SMC®

Air Fittings & Tubing

General Purpose Fittings

One-touch Mini, One-touch Fittings, Rotary One-touch Fittings, One-touch Fittings Manifold, Rectangular Multi-connector, Multi-connector, Self-Seal Fittings, Piping Module, Miniature Fittings, Insert Fittings, Self Align Fittings

Fittings for Special Environment

FR One-touch Fittings, FR One-touch Fittings Manifold, One-touch Fittings, Miniature Fittings, Antistatic One-touch Fittings

Tubing

Z PRODUCTS™

Table of Contents

General Purpose Fitting Series

Air Fitting Series

Applicable tube material	Port	Applicable tube O.D.	With sealant	Electroless nickel plating	Page
Nylon, Soft nylon, Polyurethane	NPT	ø1/8" ø5/32" ø3/16" ø1/4" ø5/16" ø3/8" ø1/2"			10
		UNF 10-32			
		1/16			
		1/8			
		Unions			
Nylon, Soft nylon, Polyurethane	PT	ø3.2 ø4 ø6 ø8 ø10 ø12 ø16			
		M3			
		M5			
		1/8			
		Unions			
Nylon, Soft nylon, Polyurethane	NPT	ø1/8" ø5/32" ø3/16" ø1/4" ø5/16" ø3/8" ø1/2"			21
		UNF 10-32			
		1/16			
		1/8			
		1/4			
		3/8			
		1/2			
		Unions			
Nylon, Soft nylon, Polyurethane	PT	ø3.2 ø4 ø6 ø8 ø10 ø12 ø16			
		M5			
		M6			
		1/8			
		1/4			
		3/8			
		1/2			
		Unions			
Nylon, Soft nylon, Polyurethane	PT	ø1/8" ø5/32" ø3/16" ø1/4" ø5/16" ø3/8" ø1/2"			
		M5			
		1/8			
		1/4			
		3/8			
		1/2			
		Unions			
Nylon, Soft nylon, Polyurethane	NPT	ø3.2 ø4 ø6 ø8 ø10 ø12 ø16			56
		UNF 10-32			
		1/8			
		1/4			
		3/8			
Nylon, Soft nylon, Polyurethane	PT	ø1/8" ø5/32" ø3/16" ø1/4" ø5/16" ø3/8" ø1/2"			
		M5			
		M6			
		1/8			
		1/4			
		3/8			
		1/2			

General Purpose Fitting Series

Air Fitting Series

Applicable tube material	Port	Applicable tube O.D.	With sealant	Electroless nickel plating	Page
Nylon, Soft nylon, Polyurethane	NPT: 1/4, 3/8, 5/16, 3/8, 1/2	ø1/8" ø5/32" ø3/16" ø1/4" ø5/16" ø3/8" ø1/2" / ø3.2 ø4 ø6 ø8 ø10 ø12 ø16			61
Nylon, Soft nylon, Polyurethane	1/4, 3/8, ø8, ø10, ø12	ø3.2 ø4 ø6 ø8 ø10 ø12 ø16			61
Nylon, Soft nylon, Polyurethane	10 tubes, 20 tubes	ø1/8" ø5/32" ø3/16" ø1/4" ø5/16" ø3/8" ø1/2" / ø3.2 ø4 ø6 ø8 ø10 ø12 ø16			66
Nylon, Soft nylon, Polyurethane	10 tubes, 20 tubes	ø3.2 ø4 ø6 ø8 ø10 ø12 ø16		●	66
Nylon, Soft nylon, Polyurethane	6 tubes, 12 tubes	ø3.2 ø4 ø6 ø8 ø10 ø12 ø16			69
Nylon, Soft nylon, Polyurethane	PT: M3, 1/8, 1/4, 3/8, 1/2, Unions	ø3.2 ø4 ø6 ø8 ø10 ø12 ø16	●	●	73
Nylon, Soft nylon, Polyurethane		ø3.2 ø4 ø6 ø8 ø10 ø12 ø16	●	●	79

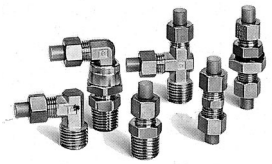
General Purpose Fitting Series

Air Fitting Series

Tubing connection/disconnection without use of tools

Miniature Fittings Series M (Metric)

Applicable tube O.D., mm



Possible to use in vacuum

Insert Fittings Series KF (Metric)

Accepts soft copper tubing

Self Align Fittings Series H, DL, L, LL (Metric)

Applicable tube O.D., inch

Applicable tube material	Port	Applicable tube O.D.	With sealant	Electroless nickel plating	Page
Nylon, Soft nylon, Polyurethane	PT	M3, M5, 1/8 — ø3.2 ø4 ø6 ø8 ø10 ø12 ø16			88
Nylon, Soft nylon, Polyurethane	PT	1/8, 1/4, 3/8, 1/2, Unions — ø3.2 ø4 ø6 ø8 ø10 ø12 ø16			94
Nylon, Soft nylon, Polyurethane	PT	1/8, 1/4, 3/8, 1/2, Unions — ø3.2 ø4 ø6 ø8 ø10 ø12 ø16			102

Fitting Series For Special Environments

Air Fitting Series

One-touch In - One-touch Out tube connection
For use where weld spatter is prevent
Equivalent to UL-94, material V-O

FR One-touch Fittings Series KR (Inch)

Applicable tube O.D., Inch

FR One-touch Fittings Series KR (Metric)

Applicable tube O.D., mm

One-touch In - One-touch Out tube connection
For use where weld spatter is prevent
Equivalent to UL-94, material V-O

FR One-touch Fittings Manif Series KRM

Applicable tube O.D., mm

One-touch In - One-touch Out tube connection
For use in corrosive environments
Stainless steel series

One touch Fittings Series KG

Applicable tube O.D., mm

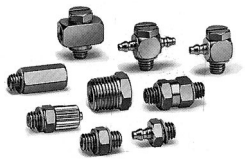
Applicable tube material	Port	Applicable tube O.D.	With sealant	Electroless nickel plating	Page
FR Soft nylon	NPT	1/8, 1/4, 3/8, 1/2, Unions — ø1/8" ø5/32" ø3/16" ø1/4" ø5/16" ø3/8" ø1/2"			110
FR Soft nylon	PT	1/8, 1/4, 3/8, 1/2, Unions — ø3.2 ø4 ø6 ø8 ø10 ø12 ø16			110
FR Soft nylon	PT	1/4, 3/8, ø10, ø12 — ø3.2 ø4 ø6 ø8 ø10 ø12 ø16			118
Nylon, Soft nylon, Polyurethane	PT	M5, M6, 1/8, 1/4, 3/8, 1/2 — ø3.2 ø4 ø6 ø8 ø10 ø12 ø16			120

Fitting Series For Special Environment

Air Fitting Series

For use in corrosive environments Stainless Steel series (SUS316)

Miniature Fittings Series MS



Applicable tube O.D., mm

To dissipate static electricity

Antistatic One-Touch Fittin Series KA

Tubing

Tubing

For General Tubing

Nylon Tubing Series TIA, T

Slightly flexible

Soft Nylon Tubing Series TISA, T

Flexible

Polyurethane Tubing Series TIUB, TU

Extremely Flexible

Soft Polyurethane Tubing Series TUS

For flexibility and moving applications

Polyurethane Coil Tubin Series TCU

	Applicable tube material	Port	Applicable tube O.D.	With sealant	Electroless nickel plating	Page
Fitting Series For Special Environment	Nylon, Soft nylon, Polyurethane	M5	ø3.2 ø4 ø6 ø8 ø10 ø12 ø16			131
	Nylon, Soft nylon, Polyurethane	UNI THREAD M5, M6, 1/8, 1/4, 3/8, 1/2, Unions	ø3.2 ø4 ø6 ø8 ø10 ø12 ø16			135

	Color	Tube O.D.		Page
		Inch-size (inch)	Metric size (mm)	
		ø1/8" (3.2) ø3/16" ø1/4" ø3/8" ø1/2"	(ø5/32) (ø5/16) ø4 ø6 ø8 ø10 ø12 ø16	
Tubing	Black, White, Red, Blue, Yellow, Green			142
	Black, White, Red, Blue, Yellow, Green			143
	Black, White, Red, Blue, Yellow, Green, Transparent, Orange			144
	Black, White, Red, Blue, Yellow, Green, Translucent, Yellow brown			145
	1tube, 2 tubes, 3 tubes			146

Tubing

Tubing

Use in spatter generating atmosphere/ Flame retardant material

FR Soft Nylon Tubing
Series TRS

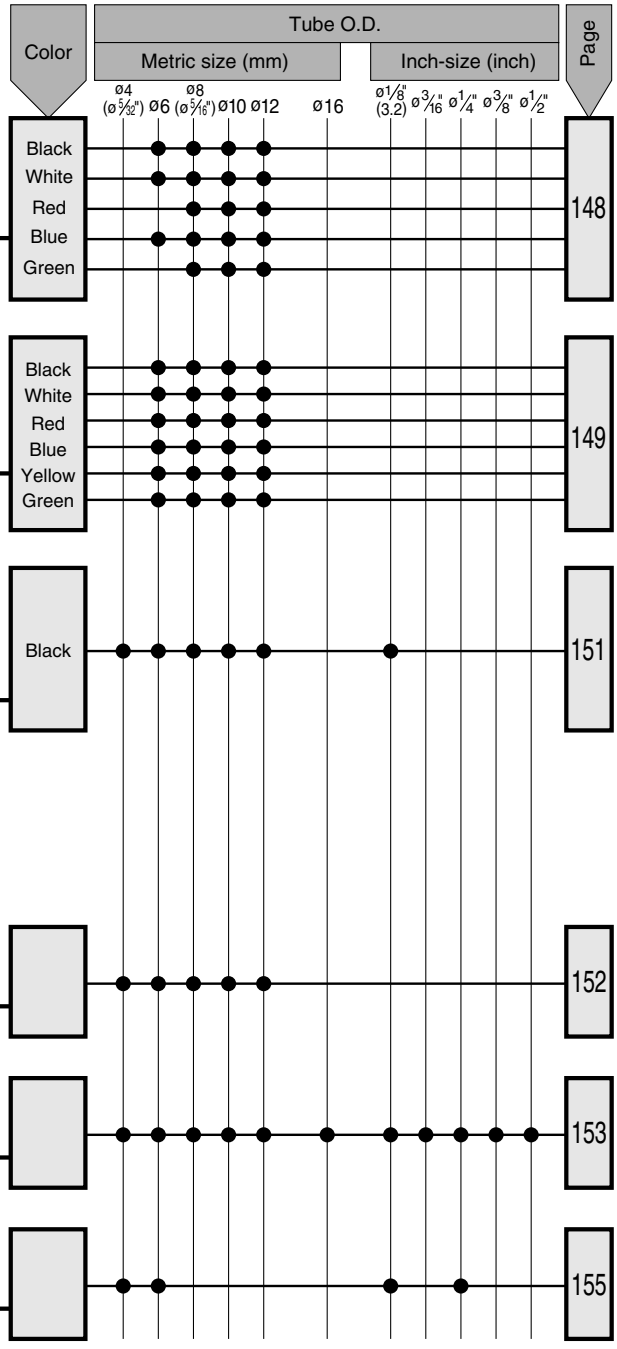
Flame resistance (Equivalent to UL-94 standard, material V-0)

FR Double Layer Tubing
Series TRB

Flame resistance (Equivalent to UL-94 standard, material V-0)

For preventing static electricity

Antistatic Tubing
Series TA□



Accessories

Accessories / Tools

Multitube Holder
Series TM

Tube Cutter
Series TK

Tube Releasing
Series TG

Operation Guide For Air Fittings and Tubing

With Sealant and Electroless Nickel Plating Option

How to Order/Standard

S — X2

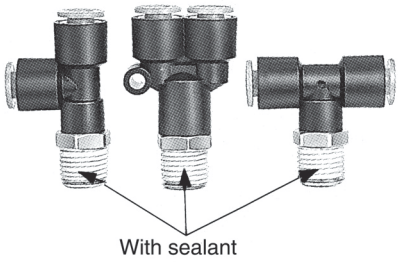
Option indication
X2 — With electroless nickel plating

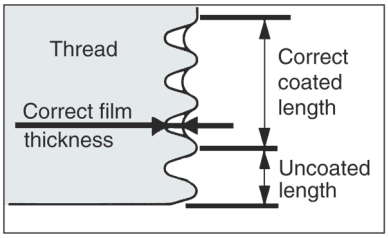
With sealant
— ——— Without sealant
S ——— With sealant

Note) With gasket for all of M3, M5 and M6 thread.

Fittings with Sealant

The sealant (fluoro resin) is applied to the threaded portion in the correct thickness and range. This eliminates the work of wrapping and coating sealant, which simplifies piping.





Air Fittings

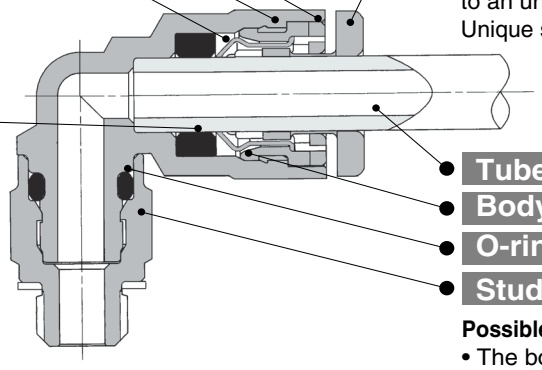
General Purpose Fittings

Guide 1
Collet
Chuck

Accepts nylon, soft nylon and polyurethane tubes.
Has large retaining force.

Packing

Can be used for a wide range of pressure from a low vacuum up to a pressure of 145psi (1.0MPa).
The use of a special profile ensures positive sealing and reduced resistance when the tube is being inserted.



Release button (Inch-Orange, Metric-Gray)

Low disconnecting force.
When the fitting is removed from the tubing, the chuck and collet are released, thus preventing them from biting into the tube to an unnecessary degree.
Unique shape allows easy tube release.

Tube
Body
O-ring
Stud

Possible to insert tube in narrower space.
- The body and threaded portion can turn independently.
- Stud has electroless nickel plating.
- Standard preapplied thread sealant. (Except 10-32UNF, M3, M5)

Optimum piping in less space with 20% minituarization of the outside diameter

Standard with thread sealant

Can be used in applications where copper-free material is required.

Possible to use in vacuum to 1.3KPa (10 Torr)

Applicable Tube

Tube material		Nylon, Soft nylon, Polyurethane
Tube O.D.	Inch	ø1/8, ø5/32, ø1/4
	Metric	ø3.2, o4, ø6

Specifications

Operating fluid			Air, Water NOTE 1)
Max. operating pressure			145psi (1.0Mpa)
Max. operating vacuum pressure			1.3KPa (10 Torr)
Proof pressure			435psi(3.0MPa)
Ambient and fluid temperature			23 to 140□F (-5 to 60□C),
			Water: 32 to 105□F (0 to 40□C) (no freezing)
Thread	Inch	Thread Portion	ANSI/ASMEB1.20.1-1983 (NPT thread), JIS B 0212 2A, Class 2B (UNF-thread)
		Nut	JIS B 0212 2A, Class 2B (UNF-thread)
	Metric	Thread Portion	JIS B 0203 (Taper pipe thread) JIS B 0209, Class 2 (Metric coarse thread)
		Nut	JIS B 0211, Class 2 (Metric fine thread)

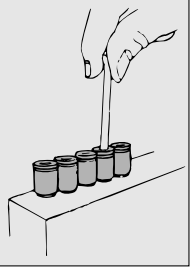
Note1) Applicable for general industry water. Consult SMC if using for other kinds of fluid. Surge pressure must be under the max. operating pressure.

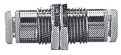
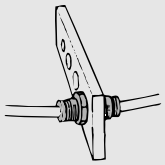
Principal Element Material

Body	SUS303, C3604BD, PBT
Stud	C3604BD (Thread portion)
Chuck, Guide	SUS304
Collet, Release button, Guide	POM
Packing, O-ring	NBR

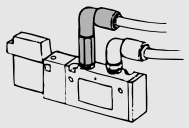
Model

Hexagon socket head male connector
KJS P. 12

Internal hex allows thread connection by using an allen wrench, for confined space.


Bulkhead union
KJE P. 20

Used to connect two tubes through a panel.


Extended male elbow
KJW P. 15

The most appropriate use is when the elbow extends over a standard elbow for ease of connection/ disconnection of tubing.


Male connector
KJH P. 12

Use to pipe in the same direction from female threaded portion. Most general type.

Female union
KJF P. 13

Use to pipe from male threaded portion such as pressure gauge.

Straight union
KJH P. 13

Use to connect tubes in the same direction.

Different dia. straight
KJH P. 13

Use to connect different size tubes.

Male elbow
KJL P. 14

Use to pipe in right angle to female threaded portion. Most general type.

Union elbow
KJL P. 14

Use to connect tubes in right angle.

Plug-in elbow
KJL P. 14

Use to change by 90˚ in a tube direction from One-touch fittings.

Reducer elbow
KJL P. 15

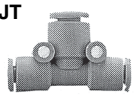
Use to change by 90˚ in tube direction from One-touch fittings and to size down.

Branch tee
KJT P. 16

Use to branch line from female thread of both side 90˚ direction.

Union tee
KJT P. 16

Use to branch connection of tubes of both side 90˚ direction.

Different dia.tee
KJT P. 17

Use to branch connection of tubes with size down in both side 90˚ direction.

Male run tee
KJY P. 17

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

Union "Y"
KJU P. 18

Use to branch connection of tubes in the same direction.

Different dia. union "Y"
KJU P. 18

Use to branch connection of tubes with size down in the same direction.

Plug-in "Y"
KJU P. 18

Use to branch tubing in the same direction from One-touch fittings.

Different dia. plug in "Y"
KJX P. 19

Use to branch line of size down in the same direction from One-touch fittings.

Branch "Y"
KJU P. 19

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

Plug-in reducer
KJR P. 19

Use to change size of One-touch fittings.

⚠ Precautions

Be sure to read before handling.
Refer to "Air Fittings & Tubing Precautions" for other details.

Interchangeability of Series KJ and Series KQ

⚠ Caution

① Do not use the plug-in KQ Series with the KJ Series, it will not hold.

② For combinations other than the plug-in KQs, they are interchangeable.

Installation and Removal of One-touch Mini Fittings

⚠ Caution

Installing Tube

① Cut the tube perpendicularly, using caution not to damage its O.D. surface. (Use tube cutter TK-1, 2 or 3. Do not cut the tube with cutting pliers, nippers, scissors, etc.)
↓
② Grasp the tube, then slowly push it until it comes to a dead-end.
↓
③ Then pull it back gently to make sure that it does not pull out.

Removing Tube

(Use one hand for removal.)

① Hold the release button with the thumb and forefinger.
↓
② Grasp the tube with the remaining three fingers and palm.
↓
③ Then pull out the tube by the three fingers and palm while pushing in the release button with the thumb and the forefinger.
↓
④ To re-use the released tube, cut off the damaged portion of the tube.

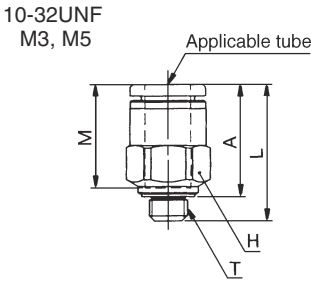
Male connector: KJH Inch

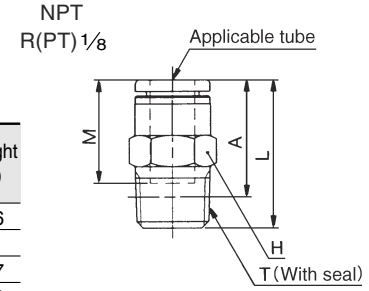
10-32UNF
M3, M5

NPT
R(PT) 1/8

Applicable tube O.D. (inch)	Thread (T) UNF NPT	Part No.	H (Hex.)	L	A	M	Min. hole dia.	Weight (g)
1/8	**10-32UNF**	**KJH01-32**	7	16.7	13.6	12.7	2.3	2
	1/16	**KJH01-33S**	9.5	18.8	14.8*		2.5	5
	1/8	**KJH01-34S**	11.11	13.8	9.8*			4.7
5/32	**10-32UNF**	**KJH03-32**	8	17	13.9	12.7	2.3	2.4
	1/16	**KJH03-33S**	9.5	19.5	15.5*		3	4.7
	1/8	**KJH03-34S**	11.11	14.8	10.8*			4.6
1/4	**10-32UNF**	**KJH07-32**	11.11	18.4	15.3	13.6	2.3	3.3
	1/16	**KJH07-33S**		22	18*		3.5	6.2
	1/8	**KJH07-34S**		18.4	14.4*		4.6	5.2

* Reference dimensions after NPT thread installation.





KJH Metric

Applicable tube O.D. (mm)	Thread T	Part No.	H (Hex.)	L	A	M	Effective orifice (mm²)		Weight (g)
							Nylon	Urethane	
3.2	**M3×0.5**	**KJH23-M3**	7	16.3	13.7	12.7	0.9	0.9	1.6
	M5×0.8	**KJH23-M5**		16.7	13.6		3	2.5	2
	R(PT) 1/8	**KJH23-01S**	10	13.8	9.8*				4.7
4	**M3×0.5**	**KJH04-M3**	8	16.3	13.7	12.7	0.9	0.9	1.9
	M5×0.8	**KJH04-M5**		17	13.9		4	4	2.4
	R(PT) 1/8	**KJH04-01S**	10	14.8	10.8*				4.6
6	**M5×0.8**	**KJH06-M5**	10	17.8	14.7	13.5	4	4	3.3
	R(PT) 1/8	**KJH06-01S**		19.4	15.4*		10	10	5.2

* Reference dimensions after R(PT) thread installation.

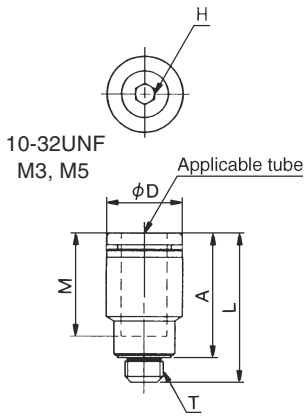
Hexagon socket head male connector: KJS Inch

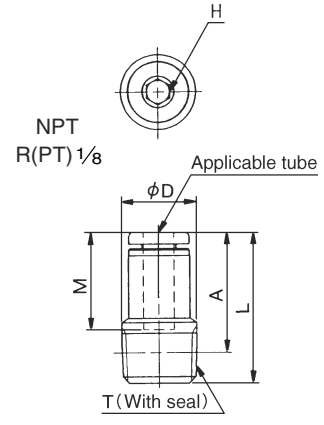
10-32UNF
M3, M5

NPT
R(PT) 1/8

Applicable tube O.D. (inch)	Thread (T) UNF NPT	Part No.	H (Hex.)	øD	L	A	M	Min. hole dia.	Weight (g)
1/8	**10-32UNF**	**KJS01-32**	2	7	19.7	16.6	12.7	2	2.8
5/32	**10-32UNF**	**KJS03-32**	2.5	8	18.7	15.6	12.7	2.5	2.7
	1/16	**KJS03-33S**	2.78		19.6	15.6*		2.8	4
	1/8	**KJS03-34S**		10.3					5.4
1/4	**10-32UNF**	**KJS07-32**	2.5	10.3	19.6	16.5	13.6	2.5	3.3
	1/16	**KJS07-33S**	3.57		21.1	17.1*		3.6	5.8
	1/8	**KJS07-34S**	4.76		20.1	16.1*		4.8	5.2

* Reference dimensions after NPT thread installation.
Note) øD: max. diameter





KJS Metric

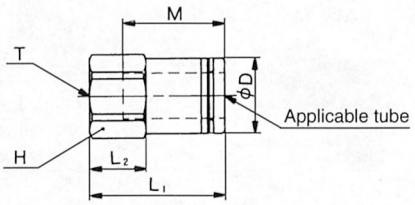
Applicable tube O.D. (mm)	Thread T	Part No.	H (Hex.)	øD	L	A	M	Effective orifice (mm²)		Weight (g)
								Nylon	Urethane	
3.2	**M3×0.5**	**KJS23-M3**	1.5	7	16.3	13.7	12.7	1.4	1.4	1.3
	M5×0.8	**KJS23-M5**	2		19.7	16.6		2.5	2.5	2.8
4	**M3×0.5**	**KJS04-M3**	1.5	8	16.3	13.7	12.7	1.4	1.4	1.6
	M5×0.8	**KJS04-M5**	2.5		18.7	15.6		4	4	2.7
	R(PT) 1/8	**KJS04-01S**	3	9.8	19.7	15.7*				5.4
6	**M5×0.8**	**KJS06-M5**	2.5	10	19.5	16.4	13.5	4	4	3.3
	R(PT) 1/8	**KJS06-01S**	4		20	16*		10	10	5.2

* Reference dimensions after R(PT) thread installation.
Note) øD: max. diameter

Female union: KJF Inch

Applicable tube O.D. (inch)	Thread (T) UNF	Part No.	H (Hex.)	øD	L1	L2	M	Min. hole dia.	Weight (g)
1/8	10-32UNF	KJF01-32	7	6.9	18.8	7.9	12.7	2.5	2.8
5/32	10-32UNF	KJF03-32	8	7.9	18.7	7.8	12.7	3	3.8
1/4	10-32UNF	KJF07-32	11.11	10.3	18	7.5	13.6	4	5.3

Note) øD: max. diameter



KJF Metric

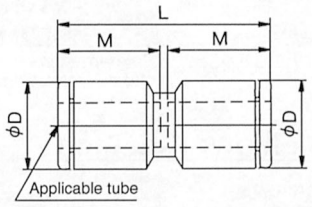
Applicable tube O.D. (mm)	Thread T	Part No.	H (Hex.)	øD	L1	L2	M	Effective orifice(mm²)		Weight (g)
								Nylon	Urethane	
3.2	M3×0.5	KJF23-M3	7	7	16.5	6.8	12.7	3	2.5	2.6
	M5×0.8	KJF23-M5			18.8	7.9				2.8
4	M3×0.5	KJF04-M3	8	8	16.1	6.4	12.7	4	4	3.2
	M5×0.8	KJF04-M5			18.7	7.8				3.8
6	M5×0.8	KJF06-M5	10	10	18	7.5	13.5	10	10	5.3

Note) øD: max. diameter

Straight union: KJH Inch

Applicable tube O.D. (inch)	Part No.	øD	L	M	Min. hole dia.	Weight (g)
1/8	KJH01-00	8.4	26.3	12.7	2.5	1.4
5/32	KJH03-00	9.3	26.3	12.7	3	1.7
1/4	KJH07-00	12	28.1	13.6	4.6	2.6

Note) øD: max. diameter

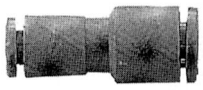


KJH Metric

Applicable tube O.D. (mm)	Part No.	øD	L	M	Effective orifice(mm²)		Weight (g)
					Nylon	Urethane	
3.2	KJH23-00	8.4	26.3	12.7	3	2.5	1.4
4	KJH04-00	9.3	26.3	12.7	4	4	1.7
6	KJH06-00	11.6	28	13.5	10	10	2.5

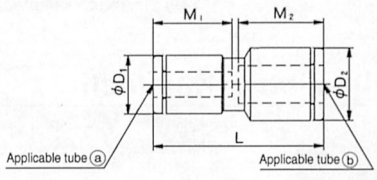
Note) øD: max. diameter

Different dia. straight: KJH Inch



Applicable tube O.D. (inch)		Part No.	øD1	øD2	L	M1	M2	Min. hole dia.	Weight (g)
ⓐ	ⓑ								
1/8	5/32	KJH01-03	8.4	9.3	26.3	12.7	12.7	2.5	1.6
	1/4	KJH01-07		12	27.2		13.6		2.1
5/32	1/4	KJH03-07	9.3	12	27.2	12.7	13.6	3	2.3

Note) øD1, øD2: max. diameter



KJH Metric

Applicable tube O.D. (mm)		Part No.	øD1	øD2	L	M1	M2	Effective orifice(mm²)		Weight (g)
ⓐ	ⓑ							Nylon	Urethane	
3.2	4	KJH23-04	8.4	9.3	26.3	12.7	12.7	3	2.5	1.6
	6	KJH23-06		11.6	27.2		13.5			2
4	6	KJH04-06	9.3	11.6	27.2	12.7	13.5	4	4	2.2

Note) øD1, øD2: max. diameter

Male elbow: KJL Inch

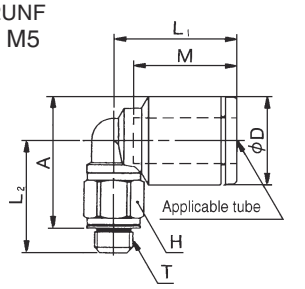
10-32UNF
M3, M5

NPT
R(PT) 1/8

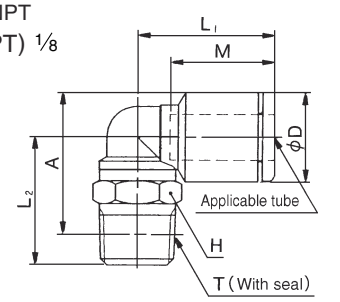
Applicable tube O.D. (inch)	Thread (T) UNF NPT	Part No.	H (Hex.)	øD	L1	L2	A	M	Min. hole dia.	Weight (g)
1/8	10-32UNF	KJL01-32	7	8.4	15.3	13.2	14.3	12.7	2.3	2.5
	1/16	KJL01-33S	9.5			16.4	16.6*		2.5	5.9
	1/8	KJL01-34S	11.11			15.4	15.6*			6.7
5/32	10-32UNF	KJL03-32	7	9.3	15.6	13.7	15.3	12.7	2.3	2.7
	1/16	KJL03-33S	9.5			16.9	17.6*		2.5	4.5
	1/8	KJL03-34S	11.11			15.9	16.6*			6.8
1/4	10-32UNF	KJL07-32	7	12	16.1	15.1	18	13.6	2.3	3.2
	1/16	KJL07-33S	9.5			18.3	20.3*		2.5	5.3
	1/8	KJL07-34S	11.11		17.8	17.3	19.3*		4.6	6.4

*Reference dimensions after NPT thread installation.
Note) øD: max. diameter

10-32UNF
M3, M5



NPT
R(PT) 1/8

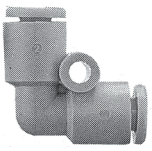


KJL Metric

Applicable tube O.D. (mm)	Thread T	Part No.	H (Hex.)	øD	L1	L2	A	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
3.2	M3×0.5	KJL23-M3	7	8.4	15.3	12.5	14.1	12.7	0.8	0.8	2.1
	M5×0.8	KJL23-M5				13.2	14.3		2.6	2.2	2.5
	R(PT) 1/8	KJL23-01S	10			15.2	15.4*				6.7
4	M3×0.5	KJL04-M3	7	9.3	15.6	13	15.1	12.7	0.8	0.8	2.2
	M5×0.8	KJL04-M5				13.7	15.3		3.5	3.5	2.7
	R(PT) 1/8	KJL04-01S	10			15.7	16.4*				6.8
6	M5×0.8	KJL06-M5	7	11.6	16.1	14.7	17.4	13.5	3.5	3.5	3.2
	R(PT) 1/8	KJL06-01S	10		17.8	16.7	18.5*		9	9	6.4

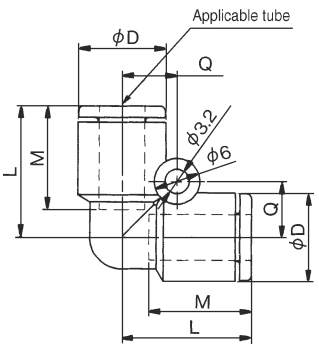
*Reference dimensions after R(PT) thread installation.
Note) øD: max. diameter

Union elbow: KJL Inch



Applicable tube O.D. (inch)	Part No.	øD	L	Q	M	Min. hole dia.	Weight (g)
1/8	KJL01-00	8.4	15	5.8	12.7	2.5	1.6
5/32	KJL03-00	9.3	15.8	6.3	12.7	3	2
1/4	KJL07-00	12	17.4	7.6	13.6	4.6	3.3

Note) øD: max. diameter



KJL Metric

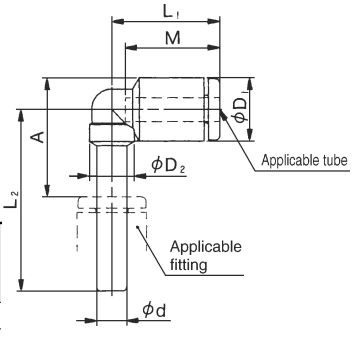
Applicable tube O.D. (mm)	Part No.	øD	L	Q	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
3.2	KJL23-00	8.4	15	5.8	12.7	2.6	2.2	1.6
4	KJL04-00	9.3	15.8	6.3	12.7	3.5	3.5	2
6	KJL06-00	11.6	17.1	7.3	13.5	9	9	3.1

Note) øD: max. diameter

Plug-in elbow: KJL Inch

Applicable tube O.D. (inch)	Applicable fitting size ød (inch)	Part No.	øD1	øD2	L1	L2	A	M	Min. hole dia.	Weight (g)
1/8	1/8	KJL01-99	8.4	6	14.5	23.8	15.3	12.7	2.2	1
5/32	5/32	KJL03-99	9.3	6	15.6	24.7	16.7	12.7	2.5	1.2
1/4	1/4	KJL07-99	12	7.6	16.7	27	19.4	13.6	4.6	2.1

Note) øD1: max. diameter



KJL Metric

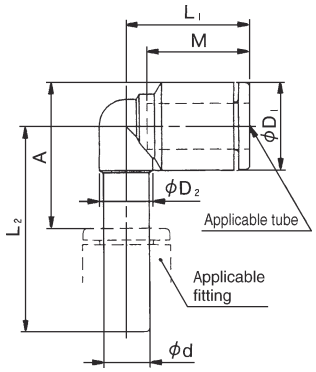
Applicable tube O.D. (mm)	Applicable fitting size ød	Part No.	øD1	øD2	L1	L	A	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
3.2	3.2	KJL23-99	8.4	6	14.5	23.8	15.3	12.7	2.6	2.2	1
4	4	KJL04-99	9.3	6	15.6	24.7	16.7	12.7	3.5	3.5	1.2
6	6	KJL06-99	11.6	7	16.3	26.8	19.1	13.5	9	9	2

Note) øD1: max. diameter

Reducer elbow: KJL Inch

Applicable tube O.D. (inch)	Applicable fitting size ød (inch)	Part No.	øD1	øD2	L1	L2	A	M	Min. hole dia.	Weight (g)
1/8	5/32	**KJL01-03**	8.4	6	14.5	24.3	15.8	12.7	2.2	1.1
	1/4	**KJL01-07**		6.35	14.7	25.8	16.4		2.2	1.3
5/32	1/4	**KJL03-07**	9.3	6.35	14.9	26.2	17.3	12.7	2.5	1.5

Note) øD1: max. diameter



KJL Metric

Applicable tube O.D. (mm)	Applicable fittings size ød	Part No.	øD1	øD2	L1	L2	A	M	Effective orifice(mm²)		Weight (g)
									Nylon	Urethane	
3.2	**4**	**KJL23-04**	8.4	6	14.5	24.3	15.8	12.7	2.6	2.2	1.1
	6	**KJL23-06**				25.3	16				1.2
4	**6**	**KJL04-06**	9.3	6	15.6	25.7	16.9	12.7	3.5	3.5	1.4

Note) øD1: max. diameter

Extended male elbow: KJW Inch

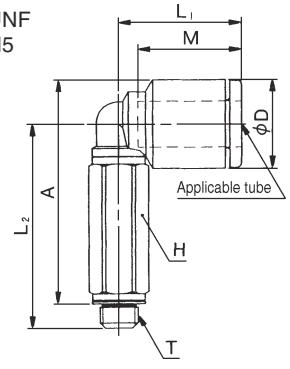
M3, M5
10-32UNF

NPT
R(PT)1/8

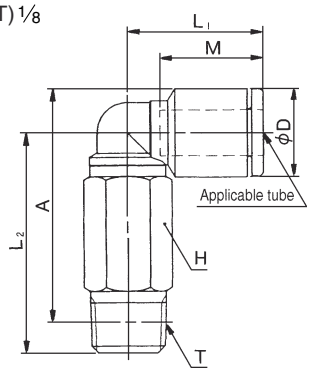
Applicable tube O.D. (inch)	Thread (T) UNF NPT	Part No.	H (Hex.)	øD	L1	L2	A	M	Min. hole dia.	Weight (g)
1/8	**10-32UNF**	**KJW01-32**	7	8.4	15.3	26.2	27.3	12.7	2.3	6.2
	1/16	**KJW01-33S**	9.5			29.4	29.6*		2.5	11.5
	1/8	**KJW01-34S**	11.11			25.7	25.9*			13.4
5/32	**10-32UNF**	**KJW03-32**	7	9.3	15.6	26.7	28.3	12.7	2.3	6.4
	1/16	**KJW03-33S**	9.5			29.9	30.6*		2.5	11.7
	1/8	**KJW03-34S**	11.11			26.2	26.9*			13.6
1/4	**10-32UNF**	**KJW07-32**	7	12	16.1	28.1	31	13.6	2.3	6.9
	1/16	**KJW07-33S**	9.5			31.3	33.3*		2.5	10.7
	1/8	**KJW07-34S**	11.11		17.8	30.3	32.3*		4.6	13.2

* Reference dimensions after NPT thread installation.
Note) øD: max. diameter

10-32UNF
M3, M5



NPT
R(PT)1/8



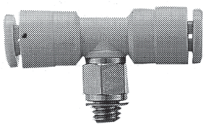
KJW Metric

Applicable tube O.D. (mm)	Thread T	Part No.	H (Hex.)	øD	L1	L2	A	M	Effective orifice(mm²)		Weight (g)
									Nylon	Urethane	
3.2	**M3×0.5**	**KJW23-M3**	7	8.4	15.3	22.5	24.1	12.7	0.8	0.8	5
	M5×0.8	**KJW23-M5**				25.2	26.3		2.6	2.2	6.2
	R(PT)1/8	**KJW23-01S**	10				25.4*				13.4
4	**M3×0.5**	**KJW04-M3**	7	9.3	15.6	23	25.1	12.7	0.8	0.8	5.1
	M5×0.8	**KJW04-M5**				25.7	27.3		3.5	3.5	6.4
	R(PT)1/8	**KJW04-01S**	10				26.4*				13.6
6	**M5×0.8**	**KJW06-M5**	7	11.6	16.1	26.7	29.4	13.5	3.5	3.5	6.9
	R(PT)1/8	**KJW06-01S**	10		17.8	28.7	30.5*		9	9	13.2

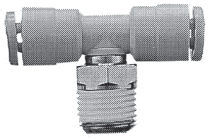
* Reference dimensions after R(PT) thread installation.
Note) øD: max. diameter

Branch tee: KJT Inch

M3, M5
10-32UNF



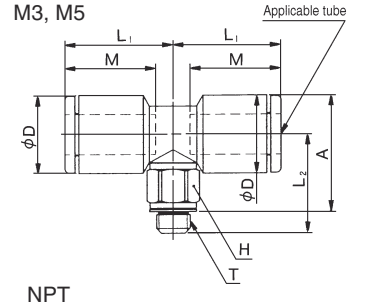
NPT
R(PT) 1/8



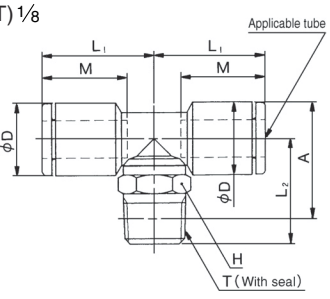
Applicable tube O.D. (inch)	Thread (T) UNF NPT	Part No.	H (Hex.)	øD	L1	L2	A	M	Min. hole dia.	Weight (g)
1/8	**10-32UNF**	**KJT01-32**	7	8.4	15.3	13.2	14.3	12.7	2.3	3.2
	1/16	**KJT01-33S**	9.5			16.4	16.6*		2.5	6.6
	1/8	**KJT01-34S**	11.11			15.4	15.6*			7.4
5/32	**10-32UNF**	**KJT03-32**	7	9.3	15.6	13.7	15.3	12.7	2.3	3.5
	1/16	**KJT03-33S**	9.5			16.9	17.6*		2.5	6.9
	1/8	**KJT03-34S**	11.11			15.9	16.6*			7.7
1/4	**10-32UNF**	**KJT07-32**	7	12	16.1	15.1	18	13.6	2.3	4.4
	1/16	**KJT07-33S**	9.5			18.3	20.3*		2.5	6.8
	1/8	**KJT07-34S**	11.11		17.8	17.3	19.3*		4.6	7.6

* Reference dimensions after NPT thread installation.
Note) øD: max. diameter

10-32UNF
M3, M5



NPT
R(PT) 1/8

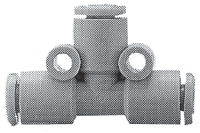


KJT Metric

Applicable tube O.D. (mm)	Thread T	Part No.	H (Hex.)	øD	L1	L2	A	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
3.2	**M3×0.5**	**KJT23-M3**	7	8.4	15.3	12.5	14.1	12.7	0.9	0.9	2.8
	M5×0.8	**KJT23-M5**				13.2	14.3		3.2	2.7	3.2
	R(PT)1/8	**KJT23-01S**	10			15.2	15.4*				7.4
4	**M3×0.5**	**KJT04-M3**	7	9.3	15.6	13	15.1	12.7	0.9	0.9	3.1
	M5×0.8	**KJT04-M5**				13.7	15.3		4.5	4.5	3.5
	R(PT)1/8	**KJT04-01S**	10			15.7	16.4*				7.7
6	**M5×0.8**	**KJT06-M5**	7	11.6	16.1	14.7	17.4	13.5	4.5	4.5	4.4
	R(PT)1/8	**KJT06-01S**	10		17.8	16.7	18.5*		11	11	7.6

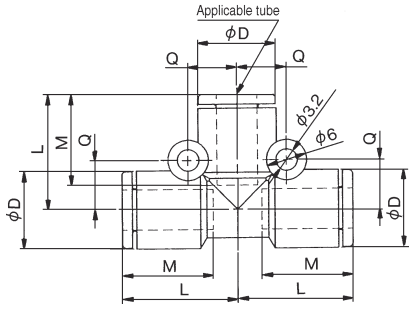
*Reference dimensions after R(PT) thread installation.
Note) øD: max. diameter

Union tee: KJT Inch



Applicable tube O.D. (inch)	Part No.	øD	L	Q	M	Min. hole dia.	Weight (g)
1/8	**KJT01-00**	8.4	15	5.8	12.7	2.5	2.5
5/32	**KJT03-00**	9.3	15.8	6.3	12.7	3	3
1/4	**KJT07-00**	12	17.4	7.6	13.6	4.6	4.8

Note) øD: max. diameter

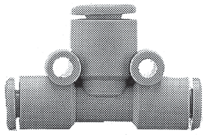


KJT Metric

Applicable tube O.D. (mm)	Part No.	øD	L	Q	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
3.2	**KJT23-00**	8.4	15	5.8	12.7	3.2	2.7	2.5
4	**KJT04-00**	9.3	15.8	6.3	12.7	4.5	4.5	3
6	**KJT06-00**	11.6	17.1	7.3	13.5	11	11	4.6

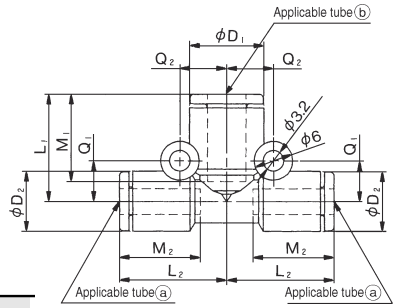
* Note) øD: max. diameter

Different dia. tee: KJT Inch



Applicable tube O.D. (inch) ⓐ	Applicable tube O.D. (inch) ⓑ	Part No.	øD1	øD2	L1	L2	Q1	Q2	M1	M2	Min. hole dia.	Weight (g)
1/8	5/32	**KJT01-03**	9.3	8.4	15.3	15.8	5.8	6.3	12.7	12.7	2.5	2.8
5/32	1/4	**KJT03-07**	12	9.3	16.4	16.8	6.3	7.6	13.6	12.7	2.5	3.9

Note) øD1, øD2: max. diameter



KJT Metric

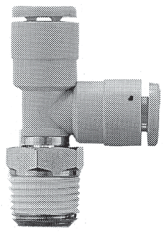
Applicable tube O.D. (mm) ⓐ	Applicable tube O.D. (mm) ⓑ	Part No.	øD1	øD2	L1	L2	Q1	Q2	M1	M2	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
3.2	**4**	**KJT23-04**	9.3	8.4	15.3	15.8	5.8	6.3	12.7	12.7	4.5	4.5	2.8
4	**6**	**KJT04-06**	11.6	9.3	16.6	16.8	6.3	7.3	13.5	12.7	8	8	3.7

Note) øD1, øD2: max. diameter

Male run tee: KJY Inch

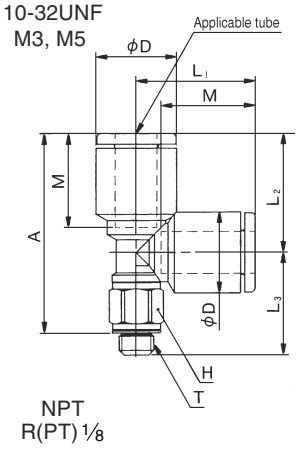
10-32UNF
M3, M5

NPT
R(PT) 1/8



Applicable tube O.D. (inch)	Thread (T) UNF NPT	Part No.	H (Hex.)	øD	L1	L2	L3	A	M	Min. hole dia.	Weight (g)
1/8	**10-32UNF**	**KJY01-32**	7	8.4	15.4	14.8	13.2	24.9	12.7	2.3	3.2
	1/16	**KJY01-33S**	9.5				16.4	27.2*		2.5	5.1
	1/8	**KJY01-34S**	11.11				15.4	26.2*			7.4
5/32	**10-32UNF**	**KJY03-32**	7	9.3	15.6	14.8	13.7	25.4	12.7	2.3	3.5
	1/16	**KJY03-33S**	9.5				16.9	27.7*		2.5	5.4
	1/8	**KJY03-34S**	11.11				15.9	26.7*			7.7
1/4	**10-32UNF**	**KJY07-32**	7	12	17.6	17.6	15.1	29.6	13.6	2.3	4.5
	1/16	**KJY07-33S**	9.5				18.3	31.9*		2.5	6.7
	1/8	**KJY07-34S**	11.11		17.9	17	17.3	30.3*		4.6	7.5

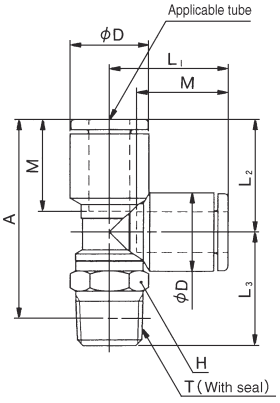
* Reference dimensions after NPT thread installation.
Note) øD: max. diameter



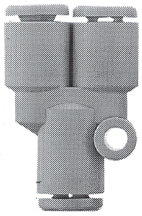
KJY Metric

Applicable tube O.D. (mm)	Thread T	Part No.	H (Hex.)	øD	L1	L2	L3	A	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
3.2	**M3×0.5**	**KJY23-M3**	7	8.4	15.4	14.8	12.5	24.7	12.7	0.9	0.9	2.8
	M5×0.8	**KJY23-M5**					13.2	24.9		3.2	2.7	3.2
	R(PT)1/8	**KJY23-01S**	10				15.2	26*				7.4
4	**M3×0.5**	**KJY04-M3**	7	9.3	15.6	14.8	13	25.2	12.7	0.9	0.9	3.1
	M5×0.8	**KJY04-M5**					13.7	25.4		4.5	4.5	3.5
	R(PT)1/8	**KJY04-01S**	10				15.7	26.5*				7.7
6	**M5×0.8**	**KJY06-M5**	7	11.6	17.1	17.1	14.7	28.7	13.5	4.5	4.5	4.5
	R(PT)1/8	**KJY06-01S**	10		17.5	16.6	16.7	29.3*		11	11	7.5

* Reference dimensions after R(PT) thread installation.
Note) øD: max. diameter

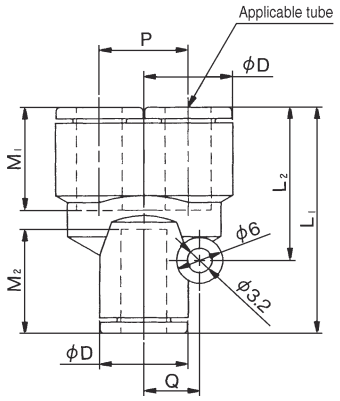


Union "Y": KJU Inch



Applicable tube O.D. (inch)	Part No.	øD	L1	L2	P	Q	M1	M2	Min. hole dia.	Weight (g)
1/8	**KJU01-00**	8.4	28.5	19	8.4	5.8	12.7	12.9	2.5	2.6
5/32	**KJU03-00**	9.3	27.9	18.3	9.3	6.3	12.7	12.9	3	3
1/4	**KJU07-00**	12	32.3	22.7	12	7.6	13.6	13.8	4.6	5

Note) øD: max. diameter

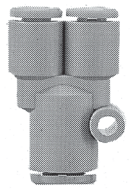


KJU Metric

Applicable tube O.D. (mm)	Part No.	øD	L1	L2	P	Q	M1	M2	Effective orifice(mm²)		Weight (g)
									Nylon	Urethane	
3.2	**KJU23-00**	8.4	28.5	19	8.4	5.8	12.7	12.9	3.2	2.7	2.6
4	**KJU04-00**	9.3	27.9	18.3	9.3	6.3	12.7	12.9	4.5	4.5	3
6	**KJU06-00**	11.6	31.2	21.6	11.6	7.3	13.5	13.7	11	11	4.7

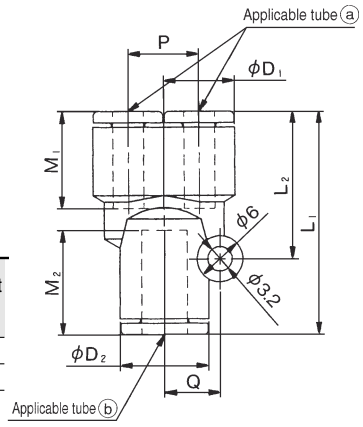
Note) øD: max. diameter

Different dia. union "Y": KJU Inch



Applicable tube O.D. (inch)		Part No.	øD1	øD2	L1	L2	P	Q	M1	M2	Min. hole dia.	Weight (g)
ⓐ	ⓑ											
1/8	5/32	**KJU01-03**	8.4	9.3	27.5	18.3	8.4	6.3	12.7	12.9	2.5	2.7
5/32	1/4	**KJU03-07**	9.3	12	30.4	20.6	9.3	7.6	12.7	13.8	3	3.9

Note) øD1, øD2: max. diameter

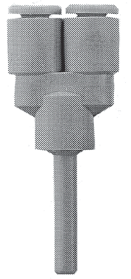


KJU Metric

Applicable tube O.D.(mm)		Part No.	øD1	øD2	L1	L2	P	Q	M1	M2	Effective orifice(mm²)		Weight (g)
ⓐ	ⓑ										Nylon	Urethane	
3.2	**4**	**KJU23-04**	8.4	9.3	27.5	18.3	8.4	6.3	12.7	12.9	4.5	4.5	2.7
4	**6**	**KJU04-06**	9.3	11.6	29.2	19.3	9.3	7.3	12.7	13.7	8	8	3.7

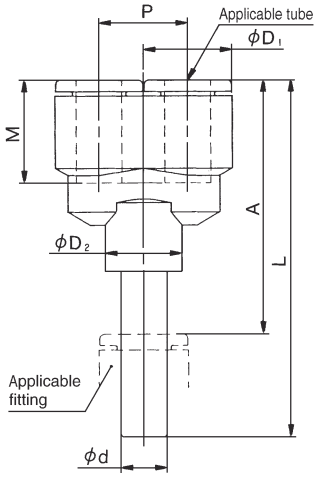
Note) øD1, øD2: max. diameter

Plug-in "Y": KJU Inch



Applicable tube O.D. (inch)	Applicable fitting size ød (inch)	Part No.	øD1	øD2	L	P	A	M	Min. hole dia.	Weight (g)
1/8	1/8	**KJU01-99**	8.4	10	43.5	8.4	34.1	12.7	2.5	2.7
5/32	5/32	**KJU03-99**	9.3	10	44.7	9.3	35.3	12.7	3	3.2
1/4	1/4	**KJU07-99**	12	10	49.9	12	39.6	13.6	4.6	4.7

Note) øD1: max. diameter

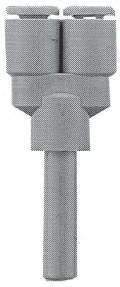


KJU Metric

Applicable tube O.D. (mm)	Applicable fittings size ød	Part No.	øD1	øD2	L	P	A	M	Effective orifice(mm²)		Weight (g)
									Nylon	Urethane	
3.2	**3.2**	**KJU23-99**	8.4	10	43.5	8.4	34.1	12.7	3.2	2.7	2.7
4	**4**	**KJU04-99**	9.3	10	44.7	9.3	35.3	12.7	4.5	4.5	3.2
6	**6**	**KJU06-99**	11.6	10	47.8	11.6	37.6	13.5	11	11	4.5

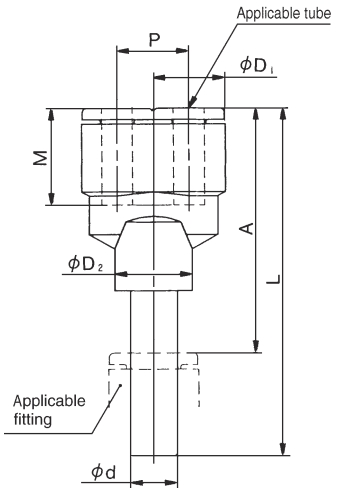
Note) øD1: max. diameter

Different dia. Plug-in "Y": KJX Inch



Applicable tube O.D. (inch)	Applicable fitting size ød (inch)	Part No.	øD1	øD2	L	P	A	M	Min. hole dia.	Weight (g)
1/8	5/32	**KJX01-03**	8.4	10	44	8.4	34.6	12.7	2.5	2.8
5/32	1/4	**KJX03-07**	9.3	10	45.7	9.3	35.4	12.7	3	3.6

Note) øD1: max. diameter



KJX Metric

Applicable tube O.D. (mm)	Applicable fittings size ød	Part No.	øD1	øD2	L	P	A	M	Effective orifice(mm²)		Weight (g)
									Nylon	Urethane	
3.2	**4**	**KJX23-04**	8.4	10	44	8.4	34.6	12.7	4.5	4.5	2.8
4	**6**	**KJX04-06**	9.3	10	45.7	9.3	35.5	12.7	8	8	3.5

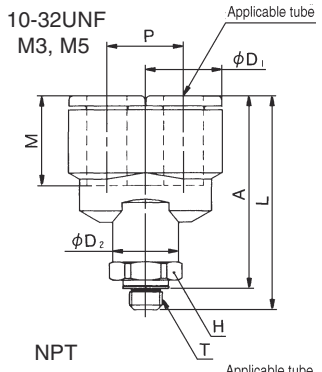
Note) øD1: max. diameter

Branch "Y": KJU Inch

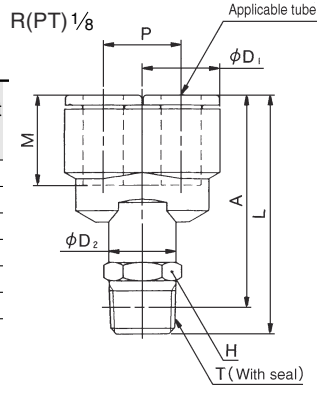
M3, M5
10-32UNF

Applicable tube O.D. (inch)	Thread (T) UNF NPT	Part No.	H (Hex.)	øD1	øD2	L	P	A	M	Min. hole dia.	Weight (g)
1/8	**10-32UNF**	**KJU01-32**	11.11	8.4	10	30.6	8.4	27.5	12.7	2.3	5.9
	1/16	**KJU01-33S**				34.1		∗ 30.1		2.5	8.1
	1/8	**KJU01-34S**									8.3
5/32	**10-32UNF**	**KJU03-32**	11.11	9.3	10	31.3	9.3	28.2	12.7	2.3	6.4
	1/16	**KJU03-33S**				34.8		∗ 30.8		3.5	8.8
	1/8	**KJU03-34S**									8.8
1/4	**10-32UNF**	**KJU07-32**	11.11	12	10	35.5	12	32.4	13.6	2.3	7.4
	1/16	**KJU07-33S**				39		∗ 35		3.5	10
	1/8	**KJU07-34S**								4.6	10

∗ Reference dimensions after NPT thread installation.
Note) øD1: max. diameter



NPT
R(PT) 1/8



KJU Metric

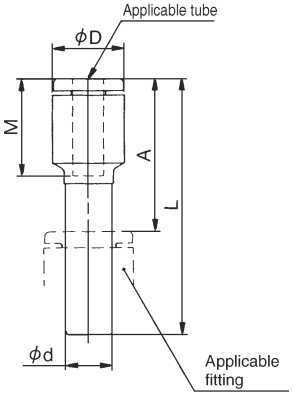
Applicable tube O.D. (mm)	Thread T	Part No.	H (Hex.)	øD1	øD2	L	P	A	M	Effective orifice(mm²)		Weight (g)
										Nylon	Urethane	
3.2	**M5×0.8**	**KJU23-M5**	10	8.4	10	30.6	8.4	27.5	12.7	2.2	2.2	5.9
	R(PT)1/8	**KJU23-01S**				34.1		30.1∗		3.2	2.7	8.3
4	**M5×0.8**	**KJU04-M5**	10	9.3	10	31.3	9.3	28.2	12.7	2.2	2.2	6.4
	R(PT)1/8	**KJU04-01S**				34.8		30.8∗		4.5	4.5	8.8
6	**M5×0.8**	**KJU06-M5**	10	11.6	10	33.4	11.6	30.3	13.5	2.2	2.2	7.4
	R(PT)1/8	**KJU06-01S**				36.9		32.9∗		11	11	9.9

∗ Reference dimensions after R(PT) thread installation.
Note) øD1: max. diameter

Plug-in reducer: KJR Inch

Applicable tube O.D. (inch)	Applicable fitting size ød (inch)	Part No.	øD	L	A	M	Min. hole dia.	Weight (g)
1/8	5/32	**KJR01-03**	8.4	32	19.3	12.7	2.5	0.9
	1/4	**KJR01-07**		33	19.4		2.5	1.2
5/32	1/4	**KJR03-07**	9.3	33.5	19.9	12.7	3	1.4

Note) øD: max. diameter



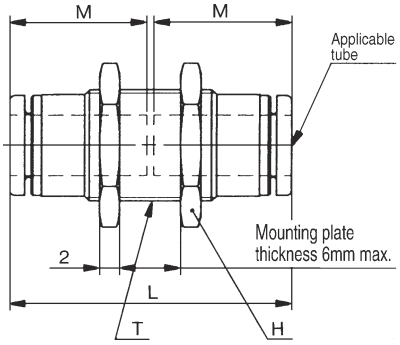
KJR Metric

Applicable tube O.D. (mm)	Applicable fittings size ød	Part No.	øD	L	A	M	Effective orifice(mm²)		Weight (g)
							Nylon	Urethane	
3.2	**4**	**KJR23-04**	8.4	32	19.3	12.7	3	2.5	0.9
	6	**KJR23-06**		33	19.5				1.1
4	**6**	**KJR04-06**	9.3	33.5	20	12.7	4	4	1.3

Note) øD: max. diameter

Bulkhead union: KJE Inch

Applicable tube O.D. (inch)	Part No.	Thread (T) UNF	H (Hex.)	L	Mounting hole	M	Min. hole dia.	Weight (g)
1/8	**KJE01-00**	3/8 -24	12.7	26	10.5	12.7	2.5	8.1
5/32	**KJE03-00**	3/8 -24	12.7	26	10.5	12.7	3	
1/4	**KJE07-00**	1/2 -20	15.88	27.8	14	13.6	4.6	15.7



KJE Metric

Applicable tube O.D. (mm)	Part No.	T	H (Hex.)	L	Mounting hole	M	Effective orifice(mm²)		Weight (g)
							Nylon	Urethane	
3.2	**KJE23-00**	M8×0.75	10	26	9	12.7	3	2.5	4.6
4	**KJE04-00**	M9×0.75	11	26	10	12.7	4	4	5.6
6	**KJE06-00**	M11×0.75	14	27.7	12	13.5	10	10	8.5

Guide

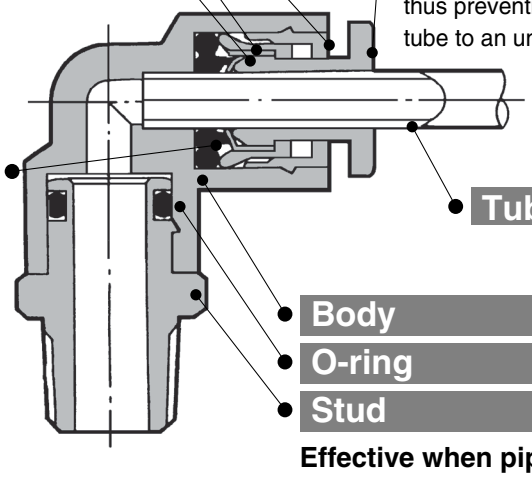
Collet

Chuck

Accepts nylon, soft nylon and polyurethane tubes.
Has high retaining force.

Release button (Blue)
(Inch-Orange, Metric-Gray)

Low disconnecting force.
When the fitting is removed from the tubing, the chuck and collet are released, thus preventing them from biting into the tube to an unnecessary degree.



Packing

Can be used for a wide range of pressure from a low vacuum up to a pressure of 145psi {1.0MPa }.
The use of a special profile ensures positive sealing and reduced resistance when the tube is being inserted.

Tube

Body

O-ring

Stud

Effective when piping in a confined space.
The body and threaded portion can turn independently.

One-touch "in"— One-touch "out" tube connection.
Vacuum to 1.3KPa (10 Torr).

- **Application to inch or metric size tube.**
- **Applicable tube material — Nylon, soft nylon, polyurethane**

Applicable Tube

Tube material		Nylon, Soft nylon, Polyurethane
Tube O.D.	Inch	ø1/8, ø5/32, ø3/16, ø1/4, ø5/16, ø3/8, ø1/2
	Metric	ø3.2, o4, ø6, ø8, ø10, ø12, ø16

Specifications

Operating fluid			Air, Water NOTE 1)
Max. operating pressure			145psi (1.0MPa)
Max. operating vacuum pressure			1.3KPa (10 Torr)
Proof pressure			435psi (3.0MPa)
Ambient and fluid temperature			32 to 140□F (0 to 60□C),
			Water: 40 to 105□(50 to 40□C)
Thread	Inch	Thread Portion	ANSIB2-1
		Nut	JIS B 0208
	Metric	Thread Portion	JIS B 0203 (Taper pipe thread)
		Nut	JIS B 02112 Class 2 (Metric fine thread)
Sealant (Thread portion)		Inch	With sealant
		Metric	With sealant or none

Note1) Applicable for general industry water. Consult SMC if using for other kinds of fluid. Surge pressure must be under the max. operating pressure.

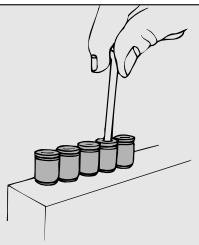
Principal Element Material

Body	C3604, PBT, PP
Stud	C3604BD (Thread portion)
Chuck	Stainless Steel (SUS304)
Guide	Stainless Steel (SUS304), C3604BD, POM
Collet	POM
Release button	POM
Packing, O-ring	NBR

Hexagon socket head male connector

KQ2S P. 25-26

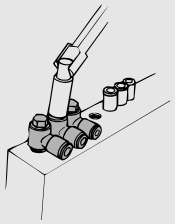
Internal hex allows thread connection by using an allen wrench, for confined space.



Universal male elbow

KQ2V P. 42

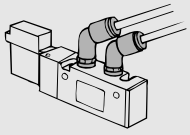
Universal male elbow allows thread connection by using a socket wrench for confined space.



45˚ male elbow

KQ2K P. 41

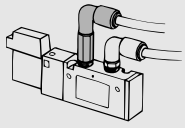
used in applications where a 45˚ elbow or male connector stresses the tubing.



Extended male elbow

KQ2W P. 30-31

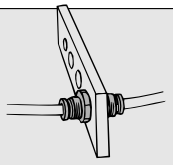
The most appropriate use is when the elbow extends over a standard elbow for ease of connection/ disconnection of tubing.



Bulkhead union

KQ2E P. 38

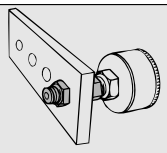
Used to connect two tubes through a panel.



Bulkhead connector

KQ2E P. 39

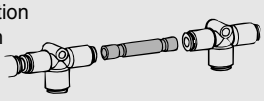
The best use is for connection of a gauge through a panel.



Nipple

KQ2N P. 50

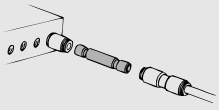
Used for connection of two One-touch fittings.



Reducer nipple

KQ2N P. 50

Used for connection of two One-touch fitting that are different tube O.D.s.



Male connector

KQ2H P. 24-25

Use to pipe in the same direction from female threaded portion. Most general type.

Male elbow

KQ2L P. 27-28

Use to pipe in right angle to female threaded portion. Most general type.

Branch tee

KQ2T P. 31-32

Use to branch line from female thread of both side 90˚ direction.

Female union

KQ2F P. 40

Use to pipe from male thread portion such as pressure gauge.

Union elbow

KQ2L P. 28

Use to connect tubes in right angle.

Union tee

KQ2T P. 33

Use to branch connection of tubes of both side 90˚ direction.

Straight union

KQ2H P. 26

Use to connect tubes in the same direction.

Plug-in elbow

KQ2L P. 29

Use to change by 90˚ in a tube fetching direction from One-touch fittings.

Different dia.tee

KQ2T P. 48

Use to branch connection of tubes with size down in both sido 90˚ direction.

Different dia. straight

KQ2H P. 40

Use to connect different size tubes.

Reducer elbow

KQ2L P. 29

Use to change by 90˚ in tube fetching direction from One-touch fittings and to size down.

Male run tee

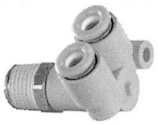
KQ2Y P. 33-34

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

Hexagon socket head universal male elbow
KQ2VS P. 42-43

Hex on the top allows thread connection by using an allen wrench, for confined space.

Branch union
KQ2LU P. 51



Used for branch connection in right angle from the female thread.

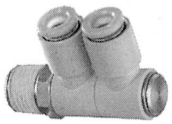
Universal female elbow
KQ2VF P. 43

Used for branch line in the same direction or in right angle from the male or female thread. Multiplex connection possible.

Female elbow
KQ2LF P. 44

Used to pipe the tube in the right angle from the male elbow.

Double universal male elbow
KQ2VD P. 44-45



Used for branch piping in the right angle from the female thread.
Two individual parts rotate 360°.

Triple universal male elbow
KQ2VT P. 45

Used for branch piping in the right angle from the female thread.
Three individual parts rotate 360°.

Branch universal male elbow
KQ2Z P. 46

Hexagonal head allows thread connection by using a box wrench.
Used for branch connection.

Branch universal female elbow
KQ2ZF P. 51

Used for branch line in the same direction or in right angle from the male or female thread. Multiplex connection possible.

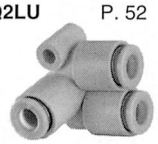
Double branch universal male elbow
KQ2ZD P. 46-47

Used for four branch connection in the right angle from the female thread. Two individual parts rotate 360°

Triple branch universal male elbow
KQ2ZT P. 47

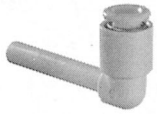
Used for six branch piping in right angle from the female thread.
Three individual parts rotate 360°.

Branch union elbow
KQ2LU P. 52



Used for branch connection of tubes in right angle.

Extended plug-in elbow
KQ2W P. 52

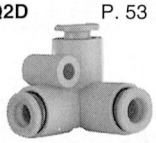


The most appropriate use is when the elbow extends over a standard elbow for ease of connection/disconnection of tubing.

Delta union
KQ2D P. 52

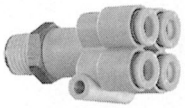
Used for two branch piping in the right angle from the female thread.

Delta
KQ2D P. 53



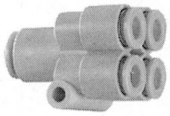
Used for three branch connection of tubes in the right angle.

Delta branch
KQ2UD P. 53



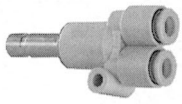
Used for four branch piping in the same direction from the female thread.

Different dia. double union "Y"
KQ2UD P. 54



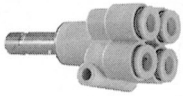
Used for four branch connection of tubes in the same direction reducing the size of tubes.

Different dia. plug-in "Y"
KQ2X P. 49



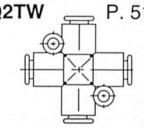
Used for branch connection from the fitting reducing the size of tubes.

Double plug-in "Y"
KQ2XD P. 53



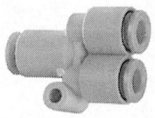
Used for four branch connection from the fitting.

Cross union
KQ2TW P. 51



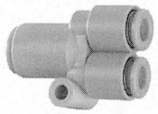
Used for four branch connections 90° apart.

Union "Y"
KQ2U P. 35



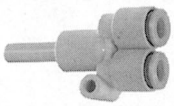
Use to branch connection of tubes in the same direction.

Different dia.union "Y"
KQ2U P. 48



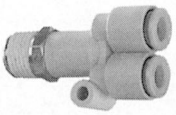
Use to branch connection of tubes with size down in the same direction.

Plug-in "Y"
KQ2U P. 36



Use to branch tubing in the same direction from one-touch fittings.

Branch "Y"
KQ2U P. 36-37

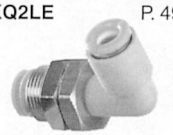


Use to branch line in the same direction from female thread.

Plug-in reducer
KQ2R P. 35

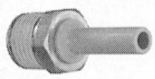
Use to change size of One-touch fittngs.

Bulkhead union elbow
KQ2LE P. 49



Used to connect two tubes through a panel changing by 90° in a tube fetching direction.

Adaptor
KQ2N P. 49

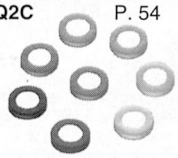


Used to connect the fitting and R (PT) female thread.

Tube cap
KQ2C P. 50

Used to plug the unused tube.

Color cap
KQ2C P. 54



Mounted on the release button corresponding to its applications.
Distinguished by color.

Plug
KQ2P P. 39

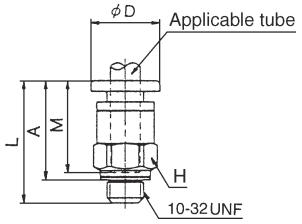
Use to shut unused One-touch fittings.

Male connector: KQ2H Inch

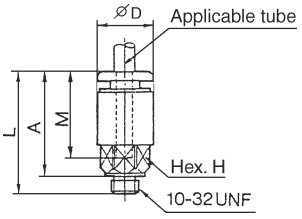
Applicable tube O.D. (inch)	Thread UNF NPT	Part No.	H (Hex.)	øD	L	A	M	Min. hole dia.	Weight (g)
1/8	10-32UNF	KQ2H01-32	7	7	16.7	13.7	12.7	2.3	2
	1/16	KQ2H01-33S	11.11	—	22	18*	15.5	2.5	7
	1/8	KQ2H01-34S		—					9
	1/4	KQ2H01-35S	14.29	—	19.5	13.5*			16
5/32	10-32UNF	KQ2H03-32	8	8	17	14	12.7	2.3	2.4
	1/16	KQ2H03-33S	11.11	—	22	18*	16	3	7
	1/8	KQ2H03-34S		—					9
	1/4	KQ2H03-35S	14.29	—	19.5	13.5*			16
3/16	10-32UNF	KQ2H05-32	8	11	24	20.4	16.5	2.3	6
	1/8	KQ2H05-34S	12.7	—	22	18*		3.5	11
	1/4	KQ2H05-35S	14.29	—	21	15*			12
1/4	10-32UNF	KQ2H07-32	11.11	10.3	18.4	15.4	13.6	2.3	3.3
	1/8	KQ2H07-34S	14.29	—	22.5	18.5*	17	4.6	10
	1/4	KQ2H07-35S		—	23	17*			15
	3/8	KQ2H07-36S	17.46	—		16.5*			27
5/16	1/8	KQ2H09-34S	14.29	—	28.5	24.5*	18.5	6	15
	1/4	KQ2H09-35S		—	26.5	20.5*			16
	3/8	KQ2H09-36S	17.46	—	22	15.5*			24
3/8	1/8	KQ2H11-34S	17.46	—	30.5	26.5*	21	6	29
	1/4	KQ2H11-35S		—	33.5	27.5*		7	31
	3/8	KQ2H11-36S		—	29	22.5*			29
	1/2	KQ2H11-37S	22.23	—	26.5	18.5*			46
1/2	1/4	KQ2H13-35S	22.23	—	34.5	28.5*	22	9	44
	3/8	KQ2H13-36S		—	33	26.5*		9.6	44
	1/2	KQ2H13-37S		—	30	22*			44

*Reference dimensions after NPT thread installation. Note) øD: max. diameter

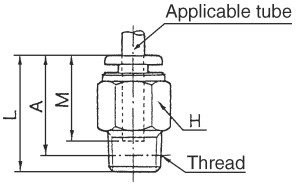
KQH (01-32, 03-32, 07-32)



KQH05-32



NPT



KQ2H Metric

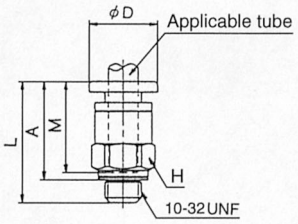
Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H (Hex.)	øD	L	A*	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
3.2	M5×0.8	KQ2H23-M5	7	7	16.7	13.6	12.7	3.4	2.9	2
	1/8	KQ2H23-01S	10	—	22	18	15.5			9
	1/4	KQ2H23-02S	14	—	19.5	13.5				16
4	M5×0.8	KQ2H04-M5	8	8	17	13.9	12.7	4	4	2.4
	M6×1.0	KQ2H04-M6	8		18					2.5
	1/8	KQ2H04-01S	10	—	22	18	16	5.6	5.6	9
	1/4	KQ2H04-02S	14	—	19.5	13.5				16
6	M5×0.8	KQ2H06-M5	10	10	17.8	14.7	13.5	4	4	3.3
	M6×1.0	KQ2H06-M6	10		19	14.9				3.4
	1/8	KQ2H06-01S	12	—	22.5	18.5	17	13.1	13.1	16
	1/4	KQ2H06-02S	14	—	23	17				14
	3/8	KQ2H06-03S	17	—	22	15.5				27
8	1/8	KQ2H08-01S	14	—	28	24	18.5	26.1	18.0	21
	1/4	KQ2H08-02S			26.5	20.5				19
	3/8	KQ2H08-03S	17		22	15.5				26
10	1/8	KQ2H10-01S	17	—	30	26	21	26.1	26.1	19
	1/4	KQ2H10-02S			33.5	27.5		41.5	29.5	30
	3/8	KQ2H10-03S			29	22.5				30
	1/2	KQ2H10-04S	22		27	19				53
12	1/4	KQ2H12-02S	19	—	34.5	28.5	22	58.3	46.1	42
	3/8	KQ2H12-03S			30	23.5				34
	1/2	KQ2H12-04S	22			22				51
16	3/8	KQ2H16-03S	24	25.7	39.5	33	25	81	(81)	61
	1/2	KQ2H16-04S			35.5	27.5		113	(96)	47

*Reference dimensions after R(PT) thread installation.
Note) ( ): Values for soft nylon, øD: max. diameter

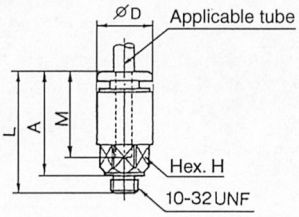
Male connector KQ2H Inch-size tube/metric thread (formerly IQ)

Applicable tube O.D. (inch)	Thread M R(PT)	Part No.	H (Hex.)	øD	L	A*	M	Min. hole dia.	Weight (g)
1/8	M5X0.8	KQ2H01-M5	7	7	16.7	13.6	12.7	2.5	2
	1/8	KQ2H01-01S	10	—	22	18	15.5		9
	1/4	KQ2H01-02S	14	—	19.5	13.5			16
3/16	M5X0.8	KQ2H05-M5	10.7	—	24	20.5	16.5	2.5	6
	1/8	KQ2H05-01S	11	—	22	18		3.5	11
	1/4	KQ2H05-02S	14	—	21	15			12
1/4	M5X0.8	KQ2H07-M5	11	10.3	18.4	15.3	13.6	2.5	3.3
	1/8	KQ2H07-01S	14	—	22.5	18.5	17	4.6	10
	1/4	KQ2H07-02S		—	23	17			15
	3/8	KQ2H07-03S	17	—	23	16.5			27
5/16	1/8	KQ2H09-01S	14	—	28	24	18.5	6	15
	1/4	KQ2H09-02S		—	26.5	20.5			16
	3/8	KQ2H09-03S	17	—	22.5	15.5			24
3/8	1/4	KQ2H11-02S	17	—	33.5	27.5	21	7	31
	3/8	KQ2H11-03S		—	29	22.5			29
	1/2	KQ2H11-04S	22	—	27	19			46
1/2	1/4	KQ2H13-02S	22	—	34.5	28.5	22	9	44
	3/8	KQ2H13-03S		—	33.5	27		9.6	
	1/2	KQ2H13-04S		—	30	22			

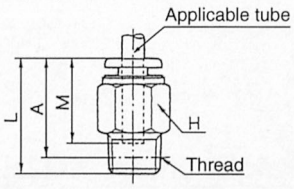
KQ2H (01-M5, 07-M5)



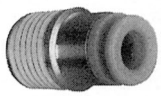
KQ2H05-M5



R(PT)



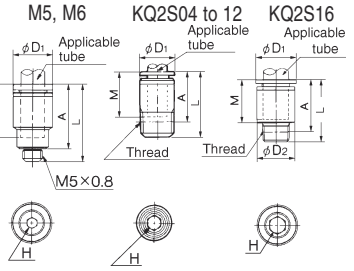
Hexagon socket head male connector: KQ2S Inch



Applicable tube O.D. (Inch)	UNF NPT	Part No.	H (Hex.)	øD	L	A*	M	Weight (g)
1/8	10-32UNF	KQ2S01-32	2	7	19.7	16.6	12.7	2
5/32	10-32UNF	KQ2S03-32	2.5	8	18.7	15.6	12.7	2.3
	1/8	KQ2S03-34S	2.78	10.5	23.5	19.5	16	2.8
3/16	1/8	KQS05-34S	3.57	10.7	23.5	19.5	16.5	3.6
1/4	10-32UNF	KQ2S07-32	2.5	10.3	19.6	16.5	13.6	2.3
	1/8	KQ2S07-34S	4.76	12.5	22	18	17	4.9
	1/4	KQ2S07-35S		13.8	23	17		
	3/8	KQ2S07-36S		17	27	21		
5/16	1/8	KQ2S09-34S	5.56	14	28	24	18.5	5.7
	1/4	KQ2S09-35S	6.35		25.5	19.5		6.5
	3/8	KQ2S09-36S		17.5	27.5	21		
3/8	1/8	KQ2S11-34S	5.56	16.5	30	26	21	5.7
	1/4	KQ2S11-35S	6.35	16.5	32	26	21	6.5
	3/8	KQ2S11-36S		17.2	29	23		
	1/2	KQ2S11-37S		21.3	30	22		
1/2	1/4	KQ2S13-35S	7.94	20	34.5	28.5	22	8
	3/8	KQ2S13-36S	9.53		33	26.5	22	9.6
	1/2	KQ2S13-37S		21.3	31	22.5		

Hexagon socket head male connector: KQ2S Metric

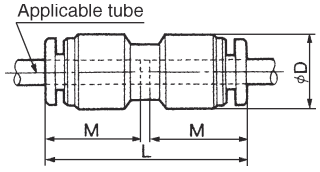
Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H (Hex.)	øD1	øD2	L	A*	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
4	M5×0.8	KQ2S04-M5	2.5	8	—	18.7	15.6	12.7	2.7	2.7	2.7
	M6×1.0	KQ2S04-M6	3			18.2	14.1				2.8
	1/8	KQ2S04-01S		9.8		23	19	16	4.1	3.6	8
6	M5×0.8	KQ2S06-M5	2.5	10	—	19.5	16.4	13.5	2.7	2.7	3.3
	M6×1.0	KQ2S06-M6	3			19.1	15				3.4
	1/8	KQ2S06-01S	4	11.8		24	20	17	10.0	9.9	9
	1/4	KQ2S06-02S		13.8		24	20		10.7	10.0	15
8	1/8	KQ2S08-01S	5	14	—	28	24	18.5	17.2	16.2	12
	1/4	KQ2S08-02S	6			25.5	19.5		23.3		11
	3/8	KQ2S08-03S		17		27.5	21				24
10	1/8	KQ2S10-01S	5	17	—	30	26	21	17.2	10.0	18
	1/4	KQ2S10-02S	8			27.5	21.5		39.0	26.6	12
	3/8	KQ2S10-03S					21				19
	1/2	KQ2S10-04S		22		28	20				35
12	1/4	KQ2S12-02S	8	19	—	33.5	27.5	22	46.0	44.5	23
	3/8	KQ2S12-03S	10			29	22.5		60.0		18
	1/2	KQ2S12-04S		22		28	20				30
16	3/8	KQ2S16-03S	10	25.7	24	39	32.5	25	81	(81)	42
	1/2	KQ2S16-04S	12			35	27		113	(96)	34



∗Reference dimensions after R(PT) thread installation.
Note) ( ): Values for soft nylon, øD1: max. diameter

Straight union: KQ2H Inch

Applicable tube O.D. (inch)	Part No.	øD	L	M	Min. hole dia.	Weight (g)
1/8	KQ2H01-00	9.6	31.5	15.5	2.5	3
5/32	KQ2H03-00	10.4	32.5	16	3	3
3/16	KQ2H05-00	11.4	34	16.5	3.5	4
1/4	KQ2H07-00	13.2	34.5	17	4.6	5
5/16	KQ2H09-00	15.2	38.5	18.5	6	7
3/8	KQ2H11-00	17.9	42.5	21	7	11
1/2	KQ2H13-00	21.7	44.5	22	9.6	16



Note) øD: max. diameter

KQ2H Metric

Applicable tube O.D (mm)	Part No.	øD	L	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
3.2	KQ2H23-00	9.6	31.5	15.5	3.4	2.9	3
4	KQ2H04-00	10.4	32.5	16	5.6	5.6	3
6	KQ2H06-00	12.8	34.5	17	13.1	13.1	5
8	KQ2H08-00	15.2	38.5	18.5	26.1	18.0	7
10	KQ2H10-00	18.5	42.5	21	41.5	29.5	11
12	KQ2H12-00	20.9	44.5	22	58.3	46.1	14
16	KQ2H16-00	26.5	51	25	113	(96)	24

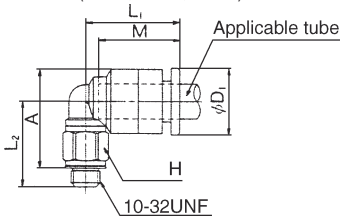
Note) ( ): Values for soft nylon.
øD: max. diameter

Male elbow: KQ2L Inch

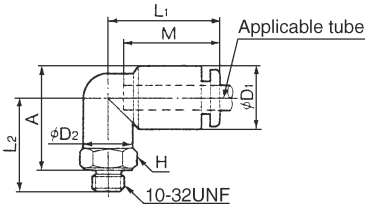
Applicable tube O.D. (inch)	Thread UNF NPT	Part No.	H (Hex.)	øD1	øD2	L1	L2	A	M	Min. hole dia.	Weight (g)
1/8	10-32UNF	KQ2L01-32	7	8.4	—	15.3	13.2	14.4	12.7	2.3	2.5
	1/16	KQ2L01-33S	11.11	9.6	10	17.5	21.5	22.5*	15.5	2.5	8
	1/8	KQ2L01-34S									
	1/4	KQ2L01-35S	14.29				25.5	24.5*			18
5/32	10-32UNF	KQ2L03-32	7	9.3	—	15.6	13.7	15.4	12.7	2.3	2.7
	1/16	KQ2L03-33S	11.11	10.4	10	18	22	23*	16	3	8
	1/8	KQ2L03-34S									9
	1/4	KQ2L03-35S	14.29				26	25*			18
3/16	10-32UNF	KQ2L05-32	11.11	11.4	10	19.5	20	22	16.5	2.3	5
	1/8	KQ2L05-34S					22.5	24*		3.5	10
	1/4	KQ2L05-35S	14.29				26.5	26*			19
1/4	10-32UNF	KQ2L07-32	7	12	—	16.1	15.1	18.1	13.6	2.3	3.2
	1/8	KQ2L07-34S	11.11	13.2	10	20.5	23.5	26*	17	4.6	10
	1/4	KQ2L07-35S	14.29				27.5	28*			20
	3/8	KQ2L07-36S	17.46				29.5	30*			32
5/16	1/8	KQ2L09-34S	12.7	15.2	12	23.5	24.5	28*	18.5	6	12
	1/4	KQ2L09-35S	14.29				28.5	30*			20
	3/8	KQ2L09-36S	17.46				30.5	31.5*			28
3/8	1/8	KQ2L11-34S	17.46	17.9	17	25.5	26.5	31.5*	21	6	16
	1/4	KQ2L11-35S					29.5	32.5*		7	23
	3/8	KQ2L11-36S					31.5	34*			33
	1/2	KQ2L11-37S					35.5	36.5*			59
1/2	1/4	KQ2L13-35S	17.46	21.7	17	28	31.5	36.5*	22	9	28
	3/8	KQ2L13-36S					33.5	38.5*		9.6	36
	1/2	KQ2L13-37S	22.23				37.5	40*			62

∗ Reference dimensions after NPT thread installation.
Note) øD1: max. diameter

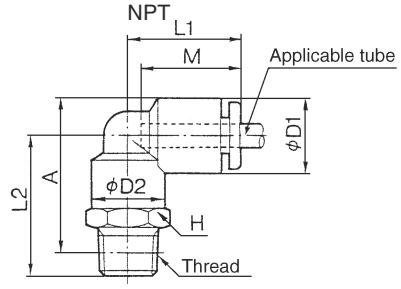
KQ2L (01-32, 03-32, 07-32)



KQ2L05-32



NPT



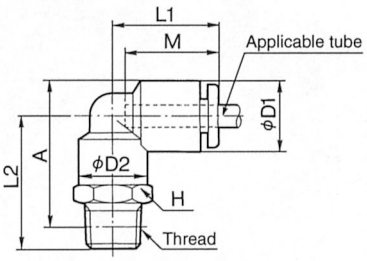
KQ2L Metric

Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H (Hex.)	øD1	øD2	L1	L2	A*	M	Effective orifice (mm²) Nylon	Effective orifice (mm²) Urethane	Weight (g)
3.2	M5×0.8	KQ2L23-M5	7	8.4	—	15.3	13.2	14.3	12.7	3	2.5	2.5
	1/8	KQ2L23-01S	10	9.6	10	17.5	21.5	22.5	15.5			8
	1/4	KQ2L23-02S	14				25.5	24.5				18
4	M5×0.8	KQ2L04-M5	7	9.3	—	15.6	13.7	15.3	12.7	3.5	3.5	2.7
	M6×1.0	KQ2L04-M6	8	12.7	—	15.6	14.7	15.3	12.7			
	1/8	KQ2L04-01S	10	10.4	10	18	22	23	16	4.2	4.2	10
	1/4	KQ2L04-02S	14				26	25				19
6	M5×0.8	KQ2L06-M5	7	11.6	—	16.1	14.7	17.4	13.5	3.5	3.5	3.2
	M6×1.0	KQ2L06-M6	8	13.5	—	16.1	15.7	17.4	13.5	—	—	—
	1/8	KQ2L06-01S	10	12.8	10	20	23	25.5	17	11.4	11.4	12
	1/4	KQ2L06-02S	14				27	27.5				22
	3/8	KQ2L06-03S	17				29	29				33
8	1/8	KQ2L08-01S	12	15.2	12	23	24.5	28	18.5	21.6	14.9	13
	1/4	KQ2L08-02S	14				28.5	30				21
	3/8	KQ2L08-03S	17				30.5	31.5				35
10	1/8	KQ2L10-01S	17	18.5	17	26.5	27	32	21	21.6	14.9	25
	1/4	KQ2L10-02S					30	33		35.2	25.0	26
	3/8	KQ2L10-03S					32	34.5				36
	1/2	KQ2L10-04S	22				36	37				63
12	1/4	KQ2L12-02S	17	20.9	17	28.5	31	35.5	22	50.2	39.7	28
	3/8	KQ2L12-03S					33	37				38
	1/2	KQ2L12-04S	22				37	39.5				65
16	3/8	KQ2L16-03S	22	26.5	20.9	34	38	44.5	25	71	(71)	101
	1/2	KQ2L16-04S					41	46		100	(84)	105

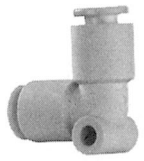
∗Reference dimensions after R(PT) thread installation.
Note) ( ): Values for soft nylon.
øD1: max. diameter

Male elbow: KQ2L Inch size tube/metric thread (formerly IQ)

Applicable tube O.D. (inch)	Thread R(PT)	Part No.	H (Hex.)	øD1	øD2	L1	L2	A*	M	Min. hole dia.	Weight (g)
3/16	1/8	KQ2L05-01S	10	11.4	10	19.5	22.5	24	16.5	3.5	10
	1/4	KQ2L05-02S	14				26.5	26			19
1/4	1/8	KQ2L07-01S	10	13.2	10	20.5	23.5	26	17	4.6	10
	1/4	KQ2L07-02S	14				27.5	28			20
	3/8	KQ2L07-03S	17				29.5	29.5			32
5/16	1/8	KQ2L09-01S	12	15.2	12	23.5	24.5	28	18.5	6	12
	1/4	KQ2L09-02S	14				28.5	30			20
	3/8	KQ2L09-03S	17				30.5	31.5			28
3/8	1/4	KQ2L11-02S	17	17.9	17	25.5	29.5	32.5	21	7	23
	3/8	KQ2L11-03S					31.5	34			33
	1/2	KQ2L11-04S	22				35.5	36.5			59
1/2	1/4	KQ2L13-02S	17	21.7	17	28	31.5	36.5	22	9	28
	3/8	KQ2L13-03S					33.5	38.5		9.6	36
	1/2	KQ2L13-04S	22				37.5	40			62

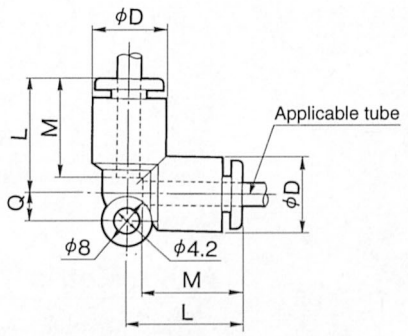


Union elbow: KQ2L Inch



Applicable tube O.D. (inch)	Part No.	øD	L	Q	M	Min. hole dia.	Weight (g)
1/8	KQ2L01-00	9.6	17.5	4.3	15.5	2.5	3
5/32	KQ2L03-00	10.4	18	4.5	16	3	4
3/16	KQ2L05-00	11.4	19.5	4.8	16.5	3.5	5
1/4	KQ2L07-00	13.2	20.5	5.3	17	4.6	6
5/16	KQ2L09-00	15.2	23	6	18.5	6	8
3/8	KQ2L11-00	17.9	26	6.6	21	7	13
1/2	KQ2L13-00	21.7	29	7.8	22	9.6	18

Note) øD: max. diameter



KQ2L Metric

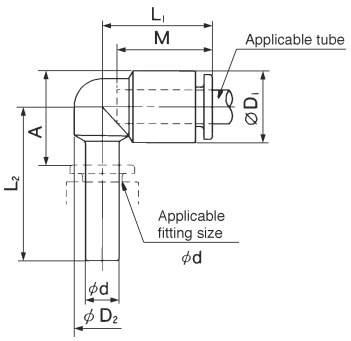
Applicable tube O.D. (mm)	Part No.	øD	L	Q	M	Effective orifice(mm²)		Weight (g)
						Nylon	Urethane	
3.2	KQ2L23-00	9.6	17.5	4.3	15.5	3	2.5	3
4	KQ2L04-00	10.4	18	4.5	16	4.2	4.2	6
6	KQ2L06-00	12.8	20	5.3	17	11.4	11.4	7
8	KQ2L08-00	15.2	23	6	18.5	21.6	14.9	11
10	KQ2L10-00	18.5	26.5	6.8	21	35.2	25.0	17
12	KQ2L12-00	20.9	28.5	7.5	22	50.2	39.7	21
16	KQ2L16-00	26.5	34	10	25	100	(84)	29

Note) ( ): Values for soft nylon. øD: max. diameter

Plug-in elbow: KQ2L Inch

Applicable tube O.D. (inch)	Applicable fitting size ød (inch)	Part No.	øD1	øD2	L1	L2	A	M	Min. hole dia.	Weight (g)
1/8	1/8	KQ2L01-99	9.6	7	17	24.5	14	15	2.2	3
5/32	5/32	KQ2L03-99	10.4	8	18	25	14.5	16	2.5	3
3/16	3/16	KQ2L05-99	11.4	10	19.5	34	23.5	16.5	3.5	7
1/4	1/4	KQ2L07-99	13.2	10	20	27.5	17.5	17	4.6	8
5/16	5/16	KQ2L09-99	15.2	12	22.5	31.5	21	18.5	6	6
3/8	3/8	KQ2L11-99	17.9	17	25.5	42	30	21	7	19
1/2	1/2	KQ2L13-99	21.7	17	28	44.5	34	22	9.6	27

Note) øD1: max. diameter



KQ2L Metric

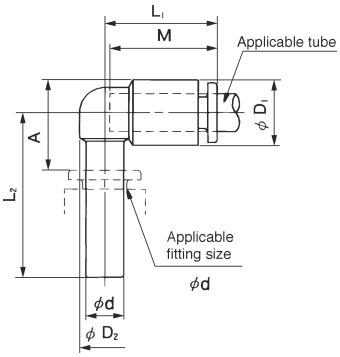
Applicable tube O.D. (mm)	Applicable fitting size ød	Part No.	øD1	øD2	L1	L2	A	M	Effective orifice(mm²)		Weight (g)
									Nylon	Urethane	
3.2	3.2	KQ2L23-99	9.6	7	17	24.5	14	15.5	3	2.5	2
4	4	KQ2L04-99	10.4	8	18	25	14.5	16	4.2	4.2	3
6	6	KQ2L06-99	12.8	10	20	27.5	17	17	11.4	11.4	3
8	8	KQ2L08-99	15.2	12	22.5	31.5	21	18.5	21.6	14.9	5
10	10	KQ2L10-99	18.5	14	25.5	35.5	23.5	21	35.2	25.0	9
12	12	KQ2L12-99	20.9	16	27	37.5	26	22	50.2	39.7	10
16	16	KQ2L16-99	26.5	20.9	34	53	41	25	100	(84)	42

Note) ( ): Values for soft nylon.
øD1: max. diameter

Reducer elbow: KQ2L Inch

Applicable tube O.D. (inch)	Applicable fitting size ød (inch)	Part No.	øD1	øD2	L1	L2	A	M	Min. hole dia.	Weight (g)
1/8	5/32	KQ2L01-03	9.6	7	17	25	13.5	15.5	2.2	3
	3/16	KQ2L01-05		10	17.5	33	21.5		2.5	7
5/32	3/16	KQ2L03-05	10.4	10	18	33.5	22.5	16	3	6
	1/4	KQ2L03-07		8		26	14.5		2.5	3
3/16	1/4	KQ2L05-07	11.4	10	19.5	34.5	23.5	16.5	3.5	8
	5/16	KQ2L05-09				35.5	23			11
1/4	5/16	KQ2L07-09	13.2	10	20.5	36.5	24.5	17	4.6	12
	3/8	KQ2L07-11				37.5	23.5			17
5/16	3/8	KQ2L09-11	15.2	12	23.5	40.5	27.5	18.5	6	17
	1/2	KQ2L09-13				41.5				30
3/8	1/2	KQ2L11-13	17.9	17	25.5	43	30	21	7	25

Note) øD1: max. diameter



KQ2L Metric

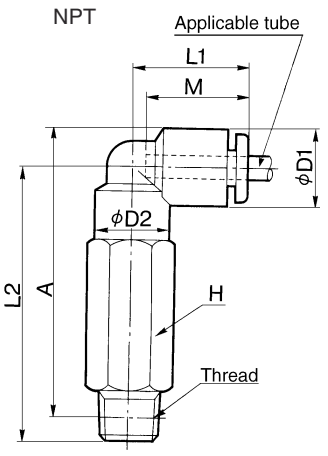
Applicable tube O.D. (mm)	Applicable fitting size ød	Part No.	øD1	øD2	L1	L2	A	M	Effective orifice(mm²)		Weight (g)
									Nylon	Urethane	
3.2	4	KQ2L23-04	9.6	7	17	25	13.5	15.5	3	2.5	2
4	6	KQ2L04-06	10.4	8	18	26	14.5	16	4.2	4.2	3
	8	KQ2L04-08		10		35	22				11
6	8	KQ2L06-08	12.8	10	20	36.5	24.5	17	11.4	11.4	12
	10	KQ2L06-10				38.5	24				19
8	10	KQ2L08-10	15.2	12	23	39.5	26	18.5	21.6	14.9	20
	12	KQ2L08-12				40.5	26				27
10	12	KQ2L10-12	18.5	17	26.5	42	30	21	35.2	25.0	29
12	16	KQ2L12-16	20.9	17	28.5	49.5	34.5	22	50.2	39.7	53

Note) øD1: max. diameter

Extended male elbow: KQ2W Inch

Applicable tube O.D. (inch)	Thread NPT	Part No.	H (Hex.)	øD1	øD2	L1	L2	A*	M	Min. hole dia.	Weight (g)
1/8	1/8	KQ2W01-34S	11.11	9.6	10	17.5	37	38	15.5	2.5	19
	1/4	KQ2W01-35S	14.29				43	42			41
5/32	1/8	KQ2W03-34S	11.11	10.4	10	18	37.5	38.5	16	3	19
	1/4	KQ2W03-35S	14.29				43.5	42.5			41
3/16	1/8	KQ2W05-34S	11.11	11.4	10	19.5	38	40	16.5	3.5	41
	1/4	KQ2W05-35S	14.29				44	43.5			19
1/4	1/8	KQ2W07-34S	11.11	13.2	10	20.5	40.5	43	17	4.6	20
	1/4	KQ2W07-35S	14.29				46.5	47			42
	3/8	KQ2W07-36S	17.46				48.5	49			69
5/16	1/8	KQ2W09-34S	12.7	15.2	12	23.5	43.5	47	18.5	6	30
	1/4	KQ2W09-35S	14.29				49.5	51			47
	3/8	KQ2W09-36S	17.46				51.5	53			74
3/8	1/4	KQ2W11-35S	17.46	17.9	17	25.5	56	59	21	7	69
	3/8	KQ2W11-36S					58	61			76
	1/2	KQ2W11-37S	22.23				64.5	65.5			147
1/2	1/4	KQ2W13-35S	17.46	21.7	17	28	58	63	22	9	72
	3/8	KQ2W13-36S					60	64.5		9.6	78
	1/2	KQ2W13-37S	22.23				66.5	69			149

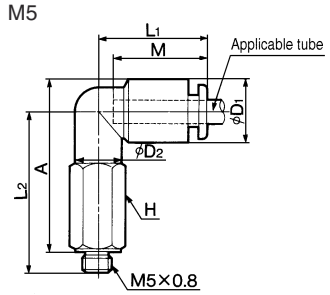
∗Reference dimensions after NPT thread installation. Note) øD1: max. diameter

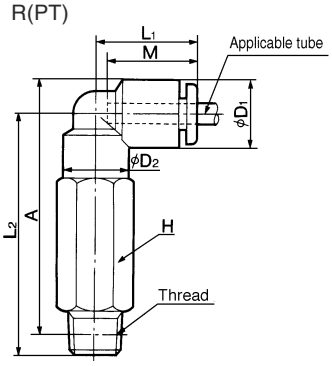


KQ2W Metric

Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H (Hex.)	øD1	øD2	L1	L2	A*	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
3.2	M5×0.8	KQ2W23-M5	8	9.6	8	17.5	30	31	15.5	2.8	2.4	10
	1/8	KQ2W23-01S	10		10		37	38				19
	1/4	KQ2W23-02S	14				43	42				41
4	M5×0.8	KQ2W04-M5	8	10.4	8	18	30	32	16	3.0	3.0	11
	1/8	KQ2W04-01S	10		10		37.5	38.5		4.0	4.0	23
	1/4	KQ2W04-02S	14				43.5	42.5				38
6	M5×0.8	KQ2W06-M5	8	12.8	8	20	30.5	33.5	17	3	3	11
	1/8	KQ2W06-01S	10		10		40	42.5		10.9	10.9	26
	1/4	KQ2W06-02S	14				46	46.5				41
	3/8	KQ2W06-03S	17				48	48				67
8	1/8	KQ2W08-01S	12	15.2	12	23	43.5	47	18.5	20.5	14.2	30
	1/4	KQ2W08-02S	14				49.5	51				47
	3/8	KQ2W08-03S	17				51.5	52.5				74
10	1/4	KQ2W10-02S	17	18.5	17	26.5	56.5	59.5	21	33.5	23.8	66
	3/8	KQ2W10-03S					58.5	61				76
	1/2	KQ2W10-04S	22				65	66				145
12	1/4	KQ2W12-02S	17	20.9	17	28.5	57.5	62	22	47.7	37.7	68
	3/8	KQ2W12-03S					59.5	63.5				78
	1/2	KQ2W12-04S	22				66	68.5				147
16	3/8	KQ2W16-03S	22	26.5	20.9	34	69.5	76	25	71	(71)	101
	1/2	KQ2W16-04S					75	80		100	(84)	105

∗Reference dimensions after R(PT) thread installation. Note) ( ): Values for soft nylon. øD1: max. diamet

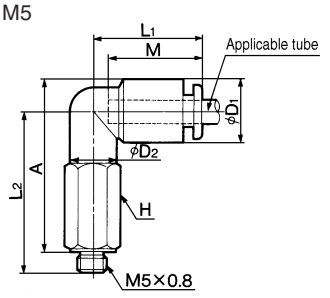




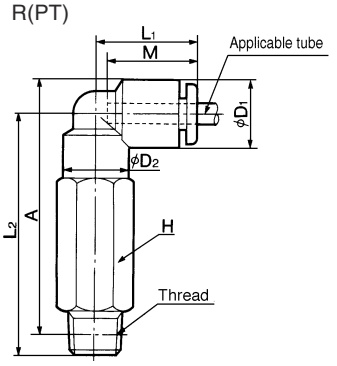
Extended male elbow: KQ2W Inch size tube/metric thread (formerly IQ)

Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H (Hex.)	øD1	øD2	L1	L2	A*	M	Min. hole dia.	Weight (g)
3/16	1/8	KQ2L05-01S	10	11.4	10	19.5	38	40	16.5	3.5	19
	1/4	KQ2L05-02S	14				44	43.5			41
1/4	1/8	KQ2L07-01S	10	13.2	10	20.5	40.5	43	17	4.6	20
	1/4	KQ2L07-02S	14				46.5	47			45
	3/8	KQ2L07-03S	17				48.5	49			69
5/16	1/8	KQ2L09-01S	12	15.2	12	23.5	43.5	47	18.5	6	30
	1/4	KQ2L09-02S	14				49.5	51			47
	3/8	KQ2L09-03S	17				51.5	53			74
3/8	1/4	KQ2L11-02S	17	17.9	17	25.5	56	59	21	7	69
	3/8	KQ2L11-03S					58	61			76
	1/2	KQ2L11-04S	22				64.5	65.5			147
1/2	1/4	KQ2L13-02S	17	21.7	17	28	58	63	22	9	72
	3/8	KQ2L13-03S					60	64.5		9.6	78
	1/2	KQ2L13-04S	22				66.5	69			149

M5



R(PT)

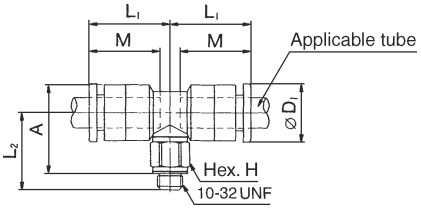


Branch tee: KQ2T Inch

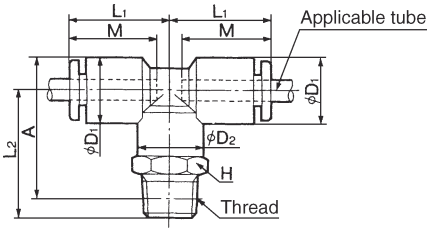
Applicable tube O.D. (inch)	Thread UNF NPT	Part No.	H (Hex.)	øD1	øD2	L1	L2	A	M	Min. hole dia.	Weight (g)
1/8	10-32UNF	KQ2T01-32	7	8.4	—	15.3	13.2	14.4	12.7	2.3	3.2
	1/16	KQ2T01-33S	11.11	9.6	10	17.5	21.5	22.5*	15.5	2.5	10
	1/8	KQ2T01-34S									
	1/4	KQ2T01-35S	14.29				25.5	24.5*			20
5/32	10-32UNF	KQ2T03-32	7	9.3	—	15.6	13.7	15.4	12.7	2.3	3.5
	1/16	KQ2T03-33S	11.11	10.4	10	18	22	23*	16	3	10
	1/8	KQ2T03-34S									11
	1/4	KQ2T03-35S	14.29				26	25*			20
3/16	1/8	KQ2T05-34S	11.11	11.4	10	19.5	22.5	24*	16.5	3.5	12
	1/4	KQ2T05-35S	14.29				26.5	26*			21
1/4	10-32UNF	KQ2T07-32	7	12	—	16.1	15.1	18.1	13.6	2.3	4.4
	1/8	KQ2T07-34S	11.11	13.2	10	20.5	23.5	26*	17	4.6	12
	1/4	KQ2T07-35S	14.29				27.5	28*			22
	3/8	KQ2T07-36S	17.46				29.5	30*			35
5/16	1/8	KQ2T09-34S	12.7	15.2	12	23	24.5	28*	18.5	6	16
	1/4	KQ2T09-35S	14.29				28.5	30*			24
	3/8	KQ2T09-36S	17.46				30.5	31.5*			36
3/8	1/8	KQ2T11-34S	17.46	17.9	17	25.5	26.5	31.5*	21	6	31
	1/4	KQ2T11-35S					29.5	32.5*		7	29
	3/8	KQ2T11-36S					31.5	34.5*			38
	1/2	KQ2T11-37S	22.23				35.5	36.5*			64
1/2	1/4	KQ2T13-35S	17.46	21.7	17	28	31.5	36.5*	22	9	34
	3/8	KQ2T13-36S					33.5	38.5*		9.6	43
	1/2	KQ2T13-37S	22.23				37.5	40*			69

∗ Reference dimensions after NPT thread installation.
Note) øD1: max. diameter

10-32UNF



NPT

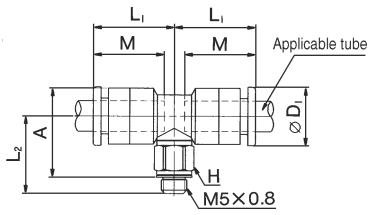


Branch tee: KQ2T Metric

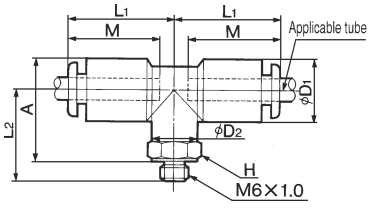
Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H (Hex.)	øD1	øD2	L1	L2	A*	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
3.2	M5×0.8	KQ2T23-M5	7	8.4	—	15.3	13.2	14.3	12.7	3.4	2.9	3.2
	1/8	KQ2T23-01S	10	9.6	10	17.5	21.5	22.5	15.5			10
	1/4	KQ2T23-02S	14				25.5	24.5				20
4	M5×0.8	KQ2T04-M5	7	9.3	—	15.6	13.7	15.3		4.3	4.3	3.5
	M6×1.0	KQ2T04-M6	8	10.4	8	15.6	14.7	15.3	12.7			6
	1/8	KQ2T04-01S	10		10	18	22	23	16	6.0	6.0	13
	1/4	KQ2T04-02S	14				26	25				19
6	M5×0.8	KQ2T06-M5	7	11.6	—	16.1	14.7	17.4	13.5	4.3	4.3	4.4
	M6×1.0	KQ2T06-M6	8	12.8	8	16.1	15.7	17.4	13.5			8
	1/8	KQ2T06-01S	10	12.8	10	20	23	25.5	17	13.9	13.9	13
	1/4	KQ2T06-02S	14				27	27.5				21
	3/8	KQ2T06-03S	17				29	29				35
8	1/8	KQ2T08-01S	12	15.2	12	23	24.5	28	18.5	26.3	18.2	15
	1/4	KQ2T08-02S	14				28.5	30				23
	3/8	KQ2T08-03S	17				30.5	31.5				37
10	1/8	KQ2T10-01S	17	18.5	17	26.5	27	32	21	40.8	29.0	31
	1/4	KQ2T10-02S					30	33				29
	3/8	KQ2T10-03S					32	34.5				39
	1/2	KQ2T10-04S	22				36	37				66
12	1/4	KQ2T12-02S	17	20.9	17	28.5	31	35.5	22	57.2	45.2	31
	3/8	KQ2T12-03S					33	37				41
	1/2	KQ2T12-04S	22				37	39.5				68
16	3/8	KQ2T16-03S	22	26.5	20.9	34	38	44.5	25	71	(71)	112
	1/2	KQ2T16-04S					40.5	46		100	(100)	116

∗Reference dimensions after R(PT) thread installation.
Note) ( ): Values for soft nylon.
øD1: max. diameter

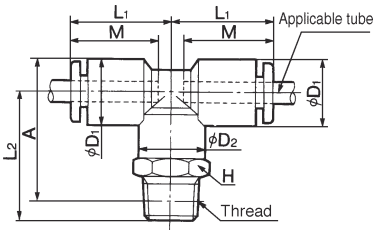
M5



M6



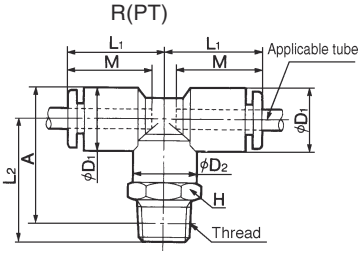
R(PT)



KQ2T Inch size tube/metric thread (formerly) IQ)

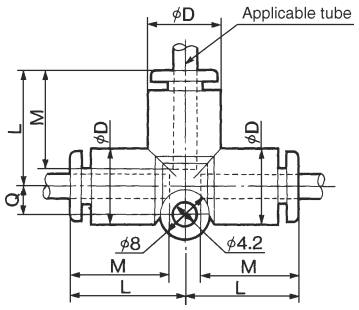
Applicable tube O.D. (inch)	Thread R(PT)	Part No.	H (Hex.)	øD1	øD2	L1	L2	A*	M	Min. hole dia.	Weight (g)
3/16	1/8	KQ2T05-01S	10	11.4	10	19.5	22.5	24	16.5	6	12
	1/4	KQ2T05-02S	14				26.5	26			21
1/4	1/8	KQ2T07-01S	10	13.2	10	20.5	23.5	26	17	4.6	12
	1/4	KQ2T07-02S	14				27.5	28			22
	3/8	KQ2T07-03S	17				29.5	30			35
5/16	1/8	KQ2T09-01S	12	15.2	12	23	24.5	28	18.5	6	16
	1/4	KQ2T09-02S	14				28.5	30			24
	3/8	KQ2T09-03S	17				30.5	31.5			36
3/8	1/4	KQ2T11-02S	17	17.9	17	25.5	29.5	32.5	21	7	29
	3/8	KQ2T11-03S					31.5	34.5			38
	1/2	KQ2T11-04S	22				35.5	36.5			64
1/2	1/4	KQ2T13-02S	17	21.7	17	28	31.5	36.5	22	9	34
	3/8	KQ2T13-03S					33.5	38.5		9.6	43
	1/2	KQ2T13-04S	22				37.5	40			69

R(PT)



Union tee: KQ2T Inch

Applicable tube O.D. (inch)	Part No.	øD	L	Q	M	Min. hole dia.	Weight (g)
1/8	**KQ2T01-00**	9.6	17.5	4.3	15.5	2.5	5
5/32	**KQ2T03-00**	10.4	18	4.5	16	3	5
3/16	**KQ2T05-00**	11.4	19.5	4.8	16.5	3.5	7
1/4	**KQ2T07-00**	13.2	20.5	5.3	17	4.6	9
5/16	**KQ2T09-00**	15.2	23	6	18.5	6	12
3/8	**KQ2T11-00**	17.9	26	6.6	21	7	18
1/2	**KQ2T13-00**	21.7	29	7.8	22	9.6	26



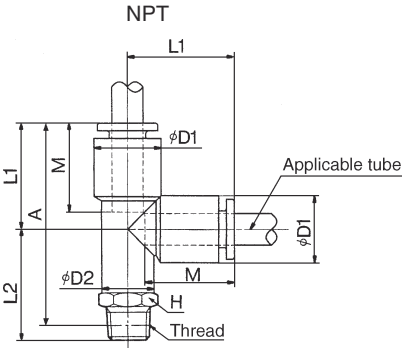
KQ2T Metric

Applicable tube O.D. (mm)	Part No.	ØD	L	Q	M	Effective orifice(mm²)		Weight (g)
						Nylon	Urethane	
3.2	**KQ2T23-00**	9.6	17.5	4.3	15.5	3.4	2.9	5
4	**KQ2T04-00**	10.4	18	4.5	16	6.4	6.4	8
6	**KQ2T06-00**	12.8	20	5.3	17	13.4	13.4	11
8	**KQ2T08-00**	15.2	23	6	18.5	25.6	17.7	16
10	**KQ2T10-00**	18.5	26.5	6.8	21	40	28.4	25
12	**KQ2T12-00**	20.9	28.5	7.5	22	57.4	45.4	29
16	**KQ2T16-00**	26.5	34	10	25	100	(84)	40

Note) ( ): Values for soft nylon.
øD: max. diameter

Male run tee: KQ2Y Inch

Applicable tube O.D. (inch)	Thread NPT	Part No.	H (Hex.)	øD1	øD2	L1	L2	A*	M	Min. hole dia.	Weight (g)
1/8	1/16	**KQ2Y01-33S**	11.11	9.6	10	17.5	21.5	35	15.5	2.5	10
	1/8	**KQ2Y01-34S**									
	1/4	**KQ2Y01-35S**	14.29				25.5	37			20
5/32	1/16	**KQ2Y03-33S**	11.11	10.4	10	18	22	36	16	3	10
	1/8	**KQ2Y03-34S**									11
	1/4	**KQ2Y03-35S**	14.29				26	38			20
3/16	1/8	**KQ2Y05-34S**	11.11	11.4	10	19.5	22.5	38	16.5	3.5	12
	1/4	**KQ2Y05-35S**	14.29				26.5	40			21
1/4	1/8	**KQ2Y07-34S**	11.11	13.2	10	20.5	23.5	40	17	4.6	12
	1/4	**KQ2Y07-35S**	14.29				27.5	42			22
	3/8	**KQ2Y07-36S**	17.46				29.5	44			35
5/16	1/8	**KQ2Y09-34S**	12.7	15.2	12	23.5	24.5	40	18.5	6	16
	1/4	**KQ2Y09-35S**	14.29				28.5	46			24
	3/8	**KQ2Y09-36S**	17.46				30.5	48			36
3/8	1/4	**KQ2Y11-35S**	17.46	17.9	17	25.5	29.5	49	21	7	29
	3/8	**KQ2Y11-36S**					31.5	51			38
	1/2	**KQ2Y11-37S**	22.23				35.5	53			64
1/2	1/4	**KQ2Y13-35S**	17.46	21.7	17	28	31.5	53.5	22	9	34
	3/8	**KQ2Y13-36S**					33.5	55.5		9.6	43
	1/2	**KQ2Y13-37S**	22.23				37.5	57			69

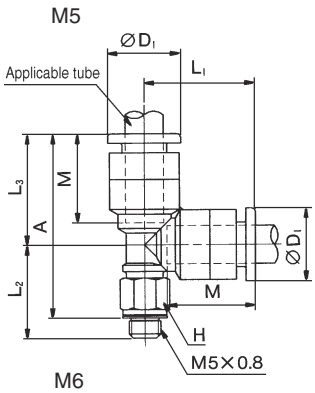


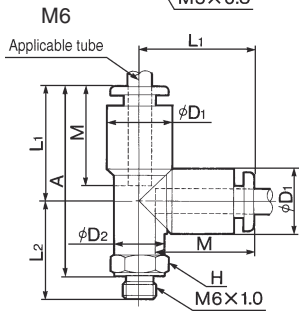
* Reference dimensions after NPT thread installation.
Note) øD1: max. diameter

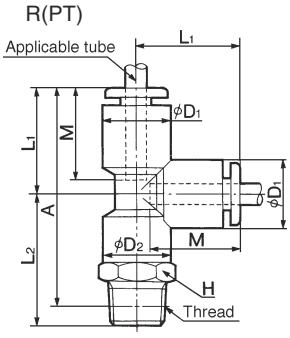
Male run tee: KQ2Y Metric

Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H (Hex.)	øD1	øD2	L1	L2	L3	A*	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
3.2	M5×0.8	KQ2Y23-M5	7	8.4	—	15.4	13.2	14.8	24.9	12.7	3.4	2.9	3.2
	1/8	KQ2Y23-01S	10	9.6	10	17.5	21.5	—	35	15.5			10
	1/4	KQ2Y23-02S	14				25.5		37				20
4	M5×0.8	KQ2Y04-M5	7	9.3	—	15.6	13.7	14.8	25.4	12.7	4.6	4.6	3.5
	M6×1.0	KQ2Y04-M6	8	9.3	8	15.6	14.7		25.4	12.7			6
	1/8	KQ2Y04-01S	10	10.4	10	18	22	—	36	16	6.4	6.4	13
	1/4	KQ2Y04-02S	14				26		38				19
6	M5×0.8	KQ2Y06-M5	7	11.6	—	17.1	14.7	17.1	28.7	13.5	4.6	4.6	4.5
	M6×1.0	KQ2Y06-M6	8	11.6	8	17.1	15.7		28.7	13.5			8
	1/8	KQ2Y06-01S	10	12.8	10	20	23	—	39	17	13.4	13.4	13
	1/4	KQ2Y06-02S	14				27		41				21
	3/8	KQ2Y06-03S	17				29		42.5				35
8	1/8	KQ2Y08-01S	12	15.2	12	23	24.5	—	43.5	18.5	25.6	17.7	15
	1/4	KQ2Y08-02S	14				28.5		45.5				23
	3/8	KQ2Y08-03S	17				30.5		47				37
10	1/8	KQ2Y10-01S	17	18.5	17	26.5	27	—	49.5	21	40.0	28.4	31
	1/4	KQ2Y10-02S					30		50.5				29
	3/8	KQ2Y10-03S					32		52				39
	1/2	KQ2Y10-04S	22				36		54.5				66
12	1/4	KQ2Y12-02S	17	20.9	17	28.5	31	—	53.5	22	57.4	45.4	31
	3/8	KQ2Y12-03S					33		55				41
	1/2	KQ2Y12-04S	22				37		57.5				68
16	3/8	KQ2Y16-03S	22	26.5	20.9	34	38	—	65.5	25	81	(81)	112
	1/2	KQ2Y16-04S					41		67		113	(113)	116

∗Reference dimensions after R(PT) thread installation.
Note) ( ): Values for soft nylon.
øD1: max. diameter

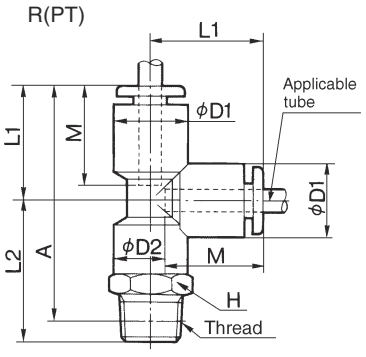






KQ2Y Inch size tube/metric thread (formerly IQ)

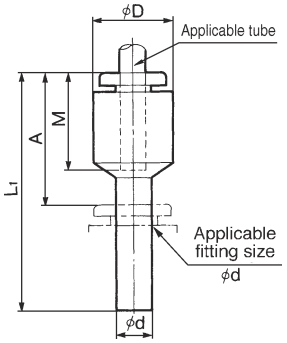
Applicable tube O.D. (Inch)	Thread R(PT)	Part No.	H (Hex.)	øD1	øD2	L1	L2	A*	M	Min. hole dia.	Weight (g)
3/16	1/8	KQ2Y05-01S	10	11.4	10	19.5	22.5	24	16.5	3.5	12
	1/4	KQ2Y05-02S	14				26.5	26			21
1/4	1/8	KQ2Y07-01S	10	13.2	10	20.5	23.5	26	17	4.5	12
	1/4	KQ2Y07-02S	14				27.5	28			22
	3/8	KQ2Y07-03S	17				29.5	29.5			35
5/16	1/8	KQ2Y09-01S	12	15.2	12	23.5	24.5	28	18.5	6	16
	1/4	KQ2Y09-02S	14				28.5	30			24
	3/8	KQ2Y09-03S	17				30.5	31.5			36
3/8	1/4	KQ2Y11-02S	17	17.9	17	25.5	29.5	32.5	21	7	29
	3/8	KQ2Y11-03S					31.5	34			38
	1/2	KQ2Y11-04S	22				35.5	36.5			64
1/2	1/4	KQ2Y13-02S	17	21.7	17	28	31.5	36.5	22	9	34
	3/8	KQ2Y13-03S					33.5	38.5		9.5	43
	1/2	KQ2Y13-04S	22				37.5	40			69



Plug-in reducer: KQ2R Inch

Applicable tube O.D. (inch)	Applicable fitting size ød (inch)	Part No.	øD	L	A	M	Min. hole dia.	Weight (g)
1/8	5/32	KQ2R01-03	9.6	34.5	18.5	15.5	2.5	2
	3/16	KQ2R01-05	9.2	34	17.5			7
	1/4	KQ2R01-07			17			9
5/32	3/16	KQ2R03-05	10	34	17.5	16	3	8
	1/4	KQ2R03-07	10.4	34.5				9
3/16	1/4	KQ2R05-07	11.4	34.5	18.5	16.5	3.5	4
	5/16	KQ2R05-09	10.7	36.5	18			14
1/4	5/16	KQ2R07-09	12.5	37	18.5	17	4.6	17
	3/8	KQ2R07-11		39	18			19
5/16	3/8	KQ2R09-11	14	40	19	18.5	6	24
	1/2	KQ2R09-13		41				32
3/8	1/2	KQ2R11-13	16.5	42.5	20.5	21	7	32

Note) øD: max. diameter



KQ2R Metric

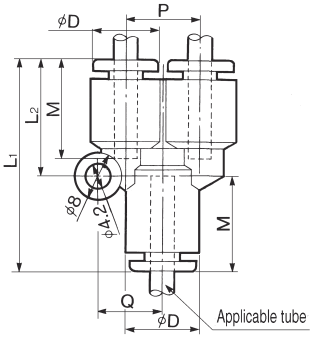
Applicable tube O.D. (mm)	Applicable fitting size ød	Part No.	øD	L	A	M	Effective orifice(mm²)		Weight (g)
							Nylon	Urethane	
3.2	4	KQ2R23-04	9.6	33.5	18.5	15.5	3.4	2.9	2
4	6	KQ2R04-06	10.4	34.5	17.5	16	5.6	5.6	2.1
	8	KQ2R04-08		36.5	18				2.3
	10	KQ2R04-10	12.8	39.5	18.5				3.6
6	4	KQ2R06-04	12.8	37	21	17	4	4	3
	8	KQ2R06-08		37	18.5		13.1	13.1	3
	10	KQ2R06-10		39.5	18.5				3.5
	12	KQ2R06-12	15.2	42	20				5.2
8	10	KQ2R08-10	15.2	41	20	18.5	26.1	18.0	4.5
	12	KQ2R08-12		42					5.1
10	12	KQ2R10-12	17	42	20	21	41.5	32.8	33
	16	KQ2R10-16	20.9	50.5	25.5			(29.5)	42
12	16	KQ2R12-16	20.9	50.5	25.5	22	58.3	(46.1)	37

Note) ( ): Values for soft nylon.
øD: max. diameter

Union "Y": KQ2U Inch

Applicable tube O.D. (inch)	Part No.	øD	L1	L2	P	Q	M	Min. hole dia.	Weight (g)
1/8	KQ2U01-00	9.6	33	17.5	9.6	9	15.5	2.5	6
5/32	KQ2U03-00	10.4	34	18	10.4	9.7	16	3	8
3/16	KQ2U05-00	11.4	36.5	20.5	11.4	10.6	16.5	3.5	9
1/4	KQ2U07-00	13.2	38	21.5	13.2	12	17	4.6	10
5/16	KQ2U09-00	15.2	42.5	24.5	15.2	13.7	18.5	6	12
3/8	KQ2U11-00	17.9	48	27.5	17.9	15.6	21	7	16

Note) øD: max. diameter

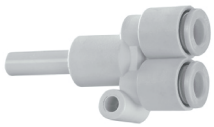


KQ2U Metric

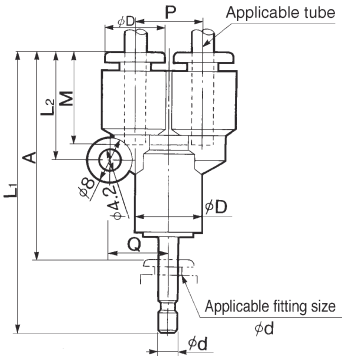
Applicable tube O.D. (mm)	Part No.	øD	L1	L2	P	Q	M	Effective orifice(mm²)		Weight (g)
								Nylon	Urethane	
3.2	KQ2U23-00	9.6	33	17.5	9.6	9	15.5	3.4	2.9	5
4	KQ2U04-00	10.4	34	18	10.4	9.7	16	4.2	4.2	8
6	KQ2U06-00	12.8	37	20	12.8	11.7	17	13.4	13.4	10
8	KQ2U08-00	15.2	42.5	24.5	15.2	13.7	18.5	25.6	17.7	12
10	KQ2U10-00	18.5	48	27.5	18.5	16.1	21	40	28.4	16
12	KQ2U12-00	20.9	51	30	20.9	18.1	22	57.4	45.4	23
16	KQ2U16-00	26.5	61.5	36.5	26.5	23	25	113	(113)	54

Note) ( ): Values for soft nylon.
øD: max. diameter

Plug-in "Y": KQ2U Inch



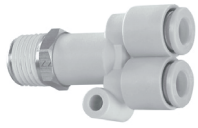
Applicable tube O.D. (inch)	Applicable fitting size ød (inch)	Part No.	øD	L1	L2	P	Q	A	M	Min. hole dia.	Weight (g)
1/8	1/8	**KQ2U01-99**	9.6	50	17.5	9.6	9	35	15.5	2	10
5/32	5/32	**KQ2U03-99**	10.4	51.5	18	10.4	9.7	35.5	16	2.5	12
3/16	3/16	**KQ2U05-99**	11.4	56	20.5	11.4	10.6	39.5	16.5	3.5	17
1/4	1/4	**KQ2U07-99**	13.2	56.5	21.5	13.2	12	39.5	17	4.6	19
5/16	5/16	**KQ2U09-99**	15.2	64.5	24.5	15.2	13.7	46	18.5	6	22



KQ2U Metric

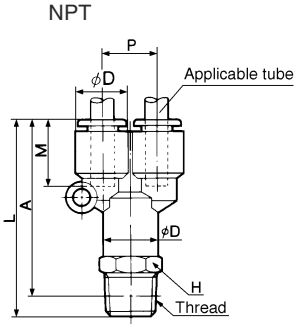
Applicable tube O.D. (mm)	Applicable fitting size ød	Part No.	øD	L1	L2	P	Q	A	M	Effective orifice (mm²)		Wt. (g)
										Nylon	Urethane	
3.2	**3.2**	**KQ2U23-99**	9.6	50	17.5	9.6	9	35	15.5	3.4	2.9	6
4	**4**	**KQ2U04-99**	10.4	51.5	18	10.4	9.7	35.5	16	4.2	4.2	12
6	**6**	**KQ2U06-99**	12.8	55.5	20	12.8	11.7	38.5	17	13.4	13.4	19
8	**8**	**KQ2U08-99**	15.2	64.5	24.5	15.2	13.7	46	18.5	25.6	17.7	22
10	**10**	**KQ2U10-99**	18.5	71.5	27.5	18.5	16.1	50.5	21	40	28.4	26
12	**12**	**KQ2U12-99**	20.9	75.5	30	20.9	18.1	53.5	22	57.4	45.4	32
16	**16**	**KQ2U16-99**	26.5	90	36.5	26.5	23	65	25	113	(113)	78

Branch "Y": KQ2U Inch

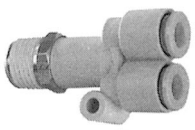


Applicable tube O.D. (inch)	Thread NPT	Part No.	H (Hex.)	øD	L	P	Q	A*	M	Min. hole dia.	Weight (g)
1/8	1/8	**KQ2U01-34S**	12.7	9.6	40.5	9.6	9	36.5	15.5	2.5	14
	1/4	**KQ2U01-35S**	14.29		44.5			38.5			
5/32	1/8	**KQ2U03-34S**	12.7	10.4	42	10.4	9.7	38	16	3	16
	1/4	**KQ2U03-35S**	14.29		46			40			
3/16	1/8	**KQ2U05-34S**	12.7	11.4	44	11.4	10.6	40	16.5	3.5	18
	1/4	**KQ2U05-35S**	14.9		48.5			42.5			
1/4	1/8	**KQ2U07-34S**	14.29	13.2	46.5	13.2	12	42.5	17	4.6	20
	1/4	**KQ2U07-35S**			49.5			43.5			
	3/8	**KQ2U07-36S**	17.46		51.5			45			
5/16	1/8	**KQ2U09-34S**	17.46	15.2	52.5	15.2	13.7	48.5	18.5	6	22
	1/4	**KQ2U09-35S**			55.5			49.5			23
	3/8	**KQ2U09-36S**			56.5			50			36
3/8	1/4	**KQ2U11-35S**	19.05	17.9	60	17.9	15.6	54	21	7	42
	3/8	**KQ2U11-36S**			61			54.5			43
	1/2	**KQ2U11-37S**	22.23		64.5			56.5			56
1/2	1/4	**KQ2U13-35S**	22.23	21.7	64.5	21.7	18.8	58.5	22	9.6	31
	3/8	**KQ2U13-36S**			65.5			59			41
	1/2	**KQ2U13-37S**			68.5			60.5			68

∗ Reference dimensions after NPT thread installation.



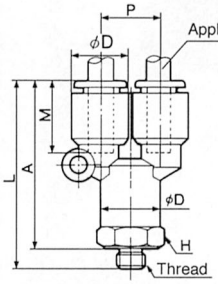
Branch "Y": KQ2U Metric



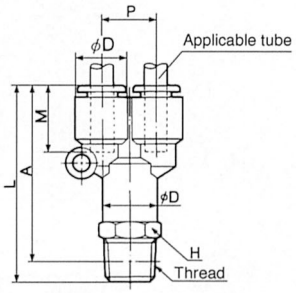
Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H (Hex.)	øD	L	P	A*	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
3.2	M5×0.8	KQ2U23-M5	10	9.6	38	9.6	34.5	15.5	2.2	2.2	9
	1/8	KQ2U23-01S	11		41		37		3.4	2.9	14
	1/4	KQ2U23-02S	14		44		38				
4	M5×0.8	KQ2U04-M5	11	10.4	39.5	10.4	36	16	2.2	2.2	4
	M6×1.0	KQ2U04-M6			40						10
	1/8	KQ2U04-01S			42		38		4.2	4.2	11
	1/4	KQ2U04-02S	14		46		40				20
6	M5×0.8	KQ2U06-M5	13	12.8	42.5	12.8	39	17	2.2	2.2	13
	M6×1.0	KQ2U06-M6			43						
	1/8	KQ2U06-01S			45.5		41.5		13.4	13.4	12
	1/4	KQ2U06-02S	14		49		43				22
	3/8	KQ2U06-03S	17		51		44.5				35
8	1/8	KQ2U08-01S	17	15.2	52.5	15.2	48.5	18.5	25.6	17.7	16
	1/4	KQ2U08-02S			55.5		49.5				24
	3/8	KQ2U08-03S			56.5		50				36
10	1/4	KQ2U10-02S	19	18.5	61	18.5	55	21	40	28.4	30
	3/8	KQ2U10-03S			62		55.5				40
	1/2	KQ2U10-04S	22		65		57				65
12	1/4	KQ2U12-02S	22	20.9	64.5	20.9	58.5	22	57.4	45.4	32
	3/8	KQ2U12-03S			65.5		59				40
	1/2	KQ2U12-04S			68.5		60.5				65
16	3/8	KQ2U16-03S	27	26.5	76	26.5	69.5	25	81	(81)	106
	1/2	KQ2U16-04S			79		71		113	(113)	111

∗Reference dimensions after R(PT) thread installation.
Note) ( ): Values for soft nylon.
øD: max. diameter

M5, M6



R(PT)

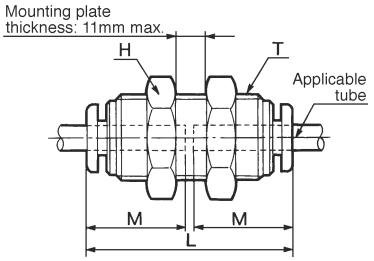


KQ2U Inch size tube/metric thread (formerly IQ)

Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H (Hex.)	øD	L	P	A*	M	Min. hole dia.	Weight (g)
3/16	1/8	KQ2U05-01S	12	11.4	44	11.4	40	16.5	3.5	18
	1/4	KQ2U05-02S	14		48.5		42.5			18
1/4	1/8	KQ2U07-01S	14	13.2	46.5	13.2	42.5	17	4.6	20
	1/4	KQ2U07-02S			49.5					20
	3/8	KQ2U07-03S	17		51.5		45			20
5/16	1/8	KQ2U09-01S	17	15.2	52.5	15.2	48.5	18.5	6	22
	1/4	KQ2U09-02S			55.5		49.5			23
	3/8	KQ2U09-03S			56.5		50			36
3/8	1/4	KQ2U11-02S	19	17.9	60	17.9	54	21	7	42
	3/8	KQ2U11-03S			61		54.5			43
	1/2	KQ2U11-04S	22		64.5		56.5			56
1/2	1/4	KQ2U13-02S	22	21.7	64.5	21.7	58.5	22	9.5	31
	3/8	KQ2U13-03S			65.5		59			41
	1/2	KQ2U13-04S			68.5		60.5			68

Bulkhead union: KQ2E Inch

Applicable tube O.D. (inch)	Part No.	Thread UNF	H (Hex.)	L	Mounting hole	M	Min. hole dia.	Weight (g)
1/8	KQ2E01-00	1/2-20	17.46	31.5	13.5	15.5	2.5	26
5/32	KQ2E03-00	1/2-20	17.46	32.5	13.5	16	3	26
3/16	KQ2E05-00	9/16-18	17.46	34	15	16.5	3.5	33
1/4	KQ2E07-00	9/16-18	17.46	34.5	15	17	4.6	33
5/16	KQ2E09-00	3/4-16	22.23	38	20	18.5	6	52
3/8	KQ2E11-00	7/8-14	25.4	42.5	23	21	7	70
1/2	KQ2E13-00	1-12	28.6	44.5	26	22	9.6	97



KQ2E Metric

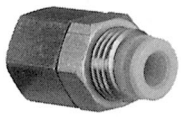
Applicable tube O.D. (mm)	Part No.	T (M)	H (Hex.)	L	Mounting hole	M	Effective orifice(mm²)		Weight (g)
							Nylon	Urethane	
3.2	KQ2E23-00	M12 ×1	14	31.5	13	15.5	3.4	2.9	26
4	KQ2E04-00	M12 ×1	14	32.5	13	16	5.6	5.6	26
6	KQ2E06-00	M14 ×1	17	34.5	15	17	13.1	13.1	33
8	KQ2E08-00	M16 ×1	19	38	17	18.5	26.1	18.0	52
10	KQ2E10-00	M20 ×1	24	42.5	21	21	41.5	29.5	70
12	KQ2E12-00	M22 ×1	27	44	23	22	58.3	46.1	90
16	KQ2E16-00	M28×1.5	32	51	29	25	113	(96)	115

Note) ( ): Values for soft nylon.

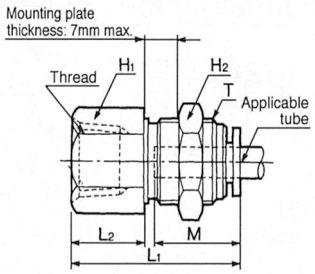
KQ2E Inch size tube/metric thread (formerly IQ)

Applicable tube O.D. (mm)	Part No.	T (M)	H (Hex.)	L	Mounting hole	M	Min. hole dia.	Weight (g)
3/16	KQ2E05-00M	M14X1	17	34	15	16.5	3.5	30
1/4	KQ2E07-00M	M14X1	17	34.5	15	17	4.6	30
5/16	KQ2E09-00M	M16X1	19	38	17	18.5	6	48
3/8	KQ2E11-00M	M20X1	24	42.5	21	21	7	62
1/2	KQ2E13-00M	M22X1	27	44.5	23	22	9.6	85

Bulkhead connector: KQ2E Inch



Applicable tube O.D. (inch)	Thread NPT	Part No.	Thread UNF	H1 (Hex.)	H2 (Hex.)	L1	L2	M	Min. hole dia.	Mounting hole	Weight (g)
1/8	1/4	KQ2E01-35	1/2-20	17.46	17.46	31	15	15.5	2.5	13.5	36
5/32	1/4	KQ2E03-35	1/2-20	17.46	17.46	31	15	16	3	13.5	36
3/16	1/8	KQ2E05-34	9/16-18	17.46	17.46	28	10	16.5	3.5	15	34
1/4	1/4	KQ2E07-35	9/16-18	17.46	17.46	32.5	14.5	17	4.6	15	34
5/16	3/8	KQ2E09-36	3/4-16	22.23	22.23	35	15	18.5	6	20	52
3/8	3/8	KQ2E11-36	1/8-14	25.4	25.4	37	14.5	21	7	23	96
1/2	3/8	KQ2E13-36	1-12	28.6	28.6	37	14	22	9.6	26	125
	1/2	KQ2E13-37	1-12			41.5	18				128



KQ2E Metric

Applicable tube O.D. (mm)	Thread Rc(PT)	Part No.	T (M)	H1 (Hex.)	H2 (Hex.)	L1	L2	Mounting hole	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
3.2	1/4	KQ2E23-02	M12×1	17	14	31.5	15	13	15.5	3.4	2.9	13
4	1/8	KQ2E04-01	M12×1	14	14	27.5	11	13	16	5.6	5.6	16
	1/4	KQ2E04-02		17		31	15					35
6	1/8	KQ2E06-01	M14×1	17	17	28	11	15	17	13.1	13.1	25
	1/4	KQ2E06-02				31.5	15					40
	3/8	KQ2E06-03		19		33.5	17					29
8	1/8	KQ2E08-01	M16×1	17	19	27.5	7.5	17	18.5	26.1	18.0	28
	1/4	KQ2E08-02				33	13					27
	3/8	KQ2E08-03		19		35	15					48
10	1/4	KQ2E10-02	M20×1	22	24	34.5	12.5	21	21	41.5	29.5	53
	3/8	KQ2E10-03		22		36.5	15					67
12	3/8	KQ2E12-03	M22×1	24	27	37	14	23	22	58.3	46.1	92
	1/2	KQ2E12-04				41	18					59
16	3/8	KQ2E16-03	M28×1.5	30	32	40	14	29	25	96	(96)	127
	1/2	KQ2E16-04				44	18			113		132

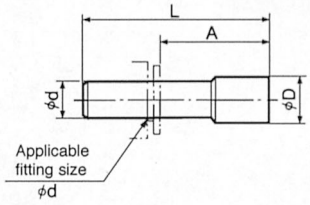
Note) ( ): Values for soft nylon.

KQ2E Inch size tube/metric thread (formerly IQ)

Applicable tube O.D. (inch)	Applicable fitting size Rc(PT)	Part No.	T (M)	H1 (Hex.)	H2 (Hex.)	L1	L2	M	Min. hole dia.	Mounting hole	Wt. (g)
3/16	1/8	KQ2E05-01	M14X1	17	17	28	11.5	16.5	3.5	15	30
1/4	1/4	KQ2E07-02	M14X1	17	17	32.5	14.5	17	4.6	15	31
5/16	3/8	KQ2E09-03	M16X1	19	19	35	15	18.5	6	17	36
3/8	3/8	KQ2E11-03	M20X1	22	24	35	14.5	21	7	21	64
1/2	3/8	KQ2E13-03	M22X1	24	27	37	14.5	22	9.6	23	78
	1/2	KQ2E13-04				41.5	18.5				74

Plug: KQ2P Inch

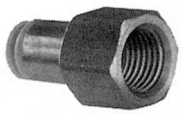
Applicable fitting size ød (inch)	Part No.	øD	L	A	Weight (g)
1/8	KQ2P-01	5	31.5	16	1
5/32	KQ2P-03	6	32	16	1
3/16	KQ2P-05	6.8	34	17.5	1
1/4	KQ2P-07	8.5	35	18	1
5/16	KQ2P-09	10	39	20.5	2
3/8	KQ2P-11	11.5	43	22	3.5
1/2	KQ2P-13	15	46	24	5



KQ2P Metric

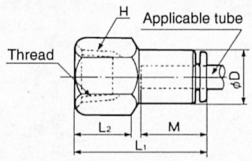
Applicable fitting size ød	Part No.	øD	L	A	Weight (g)
3.2	KQ2P-23	5	31.5	16	1
4	KQ2P-04	6	32	16	1
6	KQ2P-06	8	35	18	1
8	KQ2P-08	10	39	20.5	2
10	KQ2P-10	12	43	22	3.5
12	KQ2P-12	14	45.5	24	5
16	KQ2P-16	20.9	47	22	8

Female union: KQ2F Inch



Applicable tube O.D. (inch)	Thread UNF NPT	Part No.	H (Hex.)	øD	L1	L2	M	Weight (g)
1/8	1/8	KQ2F01-34	14.29	9.2	26.5	11.5	15.5	2.5
	1/4	KQ2F01-35	17.46		30.5	14.5		
5/32	1/8	KQ2F03-34	14.29	10	27	11	16	3
	1/4	KQ2F03-35	17.46		31	13.5		
1/4	1/8	KQ2F07-34	14.29	12.5	27.5	10.5	17	4.6
	1/4	KQ2F07-35	17.46		31	13.5		
	3/8	KQ2F07-36	22.23		33.5	15.5		
5/16	1/8	KQ2F09-34	14.29	14	29	10.5	18.5	6
	1/4	KQ2F09-35	17.46		32.5	13.5		
	3/8	KQ2F09-36	22.23		34.5	13		
3/8	1/4	KQ2F11-35	17.46	16.5	34.5	15	21	7
	3/8	KQ2F11-36	22.23		36.5			
	1/2	KQ2F11-37	23.81		40.5	19		
1/2	3/8	KQ2F13-36	22.23	20	36.5	14.5	22	9.6
	1/2	KQ2F13-37	23.81		41	18.5		

NPT

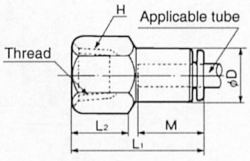


KQ2F Metric

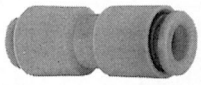
Applicable tube O.D. (mm)	Thread Rc(PT)	Part No.	H (Hex.)	øD	L1	L2	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
4	1/8	KQ2F04-01	14	10	27	11	16	5.6	5.6	15
	1/4	KQ2F04-02	17		31	14				23
6	1/8	KQ2F06-01	14	12	27.5	11	17	13.1	13.1	15
	1/4	KQ2F06-02	17		31	13				22
	3/8	KQ2F06-03	19		33.5	15				25
8	1/8	KQ2F08-01	14	14	29	11	18.5	26.1	18.0	17
	1/4	KQ2F08-02	17		32.5	13				24
	3/8	KQ2F08-03	19		33.5	14				24
10	1/4	KQ2F10-02	17	17	34.5	14	21	41.5	18.0	27
	3/8	KQ2F10-03	19		36.5	15				30
12	1/4	KQ2F12-02	19	19	35	14	22	58.3	46.1	36
	3/8	KQ2F12-03			37					31
	1/2	KQ2F12-04	24		41	18				52
16	3/8	KQ2F16-03	24	25.7	38	15	25	81	(81)	59
	1/2	KQ2F16-04			43	19		113	(96)	58

Note) ( ): Values for soft nylon, øD2: max. diameter

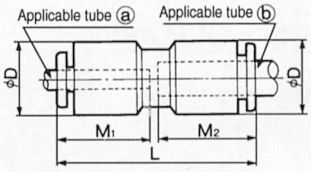
KQ2F 04 to 16



Different dia.straight: KQ2H Inch



Applicable tube O.D. (inch) a	Applicable tube O.D. (inch) b	Part No.	øD	L	M1	M2	Weight (g)
1/8	5/32	KQ2H01-03	10.4	32.5	15.5	16	2.5
	1/4	KQ2H01-07	13.2	34.5		17	
5/32	3/16	KQ2H03-05	11.4	34	16	16.5	3
	1/4	KQ2H03-07	13.2	34.5		17	
3/16	1/4	KQ2H05-07	13.2	34.5	16.5	17	3.5
1/4	5/16	KQ2H07-09	15.2	38.5	17	18.5	4.6
	3/8	KQ2H07-11	17.9	42		21	
5/16	3/8	KQ2H09-11	17.9	42	18.5	21	6
	1/2	KQ2H09-13	21.7	44		22	
3/8	1/2	KQ2H11-13	21.7	44	21	22	7



KQ2H Metric

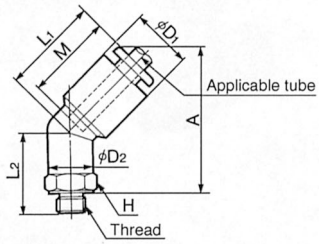
Applicable tube O.D (mm) ⓐ	Applicable tube O.D (mm) ⓑ	Part No.	øD	L	M1	M2	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
3.2	4	KQ2H23-04	10.4	32.5	15.5	16	3.2	2.7	3
4	6	KQ2H04-06	12.8	34.5	16	17	4.2	4.2	5
6	8	KQ2H06-08	15.2	38.5	17	18.5	10.7	10.7	7
8	10	KQ2H08-10	18.5	42	18.5	21	24.1	16.7	11
10	12	KQ2H10-12	20.9	44.5	21	22	37.6	28.2	14
12	16	KQ2H12-16	26.5	56.5	22	25	58.3	46.1	47

Note) øD: max. diameter

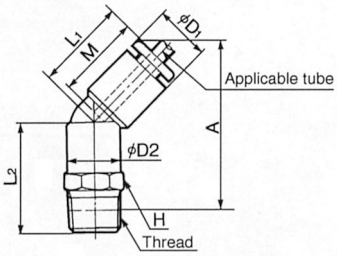
45°male elbow: KQ2K Inch

Applicable tube O.D. (inch)	Thread UNF NPT	Part No.	H (Hex.)	øD1	øD2	L1	L2	A*	M	Weight (g)
1/8	10-32 UNF	KQ2K01-32	8	9.6	8	16.5	15	25.5	15.5	2.3
	1/8	KQ2K01-34S	11.11		10	16.5	22.5	33	15.5	2.5
5/32	10-32 UNF	KQ2K03-32	8	10.4	8	17	14.5	26	16	2.3
	1/8	KQ2K03-34S	11.11		10		20.5	32		2.8
3/16	1/8	KQ2K05-34S	11.11	11.4	10	18	20.5	32.5	16.5	3.6
1/4	10-32 UNF	KQ2K07-32	11.11	13.2	10	19	18	32	17	2.3
	1/8	KQ2K07-34S					20.5	34		4.6
	1/4	KQ2K07-35S	14.29				24.5	36		
	3/8	KQ2K07-36S	17.46				26.5	37.5		
5/16	1/8	KQ2K09-34S	12.7	15.2	12	20.5	22	37	18.5	6
	1/4	KQ2K09-35S	14.29				26	39		
	3/8	KQ2K09-36S	17.46				28	41		
3/8	1/8	KQ2K11-34S	17.46	17.9	17	23.5	24	42	21	6
	1/4	KQ2K11-35S					27	43		7
	3/8	KQ2K11-36S					29	44.5		
	1/2	KQ2K11-37S					33	46.5		
1/2	1/4	KQ2K13-35S	17.46	21.7	17	25.5	27.5	46.5	22	8
	3/8	KQ2K13-36S					29.5	48		9.6
	1/2	KQ2K13-37S	22.23				33.5	50		

10-32 UNF, M5, M6



NPT, R(PT)



KQ2K Metric

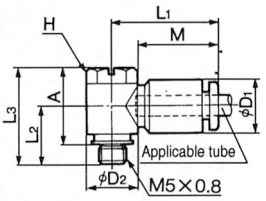
Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H (Hex.)	øD1	øD2	L1	L2	A*	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
4	M5 ×0.8	KQ2K04-M5	8	10.4	8	17	14.5	26	16	3.4	3.4	4
	M6 ×1.0	KQ2K04-M6					15					5
	1/8	KQ2K04-01S	10		10		20.5	32				10
	1/4	KQ2K04-02S	14				24.5	34				19
6	M5 ×0.8	KQ2K06-M5	8	12.8	8	18	14.5	27.5	17	8.7	8.7	6
	M6 ×1.0	KQ2K06-M6				18.5	15					5
	1/8	KQ2K06-01S	10		10	18	20.5	33				12
	1/4	KQ2K06-02S	14				24.5	35				10
	3/8	KQ2K06-03S	17				26.5	36.5				33
8	1/8	KQ2K08-01S	12	15.2	12	20.5	22	37	18.5	19.7	19.7	13
	1/4	KQ2K08-02S	14				26	39				21
	3/8	KQ2K08-03S	17				28	41				35
10	1/8	KQ2K10-01S	17	18.5	17	24	24	42	21	30.9	23.2	25
	1/4	KQ2K10-02S					27	43.5				26
	3/8	KQ2K10-03S					29	45				36
	1/2	KQ2K10-04S	22				33	47.5				63
12	1/4	KQ2K12-02S	17	20.9	17	25	27.5	45.5	22	44.5	35.1	28
	3/8	KQ2K12-03S					29.5	47.5				38
	1/2	KQ2K12-04S	22				33.5	49.5				65
16	3/8	KQ2K16-03S	22	26.5	20.9	30	32	55	25	65.8	(65.8)	52
	1/2	KQ2K16-04S					35	56.5		91.9	(78.3)	58

∗ Reference dimensions after R(PT) thread installation.
Note) ( ): Values for soft nylon.
øD1: max. diameter

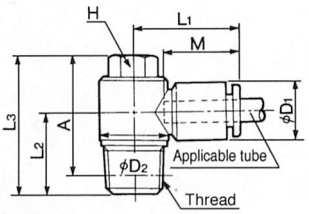
Universal male elbow: KQ2V Inch

Applicable tube O.D. (inch)	Thread UNF NPT	Part No.	H (Hex.)	øD1	øD2	L1	L2	L3	A*	M	Weight (g)
1/8	10-32 UNF	KQ2V01-32	8	8.4	9.8	17.2	11	18.5	15	12.7	2.3
	1/8	KQ2V01-34S		9.6	13.4	21.5	14.5	26.5	22.5	15.5	2.5
5/32	10-32 UNF	KQ2V03-32	8	10.4	9.8	20.5	11	18.5	15	16	2.3
	1/8	KQ2V03-34S			13.4	22	14.5	26.5	22.5		2.8
3/16	1/8	KQ2V05-34S	8	11.4	13.4	23	14.5	26.5	22.5	16.5	3.5
1/4	10-32 UNF	KQ2V07-32	8	13.2	13.4	24	12	24	20.5	17	2.3
	1/8	KQ2V07-34S					14.5	26.5	22.5		4.6
	1/4	KQ2V07-35S			15.3	23.5	19	32.5	26.5		
5/16	1/8	KQ2V09-34S	11.11	15.2	17.6	28.5	15.5	28.5	24.5	18.5	6
	1/4	KQ2V09-35S					18.5	31.5	25.5		
	3/8	KQ2V09-36S	12.7		20.6	27.5	20.5	36.5	30		
3/8	1/4	KQ2V11-35S	12.7	17.9	20.6	30.5	19.5	35.5	29.5	21	7
	3/8	KQ2V11-36S					20.5	36.5	30		
1/2	3/8	KQ2V13-36S	17.46	21.7	27	35.5	21.5	36	30	22	9
	1/2	KQ2V13-37S					24.5	39	31		

10-32 UNF, M5



NPT, R(PT)



KQ2V Metric

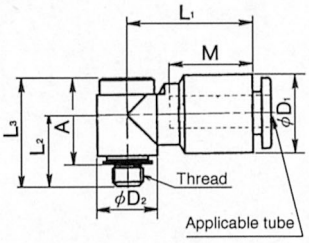
Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H (Hex.)	øD1	øD2	L1	L2	L3	A*	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
4	M5×0.8	KQ2V04-M5	8	10.4	9.8	20.5	11	18.5	15	16	2.9	2.9	6
	1/8	KQ2V04-01S			13.4	22	14.5	26.5	22.5				14
6	M5×0.8	KQ2V06-M5	8	12.8	9.8	23.5	12	18.5	15	17	3.8	3.8	7
	1/8	KQ2V06-01S			13.4	24	14.5	26.5	22.5		7.5	7.5	15
	1/4	KQ2V06-02S	10		15.4	23.5	18.5	31	25				26
8	1/8	KQ2V08-01S	12	15.2	17.6	28.5	15.5	28.5	24.5	18.5	16	11.2	24
	1/4	KQ2V08-02S					18.5	31.5	25.5				30
	3/8	KQ2V08-03S	14		20.6	27.5	20.5	36.5	30		20.5	14.3	47
10	1/4	KQ2V10-02S	14	18.5	20.6	31	19.5	35.5	29.5	21	27	20.3	40
	3/8	KQ2V10-03S					20.5	36.5	30				49
12	3/8	KQ2V12-03S	17	20.9	25.2	34	22	38.5	32	22	39	30.8	63
	1/2	KQ2V12-04S					25	41.5	33.5				80
16	3/8	KQ2V16-03S	21	26.5	32.3	39	26.5	46.5	40.5	25	55	(55)	103
	1/2	KQ2V16-04S					29.5	49.5	41.5		78	(65)	110

∗ Reference dimensions after R(PT) thread installation.
Note) ( ): Values for soft nylon.
øD1: max. diameter

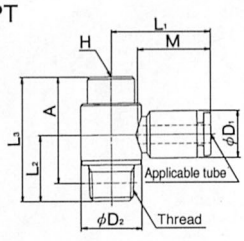
Hexagon socket head universal male elbow: KQ2VS Inch

Applicable tube O.D. (inch)	Thread UNF NPT	Part No.	H (Hex.)	øD1	øD2	L1	L2	L3	A*	M	Weight (g)
1/8	10-32 UNF	KQ2VS01-32	4	8.4	9.8	17.2	10.9	18.5	15	12.7	2.3
	1/8	KQ2VS01-34S	6.35	9.6	13.4	21.5	14.5	26.5	22.5	15.5	2.5
5/32	10-32 UNF	KQ2VS03-32	4	10.4	9.8	20.5	11	18.5	15	16	2.3
	1/8	KQ2VS03-34S	6.35		13.4	22	14.5	26.5	22.5		2.8
3/16	1/8	KQ2VS05-34S	8	11.4	13.4	23	14.5	26.5	22.5	16.5	3.5
1/4	10-32 UNF	KQ2VS07-32	6.35	13.2	13.4	24	12	24	19	17	2.3
	1/8	KQ2VS07-34S					14.5	26.5	22.5		4.6
	1/4	KQ2VS07-35S			15.3	23.5	19	28.5			
5/16	1/8	KQ2VS09-34S	8	15.2	17.6	28.5	15.5	27	23	18.5	6
	1/4	KQ2VS09-35S					18.5	30	24		
	3/8	KQ2VS09-36S			20.6	27.5	20.5	32.5	26		
3/8	1/4	KQ2VS11-35S	8	17.9	20.6	31	19.5	31.5	25.5	21	7
	3/8	KQ2VS11-36S					20.5	32.5	26		
1/2	3/8	KQ2VS13-36S	9.53	21.7	27	34.5	21.5	34.5	28.5	22	9
	1/2	KQ2VS13-37S					24.5	37.5	29.5		

10-32 UNF



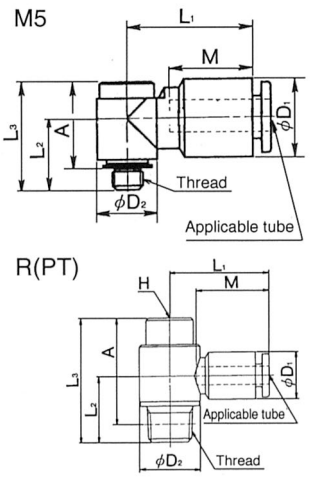
NPT



Hexagon socket head universal male elbow: KQ2VS Metric

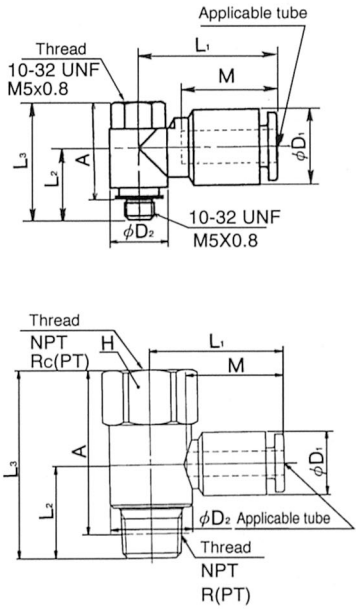
Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H (Hex.)	øD1	øD2	L1	L2	L3	A*	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
4	M5	KQ2VS04-M5	4	10.4	9.8	20.5	10.5	18	15	16	2.9	2.9	6
	1/8	KQ2VS04-01S	6		13.4	22	14.5	26.5	22.5				14
6	M5	KQ2VS06-M5	4	12.8	9.8	23.5	12	18	15	17	3.8	3.8	7
	1/8	KQ2VS06-01S	6		13.4	24	14.5	26.5	22.5		7.5	7.5	15
	1/4	KQ2VS06-02S			15.3	23.5	18.5	27	21				22
8	1/8	KQ2VS08-01S	8	15.2	17.6	28.5	15.5	27	23	18.5	16	11.2	24
	1/4	KQ2VS08-02S					18.5	30	24				30
	3/8	KQ2VS08-03S			20.6	27.5	20.5	32.5	26		20.5	14.3	47
10	1/4	KQ2VS10-02S	8	18.5	20.6	31	19.5	31.5	25	21	27	20.3	32
	3/8	KQ2VS10-03S					20.5	32.5	26				39
12	3/8	KQ2VS12-03S	10	20.9	25.2	34	22	36	30	22	39	30.8	48
	1/2	KQ2VS12-04S					25	39	31				67

*Reference dimensions after R(PT) thread installation.
Note) øD1: max. diameter



Universal female elbow: KQ2VF Inch

Applicable tube O.D. (inch)	Thread UNF NPT	Part No.	H (Hex.)	øD1	øD2	L1	L2	L3	A*	M	Weight (g)
1/8	10-32 UNF	KQ2VF01-32	8	8.4	9.8	17.2	10	20	16.5	12.7	2.3
	1/8	KQ2VF01-34S	14.29	9.6	13.4	21.5	14	29.5	25.5	15.5	2.5
5/32	10-32 UNF	KQ2VF03-32	8	10.4	9.8	20.5	11	20	16	16	2.5
	1/8	KQ2VF03-34S	14.29		13.4	22	15.5	29.5	25.5		2.8
3/16	1/8	KQ2VF05-34S	14.29	11.4	13.4	23	14	29.5	25.5	16.5	3.5
1/4	10-32 UNF	KQ2VF07-32	14.29	13.2	13.4	24	11.5	27	23.5	17	2.3
	1/8	KQ2VF07-34S					14	29.5	25.5		4.6
	1/4	KQ2VF07-35S	17.46		17.6	25	17.5	38.5	32.5		
5/16	1/8	KQ2VF09-34S	17.46	15.2	17.6	28.5	17	31	27	18.5	6
	1/4	KQ2VF09-35S					20	38.5	32.5		
	3/8	KQ2VF09-36S	22.23		25.5	29.5	20.5	45	39		
3/8	1/4	KQ2VF11-35S	22.23	17.9	20.6	31	17.5	41	35	21	7
	3/8	KQ2VF11-36S			25.2	31.5	19.5	45	39		
1/2	3/8	KQ2VF13-36S	22.23	21.7	27	35.5	21	42	39	22	9
	1/2	KQ2VF13-37S	25.4				24	50	41.5		



KQ2VF Metric

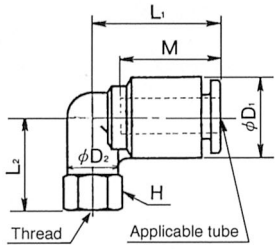
Applicable tube O.D. (mm)	Thread Rc(PT) R(PT)	Part No.	H (Hex.)	øD1	øD2	L1	L2	L3	A*	M	Weight (g)
4	M5×0.8	KQ2VF04-M5	8	10.4	9.8	20.5	11	20	16	16	6
	1/8	KQ2VF04-01S	14		13.4	22	15.5	29.5	25.5		19
6	M5×0.8	KQ2VF06-M5	8	12.8	9.8	23.5	12.5	20	16	17	7
	1/8	KQ2VF06-01S	14		13.4	24.5	15.5	29.5	25.5		19
	1/4	KQ2VF06-02S	17		17.6	25	20	38.5	32.5		36
8	1/8	KQ2VF08-01S	17	15.2	17.6	28.5	17	31	27	18.5	29
	1/4	KQ2VF08-02S					20	38.5	32.5		37
	3/8	KQ2VF08-03S	22		25.2	29.5	25.5	45.5	39		66
10	1/4	KQ2VF10-02S	19	18.5	20.6	31.5	22	41	35	21	48
	3/8	KQ2VF10-03S	22		25.2		24.5	45.5	39		68
12	3/8	KQ2VF12-03S	22	20.9	25.2	34	24.5	45.5	39	22	70
	1/2	KQ2VF12-04S	24		27	35	25.5	50	42		93

*Reference dimensions after R(PT) thread installation.
Note) øD1: max. diameter

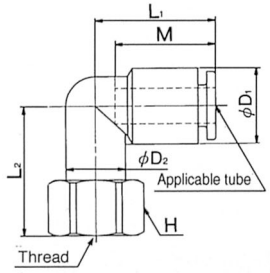
Female elbow: KQ2LF Inch

Applicable tube O.D. (inch)	Thread UNF NPT	Part No.	H (Hex.)	øD1	øD2	L1	L2	M	Weight (g)
1/8	1/8	KQ2LF01-34	14.29	9.6	10	17.5	20	15.5	2.5
	1/4	KQ2LF01-35	17.46				23.5		
5/32	1/8	KQ2LF03-34	14.29	10.4	10	18	20.5	16	3
	1/4	KQ2LF03-35	17.46				24		
1/4	1/8	KQ2LF07-34	14.29	13.2	10	20.5	22	17	4.6
	1/4	KQ2LF07-35	17.46				25.5		
	3/8	KQ2LF07-36	22.23				26		
3/8	1/4	KQ2LF11-35	17.46	17.9	17	25.5	27.5	21	7
	3/8	KQ2LF11-36	22.23				28		
	1/2	KQ2LF11-37	23.81				32		
1/2	3/8	KQ2LF13-36	22.23	21.7	17	28	30	22	9.6
	1/2	KQ2LF13-37	23.81				34		

10-32 UNF, M5, M6



NPT, Rc(PT)

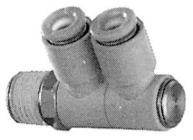


KQ2LF Metric

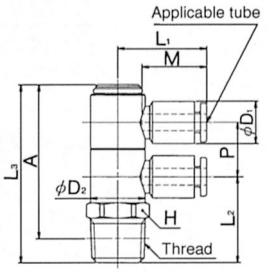
Applicable tube O.D. (mm)	Thread Rc(PT)	Part No.	H (Hex.)	øD1	øD2	L1	L2	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
4	M5 ×0.8	KQ2LF04-M5	8	10.4	8	18.5	14.5	16	3.5	3.5	5
	M6 ×1.0	KQ2LF04-M6					15.5				
	1/8	KQ2LF04-01	14		10		21		4.2	4.2	13
	1/4	KQ2LF04-02	17				24.5				20
6	M5 ×0.8	KQ2LF06-M5	8	12.8	8	20.5	15	17	3.5	3.5	5
	M6 ×1.0	KQ2LF06-M6					16				6
	1/8	KQ2LF06-01	14		10		22		11.4	11.4	13
	1/4	KQ2LF06-02	17				25.5				20
	3/8	KQ2LF06-03	19				26				
8	1/8	KQ2LF08-01	14	15.2	12	23.5	23	18.5	21.6	14.9	16
	1/4	KQ2LF08-02	17				26.5				22
	3/8	KQ2LF08-03	19				27				23
10	1/4	KQ2LF10-02	17	18.5	17	26.5	28	21	21.6	14.9	27
	3/8	KQ2LF10-03	19				28.5		35.2	25.0	
	1/2	KQ2LF10-04	24				32.5				46
12	1/4	KQ2LF12-02	17	20.9	17	28.5	29.5	22	50.2	39.7	29
	3/8	KQ2LF12-03	19				30				
	1/2	KQ2LF12-04	24				34				48

Note) øD1: max. diameter

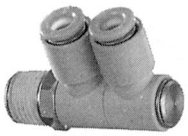
Double universal male elbow: KQ2VD Inch



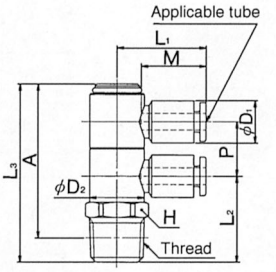
Applicable tube O.D. (inch)	Thread UNF NPT	Part No.	H (Hex.)	øD1	øD2	L1	L2	L3	A*	M	P	Weight (g)
1/8 5/32	10-32 UNF	KQ2VD01-32	14.29	9.6	13.4	22	15.5	38.5	35	15.5	13.4	2.3
	1/8	KQ2VD01-34S					18	41	37			2.5
	10-32 UNF	KQ2VD03-32	14.29	10.4	13.4	22	15.5	38.5	35	16	13.4	2.3
	1/8	KQ2VD03-34S					18.5	41	37			3
3/16	1/8	KQ2VD05-34S	14.29	11.4	13.4	23	18	41	37	16.5	13.4	3.5
1/4	10-32 UNF	KQ2VD07-32	14.29	13.2	13.4	24	15.5	39	35.5	17	13.8	4.6
	1/8	KQ2VD07-34S					18.5	41.5	37.5			
	1/4	KQ2VD07-35S					21.5	44.5	38.5			
	3/8	KQ2VD07-36S	17.46				23.5	46.5	40.5			
5/16	1/4	KQ2VD09-35S	19	15.2	17.6	28.5	24	51	45	18.5	15.9	6
	3/8	KQ2VD09-36S					25	52	45.5			
	1/2	KQ2VD09-37S	22.23				28.5	55.5	47.5			
3/8	1/4	KQ2VD11-35S	22.23	17.9	20.6	31	26	58	52	21	19.2	7
	3/8	KQ2VD11-36S					27	59	52.5			
	1/2	KQ2VD11-37S					30	62	54			
1/2	3/8	KQ2VD13-36S	25.4	21.7	27	35.5	32	66.5	60.5	22	22.3	9.6
	1/2	KQ2VD13-37S					35	69.5	61.5			



Double universal male elbow: KQ2VD Metric



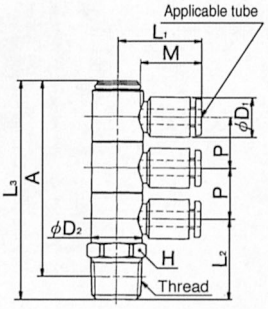
Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H (Hex.)	øD1	øD2	L1	L2	L3	A*	M	P	Weight (g)
4	1/8	KQ2VD04-01S	14	10.4	13.4	22	18.5	41	37	16	13.4	23
	1/4	KQ2VD04-02S					21.5	44	38			29
	3/8	KQ2VD04-03S	17				23.5	46	40			42
6	1/8	KQ2VD06-01S	14	12.8	13.4	24.5	18.5	41	37	17	13.4	25
	1/4	KQ2VD06-02S					21.5	44	38			31
	3/8	KQ2VD06-03S	17				23.5	46	40			43
8	1/8	KQ2VD08-01S	19	15.2	17.6	28.5	21	48	44	18.5	15.9	54
	1/4	KQ2VD08-02S					24	51	45			52
	3/8	KQ2VD08-03S					25	52	45.5			61
	1/2	KQ2VD08-04S	21				28.5	55.5	47.5			83
10	1/4	KQ2VD10-02S	21	18.5	20.6	31.5	26.5	58	52	21	19.2	71
	3/8	KQ2VD10-03S					27.5	59	53			74
	1/2	KQ2VD10-04S					30.5	62	54			91
12	1/4	KQ2VD12-02S	26	20.9	25.2	34	28.5	64.5	58.5	22	21.6	118
	3/8	KQ2VD12-03S					29.5	65.5	59			113
	1/2	KQ2VD12-04S					32.5	68.5	60			125



∗ Reference dimensions after R(PT) thread installation.
Note) øD1: max. diameter

Triple universal male elbow: KQ2VT Inch

Applicable tube O.D. (inch)	Thread UNF NPT	Part No.	H (Hex.)	øD1	øD2	L1	L2	L3	A*	M	P	Weight (g)
1/8	10-32 UNF	KQ2VT01-32	14.29	9.6	13.4	22	15.5	52	48.5	15.5	13.4	2.3
	1/8	KQ2VT01-34S					18	54.5	50.5			2.5
5/32	10-32 UNF	KQ2VT03-32	14.29	10.4	13.4	22	15.5	52	48.5	16	13.4	2.3
	1/8	KQ2VT03-34S					18.5	54.5	50.5			3
3/16	1/8	KQ2VT05-34S	14.29	11.4	13.4	23	18	54.5	50.5	16.5	13.4	3.5
1/4	10-32 UNF	KQ2VT07-32	14.29	13.2	13.4	24	15.5	53	49.5	17	13.8	4.6
	1/8	KQ2VT07-34S					18.5	55.5	51.5			
	1/4	KQ2VT07-35S					21.5	58.5	52.5			
	3/8	KQ2VT07-36S	17.46				23.5	60.5	54			
5/16	1/4	KQ2VT09-35S	19	15.2	17.6	28.5	24	67	61	18.5	15.9	6
	3/8	KQ2VT09-36S					25	68	61.5			
	1/2	KQ2VT09-37S	22.23				28.5	71.5	63.5			
3/8	1/4	KQ2VT11-35S	22.23	17.9	20.6	31	26	77.5	71.5	21	19.2	7
	3/8	KQ2VT11-36S					27	78.5	72			
	1/2	KQ2VT11-37S					30	81.5	73			
1/2	3/8	KQ2VT13-36S	25.4	21.7	27	35.5	32	89	83	22	22.3	9.6
	1/2	KQ2VT13-37S					35	92	84			



KQ2VT Metric

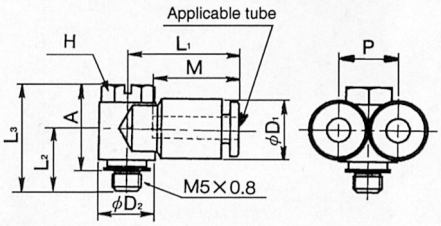
Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H (Hex.)	øD1	øD2	L1	L2	L3	A*	M	P	Weight (g)
4	1/8	KQ2VT04-01S	14	10.4	13.4	22	18.5	54.5	50.5	16	13.4	30
	1/4	KQ2VT04-02S					21.5	57.5	51.5			35
	3/8	KQ2VT04-03S	17				23.5	59.5	53.5			49
6	1/8	KQ2VT06-01S	14	12.8	13.4	24.5	18.5	54.5	50.5	17	13.4	32
	1/4	KQ2VT06-02S					21.5	57.5	51.5			38
	3/8	KQ2VT06-03S	17				23.5	59.5	53.5			51
8	1/8	KQ2VT08-01S	19	15.2	17.6	28.5	21	64	60	18.5	15.9	72
	1/4	KQ2VT08-02S					24	67	61			67
	3/8	KQ2VT08-03S					25	68	61.5			76
	1/2	KQ2VT08-04S	21				28.5	71.5	63.5			97
10	1/4	KQ2VT10-02S	21	18.5	20.6	31.5	26.5	77.5	71.5	21	19.2	94
	3/8	KQ2VT10-03S					27.5	78.5	72			
	1/2	KQ2VT10-04S					30.5	81.5	73.5			111
12	1/4	KQ2VT12-02S	26	20.9	25.2	34	28.5	86	80	22	21.6	153
	3/8	KQ2VT12-03S					29.5	87	80.5			142
	1/2	KQ2VT12-04S					32.5	90	82			154

∗ Reference dimensions after R(PT) thread installation.
Note) øD1: max. diameter

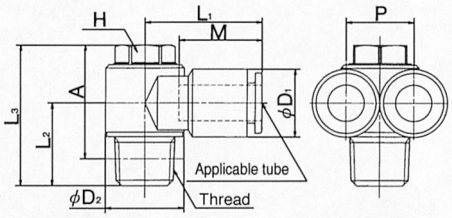
Branch universal male elbow: KQ2Z Inch

Applicable tube O.D. (inch)	Thread UNF NPT	Part No.	H (Hex.)	øD1	øD2	L1	L2	L3	A*	M	P	Weight (g)
1/8	10-32 UNF	KQ2Z01-32	8	8.4	9.8	16	11.2	18.5	15	12.7	8.4	2.3
	1/8	KQ2Z01-34S		9.6	13.4	20.5	14.5	26.5	22.5	15.5	9.6	2.5
5/32	10-32 UNF	KQ2Z03-32	8	10.4	9.8	19.5	11	18.5	15	16	10.4	2.3
	1/8	KQ2Z03-34S			13.4	21	14.5	26.5	22.5			2.8
3/16	1/8	KQ2Z05-34S	8	11.4	13.4	21.5	14.5	26.5	22.5	16.5	11.4	3.5
1/4	10-32 UNF	KQ2Z07-32	8	13.2	13.4	21.5	12	24	20.5	17	13.2	2.3
	1/8	KQ2Z07-34S					14.5	26.5	22.5			4.6
	1/4	KQ2Z07-35S	11.11	15.2	17.6	26	18.5	31.5	25.5			
5/16	1/8	KQ2Z09-34S	11.11	15.2	17.6	26	15.5	28.5	24.5	18.5	15.2	6
	1/4	KQ2Z09-35S					18.5	31.5	25.5			
	3/8	KQ2Z09-36S	12.7		20.6	27	20.5	36.5	30			
3/8	1/4	KQ2Z11-35S	12.7	17.9	20.6	28.5	19.5	35.5	29.5	21	17.9	7
	3/8	KQ2Z11-36S					20.5	36.5	30			
1/2	3/8	KQ2Z13-36S	17.46	21.7	27	33	21.5	36	30	21.7	21.7	9
	1/2	KQ2Z13-37S					24.5	39	31			

10 - 32 UNF, M5



NPT, R(PT)

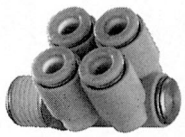


KQ2Z Metric

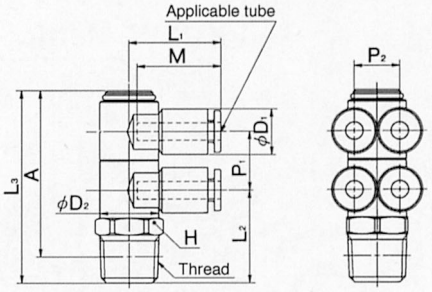
Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H (Hex.)	øD1	øD2	L1	L2	L3	A*	M	P	Effective orifice (mm²) Nylon	Effective orifice (mm²) Urethane	Weight (g)
4	M5×0.8	KQ2Z04-M5	8	10.4	9.8	19.5	11	18.5	15	16	10.4	3.4	3.4	8
	1/8	KQ2Z04-01S			13.4	21	14.5	26.5	22.5			4.7	4.7	16
6	1/8	KQ2Z06-01S	8	12.8	13.4	22	14.5	26.5	22.5	17	12.8	10.8	10.8	18
	1/4	KQ2Z06-02S	14		20.6	25.5	19.5	35.5	29.5					40
	3/8	KQ2Z06-03S					20.5	36.5	30					48
8	1/8	KQ2Z08-01S	12	15.2	17.6	26	15.5	28.5	24.5	18.5	15.2	20.5	14.2	28
	1/4	KQ2Z08-02S					18.5	31.5	25.5					34
	3/8	KQ2Z08-03S	14		20.6	27	20.5	36.5	30					50
10	1/4	KQ2Z10-02S	14	18.5	20.6	29	19.5	35.5	29.5	21	18.5	31.8	22.6	46
	3/8	KQ2Z10-03S					20.5	36.5	30					54
12	3/8	KQ2Z12-03S	17	20.9	25.2	32.5	22	39	32.5	22	20.9	44.6	35.3	71
	1/2	KQ2Z12-04S					25	42	34					88

*Reference dimensions after R(PT) thread installation.
Note) øD1: max. diameter

Double branch universal male elbow: KQ2ZD Inch

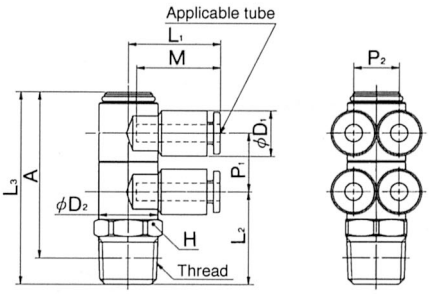


Applicable tube O.D. (inch)	Thread UNF NPT	Part No.	H (Hex.)	øD1	øD2	L1	L2	L3	A*	M	P1	P2	Weight (g)
1/8	1/8	KQ2ZD01-34S	14.29	9.6	13.4	20.5	18	41	37	15.5	13.4	9.6	2.5
5/32	1/8	KQ2ZD03-34S	14.29	10.4	13.4	21	18.5	41	37	16	13.4	10.4	3
3/16	1/8	KQ2ZD05-34S	14.29	11.4	13.4	21.5	18	41	37	16.5	13.4	11.4	3.5
1/4	1/8	KQ2ZD07-34S	14.29	13.2	13.4	21.5	18.5	41.5	37.5	17	13.8	13.2	4.6
	1/4	KQ2ZD07-35S					21.5	44.5	38.5				
	3/8	KQ2ZD07-36S	17.46				23.5	46.5	40.5				
5/16	1/4	KQ2ZD09-35S	19	15.2	17.6	26	24	51	45	18.5	15.9	15.2	6
	3/8	KQ2ZD09-36S					25	52	45.5				
	1/2	KQ2ZD09-37S	22.23				28.5	55.5	47.5				
3/8	1/4	KQ2ZD11-35S	22.23	17.9	20.6	28.5	26	58	52	21	19.2	17.9	7
	3/8	KQ2ZD11-36S					27	59	52.5				
	1/2	KQ2ZD11-37S					30	62	54				
1/2	3/8	KQ2ZD13-36S	25.4	21.7	27	33	32	66.5	60.5	22	22.3	21.7	9.6
	1/2	KQ2ZD13-37S					35	69.5	61.5				



Double branch universal male elbow: KQ2ZD Metric

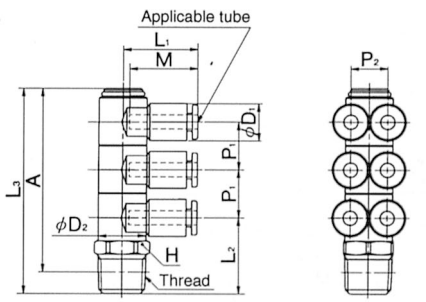
Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H (Hex.)	øD1	øD2	L1	L2	L3	A*	M	P1	P2	Weight (g)
4	1/8	KQ2ZD04-01S	14	10.4	13.4	21	18.5	41	37	16	13.4	10.4	35
	1/4	KQ2ZD04-02S					21.5	44	38				41
	3/8	KQ2ZD04-03S	17				23.5	46	40				54
6	1/8	KQ2ZD06-01S	14	12.8	13.4	22	18.5	41	37	17	13.4	12.8	40
	1/4	KQ2ZD06-02S					21.5	44	38				45
	3/8	KQ2ZD06-03S	17				23.5	46	40				59
8	1/8	KQ2ZD08-01S	19	15.2	17.6	26	21	48	44	18.5	15.9	15.2	78
	1/4	KQ2ZD08-02S					24	51	45				74
	3/8	KQ2ZD08-03S					25	52	45.5				83
	1/2	KQ2ZD08-04S	21				28.5	55.5	47.5				104
10	1/4	KQ2ZD10-02S	21	18.5	20.6	29	26.5	58	52	21	19.2	18.5	111
	3/8	KQ2ZD10-03S					27.5	59	53				
	1/2	KQ2ZD10-04S					30.5	62	54				128
12	1/4	KQ2ZD12-02S	26	20.9	25.2	32	28.5	64.5	58.5	22	21.6	20.9	178
	3/8	KQ2ZD12-03S					29.5	65.5	59				167
	1/2	KQ2ZD12-04S					32.5	68.5	60				179



*Reference dimensions after R(PT) thread installation.
Note) øD1: max. diameter

Triple branch universal male elbow: KQ2ZT Inch

Applicable tube O.D. (inch)	Thread UNF NPT	Part No.	H (Hex.)	øD1	øD2	L1	L2	L3	A*	M	P1	P2	Weight (g)
1/8	1/8	KQ2ZT01-34S	14.29	9.6	13.4	20.5	18	54.5	50.5	15.5	13.4	9.6	2.5
5/32	1/8	KQ2ZT03-34S	14.29	10.4	13.4	21	18.5	54.5	50.5	16	13.4	10.4	3
3/16	1/8	KQ2ZT05-34S	14.29	11.4	13.4	21.5	18	54.5	50.5	16.5	13.4	11.4	3.5
1/4	1/8	KQ2ZT07-34S	14.29	13.2	13.4	21.5	18.5	55.5	51.5	17	13.8	13.2	4.6
	1/4	KQ2ZT07-35S					21.5	58.5	52.5				
	3/8	KQ2ZT07-36S	17.46				23.5	60.5	54				
5/16	1/4	KQ2ZT09-35S	19	15.2	17.6	26	24	67	61	18.5	15.9	15.2	6
	3/8	KQ2ZT09-36S					25	68	61.5				
	1/2	KQ2ZT09-37S	22.23				28.5	71.5	63.5				
3/8	1/4	KQ2ZD11-35S	22.23	17.9	20.6	28.5	26	77.5	71.5	21	19.2	17.9	7
	3/8	KQ2ZT11-36S					27	78.5	72				
	1/2	KQ2ZT11-37S					30	81.5	73				
1/2	3/8	KQ2ZT13-36S	25.4	21.7	27	33	32	89	83	22	22.3	21.7	9.6
	1/2	KQ2ZT13-37S					35	92	84				

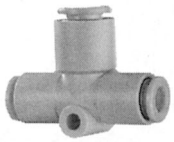


KQ2ZT Metric

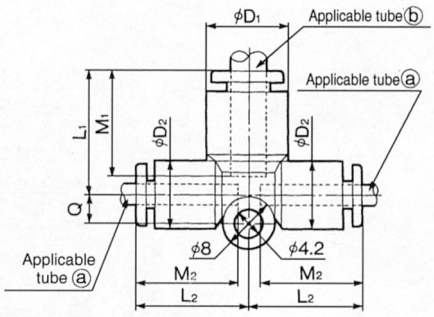
Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H (Hex.)	øD1	øD2	L1	L2	L3	A*	M	P1	P2	Weight (g)
4	1/8	KQ2ZT04-01S	14	10.4	13.4	21	18.5	54.5	50.5	16	13.4	10.4	27
	1/4	KQ2ZT04-02S					21.5	57.5	51.5				33
	3/8	KQ2ZT04-03S	17				23.5	59.5	53.5				46
6	1/8	KQ2ZT06-01S	14	12.8	13.4	22	18.5	54.5	50.5	17	13.4	12.8	30
	1/4	KQ2ZT06-02S					21.5	57.5	51.5				36
	3/8	KQ2ZT06-03S	17				23.5	59.5	53.5				49
8	1/8	KQ2ZT08-01S	19	15.2	17.6	26	21	64	60	18.5	15.9	15.2	59
	1/4	KQ2ZT08-02S					24	67	61				57
	3/8	KQ2ZT08-03S					25	68	61.5				65
	1/2	KQ2ZT08-04S	21				28.5	71.5	63.5				88
10	1/4	KQ2ZT10-02S	21	18.5	20.6	29	26.5	77.5	71.5	21	19.2	18.5	83
	3/8	KQ2ZT10-03S					27.5	78.5	72				85
	1/2	KQ2ZT10-04S					30.5	81.5	73.5				102
12	1/4	KQ2ZT12-02S	26	20.9	25.2	32	28.5	86	80	22	21.6	20.9	134
	3/8	KQ2ZT12-03S					29.5	87	80.5				130
	1/2	KQ2ZT12-04S					32.5	90	82				141

*Reference dimensions after R(PT) thread installation.
Note) øD1: max. diameter

Different dia. tee: KQ2T Inch



Applicable tube O.D. (inch) a	Applicable tube O.D. (inch) b	Part No.	øD	L1	L2	P	Q	M1	M2	Weight (g)
1/8	5/32	KQ2T01-03	10.4	18	18	10.4	9.7	15.5	16	2.5
	1/4	KQ2T01-07	13.2	38	21.5	13.2	12		17	
5/32	3/16	KQ2T03-05	11.4	36.5	20.5	11.4	10.6	16	16.5	3
	1/4	KQ2T03-07	13.2	38	21.5	13.2	12		17	
3/16	1/4	KQ2T05-07	13.2	38	21.5	13.2	12	16.5	17	3.5
1/4	5/16	KQ2T07-09	15.2	42.5	24.5	15.2	13.7	17	18.5	4.6
	3/8	KQ2T07-11	17.9	47	27.5	17.9	15.6		21	
5/16	3/8	KQ2T09-11	17.9	47	27.5	17.9	15.6	18.5	21	6
	1/2	KQ2T09-13	21.7	51	30	21.7	18.8		22	
3/8	1/2	KQ2T11-13	21.7	51.5	30.5	21.7	18.8	21	22	7

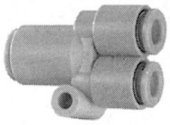


KQ2T Metric

Applicable tube O.D. (mm) ⓐ	Applicable tube O.D. (mm) ⓑ	Part No.	øD1	øD2	L1	L2	Q	M1	M2	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
3.2	4	KQ2T23-04	10.4	9.6	18	17.5	4.3	16	15.5	3.8	3.5	5
4	6	KQ2T04-06	12.8	10.4	19.5	18	4.5	17	16	7.1	6.5	6
6	8	KQ2T06-08	15.2	12.8	22.5	20	5.3	18.5	17	16.4	16.4	9
8	10	KQ2T08-10	18.5	15.2	26.5	23	6	21	18.5	36	27.2	14
10	12	KQ2T10-12	20.9	18.5	28.5	26.5	6.8	22	21	56	44.5	21
12	16	KQ2T12-16	26.5	26.5	34	39	10	25	22	108.5	92.2	88

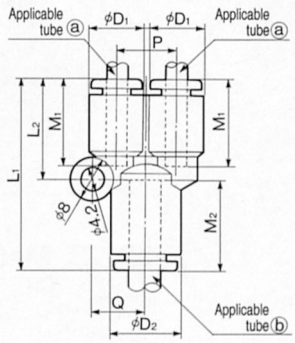
Note) øD1: max. diameter

Different dia. union "Y": KQ2U Inch



Applicable tube O.D. (inch) a	Applicable tube O.D. (inch) b	Part No.	øD	L	Q	M1	M2	Weight (g)
1/8	5/32	KQ2U01-03	10.4	18	4.5	16	15.5	2.5
	1/4	KQ2U01-07	13.2	20.5	5.3	17		
5/32	3/16	KQ2U03-05	11.4	19.5	4.8	16.5	16	3
	1/4	KQ2U03-07	13.2	20.5	5.3	17		
3/16	1/4	KQ2U05-07	13.2	20.5	5.3	17	16.5	3.5
1/4	5/16	KQ2U07-09	15.2	23	6	18.5	17	4.6
	3/8	KQ2U07-11	17.9	26	6.6	21		
5/16	3/8	KQ2U09-11	17.9	26	6.6	21	18.5	6
	1/2	KQ2U09-13	21.7	29	7.8	22		
3/8	1/2	KQ2U11-13	21.7	29	7.8	22	21	7

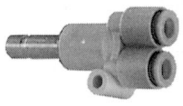
KQ2U Metric



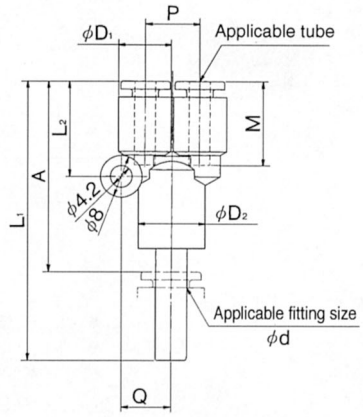
Applicable tube O.D. (mm) ⓐ	Applicable tube O.D. (mm) ⓑ	Part No.	øD1	øD2	L1	L2	P	Q	M1	M2	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
3.2	4	KQ2U23-04	9.6	10.4	33.5	17.5	9.6	9	15.5	16	3.2	2.7	5
4	6	KQ2U04-06	10.4	12.8	35	18	10.4	9.7	16	17	4.2	4.2	7
6	8	KQ2U06-08	12.8	15.2	39.5	20	12.8	11.7	17	18.5	13.4	13.4	12
8	10	KQ2U08-10	15.2	18.5	45	24.5	15.2	13.7	18.5	21	25.6	17.7	19
10	12	KQ2U10-12	18.5	20.9	49	27.5	18.5	16.1	21	22	40	28.4	27
12	16	KQ2U12-16	26.5	26.5	66.5	41.5	26.5	23	22	25	57.4	45.4	100

Note) øD1, øD2: max. diameter

Different dia. plug-in "Y": KQ2X Inch



Applicable tube O.D. (inch)	Applicable fitting size ød	Part No.	øD	L1	L2	A	P	Q	M	Weight (g)
1/8	5/32	KQ2X01-03	10.4	51.5	18	35.5	10.4	9.7	15.5	2.5
5/32	3/16	KQ2X03-05	11.4	56	20.5	39.5	11.4	10.6	16	3.5
3/16	1/4	KQ2X05-07	13.2	56.5	21.5	39.5	13.2	12	16.5	4.6
1/4	5/16	KQ2X07-09	15.2	64.5	24.5	46	15.2	13.7	17	6

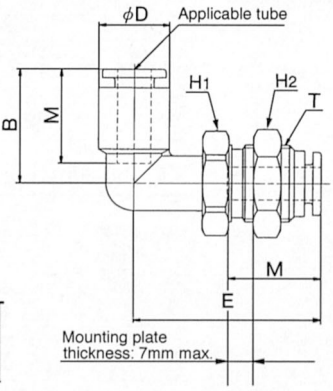


KQ2X Metric

Applicable tube O.D. (mm)	Applicable fitting size ød	Part No.	øD1	øD2	L1	L2	A	P	Q	M	Effective orifice (mm²)		Wt. (g)
											Nylon	Urethane	
4	6	KQ2X04-06	10.4	12.8	53.5	18.5	36.5	10.4	9.7	16	4.2	4.2	7
6	8	KQ2X06-08	12.8	15.2	61.5	20.5	43	12.8	11.7	17	13.4	13.4	19
8	10	KQ2X08-10	15.2	18.5	68.5	24.5	47.5	15.2	13.7	18.5	25.6	17.7	29
10	12	KQ2X10-12	18.5	20.9	73.5	27.5	51.5	18.5	16.1	21	40	28.4	42

Bulkhead male elbow: KQ2LE Inch

Applicable tube O.D. (inch)	Part No.	T	H1 (Hex.)	H2 (Hex.)	B	E	øD	Mounting Hole	M	Weight (g)
1/8	KQ2LE01-00	1/2-20UNF	17.46	17.46	17.5	31	9.6	13.5	15.5	2.5
5/32	KQ2LE03-00	1/2-20UNF	17.46	17.46	18	31	10.4	13.5	16	3
3/16	KQ2LE05-00	9/16-18UNF	17.46	17.46	19.5	34.5	11.4	15	16.5	3.5
1/4	KQ2LE07-00	9/16-18UNF	17.46	17.46	20.5	35	13.2	15	17	4.6
5/16	KQ2LE09-00	3/4-16UNF	22.23	22.23	23.5	38.5	15.2	20	18.5	6
3/8	KQ2LE11-00	7/8-14UNF	25.4	25.4	25.5	43	17.9	23	21	7
1/2	KQ2LE13-00	1-12UNF	28.6	28.6	28	46	21.7	26	22	9.6

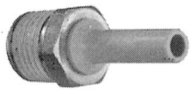


KQ2LE Metric

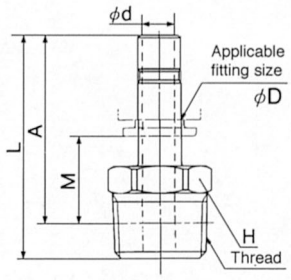
Applicable tube O.D. (mm)	Part No.	T	H1 (Hex.)	H2 (Hex.)	B	E	øD	Mounting hole	M	Effective orifice(mm²)		Weight (g)
										Nylon	Urethane	
4	KQ2LE04-00	M12×1	14	14	18.5	31	10.4	13	16	4.2	4.2	18
6	KQ2LE06-00	M14×1	17	17	20.5	34	12.8	15	17	11.4	11.4	25
8	KQ2LE08-00	M16×1	17	19	23.5	38.5	15.2	17	18.5	21.6	14.9	33
10	KQ2LE10-00	M20×1	22	24	26.5	43.5	18.5	21	21	35.2	25.0	63
12	KQ2LE12-00	M22×1	24	27	28.5	45.5	20.9	23	22	50.2	39.7	77

Note) øD: max. diameter

Adaptor: KQ2N Metric

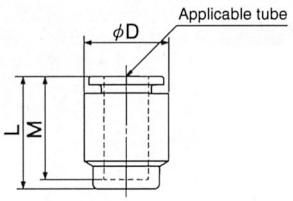


Applicable fitting size ød	Thread R(PT)	Part No.	H (Hex.)	L	A	M	ød	Weight (g)
4	M5×0.8	KQ2N04-M5	7	32	29	13	2.5	2
	1/8	KQ2N04-01S	10	34	30	14		6
6	M5×0.8	KQ2N06-M5	7	33	30	13	2.5	2
	1/8	KQ2N06-01S	10	35	31	14	4.5	5
	1/4	KQ2N06-02S	14	37.5	31.5	14.5		14
8	1/4	KQ2N08-02S	14	39	33	14.5	6	17
	3/8	KQ2N08-03S	17	41	34.5	16		30
10	3/8	KQ2N10-03S	17	46	39.5	18.5	7.5	31



Tube cap: KQ2C Inch

Applicable tube O.D. (inch)	Part No.	øD1	L	M
5/32	KQ2C03-00	10.4	17	16
1/4	KQ2C07-00	13.2	18	17
5/16	KQ2C09-00	15.2	20.5	18.5
3/8	KQ2C11-00	17.9	22.5	21



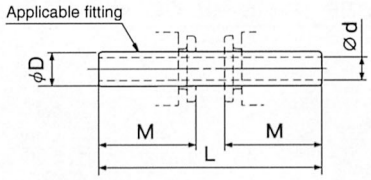
KQ2C Metric

Applicable tube O.D. (mm)	Part No.	øD	L	M	Weight (g)
4	KQ2C04-00	10.4	17	16	3
6	KQ2C06-00	12.8	18.5	17	3
8	KQ2C08-00	15.2	20.5	18.5	4
10	KQ2C10-00	18.5	23	21	6
12	KQ2C12-00	20.9	24	22	8
16	KQ2C16-00	26.5	28	25	13

Note) øD: max. diameter

Nipple: KQ2N Inch

Applicable tube O.D. (Inch)	Part No.	L	M	øD
1/8	KQ2N01-99	36	15.5	2.2
3/16	KQ2N05-99	38	16.5	3.5
1/4	KQ2N07-99	39	17	4.6
3/8	KQ2N11-99	49	21	7.5
1/2	KQ2N13-99	51	22	10

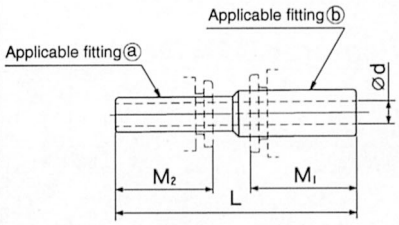


KQ2N Metric

Applicable fitting øD	Part No.	L	M	ød	Weight (g)
4	KQ2N04-99	37	16	2.5	1
6	KQ2N06-99	39	17	4	2
8	KQ2N08-99	43	18.5	6	2
10	KQ2N10-99	49	21	7.5	4
12	KQ2N12-99	52	22	9	20.6
16	KQ2N16-99	57	25	13	31

Reducer nipple: KQ2N Inch

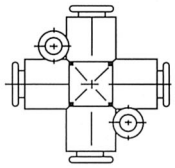
Applicable tube O.D. (inch)	Applicable fitting size ød (inch)	Part No.	L	M1	M2	ø d
1/8	5/32	KQ2N01-03	36.5	16	15.5	2.2
	3/16	KQ2N01-05	37	16.5		
5/32	3/16	KQ2N03-05	37.5	16.5	16	2.5
	1/4	KQ2N03-07	38	17		
3/16	1/4	KQ2N05-07	38.5	17	16.5	3.5
	5/16	KQ2N05-09	41	18.5		
1/4	5/16	KQ2N07-09	41.5	18.5	17	4.5
	3/8	KQ2N07-11	45	21		
5/16	3/8	KQ2N09-11	46.5	21	18.5	6
	1/2	KQ2N09-13	47.5	22		
3/8	1/2	KQ2N11-13	50	22	21	7



KQ2N Metric

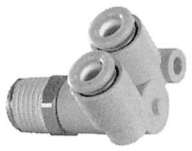
Applicable fitting		Part No.	L	M1	M2	ød	Weight (g)
ⓐ	ⓑ						
4	6	KQ2N04-06	38	17	16	2.5	2
6	8	KQ2N06-08	42	18.5	17	4	2
8	10	KQ2N08-10	47	21	18.5	6	13.2
10	12	KQ2N10-12	51	22	21	8	18.2
12	16	KQ2N12-16	55	25	22	9	29

Cross union:



Applicable tube O.D. (inch)	Part No.	øD	L	Q	M	Weight (g)
1/4	KQ2TW07-00	10.4	18	8.7	16	3
3/8	KQ2TW11-00	13.2	20.5	10.1	17	4.6
1/2	KQ2TW13-00	15.2	23	11.1	18.5	6
1/2	KQ2TW13-00	17.9	26	12.5	21	7
1/2	KQ2TW13-00	21.7	29	14.4	22	9.6

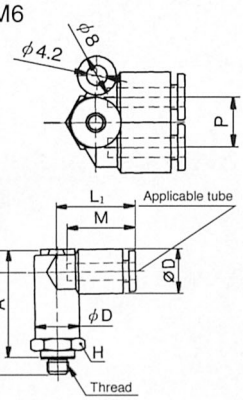
Branch union: KQ2LU Metric



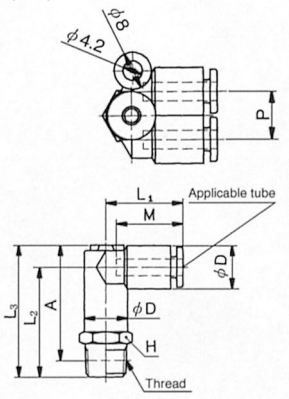
Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H (Hex.)	øD	L1	L2	L3	A*	M	P	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
4	M5×0.8	KQ2LU04-M5	11	10.4	18.5	24	29.5	25.5	16	10.4	4.3	4.3	10
	M6×1.0	KQ2LU04-M6				24.5	30						
	1/8	KQ2LU04-01S				26.5	32	27.5			6.0	6.0	12
	1/4	KQ2LU04-02S	14			30.5	36	30					21
6	M5×0.8	KQ2LU06-M5	13	12.8	21	26.5	33	29.5	17	12.8	4.3	4.3	14
	M6×1.0	KQ2LU06-M6				27	33.5						
	1/8	KQ2LU06-01S				29.5	36	32			13.9	13.9	16
	1/4	KQ2LU06-02S	14			33	39.5	33.5					23
	3/8	KQ2LU06-03S	17			35	41.5	35					36
8	1/8	KQ2LU08-01S	17	15.2	24	34	41.5	38	18.5	15.2	26.3	18.2	28
	1/4	KQ2LU08-02S				37	44.5	38.5					
	3/8	KQ2LU08-03S				38	45.5	39					36
10	1/4	KQ2LU10-02S	19	18.5	27	40	49.5	43.5	21	18.5	40.8	29.0	41
	3/8	KQ2LU10-03S				41	50.5	44					42
	1/2	KQ2LU10-04S	22			44.5	54	45.5					64
12	1/4	KQ2LU12-02S	22	20.9	29	42.5	53	47	22	20.9	57.2	45.2	57
	3/8	KQ2LU12-03S				43.5	54	47.5					58
	1/2	KQ2LU12-04S				46.5	57	49					65

∗ Reference dimensions after R(PT) thread installation.
Note) øD: max. diameter

M5, M6



R(PT)

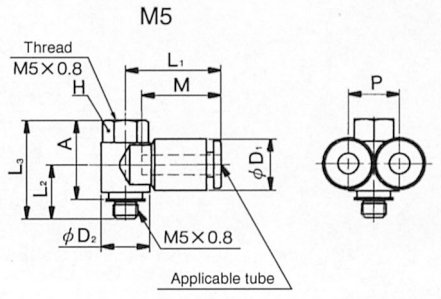


Branch universal female elbow: KQ2ZF Metric

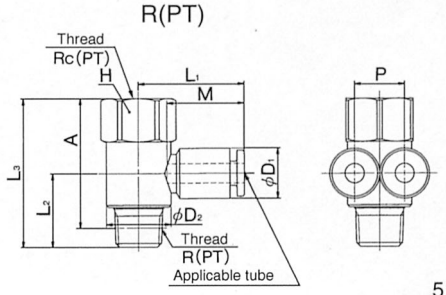
Applicable tube O.D. (mm)	Thread R(PT) Rc(PT)	Part No.	H (Hex.)	øD1	øD2	L1	L2	L3	A*	M	P	Weight (g)
4	M5×0.8	KQ2ZF04-M5	8	10.4	9.8	19.5	11	20	16.5	16	10.4	8
	1/8	KQ2ZF04-01S	14		13.4	21	15.5	29.5	25.5			21
6	1/8	KQ2ZF06-01S	14	12.8	13.4	22	15.5	29.5	25.5	17	12.8	22
	1/4	KQ2ZF06-02S	19		20.6	25.5	22	41	35			48
8	1/8	KQ2ZF08-01S	17	15.2	17.6	25.5	17	31	27	18.5	15.2	33
	1/4	KQ2ZF08-02S	19		20.6	27	22	41	35			50
10	1/4	KQ2ZF10-02S	19	18.5	20.6	29	22	41	35	21	18.5	54
	3/8	KQ2ZF10-03S	22		25.2	31.5	24.5	45.5	39			74
12	3/8	KQ2ZF12-03S	22	20.9	25.2	32.5	24.5	45.5	39	22	20.9	77
	1/2	KQ2ZF12-04S	24		27	33	25	50	42			101

∗ Reference dimensions after R(PT) thread installation.
Note) øD1: max. diameter

M5



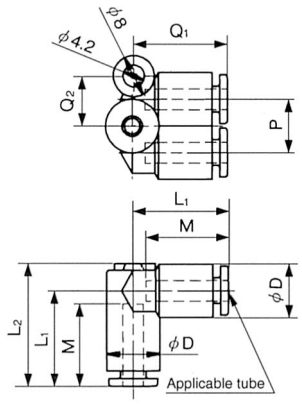
R(PT)



Branch union elbow: KQ2LU Metric

Applicable tube O.D. (mm)	Part No.	øD	L1	L2	Q1	Q2	M	P	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
4	KQ2LU04-00	10.4	18.5	24	18.5	10	16	10.4	6.0	6.0	7
6	KQ2LU06-00	12.8	21	27.5	20.5	12	17	12.8	13.9	13.9	9
8	KQ2LU08-00	15.2	24	32	24.5	14	18.5	15.2	26.3	18.2	16
10	KQ2LU10-00	18.5	27	36.5	28	16	21	18.5	40.8	29.0	25
12	KQ2LU12-00	20.9	29	40	30	18	22	20.9	57.2	45.2	32

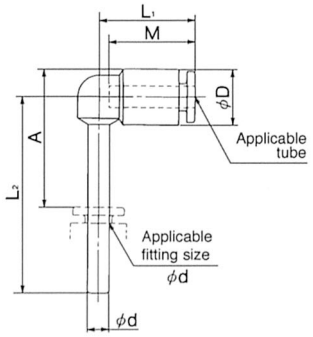
Note) øD: max. diameter



Extended plug-in elbow: KQ2W Metric

Applicable tube O.D. (mm)	Applicable fitting size ød	Part No.	øD	L1	L2	A	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
3.2	3.2	KQ2W23-99	9.6	17.5	35	24.5	15.5	3	2.5	2
4	4	KQ2W04-99	10.4	18	37	26	16	4.2	4.2	3
6	6	KQ2W06-99	12.8	20	41.5	31	17	11.4	11.4	4
8	8	KQ2W08-99	15.2	22.5	48	37	18.5	21.6	14.9	6
10	10	KQ2W10-99	18.5	25.5	55	43.5	21	35.2	25.0	9
12	12	KQ2W12-99	20.9	27	59.5	48	22	50.2	39.7	13

Note) øD: max. diameter



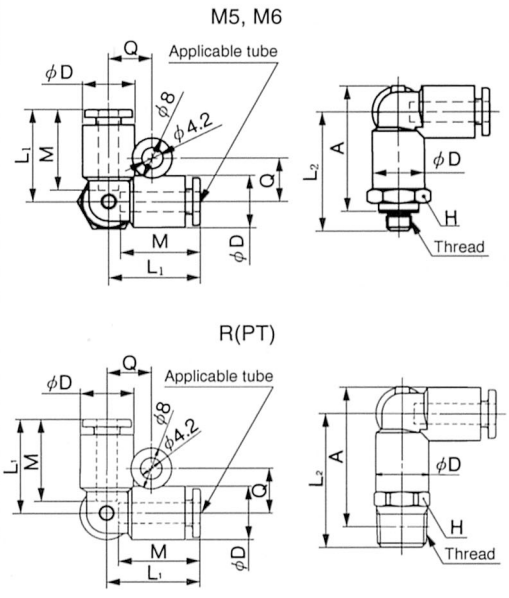
Delta union: KQ2D Metric

M5, M6

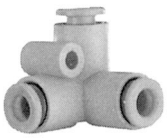
R(PT)

Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H (Hex.)	øD	L1	L2	A*	M	Q	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
4	M5×0.8	KQ2D04-M5	11	10.4	18.5	24	25.5	16	8.7	2.2	2.2	10
	M6×1.0	KQ2D04-M6				24.5				4.3	4.3	
	1/8	KQ2D04-01S				26.5	27.5			6.0	6.0	12
	1/4	KQ2D04-02S	14			30.5	29.5					21
6	M5×0.8	KQ2D06-M5	13	12.8	20.5	26	28.5	17	9.9	4.3	4.3	13
	M6×1.0	KQ2D06-M6				26.5						
	1/8	KQ2D06-01S				29	31.5			13.9	13.9	15
	1/4	KQ2D06-02S	14			32.5	33					22
	3/8	KQ2D06-03S	17			34.5	34.5					35
8	1/8	KQ2D08-01S	17	15.2	23.5	33.5	37	18.5	11.1	26.3	18.2	27
	1/4	KQ2D08-02S				36.5	38					
	3/8	KQ2D08-03S				37.5	38.5					36
10	1/4	KQ2D10-02S	19	18.5	26.5	39.5	43	21	12.8	40.8	29.0	39
	3/8	KQ2D10-03S				40.5	43.5					40
	1/2	KQ2D10-04S	22			44	45					62
12	1/4	KQ2D12-02S	22	20.9	28.5	42	46.5	22	13.9	57.2	45.2	55
	3/8	KQ2D12-03S				43	47					56
	1/2	KQ2D12-04S				46	48.5					63

*Reference dimensions after R(PT) thread installation.
Note) øD: max. diameter

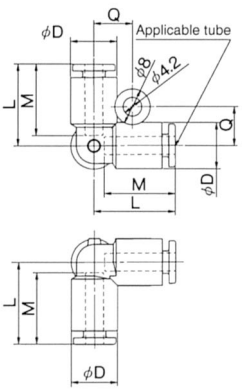


Delta: KQ2D Metric

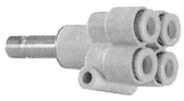


Applicable tube O.D. (mm)	Part No.	øD	L	Q	M	Effective orifice(mm²)		Weight (g)
						Nylon	Urethane	
4	KQ2D04-00	10.4	18.5	8.7	16	6.0	6.0	6
6	KQ2D06-00	12.8	20.5	9.9	17	13.9	13.9	8
8	KQ2D08-00	15.2	23.5	11.1	18.5	26.3	18.2	12
10	KQ2D10-00	18.5	26.5	12.8	21	40.8	29.0	19
12	KQ2D12-00	20.9	28.5	13.9	22	57.2	45.2	24

Note) øD: max. diameter

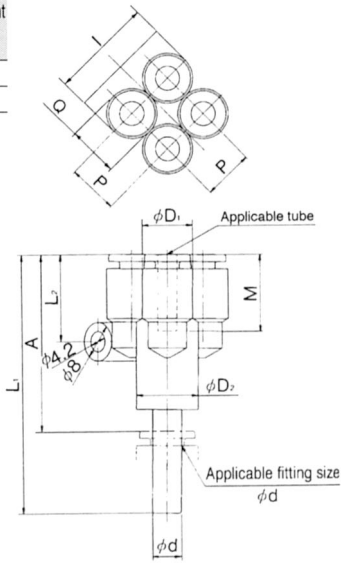


Double plug-in "Y": KQ2XD Metric

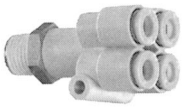


Applicable tube O.D. (mm)	Applicable fitting size ød	Part No.	øD1	øD2	L1	L2	I	Q	A	P	M	Effective orifice(mm²)		Weight (g)
												Nylon	Urethane	
4	6	KQ2XD04-06	10.4	12.8	54	18.2	21	9.7	37	10.4	16	4.2	4.2	11
6	8	KQ2XD06-08	12.8	15.2	62.5	20.3	26	11.7	44	12.8	17	13.4	13.4	25

Note) øD1: max. diameter

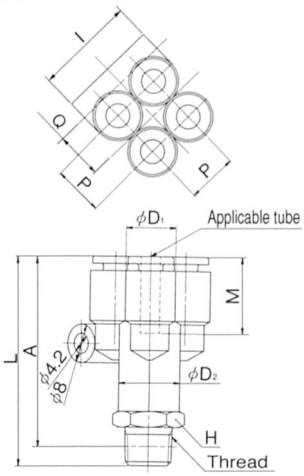


Delta branch: KQ2UD Metric

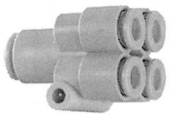


Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H (Hex.)	øD1	øD2	L	I	A*	Q	M	P	Effective orifice(mm²)		Weight (g)
												Nylon	Urethane	
4	1/8	KQ2UD04-01S	13	10.4	12.8	43.5	21	39.5	9.7	16	10.4	4.2	4.2	18
	1/4	KQ2UD04-02S	14			47		41						26
6	1/8	KQ2UD06-01S	17	12.8	15.2	50.5	26	46.5	11.7	17	12.8	13.4	13.4	31
	1/4	KQ2UD06-02S				53.5		47.5						

*Reference dimensions after R(PT) thread installation.
Note) øD1: max. diameter

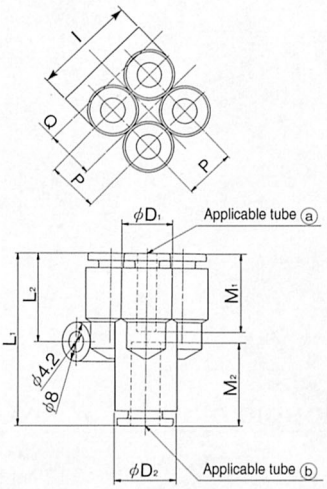


Different dia. double union "Y": KQ2UD Metric



Applicable tube O.D. (mm) ⓐ	Applicable tube O.D. (mm) ⓑ	Part No.	øD1	øD2	L1	L2	P	I	Q	M1	M2	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
4	6	KQ2UD04-06	10.4	12.8	35.5	18.2	10.4	21	9.7	16	17	4.2	4.2	11
6	8	KQ2UD06-08	12.8	15.2	40.5	20.3	12.8	26	11.7	17	18.5	13.4	13.4	19

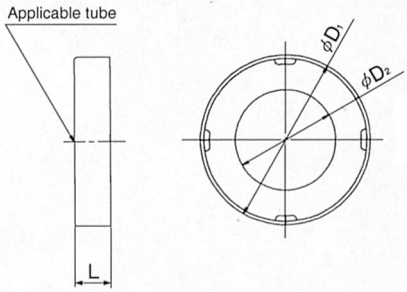
Note) øD1, øD2: max. diameter



Color cap: KQ2C Metric

Applicable tube O.D. (mm)	Part No.	øD1	øD2	L	Weight (g)	Note
4	KQ2C-04 □	10.1	5.2	2.9	0.1	
4	KQ2C-04A-□	8.5	5	2.2	0.1	KQH, KQ2H04-M5, M6 KQS, KQ2S04-M5, M6
4	KQ2C-04B-□	9.7	5	2.2	0.1	KQL, KQ2L04-M5, M6 KQT, KQ2T04-M5, M6 KQY, KQ2Y04-M5, M6
6	KQ2C-06□	12.1	7.2	2.9	0.1	
6	KQ2C-06A-□	10.5	7	2.2	0.1	KQH, KQ2H06-M5, M6 KQS, KQ2S06-M5, M6
6	KQ2C-06B-□	12.0	7	2.2	0.1	KQL, KQ2L06-M5, M6 KQT, KQ2T06-M5, M6 KQY, KQ2Y06-M5, M6
8	KQ2C-08□	14.1	9.2	2.9	0.1	
10	KQ2C-10□	17.1	11.2	2.9	0.2	
12	KQ2C-12□	19.1	13.2	2.9	0.2	
16	KQ2C-16□	26.3	17.2	3.9	0.3	

□→ B(Black), R(Red), YR(Orange), BR(Brown), Y(Yellow)
G(Green), CB(Sky Blue), W(White)



Made to Order

Series KQ2 Consult SMC with regard to detailed specifications, dimensions and delivery.

❶ Oil-less applications —— Vaseline is used as lubricant.

For use in oil-less applications, for example, in paint air lines.

Specification —— Same as KQ2 series.
Dimension —— Same as KQ2 series.
How to Order —— Add "**-X12**" at the end of the standard part number. (Example, KQ2H 06-02-X12)

❷ Stainless steel One-touch fittings

For use in highiy corrosive atmospheres where brass is not acceptable.

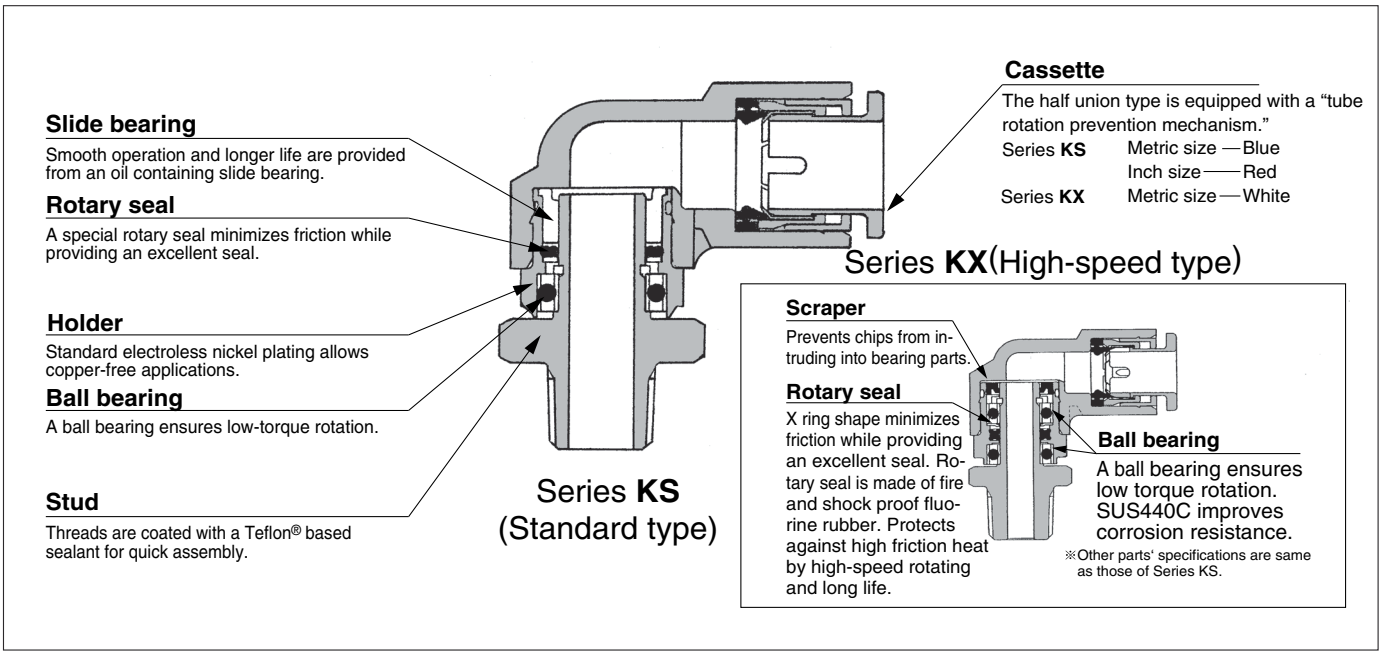
Specification —— Same as KQ2 series.
Dimension —— Same as KQ2 series.
(Some may be different, consult SMC)

Materials in each part

Body *	SUS□, PBT
Stud *	SUS□ (Thread portion)
Chuck	SUS304
Guide*	SUS□, POM
Collet, release bushing	POM
Packing, O-ring	NBR

* Every one of SUS303, SUS304 and SUS316 is possible to use.

How to Order —— Consult SMC.



Low-torque rotation type Rotary One-touch fittings

Applicable to use for oscillating and rotating sections in robots.

Brass parts are all electroless nickel plating.

Thread sealant is standard.

Applicable Tube

Tube material		Nylon, Soft nylon, Polyurethane
Tube O.D.	Inch	ø5/32, ø1/4, ø5/16, ø3/8
	Metric	ø4, ø6, ø8, ø10, ø12

Note) KS Inch/Metric, KX Metric only. Be careful about the max. operating pressure for Soft nylon and Polyurethane.

Specifications

Operating fluid	Air
Max. operating pressure	145psi (1.0MPa)
Max. operating vacuum pressure	1.3KPa (10Torr~)
Proof pressure	435psi (3.0MPa)
Ambient and fluid temperature	32 to 140°F (0 to 60°C)
Thread	JIS B 0203, JIS B 0205

Rotating Torque/Permissible Number of Rotations

Applicable tube O.D.		ø5/32"/ø4	ø1/4"/ø6	ø5/16"/ø8	ø3/8"/ø10	ø12
Rotating torque in-lbf (Nm)NOTE 1)		0.053 (0.006)	0.106 (0.012)	0.124 (0.014)	0.177 (0.020)	0.195 (0.022)
Permissible number of rotations	Series KS	500	500	400	300	250
	Series KX	1500	1200	1200	1000	1000

Note) Value under pressure 73psi (0.5MPa).

Principal Element Materials

Principal element	Series **KS**	Series **KX**
Body	PBT	
Stud, Holder, Guide	C3604BD (With electroless nickel plating)	
Chuck, Retainer	Stainless steel (SUS304) Note)	
Collet, Release button, Retaining ring	Polyacetal	
O-ring, Packing	NBR	
Rotary seal	NBR	FPM
Slide bearing	Oil-containing polyacetal	—
Scraper	—	NBR
Ball bearing	Bearing steel	Stainless steel (SUS440C)
Gasket	Stainless steel (SUS304), NBR	

Note) Retainer(C)of KX series: C3604BD (with electroless nickel plating)

Series KS/Series KX Inch

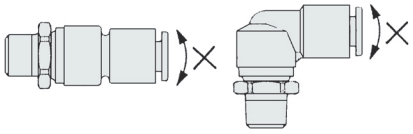
Type	Connection thread	Applicable tube O.D.(mm) ø5/32"	ø1/4"	ø5/16"	ø3/8"
Male connector **KSH** 	10-32UNF	●			
	NPT1/8	●	●	●	
	NPT1/4		●	●	●
	NPT3/8				●
Male elbow **KSL** 	10-32UNF	●			
	NPT1/8	●	●	●	
	NPT1/4		●	●	●
	NPT3/8				●

Series KS/Series KX Metric

Type	Connection thread	Applicable tube O.D.(mm) ø4	ø6	ø8	ø10	ø12
Male connector **KSH** **KXH** 	M5×0.8	●	●			
	M6×1.0	●	●			
	R(PT) 1/8	●	●	●		
	R(PT) 1/4		●	●	●	
	R(PT) 3/8			●	●	●
	R(PT) 1/2				●	●
Male elbow **KSL** **KXL** 	M5×0.8	●	●			
	M6×1.0	●	●			
	R(PT) 1/8	●	●	●		
	R(PT) 1/4		●	●	●	
	R(PT) 3/8			●	●	●
	R(PT) 1/2				●	●

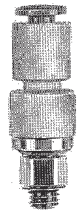
Precautions

Minimize the load shown below to protect the ball bearing. A flexible polyurethane tube is recommended.



Male connector: KSH Inch (Standard)

UNF, M5, M6

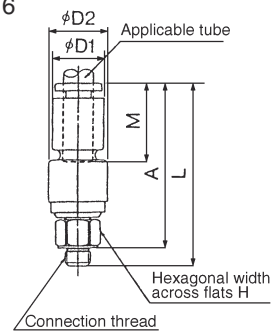


NPT R(PT)

Applicable tube O.D. (inch)	Thread UNF NPT	Part No.	H (Hex.)	D1	D2	L	A*	M	Min. hole dia.	Effective orifice (mm²) Nylon	Effective orifice (mm²) Urethane	Weight (g)
5/32	10-32 UNF	KSH03-32	8	10.4	12	36.5	33	16	2.5	4.0	4.0	9
	1/8	KSH03-34S	12.7			38.5	34.5					14
1/4	1/8	KSH07-34S	14.29	13.2	14	39.5	35.5	17	4	13.4	10.4	17
	1/4	KSH07-35S				42.5	36.5					23
5/16	1/8	KSH09-34S	17.46	15.2	17	44	40	18.5	6	26.1	18.0	23
	1/4	KSH09-35S				47	41					29
3/8	1/4	KSH11-35S	22.23	17.9	22	54	48	21	7	36.3	29.5	55
	3/8	KSH11-36S				55	48.5					63

∗ Reference dimensions after NPT thread installation.

10-32 UNF, M5, M6

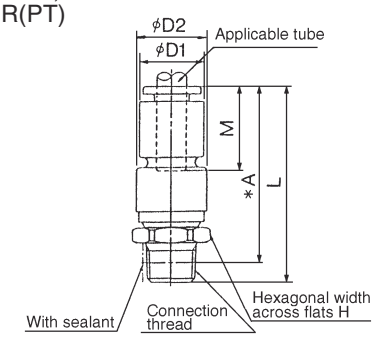


KSH Metric (Standard)

Applicable tube O.D. (mm)	Connection thread R(PT)	Part No.	H (Hex.)	D1	D2	L	A	M	Min. hole dia.	Effective orifice (mm²) Nylon	Effective orifice (mm²) Urethane	Weight (g)
4	M5×0.8	KSH04-M5	8	10.4	12	36.5	33	16	2.5	4.0	4.0	9
	M6×1.0	KSH04-M6				37						
	1/8	KSH04-01S	12			38	34					14
6	M5×0.8	KSH06-M5	8	12.8	14	37.5	33.5	17	2.5	4.0	4.0	12
	M6×1.0	KSH06-M6				38	34		3	5.6	5.6	
	1/8	KSH06-01S	14			39.5	35.5		4	13.4	10.4	17
	1/4	KSH06-02S				42.5	36.5					23
8	1/8	KSH08-01S	17	15.2	17	44	40	18.5	6	26.1	18.0	23
	1/4	KSH08-02S				47	41					29
	3/8	KSH08-03S				48	41.5					37
10	1/4	KSH10-02S	22	18.5	22	54	48	21	7	36.3	29.5	55
	3/8	KSH10-03S				55	48.5					63
	1/2	KSH10-04S				57.5	49.5					81
12	3/8	KSH12-03S	24	20.9	24	57	50.5	22	8	46.1	46.1	75
	1/2	KSH12-04S				60	52					92

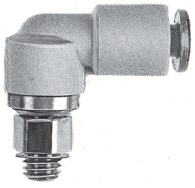
∗ Reference dimensions after R(PT) thread installation.

NPT, R(PT)

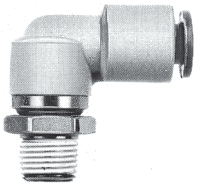


Male elbow: KSL Inch (Standard type)

UNF



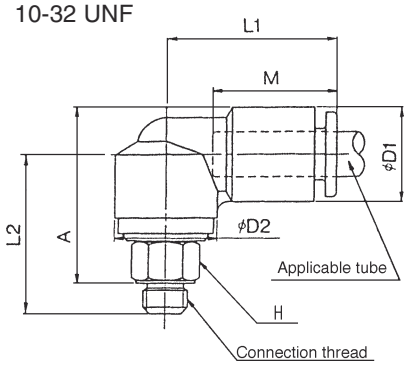
NPT



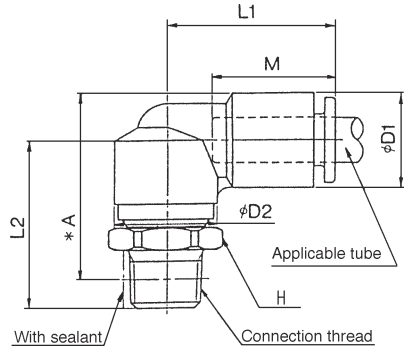
Applicable tube O.D. (inch)	Thread UNF NPT	Part No.	H (Hex.)	D1	D2	L1	L2	A*	M	Min. hole dia.	Effective orifice (mm²) Nylon	Effective orifice (mm²) Urethane	Weight (g)
5/32	10-32 UNF	KSL03-32	8	10.4	12	21	20.5	22	16	2.5	3.5	3.5	9
	1/8	KSL03-34S	12.7				22	23.5					14
1/4	1/8	KSL07-34S	14.29	13.2	14	23.5	23	25.5	17	4	8.6	8.6	17
	1/4	KSL07-35S					26	26.5					23
5/16	1/8	KSL09-34S	17.46	15.2	17	26	26.5	30	18.5	6	21.6	14.9	23
	1/4	KSL09-35S					29.5	31					29
3/8	1/4	KSL11-35S	22.23	17.9	22	31.5	34	37	21	7	30.5	25.0	56
	3/8	KSL11-36S					35	38					64

∗ Reference dimensions after NPT thread installation.

10-32 UNF

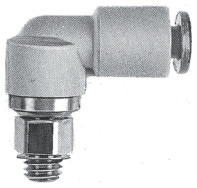


NPT

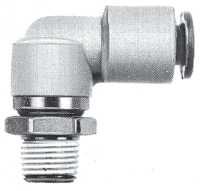


Male elbow: KSL Metric (Standard type)

M5, M6



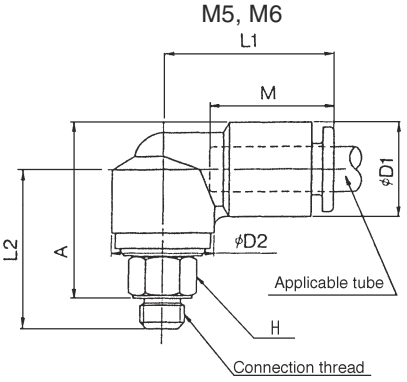
R(PT)



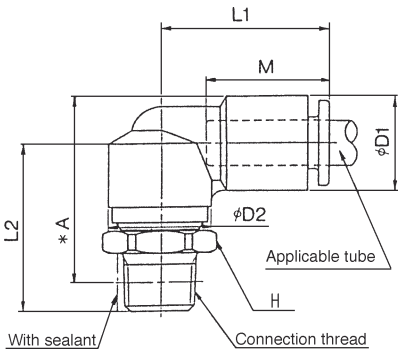
Applicable tube O.D.(mm)	Connection thread R(PT)	Part No.	H (Hex.)	D1	D2	L1	L2	A	M	Min. hole dia.	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
4	M5×0.8	KSL04-M5	8	10.4	12	21	20.5	22	16	2.5	3.5	3.5	9
	M6×1.0	KSL04-M6					21						
	1/8	KSL04-01S	12				22	23.5					14
6	M5×0.8	KSL06-M5	8	12.8	14	23	21	23.5	17	2.5	3.5	3.5	12
	M6×1.0	KSL06-M6					21.5	24		3	5.0	5.0	
	1/8	KSL06-01S	14				23	25.5		4	8.6	8.6	17
	1/4	KSL06-02S					26	26.5					23
8	1/8	KSL08-01S	17	15.2	17	26	26.5	30	18.5	6	21.6	14.9	23
	1/4	KSL08-02S					29.5	31					29
	3/8	KSL08-03S					31	32					38
10	1/4	KSL10-02S	22	18.5	22	31.5	34	37.5	21	7	30.5	25.0	56
	3/8	KSL10-03S					35	38					64
	1/2	KSL10-04S					38	39.5					82
12	3/8	KSL12-03S	24	20.9	24	34	36.5	40.5	22	8	35.1	35.1	76
	1/2	KSL12-04S					39.5	42					93

∗Reference dimensions after R(PT) thread installation.

M5, M6



R(PT)



Male connector: KXH (High-speed type)

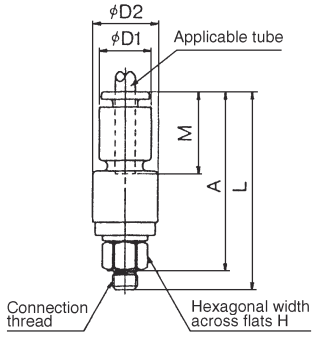
M5, M6

R(PT)

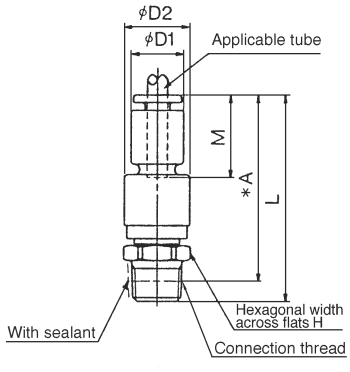
Applicable tube O.D.(mm)	Connection thread R(PT)	Part No.	H (Hex.)	D1	D2	L	A	M	Min. hole dia.	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
4	M5×0.8	KXH04-M5	8	10.4	13	38.5	35	16	2.5	4.0	4.0	11
	M6×1.0	KXH04-M6				39						
	1/8	KXH04-01S	12			40	36					16
6	M5×0.8	KXH06-M5	8	12.8	15	39.5	36	17	2.5	4.0	4.0	15
	M6×1.0	KXH06-M6				40			3	5.6	5.6	
	1/8	KXH06-01S	14			42	38		4	13.4	10.4	20
	1/4	KXH06-02S				45	39					26
8	1/8	KXH08-01S	17	15.2	18	46	42	18.5	6	26.1	18.0	28
	1/4	KXH08-02S				49	43					34
	3/8	KXH08-03S				50	44					42
10	1/4	KXH10-02S	22	18.5	23.5	58	52	21	7	36.3	29.5	68
	3/8	KXH10-03S				59						76
	1/2	KXH10-04S				62	53					94
12	3/8	KXH12-03S	24	20.9	26	60	54	22	8	46.1	46.1	88
	1/2	KXH12-04S				63	55					105

∗Reference dimensions after R(PT) thread installation.

M5, M6

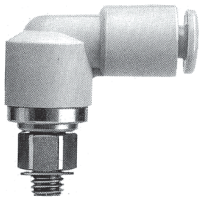


R(PT)

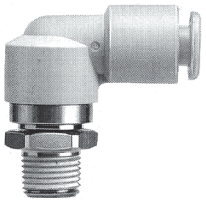


Male elbow: KXL (High-speed type)

M5, M6



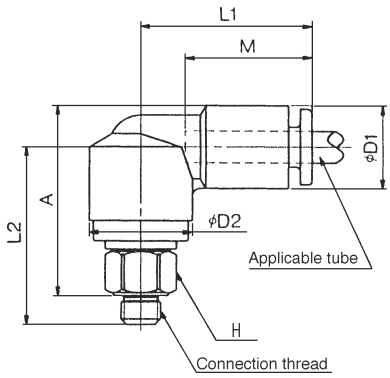
R(PT)



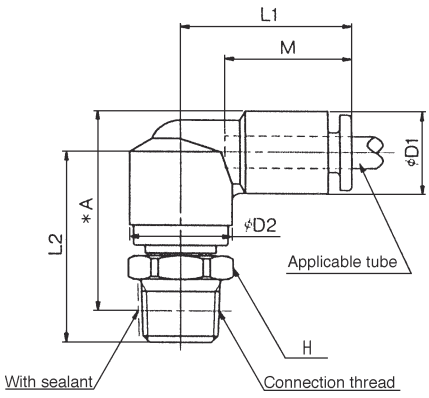
Applicable tube O.D.(mm)	Connection thread R(PT)	Part No.	H (Hex.)	D1	D2	L1	L2	A	M	Min. hole dia.	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
4	M5×0.8	KXL04-M5	8	10.4	13	22	22.5	24	16	2.5	3.5	3.5	11
	M6×1.0	KXL04-M6					23						
	1/8	KXL04-01S	12				24	25					16
6	M5×0.8	KXL06-M5	8	12.8	15	24	23.5	26	17	2.5	3.5	3.5	15
	M6×1.0	KXL06-M6					24			3	5.0	5.0	
	1/8	KXL06-01S	14				25	28		4	8.6	8.6	20
	1/4	KXL06-02S					28	29					26
8	1/8	KXL08-01S	17	15.2	18	27	29	32	18.5	6	21.6	14.9	28
	1/4	KXL08-02S					32	33					34
	3/8	KXL08-03S					33	34					43
10	1/4	KXL10-02S	22	18.5	23.5	32	38	42	21	7	30.5	25.0	69
	3/8	KXL10-03S					39						77
	1/2	KXL10-04S					42	43					95
12	3/8	KXL12-03S	24	20.9	26	35	40	44	22	8	35.1	35.1	89
	1/2	KXL12-04S					43	45					106

∗Reference dimensions after R(PT) thread installation.

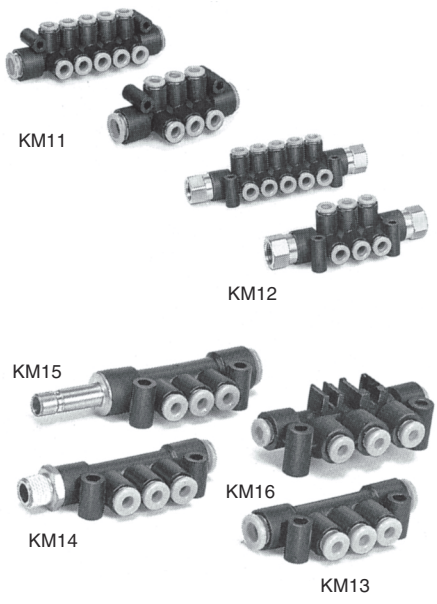
M5, M6



R(PT)



Compact piping.
Many varieties (40 types) available.
One-touch fittings give the most efficient operation.



Model

Model	Porting		Number of A Port	B Port size		A Port size					
	A Port	B Port		Inch ■	Metric ●	ø5/32"	ø4"	ø1/4"	ø6"	ø5/16"	ø8"
KM11	One-touch fitting	One-touch fitting	6, 10	ø5/16	ø8	■	●				
				ø3/8	ø10			■	●		
				ø1/2	ø12					■	●
KM12	One-touch fitting	NPT thread	6, 10	NPT1/4	Rc(PT) 1/4	■	●	■	●		
		Rc(PT) Female thread		NPT 3/8	Rc(PT) 3/8					■	●
KM13	One-touch fitting	One-touch fitting	3	—	ø6		●				
				—	ø8		●		●		
				—	ø10				●		●
KM14	One-touch fitting	One-touch fitting R(PT) male thread	3	—	ø6,R(PT) 1/8		●				
				—	ø6,R(PT) 1/4		●				
				—	ø6,R(PT) 3/8		●				
				—	ø6,R(PT) 1/8		●		●		
				—	ø6,R(PT) 1/4		●		●		
				—	ø6,R(PT) 3/8		●		●		
				—	ø6,R(PT) 1/4				●		●
				—	ø6,R(PT) 3/8				●		●
				—	ø6,R(PT) 1/4				●		●
KM15	One-touch fitting	One-touch fitting Rod	3	—	ø6		●				
				—	ø8		●		●		
				—	ø10				●		●
KM16	One-touch fitting	One-touch fitting Rod	3	—	ø4		●				
				—	ø6		●		●		

Applicable Tube

Tube material		Nylon, Soft nylon, Polyurethane
Tube O.D.	Inch	ø5/32, ø1/4, ø5/16, ø3/8, ø1/2
	Metric	ø4, ø6, ø8, ø10, ø12

Specifications

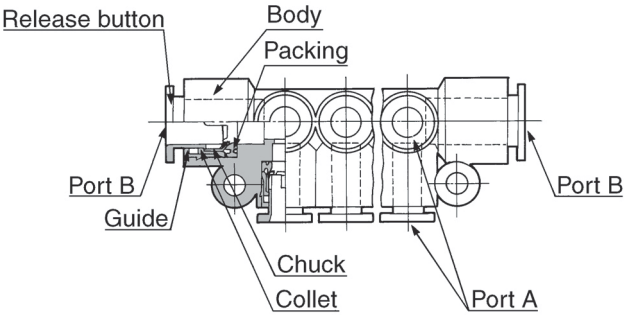
Model	KM11	KM12	KM13	KM14	KM15	KM16
Fluid	Air					
Max. operating pressure	145psi {1.0MPa}					
Proof pressure	435psi {3.0MPa}					
Ambient and fluid temperature	32 to 140°F {0 to 60°C}					
Thread	–	JIS B0203 (Taper pipe thread)	—	JIS B0203 (Taper pipe thread)	—	—
Accessories	None	Hexagon socket head blank plug with sealant:1pc.	None	None	None	None

Principal Element Material

Model	KM11	KM12	KM13	KM14	KM15	KM16
Body	PBT					
Stud	—	C3604BD	—	C3604BD	C3604BD·PBT	—
Chuck	Stainless steel (SUS304)					
Guide	C3604BD					
Collet, release button	Polyacetal (POM)					
Packing, O-ring	NBR					

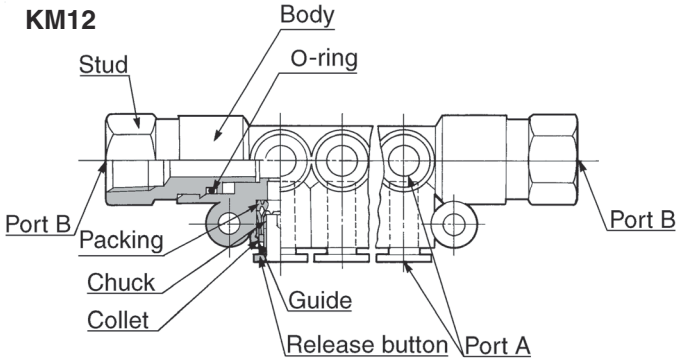
Construction

KM11



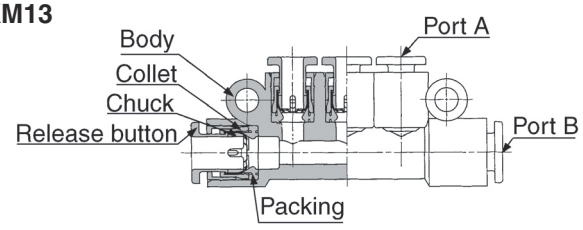
Port A: One-touch fitting
Port B: One-touch fitting

KM12



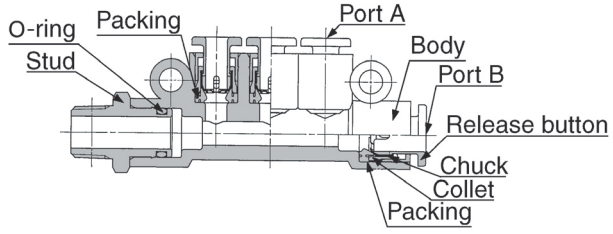
Port A: One-touch fitting
Port B: NPT or Rc (PT) female thread

KM13



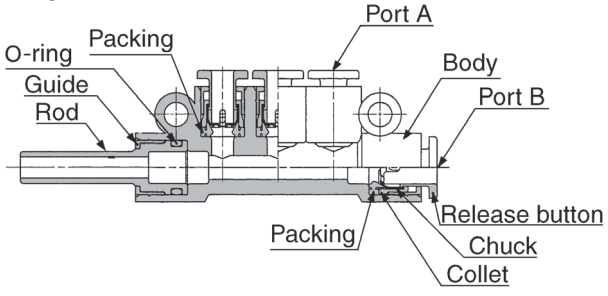
Port A: One-touch fitting
Port B: One-touch fitting

KM14



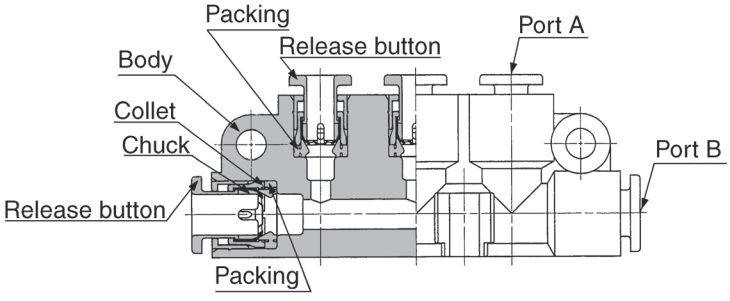
Port A: One-touch fitting
Port B: One-touch fitting, R(PT) male thread

KM15



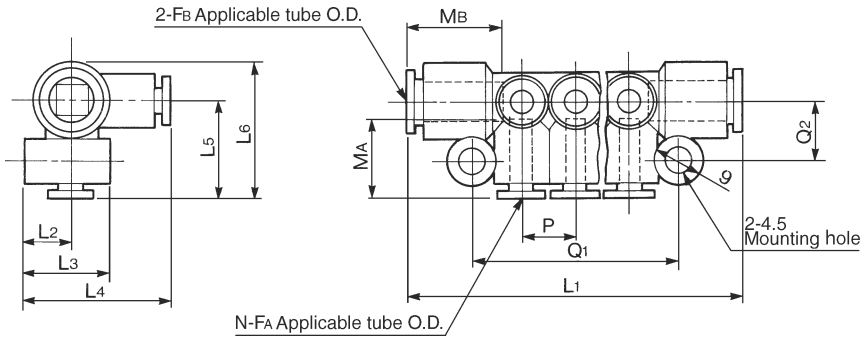
Port A: One-touch fitting
Port B: One-touch fitting
stud

KM16



Port A: One-touch fitting
Port B: One-touch fitting

KM11/Dimensions



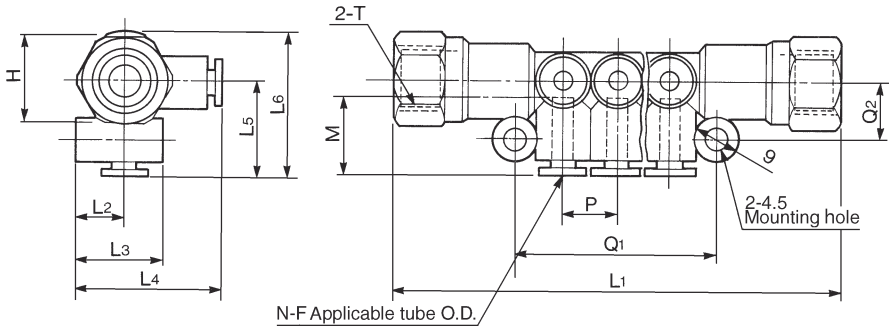
Inch

Applicable tube O.D. (inch)		Part No.	N	L1	L2	L3	L4	L5	L6	P	Q1	Q2	MA	MB	Port B Min. port size	Weight (g)
FA	FB															
5/32	5/16	**KM11-03-09-6**	6	65	10	18	29.5	19.5	27	10.6	40	12	16	18.5	6	22
		KM11-03-09-10	10	86							61.5					30
1/4	3/8	**KM11-07-11-6**	6	77.8	10	19.5	31.5	21.5	30.5	13.2	48	13	17	21	7	32
		KM11-07-11-10	10	104							73.5					44
5/16	1/2	**KM11-09-13-6**	6	85	12.7	23.7	37.7	25	35.9	15.2	52.8	15	18.5	22	9.5	44
		KM11-09-13-10	10	115							83					62

Metric

Applicable tube O.D.(mm)		Part No.	N	L1	L2	L3	L4	L5	L6	P	Q1	Q2	MA	MB	Port B min. port size	Weight (g)
FA	FB															
4	**8**	**KM11-04-08-6**	6	65	10	18	29.5	19.5	27	10.6	40	12	16	18.5	6	22
		KM11-04-08-10	10	86							61.5					30
6	**10**	**KM11-06-10-6**	6	76	10	19.5	31.5	21.5	31	13	47	13.5	17	21	7.5	32
		KM11-06-10-10	10	102							73					44
8	**12**	**KM11-08-12-6**	6	85	11.5	22.5	35.5	24	34.5	15.5	55	14.7	18.5	22	9	44
		KM11-08-12-10	10	116							86					62

KM12/Dimensions



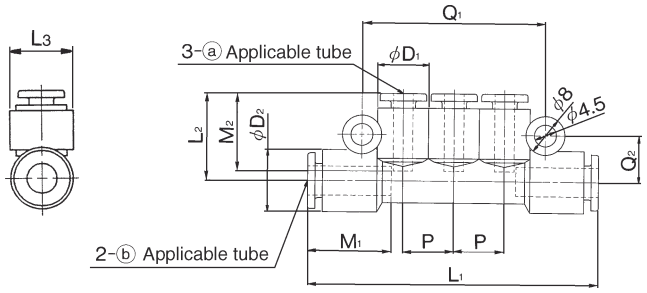
Inch

Applicable tube O.D. F (inch)	Thead NPT T	Part No.	N	H (Hex.)	L1	L2	L3	L4	L5	L6	P	Q1	Q2	M	Port B Min. port size	Weight (g)
5/32	1/4	**KM12-03-35-6**	6	17.46	87	10	18	29.5	19.5	29	10.6	40	12	16	6	67
		KM12-03-35-10	10		110							61.5				75
1/4	1/4	**KM12-07-35-6**	6	17.46	95	10	19.5	31.5	21.5	31.25	13.2	48	13	17	7	84
		KM12-07-35-10	10		121							73.5				96
5/16	3/8	**KM12-09-36-6**	6	22.22	102	12.7	23.7	37.7	25	37.5	15.2	52.8	15	18.5	9.5	100
		KM12-09-36-10	10		132							83				117

Metric

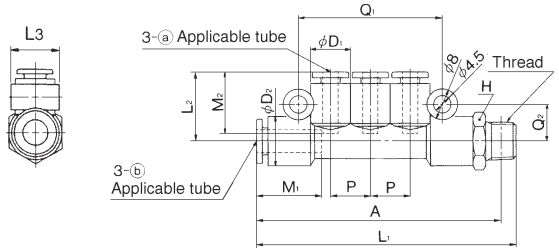
Applicable tube O.D. F(mm)	Thread Rc(PT) T	Part No.	N	H (Hex.)	L1	L2	L3	L4	L5	L6	P	Q1	Q2	M	Port B min. port size	Weight (g)
4	1/4	**KM12-04-02-6**	6	17	89	10	18	29.5	19.5	29	10.6	40	12	16	6	67
		KM12-04-02-10	10		110							61.5				75
6	1/4	**KM12-06-02-6**	6	17	99	10	19.5	31.5	21.5	31	13	47	13.5	17	7.5	84
		KM12-06-02-10	10		125							73				96
8	3/8	**KM12-08-03-6**	6	19	108	11.5	22.5	35.5	24	34.5	15.5	55	14.7	18.5	9	100
		KM12-08-03-10	10		139							86				117

KM13/Dimensions



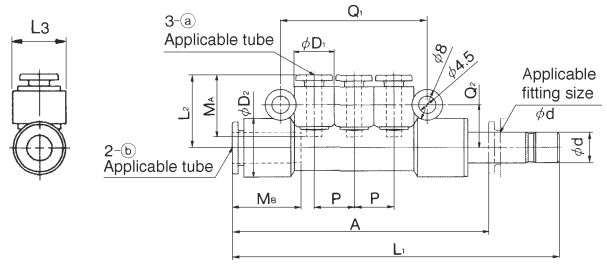
Applicable tube O.D.(mm) ⓐ	Applicable tube O.D.(mm) ⓑ	Part No.	øD1	øD2	L1	L2	L3	P	Q1	Q2	M1	M2	Port B min. port size	Weight (g)
4	6	KM13-04-06-3	10.4	12.8	60	18	13	10.4	38.2	9.9	17	16	4.5	13
	8	KM13-04-08-3		15.2	63.5	19	15.5			11.1	18.5		6	16
6	8	KM13-06-08-3	12.8	15.2	70.5	20	15.5	12.8	45.4	11.1	18.5	17	6	18
	10	KM13-06-10-3		18.5	74.5	21	19			12.8	21		7.5	23
8	10	KM13-08-10-3	15.2	18.5	81.5	22.5	19	15.2	52.6	12.8	21	18.5	7.5	27

KM14/Dimensions



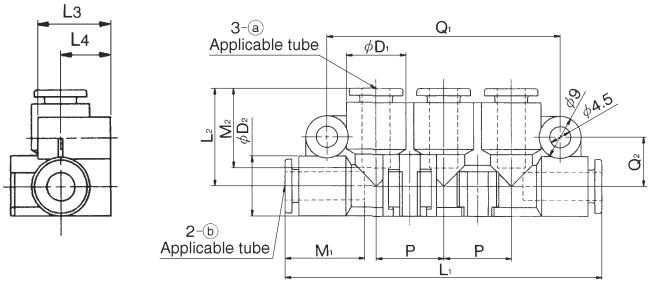
Applicable tube O.D.(mm) ⓐ	Applicable tube O.D.(mm) ⓑ	Thread R(PT)	Part No.	H (Hex.)	øD1	øD2	L1	L2	L3	P	A	Q1	Q2	M1	M2	Port B min. port size	Weight (g)
4	6	1/8	KM14-04-06-01S-3	13	10.4	12.8	68	18	13	10.4	64	38.2	9.9	17	16	4.5	19
		1/4	KM14-04-06-02S-3	14			71.5				65.5						26
		3/8	KM14-04-06-03S-3	17			73.5				67.5						39
4	8	1/8	KM14-04-08-01S-3	17	10.4	15.2	73.5	19	15.5	10.4	69.5	38.2	11.1	18.5	16	6	31
		1/4	KM14-04-08-02S-3				76.5				70.5						
		3/8	KM14-04-08-03S-3				77.5				71						39
6	8	1/8	KM14-06-08-01S-3	17	12.8	15.2	80	20	15.5	12.8	76.5	45.4	11.1	18.5	17	6	33
		1/4	KM14-06-08-02S-3				83				77						
		3/8	KM14-06-08-03S-3				84				78						41
6	10	1/4	KM14-06-10-02S-3	19	12.8	18.5	87.5	21	19	12.8	81.5	45.4	12.8	21	17	7.5	44
		3/8	KM14-06-10-03S-3				88.5				82						45
		1/2	KM14-06-10-04S-3	22			92				84						67
8	10	1/4	KM14-08-10-02S-3	19	15.2	18.5	94	22.5	19	15.2	88	52.6	12.8	21	18.5	7.5	48
		3/8	KM14-08-10-03S-3				95				89						
		1/2	KM14-08-10-04S-3	22			98.5				90.5						71

KM15/Dimensions



Applicable tube O.D.(mm) ⓐ	Applicable tube O.D.(mm) ⓑ	Applicable fitting size ød	Part No.	øD1	øD2	L1	L2	L3	P	Q1	Q2	A	MA	MB	Port B min. port size	Weight (g)
4	6	6	KM15-04-06-3	10.4	12.8	78.5	18	13	10.4	38.2	9.9	61.5	16	17	4.5	13
	8	8	KM15-04-08-3		15.2	85.5	19	15.5			11.1	67		18.5	6	25
6	8	8	KM15-06-08-3	12.8	15.2	92.5	20	15.5	12.8	45.4	11.1	74	17	18.5	6	27
	10	10	KM15-06-10-3		18.5	98	21	19			12.8	77		21	7.5	38
8	10	10	KM15-08-10-3	15.2	18.5	105	22.5	19	15.2	52.6	12.8	85	18.5	21	7.5	42

KM16/Dimensions



Applicable tube O.D.(mm) ⓐ	Applicable tube O.D.(mm) ⓑ	Part No.	øD1	øD2	L1	L2	L3	L4	P	Q1	Q2	M1	M2	Port B min. port size	Weight (g)
4	4	KM16-04-04-3	12.8	12.8	68	20.9	16	11	14.5	50	10.5	16	16	3	19
4	6	KM16-04-06-3										17	16	4.5	18
6	6	KM16-06-06-3										17	17	4.5	18

Precautions for the use with One-touch fittings

⚠ Caution

Refer to “Air Fittings & Tubing Precautions” for the details of installation/removal of One-touch fittings.

Multi-connector is effective in saving labor for separate transportation of the panel and the machine and for exchanging units due to failure.

Substantial reduction in mounting space

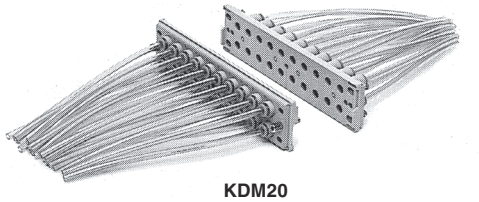
In comparison with a model requiring many union joints for panels and partitions, this model needs only a small space.

One-touch connection/ disconnection of tubing

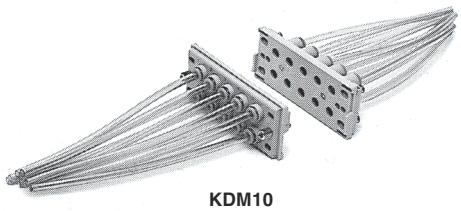
Multiple pipes can be connected/ disconnected in one-touch operation without connection error. Thus man-hours for connection/disconnection is cut down substantially.

One-touch tube connection

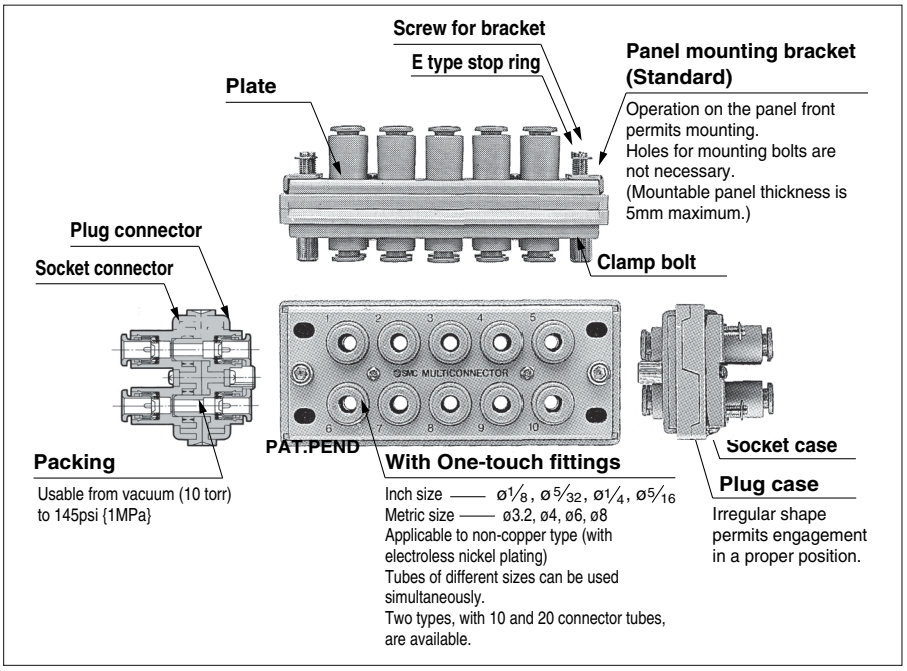
One-touch fittings substantially cuts down man-hour for piping.



KDM20



KDM10



Model

Number of connecting tubes	Tube O.D.	Part No. Inch		Color of release button	Tube O.D.	Part No. Metric		Color of release button
		Plug	Socket			Plug	Socket	
	Inch	Inch		Inch	Metric	Metric		Metric
10	ø1/8	KDM10P-01	KDM10S-01	Red	ø3.2	KDM10P-23	KDM10S-01	Blue
	ø5/32	KDM10P-03	KDM10S-03		ø4	KDM10P-04	KDM10S-03	
	ø 1/4	KDM10P-07	KDM10S-07		ø6	KDM10P-06	KDM10S-07	
	ø5/16	KDM10P-09	KDM10S-09		ø8	KDM10P-08	KDM10S-09	
20	ø1/8	KDM20P-01	KDM20S-01	Red	ø3.2	KDM20P-23	KDM20S-01	Blue
	ø5/32	KDM20P-03	KDM20S-03		ø4	KDM20P-04	KDM20S-03	
	ø1/4	KDM20P-07	KDM20S-07		ø6	KDM20P-06	KDM20S-07	
	ø5/16	KDM20P-09	KDM20S-09		ø8	KDM20P-08	KDM20S-09	

Applicable Tube Material

Tube material		Nylon, Soft nylon, Polyurethane
Tube O.D.	Inch	ø1/8, ø5/32, ø1/4, ø5/16
	Metric	ø3.2, o4, ø6, ø8

Specifications

Operating fluid	Air
Max. operating pressure	145psi {1.0MPa}
Max. operating vacuum pressure	1.3KPa {10Torr}
Proof pressure	220psi {1.5MPa}
Ambient and fluid temperature	32 to 140°F {0 to 60°C}

Principal Element Material

Plug case, Socket case		POM
Plate, Bracket		SPCC Plated
Plug connector Socket connector	Body	PBT, C3604BD Electroless nickel plated (ø5/16, ø8)
	Chuck	Stainless steel (SUS304)
	Guide	C3604BD Electroless nickel plated, POM (ø5/16, ø8)
	Collet Release button	POM
	Packing	NBR
Clamp bolt, Screw for bracket, Cross-recessed head machine screw		SWRM Nickel Plated
E type stop ring		Stainless steel (SUS304)

Part No.

Number of connecting tubes	Tube O.D.	Part No. Inch		Color of release button	Tube O.D.	Part No. Metric		Color of release button
		Plug	Socket			Plug	Socket	
	Inch	Inch		Inch	Metric	Metric		Metric
10	ø1/8	KDM10P-01	KDM10S-01	Red	ø3.2	KDM10P-23	KDM10S-01	Blue
	ø5/32	KDM10P-03	KDM10S-03		ø4	KDM10P-04	KDM10S-03	
	ø1/4	KDM10P-07	KDM10S-07		ø6	KDM10P-06	KDM10S-07	
	ø5/16	KDM10P-09	KDM10S-09		ø8	KDM10P-08	KDM10S-09	
20	ø1/8	KDM20P-01	KDM20S-01	Red	ø3.2	KDM20P-23	KDM20S-01	Blue
	ø5/32	KDM20P-03	KDM20S-03		ø4	KDM20P-04	KDM20S-03	
	ø1/4	KDM20P-07	KDM20S-07		ø6	KDM20P-06	KDM20S-07	
	ø5/16	KDM20P-09	KDM20S-09		ø8	KDM20P-08	KDM20S-09	

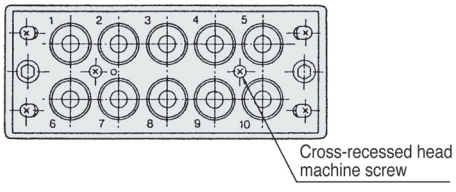
Mixed sizes of plug connectors and socket connectors

The rectangular multi-connector permits connector exchange in any desired position, thus allowing use of different sizes of tubes.

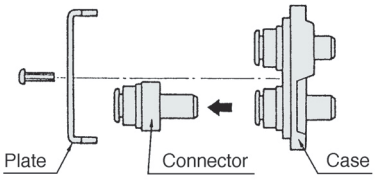
Part No.

Connector	Tube O.D.	Part No.	Color of release button	Tube O.D.	Part No.	Color of release button
	Inch			Metric		
Plug Connector	ø1/8	KDMP-01	Red	ø3.2	KDMP-23	Blue
	ø5/32	KDMP-03		ø4	KDMP-04	
	ø1/4	KDMP-07		ø6	KDMP-06	
	ø5/16	KDMP-09		ø8	KDMP-08	
Socket connector (With packing)	ø1/8	KDMP-01	Red	ø3.2	KDMP-23	Blue
	ø5/32	KDMP-03		ø4	KDMP-04	
	ø1/4	KDMP-07		ø6	KDMP-06	
	ø5/16	KDMP-09		ø8	KDMP-08	

① Loosen the cross-recessed head machine screw using a Phillips screwdriver to remove the plate from the case.



②After placing connectors in desired location, affix the plate to the case with a Phillips screwdriver.

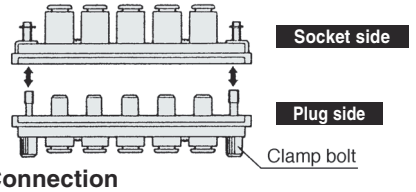


How to Use

⚠Caution

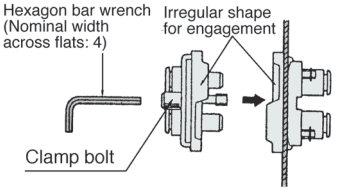
Separation

Loosen the clamp bolt to separate the plug side from the socket side.



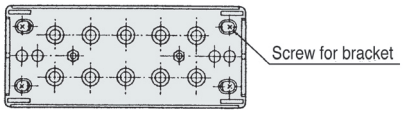
Connection

Put together the irregular faces for engagement and connect the plug case to the socket. After tightening the clamp bolt by hand, tighten it further with hexagon bar wrench (nominal width across flats:4)

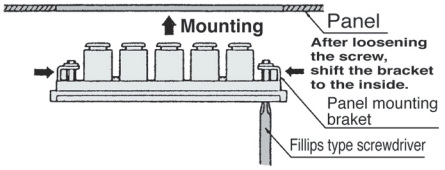


Panel mounting

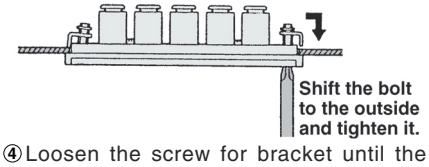
①Loosen (4) screws for bracket on the socket side using a Fillips type screwdriver (JIS nominal No.2) until the bracket touches the stop ring.



②Shift the panel mounting bracket to the inside (Move the screw for bracket in the longitudinal direction of the slot) and put the connector in the panel mounting hole. (Panel mounting hole: See Dimensions.)



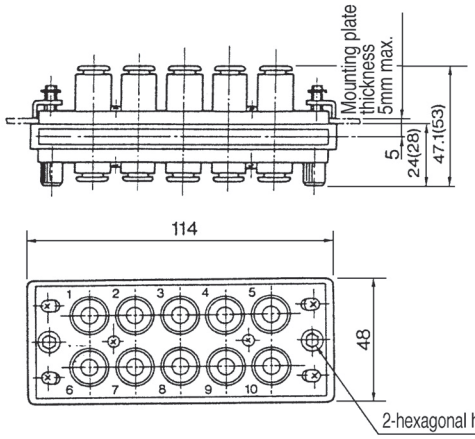
③ After shifting the bolt for bracket to the out side, tighten the bolt with a Fillips type screwdriver to fix the socket case.



④Loosen the screw for bracket until the bracket touches the stop ring and shift the bracket to the inside to remove the connector from the panel.

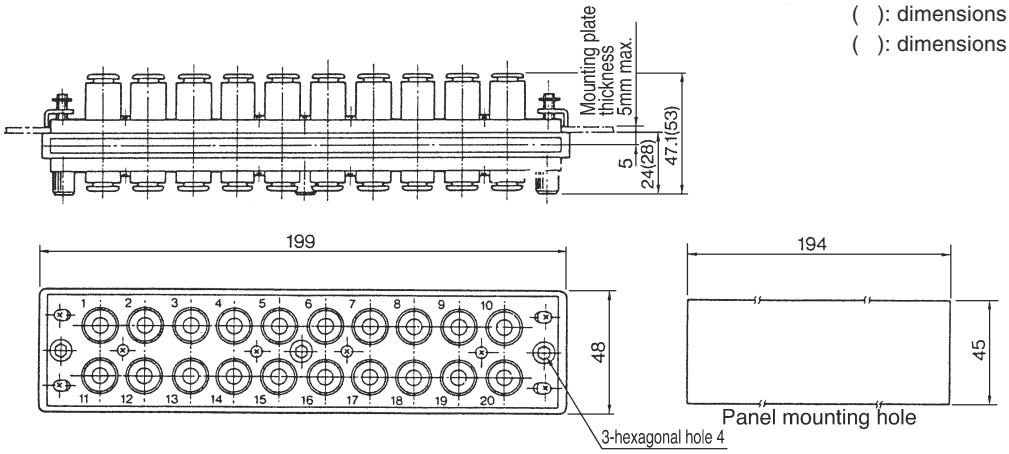
Dimensions

KDM10



( ): dimensions for KDM10-09 Inch
( ): dimensions for KDM10-08 Metric

KDM20



( ): dimensions for KDM20-09 Inch
( ): dimensions for KDM20-08 Metric

⚠ Precautions

Be sure to read before handling.

⚠ Caution

Refer to “Air Fittings & Tubing Precautions” for the details of installation/removal of One-touch fittings and other precautions.

Made to Order

Contact SMC for detailed specifications, dimensions and delivery.

Mixed tube size type

Mixed tube size manifolds are available to meet your individual requirements. Consult your SMC sales representative for availability.

Other tube sizes

Tube size (O.D.)	Number of connection	Part No.
ø10	6	IN-254-52
ø12	6	IN-254-53

The use of the multi-connector enables panel mount connections with other apparatus and can provide the reliability of one-touch installation and removal of multi-tubes(nylon, soft nylon and poly-urethane). As a result, separate transportation of panel and machinery equipment and backup unit exchange are made possible.

One-touch installation and removal.

Employs the unique built-in keying mechanism which provides one-touch installation and removal capability even in hard to see locations. In addition it prevents installation mistakes when re-connecting.

Installation processes are reduced considerably.

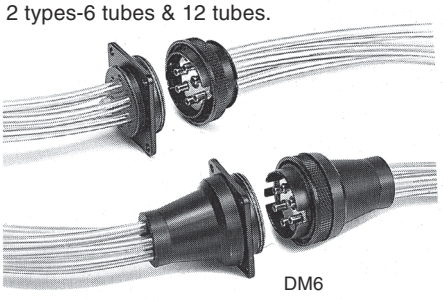
As compared with the use of many bulkhead unions, this installation is very easy and installation time is reduced considerably.

Reliable tube retaining force.

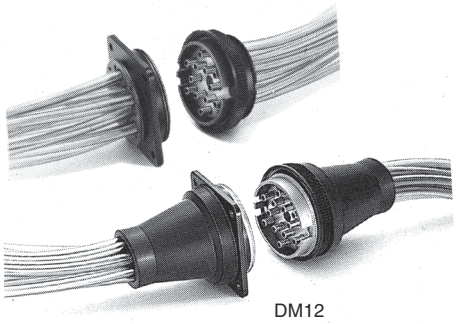
This construction mechanism enables clamping and unclamping every tube in use by one operation and can provide a reliable tube retaining force.

Number of connecting tubes.

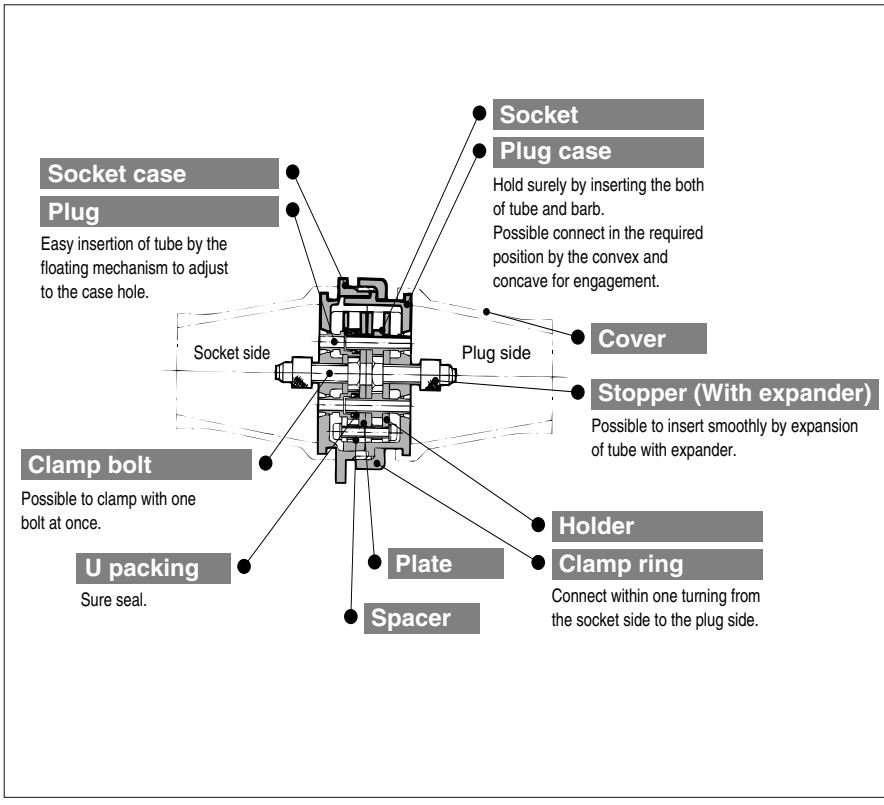
2 types-6 tubes & 12 tubes.



DM6



DM12



Model

Number of connecting tubes	Part No.			Applicable tube			Accessories (optional)
	Multiconnector	Plug side only	Socket side only	Nylon	Soft nylon	Polyurethane	
6	**DM6-04N**	**DM6P-04N**	**DM6S-04N**	T0425	—	—	DM-C-6
	DM6-04NU	**DM6P-04NU**	**DM6S-04NU**	T0403	TS0425	TU0425	
	DM6-06N	**DM6P-06N**	**DM6S-06N**	T0604	—	—	
	DM6-06NU	**DM6P-06NU**	**DM6S-06NU**	T0645	TS0604	TU0604	
12	**DM12-04N**	**DM12P-04N**	**DM12S-04N**	T0425	—	—	DM-C-12
	DM12-04NU	**DM12P-04NU**	**DM12S-04NU**	T0403	TS0425	TU0425	
	DM12-06N	**DM12P-06N**	**DM12S-06N**	T0604	—	—	
	DM12-06NU	**DM12P-06NU**	**DM12S-06NU**	T0645	TS0604	TU0604	

Specifications

Operating fluid	Air
Max.operating pressure	145psi {1.0MPa}
Ambient and fluid temperature	32 to 140°F {0 to 60°C}

Principal Element Material

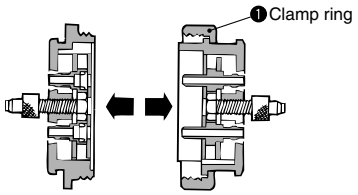
Socket case, Plug case, Clamp ring	ADC12 Black anodized
Plate	SPCC, Uni-chromate
Holder	SPCC, Zinc-chromate
Socket, Plug, Stopper	C3604BD
U-ring	NBR
Cover	CR
Cross recessed head screw, Clamp bolt	SWRM Zinc-chromate
Spacer	SPC Zinc-chromate

How to Use

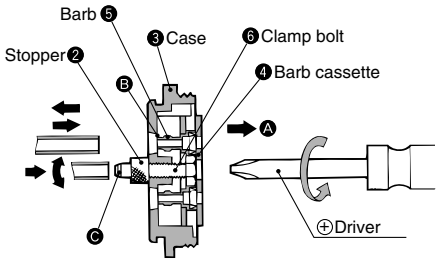
⚠Caution

Removing

Loosen clamp ring ❶, and separate the multi-connector into two parts, socket side and plug side.



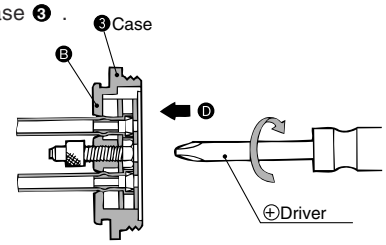
Insertion and removal of tube



① Turn the clamp bolt ❻ to the left with a screwdriver, loosen until the stopper ❷ touches the case ❸, and barb cassette ❹ will be pulled out in the direction Ⓐ.Then clamp portion Ⓑ, consisting of barb ❺ and case ❸, will be freed. Next, insert or remove the tube.
② The corresponding numbers are stamped on both the socket and plug sides for each tube connection.
③ If it is hard to insert the tube, enlarge the tube end with the head of stopper, expander Ⓒ, before inserting tube.
④ Insert tube until it clears mountain of barb ❺ completely.

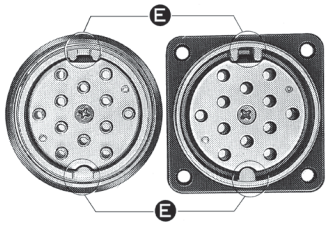
Clamping of tube

①After inserting tube, tighten clamp bolt ❻ clockwise with a screwdriver.
② Barb cassette creeps into the direction Ⓓ and the tube will be clamped at the clamp portion Ⓑ consisting of barb ❺ and case ❸ .



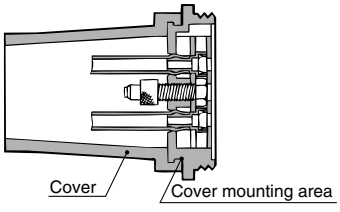
Connection

①Push together and rotate both of the cases, and the plug side will slide into the socket side at the proper position.
②The ring Ⓔ, male and female, of the plug side and socket side will interlock with each other at the proper position by pushing together and rotating.
③ Final process of connection is to screw-in the clamp ring.



Cover mounting

①Cover is mountable on both sides, plug side and socket side.
②Enlarge cover and mount cover onto mounting area.



How to Order

DM 6 ☐ — 04 N — ☐

Number of connecting tube

6	6
12	12

Type

—	Multi-connector
P	Plug side
12	Socket side

Tube O.D.

04	4mm
06	6mm

Tube material

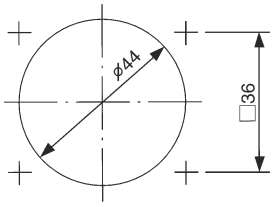
N	Nylon
NU	Soft nylon Polyurethane

Accessories(optional)

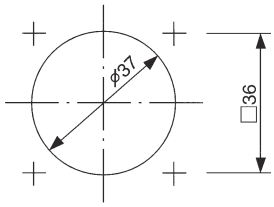
C1	1 cover(One side)
C2	2 covers(Both sides)

Dimensions (mm)

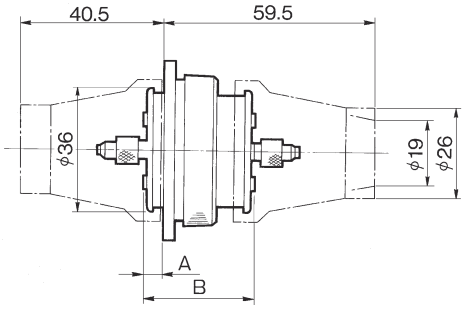
DM6

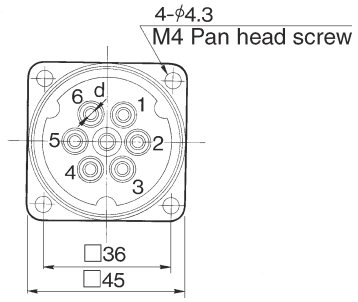


Panel mounting hole
(with the cover at socket side)

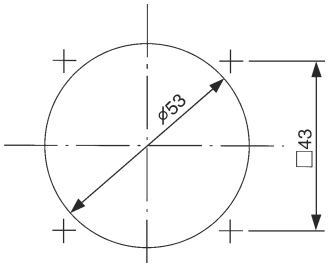


Panel mounting hole

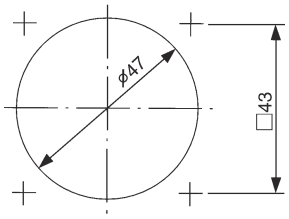




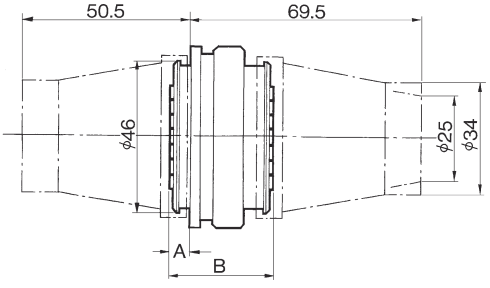
DM12

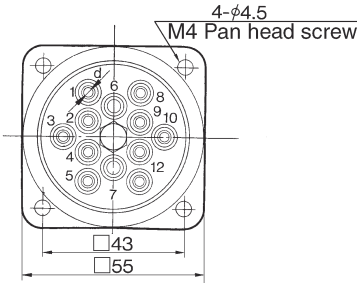


Panel mounting hole
(with the cover at socket side)



Panel mounting hole





Part No.		Barb I.D.(d)	A	B
DM6-04N	**DM12-04N**	1.6	5	29
DM6-06N	**DM12-06N**	3		
DM6-04NU	**DM12-04NU**	1.6	6	31
DM6-06NU	**DM12-06NU**	3		

⚠ Precautions

Be sure to read before handling. Refer to "Air Fittings and Tubing Precautions" for the details.

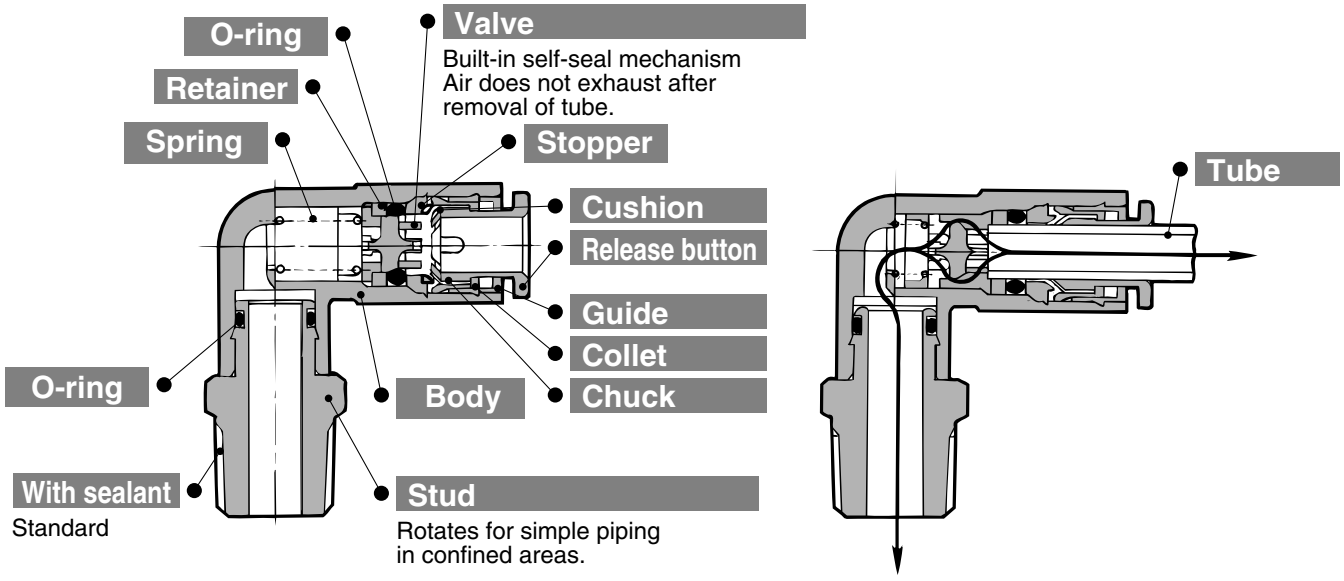
Insertion of tube

⚠ Caution

① Be sure to insert the tube slowly so that you feel it move smoothly and can feel it touch the end.

②In case the number of tubes to be used is 6 (DM6) and 12 (DM12) or less, the positioning of the tube should be symmetrical to the center.

③ Once the tube has been properly inserted, pull it back gently, to make sure that it has a positive seal. If not inserted properly, it may cause the air leakage or tube releasing.



One-touch fitting (With built-in self-seal mechanism) to prevent air exhaust when removing tube.

Best for multiple use areas when pressure cannot be shut down.

10 types are available.

Electroless nickel plated-for copper-free applications.

Applicable Tubes

Tube material	Nylon, Soft nylon, Polyurethane
Tube O.D.	ø4, ø6, ø8, ø10, ø12

Specifications

Operating fluid		Air
Max. operating pressure		145psi {1.0MPa}
Proof pressure		435psi {3.0MPa}
Ambient and fluid temperature		32 to 140°F {5 to 60˚C}
Thread	Thread portion	JIB B 0203 (Taper pipe thread)
	Nut	JIB B 0211 Class 2 (Metric fine thread)
Sealant (Thread portion)		With sealant (Standard)
Copper-free application		C3604BD Parts with electroless nickel plating

Principal Element Material

Body	C3604BD, PBT
Stud	C3604BD (Thread portion)
Chuck, Spring	Stainless Steel (SUS304)
Guide	C3604BD Polyacetal (POM)
Collet, Release button	Polyacetal (POM)
Valve, Retainer	Polyacetal (POM)
Stopper	C3604BD, Polyacetal (POM)
Packing, O-ring	NBR

Model

Half union

KCH P. 76

Use to pipe in the same direction from female thread portion.

Elbow union

KCL P. 76

Use to pipe at right angle to female thread portion. Most general type.

Tee

KCT P. 76

Use to branch connection of tubes of both side 90° direction.

Union "Y"

KCU P. 76

Use to branch connection of tubes in the same direction. 2 branched ports has a self-seal function.

Check adaptor

KCJ P. 77

Use to add the self-seal mechanism to a usual one-touch fittings, Series KQ.

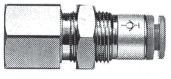
Bulkhead union

KCE P. 77

Use to junction connection of tubes for installation of panel. One of two ports has a self-seal function.

Bulkhead female union

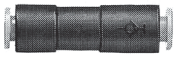
KCE P. 77



Use for transit connection of a tube and a male screw for installation of panel.

Straight

KCH P. 77



Use to connect tubes in the same direction. One of two ports has a self-seal function.

Straight plug for frequent use

KCH P. 77

Use to connect a self-seal fitting and a tube in the same direction. It can save the tube cutting labor in the case of frequent tube installation and removal.

Elbow plug for frequent use

KCL P. 78

Use to pipe a tube at right angle to a self-seal fitting. It can save the tube cutting labor in the case of frequent tube installation and removal.

⚠ Precautions

Be sure to read before handling.
Refer to "Air Fittings & Tubing Precautions" for other details.

Tube Insertion and Removal from Self-Seal Fitting

⚠Caution

Installing Tube

①Cut the tube perpendicularly, taking care not to damage the outside surface. (Use tube cutter TK-1, 2 or 3. Do not cut the tube with cutting pliers, nippers, scissors, etc.) Flat or angled cuts will make it difficult to connect to fittings or, if connected, tube will release or air leakage will occur.
②Grasp the tube, then slowly push it until it comes to a dead-end.
③Pull it back gently to make sure that it has a positive seal.
Incomplete installation may cause air leakage or tube release.

Removing Tube

①Push the release button into the fitting. The button should be pushed evenly.
②Pull out the tube while keeping the release button depressed. (If the release button is not held down, the tube cannot be withdrawn.)
③To reuse the tubing, cut off the previously lodged portion of the tube.
If using tubing without cutting the damaged portion off, it may cause the air leakage or make it difficult to release the tube.

The Number of Insertions and Removals from Self-Seal Fitting

⚠Caution

① The number of insertions and removals as a rough quide is as follows.

- Tube·····300 times
- Metal stem·····1000times

Installation of Self-Seal Fitting

⚠Caution

① The fitting should be installed (Installation of R (PT) thread portion) by screwing with a spanner at the hexagonal portion of the body.
The position of spanner should be a root as close as possible to R (PT) thread.
Use the spanner corresponding to the size of hexagonal portion, or hexagonal portion may be deformed.

Tightening the thread portion of an M5 size fitting.

⚠Caution

①First, tighten it by hand, then give it an additional 1/6 turn with a wrench.
Excessive tightening may damage the threaded portion or deform the gasket to cause air leakage. Insufficient tightening may leave the thread loosened or cause the air leakage.

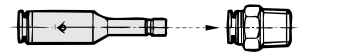
Distinction of plug and applicable fitting.

⚠Caution

①The type of applicable fittings should be chosen depending on the type of plug.

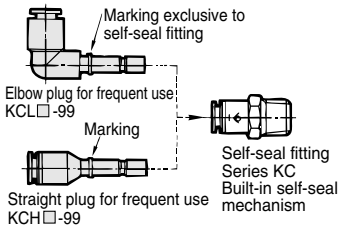
Check adaptor

How to use: Use it for addition of self-seal mechanism to a standard one-touch fitting series KQ.
Self-seal fittings with check adaptor are not available. It causes the air leakage.



Elbow plug for frequent use, straight plug for frequent use.

How to use: For use in the case of frequent tube installation and removing, tube cutting labour can be saved. These plugs are not available for a standard One-touch fittings Series KQ.
If trying to install the plug into a KQ, plug will jump out of the fitting. Note the exclusive marking for self-seal fittings before using.



Tube Insertion and Removal under a pressurized condition

⚠Caution

①When inserting/removing of the tube is difficult under a pressurized condition, it should be inserted or removed by lowering the pressure or after fully exhausting.

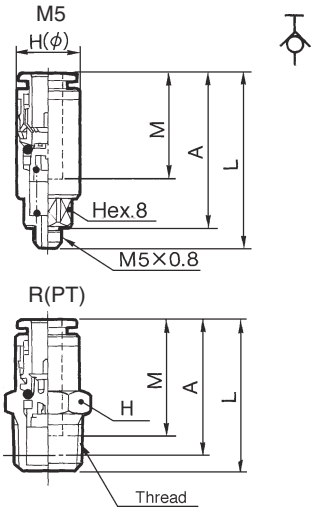
Half union: KCH

M5

R(PT)

Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H (Hex.)	L	A*	M	Effective orifice(mm²)		Weight (g)
							Nylon	Urethane	
4	M5×0.8	**KCH04-M5**	9.8	30.8	27.3	18	2.1	2.1	8
	1/8	**KCH04-01S**	10	26.1	22.1		2.6	2.6	
6	M5×0.8	**KCH06-M5**	11.8	32.4	28.9	19.5	2.4	2.4	10
	1/8	**KCH06-01S**	12	37.4	33.4	19	6.8	6.8	16
	1/4	**KCH06-02S**	14	28.9	22.9				14
8	1/8	**KCH08-01S**	14	42.4	38.4	21.5	16.2	13.1	20
	1/4	**KCH08-02S**		45.7	39.7				27
	3/8	**KCH08-03S**	17	34	27.5				25
10	1/4	**KCH10-02S**	17	50.5	44.5	24	25.6	20.4	34
	3/8	**KCH10-03S**		51.5	45				43
12	3/8	**KCH12-03S**	19	54.2	47.7	25.5	35.4	30.4	48
	1/2	**KCH12-04S**	22	41.6	33.6				41

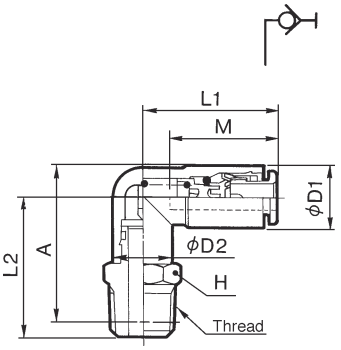
∗ Reference dimensions after R(PT) installation.



Elbow union: KCL

Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H (Hex.)	øD1	øD2	L1	L2	A*	M	Effective orifice(mm²)		Weight (g)
										Nylon	Urethane	
4	**M5×0.8**	**KCL04-M5**	8	10.4	8	25.3	16.7	18.4	18	1.9	1.9	6
	1/8	**KCL04-01S**	10		10		23	24.2		2.3	2.3	11
6	**M5×0.8**	**KCL06-M5**	8	12.8	8	26.8	17.4	20.3	19.5	2.2	2.2	7
	1/8	**KCL06-01S**	12		12	28	25.1	27.5	19	6.2	6.2	13
	1/4	**KCL06-02S**	14				29.1	29.5				21
8	1/8	**KCL08-01S**	14	15.2	14	34.1	27.1	30.7	21.5	13.0	10.5	16
	1/4	**KCL08-02S**					31.1	32.7				24
	3/8	**KCL08-03S**	17					34.2				37
10	1/4	**KCL10-02S**	17	18.5	17	38	33.9	37.2	24	19.5	16.5	29
	3/8	**KCL10-03S**					35.9	38.7				38
12	3/8	**KCL12-03S**	22	20.9	20.9	40.7	40.3	44.3	25.5	24.8	21.3	63
	1/2	**KCL12-04S**					43.2	45.7				81

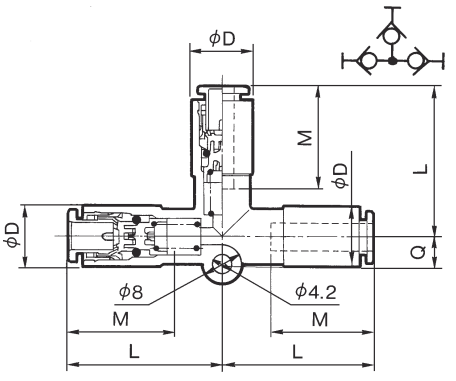
∗ Reference dimensions after R(PT) installation.
Note) øD1: max. diameter



Tee: KCT

Applicable tube O.D. (mm)	Part No.	øD	L	Q	M	Effective orifice(mm²)		Weight (g)
						Nylon	Urethane	
4	**KCT04-00**	10.4	28.6	5.3	18	2.8	2.8	9
6	**KCT06-00**	12.8	32.7	6.1	19	7.6	7.6	16
8	**KCT08-00**	15.2	39.2	7.1	21.5	13.7	11.1	24
10	**KCT10-00**	18.5	45.5	7.9	24	21.1	19.0	39
12	**KCT12-00**	20.9	49.2	8.6	25.5	28.3	24.3	52

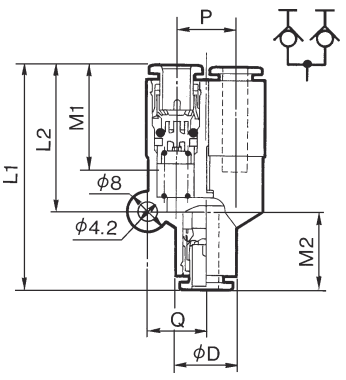
Note) øD: max. diameter



Union "Y": KCU

Applicable tube O.D. (mm)	Part No.	øD	L1	L2	P	Q	M1	M2	Effective orifice(mm²)		Weight (g)
									Nylon	Urethane	
4	**KCU04-00**	10.4	43.1	27.3	10.4	10.6	18	16	3.7	3.7	9
6	**KCU06-00**	12.8	48	31.2	12.8	12.5	19	17	10.0	10.0	15
8	**KCU08-00**	15.2	57.6	38.9	15.2	14.7	21.5	18.5	21.7	15.1	23
10	**KCU10-00**	18.5	65.2	44.9	18.5	17.1	24	21	33.3	25.6	37
12	**KCU12-00**	20.9	70.1	48.8	20.9	19.1	25.5	22	48.9	38.7	49

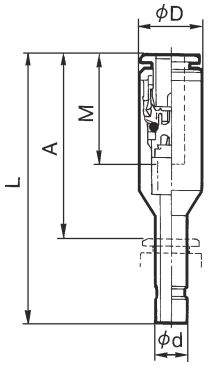
Note) øD: max. diameter



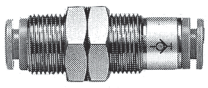
Check adaptor: KCJ

Applicable tube O.D. (mm)	Part No.	ød	øD	L	A	M	Effective orifice(mm²)		Weight (g)
							Nylon	Urethane	
4	**KCJ04-99**	4	9.8	49.5	33.5	18	2.6	2.6	9
6	**KCJ06-99**	6	11.8	54	37	19	6.8	6.8	13
8	**KCJ08-99**	8	14	61	42.5	21.5	16.2	13.1	20
10	**KCJ10-99**	10	17	70.4	49.4	24	25.6	20.4	33
12	**KCJ12-99**	12	19	74.4	52.4	25.5	35.4	30.4	43

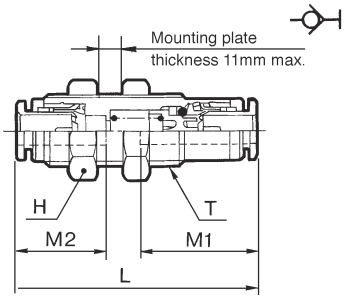
Note) øD: max. diameter



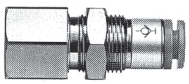
Bulkhead union: KCE



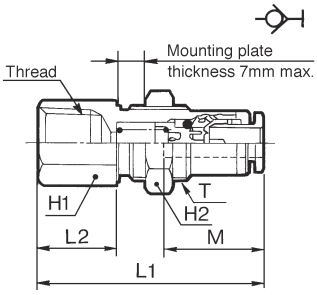
Applicable tube O.D. (mm)	Part No.	T (M)	H (Hex.)	L	Mounting hole	M1	M2	Effective orifice(mm²)		Weight (g)
								Nylon	Urethane	
4	**KCE04-00**	M12×1	14	42	13	18	16	2.6	2.6	21
6	**KCE06-00**	M14×1	17	45.5	15	19	17	6.8	6.8	30
8	**KCE08-00**	M16×1	19	52.5	17	21.5	18.5	16.2	13.1	39
10	**KCE10-00**	M20×1	24	59.5	21	24	21	25.6	20.4	84
12	**KCE12-00**	M22×1	27	63.2	23	25.5	22	35.4	30.4	115



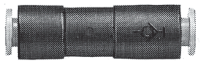
Bulkhead female union: KCE



Applicable tube O.D. (mm)	Thread Rc (PT)	Part No.	T (M)	H1 (Hex.)	H2 (Hex.)	L1	L2	Mounting hole	M	Effective orifice(mm²)		Weight (g)
										Nylon	Urethane	
4	**1/4**	**KCE04-02**	M12×1	17	14	40.5	14.7	13	18	2.6	2.6	32
6	**1/4**	**KCE06-02**	M14×1	17	17	42.7	14.7	15	19	6.8	6.8	36
8	**3/8**	**KCE08-03**	M16×1	19	19	49.4	15	17	21.5	16.2	13.1	42
10	**3/8**	**KCE10-03**	M20×1	22	24	53.9	14.2	21	24	25.6	20.4	79
12	**3/8**	**KCE12-03**	M22×1	24	27	56.1	13.7	23	25.5	35.4	30.4	105

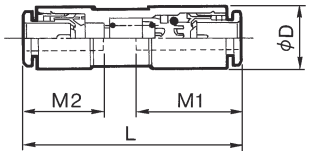


Straight: KCH



Applicable tube O.D. (mm)	Part No.	øD	L	M1	M2	Effective orifice(mm²)		Weight (g)
						Nylon	Urethane	
4	**KCH04-00**	10.4	42.1	18	16	2.6	2.6	5
6	**KCH06-00**	12.8	45.8	19	17	6.8	6.8	8
8	**KCH08-00**	15.2	52.8	21.5	18.5	16.2	13.1	11
10	**KCH10-00**	18.5	59.8	24	21	25.6	20.4	18
12	**KCH12-00**	20.9	63.5	25.5	22	35.4	30.4	24

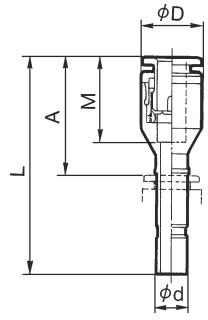
Note) øD: max. diameter



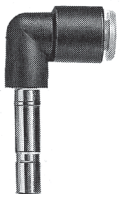
Straight plug for frequent use: KCH

Applicable tube O.D. (mm)	Part No.	ød	øD	L	A	M	Effective orifice(mm²)		Weight (g)
							Nylon	Urethane	
4	**KCH04-99**	4	9.8	40.6	22.6	16	5.6	5.6	5
6	**KCH06-99**	6	11.8	43.1	24.1	17	13.1	13.1	8
8	**KCH08-99**	8	14	46.7	25.2	18.5	26.1	18.0	11
10	**KCH10-99**	10	17	52.6	28.6	21	41.5	29.5	18
12	**KCH12-99**	12	19	54.9	29.4	22	58.3	46.1	24

Note) øD: max. diameter

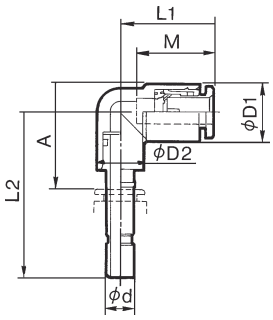


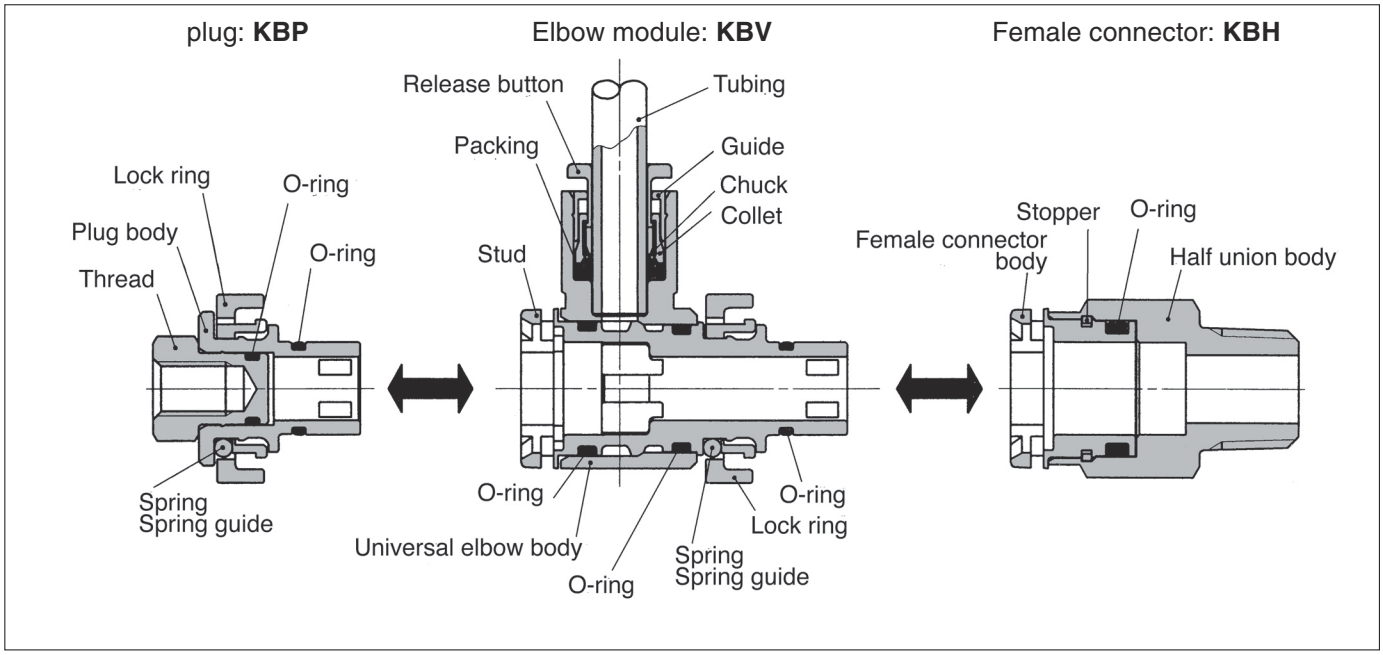
Elbow plug for frequent use: KCL



Applicable tube O.D. (mm)	Part No.	ød	øD1	øD2	L1	L2	A	M	Effective orifice(mm²)		Weight (g)
									Nylon	Urethane	
4	**KCL04-99**	4	10.4	10	18	34.3	22.6	16	4.2	4.2	7
6	**KCL06-99**	6	12.8	10	20	36.5	24.1	17	11.4	11.4	8
8	**KCL08-99**	8	15.2	12	23	40.3	25.2	18.5	21.6	14.9	12
10	**KCL10-99**	10	18.5	17	26.5	44.3	28.6	21	35.2	25.0	25
12	**KCL12-99**	12	20.9	17	28.5	46.8	29.4	22	50.2	39.7	30

Note) øD1, øD2: max. diameter





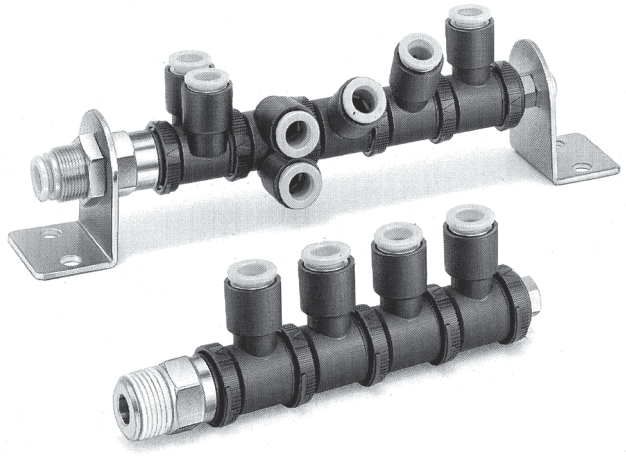
Suitable for centralized, distribution of supply air! Easy distribution utilizing One-touch fittings!

One-touch fitting installation without the use of tools.

Locking system makes the use of tools unnecessary and piping more efficient.

Air output direction possible through 360˚.

Universal construction allows for changes in air output direction after connections are completed.



Applicable Tube

Tube material	Nylon, Soft nylon, Polyurethane
Tube O.D.	ø4, ø6, ø8, ø10, ø12, ø16

Applicable Thread Size

Male thread	R(PT) 1/8, R(PT) 1/4, R(PT) 3/8, R(PT) 1/2
Female thread	M5×0.8, M6×1, Rc(PT)1/8, Rc(PT)1/4, Rc(PT) 3/8, Rc(PT)1/2

Specifications

Operating fluid		Air
Max.operating pressure		145psi {1.0MPa}
Max.operating vacuum pressure		1.3KPa {10Torr}
Proof pressure		435psi {3.0MPa}
Ambient and fluid temperature		32 to 140°F {0 to 60°C}
Thread	Thread portion	JIS B 0203 (Taper pipe thread)
		JIS B 0211, Class 2 (Metric coarse thread)
	Nut	JIS B 0211, Class 2 (Metric fine thread)
Sealant (Male thread)		With sealant
Copper-free specification		C3604BD parts with electroless nickel plating

Principal Element Material

Body	C3604BD, PBT, POM
Stud	POM
Lock ring	POM
Spring	SUS304WPB
Spring guide	POM
Stopper	POM
Thread	C3604BD
Guide	C3604BD, POM
Collet, Release button	POM
Packing,O-ring	NBR
Chuck	Stainless steel (SUS304)

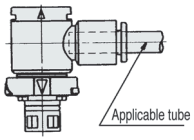
1 Air Output Port: **KBV, KBZ**(Page 83)

KB V 1 — 04

- V: Type
- 1: Body size
- 04: Tube size/ Connecting female thread size

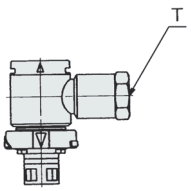
Elbow module: **KBV**

Part No.	Applicable tube O.D.
KBV1-04	4
KBV1-06	6
KBV2-06	
KBV2-08	8
KBV3-08	
KBV3-10	10
KBV3-12	12
KBV4-12	
KBV4-16	16



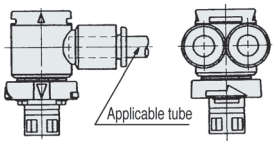
Elbow socket module: **KBV**

Part No.	T Connecting thread
KBV1-M5	M5×0.8
KBV1-M6	M6×1
KBV2-M5	M5×0.8
KBV2-M6	M6×1
KBV2-R1	Rc(PT) 1/8
KBV3-R1	
KBV3-R2	Rc(PT) 1/4
KBV4-R2	
KBV4-R3	Rc(PT) 3/8



Branch elbow module: **KBZ**

Part No.	Applicable tube O.D.
KBZ1-04	4
KBZ1-06	6
KBZ2-08	8
KBZ3-10	10
KBZ3-12	12
KBZ4-12	



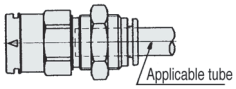
2 Air supply port: **KBE, KBH, KBB, KBS, KBL** (Page 84-85)

KB H 1 — R1 S

- H: Type
- 1: Body size
- R1: Tube size/ Connecting thread size
- S: With sealant (only male thread) ·····standard specification

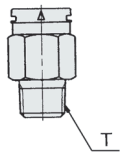
Bulkhead female connector: **KBE**

Part No.	Applicable tube O.D.
KBE1-04	4
KBE1-06	6
KBE2-06	
KBE2-08	8
KBE2-10	10
KBE3-08	8
KBE3-10	10
KBE3-12	12
KBE4-12	



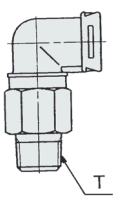
Female connector union: **KBH**

Part No.	T Connecting thread
KBH1-R1S	R(PT) 1/8
KBH2-R1S	
KBH2-R2S	R(PT) 1/4
KBH2-R3S	R(PT) 3/8
KBH3-R2S	R(PT) 1/4
KBH3-R3S	R(PT) 3/8
KBH3-R4S	R(PT) 1/2
KBH4-R3S	R(PT) 3/8
KBH4-R4S	R(PT) 1/2



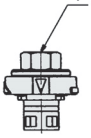
Female connector elbow union: **KBL**

Part No.	T Connecting thread
KBL1-R1S	R(PT) 1/8
KBL2-R1S	
KBL2-R2S	R(PT) 1/4
KBL2-R3S	R(PT) 3/8
KBL3-R2S	R(PT) 1/4
KBL3-R3S	R(PT) 3/8
KBL3-R4S	R(PT) 1/2
KBL4-R3S	R(PT) 3/8
KBL4-R4S	R(PT) 1/2



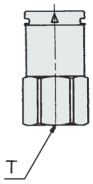
Male connector socket: **KBB**

Part No.	T Connecting thread
KBB1-M5	M5×0.8
KBB1-M6	M6×1
KBB3-R1	Rc(PT) 1/8
KBB4-R2	Rc(PT) 1/4



Female connector socket: **KBS**

Part No.	T Connecting thread
KBS1-R1	Rc(PT) 1/8
KBS2-R2	Rc(PT) 1/4
KBS3-R3	Rc(PT) 3/8
KBS4-R4	Rc(PT) 1/2



3 Other piping material: **KBN, KBD, KBR** (Page 86)

KB N 1

Type

Body size

KB D 2 — 1

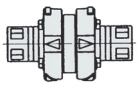
Type

Body size

Body size

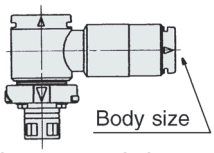
Nipple: **KBN**

Part No.
KBN1
KBN2
KBN3
KBN4



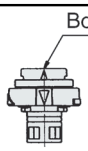
Different diameter elbow female connector module: **KBD**

Part No.
KBD2-1
KBD3-2
KBD4-3



Different bore module:

Part No.
KBR2-1
KBR3-2
KBR4-3



4 Plug / Cap: **KBP, KBC** (Page 87)

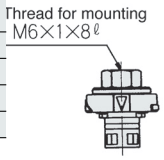
KB P 1

Body size

Type

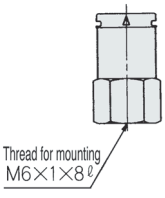
Plug: **KBP**

Part No.
KBP1
KBP2
KBP3
KBP4



Cap: **KBC**

Part No.
KBC1
KBC2
KBC3
KBC4



5 Bracket: **KBX** (Page 87)

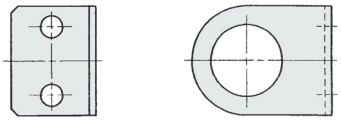
KB X 6

Applicable thread size

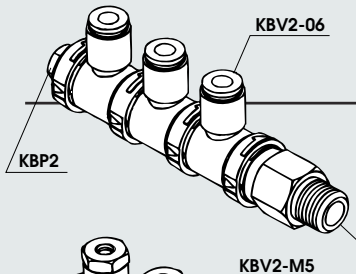
Type

Bracket: **KBX**

Part No.
KBX6
KBX12
KBX14
KBX16
KBX20
KBX22

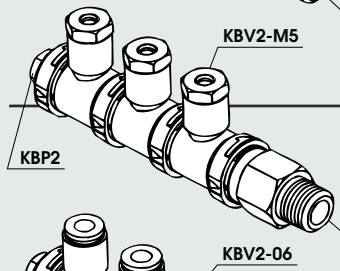


Combination Examples



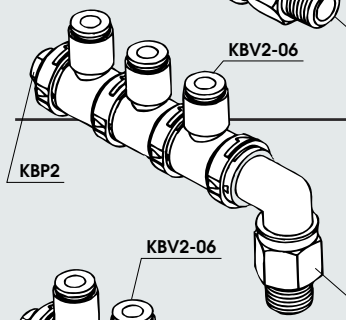
Component module

KBV2-06	3
KBH2-R2S	1
KBP2	1



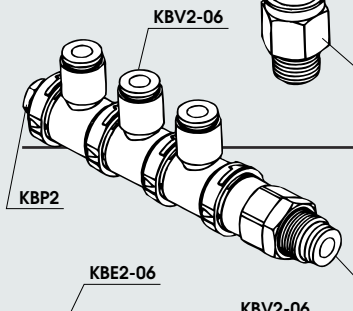
Component module

KBV2-M5	3
KBH2-R2S	1
KBP2	1



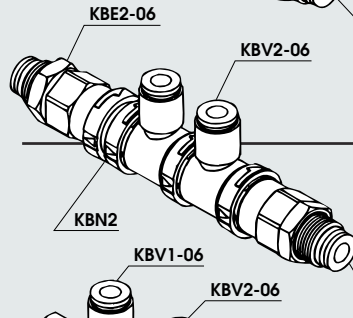
Component module

KBV2-06	3
KBL2-R2S	1
KBP2	1



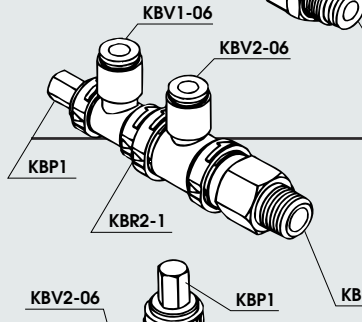
Component module

KBV2-06	3
KBE2-06	1
KBP2	1



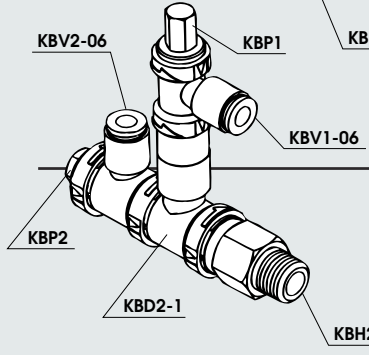
Component module

KBV2-06	2
KBE2-06	2
KBN2	1



Component module

KBV2-06	1
KBV1-06	1
KBR2-1	1
KBH2-R2S	1
KBP1	1



Component module

KBV2-06	1
KBV1-06	1
KBR2-1	1
KBH2-R2S	1
KBP2	1
KBP1	1

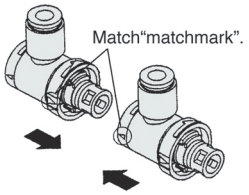
⚠Precautions

Be sure to read before handling. Refer to "Air Fittings & Tubing Precautions" for other details.

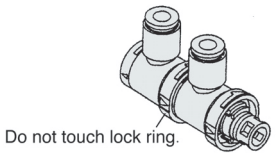
How to Install

⚠Caution

① Insert each piping module by matching "matchmark" on the lock ring and the body of the other module. Insert together. If it becomes difficult to match both modules, rotate modules to left and right while pushing together.
＊Refer to piping module insertion and removal diagram.
(To secure rigidity, it is slightly stiff.)



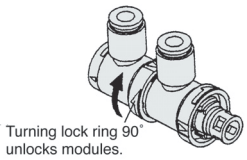
② Confirm insertion by turning modules to right and left or pulling on them. But do not touch the lock ring in the process.



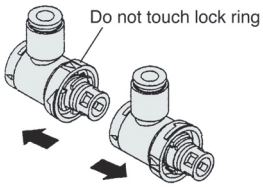
How to Remove

⚠Caution

① Turn the lock ring 90˚clockwise (in the direction of the arrow). This will cancel out the affects of the lock ring. You need not hold lock ring in place. Lock ring will hold automatically in this position



② Remove modules by pulling apart. Do not touch lock ring. After removal, lock ring will return to normal poaition automatically because of return spring.



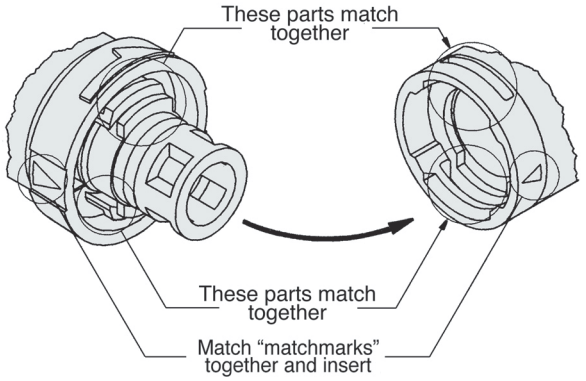
Others

⚠Caution

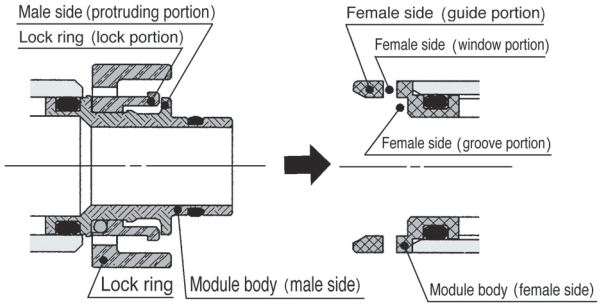
① If unit is longer than 5 stations, please use bracket to prevent deflection and/or bending of unit.
② Each type of module materials is capable of being piped with all other materials.
③ When attaching female connector union and female connector elbow union, use the body's hexagon surface and tighten threads with a suitable wrench. Use the root nearest the thread when tightening with wrench.

Piping Module-Insertion and Removal Structual Drawing

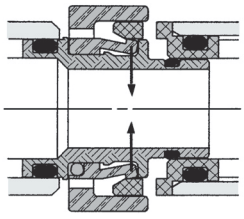
Piping Module-Male Side **Piping Module-Female Side**



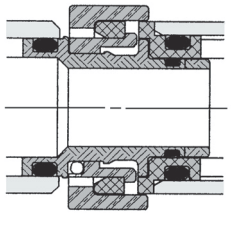
① Match "matchmarks" together and insert piping module male side into female side.



② By inserting the lock ring, the lock portion touches female side guide portion and falls into the direction shown with the arrow.



③ By pushing tighter, lock portion goes over female side guide portion and snaps into window slot portion. Male side protruding portion snaps into female side groove portion. This performs the function of a detnet.

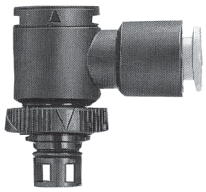


Male module inserted fully into position.

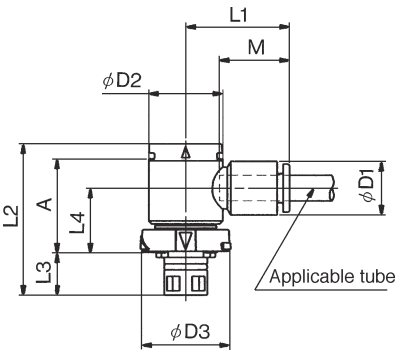
④ To remove, rotate lock ring 90˚ to release lock portion from female side window slot, then the lock is released. Removal is completed.

1 Air Output Port

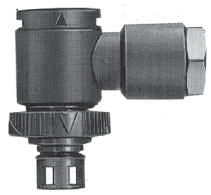
Elbow module: **KBV**



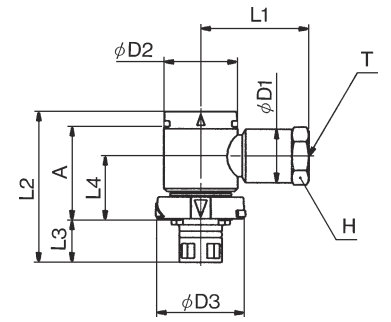
Part No.	Applicable tube O.D.	D1	D2	D3	L1	L2	L3	L4	A	M	Weight (g)
KBV1-04	4	10.4	13.6	16.8	22.0	33.0	10.4	13.0	19.5	16.0	4.6
KBV1-06	6	12.8			24.0					17.0	5.4
KBV2-06			17.6	21.0	25.0	36.0	10.1	15.5	22.5		7.8
KBV2-08	8	15.2			28.5					18.5	8.8
KBV3-08			25.2	28.6	29.5	42.6	11.4	20.5	27.0		15.5
KBV3-10	10	18.5			31.5			19.5		21.0	17.5
KBV3-12	12	20.9			34.0					22.0	19.3
KBV4-12			27.0	30.4	35.0	41.4	12.2	18.0	25.0		20.2
KBV4-16	16	26.5	32.3		39.0	55.0		24.0	38.5	25.0	36.4



Elbow socket module: **KBV**

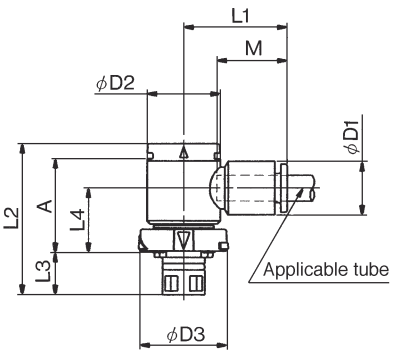


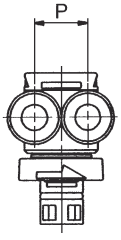
Part No.	T Connecting thread	H (Hex.)	D1	D2	D3	L1	L2	L3	L4	A	Weight (g)
KBV1-M5	M5×0.8	12	12.8	13.6	16.8	25.0	33.0	10.4	13.0	19.5	12.4
KBV1-M6	M6×1										11.6
KBV2-M5	M5×0.8			17.6	21.0	26.0	36.0	10.1	15.5	22.5	14.8
KBV2-M6	M6×1										14.0
KBV2-R1	Rc(PT) 1/8	14	15.2			29.5					15.3
KBV3-R1				25.2	28.6	30.5	42.6	11.4	20.5	27.0	22.0
KBV3-R2	Rc(PT)1/4	19	18.5			32.0			19.5		27.0
KBV4-R2		22	20.9	27.0	30.4	36.5	41.4	12.2	18.0	25.0	40.6
KBV4-R3	Rc(PT)3/8					43.0					44.7



Branch elbow module: **KBZ**

Part No.	Applicable tube O.D.	D1	D2	D3	L1	L2	L3	L4	A	M	P	Weight (g)
KBZ1-04	4	10.4	13.6	16.8	22.0	33.0	10.4	13.0	19.5	16.0	10.4	6.4
KBZ1-06	6	12.8			24.0					17.0	12.8	8.1
KBZ2-08	8	15.2	17.6	21.0	28.5	36.0	10.1	15.5	22.5	18.5	15.2	12.6
KBZ3-10	10	18.5	25.2	28.6	31.5	42.6	11.4	19.5	27.0	21.0	18.5	24.4
KBZ3-12	12	20.9			34.0					22.0	20.9	27.1
KBZ4-12			27.0	30.4	35.0	41.4	12.2	18.0	25.0			28.5



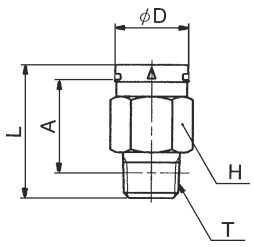


2 Air Supply Port

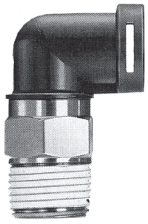
Female connector union: **KBH**

Part No.	T Connecting thread	H (Hex.)	D	L	A*	Weight (g)
KBH1-R1S	R(PT) 1/8	14	13.6	27.0	20.0	13.4
KBH2-R1S		17	17.6	29.0	21.5	19.2
KBH2-R2S	R(PT) 1/4			32.0	22.5	23.3
KBH2-R3S	R(PT) 3/8			27.5	17.5	22.5
KBH3-R2S	R(PT) 1/4	19	25.2	35.5	25.4	26.5
KBH3-R3S	R(PT) 3/8			31.0	20.5	23.2
KBH3-R4S	R(PT) 1/2	22			19.0	41.5
KBH4-R3S	R(PT) 3/8	24	27.0	35.5	24.5	44.5
KBH4-R4S	R(PT) 1/2			31.5	19.0	36.5

*Reference dimensions after R(PT)thread installation.

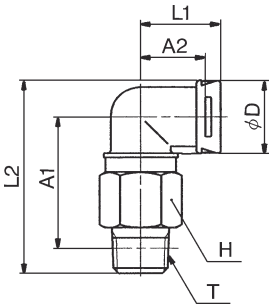


Female connector elbow union: **KBL**

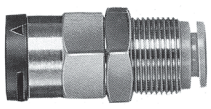


Part No.	T Connecting thread	H (Hex.)	D	L_1	L_2	A_1*	A_2	Weight (g)
KBL1-R1S	R(PT) 1/8	14	13.6	18	38.0	27.0	15.0	14.8
KBL2-R1S		17	17.6	19	43.5	30.5	15.5	23.2
KBL2-R2S	R(PT) 1/4				46.5	31.5		27.3
KBL2-R3S	R(PT) 3/8				42.0	26.5		26.5
KBL3-R2S	R(PT) 1/4	19	25.2	22	56.0	37.5	18.0	32.6
KBL3-R3S	R(PT) 3/8				51.5	32.5		29.3
KBL3-R4S	R(PT) 1/2	22				31.0		47.6
KBL4-R3S	R(PT) 3/8	24	27.0	24	61.5	41.5	19.5	57.6
KBL4-R4S	R(PT) 1/2				57.5	36.0		48.8

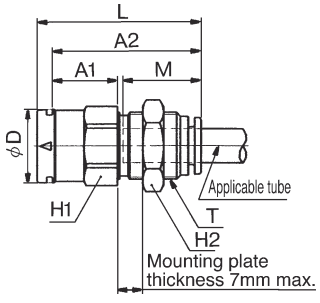
*Reference dimensions after R(PT)thread installation.



Bulkhead female connector: **KBE**



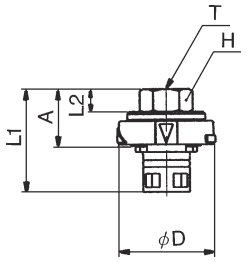
Part No.	Appli-cable tube O.D.	T Attach thread	H_1 (Hex.)	H_2 (Hex.)	D	L	A_1	A_2	M	Weight (g)
KBE1-04	4	M12×1	14	14	13.6	34.5	15.0	31.5	16.0	17.9
KBE1-06	6	M14×1	17	17		35.5	15.5	32.0	17.0	27.0
KBE2-06					17.6	37.5	17.0	33.5		26.0
KBE2-08	8	M16×1		19		39.0	15.5	35.5	18.5	29.5
KBE2-10	10	M20×1	22	24		41.5	15.5	38.0	21.0	57.5
KBE3-08	8	M16×1		19	25.2	43.5	19.5	39.5	18.5	51.6
KBE3-10	10	M20×1		24		45.0	18.5	41.0	21.0	63.0
KBE3-12	12	M22×1	24	27		46.0		42.0	22.0	83.4
KBE4-12					27.0	44.0	18.0	41.5		66.6



2 Air Supply Port

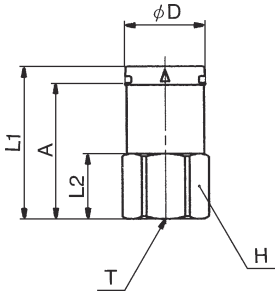
Male connector socket: **KBB**

Part No.	T Connecting thread	H (Hex.)	D	L_1	L_2	A	Weight (g)
KBB1-M5	M5×0.8	8	16.8	29.5	11.5	19.0	6.0
KBB2-M6	M6×1	10	21.0	23.0	5.0	12.5	6.3
KBB3-R1	Rc(PT)1/8	14	28.6	27.5	6.5	16.0	11.4
KBB4-R2	Rc(PT)1/4	19	30.4	31.5	9.5	19.5	24.1



Female connctor socket: **KBS**

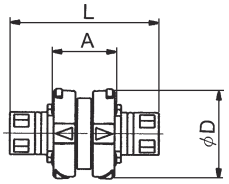
Part No.	T Connecting thread	H (Hex.)	D	L_1	L_2	A	Weight (g)
KBS1-R1	Rc(PT)1/8	14	13.6	28.0	11.0	25.0	17.8
KBS2-R2	Rc(PT)1/4	17	17.6	33.5	14.0	30.0	28.5
KBS3-R3	Rc(PT)3/8	19	25.2	38.5	17.0	34.5	33.8
KBS4-R4	Rc(PT) 1/2	24	27.0	39.0	20.0	35.0	57.1



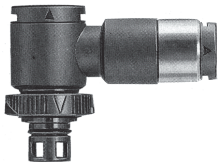
3 Other Piping Material

Nipple: **KBN**

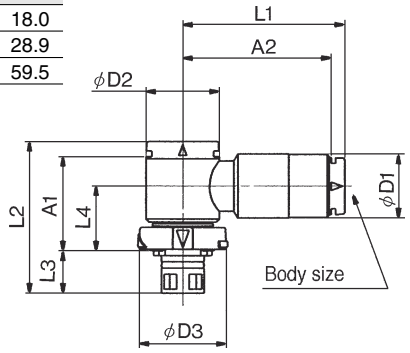
Part No.	D	L	A	Weight (g)
KBN1	16.8	35.0	14.0	2.9
KBN2	21.0		15.0	4.6
KBN3	28.6	39.0	16.5	7.2
KBN4	30.4	41.5	17.0	10.2



Elbow different diameter female connector module: **KBD**

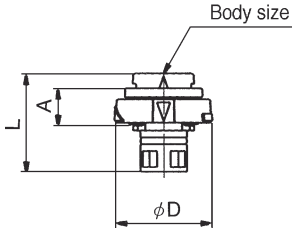


Part No.	D_1	D_2	D_3	L_1	L_2	L_3	L_4	A_1	A_2	Weight (g)
KBD2-1	15.2	17.6	21.0	39.0	36.0	10.1	15.5	22.5	35.5	18.0
KBD3-2	20.9	25.2	28.6	38.0	42.6	11.4	19.5	27.0	34.5	28.9
KBD4-3	26.5	32.3	30.4	44.5	55.0	12.2	24.0	38.5	40.0	59.5



Different diameter module: **KBR**

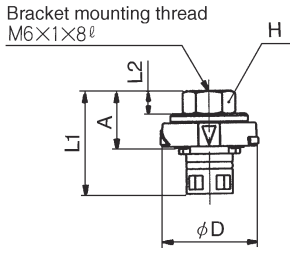
Part No.	D	L	A	Weight (g)
KBR2-1	21.0	21.5	8.0	2.8
KBR3-2	28.6	25.0	10.0	4.3
KBR4-3	30.4	30.5	14.0	8.8



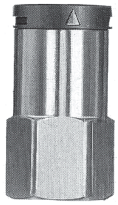
4 Plug/Cap

Plug: **KBP**

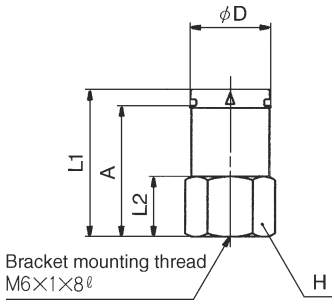
Part No.	H (Hex.)	D	L_1	L_2	A	Weight (g)
KBP1	8	16.8	29.5	11.5	19.0	5.6
KBP2	10	21.0	23.0	5.0	12.5	6.8
KBP3	14	28.6	25.5		14.0	13.4
KBP4	19	30.4	27.0		15.0	24.0



Cap: **KBC**



Part No.	H (Hex.)	D	L1	L2	A	Weight (g)
KBC1	14	13.6	30.0	13.0	26.5	23.4
KBC2	17	17.6	32.5		28.5	37.0
KBC3	19	25.2	35.5	14.0	31.5	46.7
KBC4	24	27.0	34.0	15.0	29.5	74.4

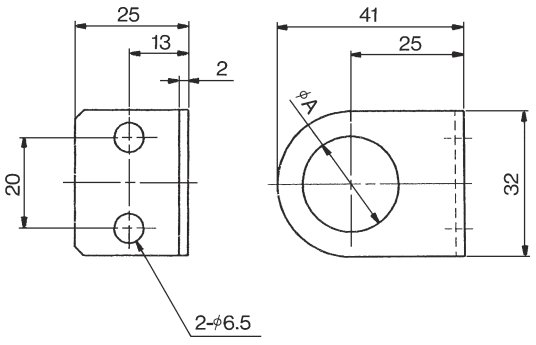


5 Bracket

Bracket: **KBX**

Part No.	A	Applicable model	Weight (g)
KBX6	7	KBP, KBC	27.5
KBX12	13	KBE1-04	26.1
KBX14	15	KBE1-06, KBE2-06	25.4
KBX16	17	KBE2-08, KBE3-08	24.4
KBX20	21	KBE2-10, KBE3-10	22.6
KBX22	23	KBE3-12, KBE4-12	21.6

∗In case of KBX6, use the enclosed mounting screws designed for KBP(plug) and KBC(cap).
Screw size: Cross recessed round head screw(M6×1×8ℓ)
Screw color: Black

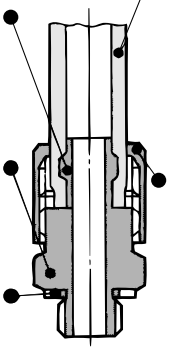


Hose nipple

Barb
Easy tube insertion.
High retaining force.

Body
Electroless nickel plated.

Gasket
Low clamping torque.



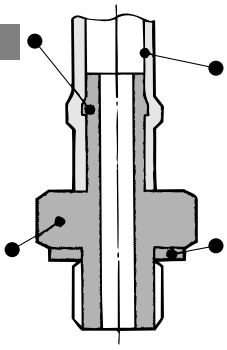
Tube
Accepts nylon, soft nylon and polyurethane tubing.

Cap nut
Hose nipple tubing connection/disconnection is simple while keeping a large retaining force. With electroless nickel plating.

Barb fitting

Barb
Easy tube insertion.
High retaining force.

Body
With electroless nickel plating.



Tube

Gasket
Low clamping torque. Certain sealing effect.

Miniature Size

For air connection in confined areas.

Simple Connection/Disconnection

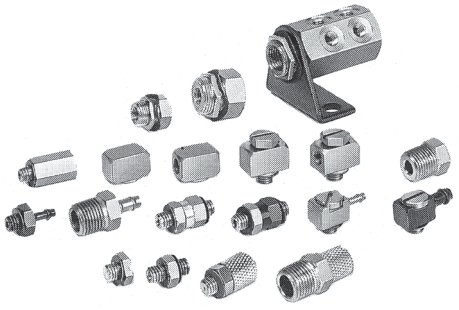
Hose nipple tubing connection/ disconnection is simple while keeping a large retaining force.

Accepts Many Types of Plastic Tubing

Hose nipple and hose elbow accepts nylon, soft nylon, and polyurethane tubing.

Electroless Nickel Plated

To be used for copper-free applications.



Specifications

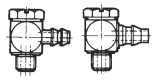
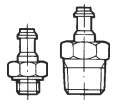
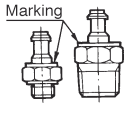
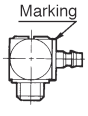
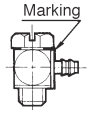
Applicable tube material		Nylon	Soft nylon		Polyurethane
Applicable tube dia.	M3	—	ø3.18/ø2.18	ø4/ø2.5	ø3.18/ø2,ø4/ø2.5
	M5-R(PT) 1/8	ø4/ø2.5 ø6/ø4		ø4/ø2.5 ø6/ø4	ø3.18/ø2, ø4/ø2.5,ø6/ø4
Max. operating pressure		220psi (1.5MPa) {15.3kgf/cm²}	145psi (1.0MPa) {10.2kgf/cm²}		120psi (0.8MPa) {8.2kgf/cm²}
Ambient and fluid temperature		32 to 140°F (5 to 60°C)			
Port size		M3, M5, R(PT)1/8			
Thread		JIS B 0209 Class 2 (Metric coarse thread), JIS B 0203 (Taper pipe thread)			

Principal Element Material

Material	C3604BD (Nipple M-3N, M-5N: Stainless steel SUS 303)

Fitting Markings For Applicable Tube Material (Barb fitting, Barb elbow, Barb elbow(H))

Tube material determines the compatible fittings. (See diagram below.)

Connection	Tube	Fitting marking for applicable tube material			Surface treatment (Color)
		Barb fitting	Barb elbow	Barb elbow (H)	
M3	Soft nylon tube Polyurethane tube		——		Electroless nickel plating (Silver color)
R(PT)1/8, M5	Nylon tube				Electroless nickel plating (Silver color)
	Soft nylon tube Polyurethane tube				Electroless nickel plating (Black color) [Except stud]

M-5E, M-5ER, M-5M do not have surface treatment. For Electroless Nickel add -X2.

Available Configurations

Series/Model	Type	Application		Note
M3 M-3AU-3	Barb fitting  P. 90	For soft nylon tube.		ø3.18/2.18
		For polyurethane tube.		ø3.18/2
M-3AU-4		For soft nylon and polyurethane tube.		ø4/2.5
M-3ALU-3	Barb fitting  P.90	Body rotates at 360° around the stud axis.	For nylon tube.	ø3.18/2.18
			For polyurethane tube.	ø3.18/2
M-3ALU-4			For soft nylon and polyurethane tube.	ø4/2.5
M-3UL	Universal elbow  P. 90	Body rotates at 360° around the stud axis.		M3 female -M3 male
M-3UT	Universal tee  P.90	Body rotates at 360° around the stud axis.		M3 female -M3 female -M3 male
M-3N	Nipple  P.90	Fitting to workpiece and fitting to fitting connection possible.		M3 male -M3 male
M-3P	Plug  P.90	To plug unused M3 port.		
M-3G	Gasket  P. 90	To seal M3 thread.		

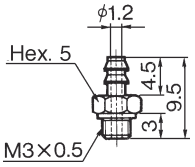
Series/Model	Type	Application	Note
R(PT)1/8 M-01AN-4	Barb fitting  P. 90	For nylon tube.	ø4/2.5
M-01AN-6			ø6/4
M-01AU-4	Barb fitting  P. 90	For soft nylon and polyurethane tube.	ø4/2.5
M-01AU-6			ø6/4
M-01H-4	Hose nipple  P. 90	For nylon, soft nylon and polyurethane tube.	ø4/2.5
M-01H-6			ø6/4

Series/Model	Type	Application		Note
M5 M-5AN-4	Barb fitting  P.91	For nylon tube.		ø4/2.5
M-5AN-6				ø6/4
M-5AU-3	Barb fitting  P. 91	For soft nylon tube.		ø3.18/2.18
		For polyurethane tube.		ø3.18/2
M-5AU-4		For soft nylon and polyurethane tube.		ø4/2.5
M-5AU-6				ø6/4
M-5ALN-4	Barb elbow  P. 91	●For nylon tube. ●Body rotates at 360° around the stud axis.		ø4/2.5
M-5ALN-6				ø6/4
M-5ALU-3	Barb elbow  P. 91	Body rotates at 360° around the stud axis.	For soft nylon tube.	ø3.18/2.18
			For polyurethane tube.	ø3.18/2
M-5ALU-4			For soft nylon and polyurethane tube.	ø4/2.5
M-5ALU-6				ø6/4
M-5ALHN-4	Barb elbow(H)  P. 91	Body rotates at 360° around the stud axis.	For nylon tube.	ø4/2.5
M-5ALHN-6				ø6/4
M-5ALHU-3	Barb elbow(H)  P. 91	Body rotates at 360° around the stud axis.	For soft nylon tube.	ø3.18/2.18
			For polyurethane tube.	ø3.18/2
M-5ALHU-4			For soft nylon and polyurethane tube.	ø4/2.5
M-5ALHU-6				ø6/4
M-5H-4	Hose nipple  P. 91	For nylon, soft nylon, and polyurethane tube.		ø4/2.5
M-5H-6				ø6/4
M-5HL-4	Hose elbow  P. 92	●For nylon, soft nylon, and polyurethane tube. ●Body rotates at 360° around the stud axis.		ø4/2.5
M-5HL-6				ø6/4
M-5HLH-4	Hose elbow(H)  P. 92			ø4/2.5
M-5HLH-6				ø6/4
M-5L	Elbow  P. 92	One-sided 90° elbow.		M5 female -M5 female

Series/Model	Type	Application	Note
M5 M-5T	Tee  P. 92	Both sides allow 90° connection.	M5 female -M5 female -M5 female
M-5UL	Universal elbow  P. 92	Body rotates at 360° around the stud axis.	M5 female -M5 male
M-5UT	Universal tee  P. 92	Body rotates at 360° around the stud axis.	M5 female -M5 female -M5 male
M-5J	Extention fitting  P. 92	Solid piece moves fitting up from workpiece.	M5 male -M5 female
M-5N	Nipple  P. 92	Fitting to workpiece and fitting to fitting connection.	M5 male -M5 male
M-5UN	Union nipple  P. 92	Body rotates at 360° around the stud axis.	PAT.
M-5E	Bulkhead union  P. 92	Panel mount connection.	M5 female -M5 female
M-5ER	Bulkhead reducer  P. 93	Reduction from Rc(PT)1/8 to M5 and includes panel mount capabilities.	Rc(PT) 1/8 -M5 female
M-5M	Manifold  P. 93	Rc(PT)1/8 can be diverted in up to 8, M5 stations this includes panel mount or bracket mount capabilities.	Rc(PT) 1/8 -M5 female (9 stations)
M-5B	Reducer bushing  P. 93	For reducing Rc(PT)1/8 female to M5 female.	Rc(PT) 1/8 -M5 female
M-5P	Plug  P. 93	To plug unused M5 port.	
M-5G1	Gasket  P. 93	To seal M5 thread.	
M-5GH	Gasket(H)  P. 93	M-5AL□-6 M-5ALH□-6 M-5HL-4,6 M-5HLH-4,6	

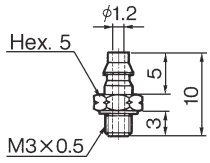
Series M3

Barb fitting for soft tube: M-3AU-3



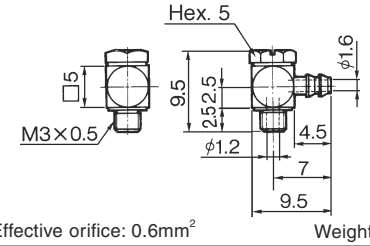
Effective orifice: 0.9mm² Weight: 0.6g

Barb fitting for soft tube: M-3AU-4



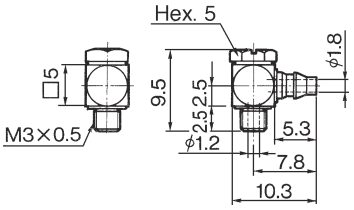
Effective orifice: 0.9mm² Weight: 0.7g

Barb elbow for soft tube: M-3ALU-3



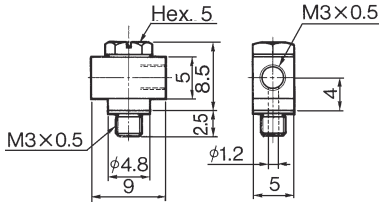
Effective orifice: 0.6mm² Weight: 0.8g

Barb elbow for soft tube: M-ALU-4



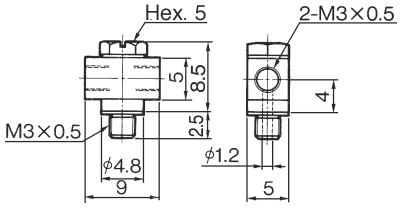
Effective orifice: 0.6mm² Weight: 0.9g

Universal elbow: M-3UL



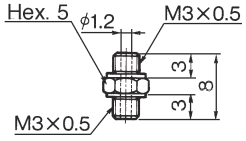
Effective orifice: 0.6mm² Weight: 1.6g

Universal tee: M-3UT



Effective orifice: 0.6mm² Weight: 1.4g

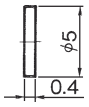
Nipple: M-3N



303 Stainless Steel

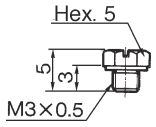
Weight: 0.6g
Effective orifice: 0.9mm²

Gasket: M-3G



Weight: 0.005g

Plug: M-3P

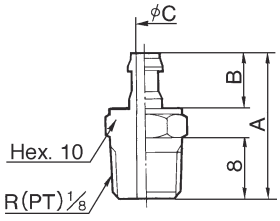


Weight: 0.5g

Series R(PT)1/8

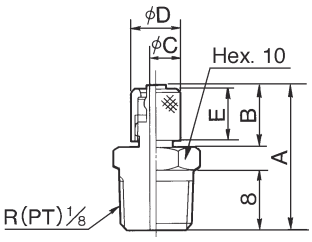
Barb fitting for nylon tube, soft tube: M-01A□-4, -6

Applicable tube	Part No.	A	B	øC	Effective orifice(mm²)	Weight (g)
Nylon tube	M-01AN-4	16	5	1.8	2.1	6.4
	M-01AN-6	18	7	2.5	4.0	6.6
Soft tube	M-01AU-4	16	5	1.8	2.1	6.5
	M-01AU-6	18	7	2.5	4.0	6.7



Hose nipple: M-01H-4, -6

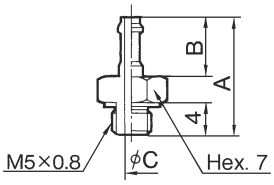
Part No.	A	B	øC	øD	E	Effective orifice(mm²)	Weight (g)
M-01H-4	19.5	8.5	1.8	6.5	7	2.1	7.1
M-01H-6	20.5	9.5	3	8.5	8	5.5	7.7



Series M5

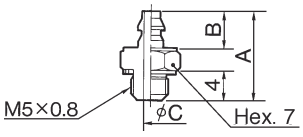
Barb fitting for nylon tube: M-5AN-4, -6

Part No.	A	B	øC	Effective orifice(mm²)	Weight (g)
M-5AN-4	12	5	1.8	2.1	1.6
M-5AN-6	14	8	2.5	4.0	1.7



Barb fitting for soft tube: M-5AU-3, -4, -6

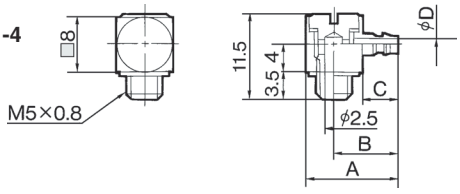
Part No.	A	B	øC	Effective orifice(mm²)	Weight (g)
M-5AU-3	11.5	4.5	1.6	1.7	1.5
M-5AU-4	12	5	1.8	2.1	1.6
M-5AU-6	14	7	2.5	4.0	1.8



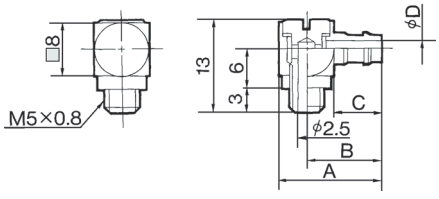
Barb elbow for nylon tube: M-5ALN-4, -6
Barb elbow for soft tube: M-5ALU-3, -4, -6

Part No.	A	B	C	øD	Effective orifice(mm²)	Weight (g)
M-5ALN-4	13	9	5	1.8	1.4	4.0
M-5ALN-6	15	11	7	2.5	2.4	4.4
M-5ALU-3	12.5	8.5	4.5	1.6	1.1	4.0
M-5ALU-4	13.3	9.3	5	1.8	1.4	4.1
M-5ALU-6	15.3	11.3	7	2.5	2.4	4.5

M-5ALN-4
M-5ALU-3, -4



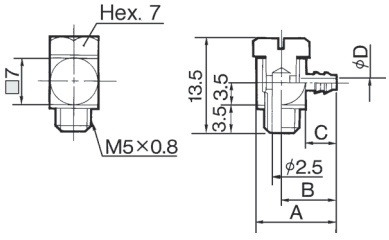
M-5ALN-6
M-5ALU-6



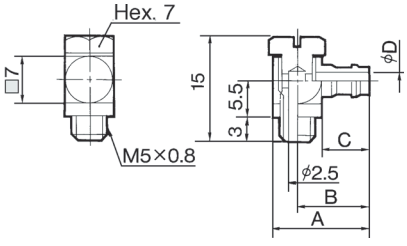
Barb elbow for nylon tube: M-5ALHN-4, -6
Barb elbow for soft tube: M-5ALHU-3, -4, -6

Part No.	A	B	C	øD	Effective orifice(mm²)	Weight (g)
M-5ALHN-4	12	8.5	5	1.8	1.4	3.2
M-5ALHN-6	14	10.5	7	2.5	2.4	3.7
M-5ALHU-3	11.5	8	4.5	1.6	1.1	3.2
M-5ALHU-4	12.3	8.8	5	1.8	1.4	3.3
M-5ALHU-6	14.3	10.8	7	2.5	2.4	3.9

M-5ALHN-4
M-5ALHU-3, -4

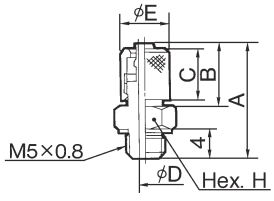


M-5ALHN-6
M-5ALHU-6



Hose nipple: M-5H-4, -6

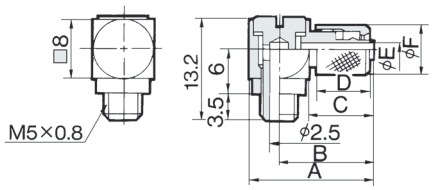
Part No.	A	B	C	øD	øE	H	Effective orifice(mm²)	Weight (g)
M-5H-4	15.5	8.5	7	1.8	6.5	7	2.1	2.7
M-5H-6	16.5	9.5	8	2.5	8.5	8	4.0	3.9



Series M5

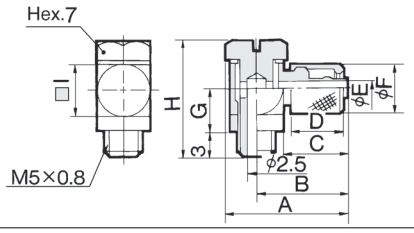
Hose elbow: M-5HL-4, -6

Part No.	A	B	C	D	øE	øF	Effective orifice(mm²)	Weight (g)
M-5HL-4	16.5	12.5	8.5	7	1.8	6.5	1.4	4.4
M-5HL-6	17.5	13.5	9.5	8	2.5	8.5	2.4	5.2

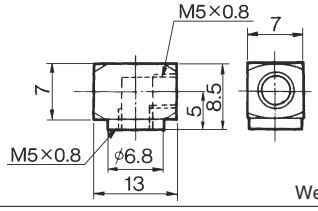


Hose elbow: M-5HLH-4, -6

Part No.	A	B	C	D	øE	øF	G	H	□I	Effective orifice(mm²)	Weight (g)
M-5HLH-4	15.5	12	8.5	7	1.8	6.5	5.5	15	7	1.4	4.5
M-5HLH-6	17.5	13.5	9.5	8	2.5	8.5	6	16	8	2.4	6.6

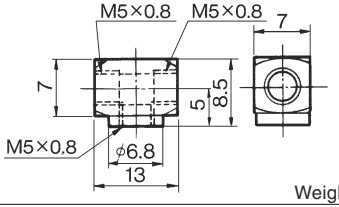


Elbow: M-5L



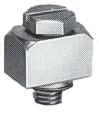
Weight: 4.2g

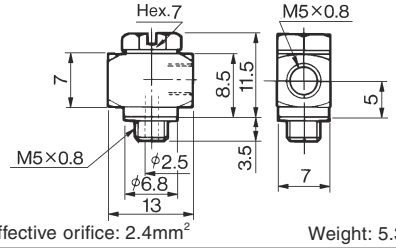
Tee: M-5T



Weight: 3.5g

Universal elbow: M-5UL

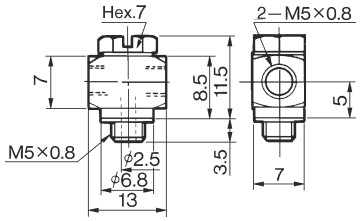




Effective orifice: 2.4mm²

Weight: 5.3g

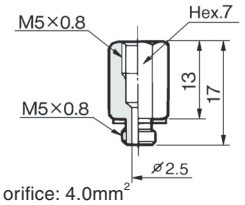
Universal tee: M-5UT



Effective orifice: 2.4mm²

Weight: 4.8g

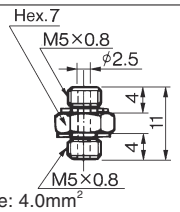
Extention fitting: M-5J



Effective orifice: 4.0mm²

Weight: 3.6g

Nipple: M-5N

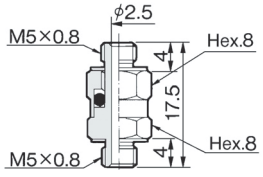


303 Stainless Steel

Effective orifice: 4.0mm²

Weight: 1.5g

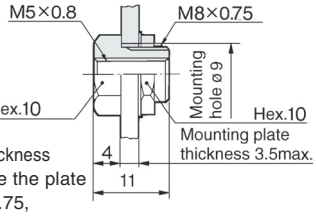
Universal nipple: M-5UN



Effective orifice: 4.0mm²

Weight: 3.9g

Bulkhead union: M-5E



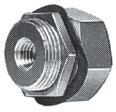
For the plate thickness 3.5 to 6mm, give the plate tapping M8×0.75, and then screw-in.

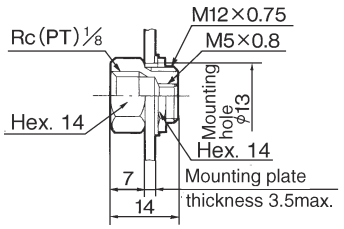
Weight: 4.6g

Brass Fitting for Electroless Nickel Plating add -X2.

Series M5

Bulkhead reducer: M-5ER

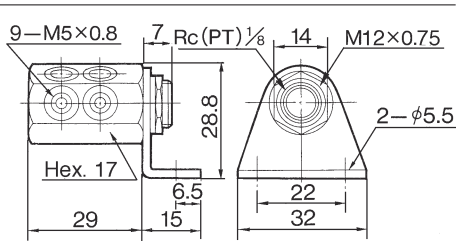




For the plate thickness 3.5 to 6mm, give the plate tapping M12×0.75, and then screw-in. Weight: 12g

Brass Fitting for Electroless Nickel Plating add -X2.

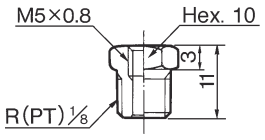
Manifold: M-5M



Panel mounting plate thickness max. 3.5mm
For the plate thickness 3.5 to 6mm, give the plate tapping M12×0.75, and then screw-in. Weight: 59g

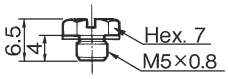
Brass Fitting for Electroless Nickel Plating add -X2.

Bushing: M-5B



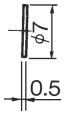
Weight: 5.8g

Plug: M-5P



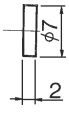
Weight: 1.3g

Gasket: M-5GI



Weight: 0.01g

Gasket: M-5GH



Weight: 0.04g

⚠ Precautions

Be sure to read before handling.
Refer to "Air Fittings & Tubing Precautions" for other details.

Tightening of M3 or M5 thread

⚠ Caution

① Tighten by hand, and give it an additional 1/4 rotation with wrench. (The additional rotation should be doubled to 1/2 when using the universal elbow, universal tee, etc. which have two gaskets.) If tightened too much, thread portion may be damaged and gasket may be deformed. This will cause air leakage. On the contrary, if tightening is not sufficient, thread may loosen causing air leakage.

Use of tubing with hose nipple

⚠ Caution

① Cut the tube perpendicularly to the tube axis to a little longer length than required length. (Use tube cutter "TK-1", "TK-2" or "TK-3".)
② Pass the tubing through the cap nut.
① Push the tube until it comes to the end of the barb portion, or it may cause air leakage or hose releasing.
④ Tighten the cap nut firmly by hand on the fitting.

Use of tube with barb fitting

⚠ Caution

① Cut the tube perpendicularly to the tube axis to a little longer length than required length. (Use tube cutter "TK-1", "TK-2" or "TK-3".)
② Push the tube in until it comes to the end of the barb portion, or it may cause air leakage or hose releasing.

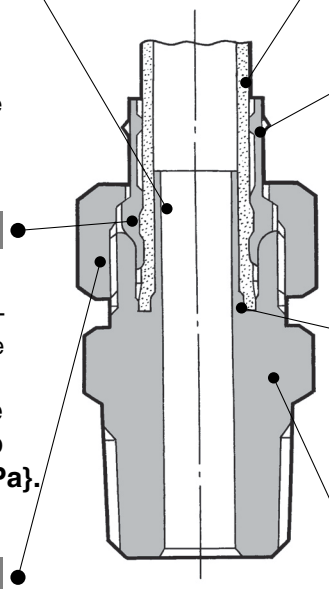
Insert

Suitable for use with nylon, soft nylon and urethane.
Large retaining force.
Insert mechanism can provide reliable retaining force on both sides of the tube, inside and outside.

Ferrul

Low tightening torque.
The resin ferrul permits the low tightening torque of the nut but provides a large retaining force.
Can be used for a wide range of pressures from vacuum up to a pressure of 145psi {1.0MPa}.

Union nut



Tube

Tube grip

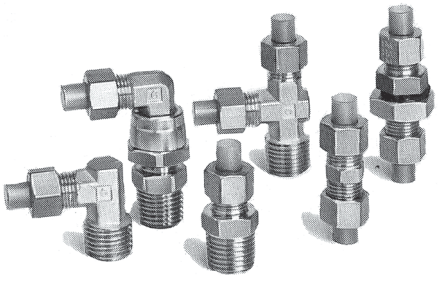
Slip prevented.
Tube grip retains the tube in position.

Tube support

Tube slide prevented during installation.
The tube support mechanism gives the sure feeling of inserting tube, and prevents tube from sliding when screwing in the tube.

Body

Design considered well to improvement of workability with low clampimg torque.



Applicable Tube

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 ø8, ø10, ø12) are provided with the captive types because of different I.D.

Specifications

Operating fluid		Air
Max.operating pressure		145 {1.0MPa}
Max.operating vaccum pressure		13Pa {0.1Torr}
Proof pressure		1,015psi {7.0MPa}
Ambient and fluid temperature		32 to 140° {0 to 60°}
Thread	Thread portion	JIS B 0203 (Taper pipe thead)
	Nut	JIS B 0211 Class 2 (Metric fine thread)
Sealant (thread portion)*		None or with sealant

* Male elbow, Branch tee and Male run tee with sealant are made to order.

Principal Element Material

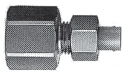
Body	C3604BD, C3771BE
Nut	C3604BD
Sleeve	Nylon66

Model

Male connector
KFH P. 97

Use to pipe in the same direction from female thread portion. Most general type.

Female connector
KFF P. 98



Use to pipe from male threaded portion such as pressure gauge.

Straight union
KFH P. 97

Use to connect same size tubes in the same direction.

Bulkhead connector
KFE P. 99

Use for transit connection of a tube and a male screw for installation of panel.

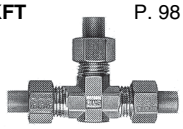
Male elbow
KFL P. 97

Use to pipe at right angle to female thread portion. Most general type.

Bulkhead union
KFE P. 99

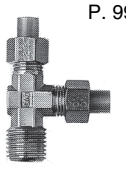
Use to junction connection of tubes for installation of panel.

Union tee
KFT P. 98



Use to branch connection of tubes of both side 90˚ direction.

Male run tee
KFY P. 99

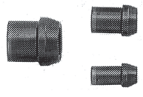


Use to branch line in the same direction from female thread and in 90˚ direction.

Branch tee
KFT P. 98

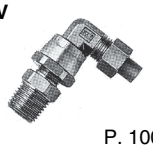
Use to branch line from female thread of both side 90˚ direction.

Plug
KFP P. 99



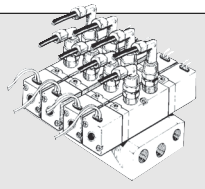
Use to plug unused fitting.

Swivel elbow
KFV

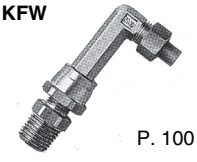


P. 100

Use to pipe at right angle to female thread portion. Swiveled at any direction.

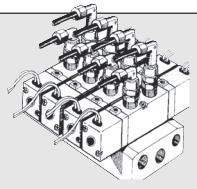


Swivel extended elbow
KFW



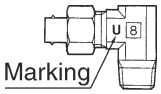
P. 100

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



Fitting Markings For Applicable Tube Material

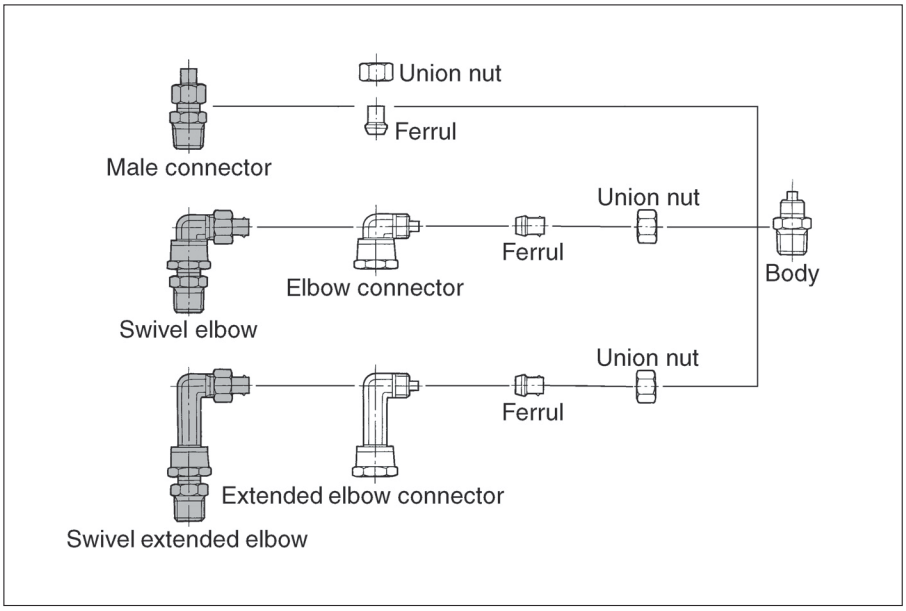
- Fittings used only with polyurethane tube (tube O.D. ø8, ø10 and ø12) are identified by the following mark on the body.
- Unmarked fittings are used with nylon and soft nylon tubes or compatibly used with nylon, soft nylon and polyurethane tubes.
- Union nut and ferrul are compatible.

Marking for polyurethane use	Type
	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

Parts List/Swivel Type Fitting Parts List

Swivel Type Fitting Parts Lineup

The bodies of elbow connectors and extended elbow connectors are compatible with almost any type of fitting. (Exceptions are "KFV-04" and "KFW-04" which are for the body of ø6 tube.)



Elbow connector: **KFV**

Part No.	Applicable tube O.D./I.D.
KFV-04	ø4/ø2.5
KFV-06	ø6/ø4
KFV-08U	ø8/ø5
KFV-08N	ø8/ø6
KFV-10U	ø10/ø6.5
KFV-10N	ø10/ø7.5
KFV-12U	ø12/ø8
KFV-12N	ø12/ø9

Union nut: **KFN**

Part No.	Applicable tube O.D.
KFN-04	ø4
KFN-06	ø6
KFN-08	ø8
KFN-10	ø10
KFN-12	ø12

Extended elbow connector: **KFW**

Part No.	Applicable tube O.D./I.D.
KFW-04	ø4/ø2.5
KFW-06	ø6/ø4
KFW-08U	ø8/ø5
KFW-08N	ø8/ø6
KFW-10U	ø10/ø6.5
KFW-10N	ø10/ø7.5
KFW-12U	ø12/ø8
KFW-12N	ø12/ø9

Ferrul: **KFS**

Part No.	Applicable tube O.D.
KFS-04	ø4
KFS-06	ø6
KFS-08	ø8
KFS-10	ø10
KFS-12	ø12

⚠ Precautions

Be sure to read before handling.
Refer to "Air Fittings & Tubing Precautions" for other details.

Piping

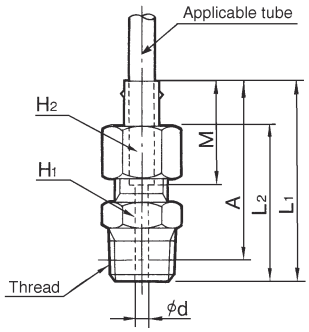
⚠ Caution

①Cut the tube perpendicularly. (Use SMC tube cutter "TK-1", "TK-2" or "TK-3".)

②Then push the tube in until it comes to a dead end and tighten nut by hand.

Male connector: KFH

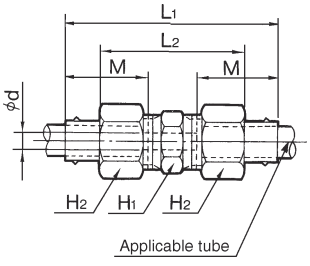
Applicable tube (mm) O.D.	Applicable tube (mm) I.D.	Thread R(PT)	Part No.	H_1 (Hex.)	H_2 (Hex.)	L_1	L_2	M	ød	A*	Effective orifice (mm^2)	Weight (g)
4	2.5	1/8	KFH04-01	10	10	30.5	23.8	15.5	1.5	26.5	1.6	13
		1/4	KFH04-02	14		34.5	27.8			28.5		23
6	4	1/8	KFH06-01	10	12	30.2	23.5	15.2	3	26.2	6	14
		1/4	KFH06-02	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	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			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	31
		3/8	KFH10N-03			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			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	31
		3/8	KFH12N-03			37.3	30.5			31		39
		1/2	KFH12N-04	22		40.3	33.5			32.1		64



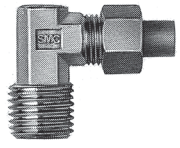
∗ Reference dimensions after R(PT) thread installation.

Straight union: KFH

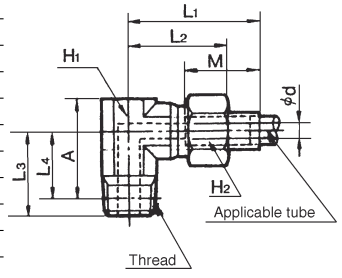
Applicable tube (mm) O.D.	Applicable tube (mm) I.D.	Part No.	H_1 (Hex.)	H_2 (Hex.)	L_1	L_2	M	ød	Effective orifice (mm^2)	Weight (g)
4	2.5	KFH04-00	8	10	40.9	27.6	15.5	1.5	1.6	13
6	4	KFH06-00	10	12	40.3	27	15.2	3	6	17
8	5	KFH08U-00	12	14	41.3	28	16.2	4	11	23
	6	KFH08N-00						5	17	22
10	6.5	KFH10U-00	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

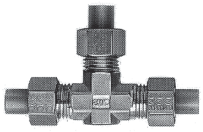


Applicable tube (mm) O.D.	Applicable tube (mm) I.D.	Thread R(PT)	Part No.	H_1 (Hex.)	H_2 (Hex.)	L_1	L_2	L_3	L_4*	M	ød	A*	Effective orifice (mm^2)	Weight (g)
4	2.5	1/8	KFL04-01	10	10	27.5	20.8	17	13	15.5	1.5	19.3	1.6	21
		1/4	KFL04-02					19						25
6	4	1/8	KFL06-01	10	12	27.2	20.5	17	13	15.2	3	19.3	6	22
		1/4	KFL06-02					19						27
		3/8	KFL06-03	12		30.2	23.5	20	13.7			21		38
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			22.3	11	32
		3/8	KFL08U-03			30.2	23.5	20	13.7			21		39
	6	1/8	KFL08N-01			28.2	21.5	18	14		5	21.3	12	31
		1/4	KFL08N-02					21	15			22.3	16	32
		3/8	KFL08N-03			30.2	23.5	20	13.7			21		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			22	20	44
		1/2	KFL10U-04	14		33.8	26.5	25	16.8			25.3		66
	7.5	1/4	KFL10N-02	12		31.8	24.5	22	16		6.5	23.3	23	38
		3/8	KFL10N-03					21	14.7			22	26	43
		1/2	KFL10N-04	14		33.8	26.5	25	16.8			25.3		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			24.2	30	53
		1/2	KFL12U-04					25	16.8			25.3		68
	9	1/4	KFL12N-02					23	17		8	25.5	27	51
		3/8	KFL12N-03					22	15.7			24.2	35	52
		1/2	KFL12N-04					25	16.8			25.3		67

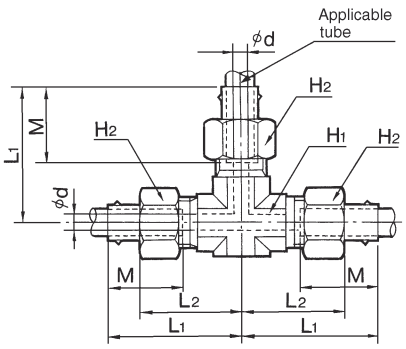


∗ Reference dimensions after R(PT) thread installation.

Union tee: KFT



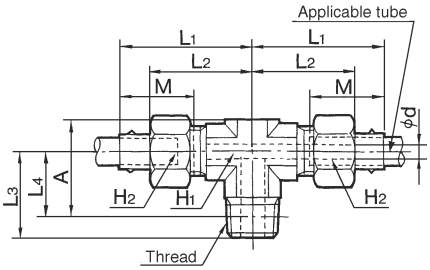
Applicable tube (mm) O.D.	Applicable tube (mm) I.D.	Part No.	H1 (Hex.)	H2 (Hex.)	L1	L2	M	ød	Effective orifice (mm²)	Weight (g)
4	2.5	KFT04-00	10	10	27.5	20.8	15.5	1.5	1.6	33
6	4	KFT06-00		12	27.2	20.5	15.2	3	6	37
8	5	KFT08U-00	12	14	30.2	23.5	16.2	4	11	54
	6	KFT08N-00						5	17	53
10	6.5	KFT10U-00	12	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



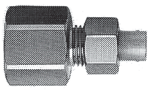
Branch tee: KFT

Applicable tube (mm) O.D.	Applicable tube (mm) I.D.	Thread R(PT)	Part No.	H1 (Hex.)	H2 (Hex.)	L1	L2	L3	L4*	M	ød	A*	Effective orifice (mm²)	Weight (g)
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					23	17			24.3	19	50
		3/8	KFT08U-03			30.2	23.5	22	15.7			23		56
	6	1/8	KFT08N-01			30.2	23.5	20	16		5	23.3	16	46
		1/4	KFT08N-02					23	17			24.3	25	49
		3/8	KFT08N-03			30.2	23.5	22	15.7			23		54
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					22	15.7			23	34	63
		1/2	KFT10U-04	14		33.8	26.5	27	18.8			27.3		90
	7.5	1/4	KFT10N-02	12		31.8	24.5	23	17		6.5	24.3	30	57
		3/8	KFT10N-03					22	15.7			23		62
		1/2	KFT10N-04	14		33.8	26.5	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		94
	9	1/4	KFT12N-02					25	19		8	27.5	32	75
		3/8	KFT12N-03					24	17.7			26.2	48	78
		1/2	KFT12N-04					27	18.8			27.3		93

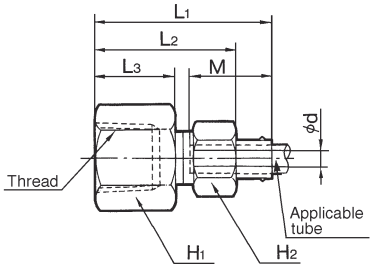
* Reference dimensions after R(PT) thread installation.



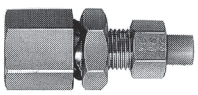
Female connector: KFF



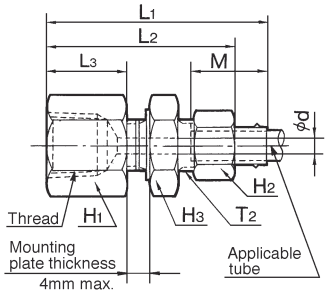
Applicable tube (mm) O.D.	Applicable tube (mm) I.D.	Thread Rc (PT)	Part No.	H1 (Hex.)	H2 (Hex.)	L1	L2	L3	M	ød	Effective orifice (mm²)	Weight (g)
4	2.5	1/4	KFF04-02	17	10	33.5	26.8	15	15.5	1.5	1.6	25
6	4	1/4	KFF06-02	17	12	33.2	26.5	15	15.2	3	6	27
		3/8	KFF06-03	19		35.2	28.5	17				30
8	5	1/4	KFF08U-02	17	14	33.2	26.5	15	16.2	4	11	28
	6		KFF08N-02							5	17	
10	6.5	1/4	KFF10U-02	17	17	34.8	27.5	15	18.8	5.5	21	32
	7.5		KFF10N-02							6.5	30	
12	8	1/4	KFF12U-02	17	19	35.3	28.5	15	19.3	7	35	35
	9		KFF12N-02							8	45	36



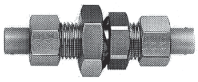
Bulkhead connector: KFE



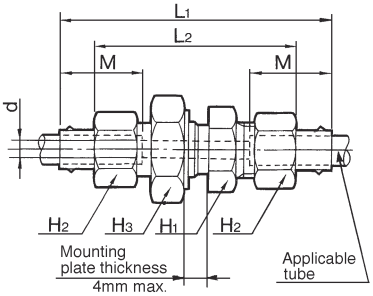
Applicable tube (mm) O.D.	Applicable tube (mm) I.D.	Thread Rc (PT)	Part No.	H1 (Hex.)	H2 (Hex.)	H3 (Hex.)	L1	L2	L3	M	ød	T2	Mounting hole	Effective orifice (mm²)	Weight (g)
6	4	1/4	KFE06-02	17	12	17	44.2	37.5	16	15.2	3	M10×1	11	6	41
8	5	3/8	KFE08U-03	19	14	19	46.2	39.5	17	16.2	4	M12×1	13	11	49
	6		KFE08N-03								5			17	50
10	6.5	3/8	KFE10U-03	19	17	22	48.8	41.5	17	18.8	5.5	M15×1	16	21	63
	7.5		KFE10N-03								6.5			30	62
12	8	3/8	KFE12U-03	22	19	24	51.3	44.5	17	19.3	7	M17×1	18	35	93
	9		KFE12N-03								8			45	91



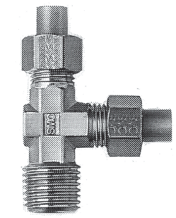
Bulkhead union: KFE



Applicable tube (mm) O.D.	Applicable tube (mm) I.D.	Part No.	H1 (Hex.)	H2 (Hex.)	H3 (Hex.)	L1	L2	M	ød	Mounting hole	Effective orifice (mm²)	Weight (g)
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							5		17	46
10	6.5	KFE10U-00	19	17	22	56.6	42	18.8	5.5	16	21	67
	7.5	KFE10N-00							6.5		30	66
12	8	KFE12U-00	22	19	24	59.5	46	19.3	7	18	35	87
	9	KFE12N-00							8		45	85

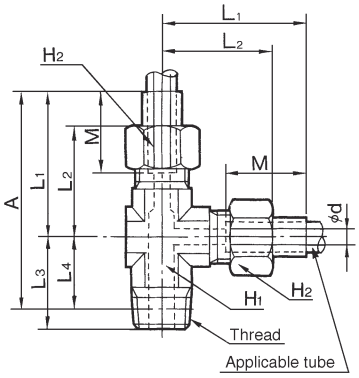


Male run tee: KFY



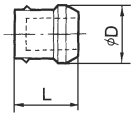
Applicable tube (mm) O.D.	Applicable tube (mm) I.D.	Thread R(PT)	Part No.	H1 (Hex.)	H2 (Hex.)	L1	L2	L3	L4*	M	ød	A*	Effective orifice (mm²)	Weight (g)
4	2.5	1/8	KFY04-01	10	10	27.5	20.8	17	13	15.5	1.5	40.5	3.5	28
		1/4	KFY04-02					19						32
6	4	1/8	KFY06-01	10	12	27.2	20.5	17	13	15.2	3	40.2	11	31
		1/4	KFY06-02					19						37
		3/8	KFY06-03			30.2	23.5	22	15.7			45.8	13	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			47.2	21	50
		3/8	KFY08U-03					22	15.7			45.8		55
	6	1/8	KFY08N-01					20	16		5	46.2	18	47
		1/4	KFY08N-02					23	17			47.2	27	48
		3/8	KFY08N-03					22	15.7			45.8		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			47.4		63
		1/2	KFY10U-04	14		33.8	26.5	27	18.8			52.6	38	89
	7.5	1/4	KFY10N-02	12		31.8	24.5	23	17		6.5	48.8	33	57
		3/8	KFY10N-03					22	15.7			47.4		62
		1/2	KFY10N-04	14		33.8	26.5	27	18.8			52.6	46	88
12	8	1/4	KFY12U-02	14	19	34.3	27.5	25	19	19.3	7	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		8	53.3	36	76
		3/8	KFY12N-03					24	17.7			51.9	54	78
		1/2	KFY12N-04					27	18.8			53.1		92

* Reference dimensions after R(PT) thread installation.

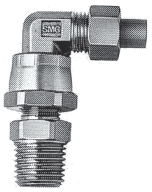


Plug: KFP

Applicable 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

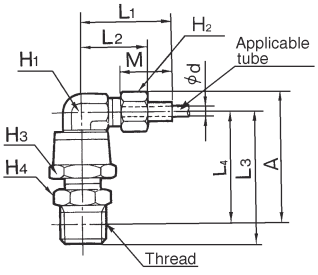


Swivel elbow: KFV



Applicable tube (mm) O.D.	Applicable tube (mm) I.D.	Thread R(PT)	Part No.	H1 (Hex.)	H2 (Hex.)	H3 (Hex.)	H4 (Hex.)	L1	L2	L3	L4*	M	ød	A*	Effective orifice (mm²)	Weight (g)
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	10	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			39.6		61
		3/8	KFV08U-03				17			39.7	33.4			40.3		73
	6	1/8	KFV08N-01				12			34.7	30.7		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							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				17			40.7	34.7		6.5	42.8	25	72
		3/8	KFV10N-03							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							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			41.7	35.7		8	45.7	38	90
		3/8	KFV12N-03							42.7	36.4			46.7		98
		1/2	KFV12N-04				22			45.7	37.5			47.5		123

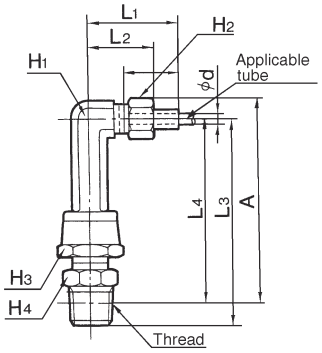
∗ Reference dimensions after R(PT) thread installation.



Swivel extended elbow: KFW

Applicable tube (mm) O.D.	Applicable tube (mm) I.D.	Thread R(PT)	Part No.	H1 (Hex.)	H2 (Hex.)	H3 (Hex.)	H4 (Hex.)	L1	L2	L3	L4*	M	ød	A*	Effective orifice (mm²)	Weight (g)
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	10	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			55.7	51.7		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							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				17			61.7	55.7		6.5	63.8	25	99
		3/8	KFW10N-03							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							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			64.7	58.7		8	68.7	38	144
		3/8	KFW12N-03							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.



Flared Ridge Ferrul

Prevents accidental loss of ferrul when inserting tubing into the fitting body.

Hardened Ridge Ferrul

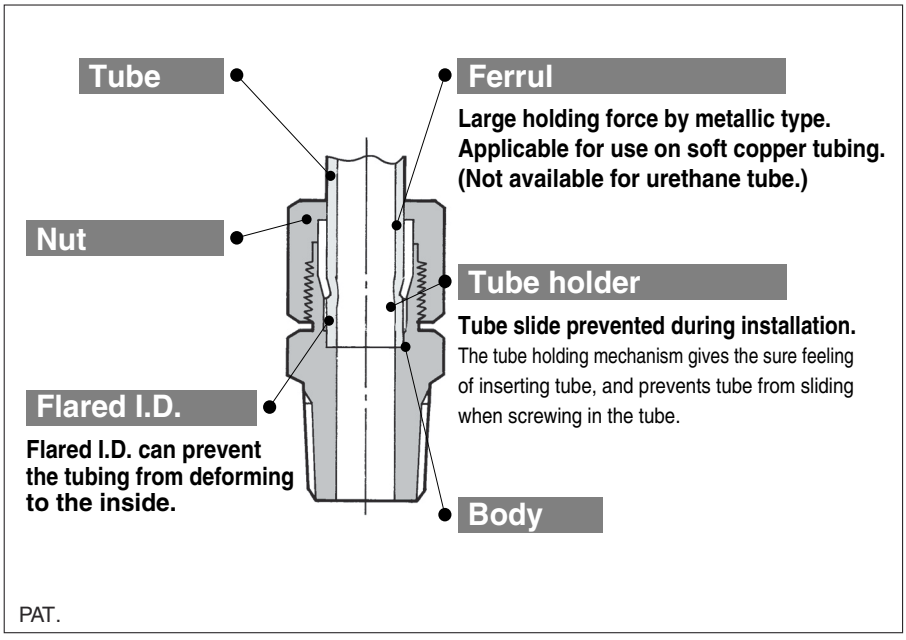
Prevents breakage of ferrul when tightening nut.

Flared I.D.

Provides low flow resistance inside the fitting.

Wide Variety of Types and Sizes

Ten types and five tube O.D's provide a wide range of fittings that will fit any application.



Specifications

Applicable tube material		Nylon tube, Soft nylon tube, Soft copper tube (C1220T-0)
Applicable tube O.D.		ø4, ø6, ø8, ø10, ø12
Max.operating pressure		145psi {1.0MPa}
Proof pressure		1,450psi {10MPa}
Operating fluid		Air
Thread	Thread portion	JIS B 0203 (Taper pipe thread)
	Nut	JIS B 0211 Class 2 (Metric fine thread)
Sealant (Thread portion) Note)		None or with sealant

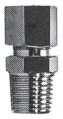
Note) Male elbow, Branch tee, Male run tee with sealant are made to order.

Principal Element Material

Body	C36004BD, C3771BE
Nut	C3604BD
Sleeve	C2700T

Model

Male connector
H P. 104



Use to pipe in the same direction from female thread portion. Most general type.

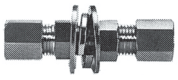
Male run tee
DY P. 105

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

Male elbow
DL P. 104

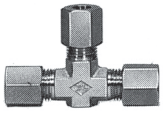
Use to pipe at right angle to female thread portion. Most general type.

Bulkhead union
DE P. 105



Use to junction connection of tubes for panel.

Union tee
DT P. 104

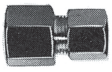


Use to branch connection of tubes of both sides 90˚ direction.

Bulkhead connector
DEF P. 105

Use for transit connection of a tube and a male screw on panel.

Female union
DHF P. 104



Use to pipe from male threaded portion such as pressure gauge.

Plug
DP P. 106

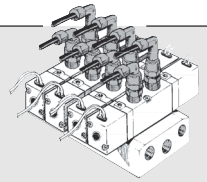
Use to plug unused fitting

Branch tee
DT P. 105

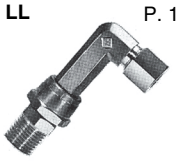
Use to branch line from female thread of both sides 90˚ direction.

Swivel elbow
L P. 106

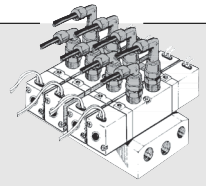
Use to pipe at right angle to female thread portion. Swiveled at any direction.



Swivel long elbow
LL P. 106



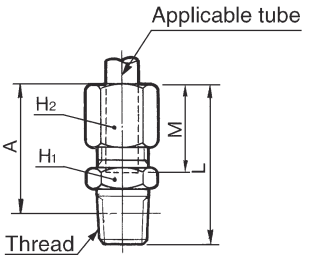
Use to pipe at right angle to female thread portion. Swiveled at any direction. Solid piece moves fittings up from workpiece.



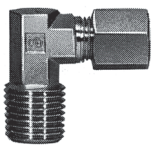
Male connector: H

Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H1 (Hex.)	H2 (Hex.)	L	M	A*	Effective orifice (mm²)	Weight (g)
4	1/8	H04-01	10	10	25.1	15	21.1	4	10
	1/4	H04-02	14		29.1		23.1		17
6	1/8	H06-01	10	12	25.1	16	21.1	11	12
	1/4	H06-02	14		29.1		23.1		19
	3/8	H06-03	17		31.1		24.8		31
8	1/8	H08-01	12	14	25.1	16	21.1	20	16
	1/4	H08-02	14		29.1		23.1		21
	3/8	H08-03	17		31.1		24.8		30
10	1/4	H10-02	14	17	29.1	17	23.1	34	28
	3/8	H10-03	17		31.1		24.8		37
	1/2	H10-04	22		34.1		25.9		53
12	1/4	H12-02	17	19	30.1	17	24.1	51	30
	3/8	H12-03	17		31.1		24.8		39
	1/2	H12-04	22		34.1		25.9		59

* Reference dimensions after R(PT) thread installation.

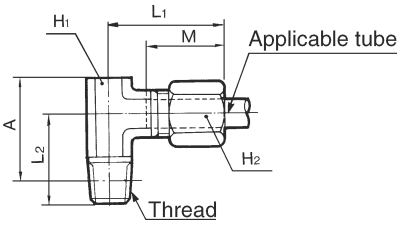


Male elbow: DL

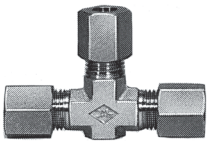


Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H1 (Hex.)	H2 (Hex.)	L1	L2	M	A*	Effective orifice (mm²)	Weight (g)
4	1/8	DL04-01	10	10	23.5	17	15	19.6	3.5	23
	1/4	DL04-02				19				30
6	1/8	DL06-01	10	12	23.5	17	16	19.6	9	25
	1/4	DL06-02				19				31
	3/8	DL06-03	14		26.5	22		24.5		53
8	1/8	DL08-01	12	14	24.5	18	16	21.6	19	32
	1/4	DL08-02				21		22.6		38
	3/8	DL08-03	14		26.5	22		24.5		54
10	1/4	DL10-02	14	17	26.5	23	17	25.8	31	51
	3/8	DL10-03				22		24.5		57
	1/2	DL10-04	17		28.5	27		29.4		100
12	1/4	DL12-02	17	19	28.5	25	17	29.6	43	76
	3/8	DL12-03				26		30.3		85
	1/2	DL12-04				27		29.4		91

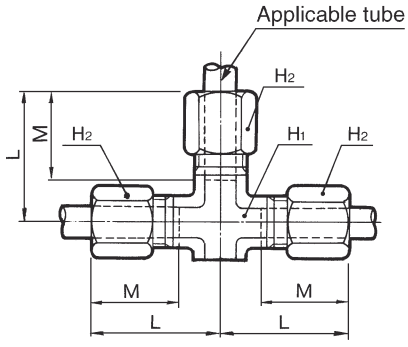
* Reference dimensions after R(PT) thread installation.



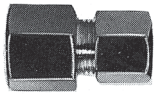
Union tee: DT



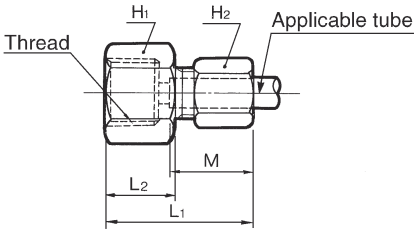
Applicable tube O.D. (mm)	Part No.	H1 (Hex.)	H2 (Hex.)	L	M	Effective orifice (mm²)	Weight (g)
4	DT04-00	10	10	23.5	15	5.7	32
6	DT06-00	10	12	23.5	16	14	36
8	DT08-00	12	14	24.5	16	25	47
10	DT10-00	14	17	26.5	17	49	70
12	DT12-00	17	19	28.5	17	55	70



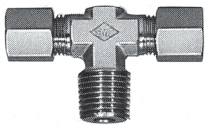
Female union: DHF



Applicable tube O.D. (mm)	Thread Rc(PT)	Part No.	H1 (Hex.)	H2 (Hex.)	L1	L2	M	Effective orifice (mm²)	Weight (g)
4	1/4	DHF04-02	17	10	30.3	16	15	4	27
6	1/4	DHF06-02	17	12	30.8	16.5	16	11	28
	3/8	DHF06-03	19		32.8	18.5			31
8	1/4	DHF08-02	17	14	29.8	15.5	16	20	30
10	1/4	DHF10-02	17	17	30.8	16.5	17	34	37
12	1/4	DHF12-02	17	19	30.8	16.5	17	51	40

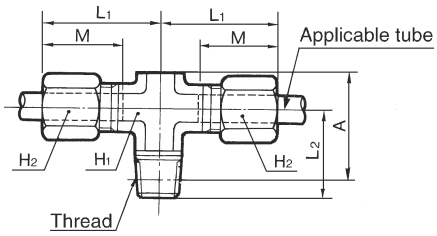


Branch tee: DT

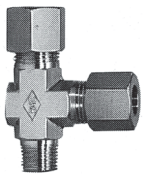


Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H1 (Hex.)	H2 (Hex.)	L1	L2	M	A*	Effective orifice (mm²)	Weight (g)
4	1/8	DT04-01	10	10	23.5	17	15	19.6	5.7	33
	1/4	DT04-02				19				40
6	1/8	DT06-01	10	12	23.5	17	16	19.6	14	35
	1/4	DT06-02				19				44
	3/8	DT06-03	14		26.5	22		24.5		70
8	1/8	DT08-01	12	14	24.5	18	16	21.6	25	45
	1/4	DT08-02				21		22.6		52
	3/8	DT08-03	14		26.5	22		24.5		73
10	1/4	DT10-02	14	17	26.5	23	17	25.8	49	72
	3/8	DT10-03				22		24.5		78
	1/2	DT10-04	17		28.5	27		29.4		120
12	1/4	DT12-02	17	19	28.5	25	17	29.6	55	106
	3/8	DT12-03				26		30.3		111
	1/2	DT12-04				27		29.4		120

∗ Reference dimensions after R(PT) thread installation.

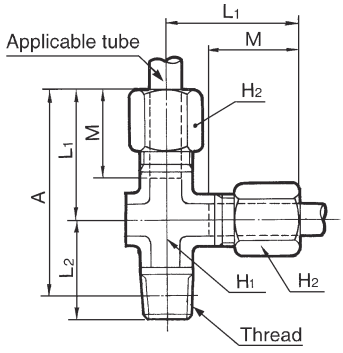


Male run tee: DY

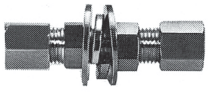


Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H1 (Hex.)	H2 (Hex.)	L1	L2	M	A*	Effective orifice (mm²)	Weight (g)
4	1/8	DY04-01	10	10	23.5	17	15	36.5	6.9	32
	1/4	DY04-02				19				40
6	1/8	DY06-01	10	12	23.5	17	16	36.5	16	36
	1/4	DY06-02				19				42
	3/8	DY06-03	14		26.5	22		42.2		66
8	1/8	DY08-01	12	14	24.5	18	16	38.5	32	44
	1/4	DY08-02				21		39.5		51
	3/8	DY08-03	14		26.5	22		42.2		69
10	1/4	DY10-02	14	17	26.5	23	17	43.5	56	70
	3/8	DY10-03				22		42.2		77
	1/2	DY10-04	17		28.5	27		47.3		116
12	1/4	DY12-02	17	19	28.5	25	17	47.5	62	106
	3/8	DY12-03				26		47.2		112
	1/2	DY12-04				27		47.3		119

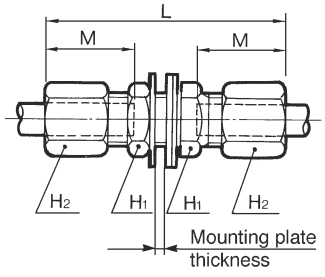
∗ Reference dimensions after R(PT) thread installation.



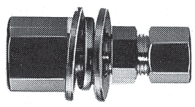
Bulkhead union: DE



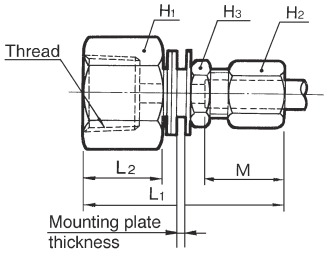
Applicable tube O.D. (mm)	Part No.	H1 (Hex.)	H2 (Hex.)	L	M	Effective orifice (mm²)	Mounting hole	Mounting plate thickness	Weight (g)
4	DE04-00	10	10	47.5	15	4	9	4max.	29
6	DE06-00	12	12	50.5	16	11	11	4max.	43
8	DE08-00	14	14	52.5	16	20	13	6max.	62
10	DE10-00	17	17	55.5	17	34	15	7max.	93
12	DE12-00	19	19	56.5	17	51	17	7max.	112



Bulkhead connector: DEF

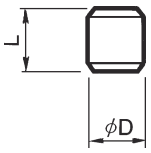


Applicable tube O.D. (mm)	Thread Rc(PT)	Part No.	H1 (Hex.)	H2 (Hex.)	H3 (Hex.)	L1	L2	M	Effective orifice (mm²)	Mounting hole	Mounting plate thickness	Weight (g)
6	1/4	DEF06-02	17	12	12	46.5	15	16	11	11	4max.	48
8	3/8	DEF08-03	19	14	14	50.5	17	16	20	13	6max.	66
10	3/8	DEF10-03	19	17	17	53.5	17	17	34	15	7max.	89
12	3/8	DEF12-03	19	19	19	54.5	17	17	51	17	7max.	104



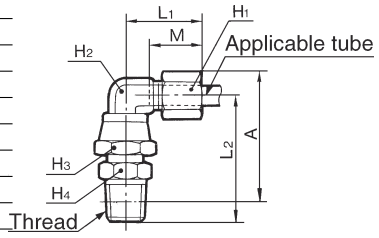
Plug: DP

Applicable tube O.D.	Part No.	L	øD	Weight (g)
ø4	**DP-04**	8	5.6	0.2
ø6	**DP-06**		7.6	0.5
ø8	**DP-08**		9.6	0.8
ø10	**DP-10**		11.6	1.2
ø12	**DP-12**		13.6	1.6



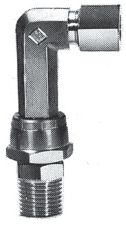
Swivel elbow: L

Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H1 (Hex.)	H2 (Hex.)	H3 (Hex.)	H4 (Hex.)	L1	L2	M	A*	Effective orifice (mm²)	Weight (g)
4	1/8	**L04-01**	10	10	14	10	21.8	30.9	15	32.7	3.5	33
	1/4	**L04-02**				14		34.9		34.7		40
6	1/8	**L06-01**	12	10	14	10	21.8	30.9	16	33.8	9	36
	1/4	**L06-02**				14		34.9		35.8		43
	3/8	**L06-03**				17		36.9		37.5		55
8	1/8	**L08-01**	14	12	17	12	23.3	31.9	16	36	19	46
	1/4	**L08-02**				14		35.9		38		52
	3/8	**L08-03**				17		37.9		39.7		61
10	1/4	**L10-02**	17	14	19	14	23.3	36.9	17	40.7	31	68
	3/8	**L10-03**				17		38.9		42.4		76
	1/2	**L10-04**				22		41.9		43.5		96
12	1/4	**L12-02**	19	17	22	17	24.3	39.9	17	44.9	43	86
	3/8	**L12-03**						40.9		45.6		94
	1/2	**L12-04**				22		43.9		46.7		118

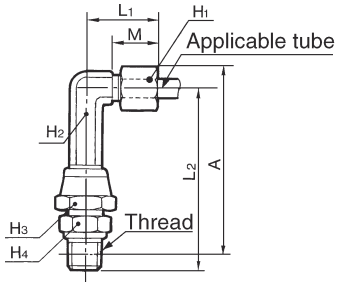


∗ Reference dimensions after R(PT) thread installation.

Swivel long elbow: LL



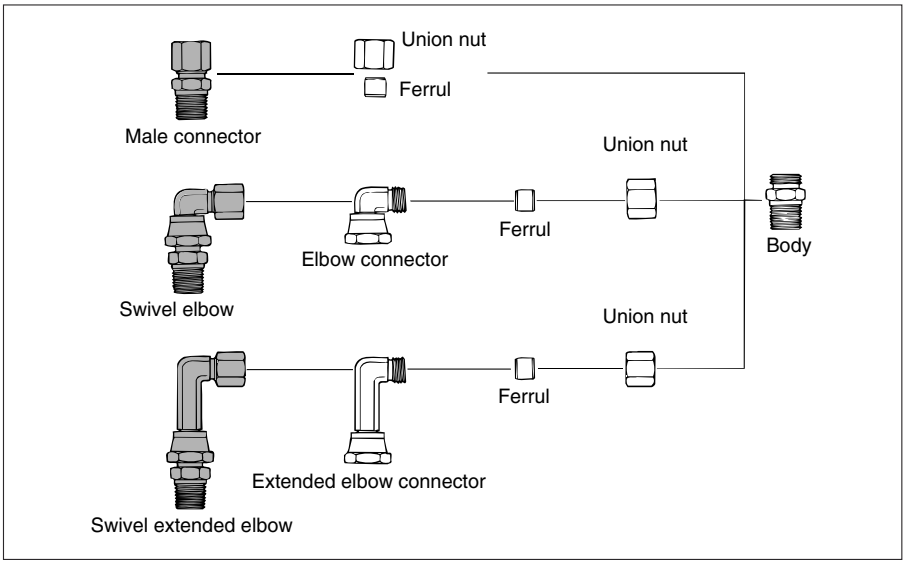
Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H1 (Hex.)	H2 (Hex.)	H3 (Hex.)	H4 (Hex.)	L1	L2	M	A*	Effective orifice (mm²)	Weight (g)
4	1/8	**LL04-01**	10	10	14	10	21.8	50.9	15	52.7	3.5	45
	1/4	**LL04-02**				14		54.9		54.7		53
6	1/8	**LL06-01**	12	10	14	10	21.8	51.9	16	54.8	9	47
	1/4	**LL06-02**				14		55.9		56.8		44
	3/8	**LL06-03**				17		57.9		58.5		66
8	1/8	**LL08-01**	14	12	17	12	23.3	52.9	16	57	19	63
	1/4	**LL08-02**				14		56.9		59		68
	3/8	**LL08-03**				17		58.9		60.7		77
10	1/4	**LL10-02**	17	14	19	14	23.3	58.9	17	62.7	31	89
	3/8	**LL10-03**				17		60.9		64.4		98
	1/2	**LL10-04**				22		63.9		65.5		117
12	1/4	**LL12-02**	19	17	22	17	24.3	62.9	17	66.7	43	121
	3/8	**LL12-03**						63.9		67.4		129
	1/2	**LL12-04**				22		66.9		71.4		153



∗ Reference dimensions after R(PT) thread installation.

Swivel Type Fittings Parts List

The bodies of elbow connectors and extended elbow connectors are compatible with almost any type of fittings. (Except “L-04” and “LL-04” which are for the body of ø6 tube.)
Swivel type fittings, elbow (L) and (LL) constitute the combination with a male connector (H) and connector as shown in the diagram.



Union nut: N

Part No.	Applicable Tube O.D.	Weight (g)
N-04	ø4	5
N-06	ø6	7
N-08	ø8	8
N-10	ø10	13
N-12	ø12	14

Elbow connector: L

Part No.	Applicable Tube O.D.
L-04	ø4
L-06	ø6
L-08	ø8
L-10	ø10
L-12	ø12

Ferrul: S

Part No.	Applicable Tube O.D.	Weight (g)
S-04	ø4	0.7
S-06	ø6	1.1
S-08	ø8	1.4
S-10	ø10	1.7
S-12	ø12	2.0

Extended elbow connector: LL

Part No.	Applicable Tube O.D.
LL-04	ø4
LL-06	ø6
LL-08	ø8
LL-10	ø10
LL-12	ø12

⚠Precautions

Be sure to read before handling.
Refer to “Air Fittings & Tubing Precautions” for other details.

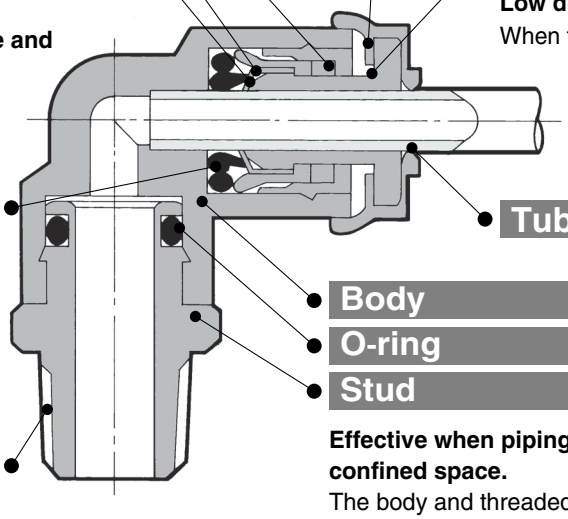
Installation

⚠ Caution

① Cut the tube to the required length. In this case, be sure to cut the tube as perpendicularly as possible to the tube axis. (Use tube cutter TK-1, 2 or 3.)
② Then push the cut tube in until it comes to the flare edge, and tighten the nut by hand.
③ Further, give nut an additional 1 1/4 turns with appropriate wrench or the like.Leave 0 space between the screwed-in nut and the tube in-line with the tube axis. If tightened insufficiently, nut may be loosened and it may cause the air leakage or tube coming off.
④ When using soft copper tube, first tighten the nut by hand and then give it an additional one turn with wrench. Use JIS H3300, equivalent to seamless tube C1220T-0, as soft copper tube. If using any other type, it may cause the air leakage or tube coming off.

Air Fittings

Fitting Series For Special Environment



Guide

Collet

Chuck

Accepts FR soft nylon.
Has high retaining force.
Chuck certainly bites tube and collet increases retaining force.

Cover

Prevention of tube releasing unconformity due to an inside intrusion or adhesion of the spatter.

Release button (Green)

Low disconnecting force.
When the fitting is removed, the chuck and collet are released, thus preventing them from biting into the tube to an unnecessary degree.

Tube

Packing

Can be used for a wide range of pressures from a low vacuum up to a pressure of 145psi {1.0MPa}.
The use of a special profile ensures positive sealing and reduced resistance when the tube is being inserted.

With sealant

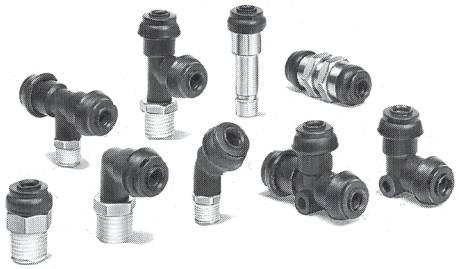
Seal tape unnecessary.

Body

O-ring

Stud

Effective when piping in a confined space.
The body and threaded portion can turn.



Applicable Tube

Tube material	FR soft nylon
Tube O.D.	ø6, ø8, ø10, ø12

Specifications

Operating fluid		Air, Water Note1)
Max. operating pressure		145psi {1.0MPa}
Proof pressure		435psi {3.0MPa}
Ambient and fluid temperature		32 to 140°F {0 to 60°C}
		Water 41 to 104°F {5 to 40°C}
Thread	Thread portion	JIS B 0203 (Taper pipe thread)
	Nut	JIS B 0211 Class 2 (Metric fine thread)
Sealant (Thread portion)		With sealant (Standard)

Note1) Applicable for general industry water. Consult SMC if using for other kind of fluid.
Surge pressure must be under the max. operating pressure.

Principal Element Material

Body	C3604BD, Flame resistance PBT (UL standard V-0)
Stud (Thread)	C3604BD
Chuck	Stainless steel (SUS304)
Guide	C3604BD, Flame resistance PBT (UL standard V-0)
Collet	Polyacetal (POM)
Release button	Flame resistance PBT (UL standard V-0)
Packing, O-ring	NBR
Cover	Flame resistance CR (UL standard V-0)

Fittings are supplied without cover, order cover separately.
Two types of covers:

1. Single layer tubing Cap — KR-**C Tubing — TRS
2. Double layer tubing Cap — ?????? Tubing — TRB

Model

Male connector
KRH P. 112

Use to pipe in the same direction from female threaded portion.
Most general type.

Straight union
KRH P. 116

Use to connect tubes in the same direction.

Male elbow
KRL P. 112-113

Use to pipe in right angle to female threaded portion.
Most general type.

45˚male elbow
KRK P. 117

Used in applications where a 90˚ elbow or male connector stresses the tubing.

Spatter cover (TIRS/TIR)
KR P. 116

Prevention of tube releasing unconformity due to an inside intrusion or adhesion of the spatter.

Union elbow
KRL P. 113

Use to connect tubes in right angle.

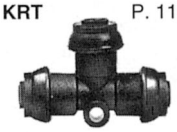
Extended male elbow
KRW P. 117

The most appropriate use is when the elbow extends over a standard elbow for ease of tubing connection/ disconnection.

Branch tee
KRT P. 114

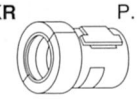
Use to branch line from female thread of both side 90˚ direction.

Union tee
KRT P. 113



Use to branch connection of tubes of both side 90˚ direction.

Spatter cover (TRB)
KR P. 116



Prevention of tube releasing unconformity due to an inside intrusion or adhesion of the spatter.

Male run tee
KRY P. 114-115

Use to branch connection of tubes with size down in both side 90˚ direction.

Plug-in reducer
KRR P. 115

Use to a size down of one-touch fitting.

Bulkhead union
KRE P. 115

Used to connect two tubes through a panel.

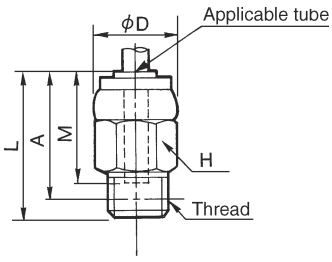
Plug
KRP P. 116

Use to shut no use one-touch fitting.

Note: Spatter cover does not come standard with KR Series Fittings.
They must be ordered separately.

Male connector: KRH Inch

Applicable tube O.D. (Inch)	Thread NPT	Part No.	H (Hex.)	ØD	L	*A	M	Min. hole dia.	Wt. (gf)
1/4	1/8	KRH07-34S	9/16 (14.29)	0.63 (16)	0.96 (24.5)	0.81 (20.5)	0.75 (19)	0.18 (4.6)	11
	1/4	KRH07-35S			0.98 (25)	0.75 (19)			16
	3/8	KRH07-36S	11/16 (17.46)			0.73 (18.5)			28
3/8	1/4	KRH11-35S	11/16 (17.46)	0.80 (20.3)	1.40 (35.5)	1.16 (29.5)	0.91 (23)	0.28 (7)	32.5
	3/8	KRH11-36S			1.22 (31)	0.96 (24.5)			30.5
	1/2	KRH11-37S	7/8 (22.23)		1.14 (29)	0.83 (21)			47.5
1/2	1/4	KRH13-35S	7/8 (22.23)	0.96 (24.3)	1.44 (36.5)	1.20 (30.5)	0.94 (24)	0.35 (9)	45.7
	3/8	KRH13-36S			1.40 (35.5)	1.14 (29)		0.38 (9.6)	
	1/2	KRH13-37S			1.26 (32)	0.94 (24)			



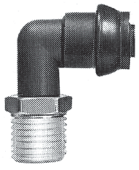
Note: Fitting cover ordered separately.

KRH Metric

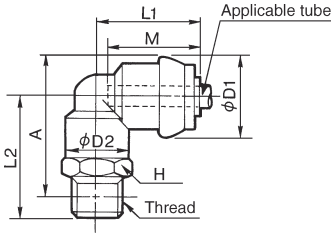
Applicable tube O.D. (mm)	Thread R(PT)	Part No.	H (Hex.)	øD	L	A*	M	Effective orifice (mm^2)	Weight (g)
6	1/8	KRH06-01S	12	15.5	24.5	20.5	19	5.7	10.8
	1/4	KRH06-02S	14		25	19			15.8
	3/8	KRH06-03S	17			18.5			27.8
8	1/8	KRH08-01S	14	17	30	26	20.5	18.0	21.9
	1/4	KRH08-02S			28.5	22.5			19.9
	3/8	KRH08-03S	17		25.5	19			26.9
10	1/8	KRH10-01S	17	20.8	32	28	23	29.5	20.3
	1/4	KRH10-02S			35.5	29.5			31.3
	3/8	KRH10-03S			31	24.5			
	1/2	KRH10-04S	22		29	21			54.3
12	1/4	KRH12-02S	19	22.8	36.5	30.5	24	46.1	43.5
	3/8	KRH12-03S			35	28.5			35.5
	1/2	KRH12-04S	22		32	24			52.5

* Reference dimensions after R(PT) thread installation.
Note: Fitting cover ordered separately.

Male elbow: KRL Inch



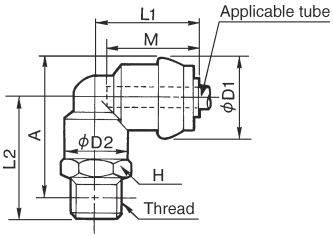
Applicable tube O.D. (Inch)	Thread NPT	Part No.	H (Hex.)	øD 1	øD 2	L 1	L 2	*A	M	Min. hole dia.	Wt. (gf)
1/4	1/8	KRL07-34S	7/16 (11.11)	0.68 (17.2)	0.39 (10)	0.89 (22.5)	0.93 (23.5)	1.10 (28)	0.75 (19)	0.18 (4.6)	11
	1/4	KRL07-35S	9/16 (14.29)				1.08 (27.5)	1.18 (30)			21
	3/8	KRL07-36S	11/16 (17.46)				1.16 (29.5)	1.24 (31.5)			33
3/8	1/4	KRL11-35S	11/16 (17.46)	0.89 (22.7)	0.67 (17)	1.10 (28)	1.16 (29.5)	1.38 (35)	0.91 (23)	0.28 (7)	24.5
	3/8	KRL1136S					1.24 (31.5)	1.44 (36.5)			34.5
	1/2	KRL11-37S					1.40 (35.5)	1.54 (39)			60.5
1/2	1/4	KRL13-35S	11/16 (17.46)	1.04 (26.5)	0.67 (17)	1.22 (31)	1.24 (31.5)	1.54 (39)	0.94 (24)	0.35 (9)	29.7
	3/8	KRL13-36S					1.32 (33.5)	1.61 (41)		0.38 (9.6)	37.7
	1/2	KRL13-37S	7/8 (22.23)				1.48 (37.5)	1.67 (42.5)			63.7



Note: Fitting cover ordered separately.

Male elbow: KRL Metric

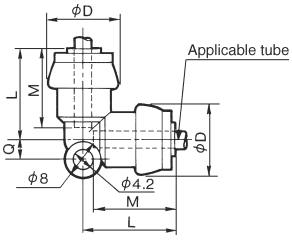
Applicable tube O.D.(mm)	Thread R(PT)	Part No.	H (Hex.)	øD1	øD2	L1	L2	A*	M	Effective orifice(mm²)	Weight (g)
6	1/8	KRL06-01S	10	16.8	10	22	23	27.5	19	5.0	12.8
	1/4	KRL06-02S	14				27	29.5			10.8
	3/8	KRL06-03S	17				29	31			33.8
8	1/8	KRL08-01S	12	19.2	12	25	24.5	30	20.5	14.9	13.9
	1/4	KRL08-02S	14				28.5	32			21.9
	3/8	KRL08-03S	17				30.5	33.5			35.9
10	1/8	KRL10-01S	17	23.3	17	28.5	27	34.4	23	14.9	26.3
	1/4	KRL10-02S					30	35.4		25.0	27.3
	3/8	KRL10-03S					32	36.9			37.3
	1/2	KRL10-04S	22				36	39.4			64.3
12	1/4	KRL12-02S	17	25.7	17	30.5	31	37.9	24	39.7	29.5
	3/8	KRL12-03S					33	39.4			39.5
	1/2	KRL12-04S	22				37	41.9			66.5



∗ Reference dimensions after R(PT) thread installation.
Note: Fitting cover ordered separately.

Union elbow: KRL Inch

Applicable tube O.D. (inch)	Part No.	øD	L	Q	M	Min. hole Dia.	Wt. (gf)
1/4	KRL07-00	0.68 (17.2)	0.89 (22.5)	0.21 (5.3)	0.75 (19)	0.18 (4.6)	8
3/8	KRL11-00	0.89 (22.7)	1.10 (28)	0.26 (6.6)	0.91 (23)	0.28 (7)	16
1/2	KRL13-00	1.04 (26.5)	1.22 (31)	0.31 (7.8)	0.94 (24)	0.38 (9.6)	21.4



Note: Fitting cover ordered separately.

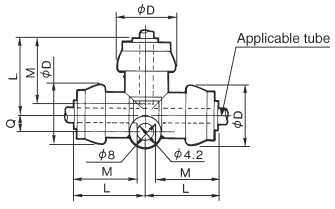
KRL Inch

Applicable tube O.D.(mm)	Part No.	øD	L	Q	M	Effective orifice(mm²)	Weight (g)
6	KRL06-00	16.8	22	5.3	19	5.0	8.6
8	KRL08-00	19.2	25	6	20.5	14.9	12.8
10	KRL10-00	23.3	28.5	6.8	23	25.0	19.6
12	KRL12-00	25.7	30.5	7.5	24	39.7	24

Note: Fitting cover ordered separately.

Union tee: KRT Inch

Applicable tube O.D. (inch)	Part No.	ØD	L	Q	M	Min. hole dia.	Wt. (gf)
1/4	KRT07-00	0.68 (17.2)	0.89 (22.5)	0.21 (5.3)	0.75 (19)	0.18 (4.6)	12
3/8	KRT11-00	0.89 (22.7)	1.10 (28)	0.26 (6.6)	0.91 (23)	0.28 (7)	22.5
1/2	KRT13-00	1.04 (26.5)	1.22 (31)	0.31 (7.8)	0.94 (24)	0.38 (9.6)	31.1



Note: Fitting cover ordered separately.

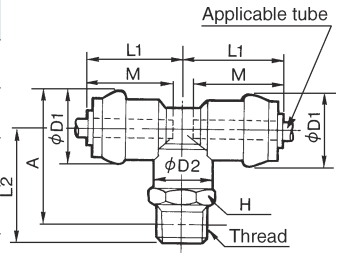
KRT Metric

Applicable tube O.D.(mm)	Part No.	øD	L	Q	M	Effective orifice (mm²)	Weight (g)
6	KRT06-00	16.8	22	5.3	19	5.8	13.4
8	KRT08-00	19.2	25	6	20.5	17.7	18.7
10	KRT10-00	23.3	28.5	6.8	23	28.4	28.9
12	KRT12-00	25.7	30.5	7.5	24	45.4	32

Note: Fitting cover ordered separately.

Branch tee: KRT Inch

Applicable tube O.D. (inch)	Thread NPT	Part No.	H (Hex.)	øD 1	øD 2	L 1	L 2	*A	M	Min. hole dia.	Wt. (gf)
1/4	1/8	KRT07-34S	7/16 (11.11)	0.68 (17.2)	0.39 (10)	0.89 (22.5)	0.93 (23.5)	1.10 (28)	0.75 (19)	0.18 (4.6)	14
	1/4	KRT07-35S	9/16 (14.29)				1.08 (27.5)	1.18 (30)			24
	3/8	KRT07-36S	11/16 (17.46)				1.16 (29.5)	1.24 (31.5)			37
3/8	1/4	KRT11-35S	11/16 (17.46)	0.89 (22.7)	0.67 (17)	1.10 (28)	1.16 (29.5)	1.38 (35)	0.91 (23)	0.28 (7)	32
	3/8	KRT11-36S					1.24 (31.5)	1.44 (36.5)			41
	1/2	KRT11-37S	7/8 (22.23)				1.40 (35.5)	1.54 (39)			67
1/2	1/4	KRT13-35S	11/16 (17.46)	1.04 (26.5)	0.67 (17)	1.22 (31)	1.24 (31.5)	1.54 (39)	0.94 (24)	0.35 (9)	37.4
	3/8	KRT13-36S					1.32 (33.5)	1.61 (41)		0.38 (9.6)	46.4
	1/2	KRT13-37S	7/8 (22.23)				1.48 (37.5)	1.67 (42.5)			72.4



Note: Fitting cover ordered separately.

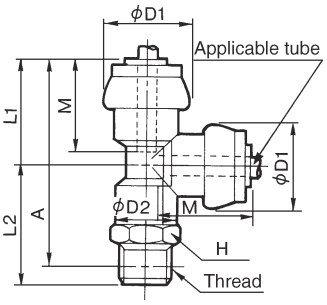
KRT Metric

Applicable tube O.D.(mm)	Thread R(PT)	Part No.	H (Hex.)	øD1	øD2	L1	L2	A*	M	Effective orifice(mm²)	Weight (g)
6	1/8	KRT06-01S	10	16.8	10	22	23	27.5	19	6.0	13.8
	1/4	KRT06-02S	14				27	29.5			21.8
	3/8	KRT06-03S	17				29	31			35.8
8	1/8	KRT08-01S	12	19.2	12	25	24.5	30	20.5	18.2	15.9
	1/4	KRT08-02S	14				28.5	32			23.9
	3/8	KRT08-03S	17				30.5	33.5			37.9
10	1/8	KRT10-01S	17	23.3	17	28.5	27	34.5	23	29.0	32.5
	1/4	KRT10-02S					30	35.5			30.3
	3/8	KRT10-03S					32	37			40.3
	1/2	KRT10-04S	22				36	39.5			67.3
12	1/4	KRT12-02S	17	25.7	17	30.5	31	38	24	45.2	32.5
	3/8	KRT12-03S					33	39.5			42.5
	1/2	KRT12-04S	22				37	42			69.5

* Reference dimensions after R(PT) thread installation.
Note: Fitting cover ordered separately.

Male run tee: KRY Inch

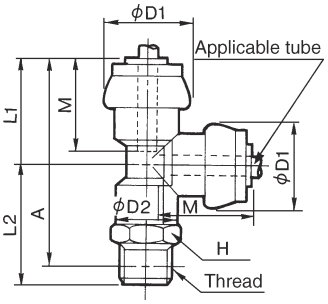
Applicable tube O.D. (inch)	Thread NPT	Part No.	H (Hex.)	øD 1	øD 2	L 1	L 2	*A	M	Min. hole dia.	Wt. (gf)
1/4	1/8	KRY07-34S	7/16 (11.11)	0.68 (17.2)	0.39 (10)	0.89 (22.5)	0.93 (23.5)	1.65 (42)	0.75 (19)	0.18 (4.6)	14
	1/4	KRY07-35S	9/16 (14.29)				1.08 (27.5)	1.73 (44)			24
	3/8	KRY07-36S	11/16 (17.46)				1.16 (29.5)	1.79 (45.5)			37
3/8	1/4	KRY11-35S	11/16 (17.46)	0.89 (22.7)	0.67 (17)	1.10 (28)	1.16 (29.5)	2.03 (51.5)	0.91 (23)	0.28 (7)	32
	3/8	KRY11-36S					1.24 (31.5)	2.09 (53)			41
	1/2	KRY11-37S					1.40 (35.5)	2.19 (55.5)			67
1/2	1/4	KRY13-35S	11/16 (17.46)	1.04 (26.5)	0.67 (17)	1.22 (31)	1.24 (31.5)	2.22 (56.5)	0.94 (24)	0.35 (9)	37.4
	3/8	KRY13-36S					1.32 (33.5)	2.28 (58)		0.38 (9.6)	46.4
	1/2	KRY13-37S	7/8 (22.23)				1.48 (37.5)	2.38 (60.5)			72.4



Note: Fitting cover ordered separately.

Male run tee: KRY Metric

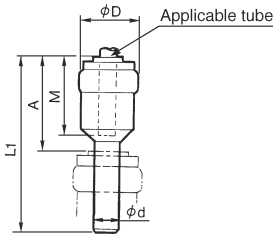
Applicable tube O.D.(mm)	Thread R(PT)	Part No.	H (Hex.)	øD1	øD2	L1	L2	A*	M	Effective orifice(mm²)	Weight (g)
6	1/8	KRY06-01S	10	16.8	10	22	23	41	19	5.8	14.6
	1/4	KRY06-02S	14				27	43			22.6
	3/8	KRY06-03S	17				29	44.4			36.6
8	1/8	KRY08-01S	12	19.2	12	25	24.5	45.5	20.5	17.7	16.8
	1/4	KRY08-02S	14				28.5	47.5			24.8
	3/8	KRY08-03S	17				30.5	49			38.8
10	1/8	KRY10-01S	17	23.7	17	28.5	27	51.5	23	28.4	32.3
	1/4	KRY10-02S					30	52.5			31.6
	3/8	KRY10-03S					32	54			41.6
	1/2	KRY10-04S	22				36	56.5			68.6
12	1/4	KRY12-02S	17	25.7	17	30.5	31	55.5	24	45.4	34
	3/8	KRY12-03S					33	57			44
	1/2	KRY12-04S	22				37	59.5			71



∗ Reference dimensions after R(PT) thread installation.
Note: Fitting cover ordered separately.

Plug-in reducer: KRR Inch

Applicable tube O.D. (inch)	Size ød	Part No.	øD	L 1	A	M	Min. hole dia.	Wt. (gf)
1/4	3/8	KRR07-11	0.63 (16)	1.65 (42)	0.79 (20)	0.75 (19)	0.18 (4.6)	20
	1/2	KRR07-13	0.63 (16)	1.65 (42)	0.71 (18)	0.91 (23)		28
1/4	1/2	KRR11-13	0.82 (20.8)	1.83 (46.5)	0.89 (22.5)	0.94 (24)	0.28 (7)	33.5



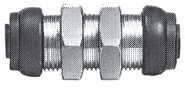
Note: Fitting cover ordered separately.

KRR Metric

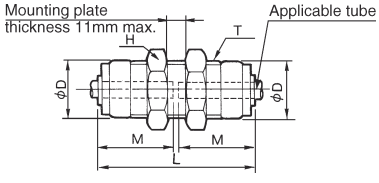
Applicable tube O.D.(mm)	Applicable fitting size ød	Part No.	øD	L1	A	M	Effective orifice(mm²)	Weight (g)
6	8	KRR06-08	16.8	39	18.5	19	5.7	3.9
	10	KRR06-10						4.4
8	10	KRR08-10	19.2	41.5	18.5	20.5	18.0	5.5
	12	KRR08-12		43	20			6.1
10	12	KRR10-12	23.3	44	20	23	32.8	36

Note: Fitting cover ordered separately.

Bulkhead union: KRE Inch



Applicable tupe O.D. (Inch)	Thread UNF	Model	H (Hex.)	ØD	L	A	M	Min. hole dia.	Wt. (gf)
1/4	5/16 - 18	KRE07-00	11/16 (17.46)	0.63 (16)	1.52 (38.5)	0.60 (15.08)	0.75 (19)	0.18 (4.6)	35
3/8	1/8 - 14	KRE11-00	1 (25.4)	0.80 (20.3)	1.83 (42)	0.91 (23)	0.91 (23)	0.28 (7)	73
1/2	1-2	KRE13-00	11/8 (28.6)	0.96 (24.3)	1.91 (48.5)	1.03 (26.2)	0.94 (24)	0.38 (9.6)	100.4



Note: Fitting cover ordered separately.

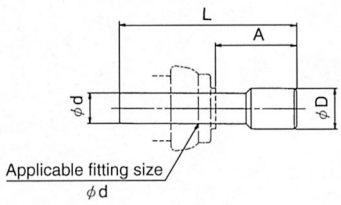
KRE Metric

Applicable tube O.D.(mm)	Part No.	T (M)	H (Hex.)	øD	L	Mountting hole	M	Effective orifice(mm²)	Weight (g)
6	KRE06-00	M14×1	17	15.5	38.5	15	19	5.7	34.8
8	KRE08-00	M16×1	19	17	42	17	20.5	18.0	53.8
10	KRE10-00	M20×1	24	20.8	46.5	21	23	29.5	72.6
12	KRE12-00	M22×1	27	22.8	48.5	23	24	46.1	99

Note: Fitting cover ordered separately.

Plug: KRP Inch

Applicable tube O.D. (inch)	Model	ØD	L	A	Weight (gf)
1/4	KRP-07	0.33(8.5)	1.38(35)	0.63(16)	1
3/8	KRP-11	0.45(11.5)	1.69(43)	0.79(20)	2
1/2	KRP-13	0.59(15)	1.81(46)	0.87(22)	4

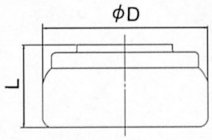


KRP Metric

Applicable fitting size ød	Part No.	øD	L	A	Weight (g)
6	KRP-06	8	35	16	1
8	KRP-08	10	39	18.5	1.7
10	KRP-10	12	43	20	3.4
12	KRP-12	14	46	22	4.7

Spatter Cover: KR Inch (TIRS Tubing)

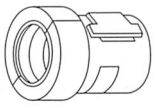
Applicable Fitting O.D.	Model	
1/4"	KR-07C	Consult factory for information
3/8"	KR-11C	
1/2	KR-13C	



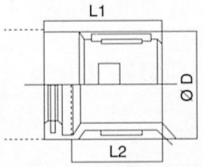
KR Metric (TRS Tubing)

Applicable fitting size	Part No.	øD	L	Weight (g)
6	KR-06C	15.5	9	0.9
8	KR-08C	17	9	1.0
10	KR-10C	20.8	10.5	1.5
12	KR-12C	22.8	10.5	1.6

Spatter Cover: KR Metric (TRB Tubing)



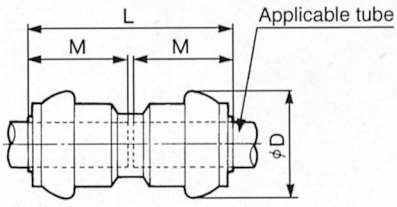
Applicable Fitting O.D.	Model	ØD	L1	L2
6	KR-06C1	18	13.7	12.8
8	KR-08C1	20	15.7	15
10	KR-10C1	22	17.2	18
12	KR-12C1	22	17.2	20



Straight union: KRH Metric

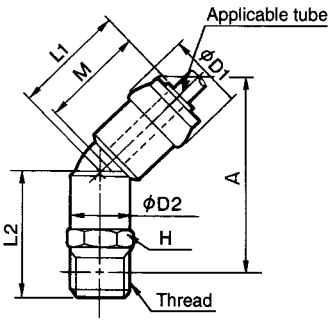
Applicable tube O.D.(mm)	Part No.	øD	L	M	Effective orifice(mm²)	Weight (g)
6	KRH06-00	16.8	38.5	19	5.7	6.6
8	KRH08-00	19.2	42.5	20.5	18.0	8.8
10	KRH10-00	23.3	46.5	23	29.5	13.6
12	KRH12-00	25.7	48.5	24	46.1	17

Note: Fitting (spatter) cover ordered separately.



45° male elbow: KRK Metric

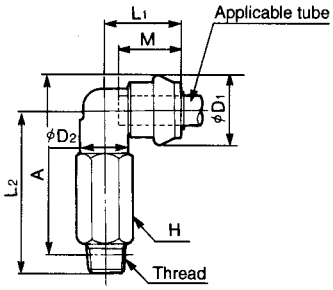
Applicable tube O.D.(mm)	Thread R(PT)	Part No.	H (Hex.)	øD1	øD2	L1	L2	A*	M	Effective orifice(mm²)	Weight (g)
6	1/8	KRK06-01S	10	16.8	10	20	20.5	34.5	19	3.9	12.8
	1/4	KRK06-02S	14				24.5	36.5			20.8
	3/8	KRK06-03S	17				26.5	38			33.8
8	1/8	KRK08-01S	12	19.2	12	22.5	22	38.5	20.5	19.7	13.9
	1/4	KRK08-02S	14				26	40.5			21.9
	3/8	KRK08-03S	17				28	41			35.9
10	1/8	KRK10-01S	17	23.3	17	24	24	44	23	23.2	26.3
	1/4	KRK10-02S				26	27	45			27.3
	3/8	KRK10-03S					29	46.5			37.3
	1/2	KRK10-04S	22				33	49			64.3
12	1/4	KRK12-02S	17	25.7	17	27	27.5	47	24	35.1	29.5
	3/8	KRK12-03S					29.5	48.5			39.5
	1/2	KRK12-04S	22				33.5	51			66.5



* Reference dimensions after R(PT) thread installation.
Note: Fitting (spatter) cover ordered separately.

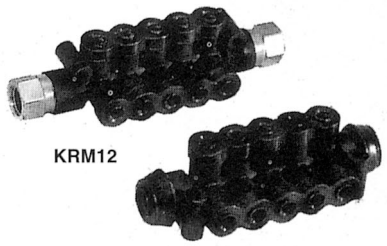
Extended male elbow: KRW Metric

Applicable tube O.D.(mm)	Thread R(PT)	Part No.	H (Hex.)	øD1	øD2	L1	L2	A*	M	Effective orifice(mm²)	Weight (g)
6	1/8	KRW06-01S	10	16.8	10	22	40	44.5	19	5.0	26.8
	1/4	KRW06-02S	14				46	48.5			41.8
	3/8	KRW06-03S	17				48	50			67.8
8	1/8	KRW08-01S	12	19.2	12	25	43.5	49	20.5	14.2	30.9
	1/4	KRW08-02S	14				49.5	53			47.9
	3/8	KRW08-03S	17				51.5	52.5			74.9
10	1/4	KRW10-02S	17	23.3	17	28.5	56.5	61.9	23	23.8	67.3
	3/8	KRW10-03S					58.5	63.4			77.3
	1/2	KRW10-04S	22				65	68.4			146.3
12	1/4	KRW12-02S	17	25.7	17	30.5	57.5	64.4	24	37.7	69.5
	3/8	KRW12-03S					59.5	65.9			79.5
	1/2	KRW12-04S	22				66	70.9			148.5



* Reference dimensions after R(PT) thread installation.
Note: Fitting (spatter) cover ordered separately.

Compact piping possible.
Manifold piping possible.
Many varieties(8 types) available.
One-touch mounting.



Type

Model	Porting		Number of Port A	Port A size	Port B size
	Port A	Port B			
KRM11	One-touch fitting	One-touch fitting	6, 10	ø6 tube	ø10 tube
				ø8 tube	ø12 tube
KRM12	One-touch fitting	Rc(PT) female thread	6, 10	ø6 tube	Rc(PT) 1/4
				ø8 tube	Rc(PT) 3/8

Applicable Tube

Tube material	FR soft nylon
Tube O.D.	ø6, ø8, ø10, ø12

Specifications

Model	KRM11	KRM12
Operating fluid	Air, Water Note1)	
Max. operating pressure	145psi {1.0MPa}	
Proof pressure	435psi {3.0Mpa}	
Ambient and fluid temperature	32 to 140°F {0 to 60°C}, Water: 40 to 105°F {5 to 40°C}	
Thread	—	JIS B0203 (Taper pipe thread)
Accessories	Nil	Hexagon socket head blanking plug with sealant: 1pc.

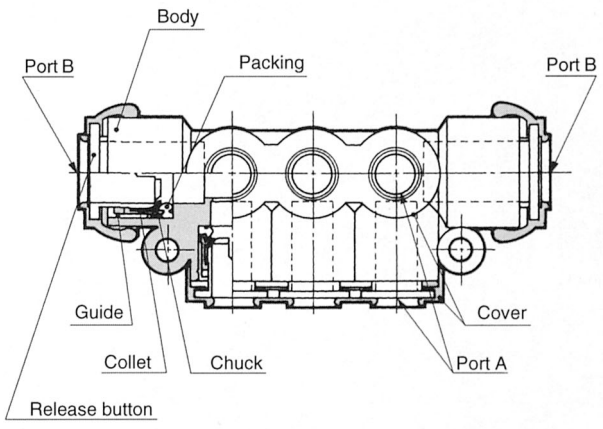
Note1) Applicable for general industry water. Consult SMC if using for other kind of fluid.
Surge pressure must be under the max. operating pressure.

Principal Element Material

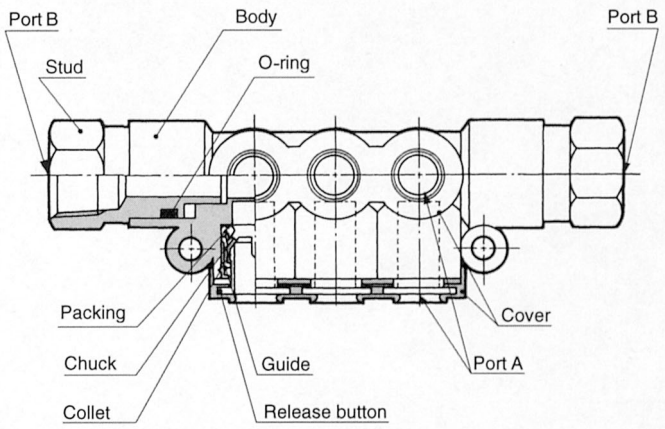
Body	Flame resistance PBT (UL standard V-0)	
Stud	—	C3604BD
Chuck	Stainless steel (SUS304)	
Guide	C3604BD	
Collet	Polyacetal (POM)	
Packing	NBR	
Release button	Flame resistance PBT (UL standard V-0)	
Cover	Flame resistance CR (UL standard V-0)	

Construction

KRM11

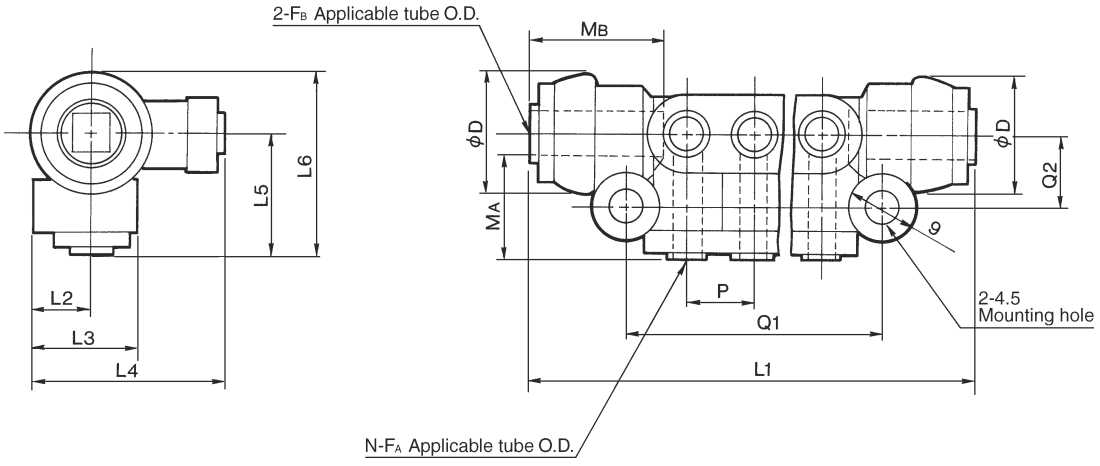


KRM12



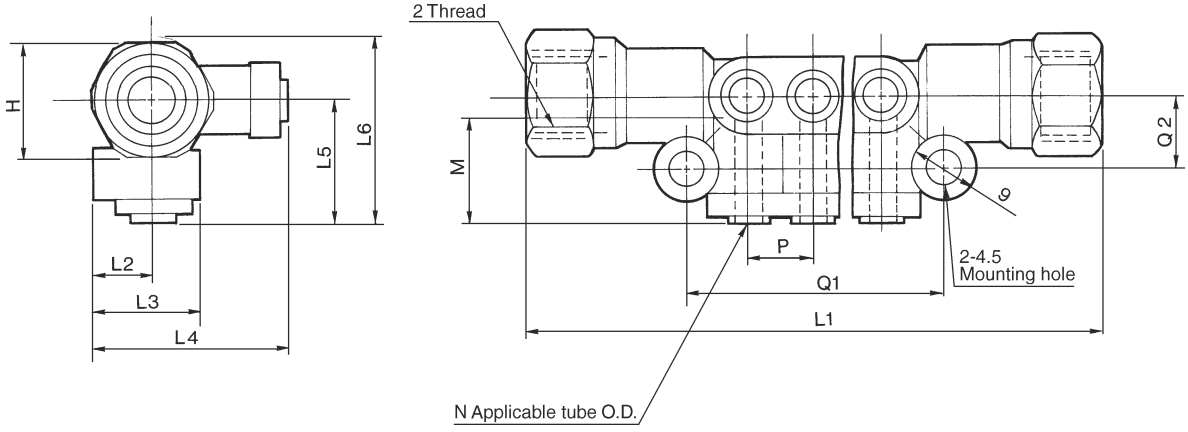
Dimensions

KRM11



Applicable tube O.D. (mm)		Part No.	N	L1	L2	L3	L4	L5	L6	øD	P	Q1	Q2	MA	MB	Port B min. port size	Weight (g)
FA	FB																
6	10	KRM11-06-10-6	6	80	10	19.5	33.5	23.5	33	23.3	13	47	13.5	19	22	8.5	40
		KRM11-06-10-10	10	106								73					55
8	12	KRM11-08-12-6	6	89	11.5	22.5	37.5	26	36.5	25.7	15.5	55	14.7	20.5	24	10	53
		KRM11-08-12-10	10	120								86					74

KRM12



Applicable tube O.D.(mm)	Thread Rc(PT)	Part No.	N	H (Hex.)	L1	L2	L3	L4	L5	L6	P	Q1	Q2	M	Port B min. port size	Weight (g)
6	1/4	KRM12-06-02-6	6	17	99	10	19.5	33.5	23.5	33	13	47	13.5	19	8.5	89
		KRM12-06-02-10	10		125							73				104
8	3/8	KRM12-08-03-6	6	19	108	11.5	22.5	37.5	26	36.5	15.5	55	14.7	20.5	10	106
		KRM12-08-03-10	10		139							86				126

Guide

Collet

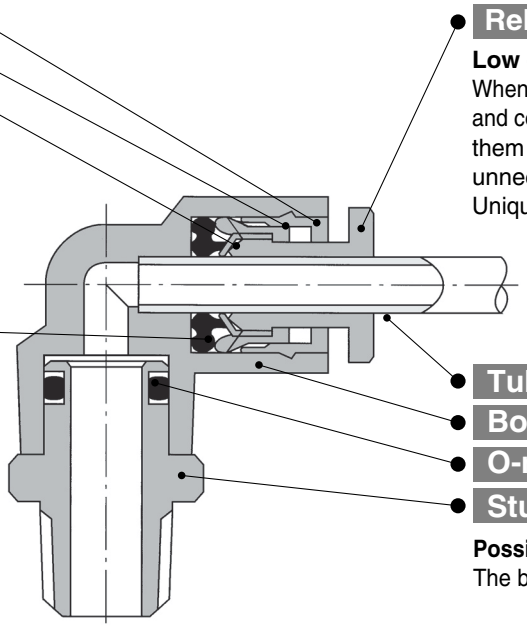
Chuck

Accepts nylon, soft nylon and polyurethane tubes.

Has large retaining force.
Chuck certainly bites tube and collet increases retaining force.

Packing

Can be used for a wide range of pressure from a low vacuum up to a pressure of 145psi {1.0MPa}
The use of a special profile ensures positive sealing and reduced resistance when the tube is being inserted.



Release button (White)

Low disconnecting force.
When the fitting is removed, the chuck and collet are released, thus preventing them from biting into the tube to an unnecessary degree.
Unique shape of easy tube release.

Tube

Body (White)

O-ring

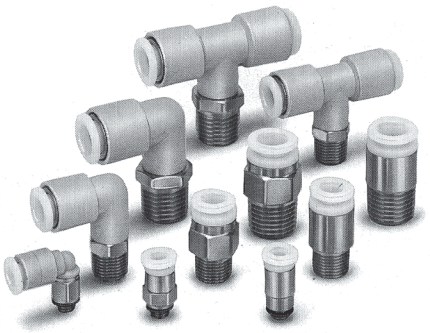
Stud

Possible to mount in narrow space.
The body and threaded portion turn.

Stainless steel specification applicable to corrosive environments.

SUS 303 stainless steel adopted for metal elements.

Suitable for use in CRT production lines where contact with copper must be avoided, food processing machines where water or salt water wash downs occur and clean room where discoloration of copper material and corrosion must be avoided.



Applicable Tube

Tube material	Nylon, Soft nylon, Polyurethane
Tube O.D.	ø4, ø6, ø8, ø10, ø12, ø16

Specifications

Operating fluid		Air, Water Note1)
Max. operating pressure		145psi {1.0MPa}
Max. operating vacuum pressure		1.3kPa {10Torr}
Proof pressure		435psi {3.0MPa}
Ambient and fluid temperature		32 to 140°F {0 to 60°C}, Water: 41 to 104°F {5 to 40°}
Thread	Thread portion	JISB0203 (Taper pipe thread)
	Nut	JISB02112 (Metric fine thread)
Sealant (Thread portion)		With /without sealant Note2)

Note1) Applicable for general industry water. Consult us if using for other kind of fluid. Surge pressure must be under the max. operating pressure.
Note2) Suffix "S" to part number if sealant is desired.

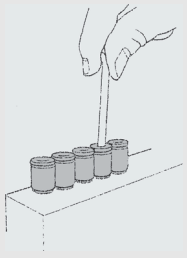
Principal Element Material

Body	Stainless steel (SUS303), PBT
Stud (Thread)	Stainless steel (SUS303)
Chuck	Stainless steel (SUS304)
Guide	Stainless steel (SUS303), POM
Collet, Release button	POM
Packing, O-ring	NBR

Model

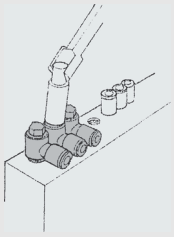
Hexagon socket head male connector
KGS P. 122

Internal hex allows thread connection by using an allen wrench, for confined spaces.



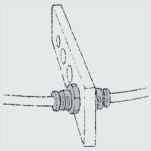
Universal male elbow
KGV P. 124

Universal male elbow allows thread connection by using a socket wrench for confined spaces.



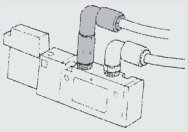
Bulkhead union
KGE P. 130

Used to connect two tubes through a panel.



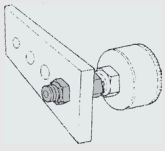
Extended male elbow
KGW P. 126

The most appropriate use is when the elbow extends over a standard elbow for ease of connection/ disconnection of tubing.



Bulkhead connector
KGE P. 130

The best use is for connection of a gauge through a panel.



Male connector
KGH P. 122

Use to pipe in the same direction from female threaded portion.
Most general type.

Female union
KGF P. 123

Use to pipe from male threaded portion such as pressure gage.

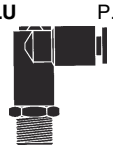
Straight union
KGH P. 123

Use to connect same size tubes in the same direction.

Different dia. straight
KGH P. 123

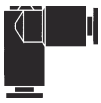
Use to connect different size tubes.

Branch male elbow
KGLU P. 124



Use to branch tubing at right angle to female thread portion.

Branch elbow
KGLU P. 125



Use to branch connection of tubes at right angle.

Male elbow
KGL P. 123

Use to pipe at right angle to female threaded portion.
Most general type.

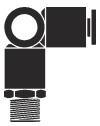
Union elbow
KGL P. 125

Use to connect tubes at right angle.

Plug-in elbow
KGL P. 125

Use to change by 90˚ in a tube fetching direction from one-touch fittings.

Male delta
KGD P. 127



Use to branch piping in 90˚ direction from female thread.

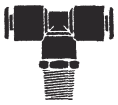
Delta
KGD P. 128

Use to branch connection of tubes in triple 90˚ direction.

Double branch "Y"
KGUD P. 128

Use to 4 branch piping in the same direction from female thread.

Branch tee
KGT P. 126



Use to branch line from female thread of both side 90˚ direction.

Union tee
KGT P. 126

Use to branch connection of tubes of both side 90˚ direction.

Different dia. tee
KGT P. 127

Use to branch connection of tubes with size down in both size 90˚ direction.

Male run tee
KGY P. 127

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

Different dia. double union "Y"
KGUD P. 129

Use to 4 branch connection of tubes in the same direction.

Union "Y"
KGU P. 129

Use to branch connection of tubes in the same direction.

Model

Different dia. union "Y"
KGU P. 129

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

Plug-in reducer
KGR P. 129

Use to change size of one-touch fittngs.

Tube cap
KGC P. 130

Use to plug up the useless tube connection.

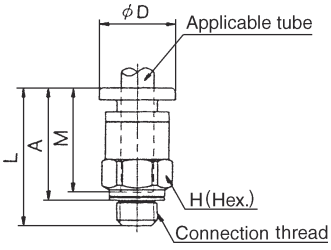
Plug-in "Y"
KGU P. 128

Use to branch tubing in the same direction from one-touch fittings.

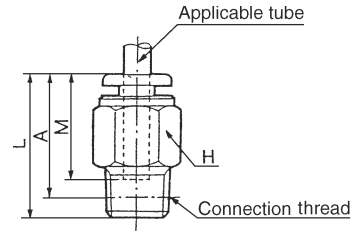
Male connector: KGH

Applicable tube O.D. (mm)	Connection thread R(PT)	Part No.	H (Hex.)	D	L	A*	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
4	M5×0.8	KGH04-M5	8	9.5	17	14	13	4	4	2.4
	1/8	KGH04-01	10	—	22	18	16	5.6	5.6	9
	1/4	KGH04-02	14	—	19.5	13.5				16
6	M5×0.8	KGH06-M5	10	11.5	18.5	15	14	4	4	3.4
	1/8	KGH06-01	12	—	22.5	18.5	17	13.1	13.1	16
	1/4	KGH06-02	14	—	23	17				14
	3/8	KGH06-03	17	—	22	15.5				27
8	1/8	KGH08-01	14	—	28	24	18.5	26.1	18.0	21
	1/4	KGH08-02			26.5	20.5				19
	3/8	KGH08-03	17	—	22	15.5				26
10	1/8	KGH10-01	17	—	30	26	21	41.5	29.5	19
	1/4	KGH10-02			33.5	27.5				30
	3/8	KGH10-03			29	22.5				30
	1/2	KGH10-04	22	—	27	19				53
12	1/4	KGH12-02	19	—	34.5	28.5	22	58.3	46.1	42
	3/8	KGH12-03			30	23.5				34
	1/2	KGH12-04	22			22				51
16	3/8	KGH16-03	24	—	38.5	32	24	81	(81)	61
	1/2	KGH16-04			34.5	26.5		113	(96)	47

M5



R(PT)

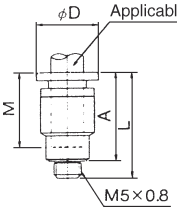


∗ Reference dimensions after R(PT) thread installation.
Note) ( ): Values for soft nylon.

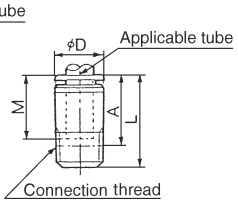
Hexagon socket head male connector: KGS

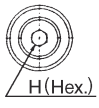
Applicable tube O.D. (mm)	Connection thread R(PT)	Part No.	H (Hex.)	D	L	A*	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
4	M5×0.8	KGS04-M5	2.5	9.5	19	15.5	13	2.7	2.7	2.6
	1/8	KGS04-01	3	9.8	23	19	16	4.1	3.6	8
6	M5×0.8	KGS06-M5	2.5	11.5	20	16.5	14	2.7	2.7	3.2
	1/8	KGS06-01	4	11.8	24	20	17	10.0	9.9	9
	1/4	KGS06-02		13.8				10.7	10.0	15
8	1/8	KGS08-01	5	14	28	24	18.5	17.2	16.2	12
	1/4	KGS08-02	6		25.5	19.5		23.3		11
	3/8	KGS08-03		17	27.5	21				24
10	1/8	KGS10-01	5	17	30	26	21	17.2	10.0	18
	1/4	KGS10-02	8		27.5	21.5		39.0	26.6	12
	3/8	KGS10-03				21				19
	1/2	KGS10-04		22	28	20				35
12	1/4	KGS12-02	8	19	33.5	27.5	22	46.0	44.5	23
	3/8	KGS12-03	10		29	22.5		60.0		18
	1/2	KGS12-04		22	28	20				30

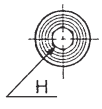
M5



R(PT)



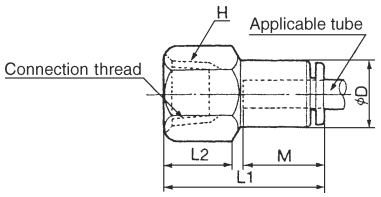




∗ Reference dimensions after R(PT) thread installation.

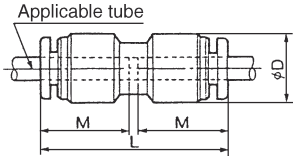
Female union: KGF

Applicable tube O.D. (mm)	Connection thread R(PT)	Part No.	H (Hex.)	D	L1	L2	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
4	1/8	KGF04-01	14	10	27	11	16	5.6	5.6	15
	1/4	KGF04-02	17		31	14				23
6	1/8	KGF06-01	14	12	27.5	11	17	13.1	13.1	15
	1/4	KGF06-02	17		31	13				22
	3/8	KGF06-03	19		33.5	15				25
8	1/8	KGF08-01	14	14	29	11	18.5	26.1	18.0	17
	1/4	KGF08-02	17		32.5	13				24
	3/8	KGF08-03	19		33.5	14				24
10	1/4	KGF10-02	17	17	34.5	14	21	41.5	18.0	27
	3/8	KGF10-03	19		36.5	15				30
12	1/4	KGF12-02	19	19	35	14	22	58.3	46.1	36
	3/8	KGF12-03			37					31
	1/2	KGF12-04	24		41	18				52



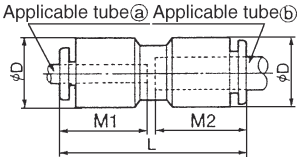
Straight union: KGH

Applicable tube O.D.(mm)	Part No.	D	L	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
4	KGH04-00	10.4	32.5	16	5.6	5.6	3
6	KGH06-00	12.8	34.5	17	13.1	13.1	5
8	KGH08-00	15.2	38.5	18.5	26.1	18.0	7
10	KGH10-00	18.5	42.5	21	41.5	29.5	11
12	KGH12-00	20.9	44.5	22	58.3	46.1	14



Different dia. straight: KGH

Applicable tube O.D.(mm) ⓐ	Applicable tube O.D.(mm) ⓑ	Part No.	D	L	M1	M2	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
4	6	KGH04-06	12.8	34.5	16	17	4.2	4.2	5
6	8	KGH06-08	15.2	38.5	17	18.5	10.7	10.7	7
8	10	KGH08-10	18.5	42	18.5	21	24.1	16.7	11
10	12	KGH10-12	20.9	44.5	21	22	37.6	28.2	14

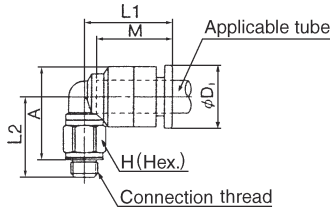


Male elbow: KGL

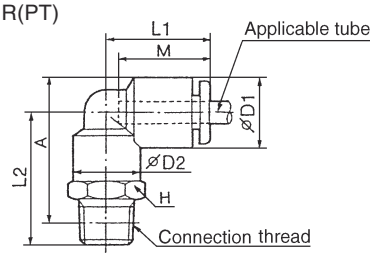
Applicable tube O.D. (mm)	Connection thread R(PT)	Part No.	H (Hex.)	D1	D2	L1	L2	A*	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
4	M5×0.8	KGL04-M5	7	9.5	—	16	13.5	15	13	3.5	3.5	2.7
	1/8	KGL04-01	10	10.4	10	18	22	23	16	4.2	4.2	10
	1/4	KGL04-02	14				26	25				19
6	M5×0.8	KGL06-M5	7	11.5	—	16	14.5	17	14	3.5	3.5	3.1
	1/8	KGL06-01	10	12.8	10	20	23	25.5	17	11.4	11.4	12
	1/4	KGL06-02	14				27	27.5				10
	3/8	KGL06-03	17				29	29				33
8	1/8	KGL08-01	12	15.2	12	23	24.5	28	18.5	21.6	14.9	13
	1/4	KGL08-02	14				28.5	30				21
	3/8	KGL08-03	17				30.5	31.5				35
10	1/8	KGL10-01	17	18.5	17	26.5	27	32	21	21.6	14.9	25
	1/4	KGL10-02					30	33		35.2	25.0	26
	3/8	KGL10-03					32	34.5				36
	1/2	KGL10-04	22				36	37				63
12	1/4	KGL12-02	17	20.9	17	28.5	31	35.5	22	50.2	39.7	28
	3/8	KGL12-03					33	37				38
	1/2	KGL12-04	22				37	39.5				65
16	3/8	KGL16-03	22	26.5	21	33	38	44.5	24	71	(71)	101
	1/2	KGL16-04					41	46		100	(84)	105

∗Reference dimensions after R(PT) thread installation.
Note) ( ): Values for soft nylon.

M5



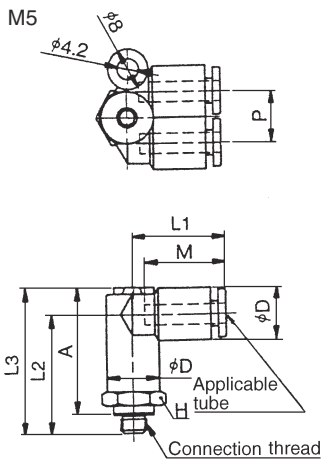
R(PT)

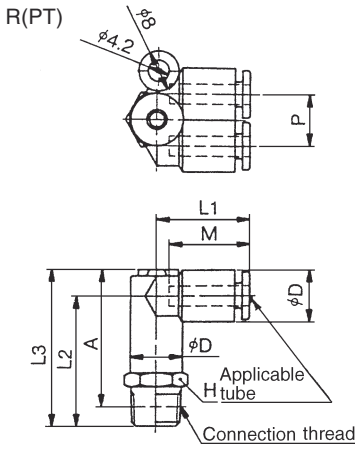


Branch male elbow: KGLU

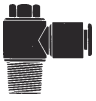
Applicable tube O.D. (mm)	Connection thread R(PT)	Part No.	H (Hex.)	D	L1	L2	L3	A*	M	P	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
4	M5×0.8	KGLU04-M5	11	10.4	18.5	24	29.5	25.5	16	10.4	4.3	4.3	10
	1/8	KGLU04-01				26.5	32	27.5			6.0	6.0	12
	1/4	KGLU04-02	14			30.5	36	30					21
6	M5×0.8	KGLU06-M5	13	12.8	21	26.5	33	29.5	17	12.8	4.3	4.3	14
	1/8	KGLU06-01				29.5	36	32			13.9	13.9	16
	1/4	KGLU06-02	14			33	39.5	33.5					23
	3/8	KGLU06-03	17			35	41.5	35					36
8	1/8	KGLU08-01	17	15.2	24	34	41.5	38	18.5	15.2	26.3	18.2	28
	1/4	KGLU08-02				37	44.5	38.5					
	3/8	KGLU08-03				38	45.5	39					36
10	1/4	KGLU10-02	19	18.5	27	40	49.5	43.5	21	18.5	40.8	29.0	41
	3/8	KGLU10-03				41	50.5	44					42
	1/2	KGLU10-04	22			44.5	54	45.5					64
12	1/4	KGLU12-02	22	20.9	29	42.5	53	47	22	20.9	57.2	45.2	57
	3/8	KGLU12-03				43.5	54	47.5					58
	1/2	KGLU12-04				46.5	57	49					65

∗ Reference dimensions after R(PT) thread installation.



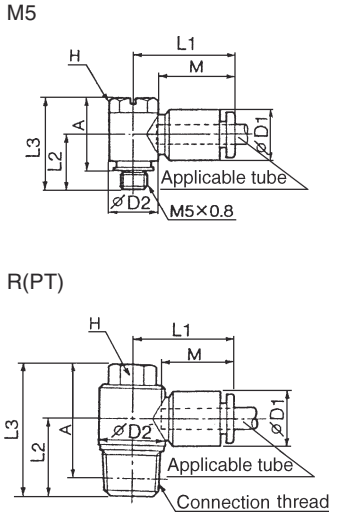


Universal male elbow: KGV



Applicable tube O.D. (mm)	Connection thread R(PT)	Part No.	H (Hex.)	D1	D2	L1	L2	L3	A*	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
4	M5×0.8	KGV04-M5	8	10.4	9.8	20.5	11	18.5	15	16	2.9	2.9	6
	1/8	KGV04-01			13.4	22	14.5	26.5	22.5				14
6	M5×0.8	KGV06-M5	8	12.8	9.8	23.5	12	18.5	15	17	3.8	3.8	7
	1/8	KGV06-01			13.4	24	14.5	26.5	22.5		7.5	7.5	15
	1/4	KGV06-02	10		15.3	23.5	18.5	31	25				26
8	1/8	KGV08-01	12	15.2	17.6	28.5	15.5	28.5	24.5	18.5	16	11.2	24
	1/4	KGV08-02					18.5	31.5	25.5				30
	3/8	KGV08-03	14		20.6	27.5	20.5	36.5	30		20.5	14.3	47
10	1/4	KGV10-02	14	18.5	20.6	31	19.5	35.5	29.5	21	27	20.3	40
	3/8	KGV10-03					20.5	36.5	30				49
12	3/8	KGV12-03	17	20.9	25.2	34	22	38.5	32	22	39	30.8	63
	1/2	KGV12-04					25	41.5	33.5				80

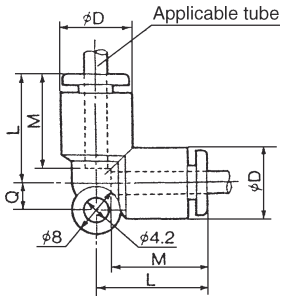
∗Reference dimensions after R(PT) thread installation.



Union elbow: KGL

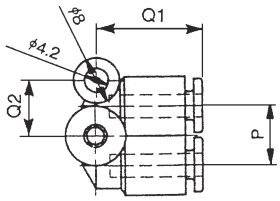
Applicable tube O.D. (mm)	Part No.	D	L	Q	M	Effective orifice(mm²)		Weight (g)
						Nylon	Urethane	
4	**KGL04-00**	10.4	18	4.5	16	4.2	4.2	6
6	**KGL06-00**	12.8	20	5.3	17	11.4	11.4	7
8	**KGL08-00**	15.2	23	6	18.5	21.6	14.9	11
10	**KGL10-00**	18.5	26.5	6.8	21	35.2	25.0	17
12	**KGL12-00**	20.9	28.5	7.5	22	50.2	39.7	21
16	**KGL16-00**	26.5	34	10	25	100	(84)	29

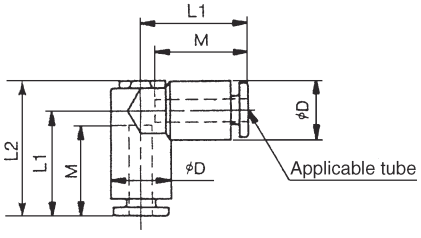
Note) ( ): Values for soft nylon.



Branch elbow: KGLU

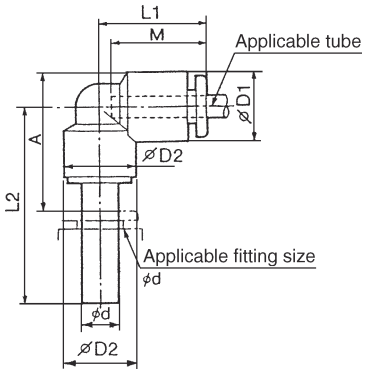
Applicable tube O.D. (mm)	Part No.	D	L_1	L_2	Q_1	Q_2	M	P	Effective orifice(mm²)		Weight (g)
									Nylon	Urethane	
4	**KGLU04-00**	10.4	18.5	24	18.5	10	16	10.4	6.0	6.0	7
6	**KGLU06-00**	12.8	21	27.5	20.5	12	17	12.8	13.9	13.9	9
8	**KGLU08-00**	15.2	24	32	24.5	14	18.5	15.2	26.3	18.2	16
10	**KGLU10-00**	18.5	27	36.5	28	16	21	18.5	40.8	29.0	25
12	**KGLU12-00**	20.9	29	40	30	18	22	20.9	57.2	45.2	32





Plug-in elbow: KGL

Applicable tube O.D. (mm)	Applicable fitting size ød	Part No.	D_1	D_2	L_1	L_2	A	M	Effective orifice(mm²)		Weight (g)
									Nylon	Urethane	
4	**4**	**KGL04-99**	10.4	8	18	25	14.5	16	4.2	4.2	8
6	**6**	**KGL06-99**	12.8	10	20	27.5	17	17	11.4	11.4	10
8	**8**	**KGL08-99**	15.2	12	22.5	31.5	21	18.5	21.6	14.9	14
10	**10**	**KGL10-99**	18.5	14	25.5	35.5	23.5	21	35.2	25.0	25
12	**12**	**KGL12-99**	20.9	16	27	37.5	26	22	50.2	39.7	28

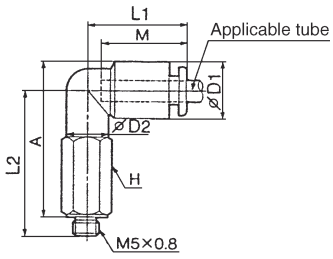


Extended male elbow: KGW

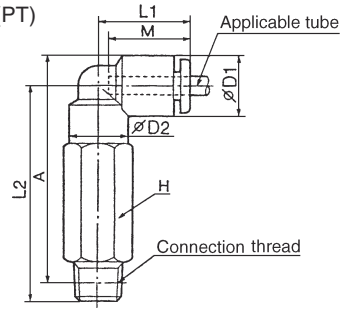
Applicable tube O.D. (mm)	Connection thread R(PT)	Part No.	H (Hex.)	D1	D2	L1	L2	A*	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
4	M5×0.8	KGW04-M5	8	10.4	8	18	30	32	16	3.0	3.0	11
	1/8	KGW04-01	10		10		37.5	38.5		4.0	4.0	23
	1/4	KGW04-02	14				43.5	42.5				38
6	M5×0.8	KGW06-M5	8	12.8	8	20	30.5	33.5	17	3.0	3.0	11
	1/8	KGW06-01	10		10		40	42.5		10.9	10.9	26
	1/4	KGW06-02	14				46	46.5				41
	3/8	KGW06-03	17				48	48				67
8	1/8	KGW08-01	12	15.2	12	23	43.5	47	18.5	20.5	14.2	30
	1/4	KGW08-02	14				49.5	51				47
	3/8	KGW08-03	17				51.5	52.5				74
10	1/4	KGW10-02	17	18.5	17	26.5	56.5	59.5	21	33.5	23.8	66
	3/8	KGW10-03					58.5	61				76
	1/2	KGW10-04	22				65	66				145
12	1/4	KGW12-02	17	20.9	17	28.5	57.5	62	22	47.7	37.7	68
	3/8	KGW12-03					59.5	63.5				78
	1/2	KGW12-04	22				66	68.5				147

*Reference dimensions after R(PT) thread installation.

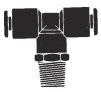
M5



R(PT)



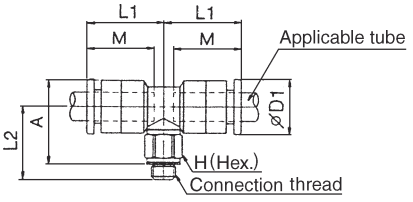
Branch tee: KGT



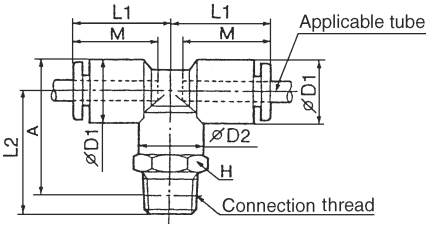
Applicable tube O.D. (mm)	Connection thread R(PT)	Part No.	H (Hex.)	D1	D2	L1	L2	A*	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
4	M5×0.8	KGT04-M5	7	9.5	.	15.5	14	15.5	13	4.3	4.3	3.5
	1/8	KGT04-01	10	10.4	10	18	22	23	16	6.0	6.0	13
	1/4	KGT04-02	14				26	25				19
6	M5×0.8	KGT06-M5	7	11.5	.	16	15	17.5	14	4.3	4.3	4.2
	1/8	KGT06-01	10	12.8	10	20	23	25.5	17	13.9	13.9	13
	1/4	KGT06-02	14				27	27.5				21
	3/8	KGT06-03	17				29	29				35
8	1/8	KGT08-01	12	15.2	12	23	24.5	28	18.5	26.3	18.2	15
	1/4	KGT08-02	14				28.5	30				23
	3/8	KGT08-03	17				30.5	31.5				37
10	1/8	KGT10-01	17	18.5	17	26.5	27	32	21	40.8	29.0	31
	1/4	KGT10-02					30	33				29
	3/8	KGT10-03					32	34.5				39
	1/2	KGT10-04	22				36	37				66
12	1/4	KGT12-02	17	20.9	17	28.5	31	35.5	22	57.2	45.2	31
	3/8	KGT12-03					33	37				41
	1/2	KGT12-04	22				37	39.5				68
16	3/8	KGT16-03	22	26.5	20.9	34	38	44.5	25	71	(71)	112
	1/2	KGT16-04					40.5	46		100	(100)	116

*Reference dimensions after R(PT) thread installation.
Note) ( ): Values for soft nylon.

M5



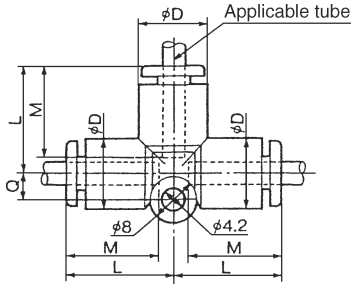
R(PT)



Union tee: KGT

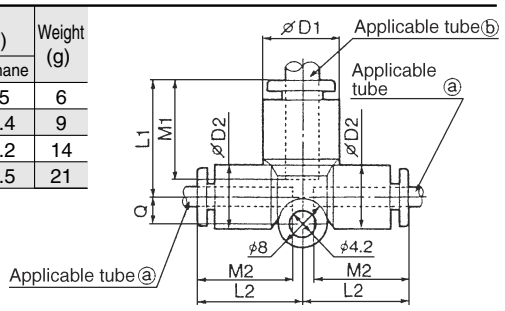
Applicable tube O.D. (mm)	Part No.	D	L	Q	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
4	KGT04-00	10.4	18	4.5	16	6.4	6.4	8
6	KGT06-00	12.8	20	5.3	17	13.4	13.4	11
8	KGT08-00	15.2	23	6	18.5	25.6	17.7	16
10	KGT10-00	18.5	26.5	6.8	21	40	28.4	25
12	KGT12-00	20.9	28.5	7.5	22	57.4	45.4	29
16	KGT16-00	26.5	34	10	25	100	(84)	40

Note) ( ): Values for soft nylon.



Different dia. tee: KGT

Applicable tube O.D.(mm) ⓐ	Applicable tube O.D.(mm) ⓑ	Part No.	D1	D2	L1	L2	Q	M1	M2	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
4	6	KGT04-06	12.8	10.4	19.5	18	4.5	17	16	7.1	6.5	6
6	8	KGT06-08	15.2	12.8	22.5	20	5.3	18.5	17	16.4	16.4	9
8	10	KGT08-10	18.5	15.2	26.5	23	6	21	18.5	36	27.2	14
10	12	KGT10-12	20.9	18.5	28.5	26.5	6.8	22	21	56	44.5	21

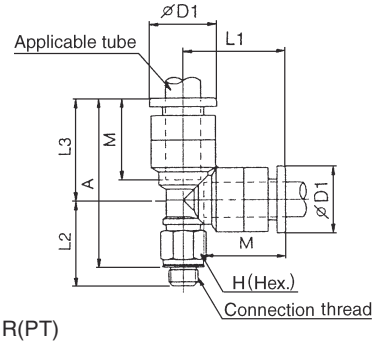


Male run tee: KGY

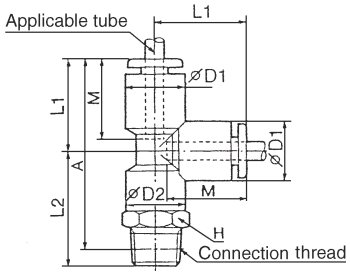
Applicable tube O.D. (mm)	Connection thread R(PT)	Part No.	H (Hex.)	D1	D2	L1	L2	L3	A*	M	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
4	M5×0.8	KGY04-M5	7	9.5	—	16	13.5	15	25.5	13	4.6	4.6	3.5
	1/8	KGY04-01	10	10.4	10	18	22	—	36	16	6.4	6.4	13
	1/4	KGY04-02	14				26		38				19
6	M5×0.8	KGY06-M5	7	11.5	—	17.5	14.5	17.5	29	14	4.6	4.6	4.3
	1/8	KGY06-01	10	12.8	10	20	23	—	39	17	13.4	13.4	13
	1/4	KGY06-02	14				27		41				21
	3/8	KGY06-03	17				29		42.5				35
8	1/8	KGY08-01	12	15.2	12	23	24.5	—	43.5	17	13.4	13.4	15
	1/4	KGY08-02	14				28.5		45.5	18.5	25.6	17.7	23
	3/8	KGY08-03	17				30.5		47				37
10	1/8	KGY10-01	17	18.5	17	26.5	27	—	49.5	21	40.0	28.4	31
	1/4	KGY10-02					30		50.5				29
	3/8	KGY10-03					32		52				39
	1/2	KGY10-04	22				36		54.5				66
12	1/4	KGY12-02	17	20.9	17	28.5	31	—	53.5	22	57.4	45.4	31
	3/8	KGY12-03					33		55				41
	1/2	KGY12-04	22				37		57.5				68
16	3/8	KGY16-03	22	26.5	20.9	34	38	—	65.5	25	81	(81)	112
	1/2	KGY16-04					41		67		113	(113)	116

*Reference dimensions after R(PT) thread installation.
Note) ( ): Values for soft nylon.

M5



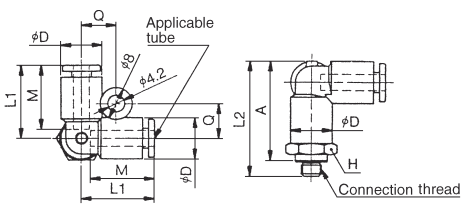
R(PT)



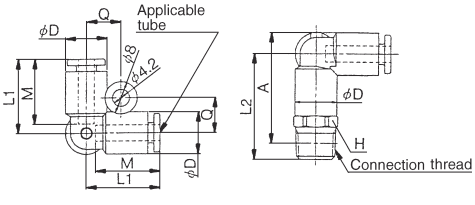
Male delta: KGD

Applicable tube O.D.(mm)	Connection thread R(PT)	Part No.	H (Hex.)	D	L1	L2	A	M	Q	Effective orifice(mm²) Nylon	Effective orifice(mm²) Urethane	Weight (g)
4	M5 × 0.8	KGD04-M5	11	10.4	18.5	24	25.5	16	8.7	4.3	4.3	10
	1/8	KGD04-01				26.5	27.5			6.0	6.0	12
	1/4	KGD04-02	14			30.5	30					21
6	M5 ×0.8	KGD06-M5	13	12.8	20.5	26	28.5	17	9.9	4.3	4.3	13
	1/8	KGD06-01				29	31.5			13.9	13.9	15
	1/4	KGD06-02	14			32.5	33					22
	3/8	KGD06-03	17			34.5	34.5					35
8	1/8	KGD08-01	17	15.2	23.5	33.5	37	18.5	11.1	26.3	18.2	27
	1/4	KGD08-02				36.5	38					
	3/8	KGD08-03				37.5	38.5					36
10	1/4	KGD10-02	19	18.5	26.5	39.5	43	21	12.8	40.8	29.0	39
	3/8	KGD10-03				40.5	43.5					40
	1/2	KGD10-04	22			44	45					62
12	1/4	KGD12-02	22	20.9	28.5	42	46.5	22	13.9	57.2	45.2	55
	3/8	KGD12-03				43	47					56
	1/2	KGD12-04				46	48.5					63

M5

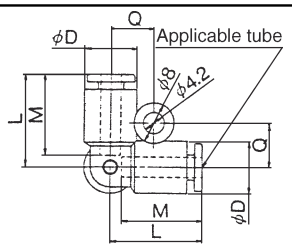


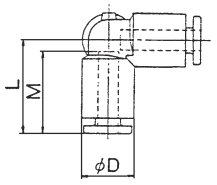
R(PT)



Delta: KGD

Applicable tube O.D. (mm)	Part No.	D	L	Q	M	Effective orifice(mm²)		Weight (g)
						Nylon	Urethane	
4	**KGD04-00**	10.4	18.5	8.7	16	6.0	6.0	6
6	**KGD06-00**	12.8	20.5	9.9	17	13.9	13.9	8
8	**KGD08-00**	15.2	23.5	11.1	18.5	26.3	18.2	12
10	**KGD10-00**	18.5	26.5	12.8	21	40.8	29.0	19
12	**KGD12-00**	20.9	28.5	13.9	22	57.2	45.2	24



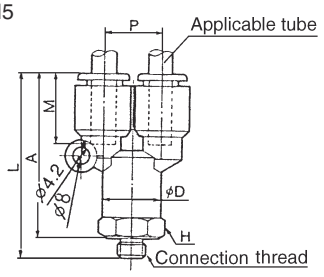


Plug-in "Y": KGU

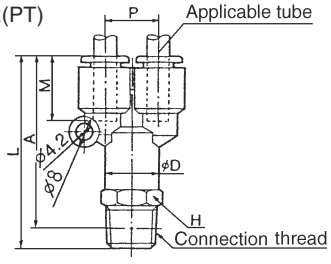
Applicable tube O.D. (mm)	Connection thread R(PT)	Part No.	H (Hex.)	D	L	P	A*	M	Effective orifice(mm²)		Weight (g)
									Nylon	Urethane	
4	**M5×0.8**	**KGU04-M5**	11	10.4	39.5	10.4	36	16	2.2	2.2	4
	1/8	**KGU04-01**			42		38		4.2	4.2	11
	1/4	**KGU04-02**	14		46		40				20
6	**M5×0.8**	**KGU06-M5**	13	12.8	42.5	12.8	39	17	2.2	2.2	13
	1/8	**KGU06-01**			45.5		41.5		13.4	13.4	12
	1/4	**KGU06-02**	14		49		43				22
	3/8	**KGU06-03**	17		51		44.5				35
8	**1/8**	**KGU08-01**	17	15.2	52.5	15.2	48.5	18.5	25.6	17.7	16
	1/4	**KGU08-02**			55.5		49.5				24
	3/8	**KGU08-03**			56.5		50				36
10	**1/4**	**KGU10-02**	19	18.5	61	18.5	55	21	40	28.4	30
	3/8	**KGU10-03**			62		55.5				40
	1/2	**KGU10-04**	22		65		57				65
12	**1/4**	**KGU12-02**	22	20.9	64.5	20.9	58.5	22	57.4	45.4	32
	3/8	**KGU12-03**			65.5		59				40
	1/2	**KGU12-04**			68.5		60.5				65

*Reference dimensions after R(PT) thread installation.

M5

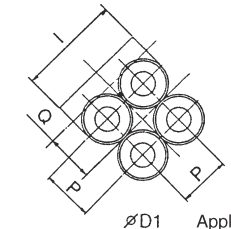


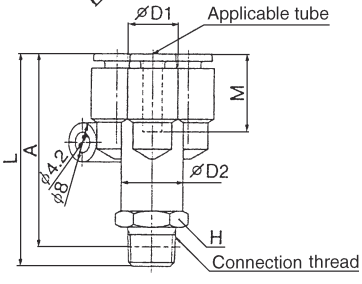
R(PT)



Double branch "Y": KGUD

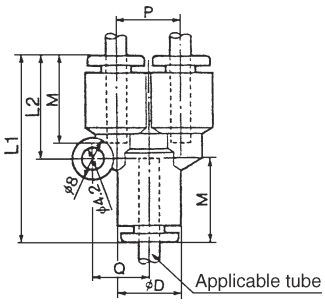
Applicable tube O.D. (mm)	Connection thread R(PT)	Part No.	H (Hex.)	D1	D2	L	I	A	Q	M	P	Effective orifice(mm²)		Weight (g)
												Nylon	Urethane	
4	**1/8**	**KGUD04-01**	13	10.4	12.8	43.5	21	39.5	9.7	16	10.4	4.2	4.2	18
	1/4	**KGUD04-02**	14			47		41						26
6	**1/8**	**KGUD06-01**	17	12.8	15.2	50.5	26	46.5	11.7	17	12.8	13.4	13.4	31
	1/4	**KGUD06-02**				53.5		47.5						





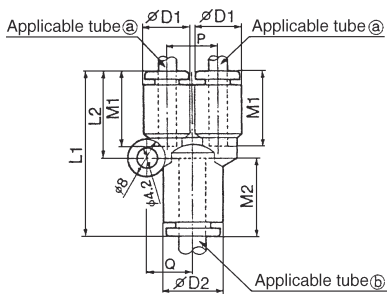
Union“Y”: KGU

Applicable tube O.D. (mm)	Part No.	D	L1	L2	P	Q	M	Effective orifice(mm²)		Weight (g)
								Nylon	Urethane	
4	KGU04-00	10.4	34	18	10.4	9.7	16	4.2	4.2	8
6	KGU06-00	12.8	37	20	12.8	11.7	17	13.4	13.4	10
8	KGU08-00	15.2	42.5	24.5	15.2	13.7	18.5	25.6	17.7	12
10	KGU10-00	18.5	48	27.5	18.5	16.1	21	40	28.4	16
12	KGU12-00	20.9	51	30	20.9	18.1	22	57.4	45.4	23



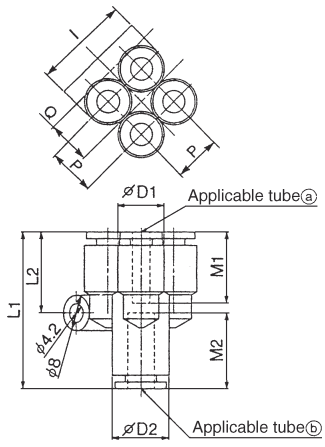
Different dia. union“Y”: KGU

Applicable tube O.D.(mm)		Part No.	D1	D2	L1	L2	P	Q	M1	M2	Effective orifice(mm²)		Weight (g)
ⓐ	ⓑ										Nylon	Urethane	
4	6	KGU04-06	10.4	12.8	35	18	10.4	9.7	16	17	4.2	4.2	7
6	8	KGU06-08	12.8	15.2	39.5	20	12.8	11.7	17	18.5	13.4	13.4	12
8	10	KGU08-10	15.2	18.5	45	24.5	15.2	13.7	18.5	21	25.6	17.7	19
10	12	KGU10-12	18.5	20.9	49	27.5	18.5	16.1	21	22	40	28.4	27



Different dia. double union“Y”: KGUD

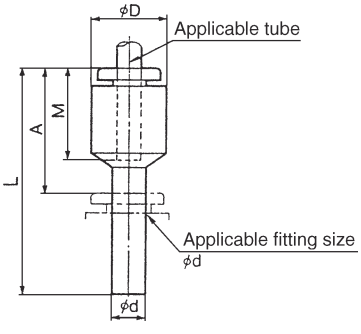
Applicable tube O.D.(mm)		Part No.	D1	D2	L1	L2	P	I	Q	M1	M2	Effective orifice(mm²)		Weight (g)
ⓐ	ⓑ											Nylon	Urethane	
4	6	KGUD04-06	10.4	12.8	35.5	18.2	10.4	21	9.7	16	17	4.2	4.2	11
6	8	KGUD06-08	12.8	15.2	40.5	20.3	12.8	26	11.7	17	18.5	13.4	13.4	19



Plug-in reducer: KGR

Applicable tube O.D. (mm)	Applicable fitting size ød	Part No.	D	L	A	M	Effective orifice(mm²)		Weight (g)
							Nylon	Urethane	
4	6	KGR04-06	10.4	34.5	17.5	16	5.6	5.6	2.1
	8	KGR04-08		36.5	18				2.3
	10	KGR04-10	12.8	39.5	18.5				3.6
6	4	KGR06-04	12.8	37	21	17	4	4	7
	8	KGR06-08		37	18.5		13.1	13.1	3
	10	KGR06-10		39.5					3.5
	12	KGR06-12	15.2	42	20				5.2
8	10	KGR08-10	15.2	41	20	18.5	26.1	18.0	4.5
	12	KGR08-12		42					5.1
10	12	KGR10-12	17	42	20	21	41.5	32.8	33
	16	KGR10-16	20.9	50.5	25.5			(29.5)	42
12	16	KGR12-16	20.9	50.5	25.5	22	58.3	(46.1)	37

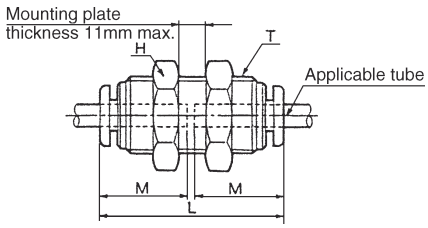
Note) ( ): Values for soft nylon.



Bulkhead union: KGE

Applicable tube O.D. (mm)	Part No.	T(M)	H (Hex.)	L	Mounting hole	M	Effective orifice(mm²)		Weight (g)
							Nylon	Urethane	
4	**KGE04-00**	M12×1	14	32.5	13	16	5.6	5.6	26
6	**KGE06-00**	M14×1	17	34.5	15	17	13.1	13.1	33
8	**KGE08-00**	M16×1	19	38	17	18.5	26.1	18.0	52
10	**KGE10-00**	M20×1	24	42.5	21	21	41.5	29.5	70
12	**KGE12-00**	M22×1	27	44	23	22	58.3	46.1	90
16	**KGE16-00**	M28 ×1.5	32	51	29	25	113	(96)	115

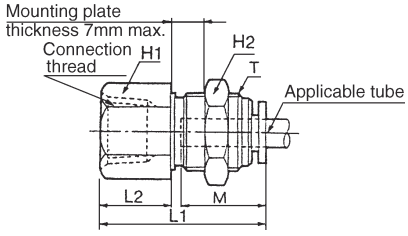
Note) ( ): Values for soft nylon.



Bulkhead connector: KGE

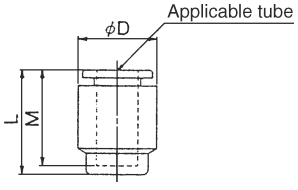
Applicable tube O.D. (mm)	Connection thread R(PT)	Part No.	T(M)	H_1 (Hex.)	H_2 (Hex.)	L_1	L_2	Mounting hole	M	Effective orifice(mm²)		Weight (g)
										Nylon	Urethane	
4	1/8	**KGE04-01**	M12×1	14	14	27.5	11	13	16	5.6	5.6	16
	1/4	**KGE04-02**		17		31	15					35
6	1/8	**KGE06-01**	M14×1	17	17	28	11	15	17	13.1	13.1	25
	1/4	**KGE06-02**				31.5	15					40
	3/8	**KGE06-03**		19		33.5	17					29
8	1/8	**KGE08-01**	M16×1	17	19	27.5	7.5	17	18.5	26.1	18.0	28
	1/4	**KGE08-02**				33	13					27
	3/8	**KGE08-03**		19		35	15					48
10	1/4	**KGE10-02**	M20×1	22	24	34.5	12.5	21	21	41.5	29.5	53
	3/8	**KGE10-03**				36.5	14					67
12	3/8	**KGE12-03**	M22×1	24	27	37	14	23	22	58.3	46.1	92
	1/2	**KGE12-04**				41	18					59
16	3/8	**KGE16-03**	M28×1.5	30	32	40	14	29	25	96	(96)	127
	1/2	**KGE16-04**				44	18			113		132

Note) ( ): Values for soft nylon.



Tube cap: KGC

Applicable tube O.D.(mm)	Part No.	D	L	M	Weight (g)
4	**KGC04-00**	10.4	17	16	3
6	**KGC06-00**	12.8	18.5	17	3
8	**KGC08-00**	15.2	20.5	18.5	4
10	**KGC10-00**	18.5	23	21	6
12	**KGC12-00**	20.9	24	22	8
16	**KGC16-00**	26.5	28	25	13



Possible to use in corrosive application.

Stainless Steel Material (SUS316)

Compact piping space.

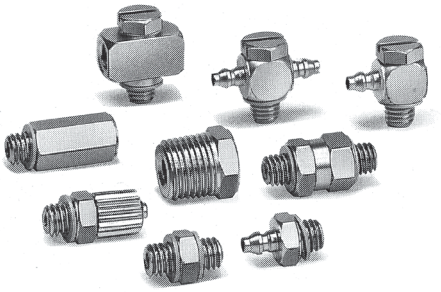
Tube has a large retaining force. Hose nipple assures easy installation and removal.

Line up various types.

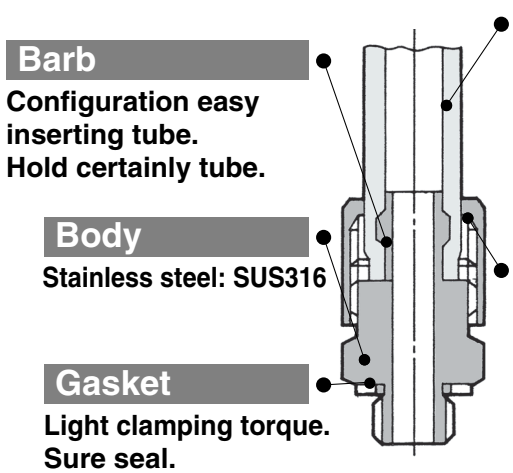
Possible for special tubing in a same direction.

Accepts Many Types of Plastic Tubing

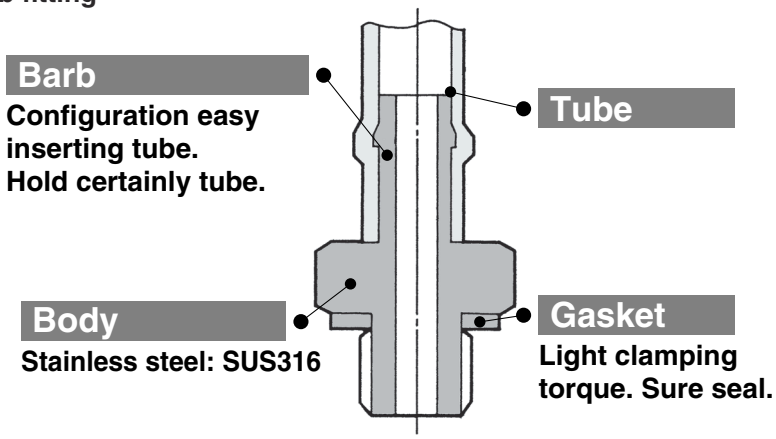
Hose nipple and hose elbow accepts nylon, soft nylon, and polyurethane tubing.



Hose nipple



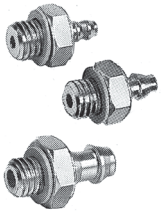
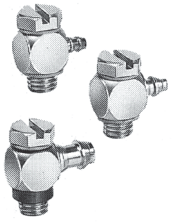
Barb fitting



Specifications

Applicable tube material	Nylon	Soft nylon		Polyurethane
Applicable tube dia.	ø4/ø2.5 ø6/ø4	ø3.18/ø2.18	ø4/ø2.5 ø6/ø4	ø3.18/ø2 ø4/ø2.5, ø6/ø4
Max. operating pressure	220psi {1.5MPa}	145psi {1.0MPa}		115psi {0.8MPa}
Port size	M5 (JIS B0209 class 2)			
Material	Stainless steel (SUS316)			

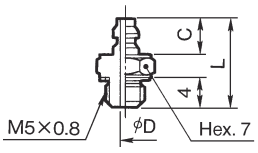
Model

Model	Type	Application	Tube O.D./I.D.
MS-5AU-3	Barb fitting  P. 133	For soft nylon tube.	ø3.18/ø2.18 -M5
		For polyurethane tube.	ø3.18/ø2-M5
MS-5AU-4		For soft nylon and polyurethane tube.	ø4/ø2.5-M5
MS-5AU-6			ø6/ø4-M5
MS-5ALHU-3	Barb elbow  P. 133	For soft nylon tube.	ø3.18/ø2.18 -M5
		For polyurethane tube.	ø3.18/ø2-M5
MS-5ALHU-4		●For soft nylon and polyurethane tube. ●Body rotates at 360˚ around the stud axis.	ø4/ø2.5-M5
MS-5ALHU-6			ø6/ø4-M5
MS-5H-4	Hose nipple  P. 133	For nylon, soft nylon, and polyurethane tube.	ø4/ø2.5-M5
MS-5H-6			ø6/ø4-M5
MS-5HLH-4	Hose elbow  P. 133	●For nylon, soft nylon, and polyurethane tube. ●Body rotates at 360˚ around the stud axis.	ø4/ø2.5-M5
MS-5HLH-6			ø6/ø4-M5
M-5G1	Gasket  P. 134	To seal M5 thread	——

Model	Type	Application	Tube O.D./I.D.
MS-5UL	Universal elbow  P. 133	Body rotates at 360˚ around the stud axis.	M5 female -M5 male
MS-5UT	Universal tee  P. 133	Body rotates at 360˚ around the stud axis.	M5 female -M5 female -M5 male
MS-5B	Bushing  P. 134	For reducing Rc(PT)1⁄8 female to M5 female	Rc(PT)1⁄8male -M5 female
MS-5P	Plug  P. 134	To plug unused M5 port.	
MS-5J	Extention fitting  P. 134	Solid piece-moves fitting up from work piece.	M5 male -M5 female
MS-5N	Nipple  P. 134	Fitting to work peice and fitting to fitting connection.	M5 male -M5 male
MS-5UN	Unilversal nipple  P. 134	Body rotates at 360˚ around the stud axis.	M5 male -M5 male PAT
MS-5ATHU-3	Barb elbow for nylon tube 	For soft nylon tube.	ø3.18/ø2.18 -M5
		For polyurethane tube.	ø3.18/ø2-M5
MS-5ATHU-4		●For soft nylon and polyurethane tube. ●Body rotates at 360˚ around the stud axis.	ø4/ø2.5-M5
MS-5ATHU-6	P. 134		ø6/ø4-M5
M-5GH	Gasket(H)  P. 134	To seal M5 thread.	Applicable MS-5ALHU-6 MS-5HLH-4 MS-5HLH-6 MS-5ATHU-6 only

Barb fitting for soft nylon: MS-5AU-3, -4, -6

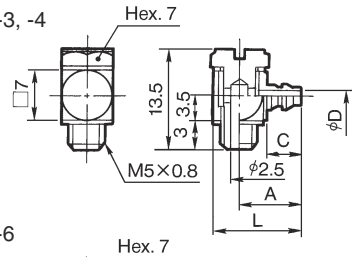
Part No.	C	øD	L	Effective orifice(mm²)	Weight (g)
MS-5AU-3	4.5	1.6	11.5	1.7	1.4
MS-5AU-4	5	1.8	12	2.1	1.5
MS-5AU-6	7	2.5	14	4.0	1.7



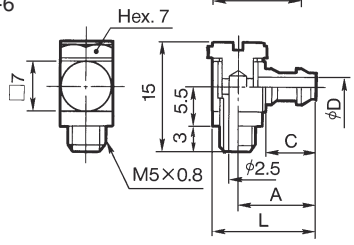
Barb elbow for soft nylon: MS-5ALHU-3, -4, -6

Part No.	A	C	øD	L	Effective orifice(mm²)	Weight (g)
MS-5ALHU-3	8	4.5	1.6	11.8	1.1	3.0
MS-5ALHU-4	8.8	5.0	1.8	12.6	1.4	3.1
MS-5ALHU-6	10.8	7.0	2.5	14.6	2.4	3.7

MS-5ALHU-3, -4

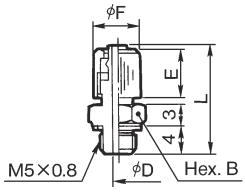


MS-5ALHU-6



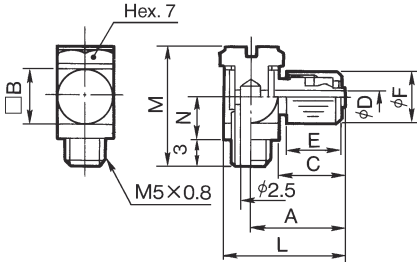
Hose nipple: MS-5H-4, -6

Part No.	B	øD	L	E	øF	Effective orifice(mm²)	Weight (g)
MS-5H-4	7	1.8	15.5	7	6.5	2.1	2.5
MS-5H-6	8	2.5	16.5	8	8.5	4.0	3.7

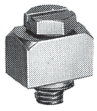


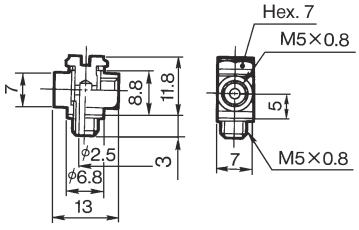
Hose elbow: MS-5HLH-4, -6

Part No.	A	□B	C	øD	E	øF	L	M	N	Effective orifice(mm²)	Weight (g)
MS-5HLH-4	12	7	8.5	1.8	7	6.5	15.8	15	5.5	1.4	4.2
MS-5HLH-6	13.5	8	9.5	2.5	8	8.5	17.8	16	6	2.4	6.2



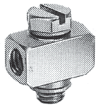
Universal elbow: MS-5UL

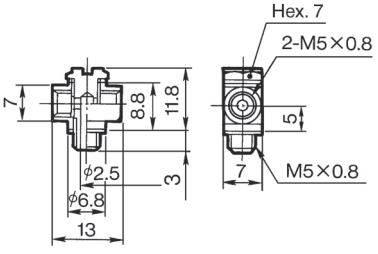




Effective orifice: 2.4mm², Weight: 4.5g

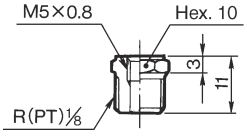
Universal tee: MS-5UT





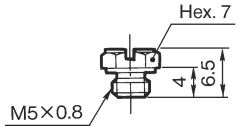
Effective orifice: 2.4mm², Weight: 4.5g

Bushing: MS-5B



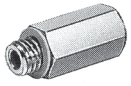
Effective orifice: 12mm²
Weight: 5.5g

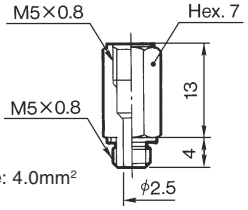
Plug: MS-5P



Weight: 1.2g

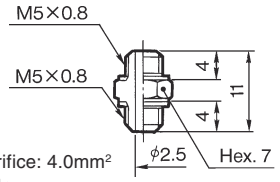
Extension fitting: MS-5J





Effective orifice: 4.0mm²
Weight: 3.4g

Nipple: MS-5N

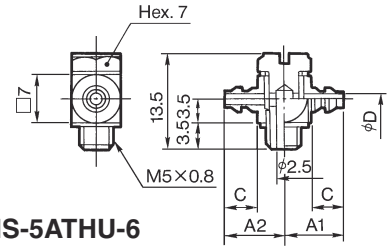


Effective orifice: 4.0mm²
Weight: 1.4g

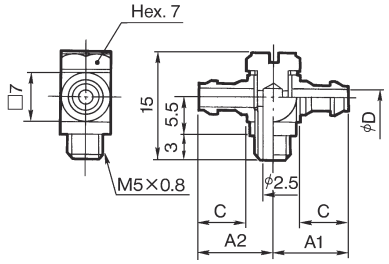
Barb tee for soft tube: MS-5ATHU-3, -4, -6

Part No.	A1	A2	C	øD	Effective orifice(mm²)	Weight (g)
MS-5ATHU-3	8	8.3	4.5	1.6	1.1	3.4
MS-5ATHU-4	8.8	8.8	5.0	1.8	1.4	3.6
MS-5ATHU-6	10.8	10.8	7.0	2.5	2.4	4.2

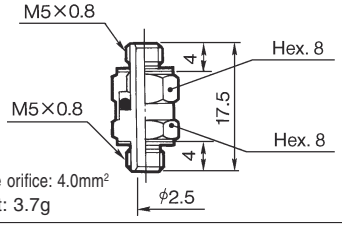
MS-5ATHU-3, -4



MS-5ATHU-6



Universal nipple: MS-5UN



Effective orifice: 4.0mm²
Weight: 3.7g

Gasket: M-5G1, M-5GH

Weight: 0.01g
Weight: 0.04g

⚠ Precautions

Be sure to read before handling.
Refer to "Air Fittings & Tubing Precautions" for other details.

Tightening of M5 thread

⚠ Caution

① Tighten by hand, and give it an additional 1/4 rotation with wrench. (The additional rotation should be doubled to 1/2 when using the universal elbow, universal tee, etc. which have two gaskets.) If tightened too much, thread portion may be damaged and gasket may be deformed. This will cause air leakage. On the contrary, if tightening is not sufficient, thread may loosen causing air leakage.

Use of tube with hose nipple

⚠ Caution

① Cut the tube perpendicularly to the tube axis to a little longer length than required length. (Use tube cutter "TK-1", "TK-2" or "TK-3".)
② Pass the tube through the cap nut.
③ Push the tube until it comes to the end of the barb portion, or it may cause air leakage or hose releasing.
④ Tighten the cap nut firmly by hand on the fitting.

Use of tube with barb fitting

⚠ Caution

① Cut the tube perpendicularly to the tube axis to a little longer length than required length. (Use tube cutter "TK-1", "TK-2" or "TK-3".)
② Push the tube in until it comes to the end of the barb portion, or it may cause air leakage or hose releasing.

One-touch loading and unloading

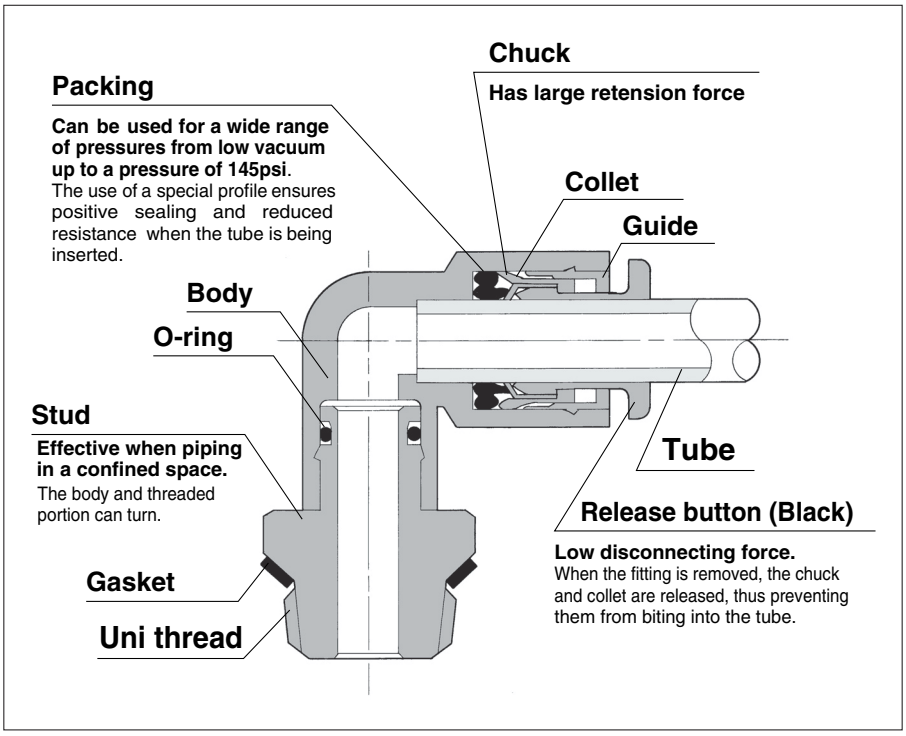
Possible to use in vacuum (Max. 10 Torr)

Can be used in copper-free application

Flame resistance (UL-94 standard, V-0)

Surface resistance 10^4 to 10^7Ω

Conductive resin is used for body and seals in fittings and tubing.



Principal Element Material

Body	C3604BD·PBT
Stud	C3604BD
Chuck	SUS304
Guide	C3604BD·PBT
Collet, Release button	PBT
Packing, O-ring	NBR

- C3604BD is all electroless nickel plated.
- PBT parts have conductive (10^4 to 10^7 Ω) and fire resistant applications. (UL-standard, V-0)
- Conductive NBR (10^4 to 10^7 Ω) is used for packing.

Applicable Tube

Tube material	Antistatic soft nylon, Polyurethane
Tube O.D.	ø3.2, ø4, ø6, ø8, ø10, ø12

Specifications

Operating fluid	Air
Max. operating pressure	145;si {1.0MPa}
Max. operating vacuum pressure	1.3KPa {10Torr}
Proof pressure	435psi {3.0MPa}
Ambient and fluid temperature	32° to 140°F {0 to 40°C}
Thread	Uni thread JISB0209, class2 (Metric coarse screw thread)
Sealant (Thread portion)	Gasket
Copper-free application	C3604BD parts with electroless nickel plating
Surface resistance	10^4 to 10^7 Ω

Half Union: KAH

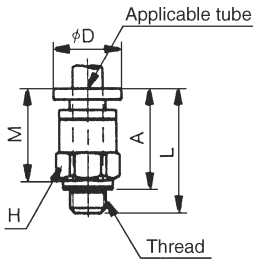
M5, M6

Uni thread

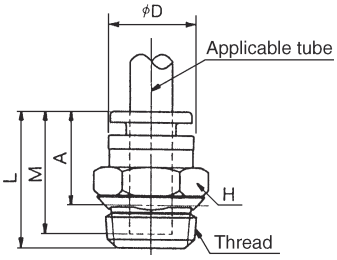
Applicable tube O.D. (mm)	Connection thread M thread Uni thread	Part No.	H (Hex.)	øD	L	A*	M	Effective orifice (mm²) Soft nylon	Effective orifice (mm²) Polyurethane	Weight (g)
3.2	M5×0.8	KAH23-M5	7	8.5	17	14	13	3.4	2.9	2.1
	M6×1.0	KAH23-M6	8		17.5					
	1/8	KAH23-U01	10		12.5	8.5				4
4	M5×0.8	KAH04-M5	8	9.5	17	14	13	4	4	2
	M6×1.0	KAH04-M6			17.5					
	1/8	KAH04-U01	10	10	18.5	13.5	16	5.6	5.6	5
	1/4	KAH04-U02	14		16.5	10.5				10
6	M5×0.8	KAH06-M5	10	11.5	18.5	15	14	4	4	3
	M6×1.0	KAH06-M6			19					
	1/8	KAH06-U01	12	12	19.5	14.5	17	13.1	13.1	5
	1/4	KAH06-U02	14			13				10
	3/8	KAH06-U03	17		17.5	11.5				16
8	1/8	KAH08-U01	14	14	25	20.5	18.5	18.0	18.0	11
	1/4	KAH08-U02			21.5	15.5				27
	3/8	KAH08-U03	17		19.5	13.5				33
10	1/8	KAH10-U01	17	17	28	23	21	29.5	29.5	17
	1/4	KAH10-U02				22				
	3/8	KAH10-U03			24	18				14
	1/2	KAH10-U04	22		22	14				28
12	1/4	KAH12-U02	19	19	30.5	24.5	22	46.1	46.1	22
	3/8	KAH12-U03			25.5	19.5				16
	1/2	KAH12-U04	22		24.5	16.5				28

*Reference dimensions after Uni thread installation.

M5, M6

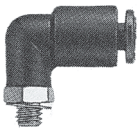


Uni thread

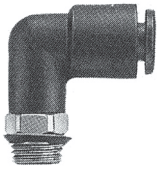


Elbow Union: KAL

M5, M6



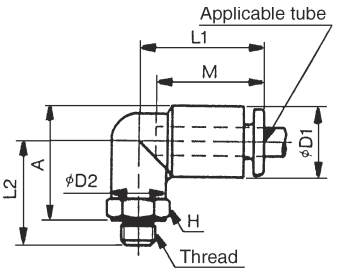
Uni thread



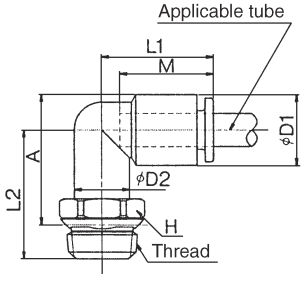
Applicable tube O.D. (mm)	Connection thread M thread Uni thread	Part No.	H (Hex.)	øD1	øD2	L1	L2	A*	M	Effective orifice (mm²) Soft nylon	Effective orifice (mm²) Polyurethane	Weight (g)
3.2	M5×0.8	KAL23-M5	8	9.6	8	17.5	15	16	15.5	3.4	2.9	6
	M6×1.0	KAL23-M6					15.5					7
	1/8	KAL23-U01	10		10		19.5	21				8
4	M5×0.8	KAL04-M5	8	10.4	8	18	15.5	16	16	3.5	3.5	4
	M6×1.0	KAL04-M6					16					5
	1/8	KAL04-U01	10		10		20	20.5		4.2	4.2	8
	1/4	KAL04-U02	14				22	21.5				14
6	M5×0.8	KAL06-M5	8	12.8	8	20	16	18	17	3.5	3.5	6
	M6×1.0	KAL06-M6					16.5					5
	1/8	KAL06-U01	10		10		21.5	23.5		11.4	11.4	9
	1/4	KAL06-U02	14				23					15
	3/8	KAL06-U03	17				24	24.5				23
8	1/8	KAL08-U01	12	15.2	12	23	22.5	25.5	18.5	14.9	14.9	11
	1/4	KAL08-U02	14				24.5	26				16
	3/8	KAL08-U03	17				25.5	27				24
10	1/8	KAL10-U01	17	18.5	17	26.5	25	29.5	21	14.9	14.9	24
	1/4	KAL10-U02					26.5	30		25.0	25.0	21
	3/8	KAL10-U03					27	30.5				25
	1/2	KAL10-U04	22				30	31.5				45
12	1/4	KAL12-U02	17	20.9	17	28.5	27	31.5	22	39.7	39.7	23
	3/8	KAL12-U03					28	32.5				27
	1/2	KAL12-U04	22				31	33.5				48

*Reference dimensions after Uni thread installation.

M5, M6



Uni thread

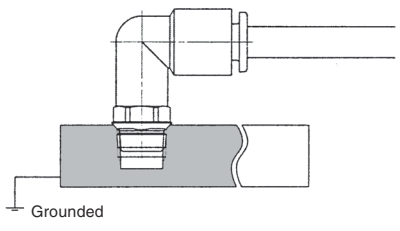


⚠ Precautions

Be sure to read before handling.
Refer to" Air Fittings & Tubing Precautions" for other details.

⚠ Caution

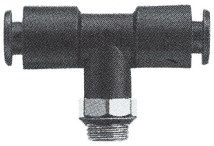
Female thread portion connected with fitting must be grounded, or fitting and tubing has static electricity.



Union Tee: KAT

M5, M6

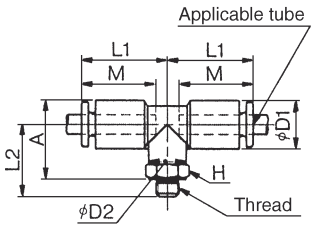
Uni thread



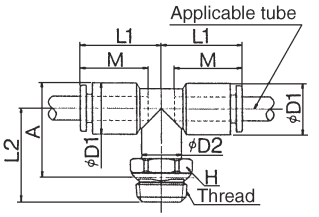
Applicable tube O.D. (mm)	Connection thread M thread Uni thread	Part No.	H (Hex.)	øD1	øD2	L1	L2	A*	M	Effective orifice(mm²) Soft nylon	Effective orifice(mm²) Polyurethane	Weight (g)
3.2	M5×0.8	KAT23-M5	8	9.6	8	17.5	15	16	15.5	3.4	2.9	8
	M6×1.0	KAT23-M6					15.5					
	1/8	KAT23-U01	10		10		19.5	21				9
4	M5×0.8	KAT04-M5	8	10.4	8	18	15.5	17	16	4.3	4.3	6
	M6×1.0	KAT04-M6					16					
	1/8	KAT04-U01	10		10		20	21.5		6.0	6.0	9
	1/4	KAT04-U02	14				22					15
6	M5×0.8	KAT06-M5	8	12.8	8	20	16	18	17	4.3	4.3	8
	M6×1.0	KAT06-M6					16.5					
	1/8	KAT06-U01	10		10		21.5	23.5		13.9	13.9	11
	1/4	KAT06-U02	14				23					17
	3/8	KAT06-U03	17				24	24.5				26
8	1/8	KAT08-U01	12	15.2	12	23	22.5	26	18.5	18.2	18.2	15
	1/4	KAT08-U02	14				24.5					20
	3/8	KAT08-U03	17				25.5	27				28
10	1/8	KAT10-U01	17	18.5	17	26.5	25	29.5	21	29.0	29.0	30
	1/4	KAT10-U02					26.5	30				27
	3/8	KAT10-U03					27	30.5				31
	1/2	KAT10-U04	22				30	31.5				51
12	1/4	KAT12-U02	17	20.9	17	28.5	27	31.5	22	45.2	45.2	31
	3/8	KAT12-U03					28	32.5				34
	1/2	KAT12-U04	22				31	33.5				54

*Reference dimensions after Uni thread installation.

M5, M6

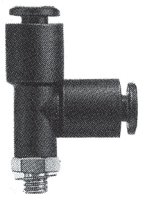


Uni thread

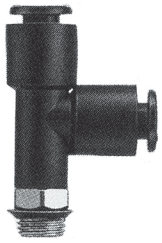


Male Run Tee: KAY

M5, M6



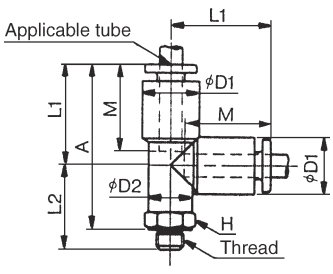
Uni thread



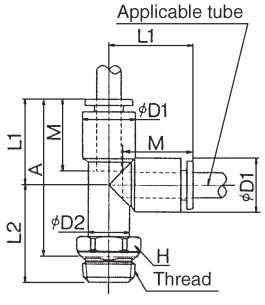
Applicable tube O.D. (mm)	Connection thread M thread Uni thread	Part No.	H (Hex.)	øD1	øD2	L1	L2	A*	M	Effective orifice(mm²) Soft nylon	Effective orifice(mm²) Polyurethane	Weight (g)
3.2	M5×0.8	KAY23-M5	8	9.6	8	17.5	15	28.5	15.5	3.4	2.9	8
	M6×1.0	KAY23-M6					15.5					
	1/8	KAY23-U01	10		10		19.5	33				9
4	M5×0.8	KAY04-M5	8	10.4	8	18	15.5	29.5	16	4.6	4.6	6
	M6×1.0	KAY04-M6				18.5	16					
	1/8	KAY04-U01	10		10	18	20	34		6.4	6.4	9
	1/4	KAY04-U02	14				22	34.5				15
6	M5×0.8	KAY06-M5	8	12.8	8	20	16	32	17	4.6	4.6	8
	M6×1.0	KAY06-M6				20.5	16.5					
	1/8	KAY06-U01	10		10	20	21.5	37.5		13.4	13.4	11
	1/4	KAY06-U02	14				23	37				17
	3/8	KAY06-U03	17				24	38				26
8	1/8	KAY08-U01	12	15.2	12	23	22.5	41.5	18.5	17.7	17.7	15
	1/4	KAY08-U02	14				24.5					19
	3/8	KAY08-U03	17				25.5	42.5				28
10	1/8	KAY10-U01	17	18.5	17	26.5	25	46.5	21	28.4	28.4	30
	1/4	KAY10-U02					26.5	47.5				27
	3/8	KAY10-U03					27	48				31
	1/2	KAY10-U04	22				30	49				51
12	1/4	KAY12-U02	17	20.9	17	28.5	27	49.5	22	45.4	45.4	31
	3/8	KAY12-U03					28	50.5				35
	1/2	KAY12-U04	22				31	51.5				55

*Reference dimensions after Uni thread installation.

M5, M6

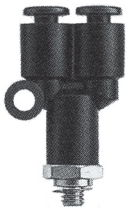


Uni thread

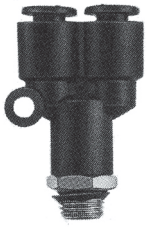


Branch: KAU

M5, M6



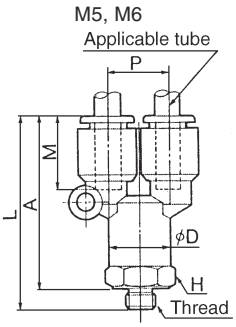
Uni thread



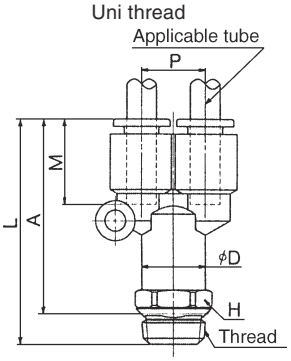
Applicable tube O.D. (mm)	Connection thread M thread Uni thread	Part No.	H (Hex.)	øD	L	P	A*	M	Effective orifice (mm²) Soft nylon	Effective orifice (mm²) Polyurethane	Weight (g)
3.2	M5×0.8	KAU23-M5	10	9.6	38	9.6	34.5	15.5	2.2	2.2	9
	M6×1.0	KAU23-M6			38.5						
	1/8	KAU23-U01	11						3.4	2.9	11
4	M5×0.8	KAU04-M5	11	10.4	39.5	10.4	36	16	2.2	2.2	4
	M6×1.0	KAU04-M6			40						10
	1/8	KAU04-U01							4.2	4.2	11
	1/4	KAU04-U02	14		42						16
6	M5×0.8	KAU06-M5	13	12.8	42.5	12.8	39	17	2.2	2.2	13
	M6×1.0	KAU06-M6			43						
	1/8	KAU06-U01			43.5		39.5		13.4	13.4	14
	1/4	KAU06-U02	14		45		39				18
	3/8	KAU06-U03	17		46		40				26
8	1/8	KAU08-U01	17	15.2	50.5	15.2	46.5	18.5	17.7	17.7	27
	1/4	KAU08-U02			52		46				25
	3/8	KAU08-U03			51.5		45.5				28
10	1/4	KAU10-U02	19	18.5	57.5	18.5	51.5	21	28.4	28.4	38
	3/8	KAU10-U03									36
	1/2	KAU10-U04	22		59		51				51
12	1/4	KAU12-U02	22	20.9	61	20.9	55	22	45.4	45.4	53
	3/8	KAU12-U03									52
	1/2	KAU12-U04			62.5		54.5				52

*Reference dimensions after Uni thread installation.

M5, M6

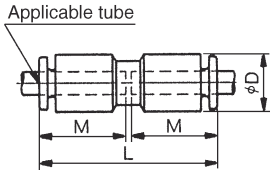


Uni thread



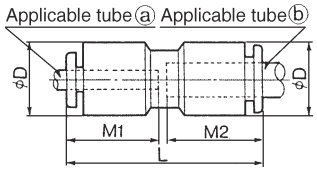
Straight Union: KAH

Applicable tube O.D. (mm)	Part No.	øD	L	M	Effective orifice (mm²) Soft nylon	Effective orifice (mm²) Polyurethane	Weight (g)
3.2	KAH23-00	9.6	31.5	15.5	3.4	2.9	3
4	KAH04-00	10.4	32.5	16	5.6	5.6	3
6	KAH06-00	12.8	34.5	17	13.1	13.1	5
8	KAH08-00	15.2	38.5	18.5	18.0	18.0	7
10	KAH10-00	18.5	42.5	21	29.5	29.5	11
12	KAH12-00	20.9	44.5	22	46.1	46.1	14

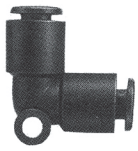


Different Dia. Straight: KAH

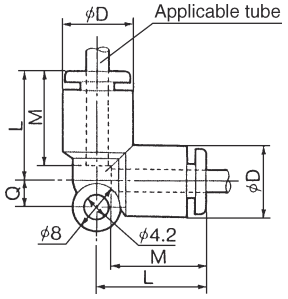
Applicable tube O.D.(mm) ⓐ	Applicable tube O.D.(mm) ⓑ	Part No.	øD	L	M1	M2	Effective orifice (mm²) Soft nylon	Effective orifice (mm²) Polyurethane	Weight (g)
3.2	4	KAH23-04	10.4	32.5	15.5	16	3.2	2.7	3
4	6	KAH04-06	12.8	34.5	16	17	4.2	4.2	5
6	8	KAH06-08	15.2	38.5	17	18.5	10.7	10.7	7
8	10	KAH08-10	18.5	42	18.5	21	16.7	16.7	11
10	12	KAH10-12	20.9	44.5	21	22	28.2	28.2	14



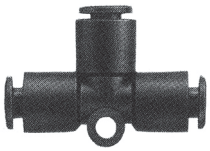
Union Elbow: KAL



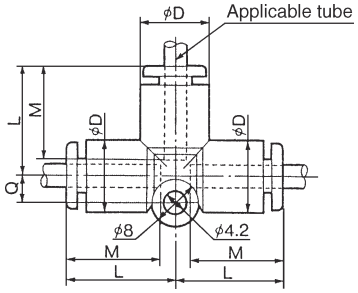
Applicable tube O.D. (mm)	Part No.	øD	L	Q	M	Effective orifice (mm²)		Weight (g)
						Soft nylon	Polyurethane	
3.2	**KAL23-00**	9.6	17.5	4.3	15.5	3.4	2.9	3
4	**KAL04-00**	10.4	18	4.5	16	4.2	4.2	6
6	**KAL06-00**	12.8	20	5.3	17	11.4	11.4	7
8	**KAL08-00**	15.2	23	6	18.5	14.9	14.9	11
10	**KAL10-00**	18.5	26.5	6.8	21	25.0	25.0	17
12	**KAL12-00**	20.9	28.5	7.5	22	39.7	39.7	21



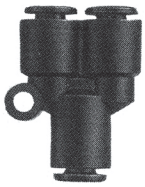
Branch Tee: KAT



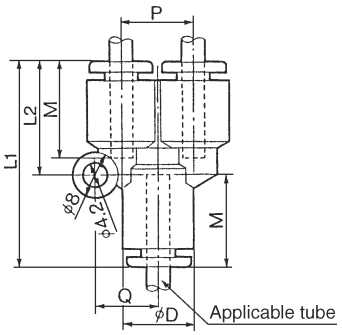
Applicable tube O.D. (mm)	Part No.	øD	L	Q	M	Effective orifice (mm²)		Weight (g)
						Soft nylon	Polyurethane	
3.2	**KAT23-00**	9.6	17.5	4.3	15.5	3.4	2.9	5
4	**KAT04-00**	10.4	18	4.5	16	6.4	6.9	8
6	**KAT06-00**	12.8	20	5.3	17	13.4	13.4	11
8	**KAT08-00**	15.2	23	6	18.5	17.7	17.7	16
10	**KAT10-00**	18.5	26.5	6.8	21	28.4	28.4	25
12	**KAT12-00**	20.9	28.5	7.5	22	45.4	45.4	29



Branch"Y": KAU

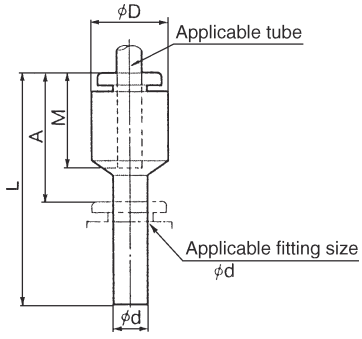


Applicable tube O.D. (mm)	Part No.	øD	L1	L2	P	Q	M	Effective orifice (mm²)		Weight (g)
								Soft nylon	Polyurethane	
3.2	**KAU23-00**	9.6	33	17.5	9.6	9	15.5	3.4	2.9	5
4	**KAU04-00**	10.4	34	18	10.4	9.7	16	4.2	4.2	8
6	**KAU06-00**	12.8	37	20	12.8	11.7	17	13.4	13.4	10
8	**KAU08-00**	15.2	42.5	24.5	15.2	13.7	18.5	17.7	17.7	12
10	**KAU10-00**	18.5	48	27.5	18.5	16.1	21	28.4	28.4	16
12	**KAU12-00**	20.9	51	30	20.9	18.1	22	45.4	45.4	23



Plug-in Reducer: KAR

Applicable tube O.D. (mm)	Applicable fitting size ød	Part No.	øD	L	A	M	Effective orifice (mm²)		Weight (g)
							Soft nylon	Polyurethane	
3.2	**4**	**KAR23-04**	9.6	33.5	18.5	15.5	3.4	2.9	5
4	**6**	**KAR04-06**	10.4	34.5	17.5	16	5.6	5.6	2.1
	8	**KAR04-08**		36.5	18				2.3
	10	**KAR04-10**	12.8	39.5	18.5				3.6
6	**8**	**KAR06-08**	12.8	37	18.5	17	13.1	13.1	3
	10	**KAR06-10**		39.5					3.5
	12	**KAR06-12**		42	20				5.2
8	**10**	**KAR08-10**	15.2	41	20	18.5	18.0	18.0	4.5
	12	**KAR08-12**		42					5.1
10	**12**	**KAR10-12**	17	42	20	21	32.8	32.8	33

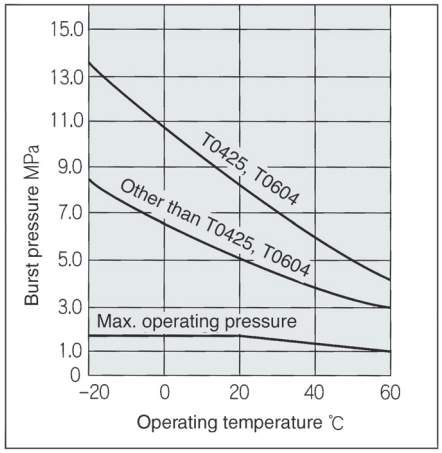


Tubing

Series T, TIA, TS, TISA, TIUB, TU, TUS, TCU, TFU, TIRS, TRS, TRB, TA□

For general air tubing
Nylon tube

Burst Pressure Characteristics Curve



⚠Precautions

Be sure to read before handling. Refer to "Air Fittings & Tubing Precautions" for other details.

⚠Caution

①Applicable for general industrial water. Consult SMC if using for other kind of fluid. Surge pressure must be under the max. operating pressure. If exceeding that value, fitting may be damaged and tubing may be burst.

②The values of the max. operating pressure are at a temperature of 20˚C. Refer to the Burst Pressure Characteristics Curve for other temperatures. Avoid abnormal temperature rise which may burst the tubing.

③The values of the min. bending radius are at a temperature of 20˚C and O.D. variable rate 10% max. In case that operating temperature is higher than 20˚C, O.D. variable rate may be over 10% even if bending radius is within the specified range.

Series Table

●: 20m roll □: 100m roll

	Tube size												
	Metric size (Series T)								Inch size (Series TIA)				
Model	T0425	T0403	T0604	T0645	T0806	T1075	T1209	T1613	TIA01	TIA05	TIA07	TIA11	TIA13
Tube O.D. (mm)	4	4	6	6	8	10	12	16	3.18	4.76	6.35	9.53	12.7
Tube I. D. (mm)	2.5	3	4	4.5	6	7.5	9	13	2.18	3.48	4.57	6.99	9.56
Black(B)	●	●	●	●	●	●	●	●	●	●	●	●	●
White(W)	●	●	●	●	●	●	●	●	●	●	●	●	●
Red(R)	□	□	□	□	□	□	□	□	□	□	□	□	□
Blue(BU)	□	□	□	□	□	□	□	□	□	□	□	□	□
Yellow(Y)	□	□	□	□	□	□	□	□	□	□	□	□	□
Green(G)	□	□	□	□	□	□	□	□	□	□	□	□	□
	5/32"				5/16"				Nominal O.D. (inch)				
									1/8"	3/16"	1/4"	3/8"	1/2"

Specifications

Operating fluid	Air, Water												
Max. operating pressure	220psi {1.5MPa} at 20˚C												
Burst pressure	Refer to burst pressure characteristics curve.												
Minimum bending radius (mm)	13	25	24	36	48	60	75	100	15	20	30	60	75
Operating temperature	–5 to 140°F (–20 to +60°C) Water: 40 to 105°F (5 to 40˚C)												
Material	Nylon 12												
Vacuum	1.3KPa (10 Torr)												

How to Order

T0425 B — 20

Indication of tube model

Color indication

Symbol	Color
B	Black
W	White
R	Red
BU	Blue
Y	Yellow
G	Green

Length per roll

Symbol	Roll size*
20	20m roll
100	100m roll (Black and white only)

Made to Order

① 100m roll for Metric size and Inch size

Suffix "-X3" to the end of part number.
Ex.) T0425R-100-X3
* Consult SMC in case of ø16.

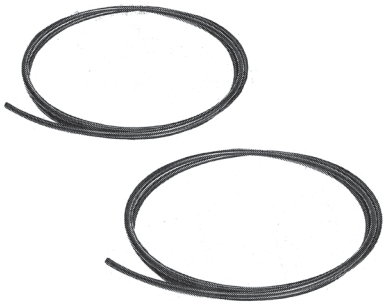
② 20m roll for Inch size (except black and white)

Suffix "-X4" to the end of part number.
Ex.) TIA01BU-20-X4

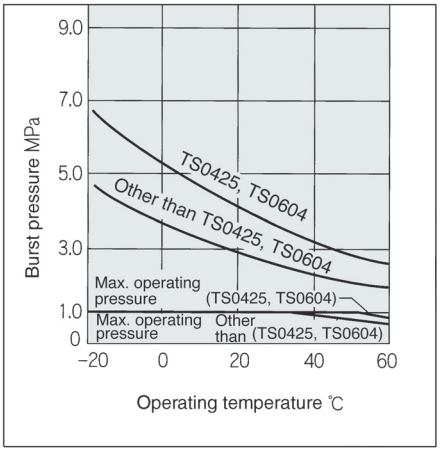
③ Longer roll length

Suffix "-X3" to the end of part number.
Ex.) T0425B-500-X3
* Available 150m for ø10, 200m for ø8, 500m for ø4 and ø6. Contact SMC for other types of length.

For general air pressure Plyable



Burst Pressure Characteristics Curve



Series Table

●: 20m roll □: 100m roll

	Tube size										
	Metric size (Series TS)						Inch size (Series TISA)				
Model	TS0425	TS0604	TS0806	TS1075	TS1209	TS1612	TISA01	TISA05	TISA07	TISA11	TISA13
Tube O.D. (mm)	4	6	8	10	12	16	3.18	4.76	6.35	9.53	12.7
Tube I.D. (mm)	2.5	4	6	7.5	9	12	2.18	3.48	4.57	6.99	9.56
Black(B)	●	●	●	●	●	●	●	●	●	●	●
White(W)	●	●	●	●	●	●	●	●	●	●	●
Red(R)	●	●	●	●	●						
Blue(BU)	●	●	●	●	●						
Yellow(Y)	●	●	●	●	●						
Green(G)	●	●	●	●	●						
Nominal O.D. (inch)	5/32"		5/16"				1/8"	3/16"	1/4"	3/8"	1/2"

Specifications

Operating fluid	Air										
Max. operating pressure	145psi {1.0MPa} at 20˚C										
Burst prssure	Refer to pressure characteristics curve.										
Minimum bending radius (mm)	12	15	23	27	31	60	12	15	23	30	40
Operating temperature	–5 to 140°F {–20 to +60˚C}										
Material	Nylon 12										
Vacuum	1.3KPa {10 Torr}										

⚠ Precautions

Be sure to read before handling. Refer to "Air Fittings & Tubing Precautions" for other details.

⚠ Caution

① Use nylon or polyurethane tubing for general industry water. If using soft-nylon tubing, air leakage or tubing coming out caused by the contracting may occur.

②The values of the max. operating pressure are at a temperature of 20˚C. Refer to the Burst Pressure Characteristics Curve for other temperatures. Avoid abnormal temperature rise which may burst the tubing.

③The values of the min. bending radius are at a temperature of 20˚C and O.D. variable rate 10% max. In case that operating temperature is higher than 20˚C, O.D. variable rate may be over 10% even if bending radius is within the specified range.

How to Order

TS0604 W — 100

Indication of tube model

Color indication

Symbol	Color
B	Black
W	White
R	Red
BU	Blue
Y	Yellow
G	Green

Length per roll

Symbol	Roll size*
20	20m roll
100	100m roll (Black and white only)

Made to Order

① 100m roll for Metric size and Inch size

Suffix "-X3" to the end of part number.
Ex.) TS0604BU-100-X3
* Consult SMC in case of ø16.

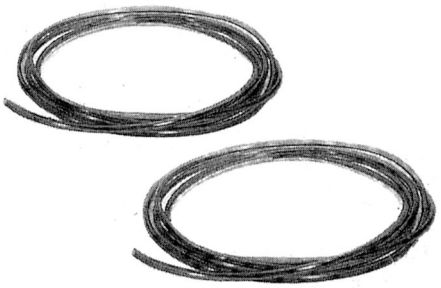
② 20m roll for Inch size (except black and white)

Suffix "-X4" to the end of part number.
Ex.) TISA01BU-20-X4

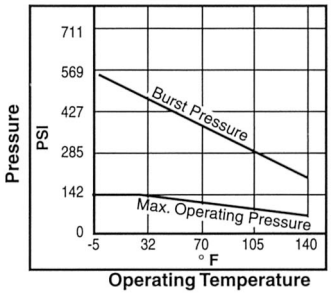
③ Longer roll length

Suffix "-X3" to the end of part number.
Ex.) TS0425B-500-X3
* Available 150m for ø10, 200m for ø8, 500m for ø4 and ø6. Consult SMC for other types of length.

For general air pressure tubing
Orange color now becomes standard model



Burst Pressure Characteristics Curve



⚠ Precautions

Be sure to read before handling. Refer to "Air Fittings & Tubing Precautions" for other details.

⚠ Caution

①Applicable for general industry water. Consult SMC if using for other kind of fluid. Surge pressure must be under the max. operating pressure. If exceeding that value, fitting may be damaged and tubing may be burst.

②The values of the max. operating pressure are at a temperature of 20˚C. Refer to the Burst Pressure Characteristics Curve for other temperatures. Avoid abnormal temperature rise which may burst the tubing.

③The values of the min. bending radius are at a temperature of 20˚C. Higher temperature allows the tubing bent more.

Series Table

	Tube size									
	Inch size (Series TIUB)					Metric size (Series TU)				
Model	TIUB01	TIUB05	TIUB07	TIUB11	TIUB13	TU0425	TU0604	TU0805	TU1065	TU1208
Tube O.D. (mm)	3.18	4.76	6.35	9.53	12.7	4	6	8	10	12
Tube I. D. (mm)	2	3.18	4.23	6.35	8.46	2.5	4	5	6.5	8
Length										
20m	●	●	●	●	●	●	●	●	●	●
33m	●	●	●	●	●	●	●	●		
100m						●		●	●	●
153m	●	●	●	●	●	●	●	●		
305m	●	●	●	●	●	●				
500m						●	●	●		
Nominal O.D. (inch)	1/8"	3/16"	1/4"	3/8"	1/2"	5/32"		5/16"		

Specifications

Operating fluid	Air, Water									
Max. operating pressure	115psi {0.8MPa} at 20˚C									
Burst pressure	Refer to pressure characteristics curve.									
Max.vacuum	1.3KPa (10 Torr)									
Minimun bending radius (mm)	10	15	23	27	35	10	15	20	27	35
Operating temperature	–5 to 140° (–20 to +60°C) Water: 40 to 105° (5 to 40˚C)									
Material	Polyurethane									

How to Order

Inch

TIUB 05 BU — 33

Polyurethane Tubing

Size

Symbol	Tube size
01	1/8"
05	3/16"
07	1/4"
11	3/8"
13	1/2"

Color indication

Symbol	Color
B	Black
BU	Blue
W	White
R	Red
Y	Yellow
G	Green
C	Clear
YR	Orange

Symbol	Color
BU1	Blue solid
BU2	TR Blue
BU3	Med. Blue
BR1	Brown solid
G1	Green solid
G2	TR Green
G3	Neon Green
G4	Dark Green

Symbol	Color
GR1	Gray (solid)
GR2	Lt. Gray
P1	Neon Pink
PU1	Purple solid
PU2	TR Purple
R1	Red (solid)
R2	TR Red
S1	Silver

Length per roll

Symbol	Roll size
20	66 ft.
33	100 ft.
153	500 ft.
305	1000 ft.

Symbol	Color
Y1	Yellow (solid)
Y2	TR Yellow
Y3	Neon Yellow
YR1	TR Orange
YR2	Neon Orange

Metric

TU 0425 BU — 20

Polyurethane Tubing

Size

Symbol	Tube size
01	1/8"
05	3/16"
07	1/4"
11	3/8"
13	1/2"

Color indication

Symbol	Color
B	Black
BU	Blue
W	White
R	Red
Y	Yellow
G	Green
C	Clear
YR	Orange

Symbol	Color
BU1	Blue solid
BU2	TR Blue
BU3	Med. Blue
BR1	Brown solid
G1	Green solid
G2	TR Green
G3	Neon Green
G4	Dark Green

Symbol	Color
GR1	Gray (solid)
GR2	Lt. Gray
P1	Neon Pink
PU1	Purple solid
PU2	TR Purple
R1	Red (solid)
R2	TR Red
S1	Silver

Length per roll

Symbol	Roll size
20	20m
33*	100 ft.
100	100m
153*	500 ft.
305*	1000 ft.
500	500m

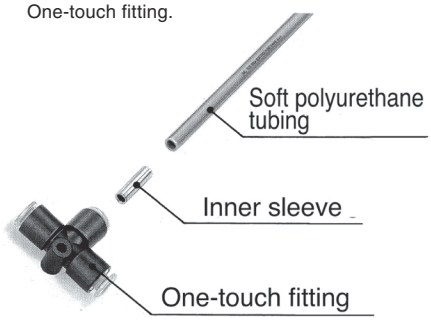
* only available in 4mm (5/32") & 8mm (5/16") tube size.

Symbol	Color
Y1	Yellow (solid)
Y2	TR Yellow
Y3	Neon Yellow
YR1	TR Orange
YR2	Neon Orange

Suitable for piping in confined space Extremely flexible Soft Polyurethane Tubing

TUS related accessories Inner Sleeve Series TJ

Reinforces soft polyurethane tubing. Insert an inner sleeve into soft polyurethane tubing when used with One-touch fitting.



Model

Part No.	Applicable tube model	Length
TJ-0425	TUS0425	18
TJ-0604	TUS0604	19
TJ-0805	TUS0805	20.5
TJ-1065	TUS1065	23
TJ-1208	TUS1208	24

Specifications

Material	C2700T(Electroless nickel plating)
Wall thickness	0.2mm

⚠ Precautions

Be sure to read before handling.
Refer to "Air Fittings & Tubing Precautions" for other details.

⚠ Caution

① Use nylon or polyurethane tubing for general industry water to prevent the tubing from coming out or bursting due to possibility of surge pressure generation. Otherwise, enough level of max. operating pressure is not provided for the use in general industry water.
②The values of the max. operating pressure are at a temperature of 20˚C. Refer to the Burst Pressure Characteristics Curve for other temperatures. Avoid abnormal temperature rise which may burst the tubing.
③ The values of the min. bending radius are at a temperature of 20˚C. Higher temperature allows the tubing bent more.
④ Use inner sleeve taking the removing force into consideration when used with One-touch fittings.

Series Table

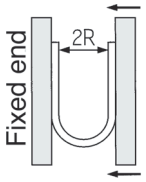
● : 20m roll ☐ : 100m roll

Model	TUS0425	TUS0604	TUS0805	TUS1065	TUS1208
Tube O.D.(mm)	4	6	8	10	12
Tube I.D.(mm)	2.5	4	5	6.5	8
Black(B)	●	●	●	●	●
White(W)	●	●	●	●	●
Red(R)	●	●	●	●	●
Blue(BU)	●	●	●	●	●
Yellow(Y)	●	●	●	●	●
Green(G)	●	●	●	●	●
Translucent(N) Note1)	●	●	●	●	●
Yellow brown(YB)	●	●	●	●	●

Specifications

Operating fluid		Air				
Max. operating pressure		87psi {0.6MPa} at 20˚C				
Burst pressure		Refer to burst pressure characteristics curve.				
Applicable tube fitting		One-touch fitting, Insert tube fitting, Hose nipple Note3)				
Min. bending radius(mm) Note2)		8	15	15	22	29
Operating temperature		–4 to 140°F {–20 to +60°C}				
Material		Polyurethane				
Tube drawing strenght N (Using One-touch fitting)	Without inner sleeve	15	60	60	85	110
	With inner sleeve	80	230	250	300	480

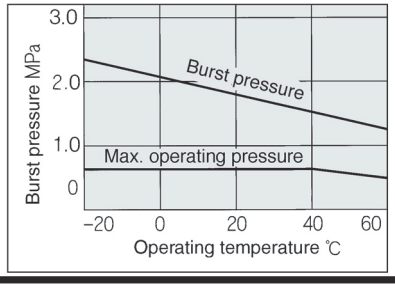
Note1) Not transparent but translucent due to material.
Note2) Min. bending radius is measured as shown in the figure below.



Bend the tube into U-form at a temperature of 20˚C.
Fix one end and close loop gradually. Measure 2R when the tube breaks or is crushed.

Note3) Always use inner sleeve (Series TJ) in safety circuit or critical area.

Burst Pressure Characteristics Curve



How to Order

TUS1065 B — 100

- TUS1065: Indication of tube model
- B: Color indication

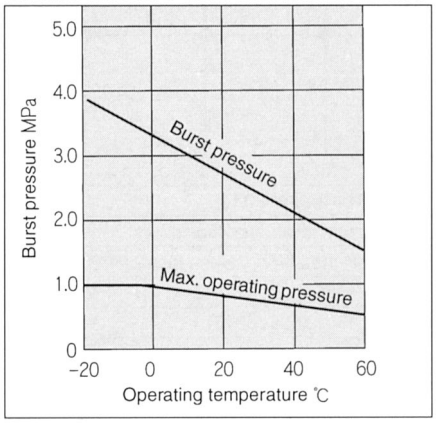
Symbol	Color
B	Black
W	White
R	Red
BU	Blue
Y	Yellow
G	Green
N	Translucent
YB	Yellow brown

- 100: Length per roll

Symbol	Roll size
20	20m roll
100	100m roll

For flexible tubing
Compact piping possible

Burst Pressure Characteristics Curve

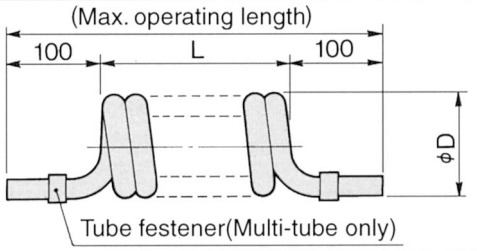


Specifications

Model	TCU 0425B-1	TCU 0425B-2	TCU 0425B-3	TCU 0604B-1	TCU 0604B-2	TCU 0604B-3	TCU 0805B-1
Number of tubes	1	2	3	1	2	3	1
Tube O.D. (mm)	4			6			8
Tube I.D. (mm)	2.5			4			5
Operating fluid	Air Note1)						
Max. operating pressure	115psi {0.8MPa} at 20°C Note2)						
Burst prssure	Refer to pressure characteristics curve.						
Operating temperature	–5 to 140°F {–20 to +60°C}						
Material	Polyurethane						
Color	B—Black, C—Clear, BU—Blue, W—White, Y—Yellow, R—Red, G—Green, YR—Orange						

Note 1) Consult SMC if using for other fluids than air.
Note 2) Refer to Burst Pressure Characteristics Curve for other temperatures.
Avoid abnormal temperature rises.

Dimensions



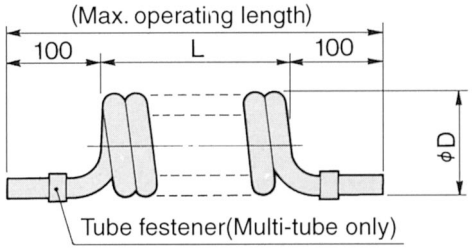
Part No. \ Specifications	Tube size (mm) O.D.	Tube size (mm) I.D.	Dimension of coil (mm) L	Dimension of coil (mm) D	Number of tubes	Number of coil winding per tube length	Max. operating length (m)	Standard unit of packing
TCU0425B-1	4	2.5	210	18	1	52	1.5	5 tubes/ case
TCU0425B-2			280	28	2	35		
TCU0425B-3			265		3	22	1	
TCU0604B-1	6	4	325	24	1	54	2	
TCU0604B-2				37	2	27	1.5	
TCU0604B-3			305		3	17	1	
TCU0805B-1	8	5	330	31	1	41	2	

∗ Dimensions are changeable due to material.

Made to Order

· Change of coil turns
· Color change

Consult SMC for detailed specifications, dimensions and delivery.



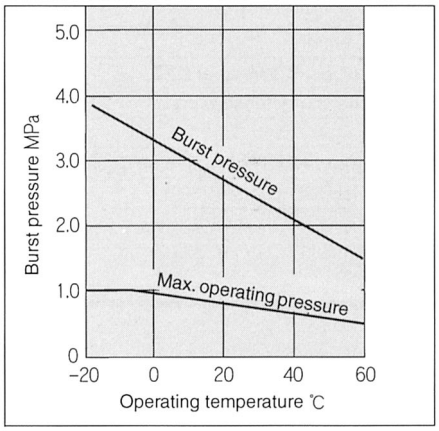
Part No. \ Specifications	Tube size (mm) O.D.	Tube size (mm) I.D.	Dimension of coil (mm) L	Dimension of coil (mm) øD	Number of tubes	Number of coil winding per tube length	Max. operating length (mm)
TCU0425□-1-N-X6	4	2.5	N×4	18	1	3 to 90	L×5.9+200
TCU0425□-2-N-X6			N×8	28	2	3 to 90	L×4.4+200
TCU0425□-3-N-X6			N×12	28	3	3 to 63	L×2.9+200
TCU0604□-1-N-X6	6	4	N×6	24	1	3 to 90	L×5.3+200
TCU0604□-2-N-X6			N×12	37	2	3 to 66	L×3.8+200
TCU0604□-3-N-X6			N×18	37	3	3 to 44	L×2.5+200

□ → B(Black), W(White), R(Red), BU(Blue), Y (Yellow), G(Green), C(Transparent),YR(Orange)

Part No. \ Specifications	Tube size (mm) O.D.	Tube size (mm) I.D.	Dimension of coil (mm) L	Dimension of coil (mm) øD	Number of tubes	Number of coil winding per tube length	Max. operating length (mm)
TCU0805□-1-N-X6	8	5	N×8	31	1	3 to 90	L×5.2+200
TCU0805□-2-N-X6			N×16	42	2	3 to 40	L×3+200
TCU1065□-1-N-X6	10	6.5	N×10	52	1	3 to 45	L×5+200
TCU1065□-2-N-X6			N×20	52	2	3 to 35	L×3+200
TCU1208□-1-N-X6	12	8	N×12	67	1	3 to 35	L×5+200
TCU1208□-2-N-X6			N×24	67	2	3 to 30	L×3+200

Compact piping possible

Burst Pressure Characteristics Curve



Specifications

Part No.	TFU 0425B-2	TFU 0425B-3	TFU 0604B-2	TFU 0604B-3	TFU 0805B-2	TFU 0805B-3
Number of tubes	2	3	2	3	2	3
Tube O.D. (mm)	4		6		8	
Tube I.D. (mm)	2.5		4		5	
Operating fluid	Air Note1)					
Max. operating pressure Note 2)	0.8MPa {8.2kg/cm²} at 20˚C					
Burst prssure	Refer to burst pressure characteristics curve					
Operating temprature	−20 to +60˚C:					
Material	Polyurethane					
Color	Black					
Min. bending radius (mm)	10		15		20	
Tube length per roll (m)	10					

Note1) Consult SMC if using for other fluids than air.
Note2) Refer to Burst Pressure Characteristics Curve for other temperatures.
Avoid abnormal temperature rises.

How to Order

TFU0425 B — 2

- TFU0425: Indication of tube model
- B: Color indication

Symbol	Color
B	Black

- 2: Number of tubes

Symbol	Number
2	2
3	3

Made to Order

Consult SMC for detailed specifications, dimensions and delivery.

① Color change (10m roll)

Suffix "X4" to the end of part number.
Ex.) TFU0604BU-2-10-X4
Note) W: White, R: Red, BU: Blue, Y: Yellow, G: Green, C: Transparent, YR: Orange (All tubes are same color.)

② Longer roll length (50m or 100m roll)

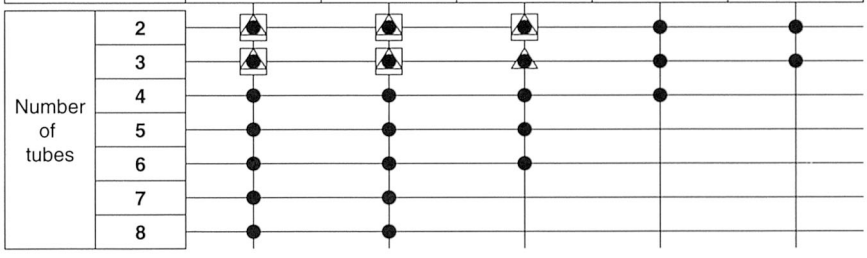
Suffix "X3" to the end of part number.
Ex.) TFU0425B-2-50-X3, TFU0425BU-3-100-X3

③ Number of tubes (10m roll)

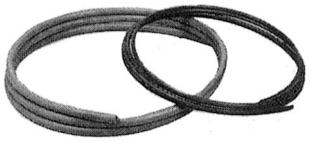
Suffix "X4" to the end of part number.
Ex.) TFU0604B-4-10-X4, TFU0604YR-4-10-X4

●: 10m roll △: 50m roll □: 100m roll

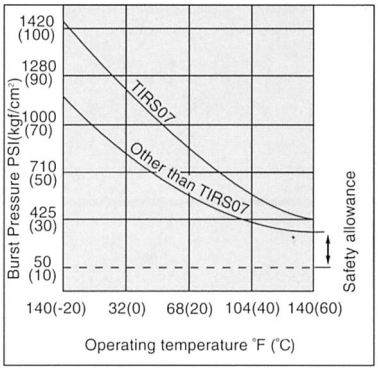
Model	TFU0425 □	TFU0604 □	TFU0805 □	TFU1065 □	TFU1208 □
Tube O.D.	4	6	8	10	12
Tube I.D.	2.5	4	5	6.5	8



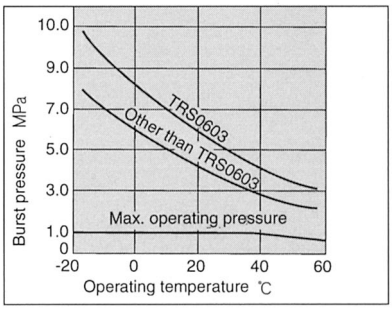
Applicable for spot welding such as tubing of general air pressure and water in spark atomosphere
Flame resistance tube



Burst Pressure Characteristics Curve



Taking safety allowance into consideration, 1/3 or less of burst pressure under temperature 60°C is the max. operating pressure.



⚠ Precautions

Be sure to read before handling.
Refer to "Air Fittings & Tubing Precautions" for other details.

⚠ Caution

① Applicable for general industry water. Consult SMC if using for other kind of fluid. Surge pressure must be under the max. operating pressure. If exceeding that value, fitting may be damaged and tubing may be burst.

② The values of the max. operating pressure are at a temperature of 20°C. Refer to the Burst Pressure Characteristics Curve for other temperatures. Avoid abnormal temperature rise which may burst the tubing.

③ The values of the min. bending radius are at a temperature of 20°C and O.D. variable rate 10% max. In case that operating temperature is higher than 20°C, O.D. variable rate may be over 10% even if bending radius is within the specified range.

Series Table

● : 20m roll □ : 100m roll

Model	TIRS07	TIRS11	TIRS13	TRS0603	TRS0805	TRS1065	TRS1208
Tube O.D. (mm)	6.35 (1/4")	9.53 (3/8")	12.7 (1/2")	6	8	10	12
Tube I.D. (mm)	4.23	6.35	8.76	3	5	6.5	8
Black(B)	●	●	●	□	□	□	□
White(W)	●	●	●	□	□	□	□
Red(R)	●	●	●		□	□	□
Blue(BU)	●	●	●	□	□	□	□
Green(G)	●	●	●		□	□	□

Specifications

Operating fluid	Air, Water					
Max. operating pressure	100psi (700kPa)		175psi {1.2MPa} at 20°C			
Burst pressure	Refer to burst pressure characteristics curve.					
Min. bending radius (mm)	23	27	35	17	27	32
Operating temperature	-5 to +140°F (-20 to +60°C), 40to 140°F (Water: 5 to 60°C)					
Material	Flame resistant nylon (UL-standard V-0)					

How to Order

TIRS07 B — 100

Indication of tube model

Length per roll

Symbol	Roll size
100	100m roll

Color indication

Symbol	Color
B	Black
W	White
R	Red
BU	Blue
G	Green

TRS1065 B — 100

Indication of tube model

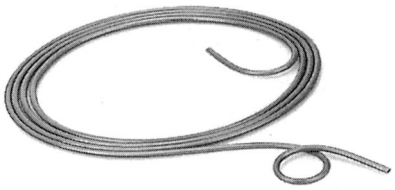
Length per roll

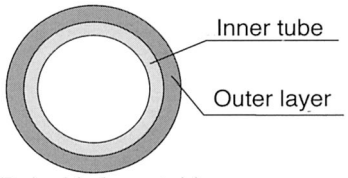
Symbol	Roll size
20	20m roll
100	100m roll

Color indication

Symbol	Color
B	Black
W	White
R	Red
BU	Blue
G	Green

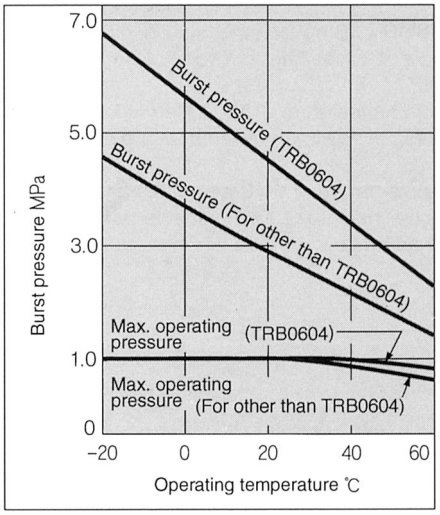
Suitable for air and water piping in environments where sparks from spot welders, etc., may be a problem.
Double layer design using flame resistant resin (equivalent to UL-94 standard V-0) **for outer layer.**





FR double layer tubing
(sectional view)

Burst Pressure Characteristics Curve



Series Table

●: 20m roll □: 100m roll

Model		TRB0604	TRB0806	TRB1075	TRB1209
Inner tube O.D. (mm)		6	8	10	12
Inner tube I.D. (mm)		4	6	7.5	9
Outer layer thickness (mm)		1	1	1	1
Note1) Outer layer color	Black(B)	●	●	●	●
	White(W)	●	●	●	●
	Red(R)	●	●	●	●
	Blue(BU)	●	●	●	●
	Yellow(Y)	●	●	●	●
	Green(G)	●	●	●	●
Minimum bending radius (mm) Note 4)		15	28	35	45

Specifications

Operating fluid		Air, Water Note 2)
Max. operating pressure Note3)		1.0MPa{10.2kgf/cm²} at 20˚C
Burst pressure		Refer to burst pressure characteristics curve.
Operating temperature		–20 to 60˚C Water: 5 to 60˚C
Material	Inner tube	Nylon 12
	Outer layer	PVC (Equivalent to UL-94, standard V-0)

Note1) The color of all inner tube is black.
Note2) Applicable only to general industrial water without surge pressure.
For other applications, contact SMC.
Note3) Refer to burst pressure characteristics curve for other temperatures.
Avoid abnormal temperature rises.
Note4) The value for a temperature of 20˚C and O.D.variable rate 10% max.

How to Order

TRB1075 **B** — **100**

Indication of tube model

Color indication

Symbol	Color	Symbol	Color
B	Black	BU	Blue
W	White	Y	Yellow
R	Red	G	Green

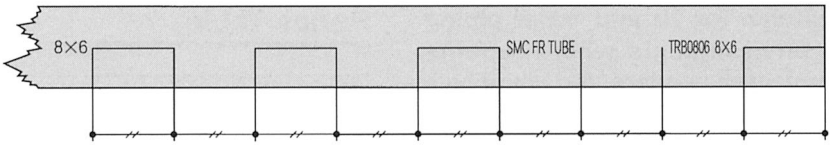
Length per roll

Symbol	Roll size
20	20m roll
100	100m roll

How to Install to One-touch Fitting

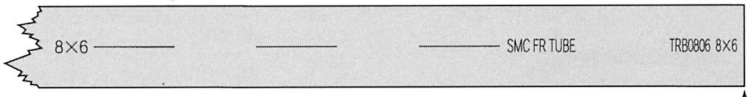
⚠ Caution

Length of tube to be inserted into One-touch fitting is indicated on the outer layer of TRB tubing.
Cut the tube according to this indication. (Procedure ①) and then strip off the outer layer. (Procedure ②) for installing tube.



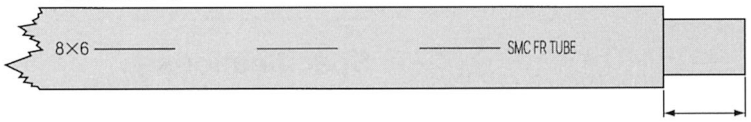
Length inserted into One-touch fittings

Procedure ①



Cut both inner tube and outer layer

Procedure ②



Strip off outer layer

⚠ Precautions

Be sure to read before handling.
Refer to "Air Fittings & Tubing Precautions" for other details.

⚠ caution

① Applicable for general industrial water. Consult SMC if using for other kind of fluid. Surge pressure must be under the max. operating pressure. If exceeding that value, fitting may be damaged and tubing may be burst.
② The values of the max. operating pressure are at a temperature of 20°C. Refer to the Burst Pressure Characteristics Curve for other temperatures. Avoid abnormal temperature rise which may burst the tubing.
③ The values of the min. bending radius are at a temperature of 20°C and O.D. variable rate 10% max. In case that operating temperature is higher than 20°C, O.D. variable rate may be over 10% even if bending radius is within the specified range.

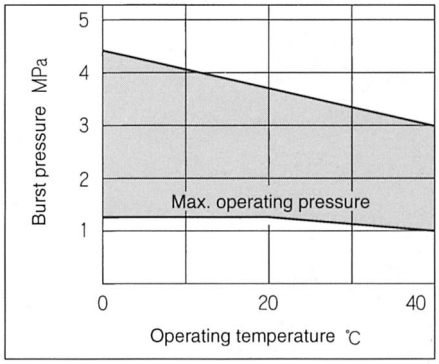
Conductive tubing prevents troubles caused by static electricity.

Antistatic type soft nylon tubing/Series TAS

For air pressure piping to product or assemble under preventing static electricity.

Fire resisitant tube (UL-standard, V-0)

Burst Pressure Characteristics Curve



Series Table

●: 20m roll □: 100m roll

Model	TAS3222	TAS0425	TAS0604	TAS0805	TAS1065	TAS1208
Tube O.D. (mm)	3.2	4	6	8	10	12
Tube I.D. (mm)	2.2	2.5	4	5	6.5	8
Black (B)	●	●	●	●	●	●

Specifications

Max. operating pressure	1.2MPa {12.2kgf/cm²} at 20˚C					
Burst pressure	Refer to burst pressure characteristics curve.					
Minimum bending radius (mm) Note1)	12	12	15	19	27	32
Operating temperature	0 to 40˚C					
Material	Conductive nylon + Fire resistant nylon (UL-standard, V-0)					
Surface resistance	10^4 to $10^7\Omega$					

Note1) The value at temperature of 20˚C and O.D. variable rate 10% max.

How to Order

TAS1065 B — 100

- TAS1065: Indication of tube model
- B: Color indication

Symbol	Color
B	Black

- 100: Length per roll

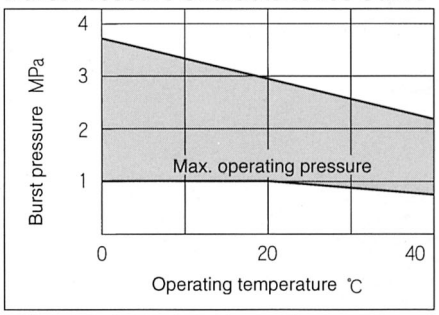
Symbol	Roll size
20	20m roll
100	100m roll

Antistatic type polyurethane tubing/Series TAU

For air pressure piping to product or assemble under preventing static electricity.

Flexible tube

Burst Pressure Characteristics Curve



Series Table

●: 20m roll □: 100m roll

Model	TAU3220	TAU0425	TAU0604	TAU0805	TAU1065	TAU1208
Tube O.D.mm	3.2	4	6	8	10	12
Tube I.D.mm	2	2.5	4	5	6.5	8
Black (B)	●	●	●	●	●	●

Specifications

Max. operating pressure	0.9MPa {9.2kgf/cm²} at 20˚C					
Burst pressure	Refer to burst pressure characteristics curve.					
Minimum bending radius (mm) Note1)	10	10	15	20	27	35
Operating temperature	0 to 40˚C					
Material	Conductive polyurethane					
Surface resistance	10^4 to $10^7\Omega$					

Note1) The value at temperature of 20˚C.

How to Order

TAU1065 B — 100

- TAU1065: Indication of tube model
- B: Color indication

Symbol	Color
B	Black

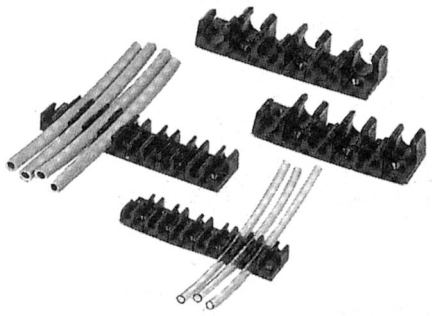
- 100: Length per roll

Symbol	Roll size
20	20m roll
100	100m roll

Accessories

Series TM, TK, TG

Easy arrangement of tubing.
Easy loading and sure holding of tube.
Possible to separate optionally depending on number of connecting tubes.
Ues of flame resistance resin(V-0).



Applicable Tube

Tube material	Nylon, Soft nylon, Polyurethane
Tube O.D.	ø4, ø6, ø8, ø10, ø12

Specifications

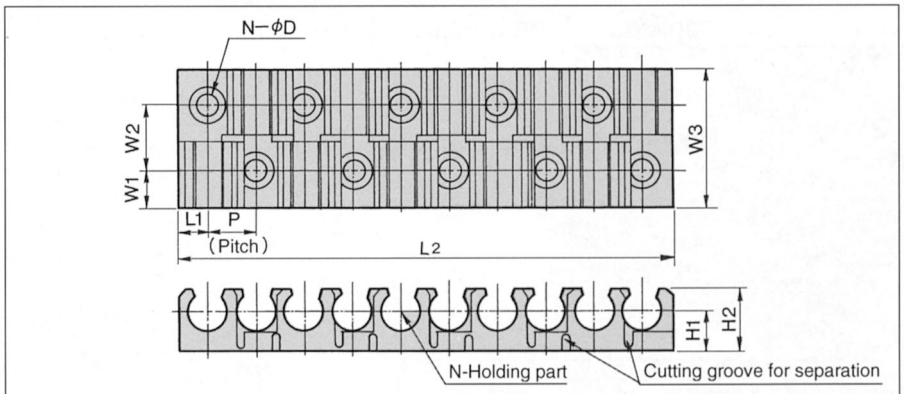
Ambient temperature	-20 to 60°C
Material	Flame resistance polypropylene (UL-94 standard, V-0)
Color	Black
Accessories	For mounting Cross recessed head counter-sunk tapping screw (Black zinc chromate treatment)

Part No.	Size (Nominal × Length)	Number of tubings
TM-04	2 ×6	4
TM-06	2.6×8	
TM-08		
TM-10	3×8	
TM-12		

Type

Applicable tube O. D.(mm)	Part No.	Number of connecting tubes (MAX.)		
		6	8	12
4	TM-04			●
6	TM-06			●
8	TM-08		●	
10	TM-10	●		
12	TM-12	●		

Multitube Holder/Dimensions



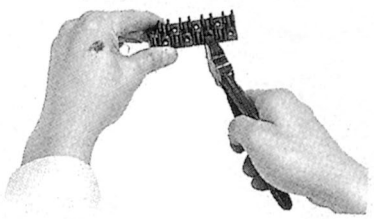
Applicable tube O.D. (mm)	Model	N (Numder of holding parts)	P	L_1	L_2	W_1	W_2	W_3	H_1	H_2	øD	Mounting tapping screw size Nominal×Length
4	TM-04	12	6	3.25	72.5	4.5	8	17	5	7.5	2.2	2×6
6	TM-06	12	7.5	4.5	91.5	5.5	10	21	6.5	10	2.8	2.6×8
8	TM-08	8	9.5	5.5	77.5	6	11	23	7.5	12	2.8	2.6×8
10	TM-10	6	12.5	7.5	77.5	6.5	12	25	8.8	14.3	3.2	3×8
12	TM-12	6	15	9	93	6.5	12	25	9.8	16.3	3.2	3×8

How to Use

⚠ Caution

① Cut the multitube holder depending on number of tubes to be connected.

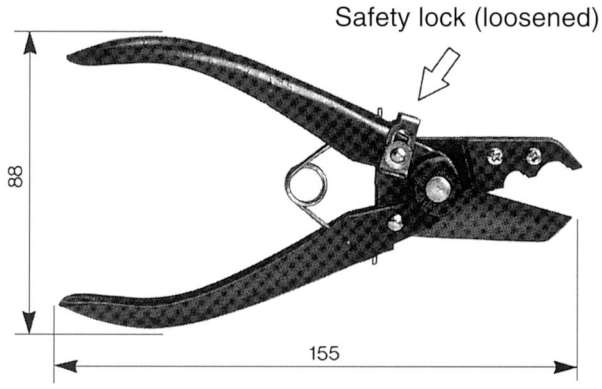
(Cutting method)



Cut the cutting groove for separation with side cutters.

② Install the cut multitube holder to equipment by use of the phillips head recessed, countersunk tapping screw provided.
③ Lay tubing across gripper and push onto tubing.
④ For removing the tubes, pulling up the tubes removes them from the gripper.

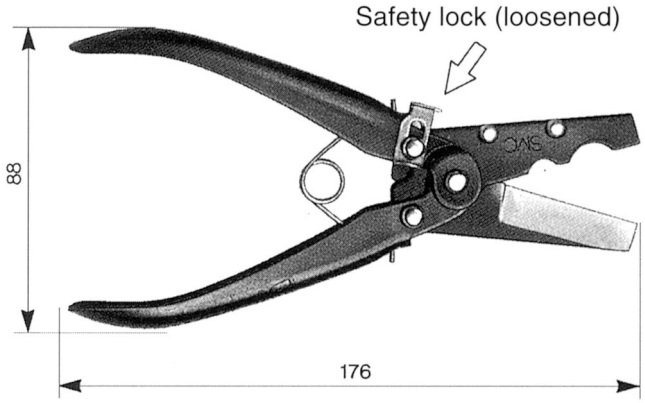
Tube Cutter: TK-1
Perpendicular cutting.
Reduced operating force.
Enclosure/safety lock contained.



Note) Never cut electric wires metals.

Part No.	TK-1
Applicable tube material	Nylon, soft nylon, polyurethane, and other soft plastic tube
Applicable tube O.D.	13mm or less
Weight	140g

Tube Cutter: TK-2
Possible to cut a tube up to 18mm.



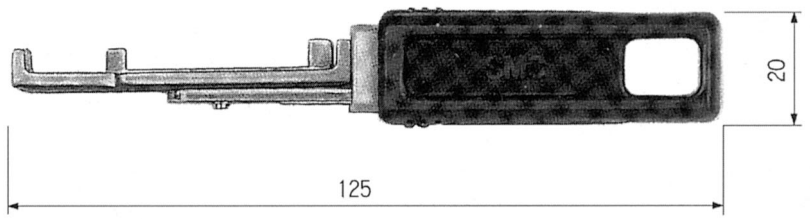
Note) Never cut electric wires metals.

Part No.	TK-2
Applicable tube material	Nylon, soft nylon, polyurethane, and other soft plastic tube
Applicable tube O.D.	18mm or less
Weight	140g

Tube Cutter: TK-3 (Useful type)
Safety lock contained.

Note) Never cut electric wires metals.

- **For loading and unloading of tubes for One-touch fittings mounted in a narrow space or manifolded.**
- **Easy one handed operation**
- **Available for two sizes of applicable tubes. Easy exchange with one touch.**



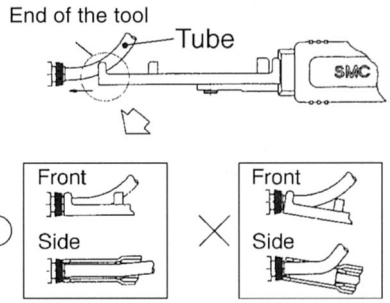
Part No.	Applicable tube size		Applicable tube material	Color	Weight
TG-1	Metric size	ø4, ø6	Nylon Soft nylon Polyurethane	Blue	33g
TG-2	Inch size	ø 1/8", ø1/4"		Red	

How to Use

⚠ Caution

Process

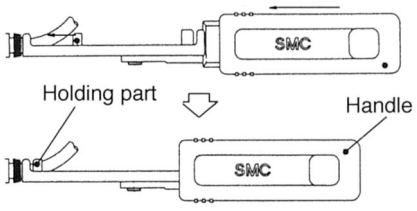
Put the end of tool into the release bushing parallel to the tube.



After inserting, grasp the handle tightly and insert the end of the tubing to the stroke end.

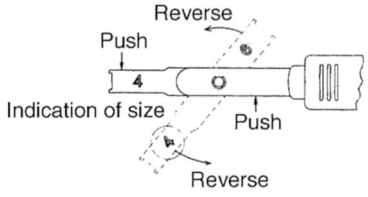
[Note) Insert firmly to guard against accidental tube release.]

After inserting end of tube, relax your grip on the tool. Returning force of spring releases the tube.



Size change

Push both sides at once to release. Reversed and fixed at the same position as before. Applicable tube size is indicated on the back side.



note

Operations Guide

Safety Instructions/Precautions

Selection

⚠ Warning

① Confirm specifications.
Products represented in this catalog are designed for use in compressed air applications only (including vacuum), unless otherwise indicated. Do not use the products outside their design parameter. Contact SMC when using the products in applications other than compressed air (including vacuum).

Installation

⚠ Warning

❶ Do not install unless the safety instructions have been read and understood.
Keep this catalog on file for future reference.

❷ Maintenance
When installing the products, please allow access for maintenance.

❸ Tighteing torque
When installing the products, please follow the listed torque specifications.

Piping

⚠ Caution

❶ Before piping
Make sure that all debris, cutting oil, dust, etc. are removed from the pipng.

❷ Sealant tape
When installing piping or fitting into a port, ensure that sealant material does not clog up the pressure port. When using sealant tape, leave the first 1.5 to 2 thread turns exposed at the end of the pipe/fitting.

Air Supply

⚠ Warning

❶ Operation fluid
Contact SMC when using the product in applications other than compressed air (including vacuum).

❷ Install an air dryer, after cooler etc.
Excessive condensate in a compressed air system may cause valves and other pneumatic equipment to malfunction. Installation of an air dryer, after cooler, etc. is recommended.

❸ Drain
If condensate in the drain bowl is not emptied on a regular basis, the bowl will over flow and allow the condensate to enter the compressed air lines. If the drain bowl is difficult to check and remove, it is recommended that a drain bowl with the auto-drain option be installed. Refer to "Compressed Air Cleaning System" for details on compressed air quality.

❹ Use clean air
If the compressed air supply is contaminated with chemicals, synthetic materials, corrosive gas, etc., damage to the pneumatic equipment may occur.

Environment

⚠ Warning

❶ Do not use in an environment where the product is directly exposed to corrosive gases, chemicals, salt water, water or steam.

❷ Do not expose the product to direct sunlight for an extended period of time. If the product has to be mounted in an area where exposure to direct sunlight can not be avoided, the use of a protective cover is recommended.

❸ Do not mount the product in a location where it is subject to strong vibrations and/or shock. Check the product specifications for above ratings.

❹ Do not mount the product in a location where it is exposed to radiant heat.

Maintenance

⚠ Warning

❶ Maintenance procedures are outlined in the operation manual. Not following proper procedures could cause the product to malfunction and could lead to damage to the equipment or machine.

❷ Maintenance
If handled improperly, compressed air can be dangerous. Assembly, handling and repair of pneumatic systems should be performed by qualified personnel only.

❸ Drain
Remove condensate from the filter bowl on a regular basis.

❹ Shut-down before maintenance
Before attempting any kind of maintenance make sure the supply pressure is shut off and all residual air pressure is released from the system to be worked on.

❺ Start-up after maintenance
Apply operating pressure and power to the equipment and check for proper operation and possible air leaks. If operation is abnormal, please verify product set-up parameters.

❻ Do not make any modification to the product.

❼ Do not take the product apart.

Selection

⚠ Caution

❶ Keep the connection part of fitting and tubing from rotating to prevent cracking. Use a Rotary One-touch Fittings Series KS (Standard type) or KX (High-speed type) in this instance.

❷ The tube bending radius in the vicinity of the fitting should be at least the minimum bending radius of the tube. If bent more than the min. bending radius, tubing may fail or be crushed.

❸ Do not use tubing for combustibles, explosives or poisoneous fluids like gases, fuel gas, coolant etc. They can permeate through tubing walls.

❹ Applicable for general industry water. Consult SMC if using for other kinds of fluid. Surge pressure must be under the max. operating pressure. If surge pressure exceeds the max. operating pressure, fitting or tubing may be damaged.

Installation

⚠ Caution

❶ Check whether tubing is damaged before installing, confirm model size etc.

❷ Take the change of tubing length due to applied pressure into consideration when piping.

❸ Do not apply unnecessary forces such as twisting, pulling, moment load etc. on fittings or tubing, this will cause damage to fittings and will crush, burst or release tubing.

❹ Avoid wear, confused piping or damage to tubing to prevent crushing, bursting or release of tubing.

Environment

⚠ Warning

❶ Anti-static fittings (Series KA) and anti-static tubing(Series TA) are recommended for use where static electricity is a problem. Using other types of fittings or tubing may cause various damage to the system and products.

❷ Flame resistant fittings (Series KR/KRM) and tubing (Series TRS/TRB) are recommended for use in spatter applications. Fire may occur caused by spattering.

❸ Do not use fittings and tubing where they are directly in contact with cutting oil, lubrication or coolant. Consult SMC if using in such applications.

Maintenance

⚠ Caution

❶ Replace fittings or tubing having the following problems.
a) Cracks, gouges, wearing, corrosion
b) Air leakage
c)Twists or crushing of tubing
d) Hardening, deterioration, softening of tubing

❷ Do not reuse damaged fittings/tubing by repairing.

Use of One-touch Fittings

⚠ Caution

❶ Tube insertion and removal from One-touch fittings

1) Installing tube

① Cut the tube perpendicularly, being careful not to damage the outside surface. Use SMC tube cutter "TK-1", "TK-2" or "TK-3". Do not cut the tube with pliers, nippers, scissors, etc., otherwise, the tube will be deformed and troubles may occur.

② Grasp the tube, slowly push it into the One-touch fittings until it comes to a dead end.

③ Pull the tubing back gently to make sure it has a positive seal. Insufficient installation may cause air leakage or tube releasing.

2) Removing tube

① Push in evenly on the release button.

② Pull out the tube while keeping the release button depressed. If the release button is not held down, the tube cannot be withdrawn.

③ To reuse the tubing, cut off the previously lodged portion of the tube.

❷ To install the fittings, screw the fitting into the hexagonal face of the body applying the appropriate wrench as close to the thread as possible. Use the spanner corresponding to the size of hexagonal portion, or hexagonal portion may be deformed.

❸ Tightening the thread portion of an M3, M5 or M6 fitting

1) M3 type

First, tighten it by hand, then give it an additional 1/4 turn with a wrench.

2) M5/M6 type

First, tighten it by hand, then give it an additional 1/6 turn with a wrench.

Excessive tightening may damage the thread portion or deform the gasket to cause air leakage.

Fittings with Sealant

⚠Caution

❶ The standard thread torques of the fittings are as shown in the table below. In short, tighten by hand, then turn it two or three revolutions with a wrench.

Thread size	Standard thread torque Nm (kgf·cm)
NPT 1/8, NPT, R(PT) 3/8	7 to 9 (70 to 90)
NPT, R(PT) 1/4	12 to 14 (120 to 140)
NPT, R(PT) 3/8	22 to 24 (220 to 240)
NPT, R(PT) 1/2	28 to 30 (280 to 300)

❷ If the fitting is threaded in with excessive torque, a large amount of sealant will seep out. Remove the excess sealant.

❸ Insufficient tightening may have the thread loosened or cause air leakage.

❹ Reuse

1) In most cases, two or three uses are possible.
2) Remove loose sealant stuck to the fitting by blowing air over the threaded portion of the fitting to prevent the malfunction or air leakage caused by entering sealant.
3) If the sealant no longer provides an effective seal, wrap sealing tape over sealant before reuse. (Sealant in any form other than tape will not work.)

❺ Once the fitting has been threaded in and tightened, backing it out to its original position often causes the sealant to become defective. Air leakage will occur.

Use of Tubing Other than SMC Brand

⚠Caution

❶ When using a brand of tubing other than SMC, be careful of the tolerance of the tube's O.D.

1) Nylon tubing ±0.1mm or less
2) Soft nylon tubing ±0.1mm or less
3) Polyurethane tubing +0.15mm or less, -0.2mm or less

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FAX: (770) 624-1943

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Austin, TX 78754
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FAX: (713) 460-1510

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SMC Corporation of America (Mnpls.)
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