

# Chemifit® CSA Series

Patent pending

product

Threaded fitting for clean air, pure water and chemical liquids

## Features

- **SUS316 threaded fitting**  
Consisting of two parts, assembly nut and fitting body, with Nitta Moore's original mechanism.
- **Highly improved workability for attaching and detaching a tube**  
The integrated structure of the fitting body and the insertion part. The assembly nut has a built-in sleeve. Both the fitting body and the assembly nut are reusable.
- **Uniform workability for connecting tube.**  
Tube connection is completed when the assembly nut reaches the fitting body. No need for torque control or special tools.
- **No rotation of tube when the tube is attached**  
A sleeve inside the assembly nut can rotate. Hence the inserted tube does not rotate together.
- **No-oil processed**  
Assembled after cleaning each part in a clean room.
- **High sealing performance**  
Nitta Moore's original sealing mechanism achieves high durability against degradation of sealing performance due to cold-hot cycle.
- **No need for additional tightening of nut**  
The structure with less stress relaxation ensures high sealing performance for a long period of time and the nut does not need to be tightened at maintenance.
- **Highly smooth inner surface and R sphere surface processing on elbow crossing**  
The surface roughness is below Ra3.2. The corner of the elbow is sphere surface processed, which reduces liquid and detergent remains.
- **Silver plated thread inside assembly nut**  
It prevents seizing of the fitting body and the assembly nut when a tube is tightly inserted.



## Operating fluid, working temperature range

Operating fluid	Working temperature range
Air (clean air)	-65°C~+260°C
Water (pure water)	0°C~+100°C

- ☞ Contact us for various chemical liquids.
- ☞ See "Combination List of Tube and Fitting" on page 8.

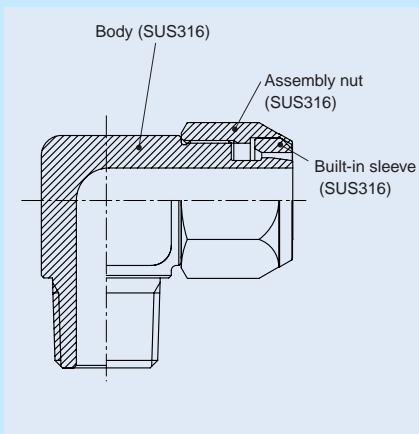
## Pressure condition

**Maximum working pressure:** 5.0MPa  
**Negative pressure performance:** -101.294kPa

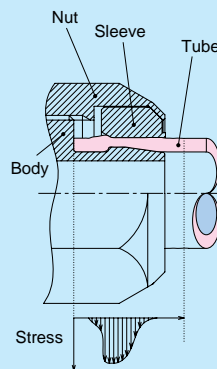
## Handling instructions

- ⚠ **Caution** When the working conditions of tubes and fittings differ, use them under the lower specified conditions.
- ⚠ **Caution** When water is used as the operating fluid, do not allow it to freeze.
- ⚠ **Caution** Do not bend the pipe sharply near the tube insertion port of the fitting. Keep the tube straight for twice as long as the tube diameter from the insertion port.
- ☞ See page34 for the common handling instructions for tube fittings.

## Cross-sectional structure diagram



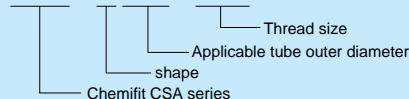
## Sealing mechanism



Nitta Moore's original sealing mechanism achieves high durability against degradation of sealing performance due to cold-hot cycle. The mechanism does not cause stress relaxation, ensuring sealing performance for a long period of time. Also, the nut does not need to be tightened at maintenance.

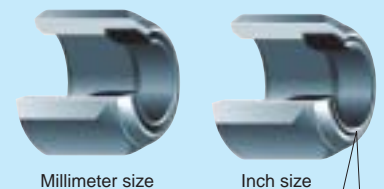
## Product number example

**CSA - C 6×4 - R1/4**



## Distinction of millimeter/inch sizes

### Assembly nut



The inch size type has a boss at the sleeve end to distinguish from millimeter size type.

## Reference

- Instruction manual.....P.188
- Chemical resistance specification table...P.209
- Effective cross-sectional area.....P.178
- Negative-pressure performance list...P.179

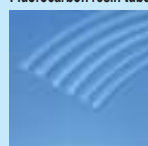
## Applicable tube

Polyolefine resin tube



PL...P.26  
PN...P.27

Fluorocarbon resin tube



TA...P.28

Polyurethane tube



\*1  
U2...P.12  
U1...P.13  
U5...P.14

Flexible fluorocarbon resin bilayer tube



\*1  
TES...P.18

Polybutene tube



\*1  
PB...P.25

Antistatic tube



\*1  
UE...P.23

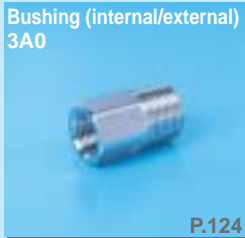
Polyurethane processed tube



\*1  
UC...P.30  
USC...P.30  
UMC...P.30  
UML...P.31

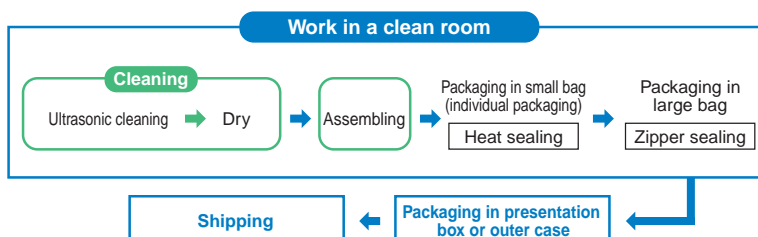
(\*1) Combinatory use of U2, U1, U5, TES, PB, UE or polyurethane processed tube and Chemifit CSA series mixes general and clean type performances. When using them in a clean environment, pay attention to the clean level that could be lowered.

## Shape list



## No-oil 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?

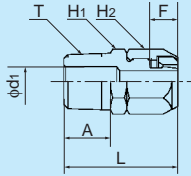
In order to maintain the cleanliness of our products, no space for oxygen, water, or corrosive gas is allowed inside the package and a packaging bag with a high gas barrier is needed for protecting the content from these gases. To meet this requirement, Nitta Moore provides high-barrier bags with a high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



- The packaging bags that Nitta Moore 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 tube outer/inner diameters (mm)	T Thread size (R)	L (mm)	A (mm)	F Tube 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 cross-sectional area (mm <sup>2</sup> )	Weight (g)
CSA-C4×2-R1/8	4×2	R1/8	24.0	9.0	5.5	10.0	10.0	5.0	1.3	1.5	11.0
CSA-C4×2-R1/4	4×2	R1/4	29.0	14.0	5.5	14.0	10.0	7.0	1.3	1.5	19.0
CSA-C6×4-R1/8	6×4	R1/8	26.5	9.0	7	12.0	12.0	5.0	3.0	7.0	17.0
CSA-C6×4-R1/4	6×4	R1/4	31.5	14.0	7	14.0	12.0	7.0	3.0	7.0	24.0
CSA-C6×4-R3/8	6×4	R3/8	31.5	14.0	7	17.0	12.0	9.0	3.0	7.0	33.0
* CSA-C8×5-R1/8	8×5	R1/8	28.0	9.0	7.5	14.0	14.0	4.5	4.3	13.0	23.0
* CSA-C8×5-R1/4	8×5	R1/4	33.0	14.0	7.5	14.0	14.0	7.0	4.3	13.0	28.0
* CSA-C8×5-R3/8	8×5	R3/8	33.0	14.0	7.5	17.0	14.0	9.0	4.3	13.0	37.0
CSA-C8×6-R1/8	8×6	R1/8	28.0	9.0	7.5	14.0	14.0	5.0	5.0	18.0	24.0
CSA-C8×6-R1/4	8×6	R1/4	33.0	14.0	7.5	14.0	14.0	7.0	5.0	18.0	29.0
CSA-C8×6-R3/8	8×6	R3/8	33.0	14.0	7.5	17.0	14.0	9.0	5.0	18.0	38.0
CSA-C8×6-R1/2	8×6	R1/2	37.0	18.0	7.5	22.0	14.0	12.0	5.0	18.0	60.0
* CSA-C10×6.5-R1/4	10×6.5	R1/4	35.0	14.0	8.5	17.0	17.0	7.0	5.5	22.0	39.0
CSA-C10×8-R1/4	10×8	R1/4	34.5	14.0	8.5	17.0	17.0	7.0	6.5	31.0	40.0
CSA-C10×8-R3/8	10×8	R3/8	34.5	14.0	8.5	17.0	17.0	9.0	6.5	31.0	46.0
CSA-C10×8-R1/2	10×8	R1/2	38.5	18.0	8.5	22.0	17.0	12.0	6.5	31.0	65.0
* CSA-C12×8-R1/4	12×8	R1/4	36.5	14.0	10	17.0	19.0	7.0	7.0	36.0	46.0
CSA-C12×9-R1/4	12×9	R1/4	36.5	14.0	10	17.0	19.0	7.5	7.5	41.0	46.0
CSA-C12×9-R3/8	12×9	R3/8	36.5	14.0	10	17.0	19.0	9.0	7.5	41.0	53.0
CSA-C12×9-R1/2	12×9	R1/2	40.5	18.0	10	22.0	19.0	12.0	7.5	41.0	72.0
CSA-C12×10-R1/4	12×10	R1/4	36.5	14.0	10	17.0	19.0	7.5	7.5	42.5	45.0
CSA-C12×10-R3/8	12×10	R3/8	36.5	14.0	10	17.0	19.0	9.0	8.5	52.5	51.0
CSA-C12×10-R1/2	12×10	R1/2	40.5	18.0	10	22.0	19.0	12.0	8.5	52.5	71.0
* CSA-C19×16-R1/2	19×16	R1/2	45.5	18.0	12.5	27.0	27.0	12.0	12.0	106.0	115.0
* CSA-C19×16-R3/4	19×16	R3/4	47.5	20.0	12.5	29.0	27.0	13.0	13.0	125.0	—

\*Made to order

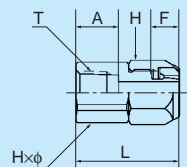
## ●Inch size type

Product number	Applicable tube outer/inner diameters (mm)	T Thread size (R)	L (mm)	A (mm)	F Tube 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 cross-sectional area (mm <sup>2</sup> )	Weight (g)
CSA-C1/4-R1/8	6.35×4.75	R1/8	26.5	9.0	7	12.0	12.0	5.0	3.5	9.0	17.0
CSA-C1/4-R1/4	6.35×4.75	R1/4	31.5	14.0	7	14.0	12.0	7.0	3.5	9.0	24.0
* CSA-C1/4-R3/8	6.35×4.75	R3/8	31.0	14.0	6.5	17.0	12.0	9.0	3.5	9.0	—
CSA-C3/8-R1/4	9.53×6.99	R1/4	34.5	14.0	8.5	17.0	17.0	7.0	5.8	25.5	41.0
CSA-C3/8-R3/8	9.53×6.99	R3/8	34.5	14.0	9	17.0	17.0	9.0	5.8	25.5	46.0
* CSA-C3/8-R1/2	9.53×6.99	R1/2	39.0	18.0	9	22.0	17.0	12.0	5.8	22.0	—
* CSA-C1/2-R1/4	12.70×9.56	R1/4	38.0	14.0	10.5	19.0	22.0	7.0	7.0	—	—
CSA-C1/2-R3/8	12.70×9.56	R3/8	38.0	14.0	10.5	19.0	22.0	9.0	8.2	51.0	63.0
CSA-C1/2-R1/2	12.70×9.56	R1/2	42.0	18.0	10.5	22.0	22.0	12.0	8.2	51.0	80.0

\*Made to order

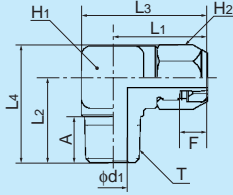
# Internal connector

## ●Millimeter size type



Product number	Applicable tube outer/inner diameters (mm)	T Thread size (R)	L (mm)	A (mm)	F Tube insertion length (mm)	H Width across flat (mm)	H×φ Width across flat (mm)	Min. inner diameter (mm)	Effective cross-sectional area (mm <sup>2</sup> )	Weight (g)
CSA-FC6×4-R1/8	6×4	R1/8	24.5	8.7	7	12.0	14.0×15.4	3.0	6.0	20.0
CSA-FC8×6-R1/4	8×6	R1/4	30.0	13.0	7.5	14.0	17.0×18.5	5.0	18.0	33.0
CSA-FC10×8-R1/4	10×8	R1/4	31.5	13.0	8.5	17.0	17.0×18.5	6.5	31.0	40.0

# 90 degree elbow



## ●Millimeter size type

Product number	Applicable tube outer-inner diameters (mm)	T Thread size (R)	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)	A (mm)	F Tube insertion length (mm)	H1 Width across flat (mm)	H2 Width across flat (mm)	d1 (mm)	Min. inner diameter (mm)	Effective cross-sectional area (mm <sup>2</sup> )	Weight (g)
CSA-L6×4-R1/8	6×4	R1/8	23.5	18.0	30.5	25.0	9.0	7	14.0	12.0	5.0	3.0	6.0	40.0
CSA-L6×4-R1/4	6×4	R1/4	23.5	23.0	30.5	30.0	14.0	7	14.0	12.0	7.0	3.0	6.0	44.0
CSA-L6×4-R3/8	6×4	R3/8	26.0	26.0	35.5	35.5	14.0	7	19.0	12.0	9.0	3.0	6.0	87.0
CSA-L8×5-R1/4	8×5	R1/4	25.0	23.0	32.0	31.0	14.0	7.5	14.0	19.0	7.0	4.3	—	46.0
CSA-L8×6-R1/8	8×6	R1/8	25.0	19.0	32.0	27.0	9.0	7.5	14.0	14.0	5.0	5.0	14.0	45.0
CSA-L8×6-R1/4	8×6	R1/4	25.0	23.0	32.0	32.0	14.0	7.5	14.0	14.0	7.0	5.0	15.5	48.0
CSA-L8×6-R3/8	8×6	R3/8	27.5	26.0	37.0	35.5	14.0	7.5	19.0	14.0	9.0	5.0	16.0	91.0
CSA-L8×6-R1/2	8×6	R1/2	29.0	30.0	40.0	41.0	18.0	7.5	22.0	14.0	12.0	5.0	—	—
CSA-L10×8-R1/4	10×8	R1/4	29.0	26.0	38.5	36.0	14.0	8.5	19.0	14.0	7.0	6.5	25.0	94.0
CSA-L10×8-R3/8	10×8	R3/8	29.0	26.0	38.5	36.0	14.0	8.5	19.0	17.0	9.0	6.5	27.5	98.0
CSA-L10×8-R1/2	10×8	R1/2	30.5	30.0	41.5	40.0	18.0	8.5	22.0	17.0	12.0	6.5	28.0	137.0
CSA-L12×8-R1/4	12×8	R1/4	31.0	26.0	40.5	37.0	14.0	10	19.0	17.0	7.0	7.0	30.5	101.0
CSA-L12×8-R1/2	12×8	R1/2	32.5	30.0	43.5	41.0	18.0	10	22.0	19.0	12.0	7.0	—	144.0
CSA-L12×9-R1/4	12×9	R1/4	31.0	26.0	40.5	37.0	14.0	10	19.0	19.0	7.0	7.0	30.5	100.0
CSA-L12×9-R3/8	12×9	R3/8	31.0	26.0	40.5	37.0	14.0	10	19.0	19.0	9.0	7.5	35.5	104.0
CSA-L12×9-R1/2	12×9	R1/2	32.5	30.0	43.5	41.0	18.0	10	22.0	19.0	12.0	7.5	37.0	143.0
CSA-L12×10-R1/4	12×10	R1/4	31.0	26.0	40.5	37.0	14.0	10	19.0	19.0	7.0	7.0	33.0	98.0
CSA-L12×10-R3/8	12×10	R3/8	31.0	26.0	40.5	37.0	14.0	10	19.0	19.0	9.0	8.5	43.0	101.0
CSA-L12×10-R1/2	12×10	R1/2	32.5	30.0	43.5	41.0	18.0	10	22.0	19.0	12.0	8.5	47.0	140.0
CSA-L19×16-R3/8	19×16	R3/8	37.5	28.5	50.5	44.0	13.0	12.5	26.0	19.0	9.0	9.0	—	200.0
CSA-L19×16-R1/2	19×16	R1/2	37.5	33.5	50.5	49.0	18.0	12.5	26.0	27.0	12.0	12.0	—	—
CSA-L19×16-R3/4	19×16	R3/4	38.8	37.0	53.3	52.5	20.0	12.5	29.0	27.0	13.0	13.0	—	—

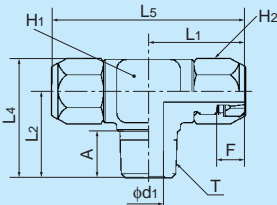
\*Made to order

## ●Inch size type

Product number	Applicable tube outer-inner diameters (mm)	T Thread size (R)	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)	A (mm)	F Tube insertion length (mm)	H1 Width across flat (mm)	H2 Width across flat (mm)	d1 (mm)	Min. inner diameter (mm)	Effective cross-sectional area (mm <sup>2</sup> )	Weight (g)
CSA-L1/4-R1/8	6.35/4.75	R1/8	23.5	18.0	30.5	25.0	9.0	7	14.0	12.0	5.0	3.5	7.5	40.0
CSA-L1/4-R1/4	6.35/4.75	R1/4	23.5	23.0	30.5	30.0	14.0	7	14.0	12.0	7.0	3.5	7.5	44.0
CSA-L1/4-R3/8	6.35/4.75	R3/8	25.5	26.0	35.0	35.5	14.0	6.5	19.0	12.0	9.0	3.5	—	—
CSA-L3/8-R1/4	9.53/6.99	R1/4	29.0	26.0	38.5	36.0	14.0	8.5	19.0	17.0	7.0	5.8	20.5	95.0
CSA-L3/8-R3/8	9.53/6.99	R3/8	29.0	26.0	38.5	36.0	14.0	8.5	19.0	17.0	9.0	5.8	22.0	99.0
CSA-L3/8-R1/2	9.53/6.99	R1/2	31.0	30.0	42.0	41.0	18.0	9	22.0	17.0	12.0	5.8	—	—
CSA-L1/2-R1/4	12.70/9.56	R1/4	31.5	29.0	41.0	38.5	14.0	10.5	19.0	22.0	7.0	7.0	—	—
CSA-L1/2-R3/8	12.70/9.56	R3/8	32.0	29.0	41.5	42.0	14.0	10.5	19.0	22.0	9.0	8.2	41.0	110.0
CSA-L1/2-R1/2	12.70/9.56	R1/2	33.5	30.5	44.5	43.0	18.0	10.5	22.0	22.0	12.0	8.2	43.0	148.0

\*Made to order

# Tee



## ●Millimeter size type

Product number	Applicable tube outer-inner diameters (mm)	T Thread size (R)	L1 (mm)	L2 (mm)	L4 (mm)	L5 (mm)	A (mm)	F Tube insertion length (mm)	H1 Width across flat (mm)	H2 Width across flat (mm)	d1 (mm)	Min. inner diameter (mm)	Effective cross-sectional area (mm <sup>2</sup> )	Weight (g)
CSA-T6×4-R1/8	6×4	R1/8	23.5	18.0	25.0	47.0	9.0	7	14.0	12.0	5.0	3.0	6.0	54.0
CSA-T6×4-R1/4	6×4	R1/4	23.5	23.0	30.0	47.0	14.0	7	14.0	12.0	7.0	3.0	6.0	58.0
CSA-T6×4-R3/8	6×4	R3/8	26.0	26.0	35.5	52.0	14.0	7	19.0	12.0	9.0	3.0	6.0	105.0
CSA-T8×6-R1/8	8×6	R1/8	25.0	19.0	27.0	50.0	9.0	7.5	14.0	14.0	5.0	5.0	14.0	62.0
CSA-T8×6-R1/4	8×6	R1/4	25.0	23.0	32.0	50.0	14.0	7.5	14.0	14.0	7.0	5.0	15.5	65.0
CSA-T8×6-R3/8	8×6	R3/8	27.5	26.0	35.5	55.0	14.0	7.5	19.0	14.0	9.0	5.0	16.0	112.0
CSA-T8×6-R1/2	8×6	R1/2	29.0	30.0	41.0	58.0	18.0	7.5	22.0	14.0	12.0	5.0	—	—
CSA-T10×8-R1/4	10×8	R1/4	29.0	26.0	36.0	58.0	14.0	8.5	19.0	17.0	7.0	6.5	25.0	123.0
CSA-T10×8-R3/8	10×8	R3/8	29.0	26.0	36.0	58.0	14.0	8.5	19.0	17.0	9.0	6.5	27.5	126.0
CSA-T10×8-R1/2	10×8	R1/2	30.5	30.0	41.0	61.0	18.0	8.5	22.0	17.0	12.0	6.5	28.0	168.0
CSA-T12×9-R1/4	12×9	R1/4	31.0	26.0	37.0	62.0	14.0	10	19.0	19.0	7.0	7.0	30.5	134.0
CSA-T12×9-R3/8	12×9	R3/8	31.0	26.0	37.0	62.0	14.0	10	19.0	19.0	9.0	7.5	35.5	138.0
CSA-T12×9-R1/2	12×9	R1/2	32.5	30.0	41.0	65.0	18.0	10	22.0	19.0	12.0	7.5	37.0	180.0
CSA-T12×10-R1/4	12×10	R1/4	31.0	26.0	37.0	62.0	14.0	9	19.0	19.0	7.0	7.0	33.0	130.0
CSA-T12×10-R3/8	12×10	R3/8	31.0	26.0	37.0	62.0	14.0	9	19.0	19.0	9.0	8.5	43.0	133.0
CSA-T12×10-R1/2	12×10	R1/2	32.5	30.0	41.0	65.0	18.0	9	22.0	19.0	12.0	8.5	47.0	174.0

\*Made to order

## ●Inch size type

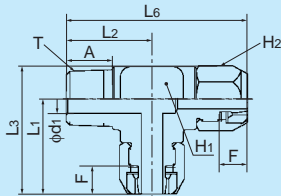
Product number	Applicable tube outer-inner diameters (mm)	T Thread size (R)	L1 (mm)	L2 (mm)	L4 (mm)	L5 (mm)	A (mm)	F Tube insertion length (mm)	H1 Width across flat (mm)	H2 Width across flat (mm)	d1 (mm)	Min. inner diameter (mm)	Effective cross-sectional area (mm <sup>2</sup> )	Weight (g)
CSA-T1/4-R1/8	6.35/4.75	R1/8	23.5	18.0	25.0	47.0	9.0	7	14.0	12.0	5.0	3.5	7.5	53.0
CSA-T1/4-R1/4	6.35/4.75	R1/4	23.5	23.0	30.0	47.0	14.0	7	14.0	12.0	7.0	3.5	7.5	57.0
CSA-T1/4-R3/8	6.35/4.75	R3/8	25.5	26.0	35.5	51.0	14.0	6.5	19.0	12.0	9.0	3.5	—	—
CSA-T3/8-R1/4	9.53/6.99	R1/4	29.0	26.0	36.0	58.0	14.0	8.5	19.0	17.0	7.0	5.8	20.5	124.0
CSA-T3/8-R3/8	9.53/6.99	R3/8	29.0	26.0	36.0	58.0	14.0	8.5	19.0	17.0	9.0	5.8	22.0	128.0
CSA-T3/8-R1/2	9.53/6.99	R1/2	31.0	30.0	41.0	62.0	18.0	9	22.0	17.0	12.0	5.8	—	—
CSA-T1/2-R1/4	12.70/9.56	R1/4	31.5	29.0	38.5	63.0	14.0	10.5	19.0	22.0	7.0	7.0	—	—
CSA-T1/2-R3/8	12.70/9.56	R3/8	32.0	29.0	42.0	64.0	14.0	10.5	19.0	22.0	9.0	8.2	41.0	140.0
CSA-T1/2-R1/2	12.70/9.56	R1/2	33.5	30.5	43.0	67.0	18.0	10.5	22.0	22.0	12.0	8.2	43.0	189.0

## Service tee



### ●Millimeter size type

Product number	Applicable tube outer:inner diameters (mm)	T Thread size (R)	L <sub>1</sub> (mm)	L <sub>2</sub> (mm)	L <sub>3</sub> (mm)	L <sub>6</sub> (mm)	A (mm)	F Tube 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 cross-sectional area (mm <sup>2</sup> )	Weight (g)
CSA-ST6×4-R1/8	6×4	R1/8	24.0	18.0	31.0	42.0	9.0	7	14.0	12.0	5.0	3.0	6.0	51.0
CSA-ST6×4-R1/4	6×4	R1/4	24.0	23.5	31.0	47.5	14.0	7	14.0	12.0	7.0	3.0	6.0	56.0
CSA-ST8×6-R1/4	8×6	R1/4	25.0	23.5	33.0	48.5	14.0	7.5	14.0	14.0	7.0	5.0	15.5	61.0
CSA-ST10×8-R3/8	10×8	R3/8	29.0	26.0	39.0	55.0	14.0	8.5	19.0	17.0	9.0	6.5	27.5	120.0
CSA-ST12×9-R1/2	12×9	R1/2	33.0	33.0	46.0	66.0	18.0	10	26.0	19.0	12.0	7.5	37.0	222.0
CSA-ST12×10-R1/2	12×10	R1/2	32.5	33.0	45.5	65.5	18.0	10	26.0	19.0	12.0	8.5	47.0	220.0



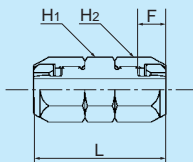
## Union connector



### ●Millimeter size type

Product number	Applicable tube outer:inner diameters (mm)	L (mm)	F Tube insertion length (mm)	H <sub>1</sub> Width across flat (mm)	H <sub>2</sub> Width across flat (mm)	Min. inner diameter (mm)	Effective cross-sectional area (mm <sup>2</sup> )	Weight (g)
CSA-UC6×4	6×4	32.0	7	12.0	12.0	3.0	7.0	21.0
CSA-UC8×5	8×5	36.0	7.5	14.0	14.0	4.3	13.0	32.0
CSA-UC8×6	8×6	36.0	7.5	14.0	14.0	5.0	18.0	31.0
CSA-UC10×8	10×8	40.0	8.5	17.0	17.0	6.5	31.0	49.0
CSA-UC12×9	12×9	45.0	10	19.0	19.0	7.5	41.0	64.0
CSA-UC12×10	12×10	45.0	10	19.0	19.0	8.5	52.5	61.0

\*Made to order



### ●Inch size type

Product number	Applicable tube outer:inner diameters (mm)	L (mm)	F Tube insertion length (mm)	H <sub>1</sub> Width across flat (mm)	H <sub>2</sub> Width across flat (mm)	Min. inner diameter (mm)	Effective cross-sectional area (mm <sup>2</sup> )	Weight (g)
CSA-UC1/4	6.35×4.75	32.0	7	12.0	12.0	3.5	9.0	21.0
CSA-UC3/8	9.53×6.99	40.0	8.5	17.0	17.0	5.8	24.0	50.0
CSA-UC1/2	12.70×9.56	48.0	10.5	19.0	22.0	8.2	45.5	74.0

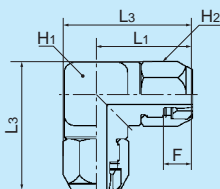
## 90 degree union elbow



### ●Millimeter size type

Product number	Applicable tube outer:inner diameters (mm)	L <sub>1</sub> (mm)	L <sub>3</sub> (mm)	F Tube insertion length (mm)	H <sub>1</sub> Width across flat (mm)	H <sub>2</sub> Width across flat (mm)	Min. inner diameter (mm)	Effective cross-sectional area (mm <sup>2</sup> )	Weight (g)
CSA-UL6×4	6×4	23.5	30.5	7	14.0	12.0	3.0	5.0	46.0
CSA-UL8×6	8×6	25.0	33.0	7.5	14.0	14.0	5.0	14.0	50.0
CSA-UL10×8	10×8	29.0	39.0	8.5	19.0	17.0	6.5	24.0	100.0
CSA-UL12×9	12×9	31.0	42.0	10	19.0	19.0	7.5	32.0	112.0
CSA-UL12×10	12×10	31.0	42.0	10	19.0	19.0	8.5	41.5	107.0
CSA-UL19×16	19×16	38.8	54.5	12.3	26.0	27.0	13.0	98.0	265.0

\*Made to order



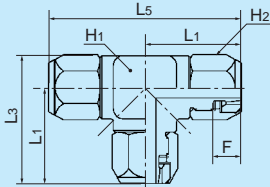
## Union tee



### ●Millimeter size type

Product number	Applicable tube outer:inner diameters (mm)	L <sub>1</sub> (mm)	L <sub>3</sub> (mm)	L <sub>5</sub> (mm)	F Tube insertion length (mm)	H <sub>1</sub> Width across flat (mm)	H <sub>2</sub> Width across flat (mm)	Min. inner diameter (mm)	Effective cross-sectional area (mm <sup>2</sup> )	Weight (g)
CSA-UT6×4	6×4	23.5	30.5	47.0	7	14.0	12.0	3.0	5.0	63.0
* CSA-UT8×5	8×5	25.0	33.0	50.0	7.5	14.0	14.0	4.3	10.0	77.0
CSA-UT8×6	8×6	25.0	33.0	50.0	7.5	14.0	14.0	5.0	13.5	74.0
CSA-UT10×8	10×8	29.0	39.0	58.0	8.5	19.0	17.0	6.5	24.0	140.0
CSA-UT12×9	12×9	31.0	42.0	62.0	10	19.0	19.0	7.5	32.0	158.0
CSA-UT12×10	12×10	31.0	42.0	62.0	10	19.0	19.0	8.5	41.5	150.0

\*Made to order



### ●Inch size type

Product number	Applicable tube outer:inner diameters (mm)	L <sub>1</sub> (mm)	L <sub>3</sub> (mm)	L <sub>5</sub> (mm)	F Tube insertion length (mm)	H <sub>1</sub> Width across flat (mm)	H <sub>2</sub> Width across flat (mm)	Min. inner diameter (mm)	Effective cross-sectional area (mm <sup>2</sup> )	Weight (g)
CSA-UT1/4	6.35×4.75	23.5	30.0	47.0	7	14.0	12.0	3.5	7.0	62.0
CSA-UT3/8	9.53×6.99	29	39.0	58.0	8.5	19.0	17.0	5.8	19.0	142.0
CSA-UT1/2	12.70×9.56	33.5	46.0	67.0	10.5	22.0	22.0	8.2	37.0	209.0

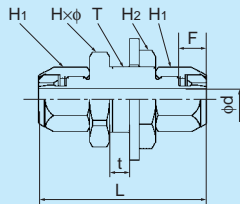
## Panel touch connector



### ●Millimeter size type

Product number	Applicable tube outer:inner diameters (mm)	L (mm)	F Tube insertion length (mm)	H <sub>1</sub> Width across flat (mm)	H <sub>2</sub> Width across flat (mm)	T Recommended panel hole diameter (mm)	t Max. panel thickness (mm)	Washer thickness (mm)	Washer outer diameter (mm)	H×φ Width across flat (mm)	Min. inner diameter (mm)	Effective cross-sectional area (mm <sup>2</sup> )	Weight (g)
CSA-UCT6×4	6×4	46.0	7	12.0	21.0	16	6.0	3	28	21.0×23.0	3.0	7.0	—
* CSA-UCT8×5	8×5	48.0	7.5	14.0	22.0	18	6.0	3	30	22.0×24.0	4.3	13.0	—
CSA-UCT8×6	8×6	48.0	7.5	14.0	22.0	18	6.0	3	30	22.0×24.5	5.0	18.0	—
CSA-UCT10×8	10×8	51.0	8.5	17.0	26.0	21	6.0	3	37	26.0×29.0	6.5	31.0	—
CSA-UCT12×9	12×9	55.5	10	19.0	27.0	23	5.5	3	37	27.0×30.0	7.5	41.0	—
CSA-UCT12×10	12×10	54.5	10	19.0	27.0	23	5.5	3	37	27.0×30.0	8.5	52.5	—

\*Made to order



## Assembly nut



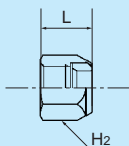
### ●Millimeter size type

Product number	Applicable tube outer diameter (mm)	L (mm)	H <sub>2</sub> Width across flat (mm)	Weight (g)
CSAN4	4	11.0	10.0	4.0
CSAN6	6	12.5	12.0	6.0
CSAN8	8	14.0	14.0	8.5
CSAN10	10	15.5	17.0	14.0
CSAN12	12	17.5	19.0	18.5
* CSAN19	19	22.5	27.0	37.5

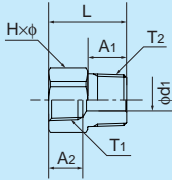
\*Made to order

### ●Inch size type

Product number	Applicable tube outer diameter (inch)	L (mm)	H <sub>2</sub> Width across flat (mm)	Weight (g)
CSAN1/4	1/4	12.5	12.0	6.0
CSAN3/8	3/8	15.5	17.0	14.5
CSAN1/2	1/2	19.0	22.0	29.0



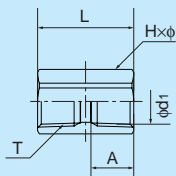
## Bushing



### ●Millimeter size type

Product number	T <sub>1</sub> Thread size (Rc)	T <sub>2</sub> Thread size (R)	L (mm)	A <sub>1</sub> (mm)	A <sub>2</sub> (mm)	H×φ Width across flat (mm)	d <sub>1</sub> (mm)	Weight (g)
3A0-4-6-CS	Rc1/4	R3/8	29.0	14.0	13.0	17.0×18.5	9.0	—
3A0-6-8-CS	Rc3/8	R1/2	34.5	18.0	13.5	22.0×24.5	11.0	—
3A0-8-12-CS	Rc1/2	R3/4	40.0	20.0	17.5	30.0×33.0	11.0	—

## Socket



### ●Millimeter size type

Product number	T Thread size (Rc)	L (mm)	A (mm)	H×φ Width across flat (mm)	d <sub>1</sub> (mm)	Weight (g)
330-4-4-CS	Rc1/4	30.0	13.0	17.0×18.5	9.0	—
330-6-6-CS	Rc3/8	33.0	13.5	19.0×21.0	13.0	—
330-8-8-CS	Rc1/2	39.5	17.5	24.0×26.5	17.0	—

