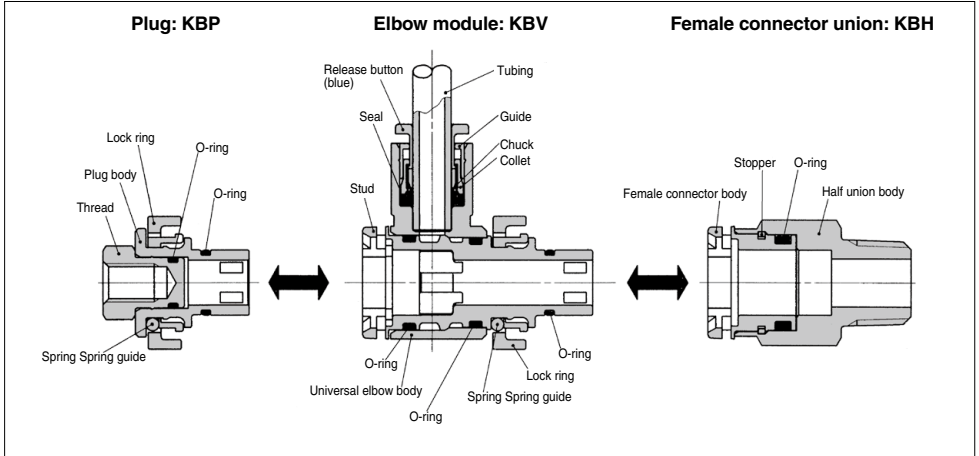


# Piping Module

# KB Series

RoHS



**Suitable for centralized distribution of supply air**

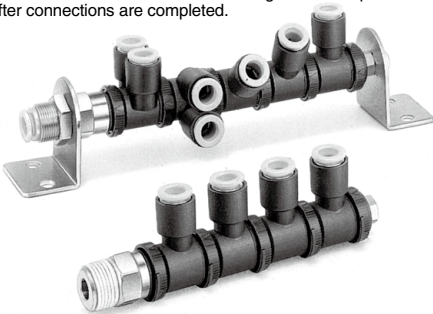
**Easy distribution utilizing One-touch fittings**

**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

<b>Fluid</b>	Air	
<b>Operating pressure range</b> <small>Note)</small>	-100 kPa to 1 MPa	
<b>Proof pressure</b>	3 MPa	
<b>Ambient and fluid temperature</b>	-5 to 60°C (No freezing)	
<b>Thread</b>	<b>Mounting section</b>	JIS B 0203 (Taper thread for piping)
	<b>Nut section</b>	JIS B 0205 (Metric coarse thread)
<b>Seal on the threads (Standard)</b>	With thread sealant	
<b>Copper-free (Standard)</b>	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, C3604
Collet, Release button	POM
Seal, O-ring	NBR
Chuck	Stainless steel 304

## How to Order

1

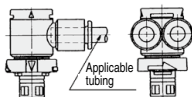
**Air Output Port: KBV, KBZ (P.375)**

**KB V 1 - 04**

Model  
Body size  
Tube size/  
Connecting female  
thread size

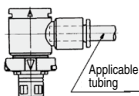
**Branch Elbow Module: KBZ**

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



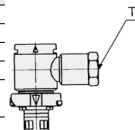
**Elbow Module: KBV**

Model	Applicable tubing O.D.
KBV1-04	4
KBV1-06	6
KBV2-06	6
KBV2-08	8
KBV3-08	8
KBV3-10	10
KBV3-12	12
KBV4-12	12
KBV4-16	16



**Elbow Socket Module: KBV**

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



2

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

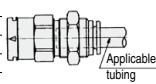
(P.376, 377)

**KB H 1 - R1 S**

Model  
Body size  
Tube size/Connection thread size  
With sealant (Male thread only) ..... Standard specifications

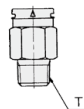
**Bulkhead Female Connector: KBE**

Model	Applicable tubing O.D.
KBE1-04	4
KBE1-06	6
KBE2-06	6
KBE2-08	8
KBE2-10	10
KBE3-08	8
KBE3-10	10
KBE3-12	12
KBE4-12	12



**Female Connector Union: KBH**

Model	T Connection thread
KBH1-R1S	R 1/8
KBH2-R1S	R 1/8
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



**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



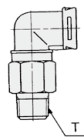
**Female Connector Socket: KBS**

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



**Female Connector Elbow Union: KBL**

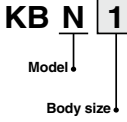
Model	T Connection thread
KBL1-R1S	R 1/8
KBL2-R1S	R 1/4
KBL2-R3S	R 3/8
KBL3-R2S	R 1/4
KBL3-R3S	R 3/8
KBL3-R4S	R 1/2
KBL4-R3S	R 3/8
KBL4-R4S	R 1/2



## Combination Examples

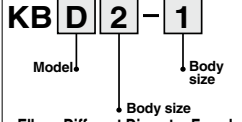
3

Other Piping Material: KBN, KBD, KBR (P.378)



**Nipple: KBN**

Model
KBN1
KBN2
KBN3
KBN4



**Elbow Different Diameter Female Connector Module: KBD**

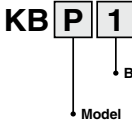
Model
KBD2-1
KBD3-2
KBD4-3

**Different Diameter Module: KBR**

Model
KBR2-1
KBR3-2
KBR4-3

4

Plug/Cap: KBP, KBC (P.379)



**Plug: KBP**

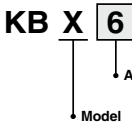
Model	Bracket mounting thread
KBP1	M6 x 1 x 8L
KBP2	
KBP3	
KBP4	

**Cap: KBC**

Model
KBC1
KBC2
KBC3
KBC4

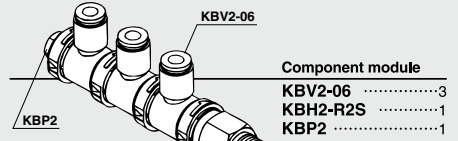
5

Bracket: KBX (P.379)

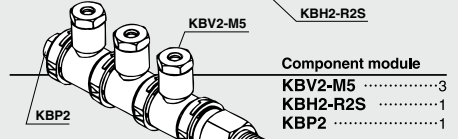


**Bracket: KBX**

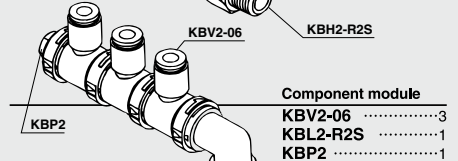
Model
KBX6
KBX12
KBX14
KBX16
KBX20
KBX22



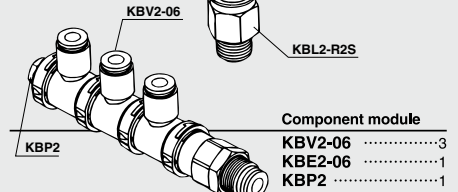
Component module	
KBV2-06	3
KBH2-R2S	1
KBP2	1



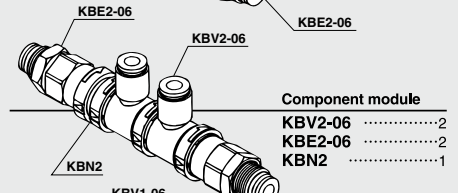
Component module	
KBV2-M5	3
KBH2-R2S	1
KBP2	1



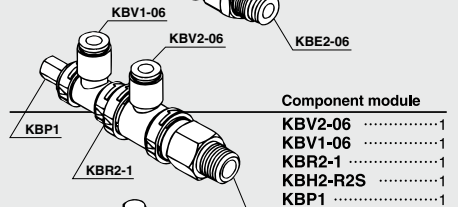
Component module	
KBV2-06	3
KBL2-R2S	1
KBP2	1



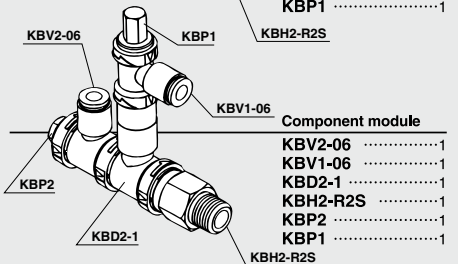
Component module	
KBV2-06	3
KBE2-06	1
KBP2	1



Component module	
KBV2-06	2
KBE2-06	2
KBN2	1

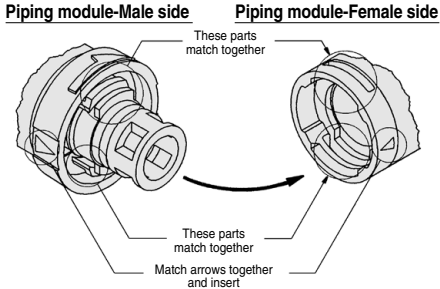


Component module	
KBV2-06	1
KBV1-06	1
KBR2-1	1
KBH2-R2S	1
KBP1	1

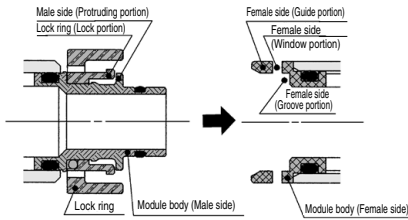


Component module	
KBV2-06	1
KBV1-06	1
KBD2-1	1
KBH2-R2S	1
KBP2	1
KBP1	1

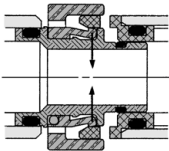
## Piping Module-Insertion and Removal Structural Drawing



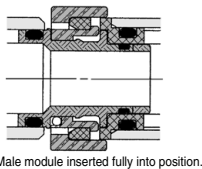
1. Match arrows together and insert piping module male side into female side.



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



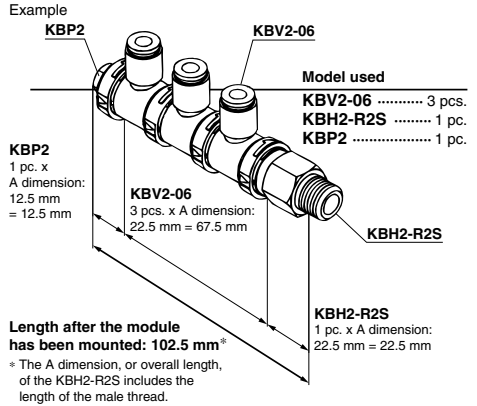
3. By pushing tighter, lock portion goes over female side guide portion and snaps into window slot portion. Male side protruding portion snaps into female side groove portion. This performs the function of a detent.



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

## Dimensions of the Product After the Module Has Been Mounted

The overall length of the product after the module has been mounted is calculated as the total of the following: the A dimension in the dimension table x the number of units to be used.

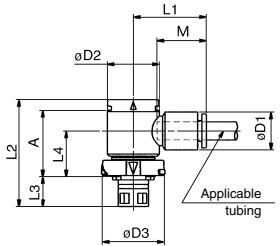


**1** Air Output Port

**Elbow Module: KBV**



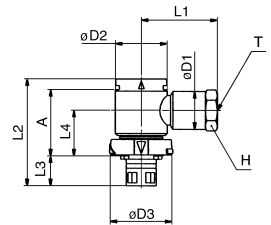
Model	Applicable tubing O.D.	D1	D2	D3	L1	L2	L3	L4	A	M	Weight (g)
KBV1-04	4	10.4	13.6	16.8	22.0	33.0	10.4	13.0	19.5	16.0	4.3
KBV1-06	6	12.8	17.6	21.0	24.0	36.0	10.1	15.5	22.5	17.0	4.9
KBV2-06					25.0						7.3
KBV2-08	8	15.2	25.2	28.6	29.5	42.6	11.4	20.5	27.0	18.5	8.3
KBV3-08					34.0						15.0
KBV3-10	10	18.5	25.2	28.6	31.5	42.6	11.4	19.5	27.0	21.0	17.5
KBV3-12	12	20.9	27.0	30.4	35.0	41.4	12.2	18.0	25.0	22.0	19.3
KBV4-12					39.0						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**



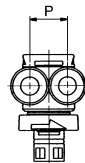
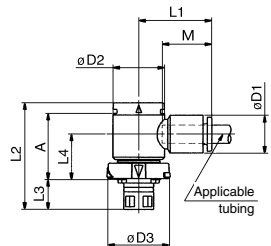
Model	T Connection thread	H width across flats	D1	D2	D3	L1	L2	L3	L4	A	Weight (g)
KBV1-M5	M5 x 0.8	12	12.8	13.6	16.8	25.0	33.0	10.4	13.0	19.5	12.4
KBV1-M6	M6 x 1										11.6
KBV2-M5	M5 x 0.8	14	15.2	17.6	21.0	26.0	36.0	10.1	15.5	22.5	14.8
KBV2-M6	M6 x 1										15.3
KBV2-R1	Rc 1/8	19	18.5	25.2	28.6	30.5	42.6	11.4	20.5	27.0	22.0
KBV3-R1											22.0
KBV3-R2	Rc 1/4	22	20.9	27.0	30.4	32.0	41.4	12.2	18.0	25.0	27.0
KBV4-R2											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	21.0	33.0	10.4	13.0	19.5	16.0	10.4	5.8
KBZ1-06	6	12.8	17.6	21.0	21.5	36.0	10.4	13.0	19.5	17.0	12.8	7.1
KBZ2-08	8	15.2	25.2	28.6	25.8	42.6	11.4	15.5	22.5	18.5	15.2	11.6
KBZ3-10	10	18.5	25.2	28.6	31.2	42.6	11.4	19.5	27.0	21.0	18.5	24.4
KBZ3-12					32.2							27.1
KBZ4-12	12	20.9	27.0	30.4	33.0	41.4	12.2	18.0	25.0	22.0	20.9	28.5



[Click here for applicable color caps.](#)

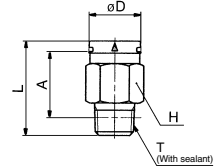
# KB Series

## 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				29.0	21.5	19.2
KBH2-R2S	R 1/4	17	17.6	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	27.0	35.5	19.0	41.5
KBH4-R3S	R 3/8				24.5	44.5
KBH4-R4S	R 1/2	24	31.5	19.0	36.5	

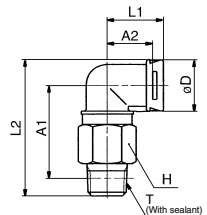


\* Reference dimensions after R thread

### Female Connector Elbow Union: KBL



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

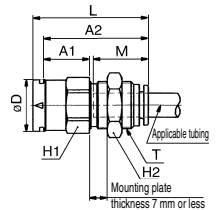


\* Reference dimensions after R thread

### Bulkhead Female Connector: KBE



Model	Applicable tubing O.D.	T (M)	H1 width across flats	H2 width across flats	D	L	A1	A2	M	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	6	M14 x 1		17	17	17.6	37.5	17.0	33.5	17.0
KBE2-08	8	M16 x 1	19				39.0	15.5	35.5	18.5
KBE2-10	10	M20 x 1	24	24	25.2	41.5	15.5	38.0	21.0	57.5
KBE3-08	8	M16 x 1	22	19		43.5	19.5	39.5	18.5	51.6
KBE3-10	10	M20 x 1	24	24	27.0	45.0	18.5	41.0	21.0	63.0
KBE3-12	12	M22 x 1	24	27		46.0	18.5	42.0	22.0	83.4
KBE4-12	12	M22 x 1	24	27	27.0	44.0	16.5	40.0	22.0	66.6



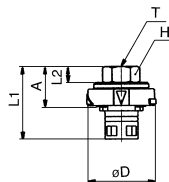
[Click here for applicable color caps.](#)

## 2 Air Supply Port

### Male Connector Socket: KBB



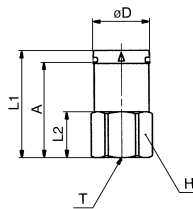
Model	T Connection thread	H width across flats	D	L1	L2	A	Weight (g)
<b>KBB1-M5</b>	M5 x 0.8	8	16.8	29.5	11.5	19.0	6.0
<b>KBB2-M6</b>	M6 x 1	10	21.0	23.0	5.0	12.5	6.3
<b>KBB3-R1</b>	Rc 1/8	14	28.6	27.5	6.5	16.0	11.4
<b>KBB4-R2</b>	Rc 1/4	19	30.4	31.5	9.5	19.5	24.1



### Female Connector Socket: KBS



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



[Click here for applicable color caps.](#)

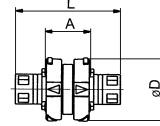
# KB Series

## 3 Other Piping Material

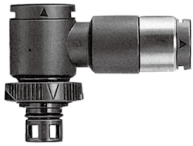
### Nipple: KBN



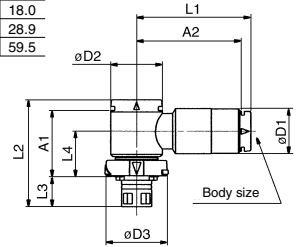
Model	D	L	A	Weight (g)
KBN1	16.8	35.0	14.0	2.9
KBN2	21.0		15.0	4.6
KBN3	28.6	39.0	16.5	7.2
KBN4	30.4	41.5	17.0	10.2



### Elbow Different Diameter Female Connector Module: KBD



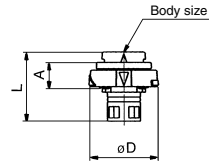
Model	D1	D2	D3	L1	L2	L3	L4	A1	A2	Weight (g)
KBD2-1	15.2	17.6	21.0	39.0	36.0	10.1	15.5	22.5	35.5	18.0
KBD3-2	20.9	25.2	28.6	38.0	42.6	11.4	19.5	27.0	34.5	28.9
KBD4-3	26.5	32.3	30.4	44.5	55.0	12.2	24.0	38.5	40.0	59.5



### Different Diameter Module: KBR



Model	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



[Click here for applicable color caps.](#)

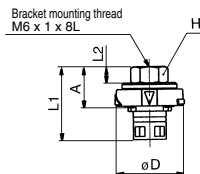


## 4 Plug / Cap

### Plug: KBP



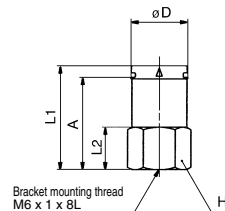
Model	H width across flats	D	L1	L2	A	Weight (g)
<b>KBP1</b>	8	16.8	29.5	11.5	19.0	5.6
<b>KBP2</b>	10	21.0	23.0		12.5	6.8
<b>KBP3</b>	14	28.6	25.5		14.0	13.4
<b>KBP4</b>	19	30.4	27.0		15.0	24.0



### Cap: KBC



Model	H width across flats	D	L1	L2	A	Weight (g)
<b>KBC1</b>	14	13.6	30.0	13.0	26.5	23.4
<b>KBC2</b>	17	17.6	32.5		28.5	37.0
<b>KBC3</b>	19	25.2	35.5	14.0	31.5	46.7
<b>KBC4</b>	24	27.0	34.0	15.0	29.5	74.4



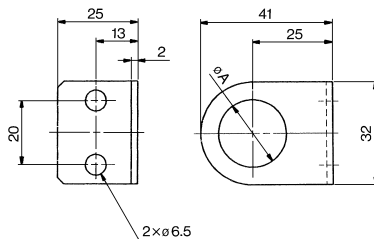
## 5 Bracket

### Bracket: KBX



Model	A	Applicable model	Weight (g)
<b>KBX6</b>	7	KBP, KBC	27.5
<b>KBX12</b>	13	KBE1-04	26.1
<b>KBX14</b>	15	KBE1-06, KBE2-06	25.4
<b>KBX16</b>	17	KBE2-08, KBE3-08	24.4
<b>KBX20</b>	21	KBE2-10, KBE3-10	22.6
<b>KBX22</b>	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



## ⚠ Precautions

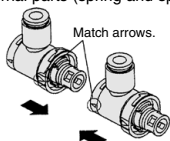
**Be sure to read this before handling the products.**  
**Refer to page 11 for safety instructions and pages 14 to 18 for fittings and tubing precautions.**

### How to Install

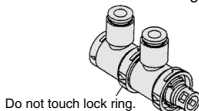
#### ⚠ Caution

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.

Do not idle the lock ring before attaching. Idling the lock ring may cause the internal parts (spring and spring guide) to come off.



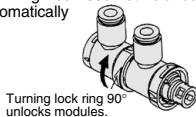
2. Confirm insertion by turning modules to right and left or pulling on them. But do not touch the lock ring in the process.



### How to Remove

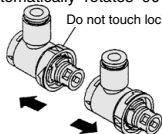
#### ⚠ Caution

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 because 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. If the bracket is not used, the piping material may be deformed due to bending or deflection.
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.