flats)	Note 1) øD	L	A*	M	Effective area Note 2) (mm^2)	Mass (g)
5/32	10-32UNF	**KQGS03-32**	2.5	10	25	22	18	4	8.6
	NPT1/8	**KQGS03-N01S**	2.78	12		20.9		4.1	11
1/4	10-32UNF	**KQGS07-32**	2.5	13	25.8	22.8	18.8	4	13
	NPT1/8	**KQGS07-N01S**	4.76			21.7		9.9	13
	NPT1/4	**KQGS07-N02S**				20		10	20
5/16	NPT1/8	**KQGS09-N01S**	5.56	14	30.5	26.4	20.9	17.2	17
	NPT1/4	**KQGS09-N02S**	6.35		28.5	22.7		23.3	18
	NPT3/8	**KQGS09-N03S**		19	30.1	24			37
3/8	NPT1/4	**KQGS11-N02S**		17	35.5	29.7	23	39	28
	NPT3/8	**KQGS11-N03S**		19	31	24.9			31
1/2	NPT3/8	**KQGS13-N03S**	9.53	22	32.8	26.7	24.8	60	36
	NPT1/2	**KQGS13-N04S**				24.7			54

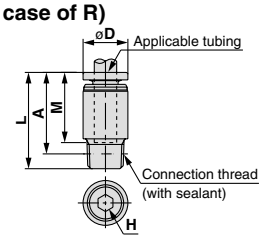
∗ Reference dimensions after installation of NPT thread

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

(In case of M5)



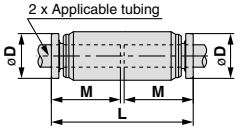
(In case of R)



Straight Union: KQGH

Applicable tubing O.D. (inch)	Model	Note 1) øD	L	M	Effective area Note 2) (mm^2)	Mass (g)
5/32	**KQGH03-00**	11	37	18	5.6	16
1/4	**KQGH07-00**	14	38.6	18.8	13.1	22
5/16	**KQGH09-00**	15	42.8	20.9	26.1	31
3/8	**KQGH11-00**	19	47	23	41.5	54
1/2	**KQGH13-00**	22	50.6	24.8	58.3	66

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



Dimensions

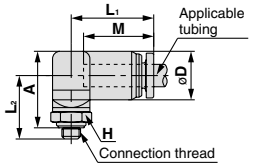
Male Elbow: KQGL

Applicable tubing O.D. (inch)	Connection thread NPT	Model	H (Width across flats)	Note 1) øD	L1	L2	A*	M	Effective area Note 2) (mm²)	Mass (g)
5/32	10-32UNF	**KQGL03-32**	10	10.6	20.5	16	18.3	18	3.5	18
	NPT1/8	**KQGL03-N01S**	12			19.5	20.7		4.2	21
1/4	10-32UNF	**KQGL07-32**	10	13	22.1	17	20.5	18.8	3.5	25
	NPT1/8	**KQGL07-N01S**	12			20.5	22.9		9	27
	NPT1/4	**KQGL07-N02S**	14			24.5	25.2			35
5/16	NPT1/8	**KQGL09-N01S**	12	15	24.9	21.9	25.3	20.9	21.6	37
	NPT1/4	**KQGL09-N02S**	14			25.9	27.6			45
	NPT3/8	**KQGL09-N03S**				27.9	29.3			58
3/8	NPT1/4	**KQGL11-N02S**	19	18	27.8	27.7	30.9	23	35.2	71
	NPT3/8	**KQGL11-N03S**				29.7	32.6			75
1/2	NPT3/8	**KQGL13-N03S**		20.8	31.3	31	35.3	23.4	50.2	96
	NPT1/2	**KQGL13-N04S**	22			35	37.3			121

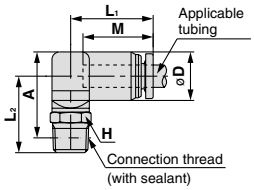
∗ Reference dimensions after installation of NPT thread

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

(In case of M5)



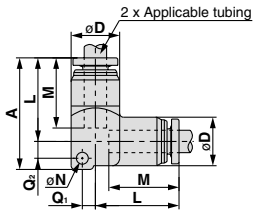
(In case of R)



Union Elbow: KQGL

Applicable tubing O.D. (inch)	Model	Note 1) øD	L	A	Q1	Q2	M	øN	Effective area Note 2) (mm²)	Mass (g)
5/32	**KQGL03-00**	10.6	20.6	27.3	2.3	3.7	18	3.2	4.2	21
1/4	**KQGL07-00**	13	22.4	28.9	3.5	3.5	18.8		9	32
5/16	**KQGL09-00**	15	25.5	35.1		5.6	20.9		21.6	49
3/8	**KQGL11-00**	18	28.6	38.2	5		23	4.2	35.2	76
1/2	**KQGL13-00**	20.8	31.4	41.8	6.4	6.4	23.4		50.2	108

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

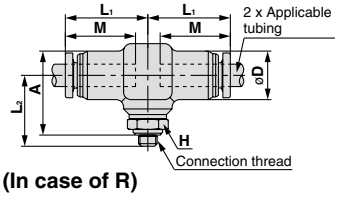


Male Branch Tee: KQGT

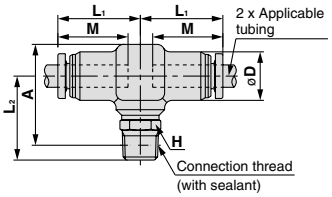
Applicable tubing O.D. (inch)	Connection thread NPT	Model	H (Width across flats)	Note 1) øD	L1	L2	A*	M	Effective area Note 2) (mm²)	Mass (g)
5/32	10-32UNF	**KQGT03-32**	10	10.6	20.5	18	23.1	18	4.5	26
	NPT1/8	**KQGT03-N01S**	12			21.5	25.5		6	28
1/4	10-32UNF	**KQGT07-32**	10	13	22.1	19	25	18.8	4.5	39
	NPT1/8	**KQGT07-N01S**	12			22.5	27.4		11	42
	NPT1/4	**KQGT07-N02S**	14			26.5	29.7			50
5/16	NPT1/8	**KQGT09-N01S**	12	15	24.9	23.9	30.6	20.9	26.3	61
	NPT1/4	**KQGT09-N02S**	14			27.9	32.9			70
	NPT3/8	**KQGT09-N03S**				29.9	34.6			85
3/8	NPT1/4	**KQGT11-N02S**	19	18	27.8	29.7	35.9	23	40.8	99
	NPT3/8	**KQGT11-N03S**				31.7	37.6			103
1/2	NPT3/8	**KQGT13-N03S**		20.8	31.3	32.7	39.7	23.4	57.2	135
	NPT1/2	**KQGT13-N04S**	22			36.7	41.7			159

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

(In case of M5)



(In case of R)

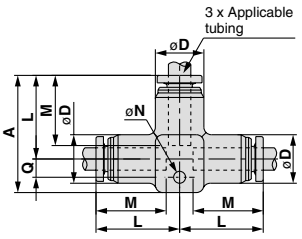


Dimensions

Union Tee: KQGT

Applicable tubing O.D. (inch)	Model	Note 1) øD	L	A	Q	M	øN	Effective area Note 2) (mm^2)	Mass (g)
5/32	**KQGT03-00**	10.6	20.6	28.7	4.1	18	3.2	6.4	28
1/4	**KQGT07-00**	13	22.4	31.4	4.9	18.8		10.6	42
5/16	**KQGT09-00**	15	25.5	36.3	6.1	20.9		25.6	57
3/8	**KQGT11-00**	18	28.6	40.6	7.1	23	4.2	40	95
1/2	**KQGT13-00**	20.8	31.4	44.5	8.1	23.4		57.4	129

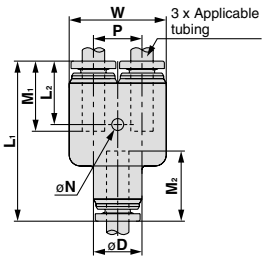
Note 1) øD is maximum diameter.
Note 2) Figures shown when using FEP tubing



Union "Y": KQGU

Applicable tubing O.D. (inch)	Model	Note 1) øD	W	L_1	L_2	P	M_1	M_2	øN	Effective area Note 2) (mm^2)	Mass (g)
5/32	**KQGU03-00**	10.6	21.2	41	16.8	10.6	18	17	3.2	4.2	35
1/4	**KQGU07-00**	13	26.3	42.9	17	13	18.8	17.8		10.6	54
5/16	**KQGU09-00**	15	30	47.7	18.7	15	20.9	19.9		25.6	75
3/8	**KQGU11-00**	18	36	52.8	20.5	18	23	22	4.2	40	114
1/2	**KQGU13-00**	20.8	41.8	57.8	21.9	21	24.8	23.8		57.4	175

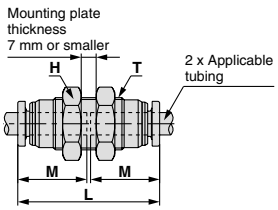
Note 1) øD is maximum diameter.
Note 2) Figures shown when using FEP tubing



Bulkhead Union: KQGE

Applicable tubing O.D. (inch)	Model	T (M)	H (Width across flats)	L	Mounting hole	M	Effective area Note) (mm^2)	Mass (g)
5/32	**KQGE03-00**	1/2-20UNF	14	38	13.5	18	5.6	22
1/4	**KQGE07-00**	9/16-18UNF	17	40.6	15	18.8	10.4	31
5/16	**KQGE09-00**	3/4-16UNF	22	45.8	20	20.9	26.1	46
3/8	**KQGE11-00**	7/8-14UNF	26	50	23	23	41.5	76
1/2	**KQGE13-00**	1-12UNF	29	54.6	26	24.8	58.3	101

Note) Figures shown when using FEP tubing



Series KQG
Applicable Fluid List

Compatibility Checklist for Used Materials and Fluids

Chemical	Main 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	△	△

Chemical	Main body	Seal
	Stainless steel 316	Special FKM
Citric acid	◎	—
Cumene	×	—
Glycerin	◎	◎
Cresol	◎	△
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	×	○

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.

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.

Series KQG
Applicable Fluid List

Compatibility Checklist for Used Materials and Fluids

Chemical	Main body	Seal
	Stainless steel 316	Special FKM
Dichloroethylene	—	△
Dichlorobenzene	—	△
Dichloromethane (Methylene chloride)	△	△
Ethylene bromide	×	—
Potassium bromide [30%]	◎	—
Potassium dichromate [25%]	◎	—
Oxalic acid	◎	—
Bromine gas	×	—
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	×	○

Chemical	Main body	Seal
	Stainless steel 316	Special FKM
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	◎	—
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.

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.

Series KQG
Specific Product Precautions

Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 11 for Actuator Precautions and Auto Switch 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 TIUB07	TU0805	TU1065 TIUB11	TU1208 TIUB13
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 TIUB07	TU0805	TU1065 TIUB11	TU1208 TIUB13
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 KQG 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.