

# Stainless Steel 316 One-touch Fittings

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

## KQG2-F Series



EHEDG  
Compliant  
Metric M, G  
KFG2H□-E

Clean  
Design

Metric M, G  
KFG2H□-C

FDA  
Compliant

Metric M, R, Rc  
KQG2-F

Inch UNF, NPT  
KQG2-F

Metric G  
KQG2-F

Metric M, R, Rc  
KQB2-F

Inch UNF, NPT  
KQB2-F

Metric G  
KQB2-F

Metric R, Rc  
KFG2-F

Inch NPT  
KFG2-F

Metric G  
KFG2-F

Precautions



### Applicable Tubing

Tubing material*1	FEP, PFA, Nylon, Soft nylon, Polyurethane, Polyolefin
Tubing O.D.	Ø 3.2, Ø 4, Ø 6, Ø 8, Ø 10, Ø 12, Ø 16

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

### Specifications

Fluid	Air, Water*1, Steam*2
Operating pressure range*3	-100 kPa to 1 MPa*4
Proof pressure	3.0 MPa
Ambient and fluid temperatures*5	-5 to 150°C (No freezing)*4
Lubricant	NSF H1 grease
Seal on the threads	Without sealant

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

\*2 Please contact SMC for applicable tubing separately.

\*3 Do not use the fittings with a leak tester or for vacuum retention because they are not guaranteed for zero leakage.

\*4 Check the operating pressure range and operating temperature range of the tubing.

\*5 It is recommended that you use the inner sleeve in the following conditions. (Except Ø 3.2)

- When using in an environment where the fluid temperature changes drastically
- When using at a high temperature

#### \* Temperature Condition of Mounting the Inner Sleeve

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

### Spare Parts

Description	Tubing O.D.	Part no.	Material
O-ring	—	M-5-F	FDA compliant FKM
Bulkhead nut	Ø 3.2, Ø 4	KQG223-P01	Stainless steel 316
	Ø 6	KQG206-P01	
	Ø 8	KQG208-P01	
	Ø 10	KQG210-P01	
	Ø 12	KQG212-P01	
	Ø 16	KQG216-P01	

### Cross Reference Table of the Inner Sleeve

Tubing O.D.	Tubing material			Applicable inner sleeve	
	TUS (Soft polyurethane)	TH/THI (FEP)	TL/TIL (Super PFA)	Part no.	Length
Ø 4	—	TH0402	—	TJG-0402	18
	TUS0425	TH0425	—	TJG-0425	18
	—	—	TL0403	TJG-0403	18
Ø 6	TUS0604	TH0604	TL0604	TJG-0604	19
	TUS0805	—	—	TJG-0805	20.5
Ø 8	—	TH0806	TL0806	TJG-0806	20.5
	TUS1065	—	—	TJG-1065	23
Ø 10	—	TH1075	—	TJG-1075	23
	—	TH1008	TL1008	TJG-1008	23
	TUS1208	—	—	TJG-1208	24
Ø 12	—	TH1209	—	TJG-1209	24
	—	TH1210	TL1210	TJG-1210	24
	—	—	—	—	—

\* Stainless steel 316 is used for the TJG series.

# KQG2-F Series

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

## How to Order

**KQG2 H 04 - 02 - F**

Body type

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

\* Plugs are excluded as the standard plug is FDA-compliant.

Tubing size (Metric)

Symbol	Size
<b>23</b>	Ø 3.2
<b>04</b>	Ø 4
<b>06</b>	Ø 6
<b>08</b>	Ø 8
<b>10</b>	Ø 10
<b>12</b>	Ø 12
<b>16</b>	Ø 16

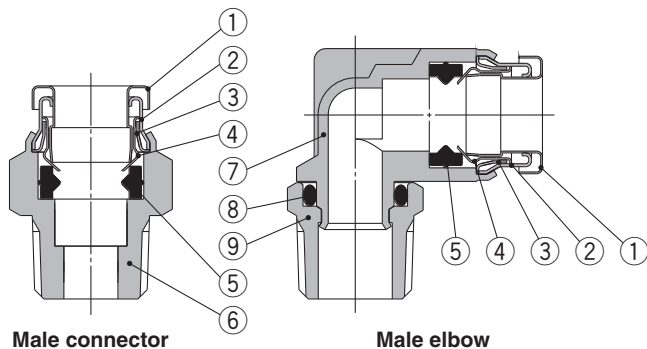
FDA compliant

Thread size, Tubing size

Symbol	Size	
<b>M5</b>	M5 x 0.8	Thread size
<b>01</b>	R1/8, Rc1/8	
<b>02</b>	R1/4, Rc1/4	
<b>03</b>	R3/8, Rc3/8	
<b>04</b>	R1/2, Rc1/2	
<b>00</b>	Same tubing O.D.	Tubing size
<b>04</b>	Ø 4	
<b>06</b>	Ø 6	
<b>08</b>	Ø 8	
<b>10</b>	Ø 10	
<b>12</b>	Ø 12	
<b>16</b>	Ø 16	

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

## Construction



## 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	FDA compliant FKM (NSF H1 grease)
6	Male connector body	Stainless steel 316
7	Male elbow body	Stainless steel 316 (NSF H1 grease)
8	O-ring	FDA compliant FKM (NSF H1 grease)
9	Stud	Stainless steel 316

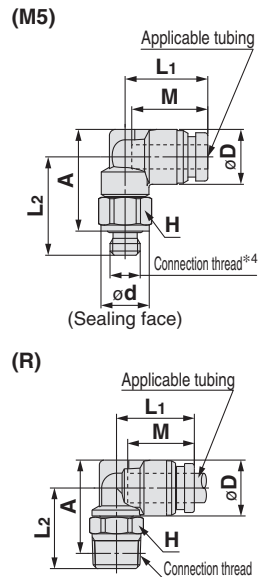
# KQG2-F Series

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

## Dimensions

### Male Elbow: KQG2L

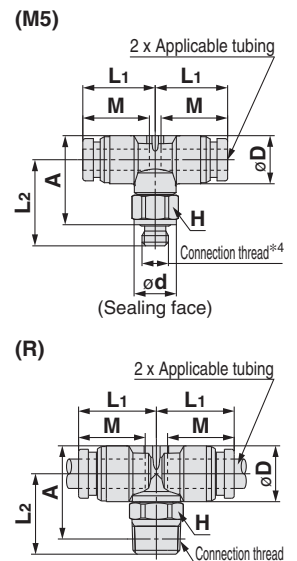
Applicable tubing O.D. (mm)	Connection thread R, M	Model	H (Width across flats)	Ø D*1	Ø d	L1	L2	A*2	M	Effective area [mm <sup>2</sup> ]*3	Weight [g]
Ø 3.2	M5 x 0.8	KQG2L23-M5-F	8	8.3	8	13.1	15.9	16.1	12	2.6	6.5
	1/8	KQG2L23-01-F	10			13.6	14.9	15.9		3	7.6
	1/4	KQG2L23-02-F	14			18.7	18.1	16			
Ø 4	M5 x 0.8	KQG2L04-M5-F	8	9.1	8	13.7	16.3	16.9	12.6	3.5	7.1
	1/8	KQG2L04-01-F	10			14.4	15.3	16.7		4.2	8.5
	1/4	KQG2L04-02-F	14			19.1	18.9	16.8			
Ø 6	M5 x 0.8	KQG2L06-M5-F	8	11.4	8	14.7	17.4	19.1	13.6	3.5	9
	1/8	KQG2L06-01-F	10			15.9	16.4	19		11.4	10.1
	1/4	KQG2L06-02-F	14			20.2	21.2	18.4		18.4	
	3/8	KQG2L06-03-F	17			21.6	22.2	29.9			
Ø 8	1/8	KQG2L08-01-F	12	13.7	—	18.6	18.3	22	16.1	21.6	14.6
	1/4	KQG2L08-02-F	14			19.1	21.5	23.6		20.3	
	3/8	KQG2L08-03-F	17			22.9	24.6	31.6			
Ø 10	1/8	KQG2L10-01-F	12	16.6	—	20	19.7	24.9	17	21.6	20.2
	1/4	KQG2L10-02-F	14			21	22.9	26.5		35.2	23.3
	3/8	KQG2L10-03-F	17			24.3	27.5	33.6			
	1/2	KQG2L10-04-F	22			28.5	30.4	60.1			
Ø 12	1/4	KQG2L12-02-F	14	18.7	—	22.6	24	28.6	18.6	50.2	27.1
	3/8	KQG2L12-03-F	17			23.6	25.3	29.5		33.7	
	1/2	KQG2L12-04-F	22			29.5	32.4	58.7			
Ø 16	3/8	KQG2L16-03-F	19	24.6	—	26.3	28	34.5	20.8	71	46.3
	1/2	KQG2L16-04-F	22			27.3	31.8	37		100	61.3



\*1 For the Ø 16, this dimension refers to the O.D. of the release button.  
 \*2 Reference dimensions after installation for R thread  
 \*3 Value of FEP tubing  
 Value of nylon tubing for Ø 16 only  
 \*4 In the case of M5, the screw length (Ø D/2 + L2 - A) is longer than that of the KQG2 series.

### Male Branch Tee: KQG2T

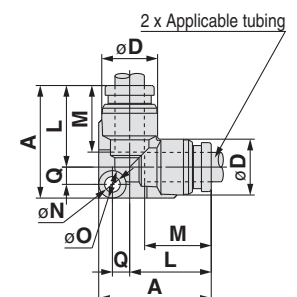
Applicable tubing O.D. (mm)	Connection thread R, M	Model	H (Width across flats)	Ø D*1	Ø d	L1	L2	A*2	M	Effective area [mm <sup>2</sup> ]*3	Weight [g]
Ø 3.2	M5 x 0.8	KQG2T23-M5-F	8	8.3	8	13.1	15.9	16.1	12	3.2	8.3
	1/8	KQG2T23-01-F	10			13.6	14.9	15.9		3.4	9.4
	1/4	KQG2T23-02-F	14			18.7	18.1	17.7			
Ø 4	M5 x 0.8	KQG2T04-M5-F	8	9.1	8	13.7	16.3	16.9	12.6	4.5	9.2
	1/8	KQG2T04-01-F	10			14.4	15.3	16.7		6	10.4
	1/4	KQG2T04-02-F	14			19.1	18.9	18.8			
Ø 6	M5 x 0.8	KQG2T06-M5-F	8	11.4	8	14.7	17.4	19.1	13.6	4.5	12.1
	1/8	KQG2T06-01-F	10			15.9	16.4	19		13.9	13.4
	1/4	KQG2T06-02-F	14			20.2	21.2	21.8		21.8	
	3/8	KQG2T06-03-F	17			21.6	22.2	33.3			
Ø 8	1/8	KQG2T08-01-F	12	13.7	—	18.6	18.3	22	16.1	26.3	20
	1/4	KQG2T08-02-F	14			19.1	21.5	23.6		25.5	
	3/8	KQG2T08-03-F	17			22.9	24.6	36.8			
Ø 10	1/8	KQG2T10-01-F	12	16.6	—	20	19.7	24.9	17	40.8	28.4
	1/4	KQG2T10-02-F	14			21	22.9	26.5		31.1	
	3/8	KQG2T10-03-F	17			24.3	27.5	41.4			
	1/2	KQG2T10-04-F	22			28.5	30.4	68			
Ø 12	1/4	KQG2T12-02-F	14	18.7	—	22.6	24	28.6	18.6	57.2	37.8
	3/8	KQG2T12-03-F	17			23.6	25.3	29.5		39.3	
	1/2	KQG2T12-04-F	22			29.5	32.4	68.8			
Ø 16	3/8	KQG2T16-03-F	19	24.6	—	26.3	28	34.5	20.8	71	63.7
	1/2	KQG2T16-04-F	22			27.3	31.8	37		100	77.6



\*1 For the Ø 16, this dimension refers to the O.D. of the release button.  
 \*2 Reference dimensions after installation for R thread  
 \*3 Value of FEP tubing  
 Value of nylon tubing for Ø 16 only  
 \*4 In the case of M5, the screw length (Ø D/2 + L2 - A) is longer than that of the KQG2 series.

### Union Elbow: KQG2L

Applicable tubing O.D. (mm)	Model	Ø D*1	L	A	Q	M	Ø N	Ø O	Effective area [mm <sup>2</sup> ]*2	Weight [g]
Ø 3.2	KQG2L23-00-F	8.3	13.6	19.3	2.9	12	3.2	5.6	3	6.3
Ø 4	KQG2L04-00-F	9.1	14.6	20.5	3.1	12.6	3.2	5.6	4.2	7.4
Ø 6	KQG2L06-00-F	11.4	16.6	23	3.6	13.6	3.2	5.6	11.4	11
Ø 8	KQG2L08-00-F	13.7	20.1	29.1	5	16.1	4.2	8	21.6	20.2
Ø 10	KQG2L10-00-F	16.6	22	31.7	5.7	17	4.2	8	35.2	29.6
Ø 12	KQG2L12-00-F	18.7	24.6	35	6.4	18.6	4.2	8	50.2	37.1
Ø 16	KQG2L16-00-F	24.6	28.8	40.5	7.7	20.8	4.2	8	100	59.7



\*1 For the Ø 16, this dimension refers to the O.D. of the release button.  
 \*2 Value of FEP tubing  
 Value of nylon tubing for Ø 16 only

## FDA Compliant Fittings

# Stainless Steel 316 One-touch Fittings

Applicable Tubing: Metric Size, Connection Thread: G\*<sup>1</sup>

# KQG2-F Series

\*1 ISO 16030 compliant



## Certified to meet current Food Sanitation Law standards

Component materials have met apparatus and container-package standards.

(This includes compliance with article 18, paragraph 3 of the amended Food Sanitation Act (June 2020) and the Ministry of Health and Welfare Notification No. 370.)

## Spare Parts

Description	Tubing O.D.	Part no.	Material
Bulkhead nut	Ø 4	<b>KQG223-P01</b>	Stainless steel 316
	Ø 6	<b>KQG206-P01</b>	
	Ø 8	<b>KQG208-P01</b>	
	Ø 10	<b>KQG210-P01</b>	
	Ø 12	<b>KQG212-P01</b>	
	Ø 16	<b>KQG216-P01</b>	

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

## Applicable Tubing

Tubing material* <sup>1</sup>	FEP, PFA, Nylon, Soft nylon, Polyurethane, Polyolefin
Tubing O.D.	Ø 4, Ø 6, Ø 8, Ø 10, Ø 12, Ø 16

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

## Specifications

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

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

\*2 Please contact SMC for applicable tubing separately.

\*3 Do not use the fittings with a leak tester or for vacuum retention because they are not guaranteed for zero leakage.

\*4 Check the operating pressure range and operating temperature range of the tubing.

\*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 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

## Cross Reference Table of the Inner Sleeve

Tubing O.D.	Tubing material			Applicable inner sleeve	
	TUS (Soft polyurethane)	TH/THH (FEP)	TL/TIL (Super PFA)	Part no.	Length
Ø 4	—	TH0402	—	<b>TJG-0402</b>	18
	TUS0425	TH0425	—	<b>TJG-0425</b>	18
	—	—	TL0403	<b>TJG-0403</b>	18
Ø 6	TUS0604	TH0604	TL0604	<b>TJG-0604</b>	19
	TUS0805	—	—	<b>TJG-0805</b>	20.5
Ø 8	—	TH0806	TL0806	<b>TJG-0806</b>	20.5
	TUS1065	—	—	<b>TJG-1065</b>	23
Ø 10	—	TH1075	—	<b>TJG-1075</b>	23
	—	TH1008	TL1008	<b>TJG-1008</b>	23
	TUS1208	—	—	<b>TJG-1208</b>	24
Ø 12	—	TH1209	—	<b>TJG-1209</b>	24
	—	TH1210	TL1210	<b>TJG-1210</b>	24

\* Stainless steel 316 is used for the TJG series.

EHEDG  
Compliant

Metric M, G  
KFG2H□-E  
KFG2H□-C

Clean  
Design

Metric M, G  
KFG2H□-C

FDA  
Compliant

Metric M, R, Rc  
KQG2-F

Inch UNF, NPT  
KQG2-F

Metric G  
KQG2-F

Metric M, R, Rc  
KQB2-F

Inch UNF, NPT  
KQB2-F

Metric G  
KQB2-F

Metric R, Rc  
KFG2-F

Inch NPT  
KFG2-F

Metric G  
KFG2-F

Precautions

# KQG2-F Series

Applicable Tubing: Metric Size, Connection Thread: G

## How to Order

**KQG2 H 04 - G 02 - F**

• Body type

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

• FDA compliant

• Thread size

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

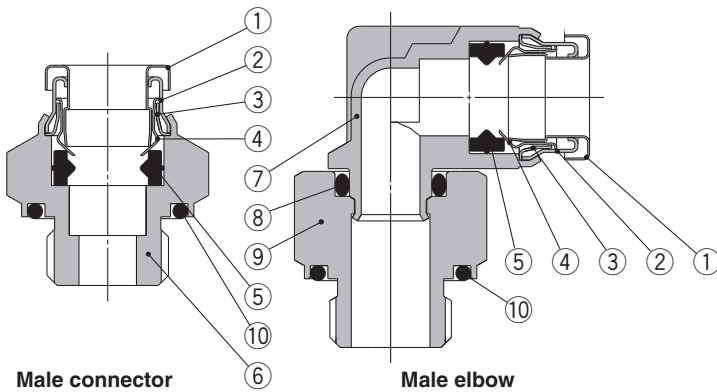
• Tubing size (Metric)

Symbol	Size
<b>04</b>	Ø 4
<b>06</b>	Ø 6
<b>08</b>	Ø 8
<b>10</b>	Ø 10
<b>12</b>	Ø 12
<b>16</b>	Ø 16

• Thread type

Symbol	Type
<b>G</b>	G

## Construction



### Component Parts

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

# KQG2-F Series

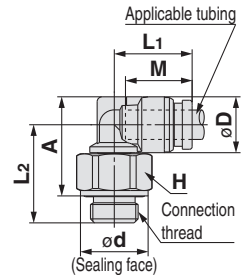
Applicable Tubing: Metric Size, Connection Thread: G

## Dimensions

### Male Elbow: KQG2L



Applicable tubing O.D. (mm)	Connection thread G	Model	H (Width across flats)	Ø D*1	Ø d	L1	L2	A	M	Effective area [mm <sup>2</sup> ]*2	Weight [g]
Ø 4	1/8	KQG2L04-G01-F	14	9.1	13.8	14.4	18.9	17.9	12.6	4.2	15
	1/4	KQG2L04-G02-F	19		17.8		22.3	20.3			32.2
Ø 6	1/8	KQG2L06-G01-F	14	11.4	13.8	15.9	20	20.2	13.6	11.4	16.6
	1/4	KQG2L06-G02-F	19		17.8		23.4	22.6			33.8
	3/8	KQG2L06-G03-F	22		21.8		25.9	24.1			52.8
Ø 8	1/8	KQG2L08-G01-F	14	13.7	13.8	18.6	21.3	22.6	16.1	21.6	19.6
	1/4	KQG2L08-G02-F	19		17.8		24.7	25			34.6
	3/8	KQG2L08-G03-F	22		21.8		27.2	26.5			53.2
Ø 10	1/8	KQG2L10-G01-F	14	16.6	13.8	20	22.7	25.5	17	21.6	25.2
	1/4	KQG2L10-G02-F	19		17.8		26.1	27.9			37
	3/8	KQG2L10-G03-F	22		21.8		28.6	29.4			55.1
	1/2	KQG2L10-G04-F	27		26.5		32.6	31.9			94.7
Ø 12	1/4	KQG2L12-G02-F	19	18.7	17.8	22.6	27.2	30	18.6	50.2	40.8
	3/8	KQG2L12-G03-F	22		21.8		29.6	31.4			52.5
	1/2	KQG2L12-G04-F	27		26.5		33.6	33.9			90.5
Ø 16	3/8	KQG2L16-G03-F	22	24.6	21.8	26.3	32.4	36.5	20.8	71	63
	1/2	KQG2L16-G04-F	27		26.5		27.3	36.4			39



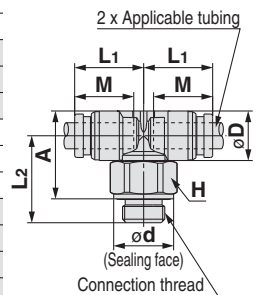
\*1 For the Ø 16, this dimension refers to the O.D. of the release button.

\*2 Value of FEP tubing  
Value of nylon tubing for Ø 16 only

### Male Branch Tee: KQG2T



Applicable tubing O.D. (mm)	Connection thread G	Model	H (Width across flats)	Ø D*1	Ø d	L1	L2	A	M	Effective area [mm <sup>2</sup> ]*2	Weight [g]
Ø 4	1/8	KQG2T04-G01-F	14	9.1	13.8	14.4	18.9	17.9	12.6	6	16.9
	1/4	KQG2T04-G02-F	19		17.8		22.3	20.3			34.2
Ø 6	1/8	KQG2T06-G01-F	14	11.4	13.8	15.9	20	20.2	13.6	13.9	19.9
	1/4	KQG2T06-G02-F	19		17.8		23.4	22.6			37.2
	3/8	KQG2T06-G03-F	22		21.8		25.9	24.1			56.2
Ø 8	1/8	KQG2T08-G01-F	14	13.7	13.8	18.6	21.3	22.6	16.1	26.3	25
	1/4	KQG2T08-G02-F	19		17.8		24.7	25			39.8
	3/8	KQG2T08-G03-F	22		21.8		27.2	26.5			58.4
Ø 10	1/8	KQG2T10-G01-F	14	16.6	13.8	20	22.7	25.5	17	40.8	33.4
	1/4	KQG2T10-G02-F	19		17.8		26.1	27.9			44.8
	3/8	KQG2T10-G03-F	22		21.8		28.6	29.4			62.9
	1/2	KQG2T10-G04-F	27		26.5		32.6	31.9			102.6
Ø 12	1/4	KQG2T12-G02-F	19	18.7	17.8	22.6	27.2	30	18.6	57.2	51.5
	3/8	KQG2T12-G03-F	22		21.8		29.6	31.4			58.1
	1/2	KQG2T12-G04-F	27		26.5		33.6	33.9			100.6
Ø 16	3/8	KQG2T16-G03-F	22	24.6	21.8	26.3	32.4	36.5	20.8	71	80.4
	1/2	KQG2T16-G04-F	27		26.5		27.3	36.4			39



\*1 For the Ø 16, this dimension refers to the O.D. of the release button.

\*2 Value of FEP tubing  
Value of nylon tubing for Ø 16 only