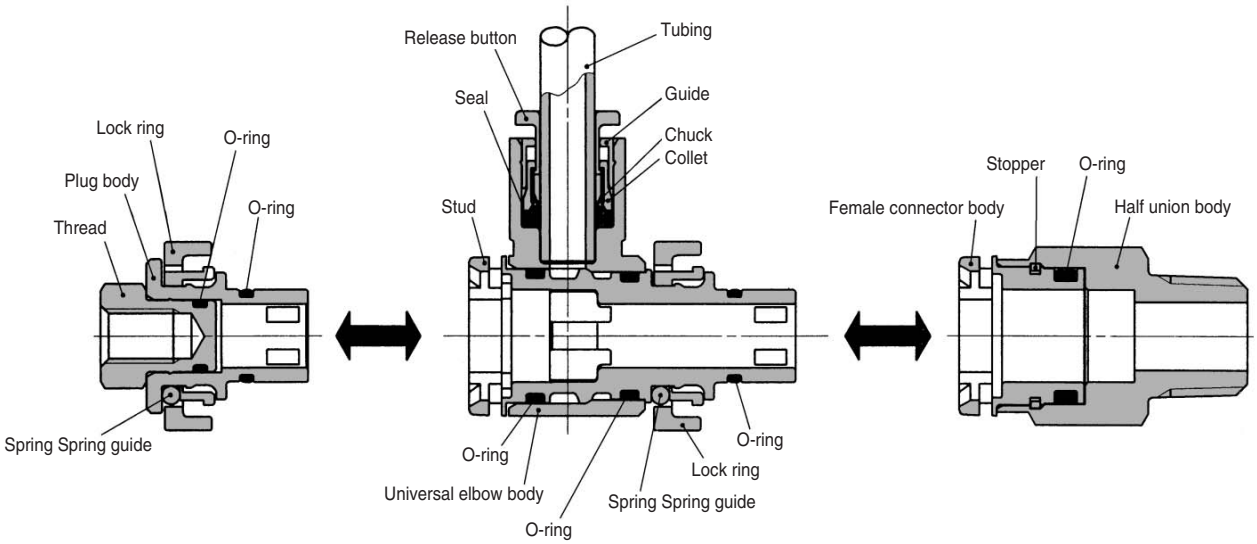
Piping Module
Series KB



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 Tubing

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

Applicable Thread Size

Male thread	R 1/8, R 1/4, R 3/8, R 1/2
Female thread	M5 x 0.8, M6 x 1, Rc 1/8, Rc 1/4, Rc 3/8, Rc 1/2

Specifications

Fluid		Air
Maximum operating pressure		1.0 MPa
Operating vacuum pressure		–100 kPa
Proof pressure		3.0 MPa
Ambient and fluid temperature		–5 to 60°C (No freezing)
Thread	Mounting section	JIS B 0203 (Taper thread for piping)
		JIS B 0209 Class 2 (Metric coarse thraed)
	Nut section	JIS B 0211 Class 2 (Metric fine thread)
Sealant (Male thread)		With thread seal
Copper-free (Standard)		Brass parts are all electroless nickel plated

Principal Parts Material

Body	C3604BD, PBT, POM
Stud	POM
Lock ring	POM
Spring	Stainless steel 304WPB
Spring guide	POM
Stopper	POM
Thread	C3604BD
Guide	Stainless steel 304, POM
Collet, Release button	POM
Seal, O-ring	NBR
Chuck	Stainless steel 304

How to Order

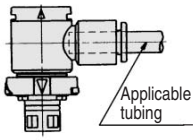
1 Air Output Port: KBV, KBZ (P. 15-2-113)

KB V 1 — 04

- **Model**
- **Body size**
- **Tube size/ Connecting female thread size**

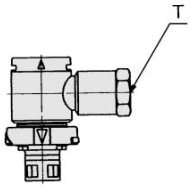
Elbow Module: KBV

Model	Applicable tubing 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



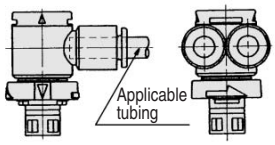
Elbow Socket Module: KBV

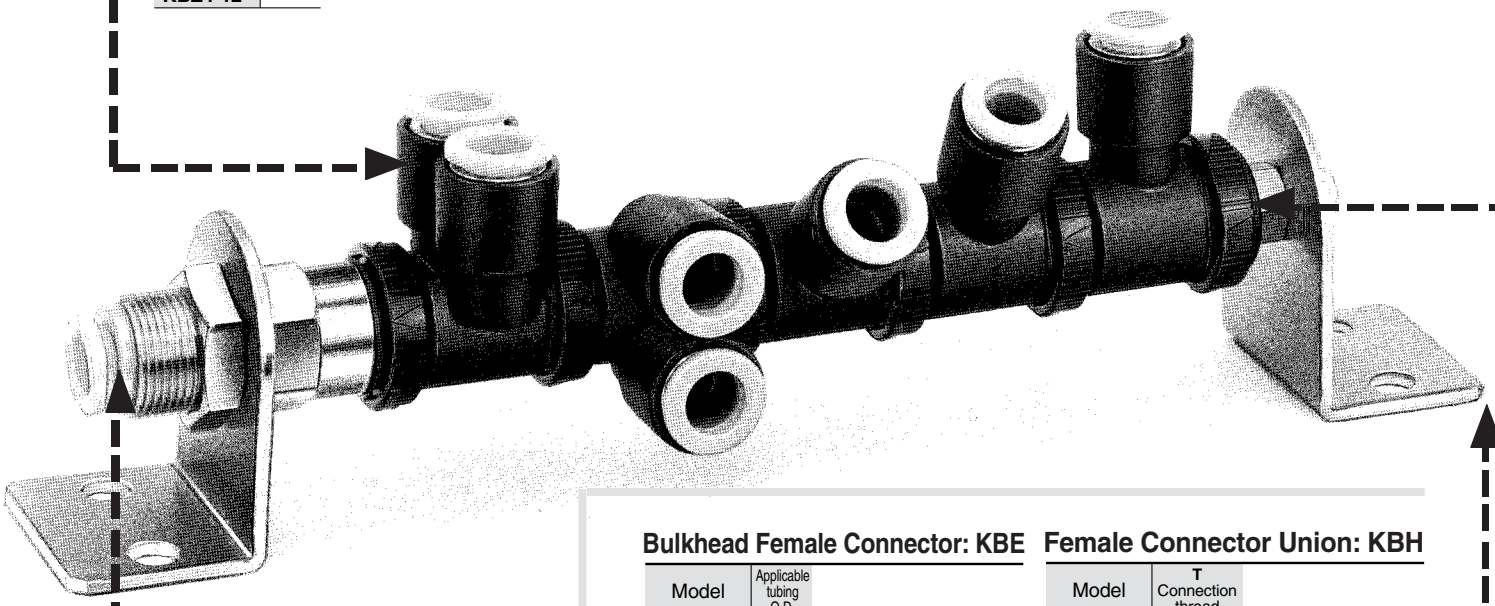
Model	T Connection thread
KBV1-M5	M5 x 0.8
KBV1-M6	M6 x 1
KBV2-M5	M5 x 0.8
KBV2-M6	M6 x 1
KBV2-R1	Rc 1/8
KBV3-R1	
KBV3-R2	Rc 1/4
KBV4-R2	
KBV4-R3	Rc 3/8



Branch Elbow Module: KBZ

Model	Applicable tubing O.D.
KBZ1-04	4
KBZ1-06	6
KBZ2-08	8
KBZ3-10	10
KBZ3-12	12
KBZ4-12	





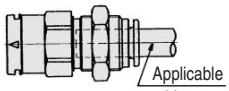
2 Air Supply Port: KBE, KBH, KBB, KBS, KBL (P. 15-3-114, 115)

KB H 1 — R1 S

- **Model**
- **Body size**
- **Tube size/Connection thread size**
- **With sealant (Male thread only)** ····· **Standard specifications**

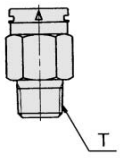
Bulkhead Female Connector: KBE

Model	Applicable tubing 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	



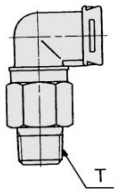
Female Connector Union: KBH

Model	T Connection thread
KBH1-R1S	R 1/8
KBH2-R1S	
KBH2-R2S	R 1/4
KBH2-R3S	R 3/8
KBH3-R2S	R 1/4
KBH3-R3S	R 3/8
KBH3-R4S	R 1/2
KBH4-R3S	R 3/8
KBH4-R4S	R 1/2



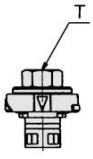
Female Connector Elbow Union: KBL

Model	T Connection thread
KBL1-R1S	R 1/8
KBL2-R1S	
KBL2-R2S	R 1/4
KBL2-R3S	R 3/8
KBL3-R2S	R 1/4
KBL3-R3S	R 3/8
KBL3-R4S	R 1/2
KBL4-R3S	R 3/8
KBL4-R4S	R 1/2



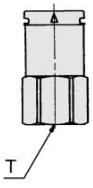
Male Connector Socket: KBB

Model	T Connection thread
KBB1-M5	M5 x 0.8
KBB2-M6	M6 x 1
KBB3-R1	Rc 1/8
KBB4-R2	Rc 1/4



Female Connector Socket: KBS

Model	T Connection thread
KBS1-R1	Rc 1/8
KBS2-R2	Rc 1/4
KBS3-R3	Rc 3/8
KBS4-R4	Rc 1/2



3 Other Pipng Material: KBN, KBD, KBR (P. 15-3-116)

KB N 1

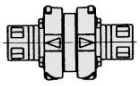
- N: Model
- 1: Body size

KB D 2 — 1

- D: Model
- 2: Body size
- 1: Body size

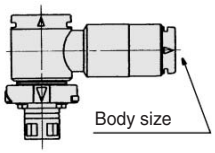
Nipple: KBN

Model
KBN1
KBN2
KBN3
KBN4



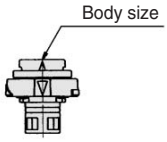
Elbow Different Diameter Female Connector Module: KBD

Model
KBD2-1
KBD3-2
KBD4-3



Different Diameter Module: KBR

Model
KBR2-1
KBR3-2
KBR4-3



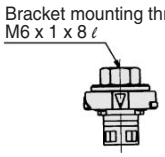
4 Plug/Cap: KBP, KBC (P. 15-3-117)

KB P 1

- P: Model
- 1: Body size

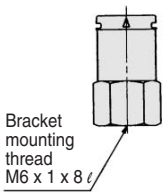
Plug: KBP

Model
KBP1
KBP2
KBP3
KBP4



Cap: KBC

Model
KBC1
KBC2
KBC3
KBC4



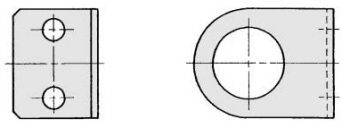
5 Bracket: KBX (P. 15-3-117)

KB X 6

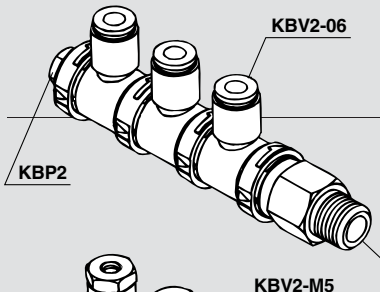
- X: Model
- 6: Applicable thread size

Bracket: KBX

Model
KBX6
KBX12
KBX14
KBX16
KBX20
KBX22

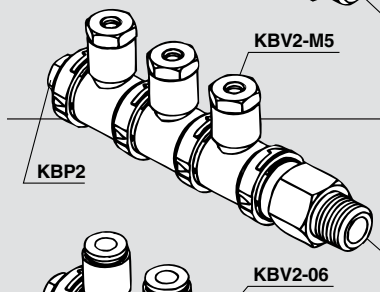


Combination Examples



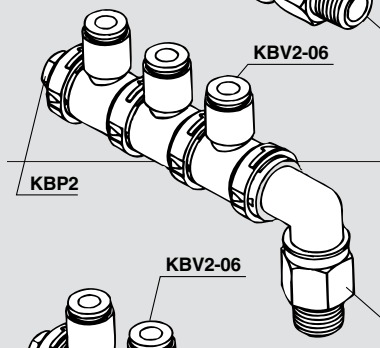
Component module

KBV2-06 3
KBH2-R2S 1
KBP2 1



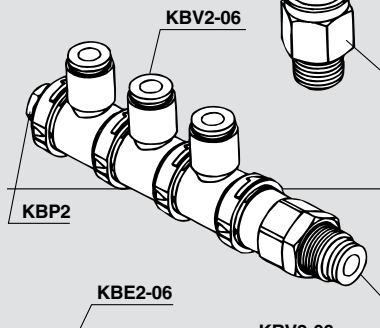
Component module

KBV2-M5 3
KBH2-R2S 1
KBP2 1



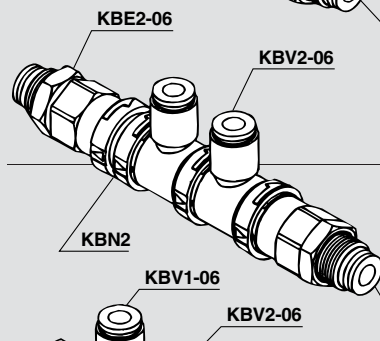
Component module

KBV2-06 3
KBL2-R2S 1
KBP2 1



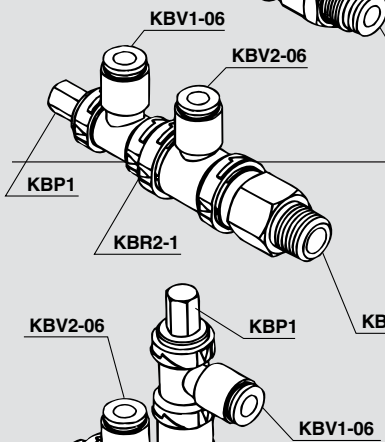
Component module

KBV2-06 3
KBE2-06 1
KBP2 1



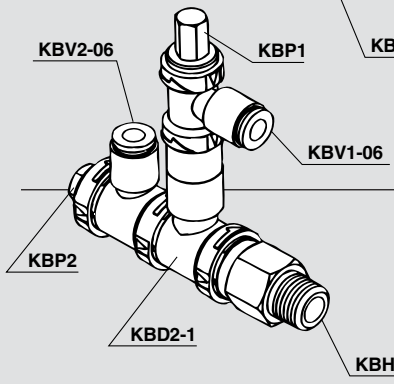
Component module

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

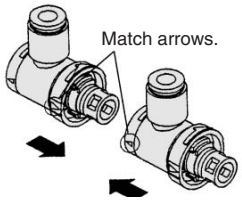
⚠Precautions

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

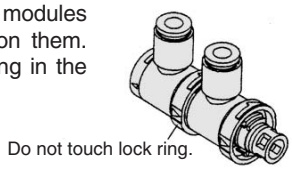
How to Install

⚠ Caution

1. Insert each piping module by matching the arrows 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. When a match is not done, piping material will eject under pressure.



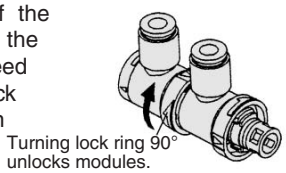
2. Confirm insertion by turning modules to right and left or pulling on them. But do not touch the lock ring in the process.



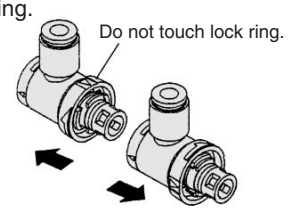
How to Remove

⚠ Caution

1. Exhaust the pressure in pipe before removing. If lock is released under pressure, piping material will eject. 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 the modules by pulling apart. Do not touch the lock ring. After removal, the lock ring will return to normal position automatically beause of a return spring. When removed, it automatically rotates 90° in the opposite direction as its spring is built into the lock ring.

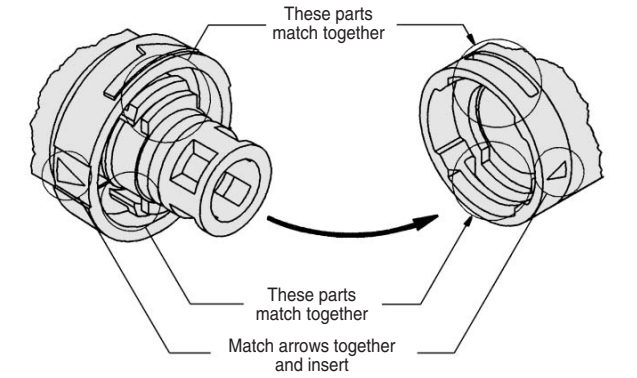


Others

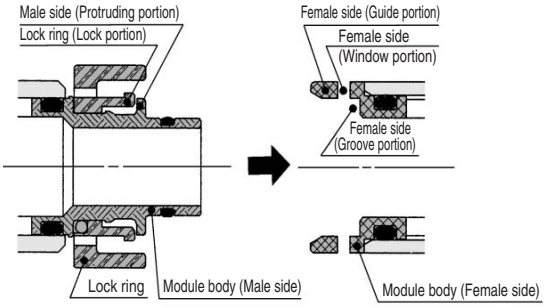
⚠ Caution

1. When connecting piping material to each other, do not apply a bending force, etc. Piping material may be deformed or damaged.
If unit is longer than 5 stations, please use brackets or it may result in deformation of the piping material by bends, deflection, etc.
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 a wrench.
Hex. across flats may be deformed, if using an improper wrench for hex. across flats.

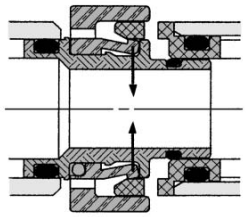
Piping Module-Insertion and Removal Structual Drawing



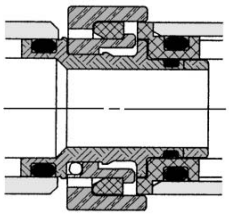
1. Match arrows together and insert piping module male side into female side.



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 detent.

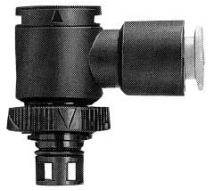


Male module inserted fully into position.

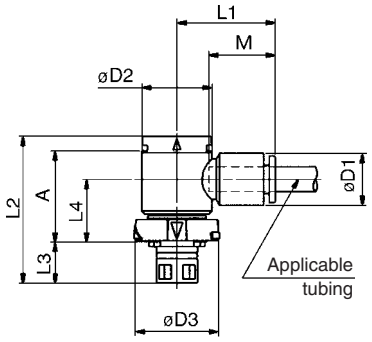
4. To remove, rotate lock ring 90° to release lock portion from female side window slot, then the lock is released. Removal is complete.

1 Air Output Port

Elbow Module: KBV

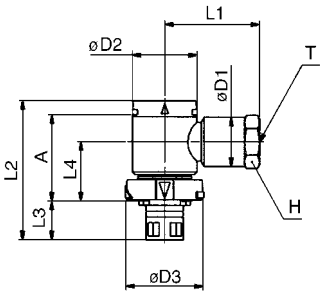


Model	Applicable tubing O.D.	D1	D2	D3	L1	L2	L3	L4	A	M	Weight (g)
KBV1-04	4	10.4	13.6	16.8	22.0	33.0	10.4	13.0	19.5	16.0	4.3
KBV1-06	6	12.8			24.0					17.0	4.9
KBV2-06			17.6	21.0	25.0	36.0	10.1	15.5	22.5		7.3
KBV2-08	8	15.2			28.5					18.5	8.3
KBV3-08			25.2	28.6	29.5	42.6	11.4	20.5	27.0		15.0
KBV3-10	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



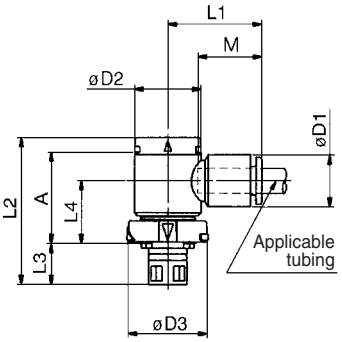
Elbow Socket Module: KBV

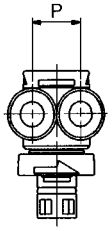
Model	T Connection thread	H (width across flats)	D1	D2	D3	L1	L2	L3	L4	A	Weight (g)
KBV1-M5	M5 x 0.8	12	12.8	13.6	16.8	25.0	33.0	10.4	13.0	19.5	12.4
KBV1-M6	M6 x 1										11.6
KBV2-M5	M5 x 0.8			17.6	21.0	26.0	36.0	10.1	15.5	22.5	14.8
KBV2-M6	M6 x 1										14.0
KBV2-R1	Rc 1/8	14	15.2			29.5					15.3
KBV3-R1				25.2	28.6	30.5	42.6	11.4	20.5	27.0	22.0
KBV3-R2	Rc 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 3/8					43.0					44.7



Branch Elbow Module: KBZ

Model	Applicable tubing 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	5.8
KBZ1-06	6	12.8			24.0					17.0	12.8	7.1
KBZ2-08	8	15.2	17.6	21.0	28.5	36.0	10.1	15.5	22.5	18.5	15.2	11.6
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



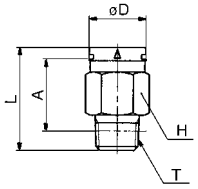


2 Air Supply Port

Female Connector Union: KBH

Model	T Connection thread	H (width across flats)	D	L	A*	Weight (g)
KBH1-R1S	R 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 1/4			32.0	22.5	23.3
KBH2-R3S	R 3/8			27.5	17.5	22.5
KBH3-R2S	R 1/4	19	25.2	35.5	25.4	26.5
KBH3-R3S	R 3/8			31.0	20.5	23.2
KBH3-R4S	R 1/2	22			19.0	41.5
KBH4-R3S	R 3/8	24	27.0	35.5	24.5	44.5
KBH4-R4S	R 1/2			31.5	19.0	36.5

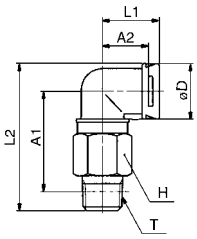
* Reference dimensions after R thread installation.



Female Connector Elbow Union: KBL

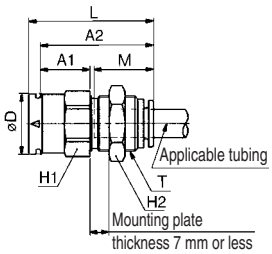
Model	T Connection thread	H (width across flats)	D	L1	L2	A1*	A2	Weight (g)
KBL1-R1S	R 1/8	14	13.6	18	38.0	27.0	15.0	14.8
KBL2-R1S		17	17.6	19	43.5	30.5	15.5	23.2
KBL2-R2S	R 1/4				46.5	31.5		27.3
KBL2-R3S	R 3/8				42.0	26.5		26.5
KBL3-R2S	R 1/4	19	25.2	22	56.0	37.5	18.0	32.6
KBL3-R3S	R 3/8				51.5	32.5		29.3
KBL3-R4S	R 1/2	22				31.0		47.6
KBL4-R3S	R 3/8	24	27.0	24	61.5	41.5	19.5	57.6
KBL4-R4S	R 1/2				57.5	36.0		48.8

* Reference dimensions after R thread installation.



Bulkhead Female Connector: KBE

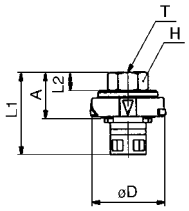
Model	Applicable tubing O.D.	T Connection thread	H1 (width across flats)	H2 (width across flats)	D	L	A1	A2	M	Weight (g)
KBE1-04	4	M12 x 1	14	14	13.6	34.5	15.0	31.5	16.0	17.9
KBE1-06	6	M14 x 1	17	17		35.5	15.5	32.0	17.0	27.0
KBE2-06					17.6	37.5	17.0	33.5		26.0
KBE2-08	8	M16 x 1		19		39.0	15.5	35.5	18.5	29.5
KBE2-10	10	M20 x 1	22	24		41.5	15.5	38.0	21.0	57.5
KBE3-08	8	M16 x 1		19	25.2	43.5	19.5	39.5	18.5	51.6
KBE3-10	10	M20 x 1		24		45.0	18.5	41.0	21.0	63.0
KBE3-12	12	M22 x 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

Model	T Connection thread	H (width across flats)	D	L1	L2	A	Weight (g)
KBB1-M5	M5 x 0.8	8	16.8	29.5	11.5	19.0	6.0
KBB2-M6	M6 x 1	10	21.0	23.0	5.0	12.5	6.3
KBB3-R1	Rc 1/8	14	28.6	27.5	6.5	16.0	11.4
KBB4-R2	Rc 1/4	19	30.4	31.5	9.5	19.5	24.1



Female Connector Socket: KBS

Model	T Connection thread	H (width across flats)	D	L1	L2	A	Weight (g)
KBS1-R1	Rc 1/8	14	13.6	28.0	11.0	25.0	17.8
KBS2-R2	Rc 1/4	17	17.6	33.5	14.0	30.0	28.5
KBS3-R3	Rc 3/8	19	25.2	38.5	17.0	34.5	33.8
KBS4-R4	Rc 1/2	24	27.0	39.0	20.0	35.0	57.1