

# Stainless Steel 316 Fittings

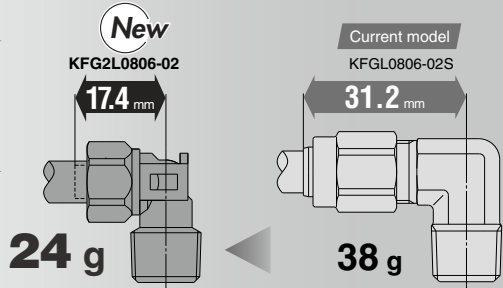
## KFG2 Series

### Compact and Light

RoHS

Dimensions **Approx. 44%** Shorter  
\* KFG2L0806-02

Weight **Approx. 37%** Lighter  
\* KFG2L0806-02



Material

# Stainless steel 316

Rubber material is not used.  
(Except swivel elbow)

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

Fluid temperature

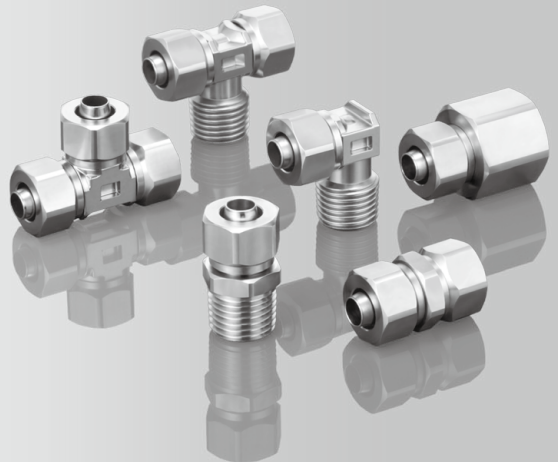
**-65 to 260°C**  
(Swivel elbow: -5 to 150°C)

Applicable tubing

**Metric size, Inch size**

Connection thread

**R, Rc, NPT**



KQ2

KQB2

KS  
KX

KM

KF

M

H/DL  
L/LL

KC

KK

KK130

DM

KDM

KB

KR

KA

KQG2

KG

KFG2

MS

KKA

KP

LQ

MQR

T

IDK

# Stainless Steel 316 Insert Fittings *KFG2 Series*

## Compact and light

Dimensions: Approx. **44%** shorter

Weight: Approx. **37%** lighter

\* Comparison with KFG L0806-02S

## Material: Stainless steel 316

Rubber material is not used.

(Except swivel elbow)

## Fluid temperature

**-65 to 260°C**

(Swivel elbow: -5 to 150°C)

## Applicable tubing material

FEP • PFA • Modified PTFE

2-layer soft fluoropolymer

Nylon • Soft nylon • Polyolefin

Polyurethane\* • Soft polyurethane\*

Hard polyurethane\*

Soft polyolefin\*

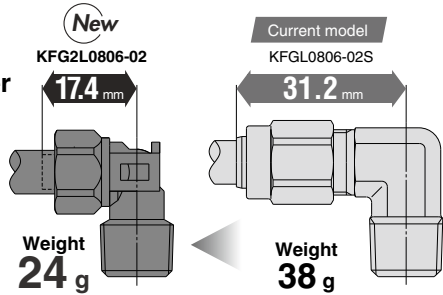
Antistatic soft nylon\*

Antistatic polyurethane\*

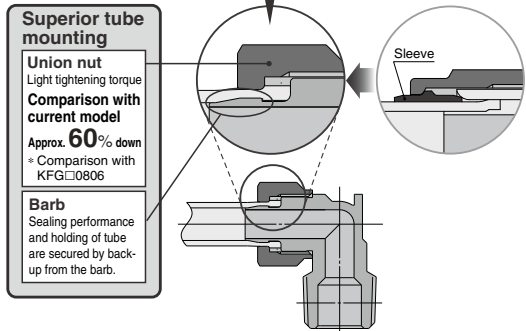
Note) For tubes marked \*, check the appropriate size.  
(Pages 322, 328)

## Grease-free

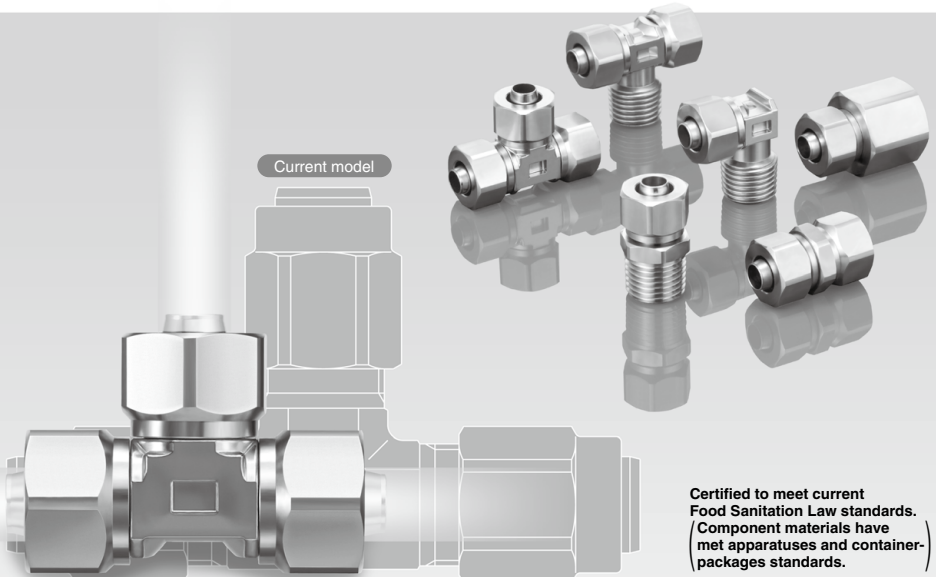
## Can be used with steam.



**Sleeveless** Sleeveless sealing structure makes replacement parts for maintenance unnecessary.



Applicable tubing	Connection thread	Page
<b>Metric size</b>	<b>R, Rc</b>	<b>P.322 to 326</b>
<b>Inch size</b>	<b>NPT</b>	<b>P.328 to 331</b>



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

### Variations

#### Male Connector

**KFG2H**

 Metric ..... P. 323  
 Inch ..... P. 329

#### Bulkhead Union

**KFG2E**

 Metric ..... P. 325  
 Inch ..... P. 330

#### Male Elbow

**KFG2L**

 Metric ..... P. 323  
 Inch ..... P. 329

#### Union Elbow

**KFG2L**

 Metric ..... P. 325  
 Inch ..... P. 330

#### Male Branch Tee

**KFG2T**

 Metric ..... P. 324  
 Inch ..... P. 329

#### Swivel Elbow

**KFG2V**

 Metric ..... P. 325  
 Inch ..... P. 331

#### Straight Union

**KFG2H**

 Metric ..... P. 324  
 Inch ..... P. 330

#### Female Connector

**KFG2F**

 Metric ..... P. 326  
 Inch ..... P. 331

#### Union Tee

**KFG2T**

 Metric ..... P. 324  
 Inch ..... P. 330

#### Union Nut

**KFG2N**

 Metric ..... P. 326  
 Inch ..... P. 331

**KQ2**
**KQB2**
**KS**  
**KX**
**KM**
**KF**
**M**
**H/DL**  
**L/LL**
**KC**
**KK**
**KK130**
**DM**
**KDM**
**KB**
**KR**
**KA**
**KQG2**
**KG**
**KFG2**
**MS**
**KKA**
**KP**
**LQ**
**MQR**
**T**
**IDK**

# Stainless Steel 316 Insert Fittings

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

## KFG2 Series

RoHS



### Applicable Tubing

Tubing material <sup>Note 1)</sup>	FEP, PFA, Modified PTFE, 2-layer soft fluoropolymer, Nylon, Soft nylon, Polyurethane, Soft polyurethane, Polyolefin, Soft polyolefin, Antistatic soft nylon, Antistatic polyurethane, Hard polyurethane
Tubing size	ø4 x ø2.5, ø4 x ø3, ø6 x ø4, ø8 x ø6, ø10 x ø7.5, ø10 x ø8, ø12 x ø9, ø12 x ø10, ø16 x ø13

Note 1) For soft polyurethane tubing, hard polyurethane tubing, antistatic polyurethane tubing, water cannot be used.

Series	Tubing material	Tubing O.D. x I.D. (mm)								
		ø4 x ø2.5	ø4 x ø3	ø6 x ø4	ø8 x ø6	ø10 x ø7.5	ø10 x ø8	ø12 x ø9	ø12 x ø10	ø16 x ø13
TH	FEP	●	—	●	●	●	●	●	●	—
TL	Super PFA	—	●	●	●	—	●	—	●	—
TLM	PFA	●	—	●	●	—	●	—	●	●
TD	Modified PTFE	●	—	●	●	—	●	—	—	—
TQ	Special fluoropolymer	●	—	●	●	—	●	—	—	—
T	Nylon	●	●	●	●	●	—	●	—	●
TS	Soft nylon	●	—	●	●	—	●	—	●	—
TU	Polyurethane	●	—	●	—	—	—	—	—	—
TPH	Polyolefin	●	—	●	●	—	●	—	—	—
TUS	Soft polyurethane	●	—	●	—	—	—	—	—	—
TUH	Hard polyurethane (High pressure)	●	—	—	—	—	—	—	—	—
TPS	Soft polyolefin	●	—	●	—	—	—	—	—	—
TAS	Antistatic soft nylon	●	—	●	—	—	—	—	—	—
TAU	Antistatic polyurethane	●	—	●	—	—	—	—	—	—

### Spare Parts

Description	Tubing O.D.	Part no.	Material
Bulkhead nut	ø4	KFG204-P01	Stainless steel 316
	ø6	KFG206-P01	
	ø8	KFG208-P01	
	ø10	KFG210-P01	
	ø12	KFG212-P01	
	ø16	KFG216-P01	

### Specifications

Fluid	Air, Water, Steam, Turbine oil class 1 (ISO VG32) <sup>Note 2) Note 3)</sup>
Operating pressure range <sup>Note 1)</sup>	–100 kPa to 1 MPa <sup>Note 4)</sup>
Proof pressure	3.0 MPa
Ambient and fluid temperature	–65 to 260°C (No freezing) <sup>Note 4)</sup> [Swivel elbow and with sealant types: –5 to 150°C]
Lubricant	Grease-free specification
Seal on the threads	Without sealant (With sealant type compatible) <sup>Note 5)</sup>

Note 1) Avoid using in a vacuum holding application such as a leak tester, since there is leakage.

Note 2) Consult with SMC regarding applicable tubing separately.

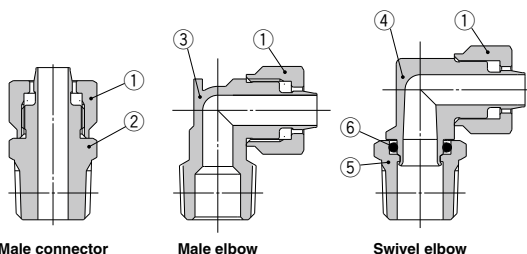
Note 3) Using special FKM that is resistant even when steam is used.

Note 4) Check the operating pressure range and operating temperature range of the tube.

Note 5) With sealant: Suffix "S" to the end of part number.

Note 6) Union nut is shipped together.

### Construction



Male connector

Male elbow

Swivel elbow

### Principal Parts Material

No.	Description	Material	Note
1	Union nut	Stainless steel 316	Fluoro coated
2	Male connector body	Stainless steel 316	
3	Male elbow body	Stainless steel 316	
4	Swivel elbow body	Stainless steel 316	
5	Stud	Stainless steel 316	
6	O-ring	Special FKM	Fluoro coated

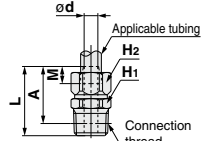
## Dimensions

### Male Connector: KFG2H



Applicable tubing size (mm)		Connection thread R	Model	Width across flat		L	M	ød	A*	Effective area (mm <sup>2</sup> )	Weight (g)
O.D.	I.D.			H1	H2						
ø4	ø2.5	1/8	KFG2H0425-01	10	8	19.4	5	1.8	16.3	1.6	8
		1/4	KFG2H0425-02	14		23.8			19.1		14
ø4	ø3	1/8	KFG2H0403-01	10	8	19.4	5	2.3	16.3	2.6	8
		1/4	KFG2H0403-02	14		23.8			19.1		14
ø6	ø4	1/8	KFG2H0604-01	10	10	20.9	5.8	3.3	17.8	6	10
		1/4	KFG2H0604-02	14		25.3			20.6		16
ø8	ø6	1/8	KFG2H0806-01	14	14	23.3	6.6	5.3	20.2	17	18
		1/4	KFG2H0806-02			26.7			22		24
		3/8	KFG2H0806-03			17			28.1		23
ø10	ø7.5	1/4	KFG2H1075-02	17	17	29.7	7.6	6.8	25	30	34
		3/8	KFG2H1075-03			30.1			27.1		41
		1/2	KFG2H1075-04			22			33.5		27.1
ø10	ø8	1/4	KFG2H1008-02	17	17	29.7	7.3	9	25	35	33
		3/8	KFG2H1008-03			30.1			27.1		40
		1/2	KFG2H1008-04			22			33.5		27.1
ø12	ø9	1/4	KFG2H1209-02	17	17	31.3	8.5	8	26.6	45	33
		3/8	KFG2H1209-03			31.7			28.7		40
		1/2	KFG2H1209-04			22			35.1		28.7
ø12	ø10	1/4	KFG2H1210-02	17	17	31.3	9	9	26.6	57	30
		3/8	KFG2H1210-03			31.7			28.7		38
		1/2	KFG2H1210-04			22			35.1		28.7
ø16	ø13	3/8	KFG2H1613-03	22	22	33.1	9.3	12	28	101	51
		1/2	KFG2H1613-04			36.3			29.9		67

\* Reference dimensions after installation of R thread

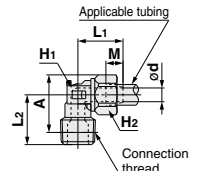


### Male Elbow: KFG2L



Applicable tubing size (mm)		Connection thread R	Model	Width across flat		L1	L2	M	ød	A*	Effective area (mm <sup>2</sup> )	Weight (g)
O.D.	I.D.			H1	H2							
ø4	ø2.5	1/8	KFG2L0425-01	10	8	13.5	5	1.8	13.8	1.6	10	
		1/4	KFG2L0425-02						15.9		15.6	14
ø4	ø3	1/8	KFG2L0403-01	10	8	13.5	5	2.3	13.8	2.6	10	
		1/4	KFG2L0403-02						15.9		15.6	14
ø6	ø4	1/8	KFG2L0604-01	10	10	15	5.8	3.3	16	6	12	
		1/4	KFG2L0604-02						17		17.8	16
ø8	ø6	1/8	KFG2L0806-01	12	14	17.4	6.6	5.3	20.4	12	20	
		1/4	KFG2L0806-02						19.2		22.2	24
		3/8	KFG2L0806-03						19.6		16	27
ø10	ø7.5	1/4	KFG2L1075-02	15	17	20.9	7.6	6.8	25.6	23	38	
		3/8	KFG2L1075-03						21.3		26	41
		1/2	KFG2L1075-04						24.5		27.5	51
ø10	ø8	1/4	KFG2L1008-02	15	17	20.9	7.3	9	25.6	30	37	
		3/8	KFG2L1008-03						21.3		27.5	41
		1/2	KFG2L1008-04						24.5		27.5	50
ø12	ø9	1/4	KFG2L1209-02	16	17	23.5	8.5	8	25.6	27	41	
		3/8	KFG2L1209-03						21.3		35	45
		1/2	KFG2L1209-04						24.5		27.5	57
ø12	ø10	1/4	KFG2L1210-02	16	17	23.5	8.5	9	25.6	34	42	
		3/8	KFG2L1210-03						21.3		44	43
		1/2	KFG2L1210-04						24.5		27.5	53
ø16	ø13	3/8	KFG2L1613-03	21	22	26.2	9.3	12	31	79	72	
		1/2	KFG2L1613-04						27.2		32.9	78

\* Reference dimensions after installation of R thread



- KQ2
- KQB2
- KS
- KX
- KM
- KF
- M
- H/DL
- L/LL
- KC
- KK
- KK130
- DM
- KDM
- KB
- KR
- KA
- KQG2
- KG
- KFG2
- MS
- KKA
- KP
- LQ
- MQR
- T
- IDK

# KFG2 Series

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

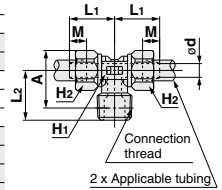
## Dimensions

### Male Branch Tee: KFG2T



Applicable tubing size (mm)		Connection thread R	Model	Width across flat		L1	L2	M	ød	A*	Effective area (mm <sup>2</sup> )	Weight (g)
O.D.	I.D.			H1	H2							
ø4	ø2.5	1/8	KFG2T0425-01	10	8	12.5	5	1.8	13.8	3	13	
	1/4	KFG2T0425-02	15.9									17
ø4	ø3	1/8	KFG2T0403-01	10	8	12.5	5	2.3	13.8	5	12	
		1/4	KFG2T0403-02									15.9
ø6	ø4	1/8	KFG2T0604-01	10	10	15	5.8	3.3	16	10	17	
		1/4	KFG2T0604-02									13.6
ø8	ø6	1/8	KFG2T0806-01	12	14	17.4	6.6	5.3	20.4	16	30	
		1/4	KFG2T0806-02									19.2
ø10	ø7.5	3/8	KFG2T0806-03	12	14	19.6	6.6	5.3	22.2	25	34	
		1/2	KFG2T1075-02									20.9
ø10	ø8	3/8	KFG2T1075-03	15	17	20.9	7.6	6.8	25.6	30	55	
		1/2	KFG2T1075-04									21.3
ø10	ø10	1/2	KFG2T1075-04	15	17	20.9	7.6	7.3	27.5	41	68	
		3/8	KFG2T1008-03									20.9
ø12	ø9	3/8	KFG2T1008-04	16	17	23.5	8.5	8	25.6	48	73	
		1/2	KFG2T1209-02									24.5
ø12	ø10	1/4	KFG2T1209-03	16	17	23.5	8.5	9	27.5	61	57	
		3/8	KFG2T1209-04									20.9
ø16	ø13	1/2	KFG2T1210-02	21	22	26.2	9.3	12	25.6	41	68	
		3/8	KFG2T1210-03									21.3
ø16	ø13	3/8	KFG2T1210-04	21	22	26.2	9.3	12	27.5	47	67	
		1/2	KFG2T1613-03									24
ø16	ø13	1/2	KFG2T1613-04	21	22	26.2	9.3	12	32.9	108	98	
		3/8	KFG2T1613-04									27.2

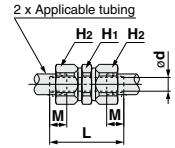
\* Reference dimensions after installation of R thread



### Straight Union: KFG2H



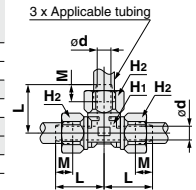
Applicable tubing size (mm)		Model	Width across flat		L	M	ød	Effective area (mm <sup>2</sup> )	Weight (g)
O.D.	I.D.		H1	H2					
ø4	ø2.5	KFG2H0425-00	8	8	21.8	5	1.8	1.6	7
	ø3	KFG2H0403-00							
ø6	ø4	KFG2H0604-00	10	10	24.8	5.8	3.3	6	11
		KFG2H0806-00	14	14	28.6	6.6	5.3	17	25
ø10	ø7.5	KFG2H1075-00	17	17	33.6	7.6	6.8	30	43
		KFG2H1008-00	17	17	33.6	7.6	7.3	35	42
ø12	ø9	KFG2H1209-00	17	17	37	8.5	8	45	44
		KFG2H1210-00	17	17	37	8.5	9	57	42
ø16	ø13	KFG2H1613-00	22	22	39.4	9.3	12	101	71



### Union Tee: KFG2T



Applicable tubing size (mm)		Model	Width across flat		L	M	ød	Effective area (mm <sup>2</sup> )	Weight (g)
O.D.	I.D.		H1	H2					
ø4	ø2.5	KFG2T0425-00	7	8	13.3	5	1.8	1.6	11
	ø3	KFG2T0403-00							
ø6	ø4	KFG2T0604-00	9	10	15.8	5.8	3.3	6	18
		KFG2T0806-00	12	14	18.7	6.6	5.3	17	39
ø10	ø7.5	KFG2T1075-00	15	17	22.2	7.6	6.8	30	67
		KFG2T1008-00	15	17	22.2	7.6	7.3	35	65
ø12	ø9	KFG2T1209-00	16	17	24.3	8.5	8	45	71
		KFG2T1210-00	16	17	24.3	8.5	9	57	67
ø16	ø13	KFG2T1613-00	21	22	28	9.3	12	101	122



# Stainless Steel 316 Insert Fittings **KFG2 Series**

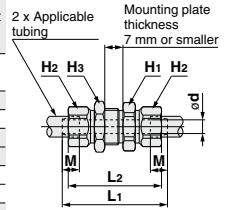
Applicable Tubing: Metric Size, Connection Thread: R, Rc

## Dimensions

### Bulkhead Union: KFG2E



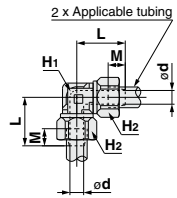
Applicable tubing size (mm)		Model	Width across flat			L1	L2	M	ød	Mounting hole	Effective area (mm <sup>2</sup> )	Weight (g)
O.D.	I.D.		H1	H2	H3							
ø4	ø2.5	KFG2E0425-00	12	8	12	32.6	29	5	1.8	11	1.6	16
ø4	ø3	KFG2E0403-00										
ø6	ø4	KFG2E0604-00	14	10	14	36.6	32.2	5.8	3.3	13	6	25
ø8	ø6	KFG2E0806-00	17	14	17	40.4	35.8	6.6	5.3	15	17	43
ø10	ø7.5	KFG2E1075-00	21	17	21	44.8	39.4	7.6	6.8	18	35	69
ø10	ø8	KFG2E1008-00										
ø12	ø9	KFG2E1209-00	21	17	21	48.1	41.7	8.5	8	19	45	71
ø12	ø10	KFG2E1210-00										
ø16	ø13	KFG2E1613-00	27	22	27	52.3	45.9	9.3	12	25	101	122



### Union Elbow: KFG2L



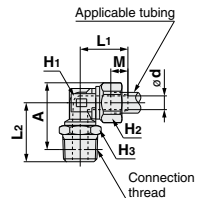
Applicable tubing size (mm)		Model	Width across flat		L	M	ød	Effective area (mm <sup>2</sup> )	Weight (g)
O.D.	I.D.		H1	H2					
ø4	ø2.5	KFG2L0425-00	7	8	13.3	5	1.8	1.6	8
ø4	ø3	KFG2L0403-00							
ø6	ø4	KFG2L0604-00	9	10	15.8	5.8	3.3	6	13
ø8	ø6	KFG2L0806-00	12	14	18.7	6.6	5.3	17	28
ø10	ø7.5	KFG2L1075-00	15	17	22.2	7.6	6.8	30	47
ø10	ø8	KFG2L1008-00							
ø12	ø9	KFG2L1209-00	16	17	24.3	8.5	8	45	51
ø12	ø10	KFG2L1210-00							
ø16	ø13	KFG2L1613-00	21	22	28	9.3	12	101	89



### Swivel Elbow: KFG2V



Applicable tubing size (mm)		Connection thread R	Model	Width across flat			L1	L2	M	ød	A*	Effective area (mm <sup>2</sup> )	Weight (g)
O.D.	I.D.			H1	H2	H3							
ø4	ø2.5	1/8	KFG2V0425-01	7	8	10	16.1	5	1.8	17.4	1.4	9	
						14	19.9						18
ø4	ø3	1/8	KFG2V0403-01	7	8	10	16.1	5	2.3	17.4	2.3	9	
						14	19.9						18
ø6	ø4	1/8	KFG2V0604-01	9	10	10	17.2	5.8	3.3	19.6	5	12	
						14	21						21
ø6	ø4	1/4	KFG2V0604-02	9	10	14	20.1	5.8	3.3	21.8	5	21	
						17	24.7						22
ø8	ø6	1/8	KFG2V0806-01	12	14	14	18.4	6.6	5.3	26.3	14	30	
						17	24.7						42
ø8	ø6	3/8	KFG2V0806-03	12	14	14	25	6.6	5.3	27.3	14	42	
						17	26.4						37
ø10	ø7.5	1/4	KFG2V1075-02	15	17	14	25	7.6	6.8	30.6	25	47	
						17	26.4						47
ø10	ø7.5	3/8	KFG2V1075-04	15	17	14	30.6	7.6	6.8	33.5	25	74	
						17	30.6						36
ø10	ø8	1/2	KFG2V1008-04	15	17	14	25	7.6	7.3	30.6	29	46	
						17	26.4						46
ø10	ø8	3/8	KFG2V1008-03	15	17	14	26.4	7.6	7.3	30.6	29	73	
						17	30.6						73
ø12	ø9	1/4	KFG2V1209-02	16	17	14	25	8.5	8	29.6	38	38	
						17	26.4						38
ø12	ø9	3/8	KFG2V1209-03	16	17	14	23	8.5	8	30.6	38	49	
						17	30.6						49
ø12	ø9	1/2	KFG2V1209-04	16	17	14	30.6	8.5	8	33.5	38	75	
						17	30.6						75
ø12	ø10	1/4	KFG2V1210-02	16	17	14	25	8.5	9	29.6	48	40	
						17	26.4						51
ø12	ø10	3/8	KFG2V1210-03	16	17	14	24.5	8.5	9	30.6	48	51	
						17	30.6						51
ø12	ø10	1/2	KFG2V1210-04	16	17	14	30.6	8.5	9	33.5	48	77	
						17	30.6						77
ø16	ø13	3/8	KFG2V1613-03	21	22	19	29.3	9.3	12	36.3	86	75	
						22	33.3						86
ø16	ø13	1/2	KFG2V1613-04	21	22	19	29.3	9.3	12	36.3	86	96	
						22	33.3						96



\* Reference dimensions after installation of R thread

- KQ2
- KQB2
- KS
- KX
- KM
- KF
- M
- H/DL
- L/LL
- KC
- KK
- KK130
- DM
- KDM
- KB
- KR
- KA
- KQG2
- KG
- KFG2
- MS
- KKA
- KP
- LQ
- MQR
- T
- IDK

# KFG2 Series

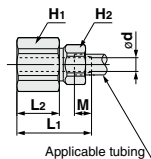
Applicable Tubing: Metric Size, Connection Thread: R, Rc

## Dimensions

### Female Connector: KFG2F



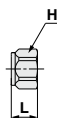
Applicable tubing size (mm)		Connection thread Rc	Model	Width across flat		L1	L2	M	ød	Effective area (mm <sup>2</sup> )	Weight (g)
O.D.	I.D.			H1	H2						
ø4	ø2.5	1/4	KFG2F0425-02	17	8	25.9	16.4	5	1.8	1.6	24
ø4	ø3	1/4	KFG2F0403-02						2.3	2.6	
ø6	ø4	1/4	KFG2F0604-02	17	10	26.8	15.8	5.8	3.3	6	25
ø8	ø6	3/8	KFG2F0806-03	19	14	28.8	16.4	6.6	5.3	17	31
ø10	ø7.5	3/8	KFG2F1075-03	19	17	30	15.6	7.6	6.8	30	36
ø10	ø8	3/8	KFG2F1008-03						7.3	35	
ø12	ø9	3/8	KFG2F1209-03	19	17	31.2	15.2	8.5	8	45	36
ø12	ø10	3/8	KFG2F1210-03						9	57	
ø16	ø13	1/2	KFG2F1613-04	24	22	37.7	20.5	9.3	12	101	71



### Union Nut: KFG2N



Applicable tubing O.D. (mm)	Model	H (Width across flat)	L	Weight (g)
ø4	KFG2N-04	8	7.7	1.9
ø6	KFG2N-06	10	8.8	3
ø8	KFG2N-08	14	10.1	6.7
ø10	KFG2N-10	17	11.7	10.5
ø12	KFG2N-12	17	12.8	9.6
ø16	KFG2N-16	22	14	15.3





<b>KQ2</b>
<b>KQB2</b>
<b>KS</b> <b>KX</b>
<b>KM</b>
<b>KF</b>
<b>M</b>
<b>H/DL</b> <b>L/LL</b>
<b>KC</b>
<b>KK</b>
<b>KK130</b>
<b>DM</b>
<b>KDM</b>
<b>KB</b>
<b>KR</b>
<b>KA</b>
<b>KQG2</b>
<b>KG</b>
<b>KFG2</b>
<b>MS</b>
<b>KKA</b>
<b>KP</b>
<b>LQ</b>
<b>MQR</b>
<b>T</b>
<b>IDK</b>

# Stainless Steel 316 Insert Fittings

Applicable Tubing: Inch Size, Connection Thread: NPT

## KFG2 Series

RoHS



### Applicable Tubing

Tubing material <sup>Note 1)</sup>	FEP, PFA, Modified PTFE, Nylon, Soft nylon, Polyurethane, Soft polyurethane, Polyolefin, Soft polyolefin, Antistatic soft nylon, Antistatic polyurethane, Hard polyurethane
Tubing size	ø1/8" x ø0.086", ø5/32" x 0.098", ø1/4" x ø5/32" ø5/16" x 0.236", ø3/8" x ø1/4", ø1/2" x ø3/8"

Note) For soft polyurethane tubing, hard polyurethane tubing, antistatic polyurethane tubing, water cannot be used.

Series	Tubing material	Tubing O.D. x I.D. (inch)					
		ø1/8" x ø0.086" (ø3.18 x ø2.18)	ø5/32" x ø1.098" (ø4 x ø2.5)	ø1/4" x ø5/32" (ø6.35 x ø3.95)	ø5/16" x ø0.236" (ø8 x ø6)	ø3/8" x ø1/4" (ø9.53 x ø6.35)	ø1/2" x ø3/8" (ø12.7 x ø9.53)
TH/THI	FEP	●	●	●	●	●	●
TL/TIL	Super PFA	●	—	●	●	●	●
TLM/TILM	PFA	●	●	●	●	●	●
TD/TID	Modified PTFE	●	●	●	●	●	●
T/TIA	Nylon	●	●	—	●	—	●
TS/TISA	Soft nylon	●	●	—	●	—	●
TU/TIUB	Polyurethane	—	●	—	—	●	—
TPH	Polyolefin	—	●	—	●	—	—
TUS	Soft polyurethane	—	●	—	—	—	—
TUH	Hard polyurethane (High pressure)	—	●	—	—	—	—
TPS	Soft polyolefin	—	●	—	—	—	—
TAS	Antistatic soft nylon	—	●	—	—	—	—
TAU	Antistatic polyurethane	—	●	—	—	—	—

### Spare Parts

Description	Tubing O.D.	Part no.	Material
Bulkhead nut	ø1/8"	KFG201-P01	Stainless steel 316
	ø5/32"	KFG203-P01	
	ø1/4"	KFG207-P01	
	ø5/16"	KFG209-P01	
	ø3/8"	KFG211-P01	
	ø1/2"	KFG213-P01	

### Specifications

<b>Fluid</b>	Air, Water, Steam <sup>Note 2)</sup> <sup>Note 3)</sup>
<b>Operating pressure range</b> <sup>Note 1)</sup>	–100 kPa to 1 MPa <sup>Note 4)</sup>
<b>Proof pressure</b>	3.0 MPa
<b>Ambient and fluid temperature</b>	–65 to 260°C (No freezing) <sup>Note 4)</sup> [Swivel elbow and with sealant types: –5 to 150°C]
<b>Lubricant</b>	Grease-free specification
<b>Seal on the threads</b>	Without sealant (With sealant type compatible) <sup>Note 5)</sup>

Note 1) Avoid using in a vacuum holding application such as a leak tester, since there is leakage.

Note 2) Consult with SMC regarding applicable tubing separately.

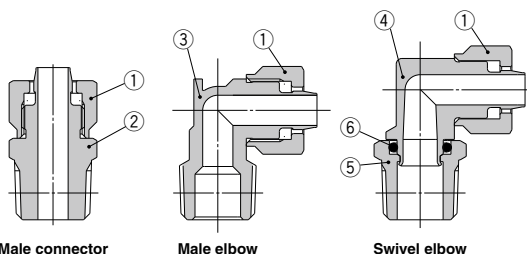
Note 3) Using special FKM that is resistant even when steam is used.

Note 4) Check the operating pressure range and operating temperature range of the tube.

Note 5) With sealant: Suffix "S" to the end of part number.

Note 6) Union nut is shipped together.

### Construction



Male connector

Male elbow

Swivel elbow

### Principal Parts Material

No.	Description	Material	Note
1	Union nut	Stainless steel 316	Fluoro coated
2	Male connector body	Stainless steel 316	
3	Male elbow body	Stainless steel 316	
4	Swivel elbow body	Stainless steel 316	
5	Stud	Stainless steel 316	
6	O-ring	Special FKM	Fluoro coated

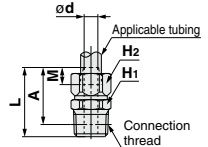
## Dimensions

### Male Connector: KFG2H



Applicable tubing size (inch)		Connection thread NPT	Model	Width across flat		L	M	ød	A*	Effective area (mm <sup>2</sup> )	Weight (g)
O.D.	I.D.			H <sub>1</sub>	H <sub>2</sub>						
ø1/8" (ø3.18)	ø0.086" (ø2.18)	1/8	KFG2H0122-N01	12	8	19.4	5	1.5	16.2	1.1	9
		1/4	KFG2H0122-N02	14	8	23.8			19.4		15
ø5/32" (ø4)	ø0.098" (ø2.5)	1/8	KFG2H0325-N01	12	8	19.4	5	1.8	16.2	1.6	9
		1/4	KFG2H0325-N02	14	8	23.8			19.4		15
ø1/4" (ø6.35)	ø5/32" (ø3.95)	1/8	KFG2H0704-N01	12	12	21.1	6	3.3	17.9	13	19
		1/4	KFG2H0704-N02	14	12	25.5			21.1	6	19
ø5/16" (ø8)	ø0.236" (ø6)	1/8	KFG2H0906-N01	14		23.3			20.1		18
		1/4	KFG2H0906-N02	14	14	26.7	6.6	5.3	22.3	17	25
		3/8	KFG2H0906-N03	19		28.3			23.6		40
ø3/8" (ø9.53)	ø1/4" (ø6.35)	1/4	KFG2H1163-N02	17		29.7			25.3		37
		3/8	KFG2H1163-N03	19	17	30.3	7.6	5.6	25.6	19	47
ø1/2" (ø12.7)	ø3/8" (ø9.53)	1/2	KFG2H1163-N04	22		33.5			27.1		70
		1/4	KFG2H1395-N02	19		31.5			27.1		40
		3/8	KFG2H1395-N03	19	19	31.9	8.5	8.5	27.2	40.1	78
		1/2	KFG2H1395-N04	22		35.1			28.7		40

\* Reference dimensions after installation of NPT thread

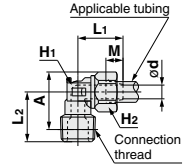


### Male Elbow: KFG2L



Applicable tubing size (inch)		Connection thread NPT	Model	Width across flat		L <sub>1</sub>	L <sub>2</sub>	M	ød	A*	Effective area (mm <sup>2</sup> )	Weight (g)
O.D.	I.D.			H <sub>1</sub>	H <sub>2</sub>							
ø1/8" (ø3.18)	ø0.086" (ø2.18)	1/8	KFG2L0122-N01	10	8	13.5	12.5	5	1.5	13.7	1.1	10
		1/4	KFG2L0122-N02	10	8	13.5	15.9			15.9		15
ø5/32" (ø4)	ø0.098" (ø2.5)	1/8	KFG2L0325-N01	10	8	13.5	12.5	5	1.8	13.7	1.6	10
		1/4	KFG2L0325-N02	10	8	13.5	15.9			15.9		15
ø1/4" (ø6.35)	ø5/32" (ø3.95)	1/8	KFG2L0704-N01	10	12	15.2	14.7	6	3.3	18.1	6	15
		1/4	KFG2L0704-N02	10	12	15.2	18.1			20.3		19
ø5/16" (ø8)	ø0.236" (ø6)	1/8	KFG2L0906-N01				15.8			20.3	12	20
		1/4	KFG2L0906-N02	12	14	17.4	19.2	6.6	5.3	22.5	16	25
		3/8	KFG2L0906-N03				19.6			22.6		28
ø3/8" (ø9.53)	ø1/4" (ø6.35)	1/4	KFG2L1163-N02				20.9			25.9	13	39
		3/8	KFG2L1163-N03	15	17	20.4	21.3	7.6	5.6	26.0	18	42
		1/2	KFG2L1163-N04				24.5			27.5		52
ø1/2" (ø12.7)	ø3/8" (ø9.53)	1/4	KFG2L1395-N02				21.9			27.9	30	48
		3/8	KFG2L1395-N03	17	19	23.3	22.3	8.5	8.5	28	40	51
		1/2	KFG2L1395-N04				25.5			29.5		61

\* Reference dimensions after installation of NPT thread

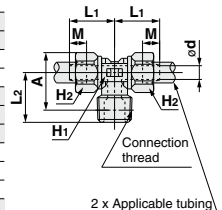


### Male Branch Tee: KFG2T



Applicable tubing size (inch)		Connection thread NPT	Model	Width across flat		L <sub>1</sub>	L <sub>2</sub>	M	ød	A*	Effective area (mm <sup>2</sup> )	Weight (g)
O.D.	I.D.			H <sub>1</sub>	H <sub>2</sub>							
ø1/8" (ø3.18)	ø0.086" (ø2.18)	1/8	KFG2T0122-N01	10	8	13.5	12.5	5	1.5	13.7	2	13
		1/4	KFG2T0122-N02	10	8	13.5	15.9			15.9		17
ø5/32" (ø4)	ø0.098" (ø2.5)	1/8	KFG2T0325-N01	10	8	13.5	12.5	5	1.8	13.7	3	13
		1/4	KFG2T0325-N02	10	8	13.5	15.9			15.9		17
ø1/4" (ø6.35)	ø5/32" (ø3.95)	1/8	KFG2T0704-N01	10	12	15.2	14.7	6	3.3	18.1	10	22
		1/4	KFG2T0704-N02	10	12	15.2	18.1			20.3		26
ø5/16" (ø8)	ø0.236" (ø6)	1/8	KFG2T0906-N01				15.8			20.3	16	31
		1/4	KFG2T0906-N02	12	14	17.4	19.2	6.6	5.3	22.5	35	35
		3/8	KFG2T0906-N03				19.6			22.6	25	38
ø3/8" (ø9.53)	ø1/4" (ø6.35)	1/4	KFG2T1163-N02				20.9			25.9	18	58
		3/8	KFG2T1163-N03	15	17	20.4	21.3	7.6	5.6	26.0	28	61
		1/2	KFG2T1163-N04				24.5			27.5		71
ø1/2" (ø12.7)	ø3/8" (ø9.53)	1/4	KFG2T1395-N02				21.9			27.9	36	70
		3/8	KFG2T1395-N03	17	19	23.3	22.3	8.5	8.5	28	54	74
		1/2	KFG2T1395-N04				25.5			29.5		83

\* Reference dimensions after installation of NPT thread



2 x Applicable tubing

KQ2

KQB2

KS

KX

KM

KF

M

H/DL

L/L

KC

KK

KK130

DM

KDM

KB

KR

KA

KQG2

KG

KFG2

MS

KKA

KP

LQ

MQR

T

IDK

# KFG2 Series

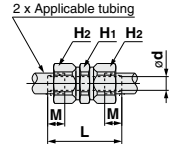
Applicable Tubing: Inch Size, Connection Thread: NPT

## Dimensions

### Straight Union: KFG2H



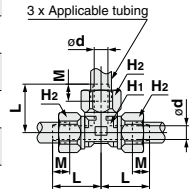
Applicable tubing size (inch)		Model	Width across flat		L	M	ød	Effective area (mm <sup>2</sup> )	Weight (g)
O.D.	I.D.		H <sub>1</sub>	H <sub>2</sub>					
ø1/8" (ø3.18)	ø0.086" (ø2.18)	KFG2H0122-00	8	8	21.8	5	1.5	1.1	7
ø5/32" (ø4)	ø0.098" (ø2.5)	KFG2H0325-00	8	8	21.8	5	1.8	1.6	7
ø1/4" (ø6.35)	ø5/32" (ø3.95)	KFG2H0704-00	12	12	25.2	6	3.3	6	16
ø5/16" (ø8)	ø0.236" (ø6)	KFG2H0906-00	14	14	28.6	6.6	5.3	17	25
ø3/8" (ø9.53)	ø1/4" (ø6.35)	KFG2H1163-00	17	17	33.6	7.6	5.6	19	45
ø1/2" (ø12.7)	ø3/8" (ø9.53)	KFG2H1395-00	19	19	37	8.5	8.5	51	55



### Union Tee: KFG2T



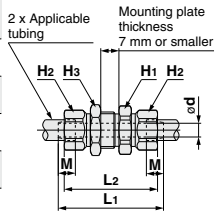
Applicable tubing size (inch)		Model	Width across flat		L	M	ød	Effective area (mm <sup>2</sup> )	Weight (g)
O.D.	I.D.		H <sub>1</sub>	H <sub>2</sub>					
ø1/8" (ø3.18)	ø0.086" (ø2.18)	KFG2T0122-00	7	8	13.3	5	1.5	1.1	11
ø5/32" (ø4)	ø0.098" (ø2.5)	KFG2T0325-00	7	8	13.3	5	1.8	1.6	11
ø1/4" (ø6.35)	ø5/32" (ø3.95)	KFG2T0704-00	10	12	16.5	6	3.3	6	26
ø5/16" (ø8)	ø0.236" (ø6)	KFG2T0906-00	12	14	18.7	6.6	5.3	17	39
ø3/8" (ø9.53)	ø1/4" (ø6.35)	KFG2T1163-00	15	17	22.2	7.6	5.6	19	70
ø1/2" (ø12.7)	ø3/8" (ø9.53)	KFG2T1395-00	17	19	24.8	8.5	8.5	51	87



### Bulkhead Union: KFG2E



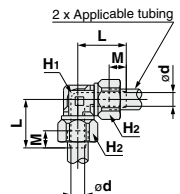
Applicable tubing size (inch)		Model	Width across flat			L <sub>1</sub>	L <sub>2</sub>	M	ød	Mounting hole	Effective area (mm <sup>2</sup> )	Weight (g)
O.D.	I.D.		H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>							
ø1/8" (ø3.18)	ø0.086" (ø2.18)	KFG2E0122-00	12	8	12	32.8	29.4	5	1.5	10	1.1	16
ø5/32" (ø4)	ø0.098" (ø2.5)	KFG2E0325-00	12	8	12	32.6	29	5	1.8	11	1.6	16
ø1/4" (ø6.35)	ø5/32" (ø3.95)	KFG2E0704-00	17	12	17	39	34.6	6	3.3	13.5	6	39
ø5/16" (ø8)	ø0.236" (ø6)	KFG2E0906-00	17	14	17	40.4	35.8	6.6	5.3	15	17	43
ø3/8" (ø9.53)	ø1/4" (ø6.35)	KFG2E1163-00	22	17	22	46.8	41.4	7.6	5.6	20	19	84
ø1/2" (ø12.7)	ø3/8" (ø9.53)	KFG2E1395-00	26	19	26	51.9	45.5	8.5	8.5	23	51	117



### Union Elbow: KFG2L



Applicable tubing size (inch)		Model	Width across flat		L	M	ød	Effective area (mm <sup>2</sup> )	Weight (g)
O.D.	I.D.		H <sub>1</sub>	H <sub>2</sub>					
ø1/8" (ø3.18)	ø0.086" (ø2.18)	KFG2L0122-00	7	8	13.3	5	1.5	1.1	8
ø5/32" (ø4)	ø0.098" (ø2.5)	KFG2L0325-00	7	8	13.3	5	2.3	1.6	8
ø1/4" (ø6.35)	ø5/32" (ø3.95)	KFG2L0704-00	10	12	16.5	6	3.3	6	18
ø5/16" (ø8)	ø0.236" (ø6)	KFG2L0906-00	12	14	18.7	6.6	5.3	17	28
ø3/8" (ø9.53)	ø1/4" (ø6.35)	KFG2L1163-00	15	17	22.2	7.6	5.6	19	50
ø1/2" (ø12.7)	ø3/8" (ø9.53)	KFG2L1395-00	17	19	24.8	8.5	8.5	51	62



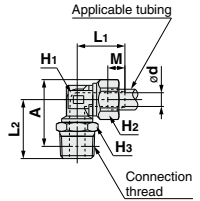
## Dimensions

### Swivel Elbow: KFG2V



Applicable tubing size (inch)		Connection thread NPT	Model	Width across flat			L1	L2	M	ød	A*	Effective area (mm <sup>2</sup> )	Weight (g)
O.D.	I.D.			H1	H2	H3							
ø1/8" (ø3.18)	ø0.086" (ø2.18)	1/8	KFG2V0122-N01	7	8	12	14.5	16.1	5	1.5	17.3	1	11
		1/4	KFG2V0122-N02			14		19.8			19.8		19
ø5/32" (ø4)	ø0.098" (ø2.5)	1/8	KFG2V0325-N01	7	8	12	14.5	16.1	5	1.8	17.3	1.4	11
		1/4	KFG2V0325-N02			14		19.8			19.8		19
ø1/4" (ø6.35)	ø5/32" (ø3.95)	1/8	KFG2V0704-N01	10	12	12	16.2	18.3	6	3.3	21.7	5	16
		1/4	KFG2V0704-N02			14		22			24.2		25
ø5/16" (ø8)	ø0.236" (ø6)	1/8	KFG2V0906-N01	12	14	12		19.6			24.1		23
		1/4	KFG2V0906-N02			14	18.4	23.3	6.6	5.3	26.6	14	31
	3/8	KFG2V0906-N03			19		25.1			28.1		45	
ø3/8" (ø9.53)	ø1/4" (ø6.35)	1/4	KFG2V1163-N02	14	14	14	24.7	24.7			29.7		38
		3/8	KFG2V1163-N03	15	17	19	21.4	26.8	7.6	5.6	31.4	16	51
		1/2	KFG2V1163-N04			22		30.6			33.5		75
		1/4	KFG2V1395-N02	17	19	14	22	25.8			31.8		46
ø1/2" (ø12.7)	ø3/8" (ø9.53)	3/8	KFG2V1395-N03	17	19	19	23	27.8	8.5	8.5	33.5	43	59
		1/2	KFG2V1395-N04			22		31.6			35.6		83

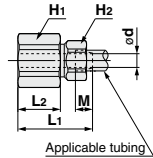
\* Reference dimensions after installation of NPT thread



### Female Connector: KFG2F



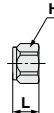
Applicable tubing size (inch)		Connection thread NPT	Model	Width across flat			L1	L2	M	ød	Effective area (mm <sup>2</sup> )	Weight (g)
O.D.	I.D.			H1	H2	H3						
ø1/8" (ø3.18)	ø0.086" (ø2.18)	1/4	KFG2F0122-N02	17	8	26.7	17.2	5	1.5	1.1	25	
		1/4	KFG2F0325-N02	17	8	26.7	17.2	5	1.8	1.6	23	
ø1/4" (ø6.35)	ø5/32" (ø3.95)	1/4	KFG2F0704-N02	17	12	27.5	16.3	6	3.3	6	28	
		3/8	KFG2F0906-N03	19	14	29.4	17	6.6	5.3	17	32	
ø3/8" (ø9.53)	ø1/4" (ø6.35)	3/8	KFG2F1163-N03	19	17	30.5	16.1	7.6	5.6	19	38	
ø1/2" (ø12.7)	ø3/8" (ø9.53)	3/8	KFG2F1395-N03	19	19	31.6	15.6	8.5	8.5	51	42	



### Union Nut: KFG2N



Applicable tubing O.D. (inch)	Model	H (Width across flat)	L	Weight (g)
ø1/8" (ø3.18)	KFG2N-01	8	7.8	1.9
ø5/32" (ø4)	KFG2N-03	8	7.7	1.9
ø1/4" (ø6.35)	KFG2N-07	12	9	4.6
ø5/16" (ø8)	KFG2N-09	14	10.1	6.7
ø3/8" (ø9.53)	KFG2N-11	17	11.7	10.7
ø1/2" (ø12.7)	KFG2N-13	19	12.8	13



- KQ2
- KQB2
- KS
- KX
- KM
- KF
- M
- H/DL
- L/LL
- KC
- KK
- KK130
- DM
- KDM
- KB
- KR
- KA
- KQG2
- KG
- KFG2
- MS
- KKA
- KP
- LQ
- MQR
- T
- IDK



**KFG2 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%]	⊙	—
Furfural	×	×
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%]	⊙	—

**KQ2**
**KQB2**
**KS  
KX**
**KM**
**KF**
**M**
**H/DL  
L/LL**
**KC**
**KK**
**KK130**
**DM**
**KDM**
**KB**
**KR**
**KA**
**KQG2**
**KG**
**KFG2**
**MS**
**KKA**
**KP**
**LQ**
**MQR**
**T**
**IDK**

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.



# KFG2 Series

## Specific Product Precautions 1

Be sure to read this before handling the products.

Refer to back page 50 for Safety Instructions and pages 13 to 17 for Fittings and Tubing Precautions.

### Selection

#### ⚠ Caution

1. Consult with SMC regarding fluids other than air, water and steam.
2. When using the swivel elbow fittings, particles may be generated by rotation for positioning after connecting. If you are concerned about the effects on machinery and equipment, check the particle generation with your machine before use.

### Mounting

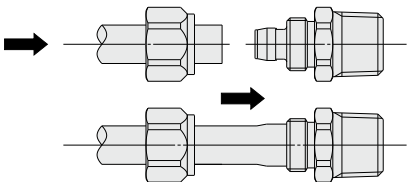
#### ⚠ Caution

1. The swivel elbow fittings can be rotated for positioning, but they cannot be used rotating.  
This will cause metal debris by wearing, which may enter the operating fluid or cause fitting damage.
2. Keep the connection part of fittings and tubes from rotating or oscillating movement.  
Failure to do so may cause the fittings to break. In particular, for the swivel elbow, the repeated load from the connection tube may cause the stud to come off.

### Piping

#### ⚠ Caution

1. Take a tube having no flaws on its periphery and cut it off at right angles.  
(Use a tube cutter TK-1, 2, 3. Do not use pinchers, nippers or scissors, etc.)  
The tube might be cut diagonally or flattened, making installation impossible or causing problems such as disconnection and leakage.
2. Insert the tube into the union nut with the union nut removed. Grab the tube and gently push it thoroughly into the fitting.

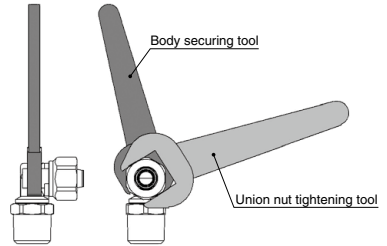


3. After insertion, tighten the union nut temporarily by hand.

### Piping

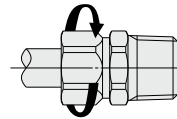
#### ⚠ Caution

4. Fix the body with a tool. Tighten the union nut to the end surface of the body using a suitable wrench.  
Hex. across flats may be deformed, if using an improper wrench for hex. across flats.  
If the body is not secured with a tool, this may cause breakage. (In particular, for the swivel elbow, the stud may come off.)



5. Fix the body with a tightening tool. Tighten the union nut to the end surface of the body using a suitable wrench.

Hex. across flats may be deformed, if using an improper wrench for hex. across flats. Tighten the union nut with the proper tightening torque shown below.



Fitting size	Proper tightening torque N·m
KFG2□01	2 to 3
KFG2□03	
KFG2□04	
KFG2□06	3 to 4
KFG2□07	
KFG2□08	5 to 6
KFG2□09	
KFG2□10	8 to 10
KFG2□11	
KFG2□12	10 to 12
KFG2□13	
KFG2□16	16 to 18

### 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 merchandise, directly touches the fitting components.

##### Installable

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

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





# KFG2 Series

## Specific Product Precautions 2

Be sure to read this before handling the products.

Refer to back page 50 for Safety Instructions and pages 13 to 17 for Fittings and Tubing Precautions.

### Maintenance

#### ⚠ Caution

##### 1. Pre-maintenance inspection

When the product is removed, turn off the power, cut off the supply pressure, and confirm that fluid in the piping has been discharged.

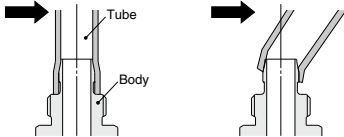
##### 2. During regular maintenance, check for the following and replace any components as necessary.

- a) Scratches, gouges, abrasion, corrosion
- b) Leakage
- c) Flattening or distortion of the tube
- d) Hardening, deterioration or softness of the tube
- e) Loosening of the union nut

##### 3. Do not repair the fittings or patch the tube for reuse.

##### 4. After operation at a high temperature, leakage may occur due to time dependent change of the tube material. If leakage occurs, remove the tube, cut off the connecting part of the tube, and connect to the piping again.

Check if the tube dimension accuracy is within the recommended tolerance. If it is difficult to take the tube out of the body, bend the tube to the side to remove.



#### 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.

KQ2
KQB2
KS KX
KM
KF
M
H/DL L/LL
KC
KK
KK130
DM
KDM
KB
KR
KA
KQG2
KG
<b>KFG2</b>
MS
KKA
KP
LQ
MQR
T
IDK