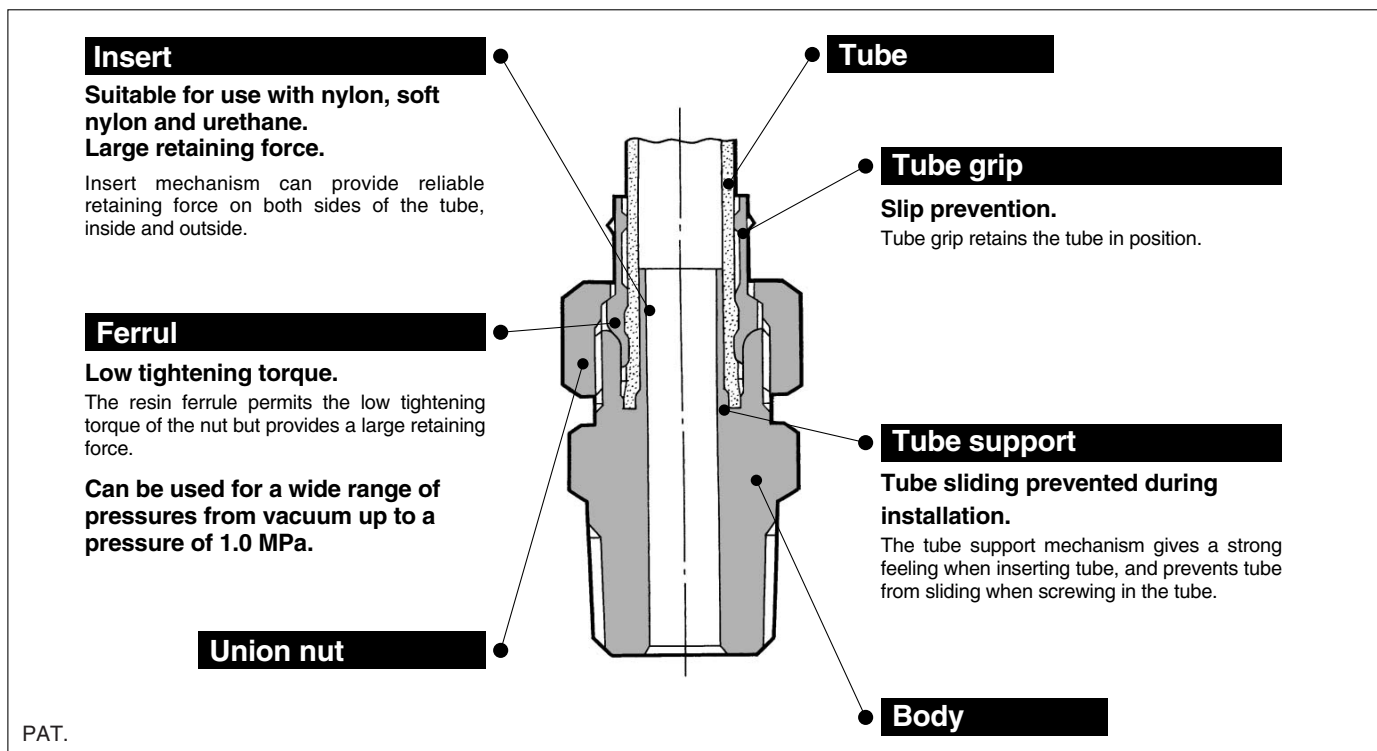


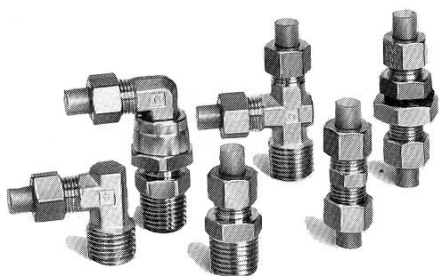
Insert Fittings

Series KF



Applicable for nylon, soft nylon and polyurethane tubing.

Designed for improvement of workability with low clamping torque.



Applicable Tubing

Tubing size	O.D.	4	6	8	10	12			
	I.D.	2.5	4	5	6	6.5	7.5	8	9
Nylon tubing		●	●	—	●	—	●	—	●
Soft nylon tubing		●	●	—	●	—	●	—	●
Polyurethane tubing		●	●	◎(Note)	—	◎(Note)	—	◎(Note)	—



Note) "◎" mark (polyurethane tubing ø8, ø10, ø12) are provided with the captive styles because of different I.D.

Specifications












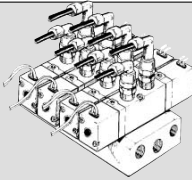
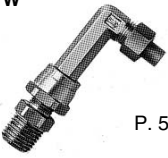
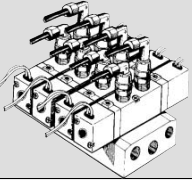
Fluid	Air	
Maximum operating pressure	1.0 MPa	
Operating vacuum pressure	-101.3 kPa	
Proof pressure	7.0 MPa	
Ambient and fluid temperature	-5 to 60°C (No freezing)	
Thread	Mounting section	JIS B 0203 (Taper thread for piping)
	Nut section	JIS B 0211 Class 2 (Metric fine thread)
Seal (Thread portion) ^{Note)}	None or with seal	



Note) Male elbow, Male branch tee and Male run tee with sealant are manufactured upon receipt of order. Suffix "S" to the end of part number if W/ seal is desired.

Principal Parts Material

Body	C3604BD, C3771BE
Nut	C3604BD
Ferrul	Nylon 66

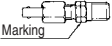
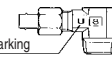
Model	
<p>Male connector</p> <p>KFH P. 49</p>  <p>Use to connect tubes in the same direction from female thread. Most general type.</p>	<p>Female connector</p> <p>KFF P. 50</p>  <p>Use to pipe from male thread such as pressure gauge.</p>
<p>Straight union</p> <p>KFH P. 49</p>  <p>Use to connect tubes in the same direction.</p>	<p>Bulkhead connector</p> <p>KFE P. 51</p>  <p>Use to connect male thread and tube through a panel.</p>
<p>Male elbow</p> <p>KFL P. 49</p>  <p>Use to pipe at right angles to female thread. Most general type.</p>	<p>Bulkhead union</p> <p>KFE P. 51</p>  <p>Use to connect tubes through a panel.</p>
<p>Union tee</p> <p>KFT P. 50</p>  <p>Use to connect tubes in both 90° directions.</p>	<p>Male run tee</p> <p>KFY P. 51</p>  <p>Use to branch line in the same direction from female thread and in 90° direction.</p>
<p>Male branch tee</p> <p>KFT P. 50</p>  <p>Use to branch line from female thread in both 90° directions.</p>	<p>Plug</p> <p>KFP P. 51</p>  <p>Use to plug unused fittings.</p>
<p>Swivel elbow</p> <p>KFV</p>  <p>P. 52</p> <p>Use to pipe at right angles to female thread. Swiveled at any direction.</p> 	
<p>Swivel extended elbow</p> <p>KFW</p>  <p>P. 52</p> <p>Use to pipe at right angles to female thread. Swiveled at any direction. Solid piece moves fittings up from workpiece.</p> 	

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- VMG

Series KF

Fitting Markings for Applicable Tubing Material

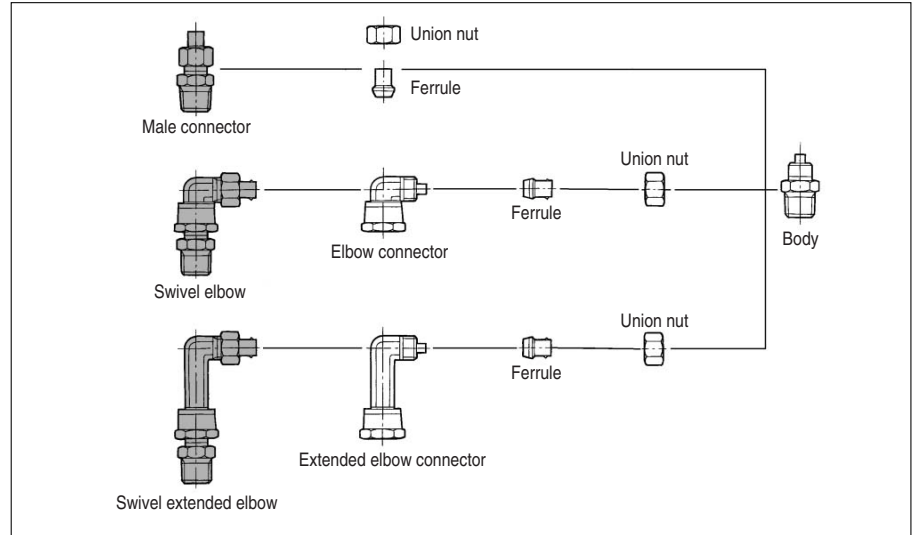
- Fittings used only with polyurethane tube (Tube O.D. $\phi 8$, $\phi 10$ and $\phi 12$) are identified by the following marks on the body.
- Unmarked fittings are used with nylon and soft nylon tubes or compatible with nylon, soft nylon and polyurethane tubes.
- Union nut and ferrule are compatible.

Marking for polyurethane tube	Model
	Male connector: KFH Female connector: KFF Bulkhead connector: KFE Bulkhead union: KFE Straight union: KFH
	Male elbow: KFL Branch tee: KFT Male run tee: KFY Union tee: KFT Swivel elbow: KFV Swivel extended elbow: KFW

Swivel Type/Parts 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 connection 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	$\phi 12$

Extended 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	$\phi 12/\phi 9$

Ferrul: KFS

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

⚠ Precautions

Be sure to read before handling.
Refer to pages 15-18-3 to 15-18-4 for Safety Instructions and Common Precautions on the products mentioned in this catalog, and refer to pages 15-1-10 to 15-1-11 for Precautions on every series.

Piping

⚠ Caution

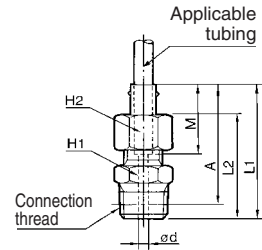
- Cut the tube perpendicularly to the axis. (Use SMC tube cutter "TK-1", "TK-2" or "TK-3".)
- Then, push the cut tube in until it comes to a stop, and tighten the nut by hand.
- Tighten 1.5 to 2 rotations with a tightening tool.
Axial direction width between nut and body after tightening is around 2 mm.

Insert Fittings Series KF

Male Connector: KFH



Applicable tubing (mm)		Connection thread R	Model	H1 (width across flats)	H2 (width across flats)	L1	L2	M	ød	A*	Effective area (mm ²)	Weight (g)
O.D.	I.D.											
4	2.5	1/8	KFH04-01	10	10	30.5	23.8	15.5	1.5	26.5	1.6	13
		1/4	KFH04-02	14		34.5	27.8			28.5		23
6	4	1/8	KFH06-01	10	12	30.2	23.5	15.2	3	26.2	6	14
		1/4	KFH06-02	14		34.2	27.5			28.2		25
		3/8	KFH06-03	17		35.2	28.5			28.9		36
		1/8	KFH08U-01	12		30.2	23.5			26.2		16
8	5	1/4	KFH08U-02	14	14	34.2	27.5	16.2	4	28.2	11	25
		3/8	KFH08U-03	17		39.8	28.5			28.9		37
		1/8	KFH08N-01	12		30.2	23.5			26.2		16
	6	1/4	KFH08N-02	14		34.2	27.5		28.2	17	24	
		3/8	KFH08N-03	17		35.2	28.5		28.9	36		
		1/4	KFH10U-02	17		35.8	28.5		29.8	32		
10	6.5	3/8	KFH10U-03	17	17	36.8	29.5	5.5	5.5	30.5	21	40
		1/2	KFH10U-04	22		39.8	32.5			31.6		65
		1/4	KFH10N-02	17		35.8	28.5			29.8		31
	7.5	3/8	KFH10N-03	17		36.8	29.5	30.5	30	39		
		1/2	KFH10N-04	22		39.8	32.5	31.6	64			
		1/4	KFH12U-02	17		36.3	29.5	30.3	33			
12	8	3/8	KFH12U-03	17	19	37.3	30.5	7	7	31	35	41
		1/2	KFH12U-04	22		40.3	33.5			32.1		65
		1/4	KFH12N-02	17		36.3	29.5			30.3		31
	9	3/8	KFH12N-03	17		37.3	30.5	31	45	39		
		1/2	KFH12N-04	22		40.3	33.5	32.1	64			



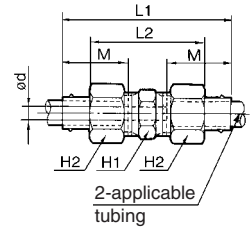
* Reference dimensions after R thread installation.

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- VMG

Straight Union: KFH



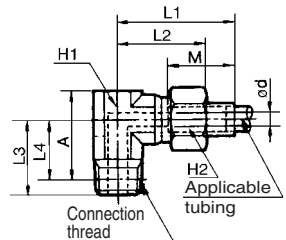
Applicable tubing (mm)		Model	H1 (width across flats)	H2 (width across flats)	L1	L2	M	ød	Effective area (mm ²)	Weight (g)
O.D.	I.D.									
4	2.5	KFH04-00	8	10	40.9	27.6	15.5	1.5	1.6	13
6	4	KFH06-00	10	12	40.3	27	15.2	3	6	17
8	5	KFH08U-00	12	14	41.3	28	16.2	4	11	23
	6	KFH08N-00						5	17	22
10	6.5	KFH10U-00	17	17	44.6	30	18.8	5.5	21	36
	7.5	KFH10N-00						6.5	30	
12	8	KFH12U-00	17	19	45.5	32	19.3	7	35	42
	9	KFH12N-00						8	45	41



Male Elbow: KFL



Applicable tubing (mm)		Connection thread R	Model	H1 (width across flats)	H2 (width across flats)	L1	L2	L3	L4*	M	ød	A	Effective area (mm ²)	Weight (g)						
O.D.	I.D.																			
4	2.5	1/8	KFL04-01	10	10	27.5	20.8	17	13	15.5	1.5	19.3	1.6	21						
		1/4	KFL04-02											19	25					
6	4	1/8	KFL06-01	10	12	27.2	20.5	17	13	15.2	3	19.3	6	22						
		1/4	KFL06-02											19	27					
		3/8	KFL06-03											12	30.2	23.5	20	13.7	21	38
		1/8	KFL08U-01											12	14	28.2	21.5	18	14	21.3
1/4	KFL08U-02	21	15	22.3	32															
8	5	3/8	KFL08U-03	12	14	30.2	23.5	20	13.7	16.2	4	16.2	11	39						
		1/8	KFL08N-01											28.2	21.5	18	14	21.3	12	31
		1/4	KFL08N-02											21	15	22.3	32			
	6	3/8	KFL08N-03			30.2	23.5	20	13.7		21	37								
		1/8	KFL10U-02			12	17	31.8	24.5		22	16	23.3	18	38					
		3/8	KFL10U-03					21	14.7		22	44								
10	6.5	1/2	KFL10U-04	14	17	33.8	26.5	25	16.8	18.8	5.5	18.8	20	66						
		1/4	KFL10N-02											31.8	24.5	22	16	23.3	23	38
		3/8	KFL10N-03											21	14.7	22	43			
	7.5	1/2	KFL10N-04			33.8	26.5	25	16.8		21	37								
		1/4	KFL12U-02			14	19	34.3	27.5		23	17	19.3	7	7	30	53			
		3/8	KFL12U-03														22	15.7	24.2	53
12	8	1/2	KFL12U-04	14	19	34.3	27.5	25	16.8	8	8	19.3	27	68						
		1/4	KFL12N-02											23	17	25.5	27	51		
	9	3/8	KFL12N-03											22	15.7	24.2	52			
		1/2	KFL12N-04											25	16.8	25.3	67			



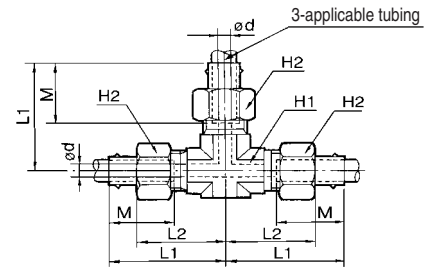
* Reference dimensions after R thread installation.

Series KF

Union Tee: KFT



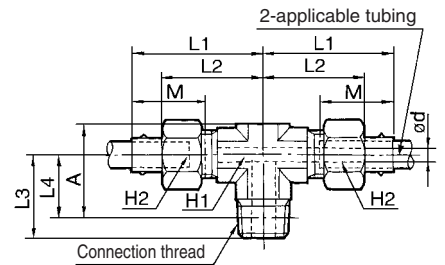
Applicable tubing (mm)		Model	H1 (width across flats)	H2 (width across flats)	L1	L2	M	ød	Effective area (mm ²)	Weight (g)
O.D.	I.D.									
4	2.5	KFT04-00	10	10	27.5	20.8	15.5	1.5	1.6	33
6	4	KFT06-00		12	27.2	20.5	15.2	3	6	37
8	5	KFT08U-00	12	14	30.2	23.5	16.2	4	11	54
	6	KFT08N-00						5	17	53
10	6.5	KFT10U-00	12	17	31.8	24.5	18.8	5.5	21	65
	7.5	KFT10N-00						6.5	30	63
12	8	KFT12U-00	14	19	34.3	27.5	19.3	7	35	89
	9	KFT12N-00						8	45	85



Male Branch Tee: KFT



Applicable tubing (mm)		Connection thread R	Model	H1 (width across flats)	H2 (width across flats)	L1	L2	L3	L4*	M	ød	A*	Effective area (mm ²)	Weight (g)												
O.D.	I.D.																									
4	2.5	1/8	KFT04-01	10	10	27.5	20.8	17	13	15.5	1.5	19.3	3	29												
		1/4	KFT04-02											19	34											
6	4	1/8	KFT06-01	10	12	27.2	20.5	17	13	15.2	3	19.3	10	32												
		1/4	KFT06-02											19	37											
		3/8	KFT06-03											12	30.2	23.5	22	15.7	23	12	53					
8	5	1/8	KFT08U-01	12	14	30.2	23.5	20	16	16.2	4	23.3	14	49												
		1/4	KFT08U-02											17	50											
		3/8	KFT08U-03											12	30.2	23.5	22	15.7	23	19	56					
	6	1/8	KFT08N-01											12	14	30.2	23.5	20	16	16.2	5	23.3	16	46		
		1/4	KFT08N-02																					17	49	
		3/8	KFT08N-03																					12	30.2	23.5
10	6.5	1/4	KFT10U-02	12	17	31.8	24.5	23	17	18.8	5.5	24.3	27	46												
		3/8	KFT10U-03											15.7	23	63										
		1/2	KFT10U-04											14	33.8	26.5	27	18.8	27.3	34	90					
	7.5	1/4	KFT10N-02											12	17	31.8	24.5	23	17	18.8	6.5	24.3	30	57		
		3/8	KFT10N-03																					15.7	23	62
		1/2	KFT10N-04																					14	33.8	26.5
12	8	1/4	KFT12U-02	14	19	34.3	27.5	25	19	19.3	7	27.5	31	79												
		3/8	KFT12U-03											17.7	24	81										
		1/2	KFT12U-04											17	27	94										
	9	1/4	KFT12N-02											14	19	34.3	27.5	25	19	19.3	8	27.5	32	75		
		3/8	KFT12N-03																					17.7	24	78
		1/2	KFT12N-04																					17	27	93

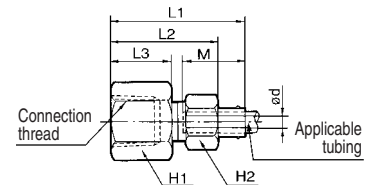


* Reference dimensions after R thread installation.

Female Connector: KFF

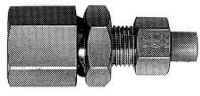


Applicable tubing (mm)		Connection thread Rc	Model	H1 (width across flats)	H2 (width across flats)	L1	L2	L3	M	ød	Effective area (mm ²)	Weight (g)
O.D.	I.D.											
4	2.5	1/4	KFF04-02	17	10	33.5	26.8	15	15.5	1.5	1.6	25
6	4	1/4	KFF06-02	17	12	33.2	26.5	15	15.2	3	6	27
		3/8	KFF06-03									19
8	6	1/4	KFF08U-02	17	14	33.2	26.5	15	16.2	4	11	28
			KFF08N-02									
10	6.5	1/4	KFF10U-02	17	17	34.8	27.5	15	18.8	5.5	21	32
			KFF10N-02									
12	8	1/4	KFF12U-02	17	19	35.3	28.5	15	19.3	7	35	35
			KFF12N-02									

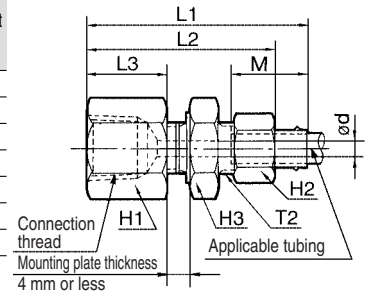


Insert Fittings Series KF

Bulkhead Connector: KFE



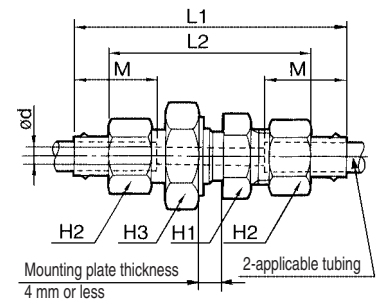
Applicable tubing (mm)		Connection thread Rc	Model	H1 (width across flats)	H2 (width across flats)	H3 (width across flats)	L1	L2	L3	M	ød	T2	Mounting hole	Effective area (mm ²)	Weight (g)
O.D.	I.D.														
6	4	1/4	KFE06-02	17	12	17	44.2	37.5	16	15.2	3	M10 x 1	11	6	41
8	5	3/8	KFE08U-03	19	14	19	46.2	39.5	17	16.2	4	M12 x 1	13	11	49
	6		KFE08N-03											17	50
10	6.5	3/8	KFE10U-03	19	17	22	48.8	41.5	17	18.8	5.5	M15 x 1	16	21	63
	7.5		KFE10N-03											30	62
12	8	3/8	KFE12U-03	22	19	24	51.3	44.5	17	19.3	7	M17 x 1	18	35	93
	9		KFE12N-03											45	91



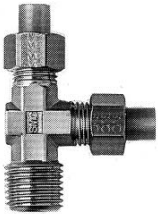
Bulkhead Union: KFE



Applicable tubing (mm)		Model	H1 (width across flats)	H2 (width across flats)	H3 (width across flats)	L1	L2	M	ød	Mounting hole	Effective area (mm ²)	Weight (g)
O.D.	I.D.											
4	2.5	KFE04-00	12	10	13	50.9	37.6	15.5	1.5	9	1.6	23
6	4	KFE06-00	14	12	17	51.3	38	15.2	3	11	6	34
8	5	KFE08U-00	17	14	19	52.3	39	16.2	4	13	11	47
	6	KFE08N-00									17	46
10	6.5	KFE10U-00	19	17	22	56.6	42	18.8	5.5	16	21	67
	7.5	KFE10N-00									30	66
12	8	KFE12U-00	22	19	24	59.5	46	19.3	7	18	35	87
	9	KFE12N-00									45	85

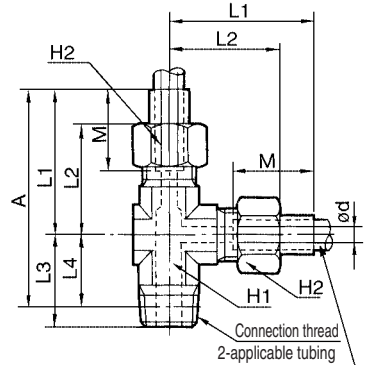


Male Run Tee: KFY



Applicable tubing (mm)		Connection thread R	Model	H1 (width across flats)	H2 (width across flats)	L1	L2	L3	L4*	M	ød	A*	Effective area (mm ²)	Weight (g)										
O.D.	I.D.																							
4	2.5	1/8	KFY04-01	10	10	27.5	20.8	17	13	15.5	1.5	40.5	3.5	28										
		1/4	KFY04-02											19	32									
6	4	1/8	KFY06-01	10	12	27.2	20.5	17	13	15.2	3	40.2	11	31										
		1/4	KFY06-02											19	37									
		3/8	KFY06-03											22	51									
8	5	1/8	KFY08U-01	12	14	30.2	23.5	20	16	16.2	4	46.2	15	48										
		1/4	KFY08U-02											23	17	50								
		3/8	KFY08U-03											22	15.7	55								
	6	1/8	KFY08N-01					20	16					18.8	5.5	46.2	18	16.2	5	47.2	21	47		
		1/4	KFY08N-02																			23	17	48
		3/8	KFY08N-03																			22	15.7	53
10	6.5	1/4	KFY10U-02	12	17	31.8	24.5	23	17	18.8	5.5	48.8	30			58								
		3/8	KFY10U-03													22	15.7					63		
	7.5	1/4	KFY10N-02			31.8	24.5	23	17							48.8	33					6.5	47.4	33
		3/8	KFY10N-03											22	15.7			62						
12	8	1/2	KFY10N-04	14	33.8	26.5	27	18.8	19.3	7	52.6	46	88											
		1/4	KFY12U-02										25	19	53.3	34	79							
	3/8	KFY12U-03	24														17.7	51.9	49	79				
	1/2	KFY12U-04											27	18.8	53.1	93								
9	1/4	KFY12N-02	25	19	53.3	36	76																	
	3/8	KFY12N-03					24	17.7	51.9	78														
1/2	KFY12N-04	27	18.8	53.1	92																			

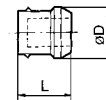
* Reference dimensions after R thread installation.



Plug: KFP



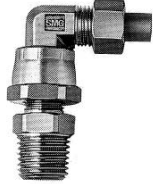
Applicable fitting (mm)	Model	L	øD	Weight (g)
4	KFP-04	12	6.5	0.3
6	KFP-06	12	8.5	0.5
8	KFP-08	12	10.4	0.7
10	KFP-10	13.5	13	1.0
12	KFP-12	14	15	1.4



- K
- M
- H
- D
- MS
- T
- VMG

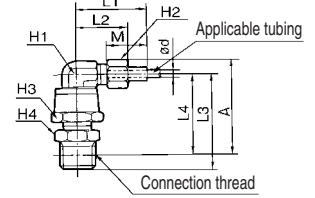
Series KF

Swivel Elbow: KFW



Applicable tubing (mm)		Connection thread R	Model	H1 (width across flats)	H2 (width across flats)	H3 (width across flats)	H4 (width across flats)	L1	L2	L3	L4*	M	ød	A*	Effective area (mm ²)	Weight (g)					
O.D.	I.D.																				
4	2.5	1/8	KFV04-01	10	10	14	10	26	19.3	33.7	29.7	15.5	1.5	35.5	1.4	40					
		1/4	KFV04-02														14	37.5	31.7		
6	4	1/8	KFV06-01	10	12	14	10	25.7	19	33.7	29.7	15.2	3	35.5	5	42					
			1/4														KFV06-02	14	37.5	31.7	
			3/8														KFV06-03	17	38.7	32.4	
8	5	1/8	KFV08U-01	12	14	17	12	27.2	20.5	34.7	30.7	16.2	4	37.6	9.4	52					
			1/4														KFV08U-02	14	38.7	32.7	
			3/8														KFV08U-03	17	39.7	33.4	
	6	1/8	KFV08N-01				12			34.7	30.7		5	37.6		14	57				
			1/4				KFV08N-02			14	38.7							32.7			
			3/8				KFV08N-03			17	39.7							33.4			
10	6.5	1/4	KFV10U-02	14	17	19	17	28.8	21.5	40.7	34.7	18.8	5.5	42.8	18		73				
			3/8															KFV10U-03	22	41.7	35.4
			1/2															KFV10U-04	22	44.7	36.5
	7.5	1/4	KFV10N-02				17			40.7	34.7		6.5	42.8		25	80				
			3/8				KFV10N-03			22	41.7							35.4			
			1/2				KFV10N-04			22	44.7							36.5			
12	8	1/4	KFV12U-02	17	19	22	17	30.3	23.5	41.7	35.7	19.3	7	45.7	30		100				
			3/8															KFV12U-03	22	42.7	36.4
			1/2															KFV12U-04	22	45.7	37.5
	9	1/4	KFV12N-02				17			41.7	35.7		8	45.7		38	90				
			3/8				KFV12N-03			22	42.7							36.4			
			1/2				KFV12N-04			22	45.7							37.5			

* Reference dimensions after R thread installation.



Swivel Extended Elbow: KFW



Applicable tubing (mm)		Connection thread R	Model	H1 (width across flats)	H2 (width across flats)	H3 (width across flats)	H4 (width across flats)	L1	L2	L3	L4*	M	ød	A*	Effective area (mm ²)	Weight (g)				
O.D.	I.D.																			
4	2.5	1/8	KFW04-01	10	10	14	10	26	19.3	53.7	49.7	15.5	1.5	55.5	1.4	58				
		1/4	KFW04-02														14	57.7	51.7	
6	4	1/8	KFW06-01	10	12	14	10	25.7	19	54.7	50.7	15.2	3	56.5	5	61				
			1/4														KFW06-02	14	58.7	52.7
			3/8														KFW06-03	17	59.7	53.4
8	5	1/8	KFW08U-01	12	14	17	12	27.2	20.5	55.7	51.7	16.2	4	58.6	9.4	81				
			1/4														KFW08U-02	14	59.7	53.7
			3/8														KFW08U-03	17	60.7	54.4
	6	1/8	KFW08N-01				12			55.7	51.7		5	58.6		14	81			
			1/4				KFW08N-02			14	59.7							53.7		
			3/8				KFW08N-03			17	60.7							54.4		
10	6.5	1/4	KFW10U-02	14	17	19	17	28.8	21.5	61.7	55.7	18.8	5.5	63.8	100					
			3/8														KFW10U-03	22	62.7	56.4
			1/2														KFW10U-04	22	65.7	57.5
	7.5	1/4	KFW10N-02				17			61.7	55.7		6.5	63.8		25	99			
			3/8				KFW10N-03			22	62.7							56.4		
			1/2				KFW10N-04			22	65.7							57.5		
12	8	1/4	KFW12U-02	17	19	22	17	30.3	23.5	64.7	58.7	19.3	7	68.7	146					
			3/8														KFW12U-03	22	65.7	59.4
			1/2														KFW12U-04	22	68.7	60.5
	9	1/4	KFW12N-02				17			64.7	58.7		8	68.7		38	144			
			3/8				KFW12N-03			22	65.7							59.4		
			1/2				KFW12N-04			22	68.7							60.5		

* Reference dimensions after R thread installation.

