

Insert Fittings

Series KF

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

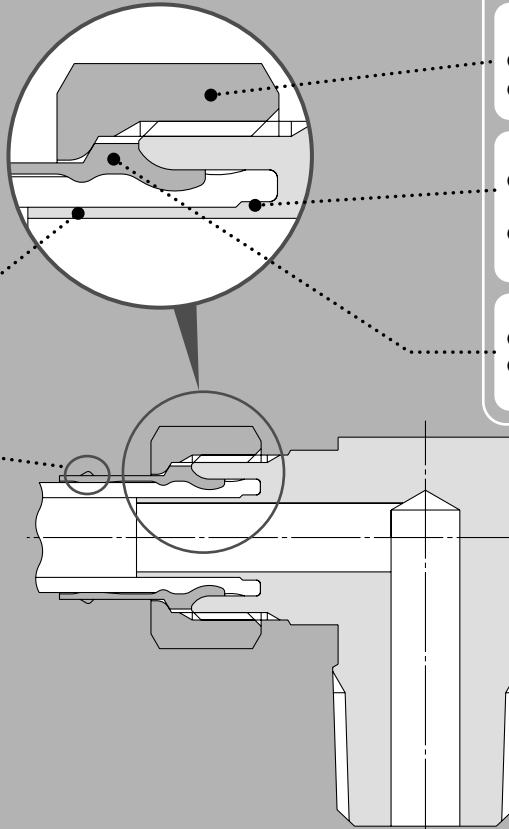
A reliable seal Holds the tube tightly

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



- Material / Body, Union nut: Brass
Sleeve: Resin or Brass
- Maximum operating temperature / 150°C (Brass sleeve)
 60°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



K

M

H

KK

D

MS

LQ

MQR

T

Male Connector

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

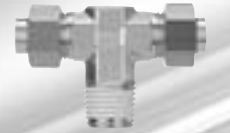
Applicable tubing size (mm)		Connection thread	Model	
O.D.	I.D.		Resin sleeve	Brass sleeve
ø4	ø2.5	R1/8	KFH04-01S	KFH04B-01S
		R1/4	KFH04-02S	KFH04B-02S
ø6	ø4	R1/8	KFH06-01S	KFH06B-01S
		R1/4	KFH06-02S	KFH06B-02S
		R3/8	KFH06-03S	KFH06B-03S
ø8	ø5	R1/8	KFH08U-01S	—
		R1/4	KFH08U-02S	—
		R3/8	KFH08U-03S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



Branch Tee

Use to branch line from female thread in both 90°C 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
ø6	ø4	R1/8	KFT06-01S	KFT06B-01S
		R1/4	KFT06-02S	KFT06B-02S
		R3/8	KFT06-03S	KFT06B-03S
ø8	ø5	R1/8	KFT08U-01S	—
		R1/4	KFT08U-02S	—
		R3/8	KFT08U-03S	—
ø8	ø6	R1/8	KFT08N-01S	KFT08B-01S
		R1/4	KFT08N-02S	KFT08B-02S
		R3/8	KFT08N-03S	KFT08B-03S
ø10	ø6.5	R1/4	KFT10U-02S	—
		R3/8	KFT10U-03S	—
		R1/2	KFT10U-04S	—
	ø7.5	R1/4	KFT10N-02S	KFT10B-02S
		R3/8	KFT10N-03S	KFT10B-03S
ø12	ø8	R1/2	KFT10N-04S	KFT10B-04S
		R1/4	KFT12U-02S	—
		R3/8	KFT12U-03S	—
	ø9	R1/2	KFT12U-04S	—
		R1/4	KFT12N-02S	KFT12B-02S
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
ø6	ø4	R1/8	KFL06-01S	KFL06B-01S
		R1/4	KFL06-02S	KFL06B-02S
		R3/8	KFL06-03S	KFL06B-03S
ø8	ø5	R1/8	KFL08U-01S	—
		R1/4	KFL08U-02S	—
		R3/8	KFL08U-03S	—
ø8	ø6	R1/8	KFL08N-01S	KFL08B-01S
		R1/4	KFL08N-02S	KFL08B-02S
		R3/8	KFL08N-03S	KFL08B-03S
ø10	ø6.5	R1/4	KFL10U-02S	—
		R3/8	KFL10U-03S	—
		R1/2	KFL10U-04S	—
	ø7.5	R1/4	KFL10N-02S	KFL10B-02S
		R3/8	KFL10N-03S	KFL10B-03S
ø12	ø8	R1/2	KFL10N-04S	KFL10B-04S
		R1/4	KFL12U-02S	—
		R3/8	KFL12U-03S	—
	ø9	R1/2	KFL12U-04S	—
		R1/4	KFL12N-02S	KFL12B-02S
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
ø6	ø4	R1/8	KFY06-01S	KFY06B-01S
		R1/4	KFY06-02S	KFY06B-02S
		R3/8	KFY06-03S	KFY06B-03S
ø8	ø5	R1/8	KFY08U-01S	—
		R1/4	KFY08U-02S	—
		R3/8	KFY08U-03S	—
ø8	ø6	R1/8	KFY08N-01S	KFY08B-01S
		R1/4	KFY08N-02S	KFY08B-02S
		R3/8	KFY08N-03S	KFY08B-03S
ø10	ø6.5	R1/4	KFY10U-02S	—
		R3/8	KFY10U-03S	—
		R1/2	KFY10U-04S	—
	ø7.5	R1/4	KFY10N-02S	KFY10B-02S
		R3/8	KFY10N-03S	KFY10B-03S
ø12	ø8	R1/2	KFY10N-04S	KFY10B-04S
		R1/4	KFY12U-02S	—
		R3/8	KFY12U-03S	—
	ø9	R1/2	KFY12U-04S	—
		R1/4	KFY12N-02S	KFY12B-02S
R3/8	KFY12N-03S	KFY12B-03S		
R1/2	KFY12N-04S	KFY12B-04S		



Female Union

Use to pipe from male thread such as pressure gauge.

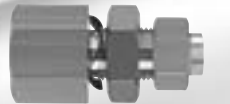
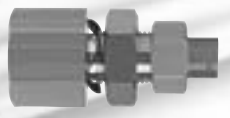
Applicable tubing size (mm)		Connection thread	Model	
O.D.	I.D.		Resin sleeve	Brass sleeve
ø4	ø2.5	R1/4	KFF04-02	KFF04B-02
		R1/4	KFF06-02	KFF06B-02
ø6	ø4	R3/8	KFF06-03	KFF06B-03
		R1/4	KFF08U-02	—
ø8	ø6	R1/4	KFF08N-02	KFF08B-02
		R1/4	KFF10U-02	—
ø10	ø7.5	R1/4	KFF10N-02	KFF10B-02
		R1/4	KFF12U-02	—
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)		Connection 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	—
ø8	ø6	R1/8	KFV08N-01S	KFV08B-01S
		R1/4	KFV08N-02S	KFV08B-02S
		R3/8	KFV08N-03S	KFV08B-03S
ø10	ø6.5	R1/4	KFV10U-02S	—
		R3/8	KFV10U-03S	—
	ø7.5	R1/2	KFV10U-04S	—
		R1/4	KFV10N-02S	KFV10B-02S
ø12	ø8	R3/8	KFV10N-03S	KFV10B-03S
		R1/2	KFV10N-04S	KFV10B-04S
	ø9	R1/4	KFV12U-02S	—
		R3/8	KFV12U-03S	—
ø12	ø8	R1/2	KFV12U-04S	—
		R1/4	KFV12N-02S	KFV12B-02S
	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.

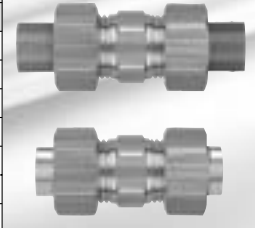
Applicable tubing size (mm)		Connection thread	Model	
O.D.	I.D.		Resin sleeve	Brass sleeve
ø4	ø2.5	R1/8	KFW04-01S	KFW04B-01S
		R1/4	KFW04-02S	KFW04B-02S
ø6	ø4	R1/8	KFW06-01S	KFW06B-01S
		R1/4	KFW06-02S	KFW06B-02S
		R3/8	KFW06-03S	KFW06B-03S
ø8	ø5	R1/8	KFW08U-01S	—
		R1/4	KFW08U-02S	—
		R3/8	KFW08U-03S	—
ø8	ø6	R1/8	KFW08N-01S	KFW08B-01S
		R1/4	KFW08N-02S	KFW08B-02S
		R3/8	KFW08N-03S	KFW08B-03S
ø10	ø6.5	R1/4	KFW10U-02S	—
		R3/8	KFW10U-03S	—
	ø7.5	R1/2	KFW10U-04S	—
		R1/4	KFW10N-02S	KFW10B-02S
ø12	ø8	R3/8	KFW10N-03S	KFW10B-03S
		R1/2	KFW10N-04S	KFW10B-04S
	ø9	R1/4	KFW12U-02S	—
		R3/8	KFW12U-03S	—
ø12	ø8	R1/2	KFW12U-04S	—
		R1/4	KFW12N-02S	KFW12B-02S
	ø9	R3/8	KFW12N-03S	KFW12B-03S
		R1/2	KFW12N-04S	KFW12B-04S



Straight Union

Use to connect tubes in the same direction.

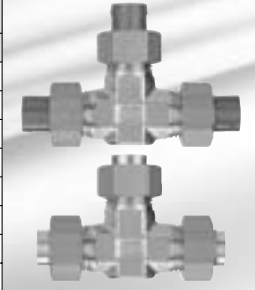
Applicable tubing size (mm)		Model	
O.D.	I.D.	Resin sleeve	Brass sleeve
ø4	ø2.5	KFH04-00	KFH04B-00
		KFH06-00	KFH06B-00
ø6	ø4	KFH08U-00	—
		KFH08N-00	KFH08B-00
ø8	ø5	KFH10U-00	—
		KFH10N-00	KFH10B-00
ø10	ø6.5	KFH12U-00	—
		KFH12N-00	KFH12B-00



Tee Union

Use to connect tubes in both 90° directions.

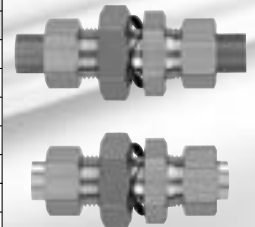
Applicable tubing size (mm)		Model	
O.D.	I.D.	Resin sleeve	Brass sleeve
ø4	ø2.5	KFT04-00	KFT04B-00
		KFT06-00	KFT06B-00
ø6	ø4	KFT08U-00	—
		KFT08N-00	KFT08B-00
ø8	ø5	KFT10U-00	—
		KFT10N-00	KFT10B-00
ø10	ø6.5	KFT12U-00	—
		KFT12N-00	KFT12B-00



Bulkhead Union

Use to connect tubes through a panel.

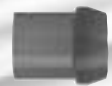
Applicable tubing size (mm)		Model	
O.D.	I.D.	Resin sleeve	Brass sleeve
ø4	ø2.5	KFE04-00	KFE04B-00
		KFE06-00	KFE06B-00
ø6	ø4	KFE08U-00	—
		KFE08N-00	KFE08B-00
ø8	ø5	KFE10U-00	—
		KFE10N-00	KFE10B-00
ø10	ø6.5	KFE12U-00	—
		KFE12N-00	KFE12B-00



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



Insert Fittings Series KF



Resin sleeve



Brass sleeve

Specifications

Sleeve material	Resin	Brass
Fluid	Air, Water ^{Note 2)}	Air, Steam ^{Note 2)}
Ambient and fluid temperature	-5 to 60°C (No freezing) Water: 0 to 60°C (No freezing)	-5 to 150°C (No freezing)
Operating pressure range ^{Note 1)}	-101.3 kPa to 1 MPa	
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 and steam.

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	●	●	—	●	—	●	—	●

How to Order

KF H 06 — **01 S** —

Type

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

Sealant (Male thread)

Nil	None
S	With sealant

Made to Order
Refer to page 127 for details.

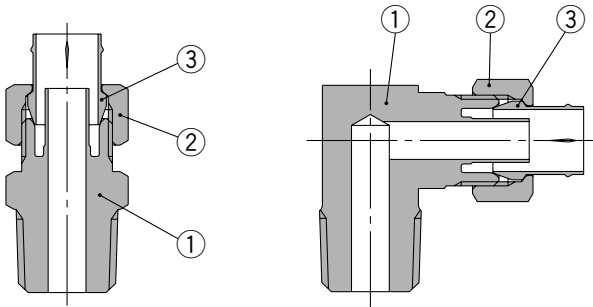
Bore size
Applicable tubing O.D.

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

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	B	—	—	B	—	B	—	B
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

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.

KF□□U-□□	KF□□-□□ KF□□N-□□ KF□□B-□□
Marking	Without marking
Marking	Without marking



Made to Order

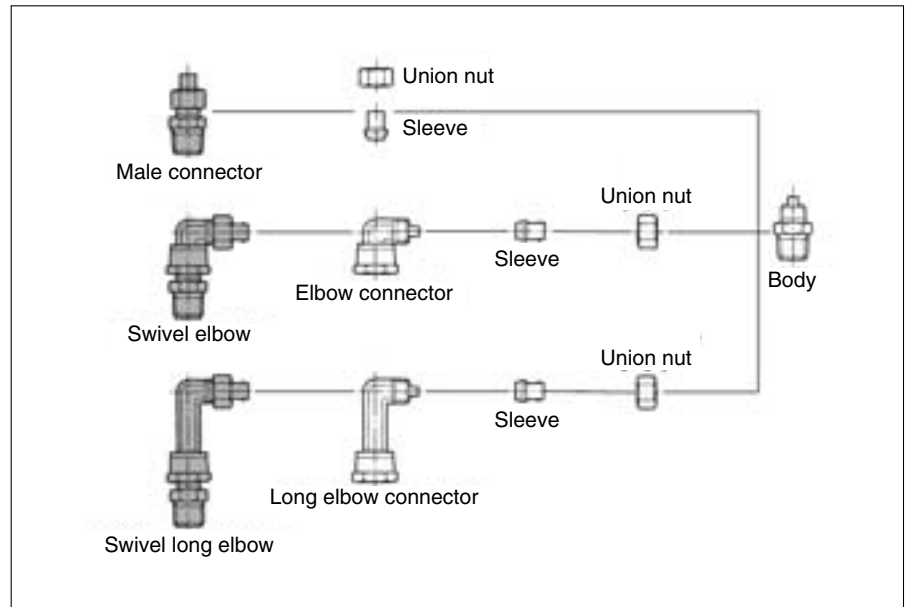
Symbol	Specifications
X2	Copper-free (Electroless nickel plated)

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

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.



Elbow Connector: KFV

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

Union Nut: KFN

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

Long Elbow Connector: KFW

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

Sleeve: KFS

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

K□
M□
H□
KK
D□
MS
LQ
MQR
T□

Series KF

Dimensions

Male Connector: KFH

(mm)

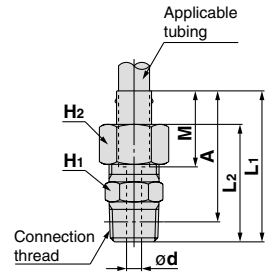


Resin sleeve



Brass sleeve

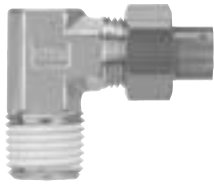
Applicable tubing size (mm)		Connection thread	Model	Width across flats		L ₁	L ₂	M	ød	A*	Effective area (mm ²)	Mass (g)	
O.D.	I.D.			H ₁	H ₂								
ø4	ø2.5	R1/8	KFH04-01S	10	10	29.6	22.9	15.5	1.5	26.5	1.6	13	
		R1/4	KFH04-02S	14		34	27.3					23	
		R1/8	KFH04B-01S	10		26.5	23.5	14					
		R1/4	KFH04B-02S	14		30.9	27.9	24					
ø6	ø4	R1/8	KFH06-01S	10	12	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		34.1	27.4	36					
		R1/8	KFH06B-01S	10		26.3	23.3	15					
		R1/4	KFH06B-02S	14		30.7	27.7	26					
		R3/8	KFH06B-03S	17		31.1	28.1	37					
ø8	ø5	R1/8	KFH08U-01S	12	14	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					37	
	ø6	R1/8	KFH08N-01S	12		29.3	22.6	5	17	26.2	17	30	16
		R1/4	KFH08N-02S	14		33.7	27						24
		R3/8	KFH08N-03S	17		34.1	27.4	36					
		R1/8	KFH08B-01S	12		26.4	23.4	17					
		R1/4	KFH08B-02S	14		30.8	27.8	25					
		R3/8	KFH08B-03S	17		31.2	28.2	37					
ø10	ø6.5	R1/4	KFH10U-02S	17	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					65	
	ø7.5	R1/4	KFH10N-02S	17		35.3	28	6.5	30	29.8	30	30	31
		R3/8	KFH10N-03S	17		35.7	28.4						39
		R1/2	KFH10N-04S	22		38.9	31.6	64					
		R1/4	KFH10B-02S	17		31.5	28.5	15.0		26.0			33
		R3/8	KFH10B-03S	17		31.9	28.9	26.7		41			
R1/2	KFH10B-04S	22	35.1	32.1	27.8	66							
ø12	ø8	R1/4	KFH12U-02S	17	19	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					65	
	ø9	R1/4	KFH12N-02S	17		35.8	29	8	45	30.3	45	45	31
		R3/8	KFH12N-03S	17		36.2	29.4						39
		R1/2	KFH12N-04S	22		39.4	32.6	64					
		R1/4	KFH12B-02S	17		32.1	29.1	15.5		26.6			33
		R3/8	KFH12B-03S	17		32.5	29.5	27.3		41			
		R1/2	KFH12B-04S	22		35.7	32.6	28.4		66			



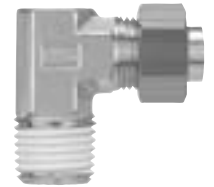
* Reference dimensions after installation of R thread.

Dimensions

Male Elbow: KFL

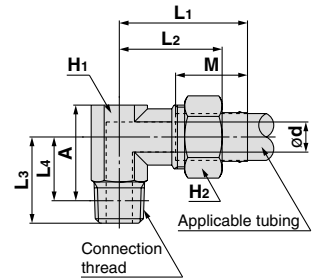


Resin sleeve



Brass sleeve

Applicable tubing size (mm)		Connection thread	Model	Width across flats		L ₁	L ₂	L ₃	L ₄	M	ød	A*	Effective area (mm ²)	Mass (g)		
O.D.	I.D.			H ₁	H ₂											
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											25		
		R1/8	KFL04B-01S			24.4	21.4	17		19				22		
		R1/4	KFL04B-02S											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											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													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											32		
		R3/8	KFL08U-03S			30.2	23.5	20						13.7	21	39
	ø6	ø6	R1/8	KFL08N-01S	12	14	28.2	21.5	18	14	16.2	5	21.3	12	31	
			R1/4	KFL08N-02S											32	
			R3/8	KFL08N-03S			30.2	23.5	20						13.7	21
			R1/8	KFL08B-01S	10	12	25.3	22.3	18	14	13.3	21.3	12	32	16	32
			R1/4	KFL08B-02S												33
			R3/8	KFL08B-03S												27.3
ø10	ø6.5	R1/4	KFL10U-02S	12	17	31.8	24.5	22	16	18.8	5.5	23.3	18	38		
		R3/8	KFL10U-03S											44		
		R1/2	KFL10U-04S			14	33.8	26.5						25	16.8	25.3
	ø7.5	ø7.5	R1/4	KFL10N-02S	12	17	31.8	24.5	22	16	18.8	6.5	23.3	23	38	
			R3/8	KFL10N-03S											43	
			R1/2	KFL10N-04S			14	33.8	26.5						25	16.8
			R1/4	KFL10B-02S	12	17	28.0	25.0	22	16	15.0	23.3	23	39	16	39
			R3/8	KFL10B-03S												44
			R1/2	KFL10B-04S												14
ø12	ø8	R1/4	KFL12U-02S	14	19	34.3	27.5	23	17	19.3	7	25.5	24	53		
		R3/8	KFL12U-03S											53		
		R1/2	KFL12U-04S											14	34.3	27.5
	ø9	ø9	R1/4	KFL12N-02S	14	19	34.3	27.5	23	17	19.3	8	25.5	27	51	
			R3/8	KFL12N-03S											52	
			R1/2	KFL12N-04S											14	34.3
			R1/4	KFL12B-02S	14	19	30.6	27.6	23	17	15.5	25.5	27	53	35	53
			R3/8	KFL12B-03S												54
			R1/2	KFL12B-04S												14



- K
- M
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- KK
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- LQ
- MQR
- T

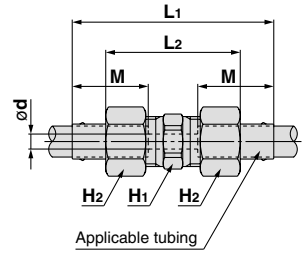
* Reference dimensions after installation of R thread.

Series KF

Dimensions

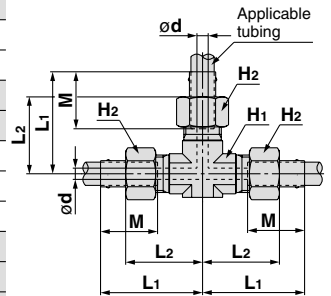
Straight Union: KFH

Applicable tubing size (mm)		Model	Width across flats		L ₁	L ₂	M	ød	Effective area (mm ²)	Mass (g)
			H ₁	H ₂						
O.D.	I.D.									
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			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			6.5	30	39			
	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			8	45	41			
	KFH12B-00	38.1					32.2	15.5	44	



Tee Union: KFT

Applicable tubing size (mm)		Model	Width across flats		L ₁	L ₂	M	ød	Effective area (mm ²)	Mass (g)
			H ₁	H ₂						
O.D.	I.D.									
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			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			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			8	45	85			
	KFT12B-00	30.6					27.6	15.5	90	



Dimensions

Branch Tee: KFT

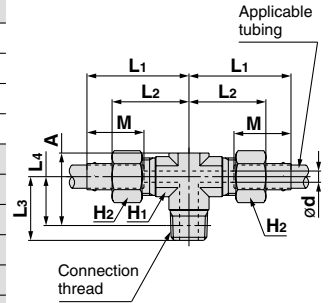


Resin sleeve



Brass sleeve

Applicable tubing size (mm)		Connection thread R	Model	Width across flats		L ₁	L ₂	L ₃	L ₄	M	ød	A*	Effective area (mm ²)	Mass (g)						
O.D.	I.D.			H ₁	H ₂															
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	12	27.2	20.5	17	13	15.2	3	19.3	10	32						
		R1/4	KFT06-02S					19						37						
		R3/8	KFT06-03S					12						53						
		R1/8	KFT06B-01S					17						34						
		R1/4	KFT06B-02S					19						39						
		R3/8	KFT06B-03S					12						55						
ø8	ø5	R1/8	KFT08U-01S	12	14	30.2	23.5	20	16	16.2	4	23.3	19	49						
		R1/4	KFT08U-02S					23						50						
		R3/8	KFT08U-03S					22						56						
	ø6	R1/8	KFT08N-01S					20	16					23.3	16	46				
		R1/4	KFT08N-02S					23	17							49				
		R3/8	KFT08N-03S					22	15.7							23	25	54		
		R1/8	KFT08B-01S					20	16							23.3	16	48		
		R1/4	KFT08B-02S					23	17									24.3	25	51
		R3/8	KFT08B-03S					22	15.7									23	25	56
ø10	ø6.5	R1/4	KFT10U-02S	12	17	31.8	24.5	23	17	18.8	5.5	24.3	27	46						
		R3/8	KFT10U-03S					22						15.7	23	34	63			
		R1/2	KFT10U-04S					14						18.8	27.3	90				
	ø7.5	R1/4	KFT10N-02S					23	17					24.3	30	57				
		R3/8	KFT10N-03S					22	15.7							23	30	62		
		R1/2	KFT10N-04S					14	18.8							27.3	41	88		
		R1/4	KFT10B-02S					23	17							24.3	30	60		
		R3/8	KFT10B-03S					22	15.7									23	30	65
		R1/2	KFT10B-04S					14	18.8									27.3	41	91
ø12	ø8	R1/4	KFT12U-02S	14	19	34.3	27.5	25	19	19.3	7	27.5	31	79						
		R3/8	KFT12U-03S					24						17.7	26.2	44	81			
		R1/2	KFT12U-04S					27						18.8	27.3	94				
	ø9	R1/4	KFT12N-02S					25	19					27.5	32	75				
		R3/8	KFT12N-03S					24	17.7							26.2	48	78		
		R1/2	KFT12N-04S					27	18.8							27.3	93			
		R1/4	KFT12B-02S					25	19							27.5	32	78		
		R3/8	KFT12B-03S					24	17.7									26.2	48	81
		R1/2	KFT12B-04S					27	18.8									27.3	96	



- K
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- T

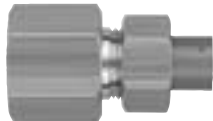
* Reference dimensions after installation of R thread.

Series KF

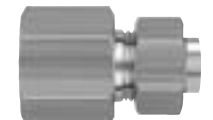
Dimensions

Female Union: KFF

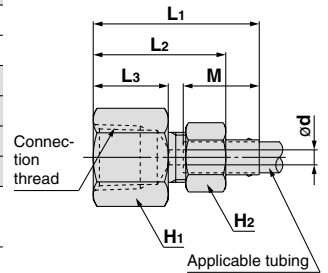
Applicable tubing size (mm)		Connection thread Rc	Model	Width across flats			L ₁	L ₂	L ₃	M	ød	Effective area (mm ²)	Mass (g)
O.D.	I.D.			H ₁	H ₂	H ₃							
ø4	ø2.5	Rc1/4	KFF04-02	17	10	33.5	26.8	15	15.5	1.5	1.6	25	
			KFF04B-02			30.4	27.4						
ø6	ø4	Rc1/4	KFF06-02	17	12	33.2	26.5	15	15.2	3	6	27	
			KFF06-03			35.2	28.5						
			KFF06B-02			30.2	27.2						
			KFF06B-03			32.2	29.2						
ø8	ø6	Rc1/4	KFF08U-02	17	14	33.2	26.5	15	16.2	4	11	28	
			KFF08N-02			30.3	27.3						
			KFF08B-02										
ø10	ø6.5	Rc1/4	KFF10U-02	17	17	34.8	27.5	15	18.8	5.5	21	32	
			KFF10N-02			31.0	28.0						
			KFF10B-02										
ø12	ø8	Rc1/4	KFF12U-02	17	19	35.3	28.5	15	19.3	7	35	35	
			KFF12N-02			31.6	28.6						
			KFF12B-02										



Resin sleeve

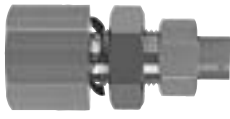


Brass sleeve

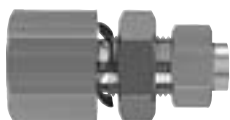


Bulkhead Connector: KFE

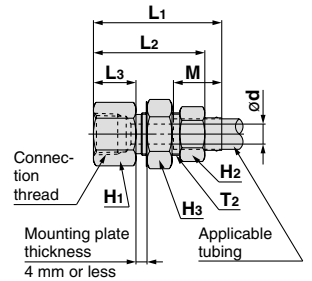
Applicable tubing size (mm)		Connection thread Rc	Model	Width across flats			L ₁	L ₂	L ₃	M	ød	T ₂	Mounting hole	Effective area (mm ²)	Mass (g)
O.D.	I.D.			H ₁	H ₂	H ₃									
ø6	ø4	Rc1/4	KFE06-02	17	12	17	44.2	37.5	16	15.2	3	M10 x 1	11	6	41
			KFE06B-02				41.2	38.2							
ø8	ø5	Rc3/8	KFE08U-03	19	14	19	46.2	39.5	17	16.2	4	M12 x 1	13	11	49
			KFE08N-03				43.3	40.3							
			KFE08B-03												
ø10	ø6.5	Rc3/8	KFE10U-03	19	17	22	48.8	41.5	17	18.8	5.5	M15 x 1	16	21	63
			KFE10N-03				45.0	42.0							
			KFE10B-03												
ø12	ø8	Rc3/8	KFE12U-03	22	19	24	51.3	44.5	17	19.3	7	M17 x 1	18	35	93
			KFE12N-03				47.6	44.6							
			KFE12B-03												



Resin sleeve

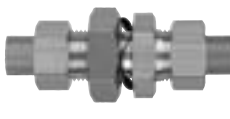


Brass sleeve

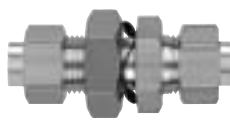


Bulkhead Union: KFE

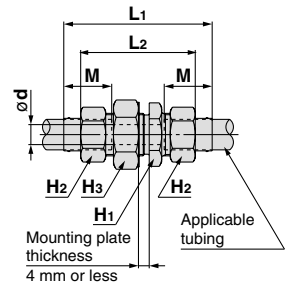
Applicable tubing size (mm)		Model	Width across flats			L ₁	L ₂	M	ød	Mounting hole	Effective area (mm ²)	Mass (g)
O.D.	I.D.		H ₁	H ₂	H ₃							
ø4	ø2.5	KFE04-00	12	10	13	50.9	37.6	15.5	1.5	9	1.6	23
		KFE04B-00				44.7	38.8					
ø6	ø4	KFE06-00	14	12	17	51.3	38	15.2	3	11	6	34
		KFE06B-00				45.3	39.4					
ø8	ø5	KFE08U-00	17	14	19	52.3	39	16.2	4	13	11	47
		KFE08N-00				46.5	40.6					
		KFE08B-00										
ø10	ø6.5	KFE10U-00	19	17	22	56.6	42	18.8	5.5	16	21	67
		KFE10N-00				49.0	43.0					
		KFE10B-00										
ø12	ø8	KFE12U-00	22	19	24	59.5	46	19.3	7	18	35	87
		KFE12N-00				52.1	46.2					
		KFE12B-00										



Resin sleeve



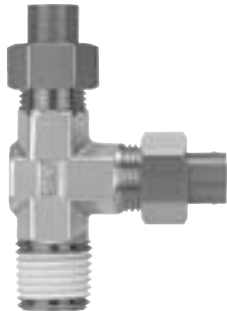
Brass sleeve



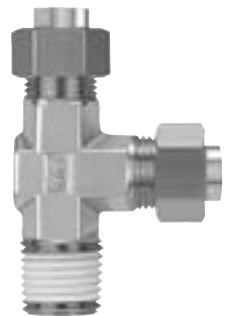
Dimensions

Male Run Tee: KFY

(mm)

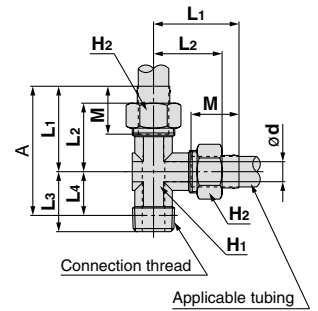


Resin sleeve



Brass sleeve

Applicable tubing size (mm)		Connection thread R	Model	Width across flats		L ₁	L ₂	L ₃	L ₄ *	M	ød	A*	Effective area (mm ²)	Mass (g)		
O.D.	I.D.			H ₁	H ₂											
ø4	ø2.5	R1/8	KFY04-01S	10	10	27.5	20.8	17	13	15.5	1.5	40.5	3.5	28		
		R1/4	KFY04-02S											32		
		R1/8	KFY04B-01S	10	10	24.4	21.4	17	19	12.4	1.5	37.4	3.5	29		
		R1/4	KFY04B-02S											33		
ø6	ø4	R1/8	KFY06-01S	10	12	27.2	20.5	17	13	15.2	3	40.2	11	31		
		R1/4	KFY06-02S											37		
		R3/8	KFY06-03S	12	12	30.2	23.5	22	15.7	16.2	4	45.8	13	51		
		R1/8	KFY06B-01S											33		
		R1/4	KFY06B-02S	10	12	24.2	21.2	17	13	12.2	3	37.2	11	39		
		R3/8	KFY06B-03S											53		
ø8	ø5	R1/8	KFY08U-01S	12	14	30.2	23.5	20	16	16.2	4	46.2	15	48		
		R1/4	KFY08U-02S											50		
		R3/8	KFY08U-03S											55		
	ø6	ø6	R1/8	KFY08N-01S	12	14	27.3	24.3	23	17	13.3	5	46.2	18	47	
			R1/4	KFY08N-02S											48	
			R3/8	KFY08N-03S											53	
		ø6	ø6	R1/8	KFY08B-01S	12	14	27.3	24.3	20	16	13.3	5	43.3	18	49
				R1/4	KFY08B-02S											50
				R3/8	KFY08B-03S											55
	ø10	ø6.5	R1/4	KFY10U-02S	12	17	31.8	24.5	23	17	18.8	5.5	48.8	30	58	
			R3/8	KFY10U-03S											63	
			R1/2	KFY10U-04S											89	
ø7.5		ø7.5	R1/4	KFY10N-02S	12	17	31.8	24.5	23	17	15.0	6.5	48.8	33	57	
			R3/8	KFY10N-03S											62	
			R1/2	KFY10N-04S											88	
		ø7.5	ø7.5	R1/4	KFY10B-02S	12	17	28.0	25.0	23	17	15.0	6.5	45.0	33	60
				R3/8	KFY10B-03S											65
				R1/2	KFY10B-04S											91
ø12		ø8	R1/4	KFY12U-02S	14	19	34.3	27.5	25	19	19.3	7	53.3	34	79	
			R3/8	KFY12U-03S											79	
			R1/2	KFY12U-04S											93	
	ø9	ø9	R1/4	KFY12N-02S	14	19	30.6	27.6	25	19	15.5	8	53.3	36	76	
			R3/8	KFY12N-03S											78	
			R1/2	KFY12N-04S											92	
		ø9	ø9	R1/4	KFY12B-02S	14	19	30.6	27.6	25	19	15.5	8	49.6	36	79
				R3/8	KFY12B-03S											81
				R1/2	KFY12B-04S											95



- K
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- LQ
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* Reference dimensions after installation of R thread.

Series KF

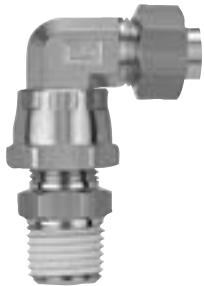
Dimensions

Swivel Elbow: KFV

(mm)

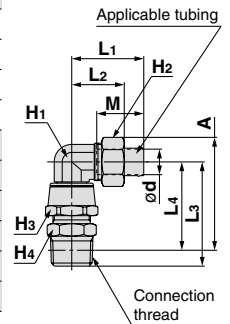


Resin sleeve



Brass sleeve

Applicable tubing size (mm)		Connection thread R	Model	Width across flats				L ₁	L ₂	L ₃	L ₄ *	M	ød	A*	Effective area (mm ²)	Mass (g)		
O.D.	I.D.			H ₁	H ₂	H ₃	H ₄											
ø4	ø2.5	R1/8	KFV04-01S	10	10	14	10	26	19.3	32.8	29.7	15.5	1.5	35.5	1.4	40		
		R1/4	KFV04-02S				14									37.2	31.7	50
		R1/8	KFV04B-01S				10									32.8	29.7	41
		R1/4	KFV04B-02S				14									37.2	31.7	51
ø6	ø4	R1/8	KFV06-01S	10	12	14	10	25.7	19	32.8	29.7	15.2	3	36.6	5	42		
		R1/4	KFV06-02S				14									37.2	31.7	52
		R3/8	KFV06-03S				17									37.6	32.4	64
		R1/8	KFV06B-01S				10									32.8	29.7	43
		R1/4	KFV06B-02S				14									37.2	31.7	53
		R3/8	KFV06B-03S				17									37.6	32.4	65
ø8	ø5	R1/8	KFV08U-01S	12	14	17	12	27.2	20.5	33.8	30.7	16.2	4	38.8	9.4	52		
		R1/4	KFV08U-02S				14									38.2	32.7	61
		R3/8	KFV08U-03S				17									38.6	33.4	73
	ø6	R1/8	KFV08N-01S				12									33.8	30.7	57
		R1/4	KFV08N-02S				14									38.2	32.7	60
		R3/8	KFV08N-03S				17									38.6	33.4	72
		R1/8	KFV08B-01S				12									33.8	30.7	58
		R1/4	KFV08B-02S				14									38.2	32.7	61
		R3/8	KFV08B-03S				17									38.6	33.4	73
ø10	ø6.5	R1/4	KFV10U-02S	14	17	19	17	28.8	21.5	40.2	34.7	18.8	5.5	44.5	18	73		
		R3/8	KFV10U-03S				17									40.6	35.4	81
		R1/2	KFV10U-04S				22									43.8	36.5	104
	ø7.5	R1/4	KFV10N-02S				17									40.2	34.7	72
		R3/8	KFV10N-03S				17									40.6	35.4	80
		R1/2	KFV10N-04S				22									43.8	36.5	104
		R1/4	KFV10B-02S				17									40.2	34.7	73
		R3/8	KFV10B-03S				17									40.6	35.4	81
		R1/2	KFV10B-04S				22									43.8	36.5	105
		ø12	ø8				R1/4									KFV12U-02S	17	19
R3/8	KFV12U-03S			17	41.6	36.4	100											
R1/2	KFV12U-04S			22	44.8	37.5	124											
ø9	R1/4		KFV12N-02S	17	41.2	35.7	90											
	R3/8		KFV12N-03S	17	41.6	36.4	98											
	R1/2		KFV12N-04S	22	44.8	37.5	123											
	R1/4		KFV12B-02S	17	41.2	35.7	92											
	R3/8		KFV12B-03S	17	41.6	36.4	100											
	R1/2		KFV12B-04S	22	44.8	37.5	125											



* Reference dimensions after installation of R thread.

Dimensions

Swivel Long Elbow: KFW

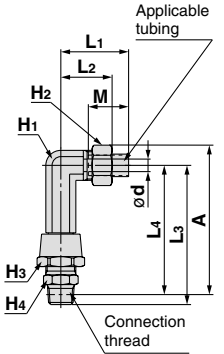


Resin sleeve



Brass sleeve

Applicable tubing size (mm)		Connection thread R	Model	Width across flats				L ₁	L ₂	L ₃	L ₄ *	M	ød	A*	Effective area (mm ²)	Mass (g)		
O.D.	I.D.			H ₁	H ₂	H ₃	H ₄											
ø4	ø2.5	R1/8	KFW04-01S	10	10	14	10	26	19.3	52.8	49.7	15.5	1.5	55.5	1.4	58		
		R1/4	KFW04-02S				14									57.2	51.7	63
		R1/8	KFW04B-01S				10									52.8	49.7	59
		R1/4	KFW04B-02S				14									57.2	51.7	64
ø6	ø4	R1/8	KFW06-01S	10	12	14	10	25.7	19.0	58.6	53.4	15.2	3	57.6	5.0	61		
		R1/4	KFW06-02S				14									58.2	52.7	66
		R3/8	KFW06-03S				17									58.6	53.4	77
		R1/8	KFW06B-01S				10									53.8	50.7	62
		R1/4	KFW06B-02S				14									58.2	52.7	67
		R3/8	KFW06B-03S				17									58.6	53.4	78
ø8	ø5	R1/8	KFW08U-01S	12	14	17	12	27.2	20.5	54.8	51.7	16.2	4	59.8	9.4	81		
		R1/4	KFW08U-02S				14									59.2	53.7	83
		R3/8	KFW08U-03S				17									59.6	54.4	90
	ø6	R1/8	KFW08N-01S				12									54.8	51.7	81
		R1/4	KFW08N-02S				14									59.2	53.7	83
		R3/8	KFW08N-03S				17									59.6	54.4	88
		R1/8	KFW08B-01S				12									54.8	51.7	82
		R1/4	KFW08B-02S				14									59.2	53.7	84
		R3/8	KFW08B-03S				17									59.6	54.4	89
ø10	ø6.5	R1/4	KFW10U-02S	14	17	19	17	28.8	21.5	61.2	55.7	18.8	5.5	66.2	18	100		
		R3/8	KFW10U-03S				17									61.6	56.4	106
		R1/2	KFW10U-04S				22									64.8	57.5	128
	ø7.5	R1/4	KFW10N-02S				17									61.2	55.7	99
		R3/8	KFW10N-03S				17									61.6	56.4	104
		R1/2	KFW10N-04S				22									64.8	57.5	126
		R1/4	KFW10B-02S				17									61.2	55.7	100
		R3/8	KFW10B-03S				17									61.6	56.4	105
		R1/2	KFW10B-04S				22									64.8	57.5	127
ø12	ø8	R1/4	KFW12U-02S	17	19	22	17	30.3	23.5	64.2	58.7	19.3	7	69.7	30	146		
		R3/8	KFW12U-03S				17									64.6	59.4	146
		R1/2	KFW12U-04S				22									67.8	60.5	161
	ø9	R1/4	KFW12N-02S				17									64.2	58.7	144
		R3/8	KFW12N-03S				17									64.6	59.4	145
		R1/2	KFW12N-04S				22									67.8	60.5	159
		R1/4	KFW12B-02S				17									64.2	58.7	146
		R3/8	KFW12B-03S				17									64.6	59.4	147
		R1/2	KFW12B-04S				22									67.8	60.5	161



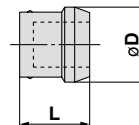
- K
- M
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- LQ
- MQR
- T

* Reference dimensions after installation of R thread.

Plug: KFP



Applicable tubing size (mm)		Model	L ₁	ød	Mass (g)
ø4	ø2.5				
ø6	ø4	KFP-06	12	8.5	0.5
ø8	ø6	KFP-08	12	10.4	0.7
ø10	ø8	KFP-10	13.5	13	1.0
ø12	ø10	KFP-12	14	15	1.4



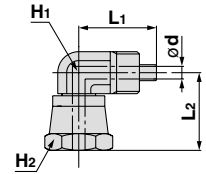
Series KF

Dimensions

Elbow Connector: KFV



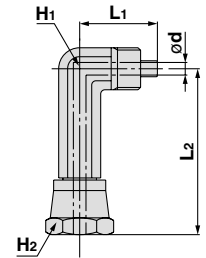
Applicable tubing size (mm)		Model	Width across flats		L ₁	L ₂	ød	Mass (g)
O.D.	I.D.		H ₁	H ₂				
ø4	ø2.5	KFV-04	10	14	18.5	18.5	1.5	21.1
ø6	ø4	KFV-06	10	14	18.5	18.5	3	21.6
ø8	ø5	KFV-08U	12	17	20	19.5	4	32.8
	ø6	KFV-08N					5	32.9
ø10	ø6.5	KFV-10U	14	19	21	21.5	5.5	41.9
	ø7.5	KFV-10N					6.5	41.7
ø12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



Long Elbow Connector: KFW



Applicable tubing size (mm)		Model	Width across flats		L ₁	L ₂	ød	Mass (g)
O.D.	I.D.		H ₁	H ₂				
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

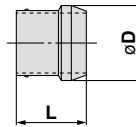


Resin sleeve



Brass sleeve

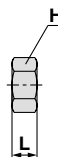
Applicable tubing size (mm)		Model	L	øD	Mass (g)
ø4					
		KFSB-04	8.7	0.6	
ø6		KFS-06	12	8.5	0.1
		KFSB-06	8.8		0.9
ø8		KFS-08	12	10.5	0.2
		KFSB-08	8.8		1.2
ø10		KFS-10	13.5	13	0.3
		KFSB-10	9.6		1.7
ø12		KFS-12	14	15	0.4
		KFSB-12	10.1		2.1



Union Nut: KFN



Applicable tubing size (mm)		Model	Width across flats		Mass (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





Series KF

Specific Product Precautions 1

Be sure to read before handling.

Refer to front matters 58 and 59 for Safety Instructions and pages 13 to 16 for Fittings and Tubing Precautions.

Selection

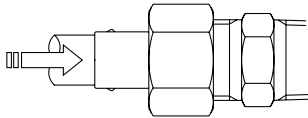
⚠ Caution

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.



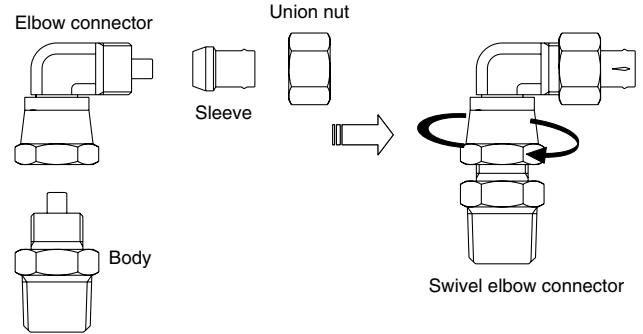
- 4) When the union is loose, tighten it additionally, temporarily by hand.
- 5) After fixing the body with the tightening tool, tighten the union nut with an appropriate wrench, applying the torque as shown below. After tightening the clearance between the union nut and the body in the axial direction 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)
KF□04	1.5 to 2.0	2 to 7	1.5	2 to 4
KF□06	1.5 to 2.0	3 to 8	1.5	4 to 6
KF□08	1.5 to 2.0	4 to 9	1.5	6 to 9
KF□10	1.5 to 2.0	6 to 9	1.5	10 to 12
KF□12	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)
KF□-04	1/6 to 1/3	3 to 7
KF□-06	1/6 to 1/3	3 to 7
KF□-08	1/6 to 1/3	3 to 7
KF□-10	1/6 to 1/3	5 to 10
KF□-12	1/6 to 1/3	5 to 10

- K**□
- M**□
- H**□
- KK**
- D**□
- MS**
- LQ**
- MQR**
- T**□



Series KF

Specific Product Precautions 2

Be sure to read before handling.

Refer to front matters 58 and 59 for Safety Instructions and pages 13 to 16 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.