

## How to Order

### Tubing connection

LQ1 **E** **11**  

#### Fitting type

Symbol	Type
E	Union elbow
T	Union tee
P	Panel mount union
U	Union
F	Union flange

#### Combination of different diameter (on B side)

Class	No.	Applicable tubing size (mm)
1	1	4 x 3
1	2	3 x 2
2	1	6 x 4
2	2	4 x 3
3	1	10 x 8
3	2	8 x 6
3	3	6 x 4
4	1	12 x 10
4	2	10 x 8
5	1	19 x 16
5	2	12 x 10
6	1	25 x 22
6	2	19 x 16

Class	No.	Applicable tubing size (inch)
1	A	1/8" x 0.086"
—	—	—
2	A	1/4" x 5/32"
2	B	3/16" x 1/8"
2	C	1/8" x 0.086"
3	A	3/8" x 1/4"
3	B	1/4" x 5/32"
4	A	1/2" x 3/8"
4	B	3/8" x 1/4"
5	A	3/4" x 5/8"
5	B	1/2" x 3/8"
6	A	1" x 7/8"
6	B	3/4" x 5/8"

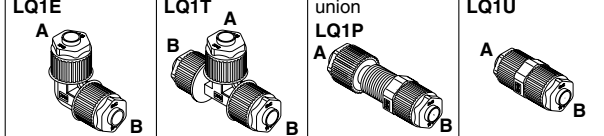


Note) For each body class, the second and later numbers or symbols indicate reducing. However, in case of size 1, the tubing cannot be changed by reducing.

#### Size combination

Class	No.	Applicable tubing size (mm)	Class	No.	Applicable tubing size (inch)	Applicable flange
1	1	4 x 3	1	A	1/8" x 0.086"	—
1	2	3 x 2	—	—	—	—
2	1	6 x 4	2	A	1/4" x 5/32"	—
2	2	4 x 3	2	B	3/16" x 1/8"	—
3	1	10 x 8	2	C	1/8" x 0.086"	—
3	2	8 x 6	3	A	3/8" x 1/4"	—
3	3	6 x 4	3	B	1/4" x 5/32"	—
4	1	12 x 10	4	A	1/2" x 3/8"	15 A
4	2	10 x 8	4	B	3/8" x 1/4"	—
5	1	19 x 16	5	A	3/4" x 5/8"	20 A
5	2	12 x 10	5	B	1/2" x 3/8"	—
6	1	25 x 22	6	A	1" x 7/8"	25 A
6	2	19 x 16	6	B	3/4" x 5/8"	—

Symbol	Application
Nil	Same tubing size
Refer to the applicable tubing table.	Different diameter tubing can be selected within the same body class.
Union elbow LQ1E	Union tee LQ1T
Panel mount union LQ1P	Union LQ1U




Note 1) For each body class, the second and later numbers or symbols indicate reducing. However, in case of size 1, the tubing cannot be changed by reducing.

Note 2) Sizes 1 to 3 are not available for the union flange

Note 3) For Union flange, nut sizes 4 and 5 are as shown below.

LQ1F4□: LQ-4N□□

LQ1F5□: LQ-5N□□

#### Different diameter tubing order example

Different diameter tubing (with plug-in reducer) can be selected within the same body class.

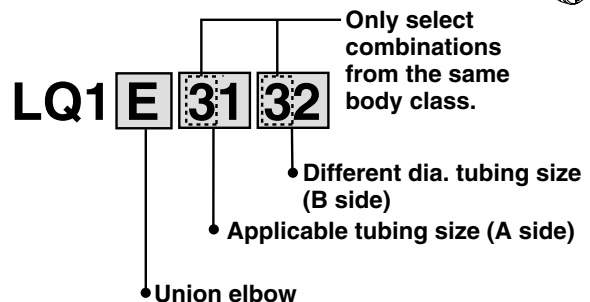
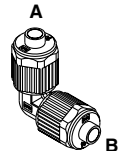
(Example) Union elbow

Body class 3

A side:  $\varnothing 10 \times \varnothing 8$

B side:  $\varnothing 8 \times \varnothing 6$

Order as shown below.



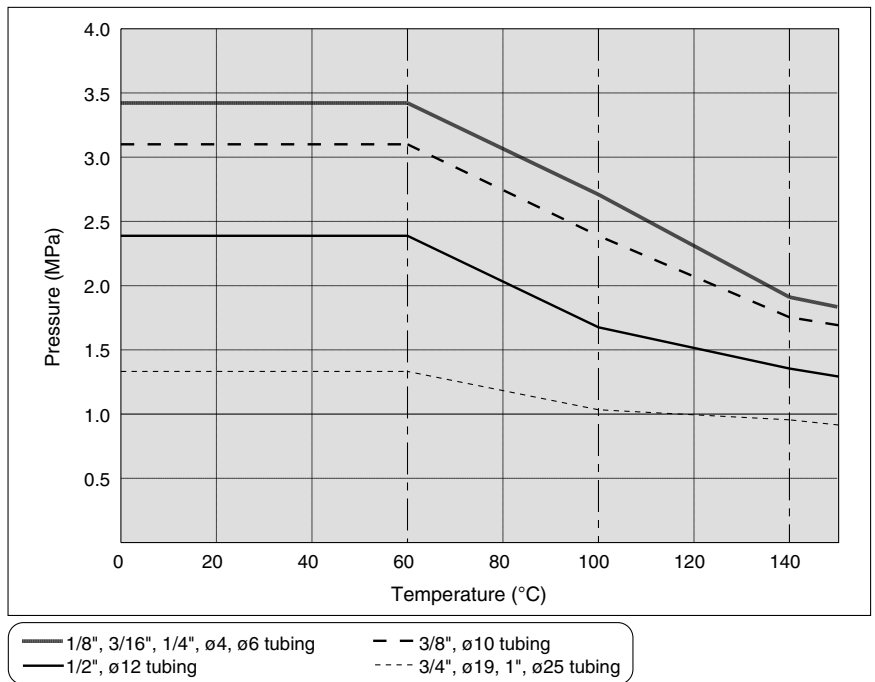
# High Purity Fluoropolymer Fittings Series LQ1

## Specifications



Feature	Model	LQ1□10	LQ1□20	LQ1□30	LQ1□40	LQ1□50	LQ1□60
Material		NEW PFA					
Maximum operating pressure (at 20°C)		0.7 MPa					
Proof pressure		Refer to the withstand pressure and heat resistance performance curves.					
Operating temperature		0 to 150°C					

## Burst Pressure and Heat Resistance Performance



VC□

VDW

VQ

VX2

VX□

VX3

VXA

VN□

LVC

LVA

LVH

LVD

LVQ

**LQ**

LVN

TI/  
TIL

PA

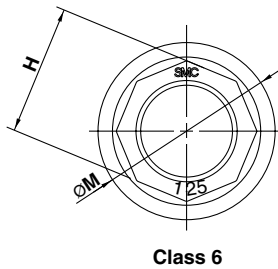
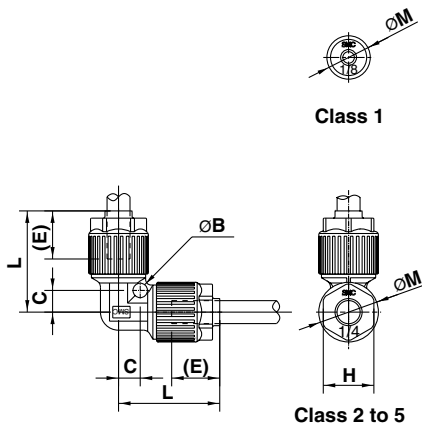
PAX

PB

# Series LQ1

## Dimensions

### Union Elbow: LQ1E



(E) shows the approximate dimension of the inserted tubing from the end of the nut.

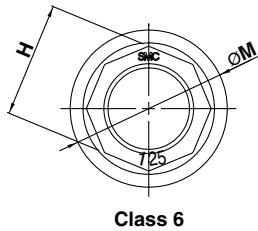
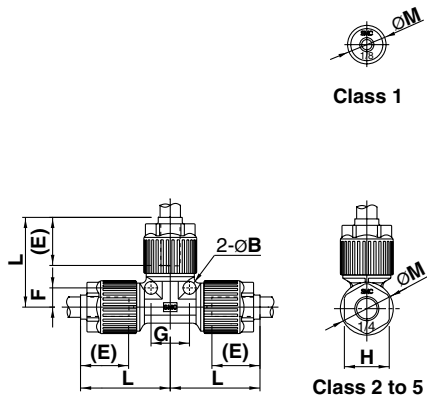
### Metric sizes

Model	Applicable tubing O.D.	B	C	E	H	L	M
LQ1E11□□	ø4	ø2	4	10	—	18.5	ø11.5
LQ1E12□□	ø3						
LQ1E21□□	ø6	ø4	6	15	14	28	ø16.5
LQ1E22□□	ø4						
LQ1E31□□	ø10	ø5	9	20	17	36.5	ø23
LQ1E32□□	ø8						
LQ1E33□□	ø6						
LQ1E41□□	ø12	ø6	9	24	21	43	ø28
LQ1E42□□	ø10						
LQ1E51□□	ø19	ø7	14	29	26	54	ø39
LQ1E52□□	ø12						
LQ1E61□□	ø25	ø8	18	39.5	36	69.5	ø49
LQ1E62□□	ø19						

### Inch sizes

Model	Applicable tubing O.D.	B	C	E	H	L	M
LQ1E1A□□	1/8"	ø2	4	10	—	18.5	ø11.5
LQ1E2A□□	1/4"						
LQ1E2B□□	3/16"	ø4	6	15	14	28	ø16.5
LQ1E2C□□	1/8"						
LQ1E3A□□	3/8"	ø5	9	20	17	36.5	ø23
LQ1E3B□□	1/4"						
LQ1E4A□□	1/2"	ø6	9	24	21	43	ø28
LQ1E4B□□	3/8"						
LQ1E5A□□	3/4"	ø7	14	29	26	54	ø39
LQ1E5B□□	1/2"						
LQ1E6A□□	1"	ø8	18	39.5	36	69.5	ø49
LQ1E6B□□	3/4"						

## Union Tee: LQ1T



(E) shows the approximate dimension of the inserted tubing from the end of the nut.

### Metric sizes

Model	Applicable tubing O.D.	B	E	F	G	H	L	M
LQ1T11□□	ø4	ø2	10	4	8	—	18.5	11.5
LQ1T12□□	ø3							
LQ1T21□□	ø6	ø4	15	6	12	14	28	16.5
LQ1T22□□	ø4							
LQ1T31□□	ø10	ø5	20	9	18	17	36.5	23
LQ1T32□□	ø8							
LQ1T33□□	ø6							
LQ1T41□□	ø12	ø6	24	9	18	21	43	28
LQ1T42□□	ø10							
LQ1T51□□	ø19	ø7	29	14	28	26	54	39
LQ1T52□□	ø12							
LQ1T61□□	ø25	ø8	39.5	18	36	36	69.5	49
LQ1T62□□	ø19							

### Inch sizes

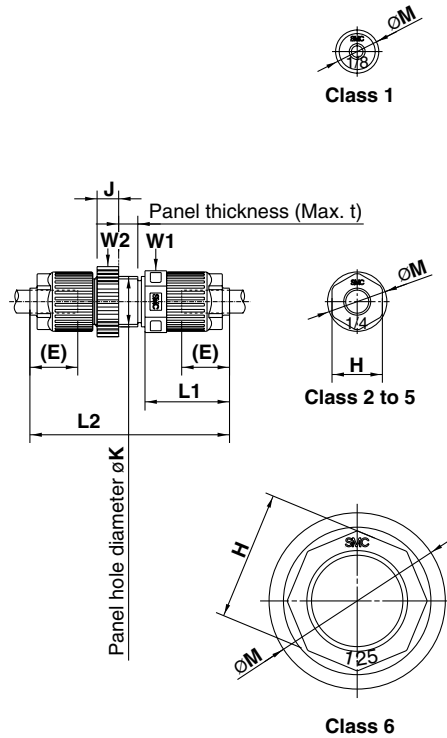
Model	Applicable tubing O.D.	B	E	F	G	H	L	M
LQ1T1A□□	1/8"	ø2	10	4	8	—	18.5	11.5
LQ1T2A□□	1/4"							
LQ1T2B□□	3/16"	ø4	15	6	12	14	28	16.5
LQ1T2C□□	1/8"							
LQ1T3A□□	3/8"	ø5	20	9	18	17	36.5	23
LQ1T3B□□	1/4"							
LQ1T4A□□	1/2"	ø6	24	9	18	21	43	28
LQ1T4B□□	3/8"							
LQ1T5A□□	3/4"	ø7	29	14	28	26	54	39
LQ1T5B□□	1/2"							
LQ1T6A□□	1"	ø8	39.5	18	36	36	69.5	49
LQ1T6B□□	3/4"							

- VC□
- VDW
- VQ
- VX2
- VX□
- VX3
- VXA
- VN□
- LVC
- LVA
- LVH
- LVD
- LVQ
- LQ**
- LVN
- TI/  
TIL
- PA
- PAX
- PB

# Series LQ1

## Dimensions

### Panel Mount Union: LQ1P



(E) shows the approximate dimension of the inserted tubing from the end of the nut.  
 "W" is width across flats dimension.

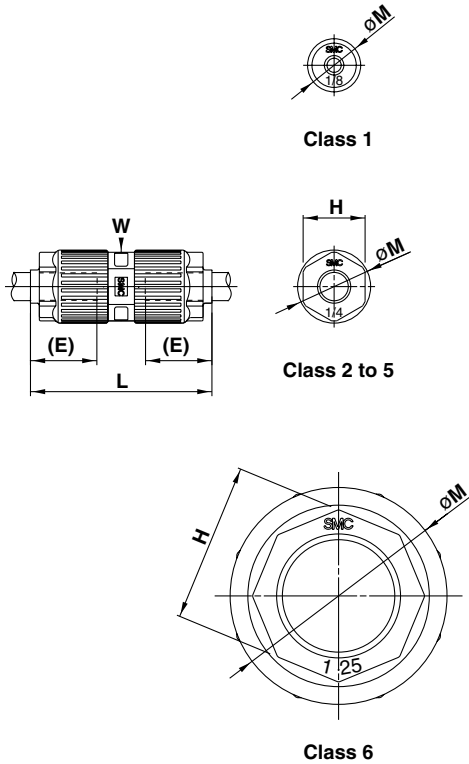
### Metric sizes

Model	Applicable tubing O.D.	E	H	J	K	L1	L2	M	t	W1	W2
LQ1P11□□	ø4	10	—	6	10.5	17	44	ø11.5	8	11	13
LQ1P12□□	ø3										
LQ1P21□□	ø6	15	14	6	14.5	23.5	55.5	ø16.5	8	15	17
LQ1P22□□	ø4										
LQ1P31□□	ø10	20	17	7	20.5	30	69	ø23	8	21	24
LQ1P32□□	ø8										
LQ1P33□□	ø6										
LQ1P41□□	ø12	24	21	7	24.5	35	78.5	ø28	8	26	28
LQ1P42□□	ø10										
LQ1P51□□	ø19	29	26	9	36.5	43.5	100	ø39	9	39	43
LQ1P52□□	ø12										
LQ1P61□□	ø25	39.5	36	10	48.5	58.5	133	ø49	10	51	55
LQ1P62□□	ø19										

### Inch sizes

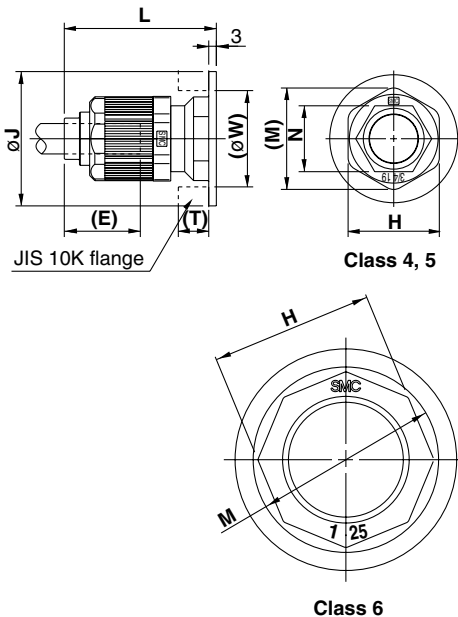
Model	Applicable tubing O.D.	E	H	J	K	L1	L2	M	t	W1	W2
LQ1P1A□□	1/8"	10	—	6	10.5	17	44	ø11.5	8	11	13
LQ1P2A□□	1/4"										
LQ1P2B□□	3/16"	15	14	6	14.5	23.5	55.5	ø16.5	8	15	17
LQ1P2C□□	1/8"										
LQ1P3A□□	3/8"	20	17	7	20.5	30	69	ø23	8	21	24
LQ1P3B□□	1/4"										
LQ1P4A□□	1/2"	24	21	7	24.5	35	78.5	ø28	8	26	28
LQ1P4B□□	3/8"										
LQ1P5A□□	3/4"	29	26	9	36.5	43.5	100	ø39	9	39	43
LQ1P5B□□	1/2"										
LQ1P6A□□	1"	39.5	36	10	48.5	58.5	133	ø49	10	51	55
LQ1P6B□□	3/4"										

## Union: LQ1U



(E) shows the approximate dimension of the inserted tubing from the end of the nut.  
 "W" is width across flats dimension.

## Union Flange: LQ1F



(E) shows the approximate dimension of the inserted tubing from the end of the nut.  
 (W) is the bore size of the JIS flange required for mounting. This flange is sold separately.  
 When ordering nuts as spare parts, size 4 and 5 are as shown below.

LQ1F4□: LQ-4N□□  
 LQ1F5□: LQ-5N□□

### Metric sizes

Model	Applicable tubing O.D.	E	H	L	M	W
LQ1U11□□	ø4	10	—	29	11.5	10
LQ1U12□□	ø3					
LQ1U21□□	ø6	15	14	41	16.5	14
LQ1U22□□	ø4					
LQ1U31□□	ø10	20	17	54	23	17
LQ1U32□□	ø8					
LQ1U33□□	ø6					
LQ1U41□□	ø12	24	21	63	28	21
LQ1U42□□	ø10					
LQ1U51□□	ø19	29	26	77	39	26
LQ1U52□□	ø12					
LQ1U61□□	ø25	39.5	36	102	49	36
LQ1U62□□	ø19					

### Inch sizes

Model	Applicable tubing O.D.	E	H	L	M	W
LQ1U1A□□	1/8"	10	—	29	11.5	10
LQ1U2A□□	1/4"					
LQ1U2B□□	3/16"	15	14	41	16.5	14
LQ1U2C□□	1/8"					
LQ1U3A□□	3/8"	20	17	54	23	17
LQ1U3B□□	1/4"					
LQ1U4A□□	1/2"					
LQ1U4B□□	3/8"	24	21	63	28	21
LQ1U5A□□	3/4"					
LQ1U5B□□	1/2"	29	26	77	39	26
LQ1U6A□□	1"					
LQ1U6B□□	3/4"	39.5	36	102	49	36

### Metric sizes

Model	Applicable tubing O.D.	E	H	J	L	N	M	W	(T)
LQ1F41	ø12	28	30	ø53	60	21	33.1	ø34	12
LQ1F42	ø10				58				
LQ1F51	ø19	32	36	ø58	65.2	26	40	ø41	14
LQ1F52	ø12				63.2				
LQ1F61	ø25	39.5	36	ø69	81.5	—	49	ø51	14
LQ1F62	ø19								

### Inch sizes

Model	Applicable tubing O.D.	E	H	J	L	N	M	W	(T)
LQ1F4A	1/2"	28	30	ø53	60	21	33.1	ø34	12
LQ1F4B	3/8"				58				
LQ1F5A	3/4"	32	36	ø58	65.2	26	40	ø41	14
LQ1F5B	1/2"				63.2				
LQ1F6A	1"	39.5	36	ø69	81.5	—	49	ø51	14
LQ1F6B	3/4"								

- VC□
- VDW
- VQ
- VX2
- VX□
- VX3
- VXA
- VN□
- LVC
- LVA
- LVH
- LVD
- LVQ
- LQ**
- LVN
- TI/  
TIL
- PA
- PAX
- PB

## How to Order

### Tubing connection

LQ2 E 21

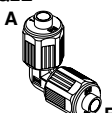
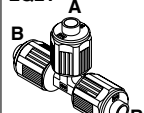

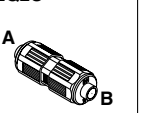
#### Fitting type

Symbol	Type
E	Union elbow
T	Union tee
P	Panel mount union
U	Union

#### Combination of different diameter (on B side)

Class	No.	Applicable tubing size (mm)	Class	No.	Applicable tubing size (inch)
2	1	6 x 4	2	A	1/4" x 5/32"
2	2	4 x 3	2	B	3/16" x 1/8"
3	1	10 x 8	2	C	1/8" x 0.086"
3	2	8 x 6	3	A	3/8" x 1/4"
3	3	6 x 4	3	B	1/4" x 5/32"
4	1	12 x 10	4	A	1/2" x 3/8"
4	2	10 x 8	4	B	3/8" x 1/4"
5	1	19 x 16	5	A	3/4" x 5/8"
5	2	12 x 10	5	B	1/2" x 3/8"

Note) For each body class, the second and later numbers or symbols indicate reducing.

Symbol	Application
Nil	Same tubing size
Refer to the applicable tubing table.	Different diameter tubing can be selected within the same body class.
Union elbow LQ2E 	Union tee LQ2T 
Panel mount union LQ2P 	Union LQ2U 

#### Size combination

Class	No.	Applicable tubing size (mm)	Class	No.	Applicable tubing size (inch)
2	1	6 x 4	2	A	1/4" x 5/32"
2	2	4 x 3	2	B	3/16" x 1/8"
3	1	10 x 8	2	C	1/8" x 0.086"
3	2	8 x 6	3	A	3/8" x 1/4"
3	3	6 x 4	3	B	1/4" x 5/32"
4	1	12 x 10	4	A	1/2" x 3/8"
4	2	10 x 8	4	B	3/8" x 1/4"
5	1	19 x 16	5	A	3/4" x 5/8"
5	2	12 x 10	5	B	1/2" x 3/8"

Note) For each body class, the second and later numbers or symbols indicate reducing.

VC

VDW

VQ

VX2

VX

VX3

VXA

VN

LVC

LVA

L VH

LVD

L VQ

LQ

L VN

T/ TIL

PA

PAX

PB

#### Different diameter tubing order example

Different diameter tubing (with plug-in reducer) can be selected within the same body class.

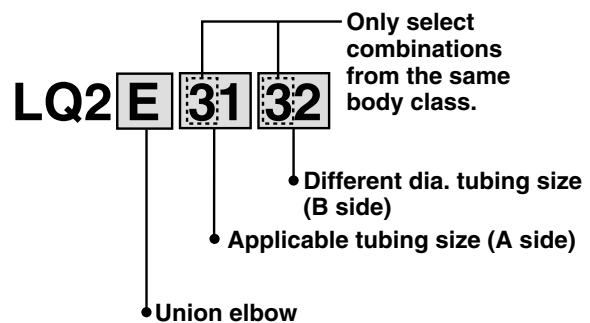
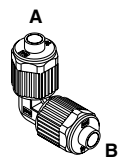
(Example) Union elbow

Body class 3

A side:  $\varnothing 10 \times \varnothing 8$

B side:  $\varnothing 8 \times \varnothing 6$

Order as shown below.



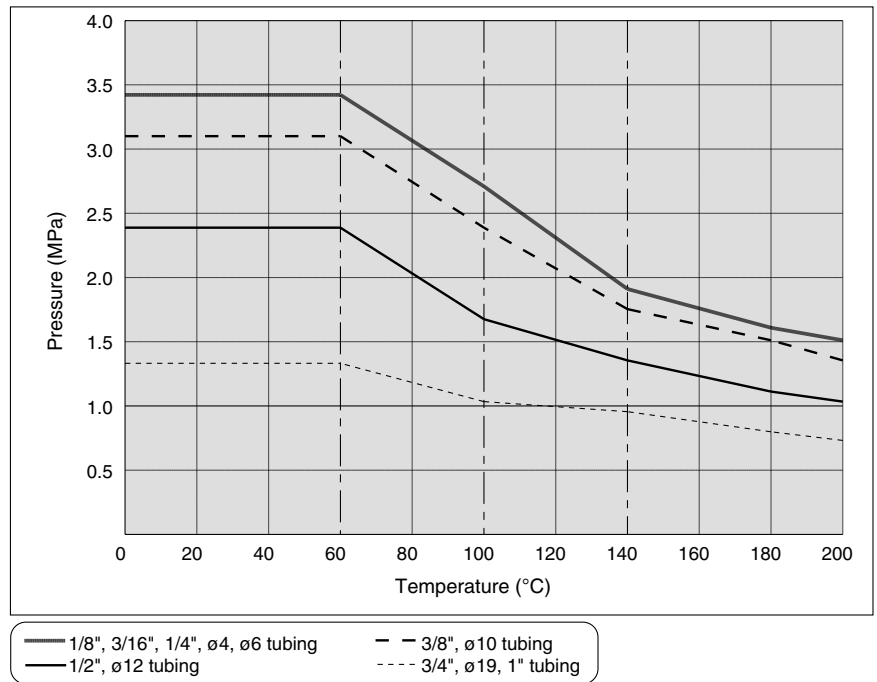
# Series LQ2



## Specifications

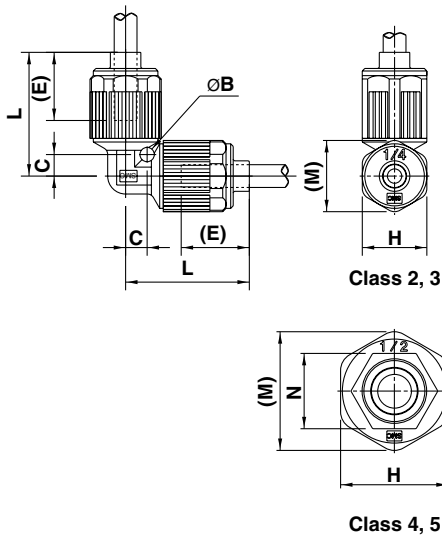
Feature	Model	LQ2□20	LQ2□30	LQ2□40	LQ2□50
Material		NEW PFA			
Maximum operating pressure (at 20°C)		1.0 MPa			
Proof pressure		Refer to the withstand pressure and heat resistance performance curves.			
Operating temperature		0 to 200°C			

## Burst Pressure and Heat Resistance Performance





## Union Elbow: LQ2E



(E) shows the approximate dimension of the inserted tubing from the end of the nut.

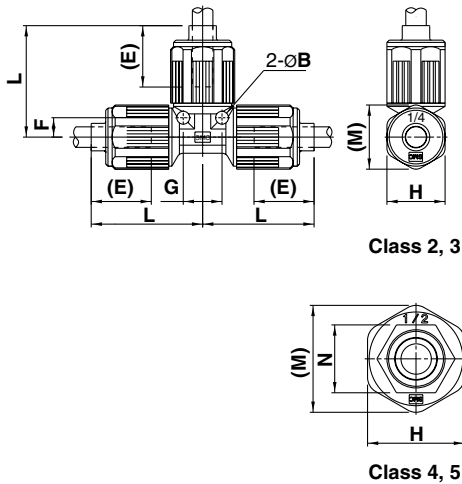
### Metric sizes

Model	Applicable tubing O.D.	B	C	E	H	L	M	N
LQ2E21□□	ø6	ø4	6	19	18	34.5	19.9	-
LQ2E22□□	ø4							
LQ2E31□□	ø10	ø5	9	22	24	43	26.2	-
LQ2E32□□	ø8							
LQ2E33□□	ø6	ø6	11	28	30	52	33.1	21
LQ2E41□□	ø12					51		
LQ2E42□□	ø10	ø7	14	32	36	59.5	40	26
LQ2E51□□	ø19					58.5		
LQ2E52□□	ø12							

### Inch sizes

Model	Applicable tubing O.D.	B	C	E	H	L	M	N
LQ2E2A□□	1/4"	ø4	6	19	18	34.5	19.9	-
LQ2E2B□□	3/16"							
LQ2E2C□□	1/8"	ø5	9	22	24	43	26.2	-
LQ2E3A□□	3/8"							
LQ2E3B□□	1/4"	ø6	11	28	30	52	33.1	21
LQ2E4A□□	1/2"					51		
LQ2E4B□□	3/8"	ø7	14	32	36	59.5	40	26
LQ2E5A□□	3/4"					58.5		
LQ2E5B□□	1/2"							

## Union Tee: LQ2T



(E) shows the approximate dimension of the inserted tubing from the end of the nut.

### Metric sizes

Model	Applicable tubing O.D.	B	E	F	G	H	L	M	N
LQ2T21□□	ø6	ø4	19	6	12	18	34.5	19.9	-
LQ2T22□□	ø4								
LQ2T31□□	ø10	ø5	22	9	18	24	43	26.2	-
LQ2T32□□	ø8								
LQ2T33□□	ø6	ø6	28	11	22	30	52	33.1	21
LQ2T41□□	ø12						51		
LQ2T42□□	ø10	ø7	32	14	28	36	59.5	40	26
LQ2T51□□	ø19						58.5		
LQ2T52□□	ø12								

### Inch sizes

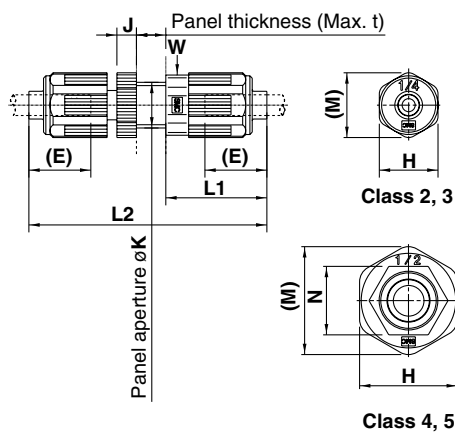
Model	Applicable tubing O.D.	B	E	F	G	H	L	M	N
LQ2T2A□□	1/4"	ø4	19	6	12	18	34.5	19.9	-
LQ2T2B□□	3/16"								
LQ2T2C□□	1/8"	ø5	22	9	18	24	43	26.2	-
LQ2T3A□□	3/8"								
LQ2T3B□□	1/4"	ø6	28	11	22	30	52	33.1	21
LQ2T4A□□	1/2"						51		
LQ2T4B□□	3/8"	ø7	32	14	28	36	59.5	40	26
LQ2T5A□□	3/4"						58.5		
LQ2T5B□□	1/2"								

- VC□
- VDW
- VQ
- VX2
- VX□
- VX3
- VXA
- VN□
- LVC
- LVA
- LVH
- LVD
- LVQ
- LQ**
- LVN
- TI/  
TIL
- PA
- PAX
- PB

# Series LQ2

## Dimensions

### Panel Mount Union: LQ2P



#### Metric sizes

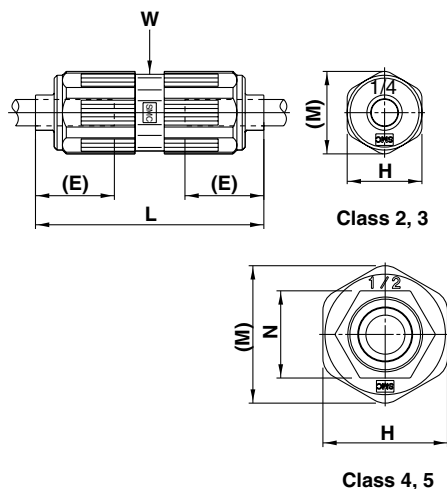
Model	Applicable tubing O.D.	E	H	J	K	L1	L2	M	N	t	W
LQ2P21□□	ø6	19	18	6	ø14.5	31	73	19.9	—	7	16
LQ2P22□□	ø4										
LQ2P31□□	ø10	22	24	6	ø20.5	36	83	26.2	—	7	24
LQ2P32□□	ø8					34.5	82				
LQ2P33□□	ø6	28	30	9	ø24.5	42	95	33.1	21	7	30
LQ2P41□□	ø12					40	93				
LQ2P42□□	ø10					49	110				
LQ2P51□□	ø19	32	36	9	ø30.5	49	110	40	26	10	36
LQ2P52□□	ø12					47	108				

#### Inch sizes

Model	Applicable tubing O.D.	E	H	J	K	L1	L2	M	N	t	W
LQ2P2A□□	1/4"	19	18	6	ø14.5	31	73	19.9	—	7	16
LQ2P2B□□	3/16"										
LQ2P2C□□	1/8"	22	24	6	ø20.5	36	83	26.2	—	7	24
LQ2P3A□□	3/8"					34.5	82				
LQ2P3B□□	1/4"					42	95				
LQ2P4A□□	1/2"	28	30	9	ø24.5	40	93	33.1	21	7	30
LQ2P4B□□	3/8"					49	110				
LQ2P5A□□	3/4"	32	36	9	ø30.5	49	110	40	26	10	36
LQ2P5B□□	1/2"					47	108				

(E) shows the approximate dimension of the inserted tubing from the end of the nut.  
"W" is width across flats dimension.

### Union: LQ2U



#### Metric sizes

Model	Applicable tubing O.D.	E	H	L	M	N	W
LQ2U21□□	ø6	19	18	55	19.9	—	16
LQ2U22□□	ø4						
LQ2U31□□	ø10	22	24	65	26.2	—	24
LQ2U32□□	ø8			64			
LQ2U33□□	ø6	28	30	77	33.1	21	30
LQ2U41□□	ø12			75			
LQ2U42□□	ø10			88			
LQ2U51□□	ø19	32	36	88	40	26	36
LQ2U52□□	ø12			86			

#### Inch sizes

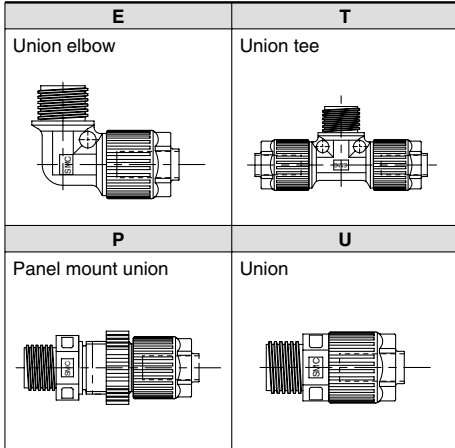
Model	Applicable tubing O.D.	E	H	L	M	N	W
LQ2U2A□□	1/4"	19	18	55	19.9	—	16
LQ2U2B□□	3/16"						
LQ2U2C□□	1/8"	22	24	65	26.2	—	24
LQ2U3A□□	3/8"			64			
LQ2U3B□□	1/4"			77			
LQ2U4A□□	1/2"	28	30	75	33.1	21	30
LQ2U4B□□	3/8"			88			
LQ2U5A□□	3/4"	32	36	88	40	26	36
LQ2U5B□□	1/2"			86			

(E) shows the approximate dimension of the inserted tubing from the end of the nut.  
"W" is width across flats dimension.

## How to Order Space Saving Fittings

**LQ1 E 21 - S**

Fitting type



One nut (including insert bushing) of the nuts is not attached.  
Please refer to below piping example.

Combination of different diameter (on B side)

Class	No.	Applicable tubing size (mm)
1	1	4 x 3
1	2	3 x 2
2	1	6 x 4
2	2	4 x 3
3	1	10 x 8
3	2	8 x 6
3	3	6 x 4
4	1	12 x 10
4	2	10 x 8
5	1	19 x 16
5	2	12 x 10
6	1	25 x 22
6	2	19 x 16

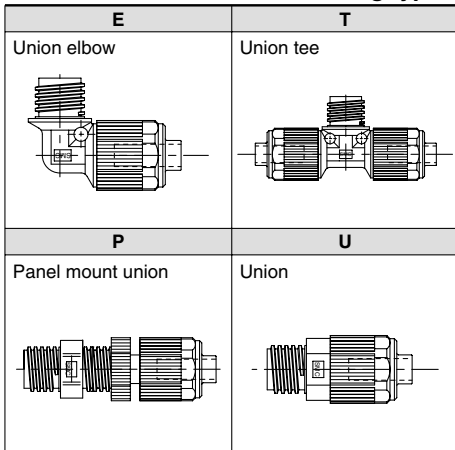
Class	No.	Applicable tubing size (mm)
1	A	1/8" x 0.086"
—	—	—
2	A	1/4" x 5/32"
2	B	3/16" x 1/8"
2	C	1/8" x 0.086"
3	A	3/8" x 1/4"
3	B	1/4" x 5/32"
4	A	1/2" x 3/8"
4	B	3/8" x 1/4"
5	A	3/4" x 5/8"
5	B	1/2" x 3/8"
6	A	1" x 7/8"
6	B	3/4" x 5/8"



Note) For each body class, the second and later numbers or symbols indicate reducing. However, in case of size 1, the tubing cannot be changed by reducing.

**LQ2 E 21 - S**

Fitting type



One nut (including insert bushing) of the nuts is not attached.  
Please refer to below piping example.

⑤ Applicable tubing size

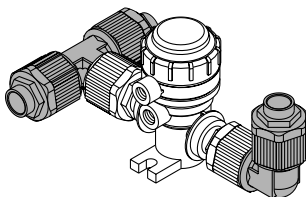
Class	No.	Applicable tubing size (mm)
2	1	6 x 4
2	2	4 x 3
3	1	10 x 8
3	2	8 x 6
3	3	6 x 4
4	1	12 x 10
4	2	10 x 8
5	1	19 x 16
5	2	12 x 10

Class	No.	Applicable tubing size (mm)
2	A	1/4" x 5/32"
2	B	3/16" x 1/8"
2	C	1/8" x 0.086"
3	A	3/8" x 1/4"
3	B	1/4" x 5/32"
4	A	1/2" x 3/8"
4	B	3/8" x 1/4"
5	A	3/4" x 5/8"
5	B	1/2" x 3/8"



Note) For each body class, the second and later numbers or symbols indicate reducing.

### Piping Example



VC □

VDW

VQ

VX2

VX □

VX3

VXA

VN □

LVC

LVA

LVH

LVD

LVQ

**LQ**

LVN

TI/  
TIL

PA

PAX

PB

# Series LQ<sup>1</sup>/<sub>2</sub>

## Options

### Panel mounting nut

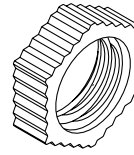
LQN P 2

Applicable fitting

Symbol		Class
LQ1	LQ2	
11	—	1
12	2	2
13	3	3
14	4	4
15	5	5
16	—	6

Packaging

Nil	Clean packaging Class M3.5
1	Standard packaging Class M5.5



Used to secure a panel with a panel mount union.

### Nut insert bushing

LQ 2 U 03

\* The U type is recommended when changing tubing sizes.

Applicable fitting

Symbol	Application
Nil	For LQ2
1	For LQ1

Class

Symbol	Class
1	1
2	2
3	3
4	4
5	5
6	6

Type of parts

Symbol	Parts
U	Insert bushing + Nut
B	Insert bushing
N	Nut

Packaging

Nil	Clean packaging Class M3.5
1	Standard packaging Class M5.5

Applicable tubing size

Symbol	Connection tubing size	Class					
		LQ1	LQ1, LQ2	LQ1	LQ1	LQ1	LQ1
		1	2	3	4	5	6

Metric sizes

03	ø3 x ø2	○	○				
04	ø4 x ø3	○	○				
06	ø6 x ø4		○	○			
08	ø8 x ø6			○			
10	ø10 x ø8			○	○		
12	ø12 x ø10				○	○	
19	ø19 x ø16					○	○
25	ø25 x ø22.5						○

Symbol	Connection tubing size	Class					
		LQ1	LQ1, LQ2	LQ1	LQ1	LQ1	LQ1
		1	2	3	4	5	6

Inch sizes

03	1/8" x 0.086"	○	○				
05	3/16" x 1/8"		○				
07	1/4" x 5/32"		○	○			
11	3/8" x 1/4"			○	○		
13	1/2" x 3/8"				○	○	
19	3/4" x 5/8"					○	○
25	1" x 7/8"						○



Note) In case of size 1, the tubing cannot be changed by reducing.

### Blanking plug

LQ 2 P 07

Packaging

Nil	Clean packaging Class M3.5
1	Standard packaging Class M5.5

Applicable tubing size

Symbol	Connection tubing size	Class					
		LQ1	LQ1, LQ2	LQ1	LQ1	LQ1	LQ1
		1	2	3	4	5	6

Metric sizes

03	ø3 x ø2	○	●				
04	ø4 x ø3	○	●				
06	ø6 x ø4		○	●			
08	ø8 x ø6			●			
10	ø10 x ø8			○	●		
12	ø12 x ø10				○	●	
19	ø19 x ø16					○	●
25	ø25 x ø22.5						○

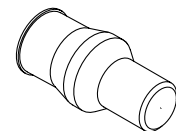
Symbol	Connection tubing size	Class					
		LQ1	LQ1, LQ2	LQ1	LQ1	LQ1	LQ1
		1	2	3	4	5	6

Inch sizes

03	1/8" x 0.086"	○	●				
05	3/16" x 1/8"		●				
07	1/4" x 5/32"		○	●			
11	3/8" x 1/4"			○	●		
13	1/2" x 3/8"				○	●	
19	3/4" x 5/8"					○	●
25	1" x 7/8"						○

○ Basic size ● With reducer

○ Basic size ● With reducer



Used to block fittings which are not being used.

# Series LQ<sub>2</sub> Insertion Tool

## Fittings

### Changing tubing sizes

The tubing size can be changed within the same body class (body size) by replacing the nut and insert bushing. However, in case of size 1, the tubing cannot be changed by reducing.

Body class	Tubing O.D.														
	Metric sizes								Inch sizes						
	ø3	ø4	ø6	ø8	ø10	ø12	ø19	ø25	1/8"	3/16"	1/4"	3/8"	1/2"	3/4"	1"
1	○	○	—	—	—	—	—	—	○	—	—	—	—	—	—
2	●	●	○	—	—	—	—	—	●	●	○	—	—	—	—
3	—	—	●	●	○	—	—	—	—	—	●	○	—	—	—
4	—	—	—	—	●	○	—	—	—	—	—	●	○	—	—
5	—	—	—	—	—	●	○	—	—	—	—	—	●	○	—
6	—	—	—	—	—	—	●	○	—	—	—	—	—	●	○


### Parts composition

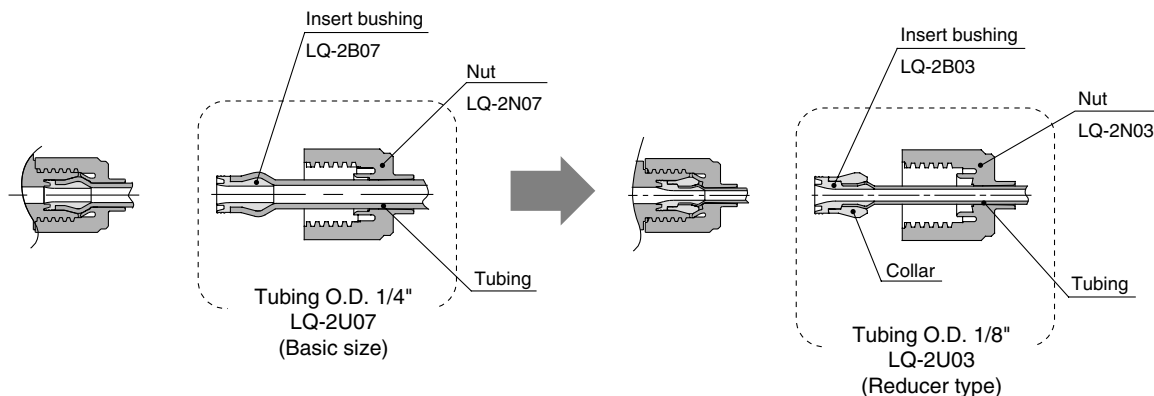
	Component parts		
	Nut	Insert	Collar (Insert assembly)
○ Basic size	Yes	Yes	No
● Reducer type	Yes	Yes	Yes

### Changing the tubing size

Example) Changing the tubing from an O.D. 1/4" to O.D. 1/8" in LQ2 body class 2.

Prepare an insert bushing and nut for 1/8" O.D. tubing (LQ-2U03) and change the tubing size.  
(Refer to the section on how to order fitting parts.)

 Note) Tubing is sold separately.

VC 

VDW

VQ

VX2

VX 

VX3

VXA

VN 

LVC

LVA

LVH

LVD

LVQ

LQ

LVN

TI/  
TIL

PA

PAX

PB

## Special Tools

### How to order insertion tool

**LQ-G J** [ ] - [ ] - [ ]

**Insert pin material**

Nil	Resin
S	Stainless (J/K type only)

**Insert pin/Holder type**

Nil	Metric size
N	Inch size

Note 1) Compatible pins and holders are included with all sizes. (with parts case)

**Option (L/M type only)**

Symbol	Option
Nil	None
B	With brackets

**Type**

Symbol	Body class	J type	K type
J · K	1, 2		
L · M	1, 2, 3, 4, 5, 6		

**Option**

Description	Part no.
Bracket assembly	LQ-GBL

**Table 1 Tubing size symbols**

Type	Body class	Tubing O.D.															
		Metric sizes								Tubing outside diameter							
		ø3	ø4	ø6	ø8	ø10	ø12	ø19	ø25	1/8"	3/16"	1/4"	3/8"	1/2"	3/4"	1"	
J	1	03	04	—	—	—	—	—	—	03	—	—	—	—	—	—	
	2	—	04	06	—	—	—	—	—	03	05	07	—	—	—	—	
L	1	03	04	—	—	—	—	—	—	03	—	—	—	—	—	—	
	2	—	04	06	—	—	—	—	—	03	05	07	—	—	—	—	
	3	—	—	06	08	10	—	—	—	—	—	07	11	—	—	—	
	4	—	—	—	—	10	12	—	—	—	—	—	11	13	—	—	
	5	—	—	—	—	—	12	19	—	—	—	—	—	13	19	—	
	6	—	—	—	—	—	—	19	25	—	—	—	—	—	19	25	—

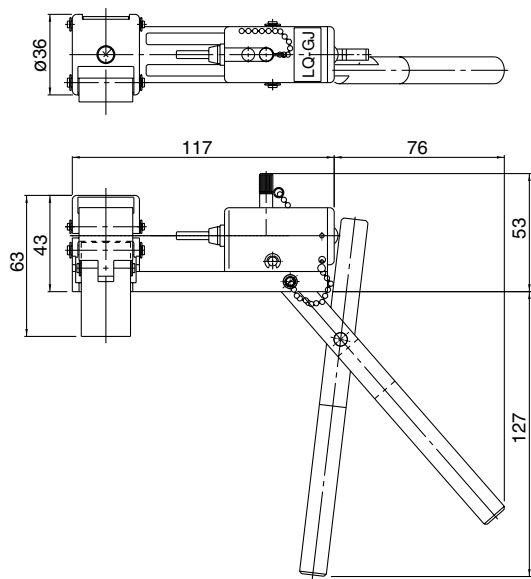
### Replacement parts

Description	Part No.								
Insert pin holder assembly (with the parts case)	<p><b>LQ-GP J</b> [ ] - [ ]</p> <p>Type</p> <p>Insert pin material (J/K type only)</p> <table border="1"> <tr> <td>Nil</td> <td>Resin</td> </tr> <tr> <td>S</td> <td>Stainless steel</td> </tr> </table> <p>Insert pin/Holder type</p> <table border="1"> <tr> <td>Nil</td> <td>Metric sizes</td> </tr> <tr> <td>N</td> <td>Inch sizes</td> </tr> </table>	Nil	Resin	S	Stainless steel	Nil	Metric sizes	N	Inch sizes
Nil	Resin								
S	Stainless steel								
Nil	Metric sizes								
N	Inch sizes								
Insert pin (single)	<p><b>LQ-GP 2 J</b> [ ] - <b>07</b></p> <p>Body class (Refer to Table 1)</p> <p>Type</p> <p>Tubing size symbol (Refer to Table 1)</p> <p>Insert pin material (J/K type only)</p> <table border="1"> <tr> <td>Nil</td> <td>Resin</td> </tr> <tr> <td>S</td> <td>Stainless steel</td> </tr> </table>	Nil	Resin	S	Stainless steel				
Nil	Resin								
S	Stainless steel								
Holder (single)	<p><b>LQ-GH J</b> - <b>07</b></p> <p>Tubing size symbol (Refer to Table 1)</p> <p>Type</p>								

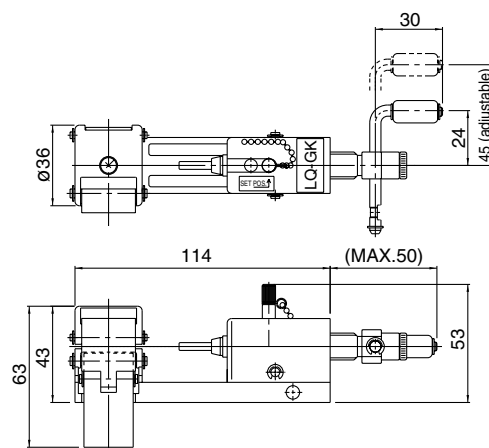
Note 1) Replacement part type J shows the parts for LQ-GJ and LQ-GK. Replacement part type L shows the parts for LQ-GL and LQ-GM.

## Dimensions

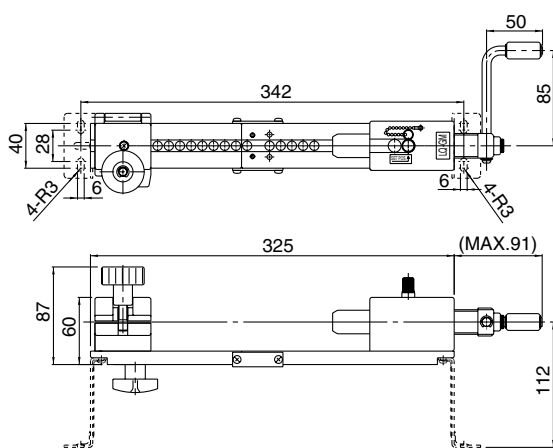
### LQ-GJ



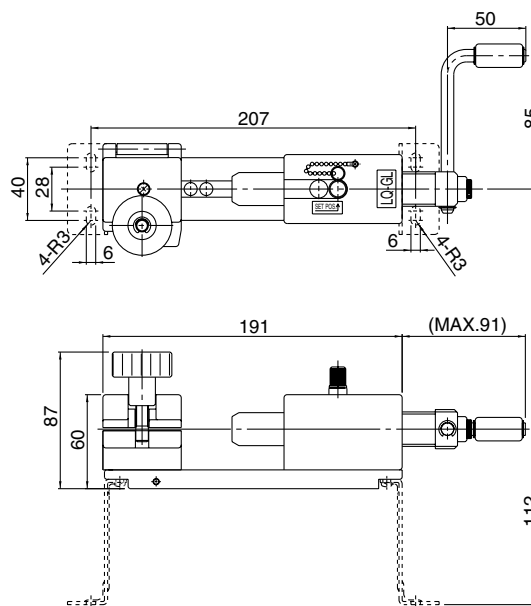
### LQ-GK



### LQ-GM



### LQ-GL



VC

VDW

VQ

VX2

VX

VX3

VXA

VN

LVC

LVA

L VH

LVD

LVQ

**LQ**

LVN

TI/  
TIL

PA

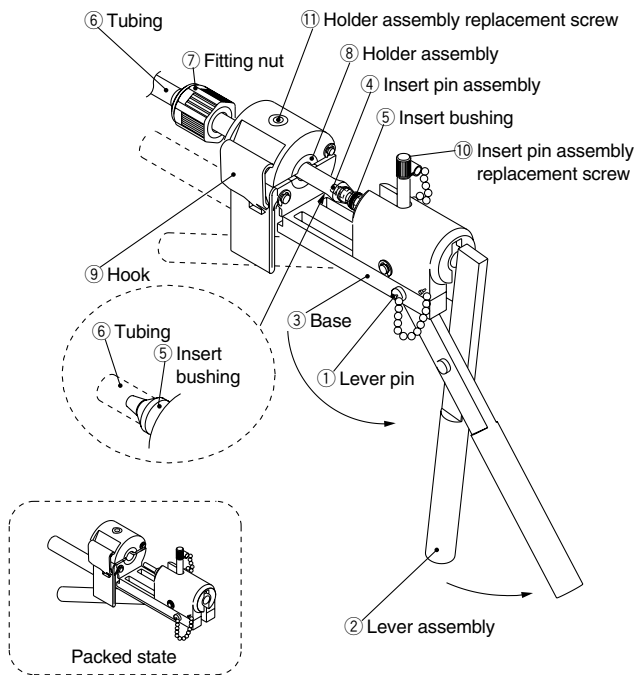
PAX

PB

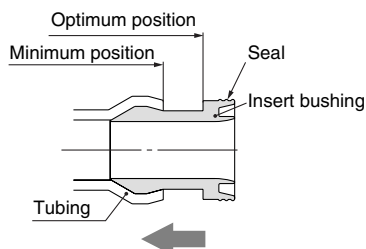
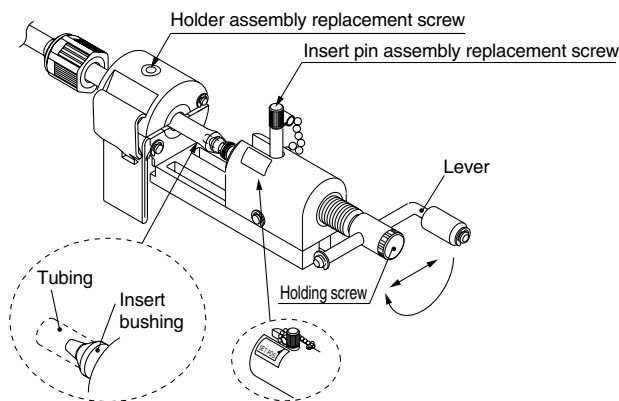
## Fitting Assembly Procedure

Assemble fittings following the procedure shown below.

### J type



### K type



### J type fitting assembly procedure

- 1 Pull out the lever pin ①. Rotate the lever assembly ② to align the holes on the lever assembly ② and the base ③. Insert the lever pin ① into the holes to fix the lever assembly ②.
  - 2 Place the insert bushing ⑤ on the insert pin assembly ④.
  - 3 Cut the end of the tubing ⑥ at a right angle and pass it through the fitting nut ⑦. After placing the tubing ⑥ in the holder assembly ⑧, push it onto the insert bushing ⑤ until it stops and clamp it with the hook ⑨.
- ⚠ Caution**
- When the tubing ⑥ is curved, straighten it out before using it.
  - The tubing ⑥ may slip if there is oil or dust, etc., on the holder assembly ⑧. Remove the contamination using alcohol or another suitable cleaner.
- 4 Press the insert bushing ⑤ into the tubing ⑥ by turning the lever assembly ②.
  - 5 To replace the insert pin assembly ④ and holder assembly ⑧, use the insert pin assembly replacement screw ⑩ and the holder assembly replacement screws ⑪, respectively.


### K type fitting assembly procedure

- For procedure to set and press fit the insert pin assembly, refer to L, M type fitting assembly procedures.
- For procedure to set the tubing, refer to J type procedure.

- 1 } Refer to J type assembly procedure.
- 5 }
- 6 Tighten the fitting nut ⑦ until it reaches the prescribed position on the body (end face). As a guide, refer to the proper tightening torques shown below.

#### Nut tightening torque for piping

Body class	Torque (Nm)	
	LQ1	LQ2
2	0.3 to 0.4	1.5 to 2.0

 Note 1) In case of body class 1, the nut should be tightened manually.

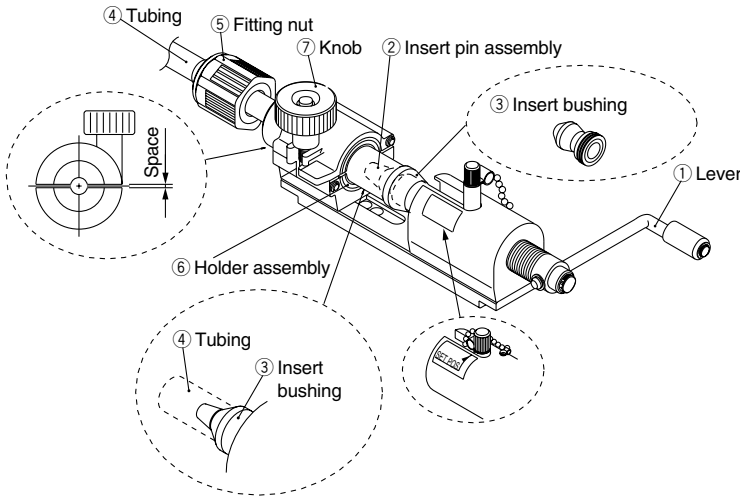
#### ⚠ Precautions on installation

- Be careful not to scratch or dent the seal of the insert bushing. (Refer to the illustration on the left.)
- When the insert bushing inserted, its tubing end should be closer to seal side than the minimum position. (Refer to the illustration on the left.)

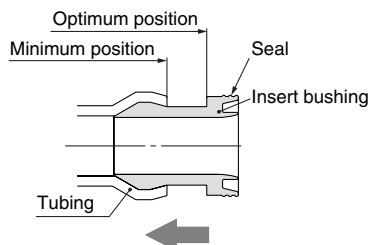
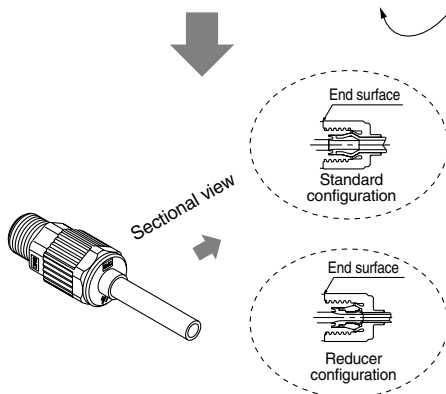
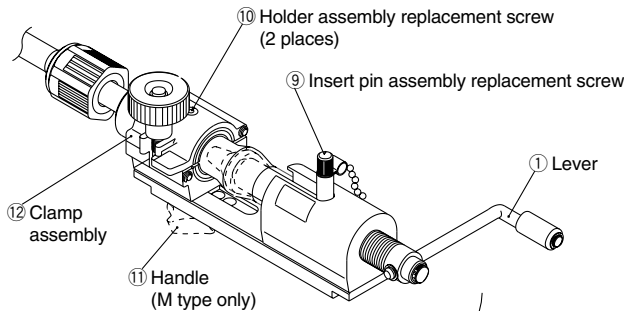


Assemble fittings following the procedure shown below.

## L type



## M type



## L/M type fitting assembly procedure

- 1 Turn the lever ① and move to SET POS.
- 2 Place the insert bushing ③ on the insert pin assembly ②.
- 3 Cut the end of the tubing ④ at a right angle and pass it through the fitting nut ⑤. After placing the tubing ④ in the holder assembly ⑥, push it onto the insert bushing ③ until it stops and clamp it with the knob ⑦. As a guide when tightening the tubing ④ with the knob ⑦, maintain a uniform gap on both sides of the holder.
- ⚠ Caution**
  - When the tubing ④ is curved, straighten it out before using it.
  - The tubing ④ may slip if there is oil or dust, etc., on the holder assembly ⑥. Remove the contamination using alcohol or another suitable cleaner.
- 4 Press the insert bushing ③ into the tubing ④ by turning the lever ①. (Pressing in can be accomplished with 2 or 3 turns of the lever ①.)
- 5 To replace the insert pin assembly ② and holder assembly ⑥, use the insert pin assembly replacement screw ⑨ and the holder assembly replacement screws ⑩, respectively.
- 6 In case of M type for short piping, remove the handle ⑪, slide the clamp assembly ⑫ to attain the specified length, then secure it again with the handle.
- 7 Tighten the fitting nut ⑤ to the prescribed position on the body (end face). As a guide, refer to the proper tightening torques shown below.

### Nut tightening torque for piping

Body class	Torque (Nm)	
	LQ1	LQ2
2	0.3 to 0.4	1.5 to 2.0
3	0.8 to 1.0	3.0 to 3.5
4	1.0 to 1.2	7.5 to 9
5	2.5 to 3.0	11 to 13
6	5.5 to 6.0	—

**Note 1)** In case of body class 1, the nut should be tightened manually.

### ⚠ Precautions on installation

- Be careful not to scratch or dent the seal of the insert bushing. (Refer to the illustration on the left.)
- When the insert bushing inserted, its tubing end should be closer to seal side than the minimum position. (Refer to the illustration on the left.)

VC□

VDW

VQ

VX2

VX□

VX3

VXA

VN□

LVC

LVA

LVH

LVD

LVQ

LQ

LVN

TI/  
TIL

PA

PAX

PB