

# Insert Fittings

## KF Series

RoHS

### A reliable seal Holds the tube tightly

#### Insert

An insert mechanism can provide reliable retaining force on tubes made of a wide variety of materials

#### Tube grip (resin sleeve)

- Tube is easily held by a unique configuration
- Slipping and dropping of sleeve and union nut is prevented

### Superior tube mounting

#### Union nut

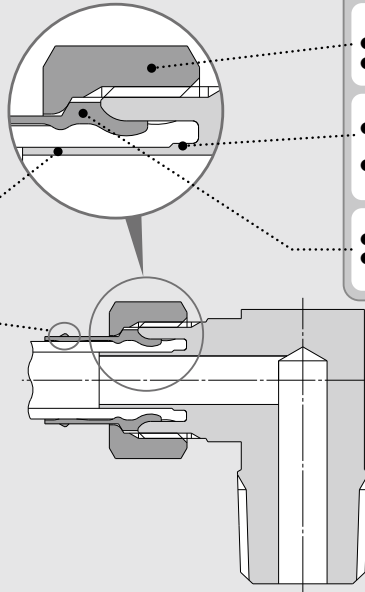
- No need to remove nuts
- Tube can be installed as-is

#### Tube holder

- Prevents tubes from being disconnected during piping.
- A strong feeling when inserting tube

#### Sleeve

- Light tightening torque
- Can be used from medium vacuum up to 1 MPa



- Material / Body, Union nut: Brass  
Sleeve: Resin or Brass
- Maximum operating temperature /  $150^{\circ}\text{C}$  (Brass sleeve)  
 $60^{\circ}\text{C}$  (Resin sleeve)
- Applicable tubing material /  
FEP • PFA • Modified PTFE • Nylon  
Soft nylon • Polyurethane  
Polyolefin • Soft polyolefin
- Can be used with steam. (For brass sleeve)
- Grease-free



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

## Male Connector

Use to connect tubes in the same direction from female thread. Most general type.

Applicable tubing size (mm)		Connection thread	Model	
O.D.	I.D.		Resin sleeve	Brass sleeve
ø4	ø2.5	R1/8	KFH04-01S	KFH04B-01S
		R1/4	KFH04-02S	KFH04B-02S
		R1/8	KFH06-01S	KFH06B-01S
ø6	ø4	R1/4	KFH06-02S	KFH06B-02S
		R3/8	KFH06-03S	KFH06B-03S
		R1/8	KFH08U-01S	—
ø8	ø5	R1/4	KFH08U-02S	—
		R3/8	KFH08U-03S	—
		R1/8	KFH08N-01S	KFH08B-01S
ø6	ø6	R1/4	KFH08N-02S	KFH08B-02S
		R3/8	KFH08N-03S	KFH08B-03S
		R1/4	KFH10U-02S	—
ø10	ø6.5	R3/8	KFH10U-03S	—
		R1/2	KFH10U-04S	—
		R1/4	KFH10N-02S	KFH10B-02S
ø7.5	ø8	R3/8	KFH10N-03S	KFH10B-03S
		R1/2	KFH10N-04S	KFH10B-04S
		R1/4	KFH12U-02S	—
ø8	ø8	R3/8	KFH12U-03S	—
		R1/2	KFH12U-04S	—
		R1/4	KFH12N-02S	KFH12B-02S
ø12	ø9	R3/8	KFH12N-03S	KFH12B-03S
		R1/2	KFH12N-04S	KFH12B-04S



## Branch Tee

Use to branch line from female thread in both 90° directions.

Applicable tubing size (mm)		Connection thread	Model	
O.D.	I.D.		Resin sleeve	Brass sleeve
ø4	ø2.5	R1/8	KFT04-01S	KFT04B-01S
		R1/4	KFT04-02S	KFT04B-02S
		R1/8	KFT06-01S	KFT06B-01S
ø6	ø4	R1/4	KFT06-02S	KFT06B-02S
		R3/8	KFT06-03S	KFT06B-03S
		R1/8	KFT08U-01S	—
ø8	ø5	R1/4	KFT08U-02S	—
		R3/8	KFT08U-03S	—
		R1/8	KFT08N-01S	KFT08B-01S
ø6	ø6	R1/4	KFT08N-02S	KFT08B-02S
		R3/8	KFT08N-03S	KFT08B-03S
		R1/4	KFT10U-02S	—
ø10	ø6.5	R3/8	KFT10U-03S	—
		R1/2	KFT10U-04S	—
		R1/4	KFT10N-02S	KFT10B-02S
ø7.5	ø8	R3/8	KFT10N-03S	KFT10B-03S
		R1/2	KFT10N-04S	KFT10B-04S
		R1/4	KFT12U-02S	—
ø8	ø8	R3/8	KFT12U-03S	—
		R1/2	KFT12U-04S	—
		R1/4	KFT12N-02S	KFT12B-02S
ø12	ø9	R3/8	KFT12N-03S	KFT12B-03S
		R1/2	KFT12N-04S	KFT12B-04S



## Male Elbow

Use to pipe at right angles to female thread. Most general type.

Applicable tubing size (mm)		Connection thread	Model	
O.D.	I.D.		Resin sleeve	Brass sleeve
ø4	ø2.5	R1/8	KFL04-01S	KFL04B-01S
		R1/4	KFL04-02S	KFL04B-02S
		R1/8	KFL06-01S	KFL06B-01S
ø6	ø4	R1/4	KFL06-02S	KFL06B-02S
		R3/8	KFL06-03S	KFL06B-03S
		R1/8	KFL08U-01S	—
ø8	ø5	R1/4	KFL08U-02S	—
		R3/8	KFL08U-03S	—
		R1/8	KFL08N-01S	KFL08B-01S
ø6	ø6	R1/4	KFL08N-02S	KFL08B-02S
		R3/8	KFL08N-03S	KFL08B-03S
		R1/4	KFL10U-02S	—
ø10	ø6.5	R3/8	KFL10U-03S	—
		R1/2	KFL10U-04S	—
		R1/4	KFL10N-02S	KFL10B-02S
ø7.5	ø8	R3/8	KFL10N-03S	KFL10B-03S
		R1/2	KFL10N-04S	KFL10B-04S
		R1/4	KFL12U-02S	—
ø8	ø8	R3/8	KFL12U-03S	—
		R1/2	KFL12U-04S	—
		R1/4	KFL12N-02S	KFL12B-02S
ø12	ø9	R3/8	KFL12N-03S	KFL12B-03S
		R1/2	KFL12N-04S	KFL12B-04S



## Male Run Tee

Use to branch line in the same direction from female thread and in 90° direction.

Applicable tubing size (mm)		Connection thread	Model	
O.D.	I.D.		Resin sleeve	Brass sleeve
ø4	ø2.5	R1/8	KFY04-01S	KFY04B-01S
		R1/4	KFY04-02S	KFY04B-02S
		R1/8	KFY06-01S	KFY06B-01S
ø6	ø4	R1/4	KFY06-02S	KFY06B-02S
		R3/8	KFY06-03S	KFY06B-03S
		R1/8	KFY08U-01S	—
ø8	ø5	R1/4	KFY08U-02S	—
		R3/8	KFY08U-03S	—
		R1/8	KFY08N-01S	KFY08B-01S
ø6	ø6	R1/4	KFY08N-02S	KFY08B-02S
		R3/8	KFY08N-03S	KFY08B-03S
		R1/4	KFY10U-02S	—
ø10	ø6.5	R3/8	KFY10U-03S	—
		R1/2	KFY10U-04S	—
		R1/4	KFY10N-02S	KFY10B-02S
ø7.5	ø8	R3/8	KFY10N-03S	KFY10B-03S
		R1/2	KFY10N-04S	KFY10B-04S
		R1/4	KFY12U-02S	—
ø8	ø8	R3/8	KFY12U-03S	—
		R1/2	KFY12U-04S	—
		R1/4	KFY12N-02S	KFY12B-02S
ø12	ø9	R3/8	KFY12N-03S	KFY12B-03S
		R1/2	KFY12N-04S	KFY12B-04S



## Female Union

Use to pipe from male thread such as pressure gauge.

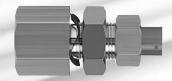
Applicable tubing size (mm)		Connection thread	Model	
O.D.	I.D.		Resin sleeve	Brass sleeve
ø4	ø2.5	R1/4	KFF04-02	KFF04B-02
		R1/4	KFF06-02	KFF06B-02
ø6	ø4	R3/8	KFF06-03	KFF06B-03
		R1/4	KFF08U-02	—
ø8	ø6	R1/4	KFF08N-02	KFF08B-02
		R1/4	KFF10U-02	—
ø10	ø7.5	R1/4	KFF10N-02	KFF10B-02
		R1/4	KFF12U-02	—
ø12	ø9	R1/4	KFF12N-02	KFF12B-02



## Bulkhead Connector

Use to connect male thread and tube through a panel.

Applicable tubing size (mm)		Connection thread	Model	
O.D.	I.D.		Resin sleeve	Brass sleeve
ø6	ø4	R1/4	KFE06-02	KFE06B-02
		R3/8	KFE08U-03	—
ø8	ø6	R3/8	KFE08N-03	KFE08B-03
		R3/8	KFE10U-03	—
ø10	ø7.5	R3/8	KFE10N-03	KFE10B-03
		R3/8	KFE12U-03	—
ø12	ø9	R3/8	KFE12N-03	KFE12B-03



## Swivel Elbow

Use to pipe at right angles to female thread. Swiveled at any direction.

Applicable tubing size (mm)		Connec-tion thread	Model	
O.D.	I.D.		Resin sleeve	Brass sleeve
ø4	ø2.5	R1/8	KFV04-01S	KFV04B-01S
		R1/4	KFV04-02S	KFV04B-02S
ø6	ø4	R1/8	KFV06-01S	KFV06B-01S
		R1/4	KFV06-02S	KFV06B-02S
		R3/8	KFV06-03S	KFV06B-03S
ø8	ø5	R1/8	KFV08U-01S	—
		R1/4	KFV08U-02S	—
		R3/8	KFV08U-03S	—
ø6	ø6	R1/8	KFV08B-01S	KFV08B-01S
		R1/4	KFV08B-02S	KFV08B-02S
ø10	ø6.5	R3/8	KFV10U-03S	—
		R1/4	KFV10U-02S	—
ø7.5	ø7.5	R1/2	KFV10U-04S	—
		R1/4	KFV10N-02S	KFV10B-02S
		R3/8	KFV10N-03S	KFV10B-03S
ø8	ø8	R1/2	KFV10N-04S	KFV10B-04S
		R1/4	KFV12U-02S	—
ø12	ø8	R3/8	KFV12U-03S	—
		R1/2	KFV12U-04S	—
		R1/4	KFV12N-02S	KFV12B-02S
ø9	ø9	R3/8	KFV12N-03S	KFV12B-03S
		R1/2	KFV12N-04S	KFV12B-04S



## Swivel Long Elbow

Use to pipe at right angles to female thread. Swiveled at any direction. Solid piece moves fittings up from workpiece.

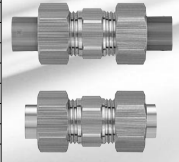
Applicable tubing size (mm)		Connec-tion thread	Model	
O.D.	I.D.		Resin sleeve	Brass sleeve
ø4	ø2.5	R1/8	KFW04-01S	KFW04B-01S
		R1/4	KFW04-02S	KFW04B-02S
ø6	ø4	R1/8	KFW06-01S	KFW06B-01S
		R1/4	KFW06-02S	KFW06B-02S
		R3/8	KFW06-03S	KFW06B-03S
ø8	ø5	R1/8	KFW08U-01S	—
		R1/4	KFW08U-02S	—
		R3/8	KFW08U-03S	—
ø6	ø6	R1/8	KFW08B-01S	KFW08B-01S
		R1/4	KFW08B-02S	KFW08B-02S
ø10	ø6.5	R3/8	KFW10U-03S	—
		R1/2	KFW10U-04S	—
ø7.5	ø7.5	R1/4	KFW10N-02S	KFW10B-02S
		R3/8	KFW10N-03S	KFW10B-03S
		R1/2	KFW10N-04S	KFW10B-04S
ø8	ø8	R1/4	KFW12U-02S	—
		R3/8	KFW12U-03S	—
ø12	ø8	R1/2	KFW12U-04S	—
		R1/4	KFW12N-02S	KFW12B-02S
		R3/8	KFW12N-03S	KFW12B-03S
ø9	ø9	R1/2	KFW12N-04S	KFW12B-04S



## Straight Union

Use to connect tubes in the same direction.

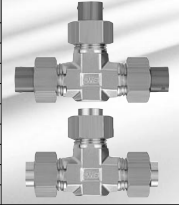
Applicable tubing size (mm)		Model	
O.D.	I.D.	Resin sleeve	Brass sleeve
ø4	ø2.5	KFH04-00	KFH04B-00
		KFH06-00	KFH06B-00
ø6	ø4	KFH08U-00	—
		KFH08N-00	KFH08B-00
ø8	ø6	KFH10U-00	—
		KFH10N-00	KFH10B-00
ø10	ø7.5	KFH12U-00	—
		KFH12N-00	KFH12B-00



## Tee Union

Use to connect tubes in both 90° directions.

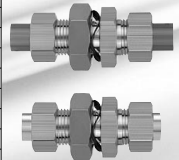
Applicable tubing size (mm)		Model	
O.D.	I.D.	Resin sleeve	Brass sleeve
ø4	ø2.5	KFT04-00	KFT04B-00
		KFT06-00	KFT06B-00
ø6	ø4	KFT08U-00	—
		KFT08N-00	KFT08B-00
ø8	ø6	KFT10U-00	—
		KFT10N-00	KFT10B-00
ø10	ø7.5	KFT12U-00	—
		KFT12N-00	KFT12B-00



## Bulkhead Union

Use to connect tubes through a panel.

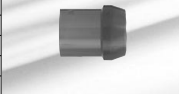
Applicable tubing size (mm)		Model	
O.D.	I.D.	Resin sleeve	Brass sleeve
ø4	ø2.5	KFE04-00	KFE04B-00
		KFE06-00	KFE06B-00
ø6	ø4	KFE08U-00	—
		KFE08N-00	KFE08B-00
ø8	ø6	KFE10U-00	—
		KFE10N-00	KFE10B-00
ø10	ø7.5	KFE12U-00	—
		KFE12N-00	KFE12B-00



## Plug

Use to plug unused fittings.

Applicable tubing size (mm)		Model
ø4		KFP-04
ø6		KFP-06
ø8		KFP-08
ø10		KFP-10
ø12		KFP-12



KQ2

KQ82

KS  
KX

KM

KF

M

H/DL  
L/LL

KC

KK

KK130

DM

KDM

KB

KR

KA

KQ62

KG

KFG2

MS

KKA

KP

LQ

MQR

T

IDK

# Insert Fittings

# KF Series

RoHS



Resin sleeve



Brass sleeve

## Specifications

Sleeve material	Resin	Brass
Fluid	Air, N <sub>2</sub> , Water, Turbine oil class 1 (ISO VG32) <small>(Note 2) (Note 3) (Note 5)</small>	Air, N <sub>2</sub> , Steam, Turbine oil class 1 (ISO VG32) <small>(Note 2) (Note 3)</small>
Ambient and fluid temperature	-5 to 60°C (No freezing) <small>(Note 4)</small> Water: 0 to 60°C (No freezing)	-5 to 150°C (No freezing) <small>(Note 4)</small>
Operating pressure range <small>(Note 1)</small>	-101.3 kPa to 1 MPa <small>(Note 4)</small>	
Proof pressure	7.0 MPa (at 60°C)	
Lubricant	Grease-free	
Seal on the threads	None or with sealant	

Note 1) Do not use the fittings with a leak tester or for vacuum retention because they are not guaranteed for zero leakage.  
 Note 2) Swivel type is not compatible with water, steam and turbine oil class 1 (ISO VG32).  
 Note 3) Consult with SMC regarding applicable tube separately.  
 Note 4) Check the operating pressure range and operating temperature range of the tubing.  
 Note 5) Deionized 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.

## Applicable Tubing

Series	Tubing O.D.	Tubing O.D. x I.D. (mm)							
		ø4 x ø2.5	ø6 x ø4	ø8 x ø5	ø8 x ø6	ø10 x ø6.5	ø10 x ø7.5	ø12 x ø8	ø12 x ø9
T	Nylon	●	●	—	●	—	●	—	●
TS	Soft nylon	●	●	—	●	—	●	—	●
TU	Polyurethane	●	●	●	—	●	—	●	—
TPH	Polyolefin	●	●	—	●	—	●	—	●
TPS	Soft polyolefin	●	●	—	●	—	●	—	●
TH	FEP	●	●	—	●	—	●	—	●
TL	Super PFA	—	●	—	—	—	—	—	—
TD	Modified PTFE	●	●	—	●	—	●	—	●
TUS	Soft polyurethane	●	●	●	—	●	—	●	—
TUH	Hard polyurethane (High pressure)	●	●	—	●	—	●	—	●
TUZ	Wear resistant polyurethane	●	●	●	—	●	—	●	—

## How to Order

KF H 06 [ ] - 01 S - [ ]

Type	Description
H	Male connector Straight union
L	Male elbow
T	Branch tee Tee union
F	Female union
E	Bulkhead connector Bulkhead union
Y	Male run tee
V	Swivel elbow
W	Swivel long elbow

Applicable tubing O.D.

04	ø4
06	ø6
08	ø8
10	ø10
12	ø12

Made to Order

Refer to page 179 for details.

Bore size/  
Applicable tubing O.D.

Thread connection	01	R1/8
	02	R1/4, Rc1/4
	03	R3/8, Rc3/8
	04	R1/2, Rc1/2
Tubing connection	00	Same tubing size

Sealant (Male thread)

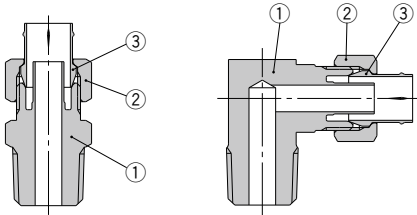
Nil	None
S	With sealant

Applicable tubing / Sleeve material

Applicable tubing material	Sleeve material	Tubing size (O.D. x I.D.)							
		ø4 x ø2.5	ø6 x ø4	ø8 x ø5	ø8 x ø6	ø10 x ø6.5	ø10 x ø7.5	ø12 x ø8	ø12 x ø9
Nylon	Resin	Nil	—	N	—	N	—	N	—
	Brass	B	—	B	—	B	—	B	—
Soft nylon	Resin	Nil	—	N	—	N	—	N	—
	Brass	B	—	B	—	B	—	B	—
Polyurethane	Resin	Nil	U	—	U	—	U	—	—
	Brass	B	—	B	—	B	—	B	—
Polyolefin	Resin	Nil	—	N	—	N	—	N	—
	Brass	B	—	B	—	B	—	B	—
Soft polyolefin	Resin	Nil	U	—	U	—	U	—	—
	Brass	Nil	—	N	—	N	—	N	—
FEP	Resin	Nil	—	N	—	N	—	N	—
	Brass	B	—	B	—	B	—	B	—
Super PFA	Resin	—	Nil	—	N	—	—	—	—
	Brass	—	B	—	B	—	—	—	—
Modified PTFE	Resin	Nil	—	N	—	N	—	N	—
	Brass	B	—	B	—	B	—	B	—
Soft polyurethane	Resin	Nil	U	—	U	—	U	—	—
	Hard polyurethane (High pressure)	Resin	Nil	U	—	U	—	U	—
Wear resistant polyurethane	Resin	Nil	U	—	U	—	U	—	

For details on applicable tubing O.D. and port size combinations for each model, refer to the charts on the Dimensions page.

## Construction

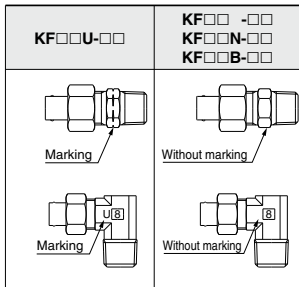


### Principal Parts Material

No	Part no.	Material
1	Body	C3604, C3771
2	Union nut	C3604
3	Resin sleeve, plug	Nylon 66
	Brass sleeve	C2700

### Identification of Fitting Body Exterior by Applicable Tubing

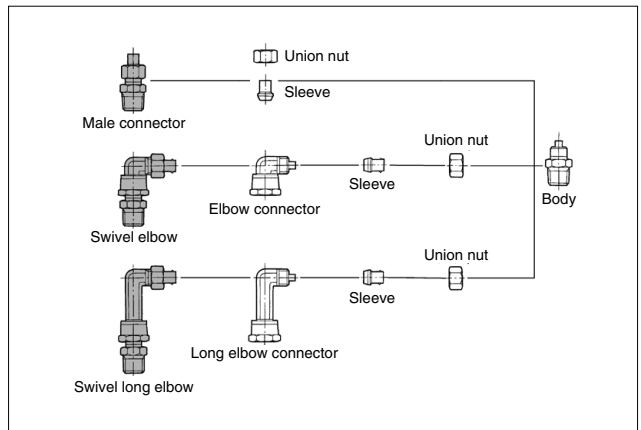
- Fittings used with polyurethane tube and soft polyolefin tube (Tube O.D.  $\phi 8$ ,  $\phi 10$  and  $\phi 12$ ) are identified by the following marks on the body.
- Union nut and sleeve are compatible.



### Swivel Type / Part No.

#### Swivel type fitting parts lineup

The bodies of elbow connectors and extended elbow connectors are compatible with almost any fitting. (Exceptions are "KFV-04" and "KFW-04" which are for the body of a  $\phi 6$  tube.) Swivel fittings, elbow (KFV) and (KFW) constitute the combination with a male connector (KFH) and connector as shown in the diagram.



**Made to Order**

Symbol	Specifications
<b>X2</b>	Copper-free (Electroless nickel plated)

Suffix "X2" to the end of part number.  
Ex.) KFH06-01S-X2

#### Elbow Connector: KFV

Part no.	Applicable tubing O.D./I.D.
<b>KFV-04</b>	$\phi 4/\phi 2.5$
<b>KFV-06</b>	$\phi 6/\phi 4$
<b>KFV-08U</b>	$\phi 8/\phi 5$
<b>KFV-08N</b>	$\phi 8/\phi 6$
<b>KFV-10U</b>	$\phi 10/\phi 6.5$
<b>KFV-10N</b>	$\phi 10/\phi 7.5$
<b>KFV-12U</b>	$\phi 12/\phi 8$
<b>KFV-12N</b>	$\phi 12/\phi 9$

#### Union Nut: KFN

Part no.	Applicable tubing O.D.
<b>KFN-04</b>	$\phi 4$
<b>KFN-06</b>	$\phi 6$
<b>KFN-08</b>	$\phi 8$
<b>KFN-10</b>	$\phi 10$
<b>KFN-12</b>	$\phi 12$

#### Long Elbow Connector: KFW

Part no.	Applicable tubing O.D./I.D.
<b>KFW-04</b>	$\phi 4/\phi 2.5$
<b>KFW-06</b>	$\phi 6/\phi 4$
<b>KFW-08U</b>	$\phi 8/\phi 5$
<b>KFW-08N</b>	$\phi 8/\phi 6$
<b>KFW-10U</b>	$\phi 10/\phi 6.5$
<b>KFW-10N</b>	$\phi 10/\phi 7.5$
<b>KFW-12U</b>	$\phi 12/\phi 8$
<b>KFW-12N</b>	$\phi 12/\phi 9$

#### Sleeve: KFS

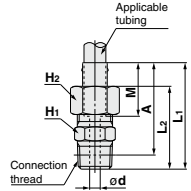
Part no.		Applicable tubing O.D.
Resin sleeve	Brass sleeve	
<b>KFS-04</b>	<b>KFSB-04</b>	$\phi 4$
<b>KFS-06</b>	<b>KFSB-06</b>	$\phi 6$
<b>KFS-08</b>	<b>KFSB-08</b>	$\phi 8$
<b>KFS-10</b>	<b>KFSB-10</b>	$\phi 10$
<b>KFS-12</b>	<b>KFSB-12</b>	$\phi 12$

# KF Series

## Dimensions

### Male Connector: KFH

Applicable tubing size (mm)		Conne- tion thread	Model	Width across flats		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>							
ø4	ø2.5	R1/8	KFH04-01S	10		29.6	22.9	15.5	1.5	26.5	1.6	13
		R1/4	KFH04-02S	14		34	27.3					23
		R1/8	KFH04B-01S	10	10	26.5	23.5	12.4	1.5	23.4	1.6	14
		R1/4	KFH04B-02S	14		30.9	27.9					24
ø6	ø4	R1/8	KFH06-01S	10		29.3	22.6	15.2	3	26.2	6	14
		R1/4	KFH06-02S	14		33.7	27					25
		R3/8	KFH06-03S	17	12	34.1	27.4	12.2	3	28.9	6	36
		R1/8	KFH06B-01S	10		26.3	23.3					15
		R1/4	KFH06B-02S	14		30.7	27.7	12.2	3	25.2	6	26
		R3/8	KFH06B-03S	17		31.1	28.1					25.9
ø8	ø5	R1/8	KFH08U-01S	12		29.3	22.6	16.2	4	26.2	11	16
		R1/4	KFH08U-02S	14		33.7	27					25
		R3/8	KFH08U-03S	17		34.1	27.4	13.3	5	28.9	17	37
		R1/8	KFH08N-01S	12		29.3	22.6					16
	ø6	R1/4	KFH08N-02S	14	14	33.7	27	16.2	4	26.2	11	24
		R3/8	KFH08N-03S	17		34.1	27.4					36
		R1/8	KFH08B-01S	12		26.4	23.4	13.3	5	25.3	17	17
		R1/4	KFH08B-02S	14		30.8	27.8					25
R3/8	KFH08B-03S	17		31.2	28.2	26.0	37					
ø10	ø6.5	R1/4	KFH10U-02S	17		35.3	28	18.8	5.5	29.8	21	32
		R3/8	KFH10U-03S	17		35.7	28.4					40
		R1/2	KFH10U-04S	22		38.9	31.6	15.0	6.5	31.6	30	65
		R1/4	KFH10N-02S	17	17	35.3	28					31
	ø7.5	R3/8	KFH10N-03S	17		35.7	28.4	18.8	5.5	29.8	21	39
		R1/2	KFH10N-04S	22		38.9	31.6					64
		R1/4	KFH10B-02S	17		31.5	28.5	15.0	6.5	26.0	30	33
		R3/8	KFH10B-03S	17		31.9	28.9					41
R1/2	KFH10B-04S	22		35.1	32.1	27.8	66					
ø12	ø8	R1/4	KFH12U-02S	17		35.8	29	19.3	7	30.3	35	33
		R3/8	KFH12U-03S	17		36.2	29.4					41
		R1/2	KFH12U-04S	22		39.4	32.6	15.5	8	32.1	45	65
		R1/4	KFH12N-02S	17	19	35.8	29					31
	ø9	R3/8	KFH12N-03S	17		36.2	29.4	19.3	7	31.0	35	39
		R1/2	KFH12N-04S	22		39.4	32.6					64
		R1/4	KFH12B-02S	17		32.1	29.1	15.5	8	26.6	45	33
		R3/8	KFH12B-03S	17		32.5	29.5					41
R1/2	KFH12B-04S	22		35.7	32.6	28.4	66					



Resin sleeve

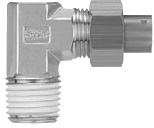


Brass sleeve

\* Reference dimensions after installation of R thread.

**Dimensions**

**Male Elbow: KFL**

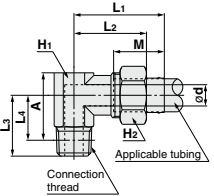


Resin sleeve



Brass sleeve

Applicable tubing size (mm)		Conne- tion thread	Model	Width across flats		L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	M	ød	A*	Effective area (mm <sup>2</sup> )	Weight (g)
O.D.	I.D.			H <sub>1</sub>	H <sub>2</sub>									
ø4	ø2.5	R1/8	KFL04-01S	10	10	27.5	20.8	17	13	15.5	1.5	19.3	1.6	21
		R1/4	KFL04-02S					19						25
		R1/8	KFL04B-01S					17						22
		R1/4	KFL04B-02S					19						26
ø6	ø4	R1/8	KFL06-01S	10	12	27.2	20.5	17	13	15.2	3	19.3	6.0	22
		R1/4	KFL06-02S					19						27
		R3/8	KFL06-03S	12	30.2	23.5	20	13.7	21	38				
		R1/8	KFL06B-01S	10	12	24.2	21.2	17	13	12.2	19.3	23		
		R1/4	KFL06B-02S					19					28	
		R3/8	KFL06B-03S	12	27.2	24.2	20	13.7	21	39				
ø8	ø5	R1/8	KFL08U-01S	12	14	28.2	21.5	18	14	16.2	4	21.3	9.5	30
		R1/4	KFL08U-02S					21						32
		R3/8	KFL08U-03S					30.2						23.5
	R1/8	KFL08N-01S	12	14	28.2	21.5	18	14	13.3	21.3	12	11	39	
	R1/4	KFL08N-02S					21							32
	R3/8	KFL08N-03S					30.2							23.5
	R1/8	KFL08B-01S	12	14	25.3	22.3	18	14	15.0	21.3	12	5	33	
	R1/4	KFL08B-02S					21							33
	R3/8	KFL08B-03S					27.3							24.3
	ø10	ø6.5	R1/4	KFL10U-02S	12	17	31.8	24.5	22	16	18.8	5.5	22.0	18
R3/8			KFL10U-03S	21					44					
R1/2			KFL10U-04S	14					33.8					
R1/4		KFL10N-02S	12	17	31.8	24.5	22	16	6.5	23.3	23	20	38	
R3/8		KFL10N-03S					21							43
R1/2		KFL10N-04S					14							33.8
R1/4		KFL10B-02S	12	17	28.0	25.0	22	16	15.0	23.3	23	22	39	
R3/8		KFL10B-03S					21							44
R1/2		KFL10B-04S					14							30.0
ø12		ø8	R1/4	KFL12U-02S	14	19	34.3	27.5	23	17	19.3	7	24.2	30
	R3/8		KFL12U-03S	22					53					
	R1/2		KFL12U-04S	25					68					
	R1/4	KFL12N-02S	14	19	34.3	27.5	23	17	8	25.5	27	24.2	35	52
	R3/8	KFL12N-03S					22							52
	R1/2	KFL12N-04S					25							67
	R1/4	KFL12B-02S	14	19	30.6	27.6	23	17	15.5	24.2	27	24.2	35	54
	R3/8	KFL12B-03S					22							54
R1/2	KFL12B-04S	25					69							



\* Reference dimensions after installation of R thread.

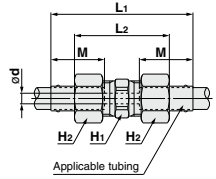
- KQ2
- KQB2
- KS
- KX
- KM
- KF**
- M
- H/DL
- L/LL
- KC
- KK
- KK130
- DM
- KDM
- KB
- KR
- KA
- KQG2
- KG
- KFG2
- MS
- KKA
- KP
- LQ
- MQR
- T
- IDK

# KF Series

## Dimensions

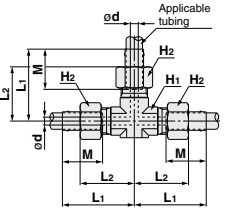
### Straight Union: KFH

Applicable tubing size (mm)		Model	Width across flats		L <sub>1</sub>	L <sub>2</sub>	M	ød	Effective area (mm <sup>2</sup> )	Weight (g)
O.D.	I.D.		H <sub>1</sub>	H <sub>2</sub>						
ø4	ø2.5	KFH04-00	8	10	40.9	27.6	15.5	1.5	1.6	13
		KFH04B-00			34.7	28.8	12.4			14
ø6	ø4	KFH06-00	10	12	40.3	27	15.2	3	6	17
		KFH06B-00			34.3	28.4	12.2			19
ø8	ø5	KFH08U-00	12	14	41.3	28	16.2	4	11	23
		KFH08N-00			35.5	29.6	13			22
ø8	ø6	KFH08N-00	12	14	41.3	28	16.2	5	17	22
		KFH08B-00			35.5	29.6	13			24
ø10	ø6.5	KFH10U-00	17	17	44.6	30	18.8	5.5	21	36
		KFH10N-00			37.0	31.0	15.0			39
ø10	ø7.5	KFH10N-00	17	17	44.6	30	18.8	6.5	30	36
		KFH10B-00			37.0	31.0	15.0			39
ø12	ø8	KFH12U-00	17	19	45.5	32	19.3	7	35	42
		KFH12N-00			38.1	32.2	15.5			41
ø12	ø9	KFH12N-00	17	19	45.5	32	19.3	8	45	41
		KFH12B-00			38.1	32.2	15.5			44



### Tee Union: KFT

Applicable tubing size (mm)		Model	Width across flats		L <sub>1</sub>	L <sub>2</sub>	M	ød	Effective area (mm <sup>2</sup> )	Weight (g)
O.D.	I.D.		H <sub>1</sub>	H <sub>2</sub>						
ø4	ø2.5	KFT04-00	10	10	27.5	20.8	15.5	1.5	1.6	33
		KFT04B-00			24.4	21.4	12.4			35
ø6	ø4	KFT06-00	10	12	27.2	20.5	15.2	3	6	37
		KFT06B-00			24.2	21.2	12.2			39
ø8	ø5	KFT08U-00	12	14	30.2	23.5	16.2	4	11	54
		KFT08N-00			27.3	24.3	13.3			53
ø8	ø6	KFT08N-00	12	14	30.2	23.5	16.2	5	17	53
		KFT08B-00			27.3	24.3	13.3			56
ø10	ø6.5	KFT10U-00	12	17	31.8	24.5	18.8	5.5	21	65
		KFT10N-00			28.0	25.0	15.0			63
ø10	ø7.5	KFT10N-00	12	17	31.8	24.5	18.8	6.5	30	63
		KFT10B-00			28.0	25.0	15.0			67
ø12	ø8	KFT12U-00	14	19	34.3	27.5	19.3	7	35	89
		KFT12N-00			30.6	27.6	15.5			85
ø12	ø9	KFT12N-00	14	19	34.3	27.5	19.3	8	45	85
		KFT12B-00			30.6	27.6	15.5			90





**Dimensions**

**Branch Tee: KFT**

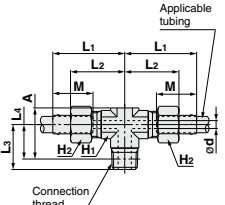


Resin sleeve



Brass sleeve

Applicable tubing size (mm)		Connection thread R	Model	Width across flats		L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	M	ød	A*	Effective area (mm <sup>2</sup> )	Weight (g)	
O.D.	I.D.			H <sub>1</sub>	H <sub>2</sub>										
ø4	ø2.5	R1/8	KFT04-01S	10	10	27.5	20.8	17	13	15.5	1.5	19.3	3	29	
		R1/4	KFT04-02S					19						34	
		R1/8	KFT04B-01S					17						30	
		R1/4	KFT04B-02S					19						35	
ø6	ø4	R1/8	KFT06-01S	10	10	27.2	20.5	17	13	15.2	3	19.3	10	32	
		R1/4	KFT06-02S					19						37	
		R3/8	KFT06-03S	12	12	30.2	23.5	22	15.7	3	19.3	10	34		
		R1/4	KFT06B-02S	10	10	24.2	21.2	19	13					12.2	19.3
		R3/8	KFT06B-03S	12	12	27.2	24.2	22	15.7	3	19.3	10	39		
		R1/8	KFT06-01S	12	14	30.2	23.5	20	16					16.2	23.3
R1/4	KFT08U-02S	23	17					4	24.3	19	50				
R3/8	KFT08U-03S	22	15.7									5	23.3		
R1/8	KFT08N-01S	20	16					5	23.3	16	48				
R1/4	KFT08N-02S	23	17									13.3	24.3		
R3/8	KFT08N-03S	22	15.7					23	24.3	25	51				
R1/8	KFT08B-01S	20	16	23	24.3	25	56								
R1/4	KFT08B-02S	27.3	24.3					23	24.3	27	46				
R3/8	KFT08B-03S	22	15.7	18.8	27.3	34	63								
ø10	ø6.5	R1/4	KFT10U-02S					12	12	31.8	24.5	22	15.7	18.8	5.5
		R3/8	KFT10U-03S	23	17	6.5	27.3					30			
		R1/2	KFT10U-04S	14	14			33.8	26.5	27	18.8		15.0	27.3	41
		R1/4	KFT10N-02S	12	17	23	17	23	17	30	60				
	R3/8	KFT10N-03S	12	17	22	15.7	23					17	30	65	
	R1/2	KFT10N-04S	14	14	33.8	26.5		27	18.8	15.0	27.3				41
	R1/4	KFT10B-02S	12	17	28.0	25.0	23	17	23			17	30	60	
	R3/8	KFT10B-03S	12	17	22	15.7	23	17		30	65				
R1/2	KFT10B-04S	14	14	30.0	27.0	27			18.8			19.3	27.3	44	94
ø12	ø8	R1/4	KFT12U-02S	14	19	34.3	27.5	25	19	19.3	7				
		R3/8	KFT12U-03S					24	17.7			8	27.3	48	93
		R1/2	KFT12U-04S	27	18.8	8	27.3	48	93						
		R1/4	KFT12N-02S	14	19					25	19	27.5	32	75	
	R3/8	KFT12N-03S	14	19	24	17.7	26.2	48	78						
	R1/2	KFT12N-04S	14	19	27	18.8				27.3	48	93			
	R1/4	KFT12B-02S	14	19	25	19	27.5	32	78						
	R3/8	KFT12B-03S	14	19	24	17.7				26.2	48	78			
R1/2	KFT12B-04S	14	19	27	18.8	27.3	48	96							



\* Reference dimensions after installation of R thread.

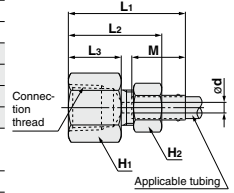
- KQ2
- KQB2
- KS
- KX
- KM
- KF**
- M
- H/DL
- L/LL
- KC
- KK
- KK130
- DM
- KDM
- KB
- KR
- KA
- KQG2
- KG
- KFG2
- MS
- KKA
- KP
- LQ
- MQR
- T
- IDK

# KF Series

## Dimensions

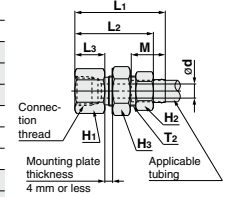
### Female Union: KFF

Applicable tubing size (mm)		Connection thread Rc	Model	Width across flats			L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	M	ød	Effective area (mm <sup>2</sup> )	Weight (g)						
O.D.	I.D.			H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>													
ø4	ø2.5	Rc1/4	KFF04-02	17	10	33.5	26.8	15	15.5	1.5	1.6	25							
			KFF04B-02										30.4	27.4	12.4				
Resin sleeve ø6	ø4	Rc1/4	KFF06-02	17	12	33.2	26.5	15	15.2	3	6	27							
			KFF06B-03										19	35.2	28.5	17	28		
			Rc1/4										17	30.2	27.2	15	12.2	31	
			Rc3/8										19	32.2	29.2	17			
ø8	ø5	Rc1/4	KFF08U-02	17	14	33.2	26.5	15	16.2	4	11	28							
			KFF08B-02										30.3	27.3	13.3	5	17	29	
Brass sleeve ø10	ø6.5	Rc1/4	KFF10U-02	17	17	34.8	27.5	15	18.8	5.5	21	32							
			KFF10N-02										17	31.0	28.0	15.0	6.5	30	33
			KFF10B-02										17	31.0	28.0	15.0	6.5	30	33
ø12	ø8	Rc1/4	KFF12U-02	17	19	35.3	28.5	15	19.3	7	35	35							
			KFF12N-02										17	31.6	28.6	15.5	8	45	36
			KFF12B-02										17	31.6	28.6	15.5	8	45	38



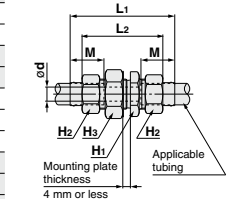
### Bulkhead Connector: KFE

Applicable tubing size (mm)		Connection thread Rc	Model	Width across flats			L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	M	ød	T <sub>2</sub>	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>																
ø6	ø4	Rc1/4	KFE06-02	17	12	17	44.2	37.5	16	15.2	3	M10 x 1	11	6	41							
			KFE06B-02													41.2	38.2	12.2	4	11	49	
Resin sleeve ø8	ø5	Rc3/8	KFE08U-03	19	14	19	46.2	39.5	17	16.2	4	M12 x 1	13	17	50							
			KFE08N-03													19	43.3	40.3	13.3	5	17	51
			KFE08B-03													19	43.3	40.3	13.3	5	17	51
			ø6.5													19	48.8	41.5	17	18.8	5.5	21
Brass sleeve ø10	ø7.5	Rc3/8	KFE10U-03	19	17	22	45.0	42.0	17	15.0	6.5	M15 x 1	16	30	62							
			KFE10B-03													19	45.0	42.0	15.0	6.5	30	63
			ø8													22	51.3	44.5	17	19.3	7	35
ø12	ø9	Rc3/8	KFE12N-03	22	19	24	47.6	44.6	17	15.5	8	M17 x 1	18	45	91							
			KFE12B-03													22	47.6	44.6	15.5	8	45	93



### Bulkhead Union: KFE

Applicable tubing size (mm)		Model	Width across flats			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>													
Resin sleeve ø4	ø2.5	KFE04-00	12	10	13	50.9	37.6	15.5	1.5	9	1.6	23						
		KFE04B-00											44.7	38.8	12.4	24		
ø6	ø4	KFE06-00	14	12	17	51.3	38	15.2	3	11	6	34						
		KFE06B-00											45.3	39.4	12.2	36		
ø8	ø5	KFE08U-00	17	14	19	52.3	39	16.2	4	13	11	47						
		KFE08N-00											46.5	40.6	13	5	17	46
		KFE08B-00											46.5	40.6	13	5	17	48
Brass sleeve ø10	ø6.5	KFE10U-00	19	17	22	56.6	42	18.8	5.5	16	21	67						
		KFE10N-00											49.0	43.0	15.0	6.5	30	66
		KFE10B-00											49.0	43.0	15.0	6.5	30	69
ø12	ø8	KFE12U-00	22	19	24	59.5	46	19.3	7	18	35	87						
		KFE12N-00											52.1	46.2	15.5	8	45	85
		KFE12B-00											52.1	46.2	15.5	8	45	88



**Dimensions**

**Male Run Tee: KFY**

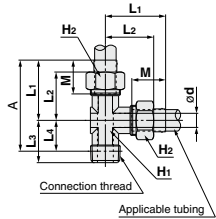


Resin sleeve



Brass sleeve

Applicable tubing size (mm)		Conne- tion thread R	Model	With across flats		L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub> *	M	ød	A*	Effective area (mm <sup>2</sup> )	Weight (g)									
O.D.	I.D.			H <sub>1</sub>	H <sub>2</sub>																		
ø4	ø2.5		R1/8	KFY04-01S	10	10	27.5	20.8	17	15.5	1.5	40.5	3.5	28									
			R1/4	KFY04-02S					19						32								
			R1/8	KFY04B-01S					17							12.4	29						
			R1/4	KFY04B-02S					19														
ø6	ø4		R1/8	KFY06-01S	10	12	27.2	20.5	19	15.2	3	40.2	11	31									
			R1/4	KFY06-02S					19						37								
			R3/8	KFY06-03S					12							12	51						
			R1/8	KFY06B-01S					17									12.2	33				
			R1/4	KFY06B-02S					19							37.2				11			
			R3/8	KFY06B-03S					12												42.8	13	
R1/8	KFY08U-01S	12	14	20	16.2	46.2	15	48															
R1/4	KFY08U-02S			23					50														
R3/8	KFY08U-03S			22						17	55												
R1/8	KFY08N-01S			20								18	47										
R1/4	KFY08N-02S			23						47.2				27									
R3/8	KFY08N-03S			22											45.8	53							
R1/8	KFY08B-01S	20	43.3	18																			
R1/4	KFY08B-02S	23			44.3	27																	
R3/8	KFY08B-03S	22	42.9				55																
ø10	ø6.5				R1/4			KFY10U-02S	12	17	31.8	24.5	22		18.8		5.5	48.8	30	58			
			R3/8		KFY10U-03S			22					15.7	47.4							38	63	
			R1/2		KFY10U-04S			14								18.8							52.6
			R1/4	KFY10N-02S	23			48.8															
	R3/8	KFY10N-03S	12	47.4	46																		
	R1/2	KFY10N-04S	14			52.6	88																
	R1/4	KFY10B-02S	12	45.0				33															
	R3/8	KFY10B-03S	12			43.6			65														
R1/2	KFY10B-04S	14	48.8	46																			
ø12	ø8				R1/4	KFY12U-02S	14			19	34.3	27.5	25	19.3	7	53.3	34	79					
			R3/8		KFY12U-03S	24		51.9					49						93				
			R1/2		KFY12U-04S	27			53.1											36			
			R1/4	KFY12N-02S	25	53.3															76		
	R3/8	KFY12N-03S	14	51.9	54																		
	R1/2	KFY12N-04S	14			53.1	92																
	R1/4	KFY12B-02S	12	49.6				36															
	R3/8	KFY12B-03S	12			48.2			81														
R1/2	KFY12B-04S	14	49.4	95																			



\* 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

# KF Series

## Dimensions

### Swivel Elbow: KVF

(mm)

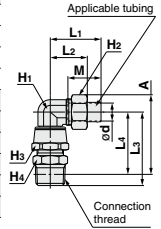


Resin sleeve



Brass sleeve

Applicable tubing size (mm)		Connection thread R	Model	Width across flats				L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub> *	M	ød	A*	Effective area (mm <sup>2</sup> )	Weight (g)
O.D.	I.D.			H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	H <sub>4</sub>									
ø4	ø2.5		R1/8	KFV04-01S	10	10	14	10	19.3	32.8	29.7	15.5	35.5	1.4		40
			R1/4	KFV04-02S				14								37.5
			R1/8	KFV04B-01S	10	22.9	19.9	12.4	10	32.8	29.7	35.5	41			
			R1/4	KFV04B-02S	14				37.2	31.7	37.5	51				
			R1/8	KFV06-01S	10	10	12	14	10	25.7	19	32.8	29.7			15.2
R1/4	KFV06-02S	14	37.2	31.7	36.6				52							
R3/8	KFV06-03S	17	37.6	32.4	39.3				64							
R1/8	KFV06B-01S	10	22.7	19.7	12.2				10	32.8	29.7	36.6	43			
R1/4	KFV06B-02S	14							37.2	31.7	36.6	53				
R3/8	KFV06B-03S	17	37.6	32.4	39.3	65										
ø6	ø4		R1/8	KFV08U-01S	10	12	14	12	27.2	20.5	16.2	38.8	3	5		52
			R1/4	KFV08U-02S				14								38.2
			R3/8	KFV08U-03S				17	38.6	33.4	41.5	72				
			R1/8	KFV08N-01S				12	33.8	30.7	38.8	57				
			R1/4	KFV08N-02S				14	38.2	32.7	40.8	60				
	R3/8	KFV08N-03S	17	38.6	33.4	41.5	72									
	R1/8	KFV08B-01S	12	24.3	21.3	13.3	12	38.8	30.7	40.8	61					
	R1/4	KFV08B-02S	14				38.2					32.7	40.8	61		
	R3/8	KFV08B-03S	17				38.6	33.4	41.5	73						
	ø8	ø5		R1/8	KFV08U-01S	12	14	17	12	28.8	21.5	18.8	44.5	4	9.4	
R1/4				KFV08U-02S	14				38.2							
R3/8				KFV08U-03S	17				38.6	33.4	41.5	72				
R1/8				KFV08N-01S	12				33.8	30.7	38.8	57				
R1/4				KFV08N-02S	14				38.2	32.7	40.8	60				
R3/8		KFV08N-03S	17	38.6	33.4	41.5	72									
R1/8		KFV08B-01S	12	24.3	21.3	13.3	12	38.8	30.7	40.8	61					
R1/4		KFV08B-02S	14				38.2					32.7	40.8	61		
R3/8		KFV08B-03S	17				38.6	33.4	41.5	73						
ø10		ø6.5		R1/4	KFV10U-02S	14	17	19	17	25.0	22.0	15.0	46.3	5.5	18	
	R3/8			KFV10U-03S	17				40.2							
	R1/2			KFV10U-04S	22				43.8	36.5	46.3	104				
	R1/4			KFV10N-02S	17				40.2	34.7	44.5	72				
	R3/8			KFV10N-03S	17				40.6	35.4	45.2	80				
	R1/2	KFV10N-04S	22	43.8	36.5	46.3	104									
	R1/4	KFV10B-02S	17	25.0	22.0	15.0	17	40.2	34.7	44.5	73					
	R3/8	KFV10B-03S	17				40.6					35.4	45.2	81		
	R1/2	KFV10B-04S	22				43.8	36.5	46.3	105						
	ø12	ø8		R1/4	KFV12U-02S	17	19	22	17	30.3	23.5	19.3	46.7	7	30	
R3/8				KFV12U-03S	17				41.2							
R1/2				KFV12U-04S	22				44.8	37.5	48.5	124				
R1/4				KFV12N-02S	17				41.2	35.7	46.7	90				
R3/8				KFV12N-03S	17				41.6	36.4	47.4	98				
R1/2		KFV12N-04S	22	44.8	37.5	48.5	123									
R1/4		KFV12B-02S	17	26.6	23.6	15.5	17	41.2	35.7	46.7	92					
R3/8		KFV12B-03S	17				41.6					36.4	47.4	100		
R1/2		KFV12B-04S	22				44.8	37.5	48.5	125						



\* Reference dimensions after installation of R thread.

**Dimensions**

**Swivel Long Elbow: KFW**

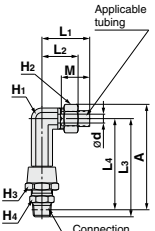


Resin sleeve



Brass sleeve

Applicable tubing size (mm)		Connection thread R	Model	Width across flats				L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub> *	M	ød	A*	Effective area (mm <sup>2</sup> )	Weight (g)	
O.D.	I.D.			H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	H <sub>4</sub>										
ø4	ø2.5	R/8	KFW04-01S	10	10	14	10	26	19.3	52.8	49.7	15.5	55.5	1.4	58		
		R1/4	KFW04-02S				14									57.2	51.7
		R/8	KFW04B-01S	10	10	14	10	22.9	19.9	52.8	49.7	12.4	57.2	51.7	55.5	59	
		R1/4	KFW04B-02S				14										57.2
		ø6	ø4	R/8	KFW06-01S	10	12	14	10	25.7	19.0	53.8	50.7	15.2	57.6	5.0	61
R1/4	KFW06-02S			14	58.2				52.7								
R/8	KFW06-03S			10	12	14	17	22.7	19.7	58.6	53.4	12.2	58.6	52.7	59.6	67	
R1/4	KFW06B-01S						10										53.8
R1/4	KFW06B-02S			14	58.2	52.7	59.6	67									
R3/8	KFW06B-03S			17	58.6	53.4	60.3	78									
ø8	ø6			R/8	KFW08U-01S	12	14	17	12	27.2	20.5	54.8	51.7	16.2	59.8	9.4	81
				R1/4	KFW08U-02S				14								
				R/8	KFW08U-03S	12	14	17	17	24.3	21.3	59.6	54.4	13.3	59.8	14	81
		R1/4	KFW08N-01S	12	54.8				51.7								
		R1/4	KFW08N-02S	14	59.2	53.7	61.8	83									
		R3/8	KFW08N-03S	17	59.6	54.4	62.5	88									
		R1/8	KFW08B-01S	12	54.8	51.7	59.8	82									
		R1/4	KFW08B-02S	14	59.2	53.7	61.8	84									
		R3/8	KFW08B-03S	17	59.6	54.4	62.5	89									
ø10	ø6.5	R1/4	KFW10U-02S	14	17	19	17	28.8	21.5	61.2	55.7	18.8	65.5	18	100		
		R3/8	KFW10U-03S				17									61.6	56.4
		R1/2	KFW10U-04S	14	17	19	22	25.0	22.0	64.8	57.5	15.0	67.3	25	128		
		R1/4	KFW10N-02S				22									61.2	55.7
		R3/8	KFW10N-03S	17	61.6	56.4	66.2	104									
		R1/2	KFW10B-02S	14	17	19	22	25.0	22.0	64.8	57.5	15.0	67.3	25	126		
	R3/8	KFW10B-03S	22				61.2									55.7	65.5
	R1/2	KFW10B-04S	22	64.8	57.5	67.3	127										
	ø12	ø8	R1/4	KFW12U-02S	17	19	22	17	30.3	23.5	64.2	58.7	19.3	69.7	30	146	
			R3/8	KFW12U-03S				17									64.6
			R1/2	KFW12U-04S	22	67.8	60.5	71.5	161								
		R1/4	KFW12N-02S	17	19	22	22	26.6	23.6	64.2	58.7	15.5	69.7	38	144		
R3/8		KFW12N-03S	17				64.6									59.4	70.4
R1/2		KFW12N-04S	22	67.8	60.5	71.5	159										
R1/4		KFW12B-02S	17	19	22	22	26.6	23.6	64.6	59.4	15.5	70.4	38	146			
R3/8		KFW12B-03S				17									64.6	59.4	70.4
R1/2		KFW12B-04S	22	67.8	60.5	71.5	161										



\* Reference dimensions after installation of R thread.

**Plug: KFP**



(mm)				
Applicable tubing size (mm)	Model	L <sub>1</sub>	ød	Weight (g)
ø4	KFP-04	12	6.5	0.3
ø6	KFP-06	12	8.5	0.5
ø8	KFP-08	12	10.4	0.7
ø10	KFP-10	13.5	13	1.0
ø12	KFP-12	14	15	1.4



- 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

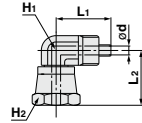
# KF Series

## Dimensions

### Elbow Connector: KFB



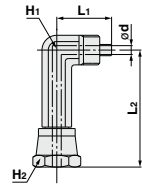
Applicable tubing size (mm)		Model	Width across flats		L <sub>1</sub>	L <sub>2</sub>	ød	Weight (g)
O.D.	I.D.		H <sub>1</sub>	H <sub>2</sub>				
ø4	ø2.5	KFB-04	10	14	18.5	18.5	1.5	21.1
ø6	ø4	KFB-06	10	14	18.5	18.5	3	21.6
ø8	ø5	KFB-08U	12	17	20	19.5	4	32.8
	ø6	KFB-08N					5	32.9
ø10	ø6.5	KFB-10U	14	19	21	21.5	5.5	41.9
	ø7.5	KFB-10N					6.5	41.7
ø12	ø8	KFB-12U	17	22	22	22.5	7	61.8
	ø9	KFB-12N					8	61.6



### Long Elbow Connector: KFW



Applicable tubing size (mm)		Model	Width across flats		L <sub>1</sub>	L <sub>2</sub>	ød	Weight (g)
O.D.	I.D.		H <sub>1</sub>	H <sub>2</sub>				
ø4	ø2.5	KFW-04	10	14	18.5	38.5	1.5	31.7
ø6	ø4	KFW-06	10	14	18.5	39.5	3	33.0
ø8	ø5	KFW-08U	12	17	20	40.5	4	48.0
	ø6	KFW-08N					5	46.8
ø10	ø6.5	KFW-10U	14	19	21	42.5	5.5	62.4
	ø7.5	KFW-10N					6.5	63.4
ø12	ø8	KFW-12U	17	22	22	45.5	7	94.0
	ø9	KFW-12N					8	94.5



### Sleeve: KFS



Resin sleeve



Brass sleeve

Applicable tubing size (mm)		Model	L	øD	Weight (g)
ø4	KFS-04				
	KFSB-04	8.7	0.6		
ø6	KFS-06	12	8.5	0.1	
	KFSB-06	8.8		0.9	
ø8	KFS-08	12	10.5	0.2	
	KFSB-08	8.8		1.2	
ø10	KFS-10	13.5	13	0.3	
	KFSB-10	9.6		1.7	
ø12	KFS-12	14	15	0.4	
	KFSB-12	10.1		2.1	



### Union Nut: KFN



Applicable tubing size (mm)		Model	Width across flats		Weight (g)
			H	L	
ø4	KFN-04	10	8	3.0	
ø6	KFN-06	12	8	3.8	
ø8	KFN-08	14	8	4.7	
ø10	KFN-10	17	9	7.0	
ø12	KFN-12	19	10	9.5	





# KF 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

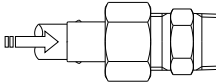
#### ⚠ Caution

1. Please consult with SMC regarding fluids other than air and steam.

### Piping

#### ⚠ Caution

1. Installation of tubing
  - 1) Take a tube having no flaws on its periphery and cut it off at right angles. Do not use pinchers, nippers or scissors, etc. The tubing might be cut diagonally or flattened, making installation impossible or causing problems such as disconnection and leakage.
  - 2) Without loosening the union nut, grab the tube and gently push it thoroughly into the fitting.
  - 3) After insertion, confirm that the tube will not disconnect.



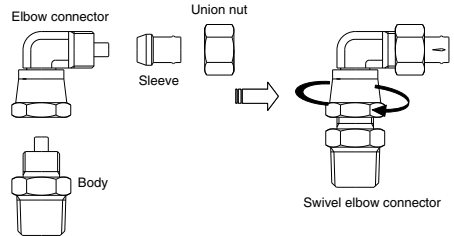
- 4) When the union is loose, tighten it additionally, temporarily by hand.
- 5) After fixing the body with the tightening tool, tighten the union nut with an appropriate wrench, applying the torque as shown below. After tightening the clearance between the union nut and the body in the axial direction is about 2 mm.

Fitting size	Sleeve material			
	Resin		Brass	
	Appropriate tightening rotations	Equivalent tightening torque (N·m)	Appropriate tightening rotations	Equivalent tightening torque (N·m)
<b>KF□04</b>	1.5 to 2.0	2 to 7	1.5	2 to 4
<b>KF□06</b>	1.5 to 2.0	3 to 8	1.5	4 to 6
<b>KF□08</b>	1.5 to 2.0	4 to 9	1.5	6 to 9
<b>KF□10</b>	1.5 to 2.0	6 to 9	1.5	10 to 12
<b>KF□12</b>	1.5 to 2.0	9 to 12	1.5	10 to 12

### Piping

#### ⚠ Caution

2. How to connect elbow type connector
  - 1) First tighten by hand, then use an appropriate wrench to tighten 1/6 to 1/3 turns additionally. Refer to the table below for equivalent tightening torque.



Fitting size	Appropriate tightening rotations	Equivalent tightening torque (N·m)
<b>KF□-04</b>	1/6 to 1/3	3 to 7
<b>KF□-06</b>	1/6 to 1/3	3 to 7
<b>KF□-08</b>	1/6 to 1/3	3 to 7
<b>KF□-10</b>	1/6 to 1/3	5 to 10
<b>KF□-12</b>	1/6 to 1/3	5 to 10

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



## KF 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.

### Operating Environment

#### Warning

1. Do not use in environments or locations where there is a danger of damage to the fittings and tubing.  
For fitting and tubing materials, refer to specifications and construction drawings, etc.

### 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 tubing
  - d) Hardening, deterioration or softness of tubing
3. Do not repair the fittings or patch the tubing for reuse.
4. Using this product for extended periods of time can result in leaks due to the material change. In such cases, tighten the union nut additionally.  
A guide for the additional tightening is 1/6 to 1/4 turns. But in case of the brass sleeve, the limit for additional tightening is 1/2 turns.  
When there is a leak even after additional tightening, replace the sleeve with new one.
5. Sleeve is not recyclable. Replace it every time piping is performed.