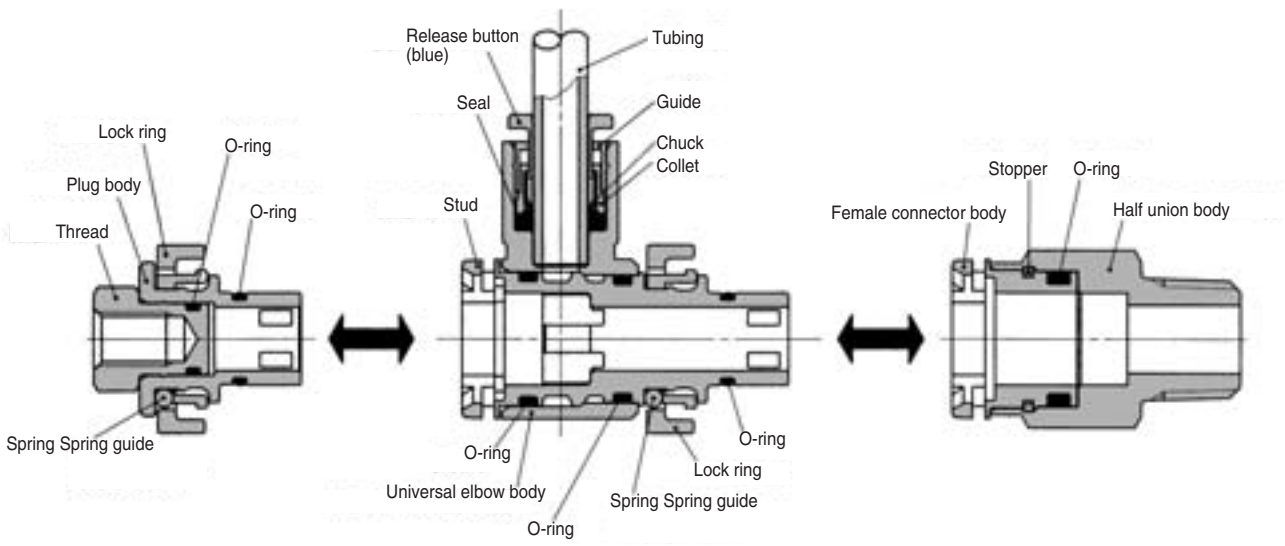
Piping Module
Series KB



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, FEP, PFA
Tubing O.D.	ø4, ø6, ø8, ø10, ø12, ø16

Applicable Thread Size

Male thread	R1/8, R1/4, R3/8, R1/2
Female thread	M5 x 0.8, M6 x 1, Rc 1/8, Rc 1/4, Rc 3/8, Rc 1/2

Specifications

Fluid		Air
Operating pressure range Note)		–100 kPa to 1 MPa
Proof pressure		3 MPa
Ambient and fluid temperature		–5 to 60°C (No freezing)
Thread	**Mounting section**	JIS B 0203 (Taper thread for piping)
		JIS B 0205 (Metric coarse thraed)
	Nut section	JIS B 0205 (Metric fine thread)
Seal on the threads (Standard)		With thread sealant
Copper-free (Standard)		Brass parts are all electroless nickel plated

Note) Please avoid using in a vacuum holding application such as a leak tester, since there is leakage.

Principal Parts Material

Body	C3604, PBT, POM
Stud	POM
Lock ring	POM
Spring	Stainless steel 304
Spring guide	POM
Stopper	POM
Thread	C3604
Guide	Stainless steel 304, PBT
Collet, Release button	POM
Seal, O-ring	NBR
Chuck	Stainless steel 304

How to Order

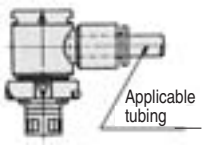
1 Air Output Port: KBV, KBZ (P.207)

KB V 1 – 04

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

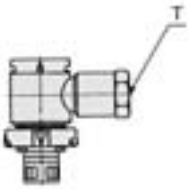
Elbow Module: KBV

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



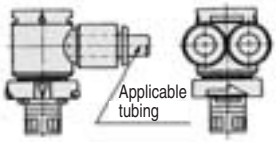
Elbow Socket Module: KBV

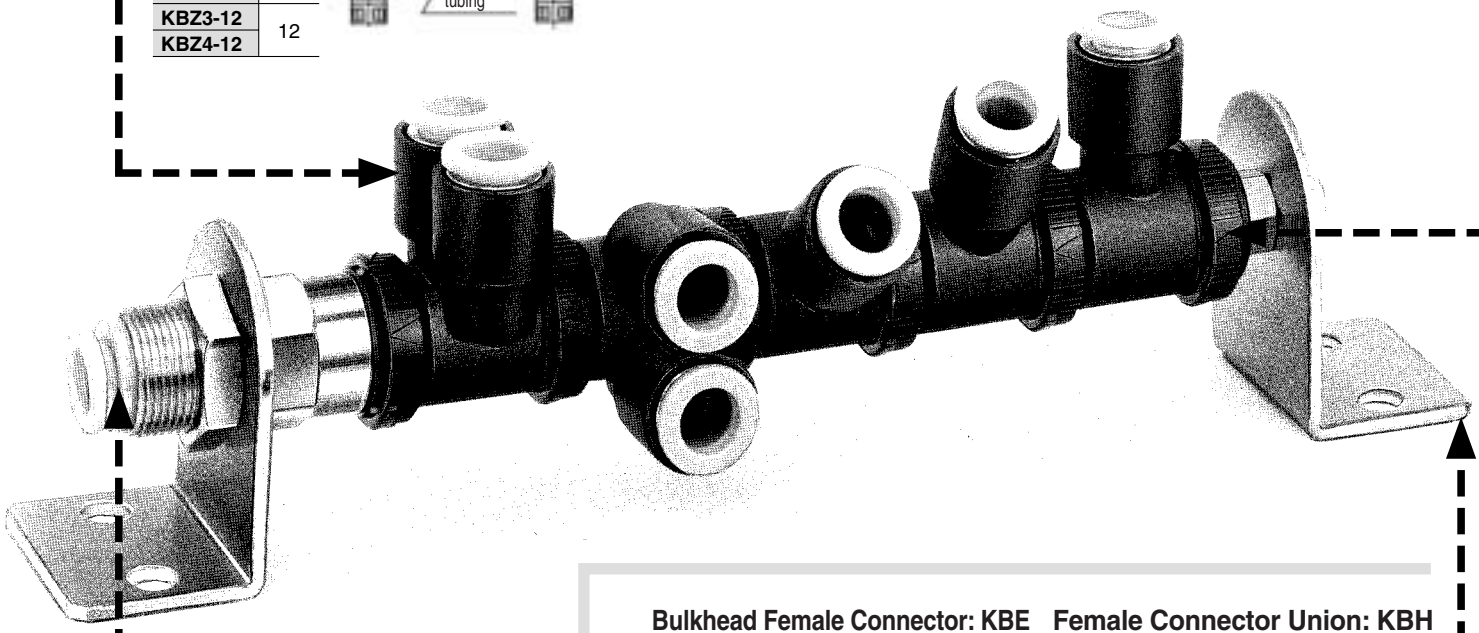
Model	T Connection thread
KBV1-M5	M5 x 0.8
KBV1-M6	M6 x 1
KBV2-M5	M5 x 0.8
KBV2-M6	M6 x 1
KBV2-R1	Rc 1/8
KBV3-R1	
KBV3-R2	Rc 1/4
KBV4-R2	
KBV4-R3	Rc 3/8



Branch Elbow Module: KBZ

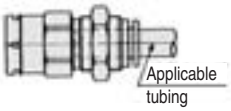
Model	Applicable tubing O.D.
KBZ1-04	4
KBZ1-06	6
KBZ2-08	8
KBZ3-10	10
KBZ3-12	12
KBZ4-12	





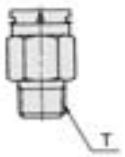
Bulkhead Female Connector: KBE

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
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



2 Air Supply Port: KBE, KBH, KBB, KBS, KBL

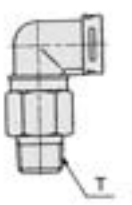
(P.208, 209)

KB H 1 – R1 S

- H: Model
- 1: Body size
- R1: Tube size/Connection thread size
- S: With sealant (Male thread only) ····· Standard specifications

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

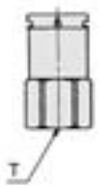


Male Connector Socket: KBB

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.210)

KB N 1
- Model
- Body size

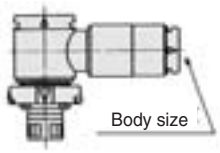
KB D 2 – 1
- Model
- Body size
- Body size

Nipple: KBN

Model
KBN1
KBN2
KBN3
KBN4

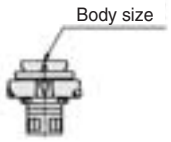
Elbow Different Diameter Female Connector Module: KBD

Model
KBD2-1
KBD3-2
KBD4-3



Different Diameter Module: KBR

Model
KBR2-1
KBR3-2
KBR4-3

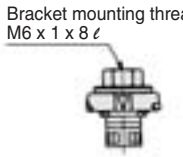


4 Plug/Cap: KBP, KBC(P.211)

KB P 1
- Body size
- Model

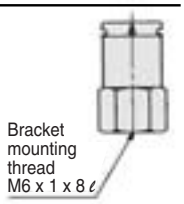
Plug: KBP

Model
KBP1
KBP2
KBP3
KBP4



Cap: KBC

Model
KBC1
KBC2
KBC3
KBC4



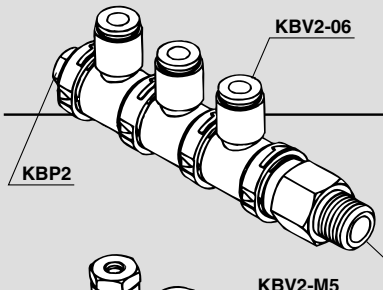
5 Bracket: KBX(P.211)

KB X 6
- Model
- Applicable thread size

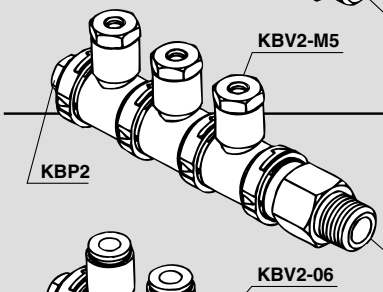
Bracket: KBX

Model
KBX6
KBX12
KBX14
KBX16
KBX20
KBX22

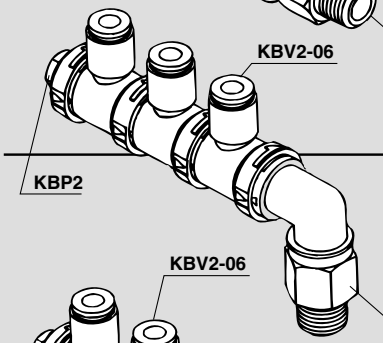
Combination Examples



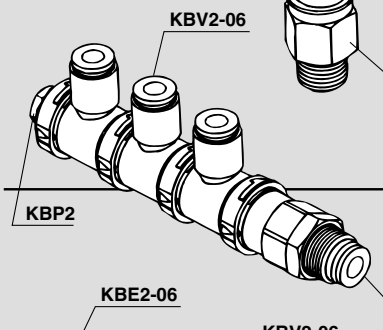
Component module
KBV2-06 ·····3
KBH2-R2S ·····1
KBP2 ·····1



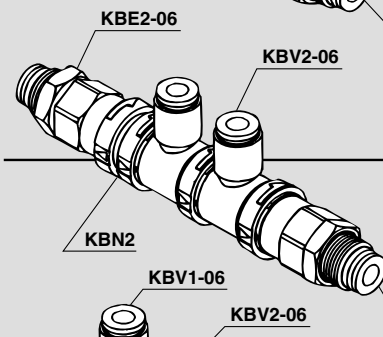
Component module
KBV2-M5 ·····3
KBH2-R2S ·····1
KBP2 ·····1



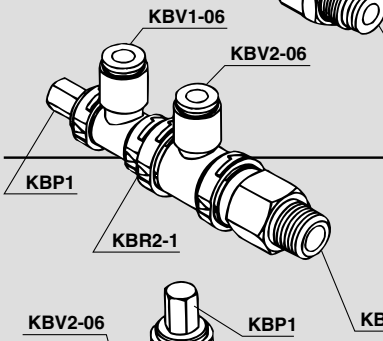
Component module
KBV2-06 ·····3
KBL2-R2S ·····1
KBP2 ·····1



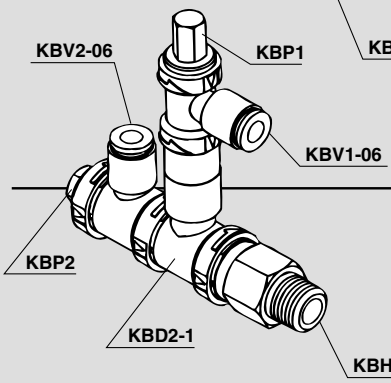
Component module
KBV2-06 ·····3
KBL2-R2S ·····1
KBP2 ·····1



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
KBD2-1 ·····1
KBH2-R2S ·····1
KBP2 ·····1
KBP1 ·····1

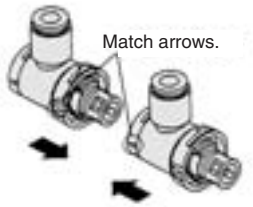
⚠Precautions

Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 13 to 16 for Fittings and Tubing Precautions.

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.



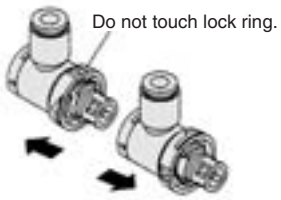
2. Confirm insertion by turning modules to right and left or pulling on them. But do not touch the lock ring in the process.

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.



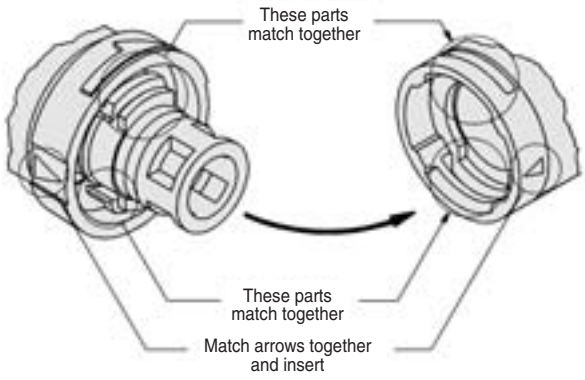
Others

⚠Caution

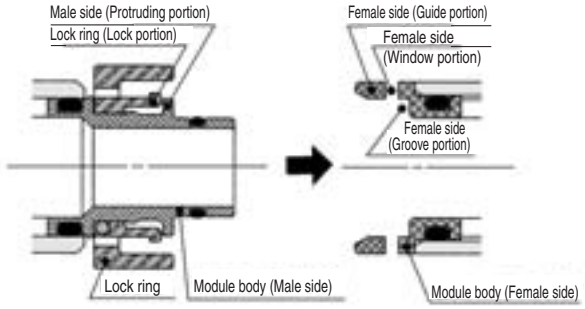
1. When connecting piping material to each other, do not apply a bending force, etc. Piping material may be deformed or damaged. If unit is longer than 5 stations, please use brackets or it may result in deformation of the piping material by bends, deflection, etc.
2. Each type of module materials is 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

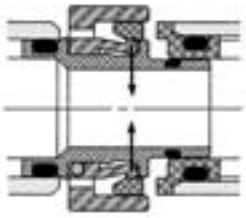
Piping module-Male side **Piping module-Female side**



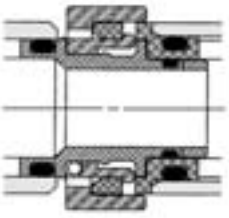
1. Match arrows together and insert piping module male side into female side.



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.



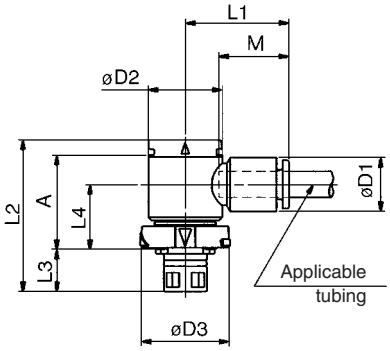
Male module inserted fully into position.

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

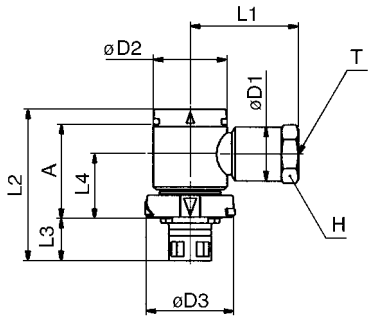
Elbow Module: KBV

Model	Applicable tubing O.D.	D1	D2	D3	L1	L2	L3	L4	A	M	Mass (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



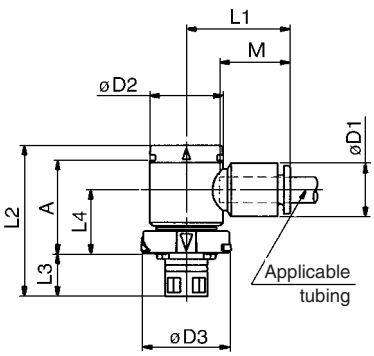
Elbow Socket Module: KBV

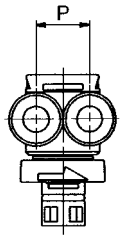
Model	T Connection thread	H width across flats	D1	D2	D3	L1	L2	L3	L4	A	Mass (g)
KBV1-M5	M5 x 0.8	12	12.8	13.6	16.8	25.0	33.0	10.4	13.0	19.5	12.4
KBV1-M6	M6 x 1										11.6
KBV2-M5	M5 x 0.8			17.6	21.0	26.0	36.0	10.1	15.5	22.5	14.8
KBV2-M6	M6 x 1										14.0
KBV2-R1	Rc1/8	14	15.2			29.5					15.3
KBV3-R1				25.2	28.6	30.5	42.6	11.4	20.5	27.0	22.0
KBV3-R2	Rc1/4	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	Rc3/8					43.0					44.7



Branch Elbow Module: KBZ

Model	Applicable tubing O.D.	D1	D2	D3	L1	L2	L3	L4	A	M	P	Mass (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



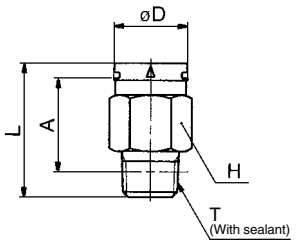


2 Air Supply Port

Female Connector Union: KBH

Model	T Connection thread	H width across flats	D	L	A*	Mass (g)
KBH1-R1S	R 1/8	14	13.6	27.0	20.0	13.4
KBH2-R1S	R 1/8	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

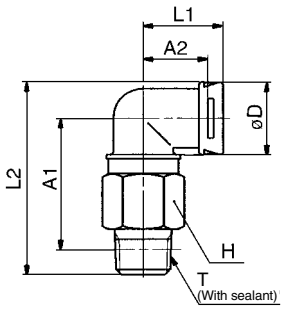
* Reference dimensions after R thread



Female Connector Elbow Union: KBL

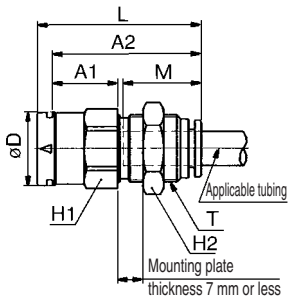
Model	T Connection thread	H width across flats	D	L1	L2	A1*	A2	Mass (g)
KBL1-R1S	R1/8	14	13.6	18	38.0	27.0	15.0	14.8
KBL2-R1S	R1/8	17	17.6	19	43.5	30.5	15.5	23.2
KBL2-R2S	R1/4				46.5	31.5		27.3
KBL2-R3S	R3/8				42.0	26.5		26.5
KBL3-R2S	R1/4	19	25.2	22	56.0	37.5	18.0	32.6
KBL3-R3S	R3/8				51.5	32.5		29.3
KBL3-R4S	R1/2	22				31.0		47.6
KBL4-R3S	R3/8	24	27.0	24	61.5	41.5	19.5	57.6
KBL4-R4S	R1/2				57.5	36.0		48.8

* Reference dimensions after R thread



Bulkhead Female Connector: KBE

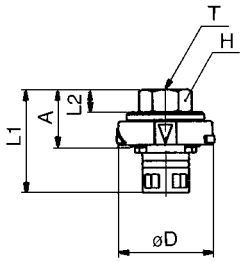
Model	Applicable tubing O.D.	T (M)	H1 width across flats	H2 width across flats	D	L	A1	A2	M	Mass (g)
KBE1-04	4	M12 x 1	14	14	13.6	34.5	15.0	31.5	16.0	17.9
KBE1-06	6	M14 x 1	17	17		35.5	15.5	32.0	17.0	27.0
KBE2-06					17.6	37.5	17.0	33.5		26.0
KBE2-08	8	M16 x 1	22	19		39.0	15.5	35.5	18.5	29.5
KBE2-10	10	M20 x 1		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	16.5	40.0		66.6



2 Air Supply Port

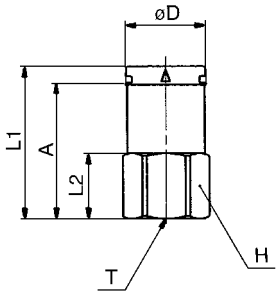
Male Connector Socket: KBB

Model	T Connection thread	H width across flats	D	L1	L2	A	Mass (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

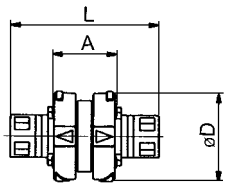
Model	T Connection thread	H width across flats	D	L1	L2	A	Mass (g)
KBS1-R1	Rc 1/8	14	13.6	28.0	11.0	25.0	17.8
KBS2-R2	Rc 1/4	17	17.6	33.5	14.0	30.0	28.5
KBS3-R3	Rc 3/8	19	25.2	38.5	17.0	34.5	33.8
KBS4-R4	Rc 1/2	24	27.0	39.0	20.0	35.0	57.1



3 Other Piping Material

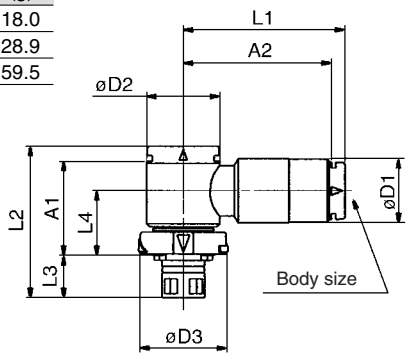
Nipple: KBN

Model	D	L	A	Mass (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



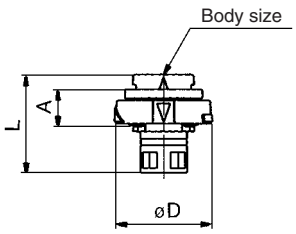
Elbow Different Diameter Female Connector Module: KBD

Model	D1	D2	D3	L1	L2	L3	L4	A1	A2	Mass (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

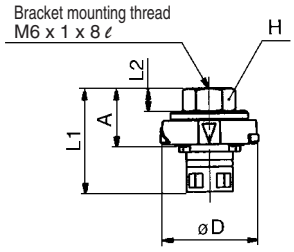
Model	D	L	A	Mass (g)
KBR2-1	21.0	21.5	8.0	2.8
KBR3-2	28.6	25.0	10.0	4.3
KBR4-3	30.4	30.5	14.0	8.8



4 Plug / Cap

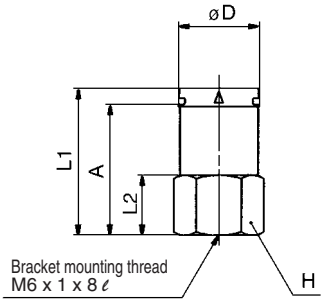
Plug: KBP

Model	H width across flats	D	L1	L2	A	Mass (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

Model	H width across flats	D	L1	L2	A	Mass (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

Model	A	Applicable model	Mass (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 the case of KBX6, use the enclosed mounting screws designed for KBP (plug) and KBC (cap).
Screw size: Cross recessed round head screw (M6 x 1 x 8ℓ)
Screw color: Black