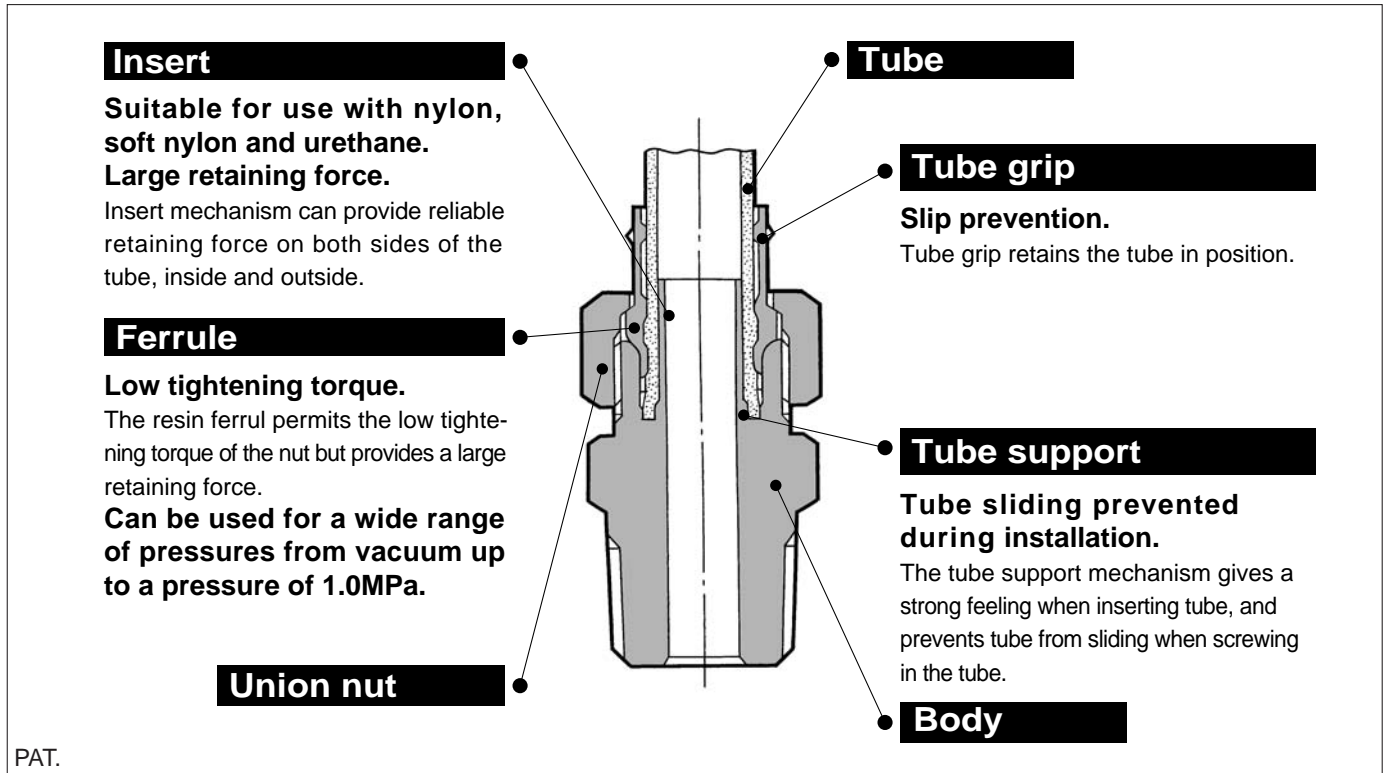


Insert Fittings Series KF



Suitable for use with nylon, soft nylon and urethane

Large retaining force

Design considered well for improvement of workability with low clamping torque



Applicable Tubing

Size	O.D.	4	6	8	10	12			
	I.D.	2.5	4	5	6	6.5	7.5	8	9
Material	Nylon tube	●	●	—	●	—	●	—	●
	Soft nylon tube	●	●	—	●	—	●	—	●
	Polyurethane tube	●	●	◎*	—	◎*	—	◎*	—



* "◎" mark (polyurethane tube $\phi 8$, $\phi 10$, $\phi 12$) are provided with the captive styles because of different I.D.

Specifications












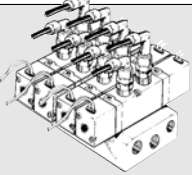

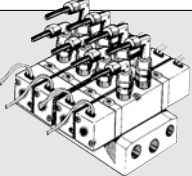
Operating fluid		Air
Max. operating pressure		1.0MPa
Operating vacuum pressure		-101.3kPa
Proof pressure		7.0MPa
Ambient and fluid temperature		-5 to 60°C (No freezing)
Thread	Thread portion	JIS B0203 (Taper pipe thread)
	Nut	JIS B0211 Class 2 (Metric fine thread)
Sealant (thread portion)*		None or with sealant



*Male elbow, Branch tee and Male run tee with sealant are manufactured upon receipt of order.

Component Materials

Body	C3604BD, C3771BE
Nut	C3604BD
Ferrule	Nylon66

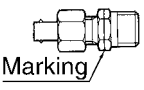
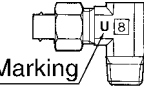
Model	
<p>Male connector</p> <p>KFH P.2.1-42</p> 	<p>Used to pipe in the same direction from female thread portion. Most common style.</p>
<p>Female connector</p> <p>KFF P.2.1-43</p> 	<p>Used to pipe from male threaded portion such as pressure gauge.</p>
<p>Straight union</p> <p>KFH P.2.1-42</p> 	<p>Used to connect tubes in the same direction.</p>
<p>Bulkhead connector</p> <p>KFE P.2.1-44</p> 	<p>Used for transit connection of a tube and a male screw for a installation of a panel.</p>
<p>Male elbow</p> <p>KFL P.2.1-42</p> 	<p>Used to pipe at right angles to female threaded portion. Most common style.</p>
<p>Bulkhead union</p> <p>KFE P.2.1-44</p> 	<p>Used for junction connection of tubes for installation of a panel.</p>
<p>Union tee</p> <p>KFT P.2.1-43</p> 	<p>Used to connect tubes in both 90° directions.</p>
<p>Male run tee</p> <p>KFY P.2.1-44</p> 	<p>Used for a branch line in the same direction from female thread and in 90° direction.</p>
<p>Male branch tee</p> <p>KFT P.2.1-43</p> 	<p>Used to branch line from female thread in both 90° directions.</p>
<p>Plug</p> <p>KFP P.2.1-44</p> 	<p>Used to plug unused fitting.</p>
<p>Swivel elbow</p> <p>KFV</p>  <p>P.2.1-45</p>	<p>Used to pipe at right angles to female thread portions. Swiveled at any direction.</p> 
<p>Swivel extended elbow</p> <p>KFW</p>  <p>P.2.1-45</p>	<p>Used to pipe at right angles to female thread portions. Swiveled at any direction. Solid piece moves fittings up from workpiece.</p> 

- K
- M
- H
- D
- MS
- T
- LQ
- Clean Room

Series KF

Fitting Markings For Applicable Tube Material

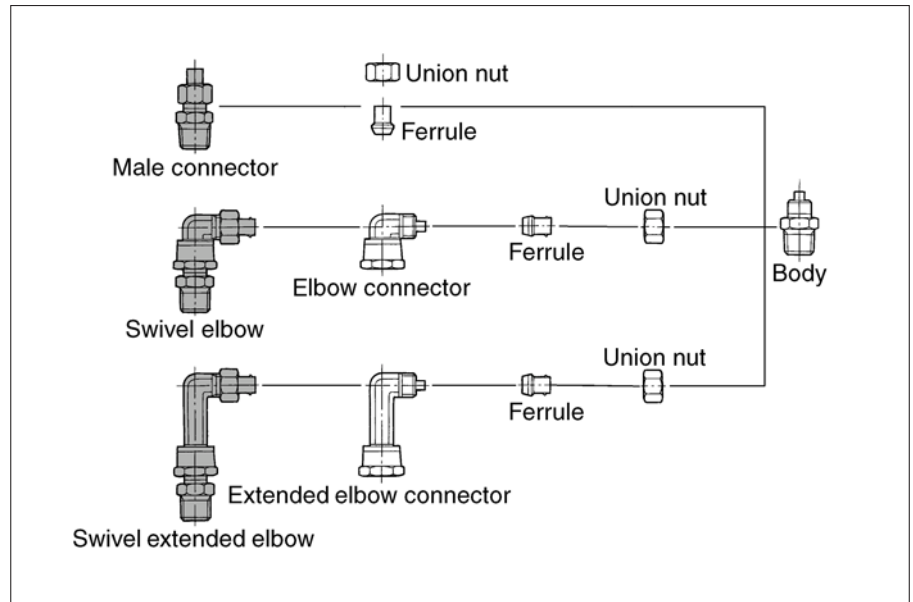
- Fittings used only with polyurethane tube (tube O.D. $\phi 8$, $\phi 10$ and $\phi 12$) are identified by the following marks on the body.
- Unmarked fittings are used with nylon and soft nylon tubes or compatible with nylon, soft nylon and polyurethane tubes.
- Union nut and ferrule are compatible.

Marking for polyurethane use	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 long elbow: KFW

Component List/Swivel Fitting 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.	Tube 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.	Tube 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.	Tube 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	$\phi 12/\phi 9$

Ferrule: KFS

Part No.	Tube 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 p.0-26 and 0-27 for Safety Instructions and common precautions on the products mentioned in this catalogue, and refer to p.2.0-7 and 2.0-8 for more detailed precautions of every series.

Piping

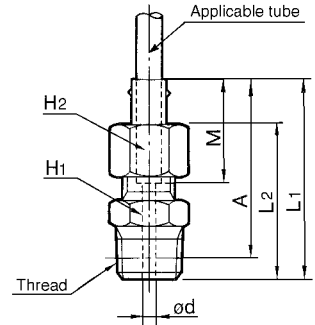
⚠ Caution

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

Male connector: **KFH**



Tube (mm)		Thread R(PT)	Part No.	H1 (Hex.)	H2 (Hex.)	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		
8	5	1/8	KFH08U-01	12	14	30.2	23.5	16.2	4	26.2	11	16		
		1/4	KFH08U-02	14		34.2	27.5			28.2		25		
		3/8	KFH08U-03	17		35.2	28.5			28.9		37		
	6	1/8	KFH08N-01	12		30.2	23.5		5	26.2	17	26.2	17	16
		1/4	KFH08N-02	14		34.2	27.5			28.2		24		
		3/8	KFH08N-03	17		35.2	28.5			28.9		36		
10	6.5	1/4	KFH10U-02	17	17	35.8	28.5	18.8	5.5	29.8	21	32		
		3/8	KFH10U-03	22		36.8	29.5			30.5		40		
		1/2	KFH10U-04	22		39.8	32.5			31.6		65		
	7.5	1/4	KFH10N-02	17		35.8	28.5		6.5	29.8	30	29.8	30	31
		3/8	KFH10N-03	17		36.8	29.5			30.5		39		
1/2	KFH10N-04	22	39.8	32.5	31.6	64								
12	8	1/4	KFH12U-02	17	19	36.3	29.5	19.3	7	30.3	35	33		
		3/8	KFH12U-03	22		37.3	30.5			31		41		
		1/2	KFH12U-04	22		40.3	33.5			32.1		65		
	9	1/4	KFH12N-02	17		36.3	29.5		8	30.3	45	30.3	45	31
		3/8	KFH12N-03	17		37.3	30.5			31		39		
		1/2	KFH12N-04	22		40.3	33.5			32.1		64		

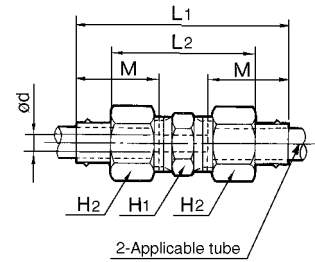


*Reference dimensions after R(PT) thread installation.

Straight union: **KFH**



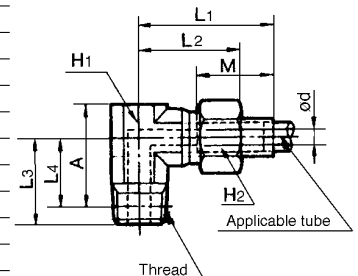
Tube (mm)		Part No.	H1 (Hex.)	H2 (Hex.)	L1	L2	M	ød	Effective area (mm ²)	Weight (g)
O.D.	I.D.									
4	2.5	KFH04-00	8	10	40.9	27.6	15.5	1.5	1.6	13
6	4	KFH06-00	10	12	40.3	27	15.2	3	6	17
8	5	KFH08U-00	12	14	41.3	28	16.2	4	11	23
	6	KFH08N-00						5	17	22
10	6.5	KFH10U-00	17	17	44.6	30	18.8	5.5	21	36
	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**



Tube (mm)		Thread R(PT)	Part No.	H1 (Hex.)	H2 (Hex.)	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
8	5	1/8	KFL08U-01	12	14	28.2	21.5	18	14	16.2	4	21.3	9.5	30				
		1/4	KFL08U-02											21	15	32		
		3/8	KFL08U-03											20	13.7	39		
	6	1/8	KFL08N-01								28.2	21.5	18	14	5	21.3	12	31
		1/4	KFL08N-02								21	15	32					
		3/8	KFL08N-03								20	13.7	37					
10	6.5	1/4	KFL10U-02	12	17	31.8	24.5	22	16	18.8	5.5	23.3	18	38				
		3/8	KFL10U-03											21	14.7	44		
		1/2	KFL10U-04											25	16.8	66		
	7.5	1/4	KFL10N-02								21	15	33					
		3/8	KFL10N-03								21	14.7	43					
1/2	KFL10N-04	14	33.8	26.5	25	16.8	25.3	26	65									
12	8	1/4	KFL12U-02	14	19	34.3	27.5	23	17	19.3	7	25.5	24	53				
		3/8	KFL12U-03											22	15.7	53		
		1/2	KFL12U-04											25	16.8	68		
	9	1/4	KFL12N-02								23	17	51					
		3/8	KFL12N-03								22	15.7	52					
		1/2	KFL12N-04								25	16.8	67					



*Reference dimensions after R(PT) thread installation.

K □

M □

H □

D □

MS

T □

LQ

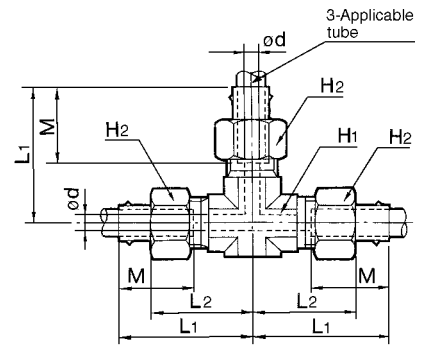
Clean Room

Series KF

Union tee: KFT



Tube (mm)		Part No.	H1 (Hex.)	H2 (Hex.)	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								
10	6.5	KFT10U-00	12	17	31.8	24.5	18.8	5.5	21	65
	7.5	KFT10N-00								
12	8	KFT12U-00	14	19	34.3	27.5	19.3	7	35	89
	9	KFT12N-00								

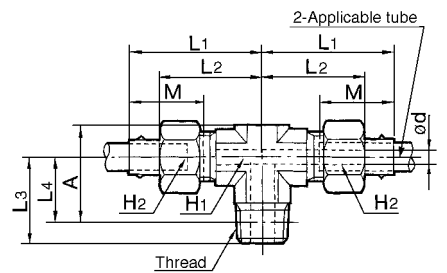


Branch tee: KFT



Tube (mm)		Thread R(PT)	Part No.	H1 (Hex.)	H2 (Hex.)	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	13	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	13	37		
		3/8	KFT06-03												12	30.2	23.5	22	15.7
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												23	17	24.3	19	50
		3/8	KFT08U-03												23	17	23	19	56
	6	1/8	KFT08N-01												20	16	23.3	16	46
		1/4	KFT08N-02												23	17	24.3	16	49
		3/8	KFT08N-03												23	17	23	16	46
10	6.5	1/4	KFT10U-02	12	17	31.8	24.5	22	17	18.8	5.5	24.3	27	46					
		3/8	KFT10U-03												22	15.7	23	16	46
		1/2	KFT10U-04												27	18.8	27.3	34	90
	7.5	1/4	KFT10N-02												23	17	24.3	30	57
		3/8	KFT10N-03												22	15.7	23	25	62
		1/2	KFT10N-04												27	18.8	27.3	41	88
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												24	17.7	26.2	44	81
		1/2	KFT12U-04												27	18.8	27.3	44	94
	9	1/4	KFT12N-02												25	19	27.5	32	75
		3/8	KFT12N-03												24	17.7	26.2	28	78
		1/2	KFT12N-04												27	18.8	27.3	48	93

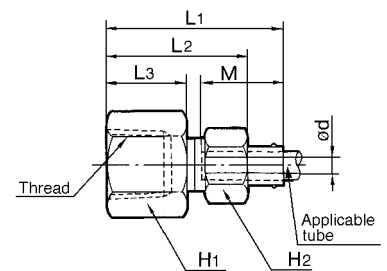
*Reference dimensions after R(PT) thread installation.



Female connector: KFF



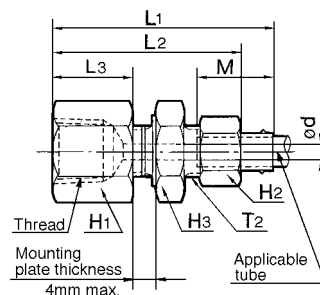
Tube (mm)		Thread Rc(PT)	Part No.	H1 (Hex.)	H2 (Hex.)	L1	L2	L3	M	ød	Effective area (mm ²)	Weight (g)
O.D.	I.D.											
4	2.5	1/4	KFF04-02	17	10	33.5	26.8	15	15.5	1.5	1.6	25
6	4	1/4	KFF06-02	17	12	33.2	26.5	15	15.2	3	6	27
		3/8	KFF06-03									
8	5	1/4	KFF08U-02	17	14	33.2	26.5	15	16.2	4	11	28
			6									
10	6.5	1/4	KFF10U-02	17	17	34.8	27.5	15	18.8	5.5	21	32
			7.5									
12	8	1/4	KFF12U-02	17	19	35.3	28.5	15	19.3	7	35	35
			9									



Bulkhead connector: KFE



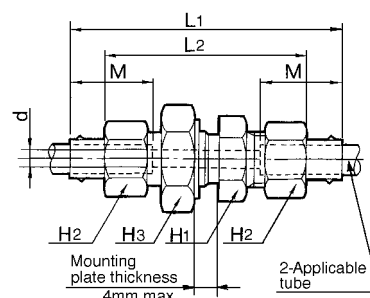
Tube (mm)		Thread Rc (PT)	Part No.	H1 (Hex.)	H2 (Hex.)	H3 (Hex.)	L1	L2	L3	M	ød	T2	Mounting hole	Effective area (mm ²)	Weight (g)
O.D.	I.D.														
6	4	1/4	KFE06-02	17	12	17	44.2	37.5	16	15.2	3	M10 X 1	11	6	41
8	5	3/8	KFE08U-03	19	14	19	46.2	39.5	17	16.2	4	M12 X 1	13	11	49
	6		KFE08N-03											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



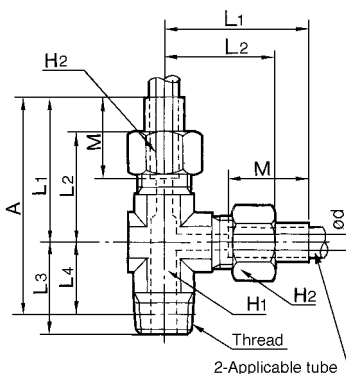
Tube (mm)		Part No.	H1 (Hex.)	H2 (Hex.)	H3 (Hex.)	L1	L2	M	ød	Mounting hole	Effective area (mm ²)	Weight (g)
O.D.	I.D.											
4	2.5	KFE04-00	12	10	13	50.9	37.6	15.5	1.5	9	1.6	23
6	4	KFE06-00	14	12	17	51.3	38	15.2	3	11	6	34
8	5	KFE08U-00	17	14	19	52.3	39	16.2	4	13	11	47
	6	KFE08N-00									17	46
10	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



Tube (mm)		Thread R(PT)	Part No.	H1 (Hex.)	H2 (Hex.)	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	
8	5	3/8	KFY06-03	12	14	30.2	23.5	22	15.7	16.2	5	45.8	13	51		
														1/8	KFY08U-01	20
		1/4	KFY08U-02					23	17					47.2	21	50
		3/8	KFY08U-03					22	15.7					45.8	21	55
		1/8	KFY08N-01					20	16					46.2	18	47
		1/4	KFY08N-02					23	17					47.2	21	48
10	6.5	3/8	KFY08N-03	12	17	31.8	24.5	22	15.7	18.8	5.5	47.4	30	53		
														1/4	KFY10U-02	23
		3/8	KFY10U-03					22	15.7					52.6	38	89
		1/2	KFY10U-04					27	18.8					56.6	46	88
		1/4	KFY10N-02					23	17					48.8	33	57
		3/8	KFY10N-03					22	15.7					47.4	33	62
12	8	1/2	KFY10N-04	14	19	33.8	26.5	27	18.8	19.3	6.5	52.6	46	88		
														1/4	KFY12U-02	25
		3/8	KFY12U-03					24	17.7					51.9	49	79
		1/2	KFY12U-04					27	18.8					53.1	49	93
		1/4	KFY12N-02					25	19					53.3	36	76
		3/8	KFY12N-03					24	17.7					51.9	36	78
9	1/2	KFY12N-04	14	19	34.3	27.5	27	18.8	19.3	8	53.1	49	93			
													3/8	KFY12N-03	24	17.7
														54		
														92		

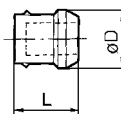


*Reference dimensions after R(PT) thread installation.

Plug: KFP



Fitting (mm)	Part No.	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 □

LQ

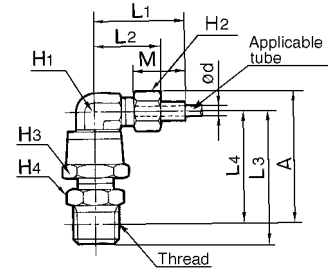
Clean Room

Series KF

Swivel elbow: Kfv



Tube (mm)		Thread R(PT)	Part No.	H1 (Hex.)	H2 (Hex.)	H3 (Hex.)	H4 (Hex.)	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	37.7	31.7	37.5	50
6	4	1/8	KFV06-01	10	12	14	14	25.7	19	33.7	29.7	15.2	3	35.5	5	42					
		1/4	KFV06-02														14	37.7	31.7	37.5	52
		3/8	KFV06-03														17	38.7	32.4	38.2	64
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	40.3	61
		3/8	KFV08U-03														17	39.7	33.4	40.3	73
	6	1/8	KFV08N-01	12	14	17	12	27.2	20.5	34.7	30.7	16.2	5	37.6	14	57					
		1/4	KFV08N-02														14	38.7	32.7	39.6	60
		3/8	KFV08N-03														17	39.7	33.4	40.3	72
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	43.5	81
		1/2	KFV10U-04														22	44.7	36.5	44.6	104
	7.5	1/4	KFV10N-02	14	17	19	17	28.8	21.5	40.7	34.7	18.8	6.5	42.8	25	80					
		3/8	KFV10N-03														22	41.7	35.4	43.5	80
		1/2	KFV10N-04														22	44.7	36.5	44.6	104
12	8	1/4	KFV12U-02	17	19	22	17	30.3	23.5	41.7	35.7	19.3	7	45.7	30	92					
		3/8	KFV12U-03														22	42.7	36.4	46.7	100
		1/2	KFV12U-04														22	45.7	37.5	47.5	124
	9	1/4	KFV12N-02	17	19	22	17	30.3	23.5	41.7	35.7	19.3	8	45.7	38	90					
		3/8	KFV12N-03														22	42.7	36.4	46.7	98
		1/2	KFV12N-04														22	45.7	37.5	47.5	123

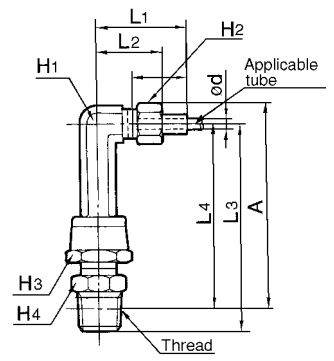


*Reference dimensions after R(PT) thread installation.

Swivel extended elbow: Kfw



Tube (mm)		Thread R(PT)	Part No.	H1 (Hex.)	H2 (Hex.)	H3 (Hex.)	H4 (Hex.)	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	63.5	63
6	4	1/8	KFW06-01	10	12	14	14	25.7	19	54.7	50.7	15.2	3	56.5	5	61					
		1/4	KFW06-02														14	58.7	52.7	58.5	66
		3/8	KFW06-03														17	59.7	53.4	59.2	77
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	60.6	83
		3/8	KFW08U-03														17	60.7	54.4	61.3	90
	6	1/8	KFW08N-01	12	14	17	12	27.2	20.5	55.7	51.7	16.2	5	58.6	14	81					
		1/4	KFW08N-02														14	59.7	53.7	60.6	83
		3/8	KFW08N-03														17	60.7	54.4	61.3	88
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	18	100					
		3/8	KFW10U-03														22	62.7	56.4	64.5	106
		1/2	KFW10U-04														22	65.7	57.5	65.6	128
	7.5	1/4	KFW10N-02	14	17	19	17	28.8	21.5	61.7	55.7	18.8	6.5	63.8	25	99					
		3/8	KFW10N-03														22	62.7	56.4	64.5	104
		1/2	KFW10N-04														22	65.7	57.5	65.6	126
12	8	1/4	KFW12U-02	17	19	22	17	30.3	23.5	64.7	58.7	19.3	7	68.7	30	146					
		3/8	KFW12U-03														22	65.7	59.4	69.4	146
		1/2	KFW12U-04														22	68.7	60.5	70.5	161
	9	1/4	KFW12N-02	17	19	22	17	30.3	23.5	64.7	58.7	19.3	8	68.7	38	144					
		3/8	KFW12N-03														22	65.7	59.4	69.4	145
		1/2	KFW12N-04														22	68.7	60.5	70.5	159



*Reference dimensions after R(PT) thread installation.