

Renewal



## Push-In Fitting Type of Stainless Steel Tube Fitting Stainless SUS303 Equivalent Corrosivity Series

Copper alloy  
free material

- *Suitable for Strength Requirements / Corrosive Environment.*
- *Stainless steel (Cr19~21%, Mo1.5~2.5%) whose Corrosion resistance is equivalent to SUS303 is adopted.*
- *Copper alloy free Material.*
- *HNBR for Seal Rubber against Low Ozone Concentration.*

FITTING

CONTROLLER

VALVE

TUBE

MADE-TO-ORDER  
PRODUCTS

152

Stainless  
Series

Chemical  
Series

PP  
Series

EG  
Series

Anti-siphon  
& Press Series

Oil Concentration  
Control

Minimal  
Series

Stop Fitting  
Series

Rotary  
Series

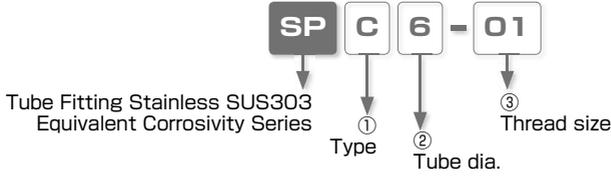
Twist-Proof  
Fitting

Block and  
Connector

Coupling

Color  
Cap

### Model Designation (Example)



#### ① Type

Code	Type	Code	Type	Code	Type	Code	Type
C	Straight	L	Elbow	B	Branch Tee	D	Run Tee
X	Branch Y	VX	Tripod Elbow	AX	Branch Elbow	KD	Run Triple
RX	Branch Double Y	U	Union Straight	G	Unequal Union Straight	V	Union Elbow
E	Union Tee	EG	Unequal Union Tee	Y	Union Y	W	Unequal Union Y
VU	Tripod Union	AU	Branch Union Elbow	KG	Unequal Triple	RG	Unequal Double Y
M	Bulkhead Union	GJ	Plug-in Reducer	PF	Cap		

#### ② Tube dia.

Tube dia.	mm size					
Code	4	6	8	10	12	16
Size (mm)	ø4	ø6	ø8	ø10	ø12	ø16

#### ③ Thread size (\* In case that ③ indicates tube dia., select tube dia. from table ②)

Thread size	Metric thread type (mm)		Taper pipe thread			
Code	M5	M6	01	02	03	04
Size	M5 × 0.8	M6 × 1	R1/8	R1/4	R3/8	R1/2

## Specifications

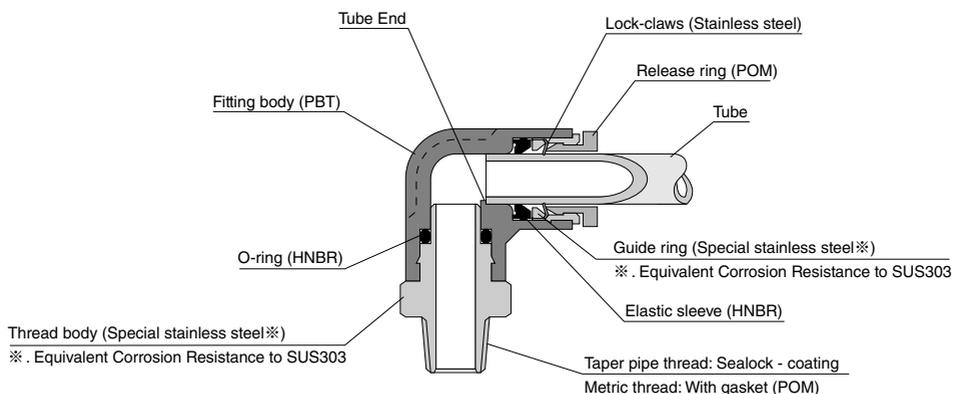
Fluid medium	Air / Water (※)
Max. operating pressure	1.0MPa
Max. vacuum	-100kPa
Operating temp. range	0 ~ 60°C (No freezing)

### ⚠ Warning

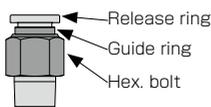
※ . Make sure to follow the instructions below when the fluid medium is water.

1. Surge pressure must be controlled lower than max. operating pressure when using water as a fluid medium.
2. Be sure to place Insert Ring into the tube edge when using water as a fluid medium.

## Construction (Elbow: PL)



### ● How to identify SUS304, SUS303 Equivalent and Standard Fitting (Tube Fitting Standard Fitting).



Identification part	SUS304	SUS303 Equivalent	Standard Fitting
V groove on Guide ring	○	×	○
Flat groove on Hex bolt	○	×	×
Release-ring color	Dark blue	Dark blue	Black

## ⚠ Detailed Safety Instructions

Before using PISCO products, be sure to read "Safety Instructions" and "Safety Instruction Manual" on page 23 to 27 and "Common Safety Instructions for Fittings" on page 33 to 35.

### Warning

1. This series can not be used in case a fluid medium is a chemical. Use SUS316 series instead.
2. When using this series under corrosive conditions, be sure to contact us first. It may cause damage to the products depending on the conditions.



### Standard Size List

#### Connection: Thread ⇔ Tube

Type	Page	Thread size	Tube O.D. (mm)					
			4	6	8	10	12	16
SPCI Straight	P.157	M5 × 0.8	●	●				
		M6 × 1	●	●				
		R1/8	●	●	●	●	●	
		R1/4	●	●	●	●	●	●
		R3/8	●	●	●	●	●	●
SPL Elbow	P.158	M5 × 0.8	●	●				
		M6 × 1	●	●				
		R1/8	●	●	●	●	●	
		R1/4	●	●	●	●	●	●
		R3/8	●	●	●	●	●	●
SPBI Branch Tee	P.159	M5 × 0.8	●	●				
		M6 × 1	●	●				
		R1/8	●	●	●	●	●	
		R1/4	●	●	●	●	●	●
		R3/8	●	●	●	●	●	●
SPDI Run Tee	P.160	M5 × 0.8	●	●				
		M6 × 1	●	●				
		R1/8	●	●	●	●	●	
		R1/4	●	●	●	●	●	●
		R3/8	●	●	●	●	●	●

Type	Page	Thread size	Tube O.D. (mm)					
			4	6	8	10	12	16
SPXY Branch Y	P.162	M5 × 0.8	●	●				
		M6 × 1	●	●				
		R1/8	●	●	●	●	●	
		R1/4	●	●	●	●	●	●
		R3/8	●	●	●	●	●	●
SPVX Tripod Elbow	P.163	M5 × 0.8	●	●				
		M6 × 1	●	●				
		R1/8	●	●	●	●	●	
		R1/4	●	●	●	●	●	●
		R3/8	●	●	●	●	●	●
SPAX Branch Elbow	P.165	M5 × 0.8	●	●				
		M6 × 1	●	●				
		R1/8	●	●	●	●	●	
		R1/4	●	●	●	●	●	●
		R3/8	●	●	●	●	●	●
SPRX Branch Double Y	P.166	R1/8	●	●				
		R1/2	●	●				
		R1/4	●	●				

Type	Page	Thread size	Tube O.D. 1 (mm)			Tube O.D. 2 (mm)
			4	6	8	
SPKD Run Triple	P.165	R1/8	●			6
		R1/4	●	●		8
		R3/8	●	●	●	10

#### Connection: Tube ⇔ Tube (Equal dia.)

Type	Page	Tube O.D. (mm)					
		4	6	8	10	12	16
SPUJ Union Straight	P.157	●	●	●	●	●	●
SPVJ Union Elbow	P.159	●	●	●	●	●	●
SPBJ Union Tee	P.161	●	●	●	●	●	●
SPYJ Union Y	P.162	●	●	●	●	●	●

Type	Page	Tube O.D. (mm)					
		4	6	8	10	12	16
SPVU Tripod Union	P.164	●	●	●	●	●	
SPAU Branch Union Elbow	P.164	●	●	●	●	●	
SPMU Bulkhead Union	P.167	●	●	●	●	●	

#### Connection: Tube ⇔ Tube (Unequal dia.)

Type	Page	Tube O.D. 1 (mm)	Tube O.D. 2 (mm)				
			4	6	8	10	12
SPGJ Unequal Union Straight	P.158	6	●				
		8		●			
		10			●		
		12				●	
		16					●
SPGK Unequal Union Tee	P.161	6	●				
		8		●			
		10			●		
		12				●	
		16					●
SPGK Unequal Double Y	P.166	6	●				
		8		●			
		10			●		

Type	Page	Tube O.D. 1 (mm)	Tube O.D. 2 (mm)				
			4	6	8	10	12
SPWJ Unequal Union Y	P.163	6	●				
		8		●			
		10			●		
		12				●	
SPKG Unequal Triple	P.166	6	●				
		8		●			
		10			●		

#### Connection: Tube ⇔ Thread

Type	Page	Tube dia. (mm)	Tube O.D.			
			4	6	8	10
SPGJ Plug-in Reducer	P.167	4		●		
		6	●			
		8	●	●		
		10	●	●	●	
		12	●	●	●	●

#### Plug

Type	Page	Tube O.D. (mm)				
		4	6	8	10	12
SPPF Cap	P.167	●	●	●	●	●

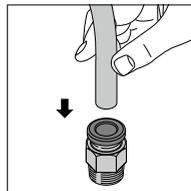
## How to insert and disconnect

### 1. How to insert and disconnect tubes

#### ① Tube insertion

Insert a tube into Push-In Fitting up to the tube end. Lock-claws bite the tube and fix it automatically, then the elastic sleeve seals around the tube.

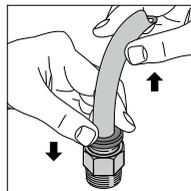
Refer to "2. Instructions for Tube Insertion" under "Common Safety Instructions for Fittings".



#### ② Tube disconnection

The tube is disconnected by pushing release-ring to release Lock-claws.

Make sure to stop air supply before the tube disconnection.

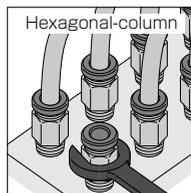


### 2. How to tighten thread

#### ① Tightening thread

Use a spanner to tighten a hexagonal-column.

Refer to "Table 2: Recommended tightening torque / Sealock color / Gasket materials" under "4. Instructions for Installing a fitting" in "Common Safety Instructions for Fittings".



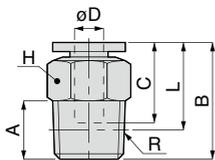
## Applicable Tube and Related Products

Fluororesin (PFA) Tube.....P.628

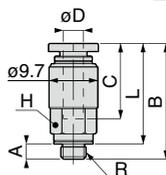
Speed Controller SUS303 Equivalent Corrosivity.....P.404

### SPC Straight

RoHS compliant



Metric thread type



SPC4-M50



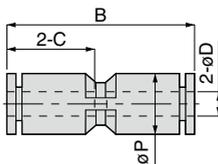
Unit : mm

Model code	Tube O.D. $\phi D$	R	A	B	L	Tube end C	Hex. H	Effective area (mm <sup>2</sup> )	Weight (g)	CAD file name	
SPC4-M5	4	M5×0.8	3.2	20	16.8	14.9	10	1.9	5.6	SPC4-M5	
SPC4-M50				22.9			19.7		8	5.9	SPC4-M50
SPC4-M6		M6×1	4	21	17		10	6.2	5.7	SPC4-M6	
SPC4-01							R1/8	8	15	5.3	7.5
SPC4-02		R1/4	11	15	15		15	SPC4-02			
SPC6-M5		6	M5×0.8	3.2	22.1		18.9	17	12	1.9	8.1
SPC6-M6	23.1				19.1	12			6.2		8.6
SPC6-01	R1/8		8	22.6	18.6	14	12.5		8.3	16	SPC6-01
SPC6-02										R1/4	11
SPC6-03	R3/8		12	23.6	17.2	17	25		SPC6-03		
SPC8-01	8		R1/8	8	27.9	23.9	18.2		14	20	14
SPC8-02		R1/4	11	26.6	20.6	21		SPC8-02			
SPC8-03		R3/8	12	23.9	17.6	21		SPC8-03			
SPC10-01	10	R1/8	8	30.3	26.3	20.7	17	22.9	21	SPC10-01	
SPC10-02		R1/4	11	29.8	23.8				19	SPC10-02	
SPC10-03		R3/8	12	29.3	23			24	SPC10-03		
SPC10-04		R1/2	15	30.3	22.1			21	46	SPC10-04	
SPC12-02	12	R1/4	11	35.9	29.9	23.3	21	35	40	SPC12-02	
SPC12-03		R3/8	12	31.9	25.6				32	SPC12-03	
SPC12-04		R1/2	15	33.9	25.7			59	45	SPC12-04	
SPC16-03	16	R3/8	12	39.3	33	24.8	24	83.3	54	SPC16-03	
SPC16-04		R1/2	15	41.3	33.1				114	61	SPC16-04

\*. "L" is a reference value for height dimension after tightening taper thread.

### SPU Union Straight

RoHS compliant



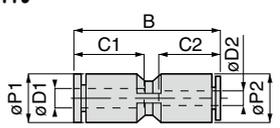
Unit : mm

Model code	Tube O.D. $\phi D$	B	$\phi P$	Tube end C	Effective area (mm <sup>2</sup> )	Weight (g)	CAD file name
SPU4	4	30.8	10	14.9	5.3	4.4	SPU4
SPU6	6	34.9	12.5	17	12.5	6.2	SPU6
SPU8	8	37.8	14.5	18.1	20	8.8	SPU8
SPU10	10	43.4	17.5	20.2	35	15	SPU10
SPU12	12	47.8	21	23.4	59	21	SPU12
SPU16	16	49.4	25	24.1	147.6	24	SPU16

## SPG Unequal Union Straight



RoHS compliant



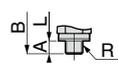
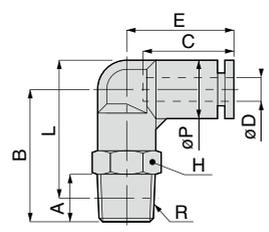
Unit : mm

Model code	Tube O.D. øD1	Tube O.D. øD2	B	øP1	øP2	Tube end C1	Tube end C2	Effective area (mm <sup>2</sup> )	Weight (g)	CAD file name
SPG6-4	6	4	34.4	12.5	12.5	17	14.9	5.3	6	SPG6-4
SPG8-6	8	6	37.9	14.5	14.5	18.1	17	12.5	8.3	SPG8-6
SPG10-8	10	8	43.1	17.5	17.5	20.2	18.4	20	14	SPG10-8
SPG12-10	12	10	47.6	21	21	23.4	20.2	35	20	SPG12-10
SPG16-12	16	12	49.5	25	25	24.1	23.4	88.6	26	SPG16-12

## SPL Elbow



RoHS compliant



Metric thread type

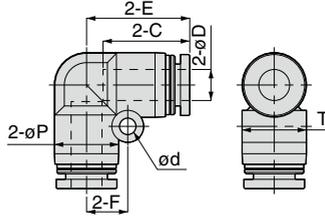
Unit : mm

Model code	Tube O.D. øD	R	A	B	L	øP	Tube end C	E	Hex. H	Effective area (mm <sup>2</sup> )	Weight (g)	CAD file name	
SPL4-M5	4	M5×0.8	3.2	20.3	22.1	10	14.9	18	10	1.5	7.3	SPL4-M5	
SPL4-M6		M6×1	4	21.3	22.3							SPL4-M6	
SPL4-01		R1/8	8	23.3	24.3					4.2	SPL4-01		
SPL4-02		R1/4	11	26.3	25.3						SPL4-02		
SPL6-M5	6	M5×0.8	3.2	22	25.1	12.5	16.8	19.8	12	1.5	11	SPL6-M5	
SPL6-M6		M6×1	4	23	25.3							SPL6-M6	
SPL6-01		R1/8	8	25	27.3					10	20	13	SPL6-01
SPL6-02		R1/4	11	28	28.2								SPL6-02
SPL6-03	R3/8	12	29.8	29.7	17	32	17	SPL6-03					
SPL8-01	R1/8	8	28	31.3				14.5	18.1	22.7	14	16.5	17
SPL8-02	R1/4	11	31	32.2	SPL8-02								
SPL8-03	R3/8	12	32.8	33.7	34	17	SPL8-03						
SPL10-01	R1/8	8	33	37.8			17.5					20.2	26.2
SPL10-02	R1/4	11	36	38.7	SPL10-02								
SPL10-03	R3/8	12	37	39.4	30	39		17	SPL10-03				
SPL10-04	R1/2	15	40	40.6					SPL10-04				
SPL12-02	12	R1/4	11	38	42.5	21	23.4	29.4	21	30	47	SPL12-02	
SPL12-03		R3/8	12	39	43.2							SPL12-03	
SPL12-04		R1/2	15	42	44.3					63	47	SPL12-04	
SPL16-03		R3/8	11	47	53.2							80.2	70
SPL16-04	R1/2	15	51	55.3	93.3	74	SPL16-04						

※: "L" is a reference value for height dimension after tightening taper thread.

### SPV Union Elbow

RoHS compliant



OP. P.754

3D CAD

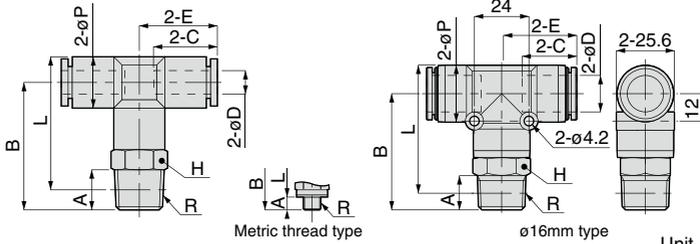
CAD

Unit : mm

Model code	Tube O.D. øD	øP	Tube end C	E	ød	F	T	Effective area (mm <sup>2</sup> )	Weight (g)	CAD file name
SPV4	4	10	14.9	16.9	3.2	6.5	10	4.2	4.7	SPV4
SPV6	6	12.5	16.9	20.1	3.2	8	12.5	10	6.9	SPV6
SPV8	8	15	18.1	22.4	4.2	10	15.6	16.5	11	SPV8
SPV10	10	17.5	20.7	26.2	4.2	12	18.2	30	16	SPV10
SPV12	12	21	23.4	29.4	4.2	14	21.7	47	24	SPV12
SPV16	16	25	24.1	33.1	4.2	12	25.6	91.6	29	SPV16

### SPB Branch Tee

RoHS compliant



OP. P.754

3D CAD

CAD

Unit : mm

Model code	Tube O.D. øD	R	A	B	L	øP	Tube end C	E	Hex. H	Effective area (mm <sup>2</sup> )	Weight (g)	CAD file name		
SPB4-M5	4	M5 × 0.8	3.2	20.2	22	10	14.9	16.9	10	1.5	9.4	SPB4-M5		
SPB4-M6		M6 × 1	4	21.2	22.2							9.7	SPB4-M6	
SPB4-01		R1/8	8	23.2	24.2							4.1	13	SPB4-01
SPB4-02		R1/4	11	26.2	25.2			14		21	SPB4-02			
SPB6-M5	6	M5 × 0.8	3.2	23	26.3	13	17	20.15	12	1.5	15	SPB6-M5		
SPB6-M6		M6 × 1	4	24	26.5							6.8	SPB6-M6	
SPB6-01		R1/8	8	26	28.5							10	17	SPB6-01
SPB6-02		R1/4	11	29	29.5			14	10	24	SPB6-02			
SPB6-03		R3/8	12	30.8	31			17		36	SPB6-03			
SPB8-01	8	R1/8	8	26.3	29.8	15	18.4	22.4	14	16.5	26	SPB8-01		
SPB8-02		R1/4	11	29.3	30.8							17	38	SPB8-02
SPB8-03		R3/8	12	31.1	32.3								38	SPB8-03
SPB10-01	10	R1/8	8	33	37.8	17.5	20.2	25.2	17	23.2	36	SPB10-01		
SPB10-02		R1/4	11	36	38.7							30	46	SPB10-02
SPB10-03		R3/8	12	37	39.4								46	SPB10-03
SPB10-04		R1/2	15	40	40.6			21		65	SPB10-04			
SPB12-02	12	R1/4	11	38	42.5	21	22.9	28.4	21	30	56	SPB12-02		
SPB12-03		R3/8	12	39	43.2							47	58	SPB12-03
SPB12-04		R1/2	15	42	44.3								73	SPB12-04
SPB16-03	16	R3/8	11	47	53.2	25	24.1	33.1	22	80.1	84	SPB16-03		
SPB16-04		R1/2	15	51	55.3							90.8	88	SPB16-04

※: "L" is a reference value for height dimension after tightening taper thread.

**SPD Run Tee**

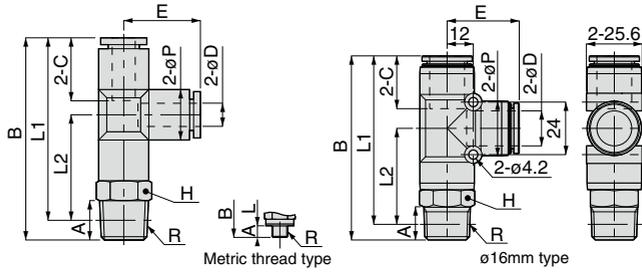
RoHS compliant



OP P.754

3D CAD

CAD



Unit : mm

Model code	Tube O.D. øD	R	A	B	L1	L2	øP	Tube end C	E	Hex. H	Effective area (mm <sup>2</sup> )	Weight (g)	CAD file name
SPD4-M5	4	M5 × 0.8	3.2	37.1	33.9	17	10	14.9	16.9	10	1.9	9.4	SPD4-M5
SPD4-M6		M6 × 1	4	38.1	34.1	17.2						9.7	SPD4-M6
SPD4-01		R1/8	8	40.1	36.1	19.2					5.3	13	SPD4-01
SPD4-02		R1/4	11	43.1	37.1	20.2						21	SPD4-02
SPD6-M5	6	M5 × 0.8	3.2	43.2	40	19.8	13	17	20.1	12	1.9	15	SPD6-M5
SPD6-M6		M6 × 1	4	44.2	40.2	20					6.4	SPD6-M6	
SPD6-01		R1/8	8	46.2	42.2	22				12.5	17	SPD6-01	
SPD6-02		R1/4	11	49.2	43.1	23					24	SPD6-02	
SPD6-03	R3/8	12	51	44.6	24.5	17	35	SPD6-03					
SPD8-01	8	R1/8	8	50.4	46.4	24.2	15	18.1	22.2	14	20	27	SPD8-01
SPD8-02		R1/4	11	53.4	47.4	25.2					27	SPD8-02	
SPD8-03		R3/8	12	55.2	48.9	26.7				17	38	SPD8-03	
SPD10-01	10	R1/8	8	58.2	54.2	29	17.5	20.2	25.2	17	23.6	36	SPD10-01
SPD10-02		R1/4	11	61.2	55.2	30						38	SPD10-02
SPD10-03		R3/8	12	62.2	55.9	30.7				35	46	SPD10-03	
SPD10-04		R1/2	15	65.2	57	31.8					21	65	SPD10-04
SPD12-02	12	R1/4	11	66.6	60.6	32.2	21	22.9	28.2	21	35	57	SPD12-02
SPD12-03		R3/8	12	67.6	61.3	32.9					59	58	SPD12-03
SPD12-04		R1/2	15	70.6	62.4	34				72	SPD12-04		
SPD16-03	16	R3/8	11	80.1	73.8	40.7	25	24.1	33.1	22	79.5	84	SPD16-03
SPD16-04		R1/2	15	84.1	75.9	42.8					92.8	88	SPD16-04

\*. "L1" and "L2" are reference values for height dimensions after tightening taper thread.

FITTING  
CONTROLLER  
VALVE  
TUBE

MAKE-TO-ORDER  
PRODUCTS

160

Stainless Series

Chemical Series

PP Series

EG Series

Anti-siphon & Press Series

Gas Conversion Control

Minimal Series

Stop Fitting Series

Rotary Series

Twist-Proof Fitting

Block and Connector

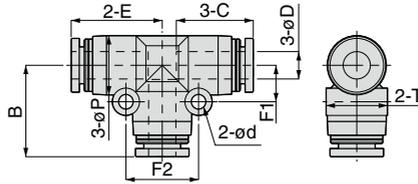
Coupling

Color Cap

FITTING

### SPE Union Tee

RoHS compliant



OP.  
P.754

3D  
CAD

CAD

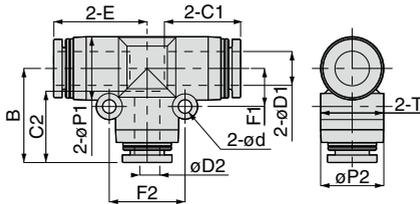
Unit : mm

Model code	Tube O.D. øD	øP	Tube end C	E	ød	F1	F2	B	T	Effective area (mm <sup>2</sup> )	Weight (g)	CAD file name
SPE4	4	10	14.9	16.9	3.2	6.5	13	16.9	10	5.3	7.1	SPE4
SPE6	6	13	17	20.05	3.2	8	16	20.1	13.5	12.5	11	SPE6
SPE8	8	15	18.1	22.2	3.2	9	18	22.2	15	20	15	SPE8
SPE10	10	17.5	19.6	25.2	4.2	12	24	25.2	17.5	35	24	SPE10
SPE12	12	21	22.9	28.4	4.2	14	28	28.2	21.7	59	34	SPE12
SPE16	16	25	24.1	33.1	4.2	12	24	33.1	25.6	89.8	41	SPE16

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### SPEG Unequal Union Tee

RoHS compliant



OP.  
P.754

3D  
CAD

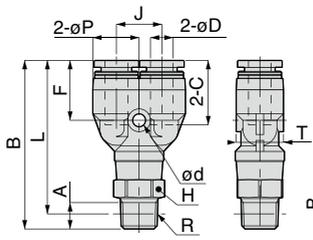
CAD

Unit : mm

形式	Tube O.D. øD1	Tube O.D. øD2	øP1	øP2	Tube end C1	Tube end C2	E	ød	F1	F2	B	T	Effective area (mm <sup>2</sup> )	Weight (g)	CAD file name
SPEG6-4	6	4	13	13	17	14.9	20.05	3.2	8	16	19.5	13.5	4.1	11	SPEG6-4
SPEG8-6	8	6	14.5	12.5	18.1	17	22.2	3.2	9	18	22.3	15.1	9.5	15	SPEG8-6
SPEG10-8	10	8	17.5	14.5	20.2	18.1	25.2	4.2	12	24	24.9	18.2	18.5	23	SPEG10-8
SPEG12-10	12	10	21	17.5	23.4	20.2	28.4	4.2	14	28	28	21.7	29.5	33	SPEG12-10

# SPX Branch Y

RoHS compliant



Metric thread type

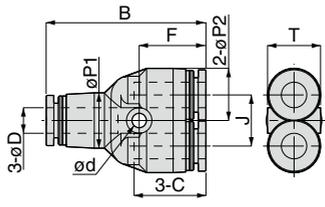
Unit : mm

Model code	Tube O.D. øD	R	A	B	L	øP	Tube end C	J	ød	F	T	Hex. H	Effective area (mm <sup>2</sup> )	Weight (g)	CAD file name
SPX4-M5	4	M5×0.8	3.2	37.6	34.4	10	14.9	11	3.4	14.1	10	10	1.5	9.9	SPX4-M5
SPX4-M6		M6×1	4	38.6	34.6								3.3	11	SPX4-M6
SPX4-01		R1/8	8	40.6	36.6								4.2	13	SPX4-01
SPX4-02		R1/4	11	43.6	37.6								4.2	21	SPX4-02
SPX6-M5	6	M5×0.8	3.2	41.4	38.2	12.5	17	12	3.4	15.8	12.5	12	1.5	15	SPX6-M5
SPX6-M6		M6×1	4	42.4	38.4								6.5		15
SPX6-01		R1/8	8	44.4	40.4								10	17	SPX6-01
SPX6-02		R1/4	11	47.4	41.3								14	24	SPX6-02
SPX6-03	R3/8	12	49.2	42.8	17	36	SPX6-03								
SPX8-01	8	R1/8	8	48.7	44.7	14.5	18.1	14	3.4	17.2	14.5	14	22	22	SPX8-01
SPX8-02		R1/4	11	51.7	45.7								16.5	27	SPX8-02
SPX8-03		R3/8	12	53.5	47.2								17	39	SPX8-03
SPX10-01	10	R1/8	8	55.3	51.3	18	20.7	18	4.5	19.5	18	17	22.1	48	SPX10-01
SPX10-02		R1/4	11	58.3	52.3								30	48	SPX10-02
SPX10-03		R3/8	12	59.3	53								48	SPX10-03	
SPX10-04		R1/2	15	62.3	54.1								21	67	SPX10-04
SPX12-02	12	R1/4	11	63.5	57.5	21	23.4	20	4.2	22.2	21	21	59	59	SPX12-02
SPX12-03		R3/8	12	64.5	58.2								61	61	SPX12-03
SPX12-04		R1/2	15	67.5	59.3								75	75	SPX12-04
SPX16-03	16	R3/8	11	76.1	69.8	25	24.1	24	4.5	22.1	25	22	54.5	84	SPX16-03
SPX16-04		R1/2	15	80.1	71.9								59	88	SPX16-04

\*. "L" is a reference value for height dimension after tightening taper thread.

# SPY Union Y

RoHS compliant

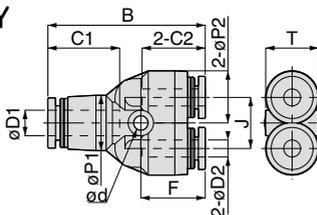


Unit : mm

Model code	Tube O.D. øD	B	øP1	øP2	Tube end C	J	ød	F	T	Effective area (mm <sup>2</sup> )	Weight (g)	CAD file name
SPY4	4	32.8	10	10	14.9	11	3.4	14.1	10	4.2	7.6	SPY4
SPY6	6	37.7	13	12.5	17	12	3.4	15.8	12.5	10	10	SPY6
SPY8	8	42.4	15	14.5	18.1	14	3.4	17.2	14.5	16.5	15	SPY8
SPY10	10	48.4	18	18	20.7	18	4.5	19.5	18	27	25	SPY10
SPY12	12	54.8	21.5	21	23.4	20	4.2	22.2	21	38	35	SPY12
SPY16	16	62.2	25	25	24.1	24	4.5	22.1	25	56.5	42	SPY16

### SPW Unequal Union Y

RoHS compliant

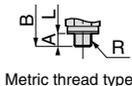
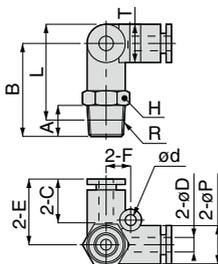


Unit : mm

Model code	Tube O.D. øD1	Tube O.D. øD2	B	øP1	øP2	Tube end C1	Tube end C2	J	ød	F	T	Effective area (mm <sup>2</sup> )	Weight (g)	CAD file name
SPW6-4	6	4	37.2	13	12.5	17	14.9	12	3.4	15.2	12.5	4.2	9.7	SPW6-4
SPW8-6	8	6	42.5	15	14.5	18.1	17	14	3.4	17.3	14.5	10	14	SPW8-6
SPW10-8	10	8	48.1	18	18	20.7	18.2	18	4.5	19.2	18	17	22	SPW10-8
SPW12-10	12	10	54.6	21.5	21	23.4	20.2	20	4.2	22	21	27	34	SPW12-10

### SPVX Tripod Elbow

RoHS compliant



Unit : mm

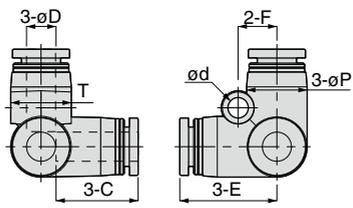
Model code	Tube O.D. øD	R	A	B	L	øP	Tube end C	E	Hex. H	ød	F	T	Effective area (mm <sup>2</sup> )	Weight (g)	CAD file name	
SPVX4-M5	4	M5 × 0.8	3.2	21.7	23.5	10	14.9	16.9	10	3.2	6.5	10	2.3	11	SPVX4-M5	
SPVX4-M6		M6 × 1	4	22.7	23.7								3.6		SPVX4-M6	
SPVX4-01		R1/8	8	24.7	25.7								4		SPVX4-01	
SPVX4-02		R1/4	11	27.7	26.7								3.5		23	SPVX4-02
SPVX6-M5	6	M5 × 0.8	3.2	25.3	28.4	12.5	17	20.1	14	4.2	8	12.5	2.3	17	SPVX6-M5	
SPVX6-M6		M6 × 1	4	26.3	28.6								5.9		SPVX6-M6	
SPVX6-01		R1/8	8	28.3	30.6								8.5		18	SPVX6-01
SPVX6-02		R1/4	11	31.3	31.5								8		26	SPVX6-02
SPVX6-03	R3/8	12	33.1	33	8.4	39	SPVX6-03									
SPVX8-01	8	R1/8	8	30.4	33.7	14.5	18.1	22.1	14	4.2	10	14.5	17.1	24	SPVX8-01	
SPVX8-02		R1/4	11	33.4	34.6								17.5		30	SPVX8-02
SPVX8-03		R3/8	12	35.2	36.1								17.4		42	SPVX8-03
SPVX10-01		R1/8	8	35.2	40								21.7		38	SPVX10-01
SPVX10-02	10	R1/4	11	38.2	40.9	17.5	20.2	26.2	17	4.2	12	17.5	31.5	44	SPVX10-02	
SPVX10-03		R3/8	12	39.2	41.6								28.1		52	SPVX10-03
SPVX10-04		R1/2	15	42.2	42.8								24.3		74	SPVX10-04
SPVX12-02		R1/4	11	41.2	45.7								40.9		64	SPVX12-02
SPVX12-03	12	R3/8	12	42.2	46.4	21	23.4	29.4	21	4.2	14	21	45	65	SPVX12-03	
SPVX12-04		R1/2	15	45.2	47.5								44.8		81	SPVX12-04

※: "L" is a reference value for height dimension after tightening taper thread.

## SPVU Tripod Union

RoHS compliant

OP. P.754 3D CAD CAD



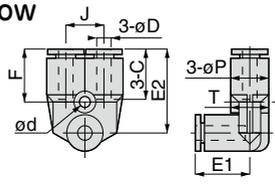
Unit : mm

Model code	Tube O.D. øD	øP	Tube end C	E	ød	F	T	Effective area (mm <sup>2</sup> )	Weight (g)	CAD file name
SPVU4	4	10	14.9	16.9	3.2	6.5	10	3.7	7	SPVU4
SPVU6	6	12.5	17	20.1	4.2	8	12.5	8.3	9.8	SPVU6
SPVU8	8	14.5	18.1	22.1	4.2	10	14.5	16	15	SPVU8
SPVU10	10	17.5	20.2	26.2	4.2	12	17.5	30.2	24	SPVU10
SPVU12	12	21	23.4	29.4	4.2	14	21	40.2	34	SPVU12

## SPAU Branch Union Elbow

RoHS compliant

OP. P.754 3D CAD CAD



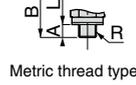
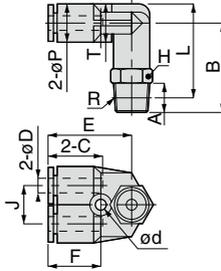
Unit : mm

Model code	Tube O.D. øD	E1	øP	Tube end C	J	E2	ød	F	T	Effective area (mm <sup>2</sup> )	Weight (g)	CAD file name
SPAU4	4	16.9	10	14.9	11	22.7	3.2	14.2	10	2.5	7.8	SPAU4
SPAU6	6	19.8	12.5	17	12	26.2	4.2	15.5	12.5	7.2	11	SPAU6
SPAU8	8	22.7	14.5	18.1	14	29.4	4.2	16.9	14.5	16.3	16	SPAU8
SPAU10	10	25	17.5	20.2	18	33.5	4.2	18.5	17.5	27.9	26	SPAU10
SPAU12	12	29.4	21	23.4	20	35.2	4.2	20.4	21	40	37	SPAU12

FITTING

### SPAX Branch Elbow

RoHS compliant



Unit : mm

Model code	Tube O.D. øD	R	A	B	L	øP	Tube end C	J	E	Hex. H	ød	F	T	Effective area (mm <sup>2</sup> )	Weight (g)	CAD file name	
SPAX4-M5	4	M5×0.8	3.2	21.7	23.5	10	14.9	11	22.7	10	3.2	14.2	10	2.2	11	SPAX4-M5	
SPAX4-M6		M6×1	4	22.7	23.7									2.5		SPAX4-M6	
SPAX4-01		R1/8	8	24.7	25.7									2.7		14	SPAX4-01
SPAX4-02		R1/4	11	27.7	26.7									2.5		22	SPAX4-02
SPAX6-M5	6	M5×0.8	3.2	25	28.1	12.5	17	12	26.2	12	4.2	15.5	12.5	2.2	17	SPAX6-M5	
SPAX6-M6		M6×1	4	26	28.3									6.4		18	SPAX6-M6
SPAX6-01		R1/8	8	28	30.3									6.9		17	SPAX6-01
SPAX6-02		R1/4	11	31	31.2									6.6		25	SPAX6-02
SPAX6-03	R3/8	12	32.8	32.7	6.8	37	SPAX6-03										
SPAX8-01	8	R1/8	8	31	34.3	14.5	18.1	14	29.4	14	4.2	16.9	14.5	14.6	23	SPAX8-01	
SPAX8-02		R1/4	11	34	35.2									15		40	SPAX8-02
SPAX8-03		R3/8	12	35.8	36.7									15		40	SPAX8-03
SPAX10-01	10	R1/8	8	34	38.8	17.5	20.2	18	33.5	17	4.2	18.5	17.5	21.6	40	SPAX10-01	
SPAX10-02		R1/4	11	37	39.7									26.1		42	SPAX10-02
SPAX10-03		R3/8	12	38	40.4									27.2		49	SPAX10-03
SPAX10-04		R1/2	15	41	41.6									29.9		69	SPAX10-04
SPAX12-02	12	R1/4	11	41.2	45.7	21	23.4	20	35.2	21	4.2	20.4	21	38.2	62	SPAX12-02	
SPAX12-03		R3/8	12	42.2	46.4									43.1		63	SPAX12-03
SPAX12-04		R1/2	15	45.2	47.5									42.1		78	SPAX12-04

※. "L" is a reference value for height dimension after tightening taper thread.

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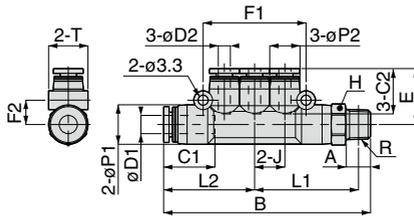
Standard Series

Mini Series

Stainless Series

### SPKD Run Triple

RoHS compliant



Unit : mm

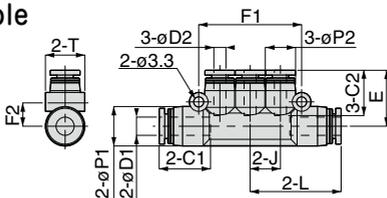
形式	Tube O.D. øD1	Tube O.D. øD2	R	A	B	E	L1	L2	J	øP1	øP2	Tube end C1	Tube end C2	F1	F2	Hex. H	T	Effective area (mm <sup>2</sup> )	Weight (g)	CAD file name
SPKD6-4-01	6	4	R1/8	8	68.4	18.4	34.3	30.1	10	13	10	17	14.9	34	8	12	13	5	22	SPKD6-4-01
SPKD8-4-02	8	4	R1/4	11	73.7	19.2	36.5	31.2	10	15	10	18.1	14.9	34	9.2	14	15	5.2	31	SPKD8-4-02
SPKD8-6-02		6			80.7	21.3	40	34.7	12									13		17
SPKD10-8-03	10	8	R3/8	12	93	23.7	46.7	40	14	17.5	15	20.7	18.1	46.2	10.5	17	17.5	19.1	55	SPKD10-8-03

※. "L1" is a reference value for height dimension after tightening thread.



## SPKG Unequal Triple

RoHS compliant

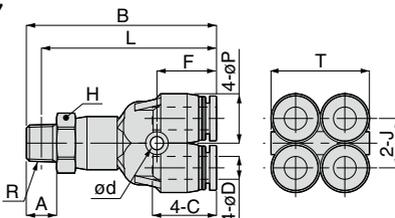


Unit : mm

Model code	Tube O.D. øD1	Tube O.D. øD2	L	E	J	øP1	øP2	Tube end C1	Tube end C2	F1	F2	T	Effective area (mm <sup>2</sup> )	Weight (g)	CAD file name
SPKG6-4	6	4	30.05	18.4	10	13	10	17	14.9	34	8	13	5	15	SPKG6-4
SPKG8-4	8	4	31.2	19.2	10	15	10	18.1	14.9	34	9.2	15	6	19	SPKG8-4
SPKG8-6		6	34.7	21.3	12		13		17	40.2	9		10.1	22	SPKG8-6
SPKG10-6	10	6	40	23.8	14	17.5	15	20.7	17	46.2	10.5	17.5	11.2	30	SPKG10-6
SPKG10-8		8		23.7					18.1				19.1	32	SPKG10-8

## SPRX Branch Double Y

RoHS compliant



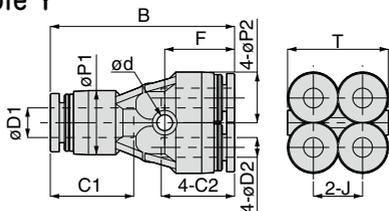
Unit : mm

Model code	Tube O.D. øD	R	A	B	L	øP	Tube end C	J	Hex. H	ød	F	T	Effective area (mm <sup>2</sup> )	Weight (g)	CAD file name
SPRX4-01	4	R1/8	8	45.7	41.7	10.5	14.9	10	12	3.2	14.2	20.5	1.5	20	SPRX4-01
SPRX4-02		R1/4	11	48.7	42.7				14				1.4	27	SPRX4-02
SPRX6-01	6	R1/8	8	50.3	46.3	13	17	13	14	3.5	15.8	26	9	27	SPRX6-01

※ . "L" is a reference value for height dimension after tightening thread.

## SPRG Unequal Double Y

RoHS compliant



Unit : mm

Model code	Tube O.D. øD1	Tube O.D. øD2	B	øP1	øP2	Tube end C1	Tube end C2	J	ød	F	T	Effective area (mm <sup>2</sup> )	Weight (g)	CAD file name
SPRG6-4	6	4	37.5	13	10.5	17	14.9	10	3.2	14.2	20.5	1.5	13	SPRG6-4
SPRG8-6	8	6	42	14	13	18.2	17	13	3.5	15.8	26	8.2	20	SPRG8-6



Page for special specifications



3D CAD data is available at PISCO website.



CAD data is available at PISCO website.

FITTING

CONTROLLER

VALVE

TUBE

MAKE-TO-OFFER PRODUCTS

166

Stainless Series

Chemical Series

PP Series

EG Series

Anti-static & Pass Series

Self-temperature Control

Minimal Series

Stop Fitting Series

Rotary Series

Twist-Proof Fitting

Block and Connector

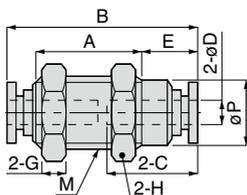
Coupling

Color Cap

FITTING

### SPM Bulkhead Union

RoHS compliant



OP.  
P.754

3D  
CAD

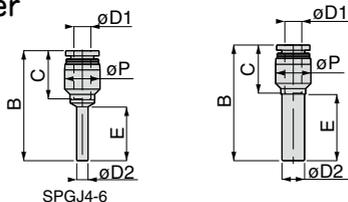
CAD

Unit : mm

Model code	Tube O.D. øD	M	B	E	A	øP	Tube end C	Hex. H	G	Effective area (mm <sup>2</sup> )	Weight (g)	CAD file name
SPM4	4	M12 × 1	30.8	10.4	15	10.8	14.9	14	4	5.3	16	SPM4
SPM6	6	M14 × 1	34.9	11	18	12.5	17	17	4	12.5	24	SPM6
SPM8	8	M16 × 1	37.4	14.3	16.8	14.6	18.2	19	4	20	30	SPM8
SPM10	10	M20 × 1	42.4	12.7	23	18.5	20.7	24	5	35	56	SPM10
SPM12	12	M22 × 1	47.6	12.3	29	20.4	23.3	27	6	71	81	SPM12

### SPGJ Plug-in Reducer

RoHS compliant



OP.  
P.754

3D  
CAD

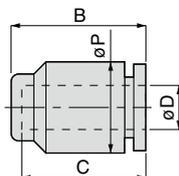
CAD

Unit : mm

Model code	Tube O.D. øD1	Tube dia. øD2	B	E	øP	Tube end C	Effective area (mm <sup>2</sup> )	Weight (g)	CAD file name
SPGJ4-6	6	4	38.8	19	12.5	17	4	3.3	SPGJ4-6
SPGJ6-4	4	6	37.7	22.3	10	14.9	5	2.7	SPGJ6-4
SPGJ8-4	4	8	40.2	23.3	12.5	14.9	4.5	3.7	SPGJ8-4
SPGJ8-6	6		17			11.5	3.8	SPGJ8-6	
SPGJ10-4	4	10	42.2	28.3	12.5	14.9	4.5	4.1	SPGJ10-4
SPGJ10-6	6		43.8			17	11.5	4.3	SPGJ10-6
SPGJ10-8	8		43.7			24.8	14.5	18.1	22.5
SPGJ12-6	6	12	48.8	33.5	14.5	17	10.5	5.8	SPGJ12-6
SPGJ12-8	8		49.7			18.1	23	6.5	SPGJ12-8
SPGJ12-10	10		50			28.8	17.5	20.2	31.5

### SPPF Cap

RoHS compliant



OP.  
P.754

3D  
CAD

CAD

Unit : mm

Model code	Tube O.D. øD	B	øP	C	Weight (g)	CAD file name
SPPF4	4	16.4	10	14.9	2.2	SPPF4
SPPF6	6	18.5	12.5	17	3.1	SPPF6
SPPF8	8	19.9	14.5	18.4	4.4	SPPF8
SPPF10	10	22.3	17.5	20.7	7.3	SPPF10
SPPF12	12	24.9	21	22.9	11	SPPF12



# SAFETY Instructions

This safety instructions aim to prevent personal injury and damage to properties by requiring proper use of PISCO products.

Be certain to follow ISO 4414 and JIS B 8370

ISO 4414 : Pneumatic fluid power...Recommendations for the application of equipment to transmission and control systems.

JIS B 8370 : General rules and safety requirements for systems and their components.

This safety instructions is classified into "Danger", "Warning" and "Caution" depending on the degree of danger or damages caused by improper use of PISCO products.



**Danger**

Hazardous conditions. It can cause death or serious personal injury.



**Warning**

Hazardous conditions depending on usages. Improper use of PISCO products can cause death or serious personal injury.



**Caution**

Hazardous conditions depending on usages. Improper use of PISCO products can cause personal injury or damages to properties.



## Warning

### 1. Selection of pneumatic products

- ① A user who is a pneumatic system designer or has sufficient experience and technical expertise should select PISCO products.
- ② Due to wide variety of operating conditions and applications for PISCO products, carry out the analysis and evaluation on PISCO products. The pneumatic system designer is solely responsible for assuring that the user's requirements are met and that the application presents no health or safety hazards. All designers are required to fully understand the specifications of PISCO products and constitute all systems based on the latest catalog or information, considering any malfunctions.

### 2. Handle the pneumatic equipment with enough knowledge and experience

- ① Improper use of compressed air is dangerous. Assembly, operation and maintenance of machines using pneumatic equipment should be conducted by a person with enough knowledge and experience.

### 3. Do not operate machine / equipment or remove pneumatic equipment until safety is confirmed.

- ① Make sure that preventive measures against falling work-pieces or sudden movements of machine are completed before inspection or maintenance of these machine.
- ② Make sure the above preventive measures are completed. A compressed air supply and the power supply to the machine must be off, and also the compressed air in the systems must be exhausted.
- ③ Restart the machines with care after ensuring to take all preventive measures against sudden movements.

## Disclaimer

1. PISCO does not take any responsibility for any incidental or indirect loss, such as production line stop, interruption of business, loss of benefits, personal injury, etc., caused by any failure on use or application of PISCO products.
2. PISCO does not take any responsibility for any loss caused by natural disasters, fires not related to PISCO products, acts by third parties, and intentional or accidental damages of PISCO products due to incorrect usage.
3. PISCO does not take any responsibility for any loss caused by improper usage of PISCO products such as exceeding the specification limit or not following the usage the published instructions and catalog allow.
4. PISCO does not take any responsibility for any loss caused by remodeling of PISCO products, or by combinational use with non-PISCO products and other software systems.
5. The damages caused by the defect of Pisco products shall be covered but limited to the full amount of the PISCO products paid by the customer.



# SAFETY INSTRUCTION MANUAL

PISCO products are designed and manufactured for use in general industrial machines. Be sure to read and follow the instructions below.

## Danger

1. Do not use PISCO products for the following applications.
  - ① Equipment used for maintaining / handling human life and body.
  - ② Equipment used for moving / transporting human.
  - ③ Equipment specifically used for safety purposes.

## Warning

1. Do not use PISCO products under the following conditions.
  - ① Beyond the specifications or conditions stated in the catalog, or the instructions.
  - ② Under the direct sunlight or outdoors.
  - ③ Excessive vibrations and impacts.
  - ④ Exposure / adhere to corrosive gas, inflammable gas, chemicals, seawater, water and vapor. \*  
\* Some products can be used under the condition above(④), refer to the details of specification and condition of each product.
2. Do not disassemble or modify PISCO products, which affect the performance, function, and basic structure of the product.
3. Turn off the power supply, stop the air supply to PISCO products, and make sure there is no residual air pressure in the pipes before maintenance and inspection.
4. Do not touch the release-ring of push-in fitting when there is a working pressure. The lock may be released by the physical contact, and tube may fly out or slip out.
5. Frequent switchover of compressed air may generate heat, and there is a risk of causing burn injury.
6. Avoid any load on PISCO products, such as a tensile strength, twisting and bending. Otherwise, there is a risk of causing damage to the products.
7. As for applications where threads or tubes swing / rotate, use Rotary Joints, High Rotary Joints or Multi-Circuit Rotary Block only. The other PISCO products can be damaged in these applications.
8. Use only Die Temperature Control Fitting Series, Tube Fitting Stainless SUS316 Series, Tube Fitting Stainless SUS316 Compression Fitting Series or Tube Fitting Brass Series under the condition of over 60°C (140° F) water or thermal oil. Other PISCO products can be damaged by heat and hydrolysis under the condition above.
9. As for the condition required to dissipate static electricity or provide an antistatic performance, use EG series fitting and antistatic products only, and do not use other PISCO products. There is a risk that static electricity can cause system defects or failures.
10. Use only Fittings with a characteristic of spatter-proof such as Anti-spatter or Brass series in a place where flame and weld spatter is produced. There is a risk of causing fire by sparks.
11. Turn off the power supply to PISCO products, and make sure there is no residual air pressure in the pipes and equipment before maintenance. Follow the instructions below in order to ensure safety.
  - ① Make sure the safety of all systems related to PISCO products before maintenance.
  - ② Restart of operation after maintenance shall be proceeded with care after ensuring safety of the system by preventive measures against unexpected movements of machines and devices where pneumatic equipment is used.
  - ③ Keep enough space for maintenance when designing a circuit.
12. Take safety measures such as providing a protection cover if there is a risk of causing damages or fires on machine / facilities by a fluid leakage.

## ⚠ Caution

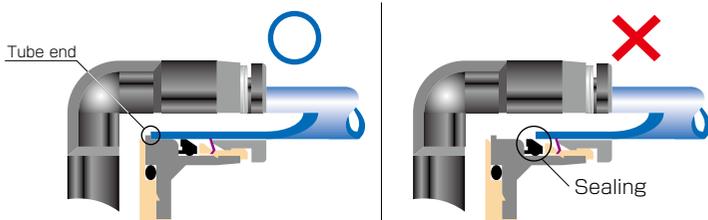
1. Remove dusts or drain before piping. They may get into the peripheral machine / facilities and cause malfunction.
2. When inserting an ultra-soft tube into push-in fitting, make sure to place an Insert Ring into the tube edge. There is a risk of causing the escape of tube and a fluid leakage without using an Insert Ring.
3. The product incorporating NBR as seal rubber material has a risk of malfunction caused by ozone crack. Ozone exists in high concentrations in static elimination air, clean-room, and near the high-voltage motors, etc. As a countermeasure, material change from NBR to HNBR or FKM is necessary. Consult with PISCO for more information.
4. Special option "Oil-free" products may cause a very small amount of a fluid leakage. When a fluid medium is liquid or the products are required to be used in harsh environments, contact us for further information.
5. In case of using non-PISCO brand tubes, make sure the tolerance of the outer tube diameter is within the limits of Table 1.

● Table 1. Tube O.D. Tolerance

mm size	Nylon tube	Polyurethane tube	inch size	Nylon tube	Polyurethane tube
ø1.8mm	—	± 0.05mm	ø1/8	± 0.1mm	± 0.15mm
ø3mm	—	± 0.15mm	ø5/32	± 0.1mm	± 0.15mm
ø4mm	± 0.1mm	± 0.15mm	ø3/16	± 0.1mm	± 0.15mm
ø6mm	± 0.1mm	± 0.15mm	ø1/4	± 0.1mm	± 0.15mm
ø8mm	± 0.1mm	± 0.15mm	ø5/16	± 0.1mm	± 0.15mm
ø10mm	± 0.1mm	± 0.15mm	ø3/8	± 0.1mm	± 0.15mm
ø12mm	± 0.1mm	± 0.15mm	ø1/2	± 0.1mm	± 0.15mm
ø16mm	± 0.1mm	± 0.15mm	ø5/8	± 0.1mm	± 0.15mm

## 6. Instructions for Tube Insertion

- ① Make sure that the cut end surface of the tube is at right angle without a scratch on the surface and deformations.
- ② When inserting a tube, the tube needs to be inserted fully into the push-in fitting until the tubing edge touches the tube end of the fitting as shown in the figure below. Otherwise, there is a risk of leakage.



Tube is not fully inserted up to tube end.

- ③ After inserting the tube, make sure it is inserted properly and not to be disconnected by pulling it moderately.
- ※ When inserting tubes, Lock-claws may be hardly visible in the hole, observed from the front face of the release-ring. But it does not mean the tube will surely escape. Major causes of the tube escape are the followings;
- ① Shear drop of the lock-claws edge
  - ② The problem of tube diameter (usually small)
- Therefore, follow the above instructions from ① to ③, even lock-claws is hardly visible.

7. Instructions for Tube Disconnection

- ① Make sure there is no air pressure inside of the tube, before disconnecting it.
- ② Push the release-ring of the push-in fitting evenly and deeply enough to pull out the tube toward oneself. By insufficient pushing of the release-ring, the tube may not be pulled out or damaged by scratch, and tube shavings may remain inside of the fitting, which may cause the leakage later.

8. Instructions for Installing a fitting

- ① When installing a fitting, use proper tools to tighten a hexagonal-column or an inner hexagonal socket. When inserting a hex key into the inner hexagonal socket of the fitting, be careful so that the tool does not touch lock-claws. The deformation of lock-claws may result in a poor performance of systems or an escape of the tube.
- ② Refer to Table 2 which shows the recommended tightening torque. Do not exceed these limits to tighten a thread. Excessive tightening may break the thread part or deform the gasket and cause a fluid leakage. Tightening thread with tightening torque lower than these limits may cause a loosened thread or a fluid leakage.
- ③ Adjust the tube direction while tightening thread within these limits, since some PISCO products are not rotatable after the installation.

● Table 2: Recommended tightening torque / Sealock color / Gasket materials

Thread type	Thread size	Tightening torque	Sealock color	Gasket materials
Metric thread	M3 × 0.5	0.7N·m	—	SUS304 NBR
	M5 × 0.8	1.0 ~ 1.5N·m		
	M6 × 1	2 ~ 2.7N·m		
	M3 × 0.5	0.5 ~ 0.6N·m		POM
	M5 × 0.8	1 ~ 1.5N·m		
	M6 × 0.75	0.8 ~ 1N·m		
Taper pipe thread	M8 × 0.75	1 ~ 2N·m	White	—
	R1/8	7 ~ 9N·m		
	R1/4	12 ~ 14N·m		
	R3/8	22 ~ 24N·m		
Unified thread	R1/2	28 ~ 30N·m	—	SUS304, NBR
	No.10-32UNF	1.0 ~ 1.5N·m		
National pipe thread taper	1/16-27NPT	7 ~ 9N·m	White	—
	1/8-27NPT	7 ~ 9N·m		
	1/4-18NPT	12 ~ 14N·m		
	3/8-18NPT	22 ~ 24N·m		
	1/2-14NPT	28 ~ 30N·m		

※ These values may differ for some products. Refer to each specification as well.

9. Instructions for removing a fitting

- ① When removing a fitting, use proper tools to loosen a hexagonal-column or an inner hex bolt.
- ② Remove the sealant stuck on the mating equipment. The remained sealant may get into the peripheral equipment and cause malfunctions.

10. Arrange piping avoiding any load on fittings and tubes such as twist, tensile, moment load, shaking and physical impact. These may cause damages to fittings, tube deformations, bursting and the escape of tubes.

## Common Safety Instructions for Fittings

Before selecting or using PISCO products, read the following instructions. Read the detailed instructions for individual series as well as the instructions below.

### Warning

1. Do not use fittings with fluid medium other than air or water. (Water can be used with some series.) Contact us for using other kind of fluid medium except air and water.
2. Do not use fittings except Anti-spatter, Brass and Brass Compression Fitting series in a place where the flame and weld spatter is produced. There is a risk of causing fire by sparks.
3. As for applications where threads or tubes swing / rotate, use Rotary Joints, High Rotary Joints or Multi-Circuit Rotary Block only. The other PISCO products can be damaged in these applications.
4. Use only Die Temperature Control Fitting Series, Tube Fitting Stainless SUS316 Series, Tube Fitting Stainless SUS316 Compression Fitting Series or Tube Fitting Brass Series under the condition of over 60°C (140° F) water or thermal oil. Other PISCO products can be damaged by heat and hydrolysis under the condition above.
5. As for the condition required to dissipate static electricity or provide an antistatic performance, use EG Series fitting and antistatic products only, and do not use other PISCO products. There is a risk that static electricity can cause system defects or failures.
6. Avoid any load on PISCO products, such as a tensile strength, twisting and bending. Otherwise, there is a risk of causing damage to the products.

## ⚠ Caution

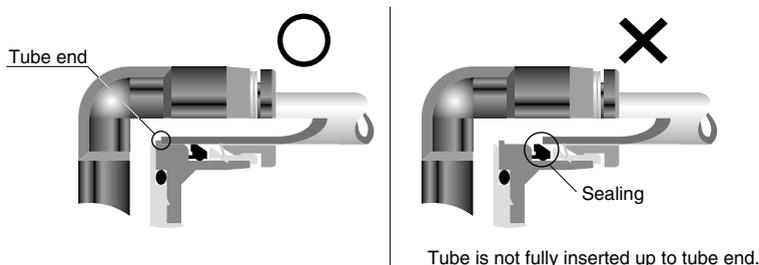
1. In case of using non-PISCO brand tubes, make sure the tolerance of the outer tube diameter is within the following limits of Table 1.

● Table 1. Tube O.D. Tolerance

mm size	Nylon tube	Urethane tube	inch size	Nylon tube	Urethane tube
ø1.8mm	—	± 0.05mm	ø1/8	± 0.1mm	± 0.15mm
ø3mm	—	± 0.15mm	ø5/32	± 0.1mm	± 0.15mm
ø4mm	± 0.1mm	± 0.15mm	ø3/16	± 0.1mm	± 0.15mm
ø6mm	± 0.1mm	± 0.15mm	ø1/4	± 0.1mm	± 0.15mm
ø8mm	± 0.1mm	± 0.15mm	ø5/16	± 0.1mm	± 0.15mm
ø10mm	± 0.1mm	± 0.15mm	ø3/8	± 0.1mm	± 0.15mm
ø12mm	± 0.1mm	± 0.15mm	ø1/2	± 0.1mm	± 0.15mm
ø16mm	± 0.1mm	± 0.15mm	ø5/8	± 0.1mm	± 0.15mm

## 2. Instructions for Tube Insertion

- ① Make sure that the cut end surface of the tube is at right angle without a scratch on the tube surface and deformations.
- ② When inserting a tube, the tube needs to be inserted fully into the push-in fitting until the tubing edge touches the tube end of the fitting as shown in the figure below. Otherwise, there is a risk of leakage.



- ③ After inserting the tube, make sure it is inserted properly and not to be disconnected by pulling it moderately.

## 3. Instructions for Tube Disconnection

- ① Make sure there is no air pressure inside of the tube, before disconnecting it.
- ② Push the release-ring of the push-in fitting evenly and deeply enough to pull out the tube toward oneself. By insufficient pushing of the release-ring, the tube may not be pulled out or damaged by scratch, and tube shavings may remain inside of the fitting, which may cause the leakage later.

#### 4. Instructions for Installing a fitting

- ① When installing a fitting, use proper tools to tighten a hexagonal-column or an inner hexagonal socket. When inserting a hex key into the inner hexagonal socket of the fitting, be careful so that the tool does not touch lock-claws. The deformation of lock-claws may result in a poor performance of systems or an escape of the tube.
- ② Refer to Table 2 which shows the recommended tightening torque. Do not exceed these limits to tighten a thread. Excessive tightening may break the thread part or deform the gasket and cause a fluid leakage. Tightening thread with tightening torque lower than these limits may cause a loosened thread or a fluid leakage.
- ③ Adjust the tube direction while tightening thread within these limits, since some PISCO products are not rotatable the installation.

● Table 2: Recommended tightening torque / Sealock color / Gasket materials

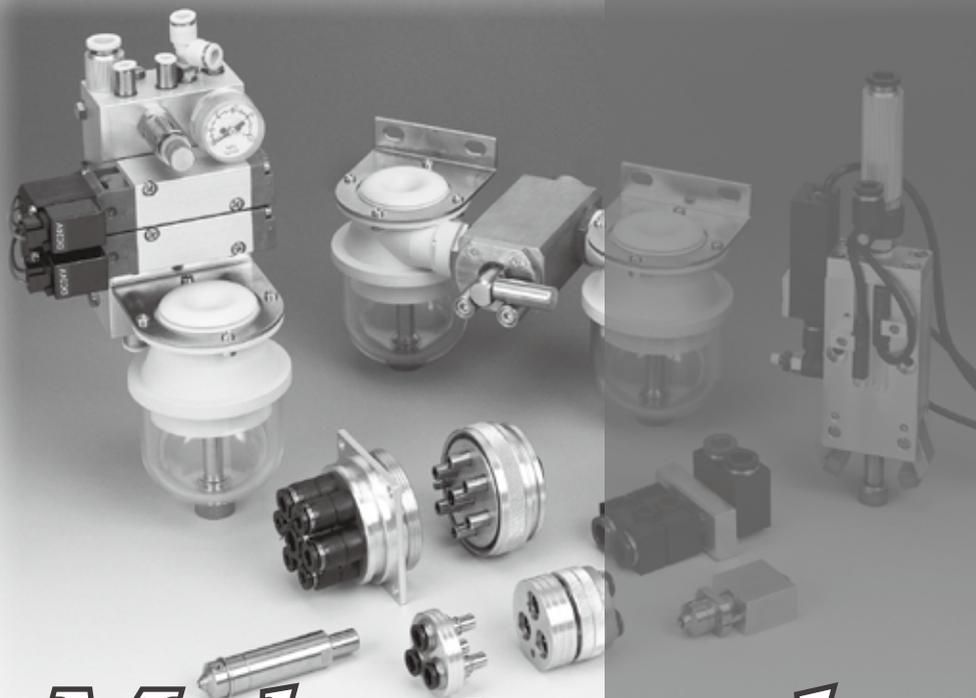
Thread type	Thread size	Tightening torque	Sealock color	Gasket materials
Metric thread	M3 × 0.5	0.7N·m	—	SUS304 NBR
	M5 × 0.8	1.0 ~ 1.5N·m		
	M6 × 1	2 ~ 2.7N·m		
	M3 × 0.5	0.5 ~ 0.6N·m		POM
	M5 × 0.8	1 ~ 1.5N·m		
	M6 × 0.75	0.8 ~ 1N·m		
	M8 × 0.75	1 ~ 2N·m		
Taper pipe thread	R1/8	7 ~ 9N·m	White	—
	R1/4	12 ~ 14N·m		
	R3/8	22 ~ 24N·m		
	R1/2	28 ~ 30N·m		
Unified thread	No.10-32UNF	1.0 ~ 1.5N·m	—	SUS304, NBR
National pipe thread taper	1/16-28NPT	7 ~ 9N·m	White	—
	1/8-27NPT	7 ~ 9N·m		
	1/4-18NPT	12 ~ 14N·m		
	3/8-18NPT	22 ~ 24N·m		
	1/2-14NPT	28 ~ 30N·m		

※. These values may differ for some products. Refer to each specification as well

#### 5. Instructions for removing a fitting

- ① When removing a fitting, use proper tools to loosen a hexagonal-column or an inner hexagonal socket.
- ② Remove the sealant stuck on the mating equipment. The remained sealant may get into the peripheral equipment and cause malfunctions.

6. Arrange piping avoiding any load on fittings and tubes such as twist, tensile, moment load, shaking and physical impact. These may cause damages to fittings, tube deformations, bursting and the escape of tubes.



# *Make-to-order products*

PISCO offers make-to-order products to support customer's various requirements such as special specifications, and special appearances.

# Special Options

## ■ Characteristics

### ● *Color option*

*Light-gray color option for resin body and release-ring.*

### ● *Seal rubber material option*

*Seal Rubber Selection: FKM or EPDM.*

### ● *Oil-free option*

*Suitable for Oil-free Environment.*

### ● *Release-ring color option*

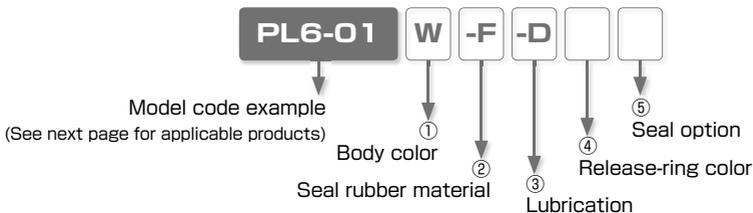
*Changeable to Red Color*

### ● *Non-purple option*

*Suppress CU ion and F ion.*

※ Note: With this option, Check Valve and Stop Fitting, etc. do not have marking on the brass parts. Be careful when piping.

## Model Designation (Example)



### ① Body color

Code	W	No code
Body color	Light-gray	Standard color

※ . W: Release-ring color is light-gray

### ② Seal rubber material

Code	-F	-E	No code
Material	FKM	EPDM (Oil-free)	Standard seal rubber

※ 1. FKM: Release-ring color is brown. Non-purple option is not available with FKM option.

※ 2. EPDM: All oil-free. Release-ring color is yellow.

※ 3. EPDM: Not available for Thread size M3, M6 and Fittings with Inch sized Tube dia.

### ③ Lubrication

Code	-D	No code
Option	Oil-free	Standard lubrication

※ 1. Oil-free : Release-ring color is yellow.

※ 2. The products with oil-free option are assembled without intentional use of lubrication through its production process. It may cause problems such as degradation of airtightness and increase of friction.

### ④ Release-ring color

Code	-R	No code
Color	Red	Standard color

### ⑤ Seal option (Taper pipe thread only)

Code	-P	No code
Option	Non-purple	Standard

※ 1. Non-purple option is not available with seal rubber FKM

※ . See next page for "Reference Chart of Special Option" .

※ . Contact the nearest sales office for the price.

## Reference Chart of Special Option

○ : Available, × : Not available

Series	Standard specification						Special specification					
	Body Color and Packaging Option	Body color	Release-ring color	Seal rubber material	Lubrication	Seal option	①	②	③	④	⑤	
							Body color	Seal rubber material	Lubrication	Release-ring color	Seal option	
							W* <sup>1</sup>	-F* <sup>2</sup>	-E* <sup>3</sup>	-D* <sup>4</sup>	-R	-P* <sup>2</sup>
Light-gray	FKM	EPDM	Oil-free	Red	Non-purple							
Tube Fitting <b>Standard Series</b>	—	Black	Black	NBR	Turbin oil	With seal coat	—	○* <sup>5</sup>	○	○	○	○
	Light-gray	Light-gray	Light-gray				Std. option	○	○	○	×	○
	Clean-room pkg	Light-gray	Light-blue		Fluorochemical grease	—	○	○* <sup>6</sup>	○* <sup>6</sup>	×	×	
	Light-gray + Clean-room pkg	Light-gray	Light-gray		Std. option	○	○	○	×	×		
Tube Fitting <b>Mini Series</b>	—	Black	Black	NBR	Turbin oil	With seal coat	—	○* <sup>5</sup>	○	○	○	○
	Light-gray	Light-gray	Light-gray				Std. option	○	○	○	×	○
	Clean-room pkg	Light-gray	Light-blue		Fluorochemical grease	—	○	○* <sup>6</sup>	○* <sup>6</sup>	×	×	
	Light-gray + Clean-room pkg	Light-gray	Light-gray		Std. option	○	○	○	×	×		
Tube Fitting <b>Stainless SUS304 Series</b>	—	Black	Dark-blue	FKM	Turbin oil	With seal coat	×	Std. spec.	×	○* <sup>7</sup>	×	×
Tube Fitting <b>Stainless SUS303 Equivalent Corrosivity Series</b>	—	Black	Dark-blue	HNBR	Turbin oil	With seal coat	○	○	○* <sup>7</sup>	○* <sup>7</sup>	×	○
Tube Fitting <b>EG Series</b>	—	Black	Black	NBR	Turbin oil	With seal coat	×	○	○* <sup>8</sup>	×	×	○
Tube Fitting <b>Brass Series</b>	—	—	—	HNBR / FM / NBR	Turbin oil	With seal coat	×	Std. option	○	○	×	○
Tube Fitting <b>Long Type</b>	—	—	Black	NBR	Turbin oil	With seal coat	×	○* <sup>5</sup>	○	○	○	○
Speed Controller Series	—	Black	Black	NBR	Turbin oil	With seal coat	—	○* <sup>5</sup>	×	×	○	○
	Light-gray	Light-gray	Light-gray				Std. option	○	×	×	×	○
	Clean-room pkg	Light-gray	Light-blue		Fluorochemical grease	—	○	×	×	×	×	
	Light-gray + Clean-room pkg	Light-gray	Light-gray		Std. option	○	×	×	×	×		
Speed Controller <b>SUS303 Equivalent Corrosivity</b>	—	Black	Dark-blue	HNBR	Turbin oil	With seal coat	○	○	×	×	×	○
Throttle (Needle) Valve Standard Series	—	Black	Black	NBR	Turbin oil	With seal coat	—	○* <sup>5</sup>	×	×	○	○
	Light-gray	Light-gray	Light-gray				Std. option	○	×	×	×	○
	Clean-room pkg	Light-gray	Light-blue		Fluorochemical grease	—	○	×	×	×	×	
	Light-gray + Clean-room pkg	Light-gray	Light-gray		Std. option	○	×	×	×	×		
Fixed Orifice Joint Series	—	Black	Black	NBR	Turbin oil	With seal coat	○	○	○	○	○* <sup>9</sup>	○
Regulator Series (RVC, RVS, RVU, RVCU, RVUM)	—	Black	Black	NBR	Turbin oil	With seal coat	○	×	×	×	○* <sup>9</sup>	○
Check Valve Series	—	Black	Black	NBR	Turbin oil	With seal coat	○* <sup>10</sup>	×	×	×	○* <sup>9</sup>	○
Check Valve Series (Resin Type)	—	Light-gray	Light-gray	NBR	Turbin oil	With seal coat	Std. option	×	×	×	×	○

※ 1. W: Release-ring color is light-gray

※ 2. Seal option non-purple is not available with seal rubber material FKM

※ 3. EPDM: All oil-free. Release-ring color is yellow. Thread size M3, M6 and Fitting with inch sized Tube dia are not available.

※ 4. Release-ring color: Yellow.

※ 5. Release-ring color: Brown.

※ 6. Release-ring color: Light-blue.

※ 7. Release-ring color: Dark-blue.

※ 8. Release-ring color: Black

※ 9. Release-ring Red is not selectable with body color Light-gray.

※ 10. Not available for CVU4-4, CVU6-6 and CVU8-8.

※ Contact the nearest sales office for other special specifications.

■ Reference chart of Appearance Color Combination (For Fitting)

Series	Resin color or Option	Tube dia.		Seal rubber material		Lubrication	Release-ring color	
				-F FKM	-E EPDM	-D Oil-free	-R Red	
Tube Fitting <b>Standard Series</b> Tube Fitting <b>Mini Series</b>	-	mm size						
		inch size						
	Light-gray	mm size						
		inch size						
	Clean-room pkg	mm size						
		inch size						
	Light-gray + Clean-room pkg	mm size						
		inch size						
	Tube Fitting <b>Stainless SUS304 Series</b>	-	mm size		Std. spec.			
	Tube Fitting <b>Stainless SUS303 Equivalent Corrosivity Series</b>	-	mm size					
		Light-gray	mm size					

## Reference chart of Appearance Color Combination (For Controller)

Series	Resin color or Option	Tube dia.		Seal rubber material		Release-ring color
				-F FKM	-R レッド	
Speed Controller Series Throttle (Needle) Valve Standard Series	-	mm size				
		inch size				
	Light-gray	mm size				
		inch size				
	Clean-room pkg	mm size				
		inch size				
	Light-gray + Clean-room pkg	mm size				
		inch size				

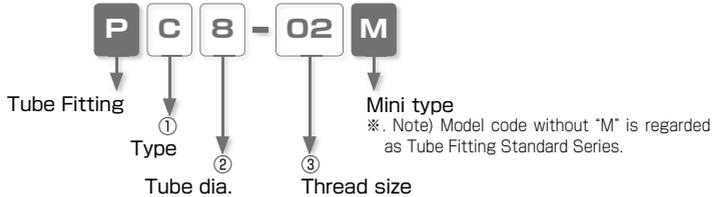
※ Contact the nearest sales office for other special specifications.

# Space-Saving Options

## Characteristics

- Suitable for Installing in Limited Spaces.

## Model Designation (Example)



### ① Type

Code	Type	Code	Type	Code	Type
L	Elbow	B	Branch Tee	D	Run Tee

### ② Tube dia.

Code	8	10
Size (mm)	ø8	ø10

### ③ Thread size

Thread size	Taper pipe thread		
Code	01	02	03
Size	R1/8	R1/4	R3/8

# Make-to-order products

FITTING

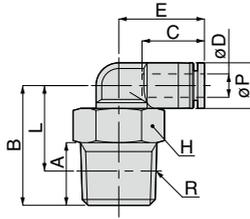
CONTROLLER

VALVE

TUBE

**PL**  
Mini

## Elbow



Unit : mm

Model code	Tube O.D. $\phi D$	R	A	B	Tube end C	L	Hex. H	E	$\phi P$	Weight (g)
PL8-01M	8	R1/8	8	22.5	18.1	18.5	12	21.9	15	11.9
PL8-02M		R1/4	11	25.5		19.5	14			17.5
PL8-03M		R3/8	12	26.5		20.2	17			27.9
PL10-02M	10	R1/4	11	27	20.2	21	14	24.4	18	20.9
PL10-03M		R3/8	12	28		21.7	17			28.8

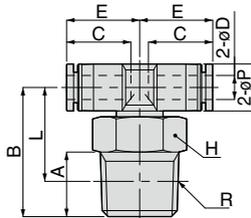
※ . "L" is a reference value for height dimension after tightening thread.

MAKE-TO-ORDER  
PRODUCTS

761

**PB**  
Mini

## Branch Tee



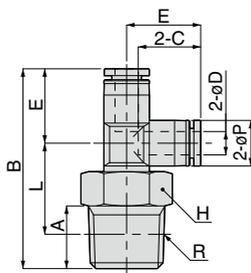
Unit : mm

Model code	Tube O.D. $\phi D$	R	A	B	Tube end C	L	Hex. H	E	$\phi P$	Weight (g)
PB8-01M	8	R1/8	8	22.5	18.1	18.5	12	21.9	15	12.8
PB8-02M		R1/4	11	25.5		19.5	14			18.2
PB8-03M		R3/8	12	26.5		20.2	17			26.1
PB10-02M	10	R1/4	11	27	20.2	21	14	24.4	18	22.3
PB10-03M		R3/8	12	28		21.7	17			30.4

※ . "L" is a reference value for height dimension after tightening thread.

※ Contact the nearest sales office for other special specifications.

**PD** Mini Run Tee



Unit : mm

Model code	Tube O.D. øD	R	A	B	Tube end C	L	Hex. H	E	øP	Weight (g)
PD8-01M	8	R1/8	8	44.2	18.1	18.5	12	21.7	15	11.9
PD8-02M		R1/4	11	47.2		19.5	14			17.5
PD8-03M		R3/8	12	48.2		20.2	17			25.3
PD10-02M	10	R1/4	11	52.3	20.2	21	14	25.3	18	21
PD10-03M		R3/8	12	53.3		21.7	17			28.8

※ .L" is a reference value for height dimension after tightening thread.