

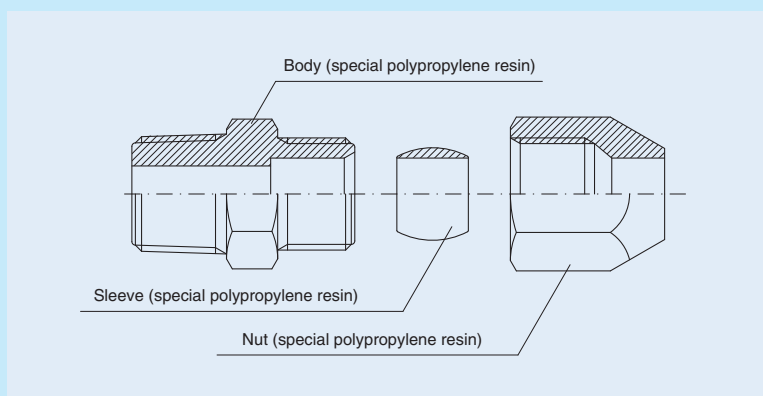
# Chemifit™ CP Series

Threaded fitting for clean air, pure water and chemical liquids

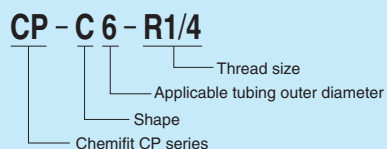
## Features

- Threaded fitting made of polypropylene resin  
Lightweight.
- Made in oil-free process  
Each part is cleaned in a clean room.
- Highly smooth inner surface  
Smooth inner surface due to ejection forming.
- High performance, free of dust and contamination  
Made of special polypropylene resin.
- Compliant with the MHLW Ministerial Notification No.201(2006),  
MHW Ministerial Notification No.370(1959), Japan

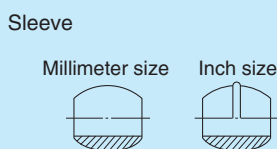
## Cross-sectional structure diagram



## Product number example



## Distinction of millimeter/inch sizes



The millimeter and inch size types of the Chemifit CP series are distinguished by the outer shape of the sleeve.



## Operating fluid, working temperature range

Operating fluid	Working temperature range
Air (clean air)	-20°C~+80°C
Water (pure water)	0°C~+80°C

☞ Contact us for various chemical liquids.

☞ See "Combination List of Tubing and Fitting" on page 8.

## Pressure condition

**Maximum working pressure:** 0.4MPa(at20°C)  
**Negative pressure performance:** -99.975kPa

## Handling instructions

⚠ **Caution:** When the working conditions of tubes and fittings differ, use them under the lower specified conditions.

⚠ **Caution:** Use an insertion part (sold separately) to attach a flexible tubing.

⚠ **Caution:** Stress relaxation occurs more readily with resin thread than with metal thread. The relaxation is prominent at a high temperature. Tighten the thread periodically.

⚠ **Caution:** For use at a high temperature within the working temperature range, tighten the nut periodically. If the nut cannot be tightened further, cut the tubing end and insert the tubing again with a new sleeve.

⚠ **Caution:** When water is used as the operating fluid, do not allow it to freeze.

⚠ **Caution:** Do not bend the pipe sharply near the tubing insertion port (sleeve end) of the fitting. Keep the tubing straight for twice as long as the tubing diameter from the insertion port.

☞ See page 34 for the common handling instructions for fittings.

## Applicable tubing

Polyolefin resin tubing Fluorocarbon resin tubing



PL PN

TA TP

(\*1) Use an insertion part (sold separately) to attach a flexible tubing.

## Reference

Instruction manual .....P.180  
Chemical resistance  
specification table .....P.198  
Effective sectional area ..P.168  
Negative-pressure  
performance list .....P.169

# Chemifit™ CP Series

## Shape list



Tubing

Clean tubing

Processed tubing

PushOne fitting

QuickSeal fitting

Clean fitting/ Chemifit

Bamboo-shoot fitting

Control switch/ Detachable series

Jig/Tool/ Accessory

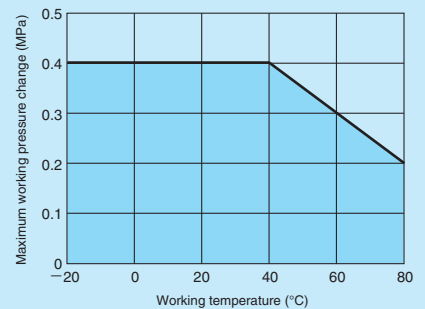
Technical information

Reference

### Relation between the working temperature and the maximum working pressure

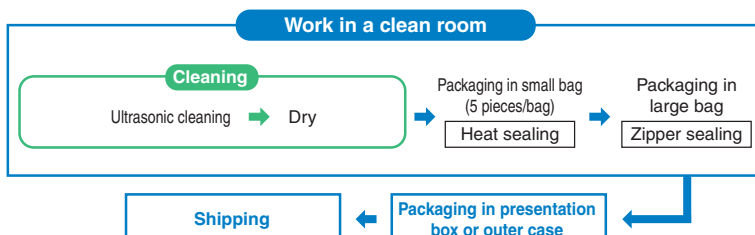
The maximum working pressure varies with the working temperature (environmental temperature). For use at an abnormal temperature, always check the maximum working pressure change in the graph below and keep the pressure within the indicated range.

**⚠ Caution:** Using tubes at a pressure outside the range may cause accidents or damage, for which Nitta is not liable.



## Oil-free processing, Clean wrapping and packaging

● Ultrasonic cleaning with no oil or fat used for assembling in a clean room.



● High-barrier sheet packaging available

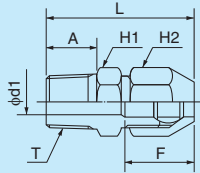
### What is high-barrier sheet packaging?

In order to maintain the cleanliness of our products, no space for oxygen, water, or corrosive gas is allowed inside the package and a packaging bag with a high gas barrier is needed for protecting the content from these gases. To meet this requirement, Nitta provides high-barrier bags with a high gas barrier performance also for nitrogen sealing or atmospheric sealing.



- The packaging bags that Nitta uses have the highest gas barrier performance among clear bags.
- The bags do not contain halogen, etc., for safe burning.

Connector



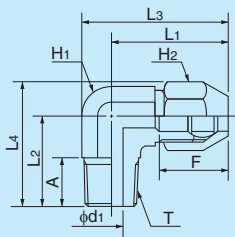
●Millimeter size type

Product number	Applicable tubing outer diameter (mm)	T Thread size (R)	L (mm)	A (mm)	F Tubing insertion length (mm)	H <sub>1</sub> Width across flat (mm)	H <sub>2</sub> Width across flat (mm)	d <sub>1</sub> (mm)	Min. inner diameter (mm)	Effective sectional area (mm <sup>2</sup> )	Weight (g)
CP-C4-R1/8	4	R1/8	29.8	8.0	17	12.0	12.0	4.3	2.8	3.5	2.0
CP-C6-R1/8	6	R1/8	37.1	12.0	19	14.0	14.0	5.0	5.0	11.0	3.0
CP-C6-R1/4	6	R1/4	37.1	12.0	19	14.0	14.0	5.0	5.0	11.0	3.0
CP-C8-R1/8	8	R1/8	42.5	9.0	22	16.5	16.5	6.0	6.0	24.5	5.0
CP-C8-R1/4	8	R1/4	45.0	12.0	22	16.5	16.5	6.0	6.0	24.5	5.0
CP-C10-R1/4	10	R1/4	46.8	12.0	29	18.5	19.0	8.0	8.0	37.0	6.0
CP-C10-R3/8	10	R3/8	48.6	13.5	29	18.5	19.0	8.0	8.0	37.0	7.0
CP-C12-R3/8	12	R3/8	57.7	13.5	29	24.0	21.5	9.9	9.9	54.0	11.0
CP-C12-R1/2	12	R1/2	59.9	15.5	29	24.0	21.5	9.9	9.9	54.0	13.0

●Inch size type

Product number	Applicable tubing outer diameter (inch)	T Thread size (R)	L (mm)	A (mm)	F Tubing insertion length (mm)	H <sub>1</sub> Width across flat (mm)	H <sub>2</sub> Width across flat (mm)	d <sub>1</sub> (mm)	Min. inner diameter (mm)	Effective sectional area (mm <sup>2</sup> )	Weight (g)
CP-C1/4-R1/8	1/4	R1/8	37.4	12.0	19	14.0	14.0	5.0	5.0	15.0	3.0
CP-C1/4-R1/4	1/4	R1/4	37.4	12.0	19	14.0	14.0	5.0	5.0	15.0	3.0
CP-C3/8-R1/4	3/8	R1/4	45.9	12.0	28	18.5	19.0	8.0	8.0	34.0	6.0
CP-C3/8-R3/8	3/8	R3/8	47.7	13.5	28	18.5	19.0	8.0	8.0	34.0	7.0
CP-C1/2-R3/8	1/2	R3/8	58.2	13.5	29	24.0	22.0	9.9	9.9	59.0	11.0
CP-C1/2-R1/2	1/2	R1/2	60.7	15.5	29	24.0	22.0	9.9	9.9	59.0	13.0

90 degree elbow



●Millimeter size type

Product number	Applicable tubing outer diameter (mm)	T Thread size (R)	L <sub>1</sub> (mm)	L <sub>2</sub> (mm)	L <sub>3</sub> (mm)	L <sub>4</sub> (mm)	A (mm)	F Tubing insertion length (mm)	H <sub>1</sub> Width across flat (mm)	H <sub>2</sub> Width across flat (mm)	d <sub>1</sub> (mm)	Min. inner diameter (mm)	Effective sectional area (mm <sup>2</sup> )	Weight (g)
CP-L4-R1/8	4	R1/8	26.8	21.0	32.6	27.9	8.0	17	10.0	12.0	4.0	2.8	3.0	3.0
CP-L6-R1/8	6	R1/8	29.1	23.0	36.0	31.1	12.0	19	12.0	14.0	5.0	5.0	10.0	4.0
CP-L6-R1/4	6	R1/4	29.1	23.0	36.0	31.1	12.0	19	12.0	14.0	5.0	5.0	10.0	4.0
CP-L8-R1/8	8	R1/8	37.0	24.0	43.9	33.5	9.0	22	12.0	16.5	6.0	6.0	19.5	6.0
CP-L8-R1/4	8	R1/4	37.0	27.0	43.9	36.5	12.5	22	12.0	16.5	6.0	6.0	19.5	6.0
CP-L10-R1/4	10	R1/4	41.8	27.0	51.3	37.9	12.0	29	16.5	19.0	8.0	8.0	30.0	9.0
CP-L10-R3/8	10	R3/8	41.8	27.0	51.3	37.9	13.5	29	16.5	19.0	8.0	8.0	30.0	10.0
CP-L12-R3/8	12	R3/8	45.7	27.0	56.3	39.4	13.7	29	18.5	21.5	9.9	9.9	46.0	12.0
CP-L12-R1/2	12	R1/2	45.7	27.0	56.3	39.4	16.0	29	18.5	21.5	9.9	9.9	46.0	14.0

●Inch size type

Product number	Applicable tubing outer diameter (inch)	T Thread size (R)	L <sub>1</sub> (mm)	L <sub>2</sub> (mm)	L <sub>3</sub> (mm)	L <sub>4</sub> (mm)	A (mm)	F Tubing insertion length (mm)	H <sub>1</sub> Width across flat (mm)	H <sub>2</sub> Width across flat (mm)	d <sub>1</sub> (mm)	Min. inner diameter (mm)	Effective sectional area (mm <sup>2</sup> )	Weight (g)
CP-L1/4-R1/8	1/4	R1/8	29.4	23.0	36.3	31.1	12.0	19	12.0	14.0	5.0	5.0	12.0	4.0
CP-L1/4-R1/4	1/4	R1/4	29.4	23.0	36.3	31.1	12.0	19	12.0	14.0	5.0	5.0	12.0	4.0
CP-L3/8-R1/4	3/8	R1/4	40.9	27.0	50.4	37.9	12.0	28	16.5	19.0	8.0	8.0	29.0	9.0
CP-L3/8-R3/8	3/8	R3/8	40.9	27.0	50.4	37.9	13.5	28	16.5	19.0	8.0	8.0	29.0	10.0
CP-L1/2-R3/8	1/2	R3/8	46.2	27.0	56.8	39.7	13.5	29	18.5	22.0	9.9	9.9	53.0	12.0
CP-L1/2-R1/2	1/2	R1/2	46.2	27.0	56.8	39.7	16.0	29	18.5	22.0	9.9	9.9	53.0	14.0

Tubing

Clean tubing

Processed tubing

PushOne fitting

QuickSeal fitting

Clean fitting/ Chemifit

Bamboo-shoot fitting

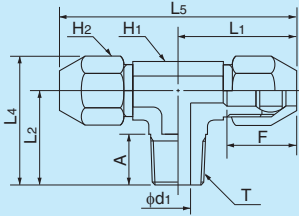
Control switch/ Detachable series

Jig/Tool/ Accessory

Technical information

Reference

## Tee



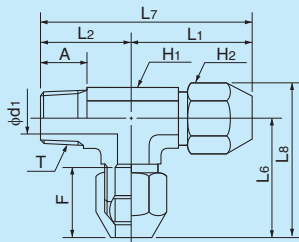
### ●Millimeter size type

Product number	Applicable tubing outer diameter (mm)	T Thread size (R)	L1 (mm)	L2 (mm)	L4 (mm)	L5 (mm)	A (mm)	F Tubing insertion length (mm)	H1 Width across flat (mm)	H2 Width across flat (mm)	d1 (mm)	Min. inner diameter (mm)	Effective sectional area (mm <sup>2</sup> )	Weight (g)
CP-T4-R1/8	4	R1/8	26.8	18.0	24.9	53.7	8.0	17	10.0	12.0	2.8	2.8	3.0	4.0
CP-T6-R1/8	6	R1/8	29.2	22.0	30.1	58.5	12.0	19	12.0	14.0	5.0	5.0	10.0	5.0
CP-T6-R1/4	6	R1/4	29.2	22.0	30.1	58.5	12.0	19	12.0	14.0	5.0	5.0	10.0	5.0
CP-T8-R1/8	8	R1/8	35.0	20.5	30.0	69.9	10.0	22	9.5	16.5	6.0	6.0	19.5	6.0
CP-T8-R1/4	8	R1/4	35.0	24.0	33.5	69.9	13.0	22	9.5	16.5	6.0	6.0	19.5	6.0
CP-T10-R1/4	10	R1/4	44.5	28.5	39.4	89.0	12.0	29	12.0	19.0	8.0	8.0	30.0	9.0
CP-T10-R3/8	10	R3/8	44.5	29.0	39.9	89.0	13.5	29	12.0	19.0	8.0	8.0	30.0	10.0
CP-T12-R3/8	12	R3/8	50.1	31.0	43.4	100.2	13.5	29	13.5	21.5	9.9	9.9	46.0	12.0
CP-T12-R1/2	12	R1/2	50.1	33.0	45.4	100.2	15.5	29	13.5	21.5	9.9	9.9	46.0	14.0

### ●Inch size type

Product number	Applicable tubing outer diameter (inch)	T Thread size (R)	L1 (mm)	L2 (mm)	L4 (mm)	L5 (mm)	A (mm)	F Tubing insertion length (mm)	H1 Width across flat (mm)	H2 Width across flat (mm)	d1 (mm)	Min. inner diameter (mm)	Effective sectional area (mm <sup>2</sup> )	Weight (g)
CP-T1/4-R1/8	1/4	R1/8	29.6	22.0	30.1	59.1	12.0	19	12.0	14.0	5.0	5.0	12.0	5.0
CP-T1/4-R1/4	1/4	R1/4	29.6	22.0	30.1	59.1	12.0	19	12.0	14.0	5.0	5.0	12.0	5.0
CP-T3/8-R1/4	3/8	R1/4	43.5	28.5	39.4	87.0	12.0	28	12.0	19.0	8.0	8.0	29.0	9.0
CP-T3/8-R3/8	3/8	R3/8	43.5	29.0	39.9	87.0	13.5	28	12.0	19.0	8.0	8.0	29.0	10.0
CP-T1/2-R3/8	1/2	R3/8	50.6	31.0	43.7	101.1	13.5	29	13.5	22.0	9.9	9.9	53.0	12.0
CP-T1/2-R1/2	1/2	R1/2	50.6	33.0	45.7	101.1	15.5	29	13.5	22.0	9.9	9.9	53.0	14.0

## Service tee



### ●Millimeter size type

Product number	Applicable tubing outer diameter (mm)	T Thread size (R)	L1 (mm)	L2 (mm)	L6 (mm)	L7 (mm)	L8 (mm)	A (mm)	F Tubing insertion length (mm)	H1 Width across flat (mm)	H2 Width across flat (mm)	d1 (mm)	Min. inner diameter (mm)	Effective sectional area (mm <sup>2</sup> )	Weight (g)
CP-ST4-R1/8	4	R1/8	26.8	18.0	26.8	44.8	33.7	8.0	17	10.0	12.0	2.8	2.8	3.0	4.0
CP-ST6-R1/8	6	R1/8	29.1	22.0	29.1	51.1	37.1	12.0	19	12.0	14.0	5.0	5.0	10.0	5.0
CP-ST6-R1/4	6	R1/4	29.1	22.0	29.1	51.1	37.1	12.0	19	12.0	14.0	5.0	5.0	10.0	5.0
CP-ST8-R1/8	8	R1/8	35.5	21.0	35.5	56.5	45.0	10.0	22	9.5	16.5	6.0	6.0	19.5	6.0
CP-ST8-R1/4	8	R1/4	35.5	23.5	35.5	59.0	45.0	13.0	22	9.5	16.5	6.0	6.0	19.5	6.0
CP-ST10-R1/4	10	R1/4	44.8	28.0	44.8	72.8	53.8	12.0	29	12.0	19.0	8.0	8.0	30.0	9.0
CP-ST10-R3/8	10	R3/8	44.8	30.0	44.8	74.8	53.8	13.5	29	12.0	19.0	8.0	8.0	30.0	9.0
CP-ST12-R3/8	12	R3/8	50.2	30.3	50.2	80.5	62.5	13.5	29	13.5	21.5	9.9	9.9	46.0	12.0
CP-ST12-R1/2	12	R1/2	50.2	32.5	50.2	82.7	62.5	15.5	29	13.5	21.5	9.9	9.9	46.0	14.0

### ●Inch size type

Product number	Applicable tubing outer diameter (inch)	T Thread size (R)	L1 (mm)	L2 (mm)	L6 (mm)	L7 (mm)	L8 (mm)	A (mm)	F Tubing insertion length (mm)	H1 Width across flat (mm)	H2 Width across flat (mm)	d1 (mm)	Min. inner diameter (mm)	Effective sectional area (mm <sup>2</sup> )	Weight (g)
CP-ST1/4-R1/8	1/4	R1/8	29.4	22.0	29.4	51.4	37.5	12.0	19	12.0	14.0	5.0	5.0	12.0	5.0
CP-ST1/4-R1/4	1/4	R1/4	29.4	22.0	29.4	51.4	37.5	12.0	19	12.0	14.0	5.0	5.0	12.0	5.0
CP-ST3/8-R1/4	3/8	R1/4	43.9	28.0	43.9	71.9	54.8	12.0	28	12.0	19.0	8.0	8.0	29.0	9.0
CP-ST3/8-R3/8	3/8	R3/8	43.9	30.0	43.9	73.9	54.8	13.5	28	12.0	19.0	8.0	8.0	29.0	9.0
CP-ST1/2-R3/8	1/2	R3/8	50.7	30.3	50.7	81.0	63.3	13.5	29	13.5	22.0	9.9	9.9	53.0	12.0
CP-ST1/2-R1/2	1/2	R1/2	50.7	32.5	50.7	83.2	63.3	16.0	29	13.5	22.0	9.9	9.9	53.0	14.0

Tubing

Clean tubing

Processed tubing

PushOne fitting

QuickSeal fitting

Clean fitting/ Chemifit

Bamboo-shoot fitting

Control switch/ Detachable series

Jig/Tool/ Accessory

Technical information

Reference

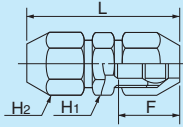
## Union connector

### ●Millimeter size type



Product number	Applicable tubing outer diameter (mm)	L (mm)	F Tubing insertion length (mm)	H <sub>1</sub> Width across flat (mm)	H <sub>2</sub> Width across flat (mm)	Min. inner diameter (mm)	Effective sectional area (mm <sup>2</sup> )	Weight (g)
CP-UC4	4	38.7	17	12.0	12.0	2.8	3.0	3.0
CP-UC6	6	43.2	19	14.0	14.0	5.0	10.0	3.0
CP-UC8	8	57.4	22	16.5	16.5	6.0	22.0	5.0
CP-UC10	10	63.2	29	18.5	19.0	8.0	35.5	9.0
CP-UC12	12	77.4	29	24.0	21.5	10.0	51.0	15.0

### ●Inch size type



Product number	Applicable tubing outer diameter (inch)	L (mm)	F Tubing insertion length (mm)	H <sub>1</sub> Width across flat (mm)	H <sub>2</sub> Width across flat (mm)	Min. inner diameter (mm)	Effective sectional area (mm <sup>2</sup> )	Weight (g)
CP-UC1/4	1/4	43.8	19	14.0	14.0	5.0	12.0	3.0
CP-UC3/8	3/8	61.2	28	18.5	19.0	8.0	31.5	9.0
CP-UC1/2	1/2	78.6	29	24.0	22.0	10.0	56.0	15.0

## 90 degree union elbow

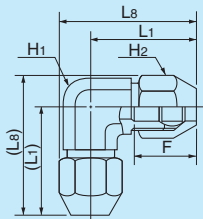
### ●Millimeter size type



Product number	Applicable tubing outer diameter (mm)	L <sub>1</sub> (mm)	L <sub>8</sub> (mm)	F Tubing insertion length (mm)	H <sub>1</sub> Width across flat (mm)	H <sub>2</sub> Width across flat (mm)	Min. inner diameter (mm)	Effective sectional area (mm <sup>2</sup> )	Weight (g)
CP-UL6	6	29.1	37.1	19	12.0	14.0	5.0	9.0	5.0
CP-UL8	8	39.0(37.0)	48.5(46.5)	22	12.0	16.5	6.0	18.5	8.0
CP-UL10	10	41.8	52.8	29	16.5	19.0	8.0	30.5	12.0
CP-UL12	12	45.7	58.0	29	18.5	21.5	10.0	44.0	16.0

☞ L<sub>1</sub> and L<sub>8</sub> of CP-UL8 have two lengths. Other length is inside parentheses.

### ●Inch size type



Product number	Applicable tubing outer diameter (inch)	L <sub>1</sub> (mm)	L <sub>8</sub> (mm)	F Tubing insertion length (mm)	H <sub>1</sub> Width across flat (mm)	H <sub>2</sub> Width across flat (mm)	Min. inner diameter (mm)	Effective sectional area (mm <sup>2</sup> )	Weight (g)
CP-UL1/4	1/4	29.4	37.5	19	12.0	14.0	5.0	11.5	5.0
CP-UL3/8	3/8	40.9	51.8	28	16.5	19.0	8.0	27.0	12.0
CP-UL1/2	1/2	46.2	58.8	29	18.5	22.0	10.0	49.0	16.0

## Union tee

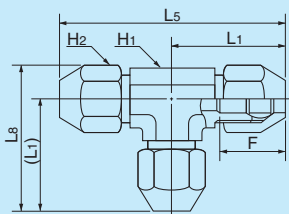
### ●Millimeter size type



Product number	Applicable tubing outer diameter (mm)	L <sub>1</sub> (mm)	L <sub>5</sub> (mm)	L <sub>8</sub> (mm)	F Tubing insertion length (mm)	H <sub>1</sub> Width across flat (mm)	H <sub>2</sub> Width across flat (mm)	Min. inner diameter (mm)	Effective sectional area (mm <sup>2</sup> )	Weight (g)
CP-UT4	4	26.8	53.7	33.7	17	10.0	12.0	2.8	2.5	5.0
CP-UT6	6	29.1	58.2	37.1	19	12.0	14.0	5.0	9.0	8.0
CP-UT8	8	36.5(36.0)	71.9	46.0	22	9.5	16.5	6.0	18.5	11.0
CP-UT10	10	44.3	88.7	55.3	29	12.0	19.0	8.0	30.5	15.0
CP-UT12	12	50.1	100.2	62.5	29	13.5	21.5	10.0	44.0	20.0

☞ L<sub>1</sub> of CP-UT8 has two lengths. Other length is inside parentheses.

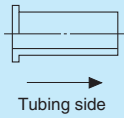
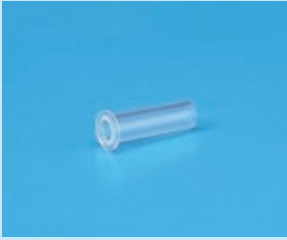
### ●Inch size type



Product number	Applicable tubing outer diameter (inch)	L <sub>1</sub> (mm)	L <sub>5</sub> (mm)	L <sub>8</sub> (mm)	F Tubing insertion length (mm)	H <sub>1</sub> Width across flat (mm)	H <sub>2</sub> Width across flat (mm)	Min. inner diameter (mm)	Effective sectional area (mm <sup>2</sup> )	Weight (g)
CP-UT1/4	1/4	29.4	58.8	37.5	19	12.0	14.0	5.0	11.5	8.0
CP-UT3/8	3/8	43.4	86.7	54.3	28	12.0	19.0	8.0	27.0	15.0
CP-UT1/2	1/2	50.7	101.3	63.3	29	13.5	22.0	10.0	49.0	20.0

Tubing  
Clean tubing  
Processed tubing  
PushOne fitting  
QuickSeal fitting  
Clean fitting/Chemifit  
Bamboo-shoot fitting  
Control switch/Detachable series  
Jig/Tool/Accessory  
Technical information  
Reference

## Insertion part



### ●Millimeter size type

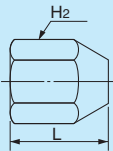
Product number	Applicable tubing outer/inner diameters (mm)
CPI 6×4	6×4
CPI 8×6	8×6
CPI 10×8	10×8
CPI 12×9	12×9
CPI12×10	12×10

### ●Inch size type

Product number	Applicable tubing outer/inner diameters (mm)
CPI1/4	6.35×4.57
CPI3/8	9.53×6.99
CPI1/2	12.7×9.56

**⚠ Caution:** When using a flexible tubing such as a polyolefin resin tubing, insert it first to the insertion part before connecting to a fitting.

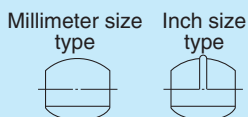
## Nut



Product number	Applicable tubing outer diameter		L (mm)	H <sub>2</sub> Width across flat (mm)	Weight (g)
	(mm)	(Inch)			
CPN4	4	—	13.5	12.0	1.0
CPN6	6	1/4	15.0	14.0	1.0
CPN8	8	—	19.0	16.5	2.0
CPN10	10	3/8	22.0	21.5	2.0
CPN12	12	—	26.5	22.0	4.0
CPN1/2	—	1/2	26.5	22.0	4.0

**⚠ Caution:** When you detach and re-attach a tubing, replace the nut with a new one.

## Sleeve



### ●Millimeter size type

Product number	Applicable tubing outer diameter (mm)	Weight (g)
CPS4	4	0.1
CPS6	6	0.1
CPS8	8	0.2
CPS10	10	0.4
CPS12	12	0.4

### ●Inch size type

Product number	Applicable tubing outer diameter (inch)	Weight (g)
CPS1/4	1/4	0.1
CPS3/8	3/8	0.3
CPS1/2	1/2	0.5

**⚠ Caution:** When you detach and re-attach a tubing, replace the sleeve with a new one.