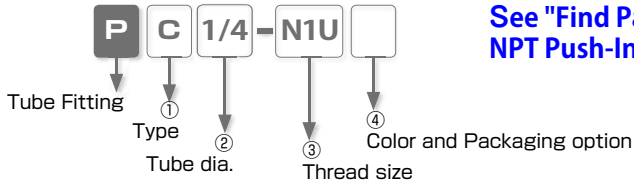


## Model Designation (Example)



See "Find Part #" for Inch NPT Push-In fitting models

### ① Type

| Code | Type                    | Code | Type                    | Code | Type                       | Code | Type                     |
|------|-------------------------|------|-------------------------|------|----------------------------|------|--------------------------|
| C    | Straight                | OC   | Inner Hex. Straight     | L    | Elbow                      | LL   | Long Elbow               |
| LH   | 45° Elbow               | H    | Single Banjo            | OL   | Hex. Holed Banjo           | B    | Branch Tee               |
| D    | Run Tee                 | X    | Branch Y                | VX   | Tripod Elbow               | AX   | Branch Elbow             |
| A    | Twin Banjo              | RX   | Double Branch Y         | HW   | Double Banjo               | HT   | Triple Banjo             |
| AW   | Double Twin Banjo       | AT   | Triple Twin Banjo       | CF   | Female Straight            | MF   | Bulkhead Female Straight |
| LF   | Female Elbow            | KD   | Triple Run Tee          | KVD  | Twin Triple Run Tee        | AF   | Link-up Twin Banjo       |
| HF   | Link-up Banjo           | U    | Union Straight          | E    | Union Tee                  | V    | Union Elbow              |
| Y    | Union Y                 | M    | Bulkhead Union          | MP   | Bulkhead Union P           | ML   | Bulkhead Union Elbow     |
| VU   | Tripod Union            | AU   | Branch Union Elbow      | ZA   | Union Cross                | G    | Unequal Union Straight   |
| EG   | Unequal Union Tee       | RG   | Unequal Double Y        | W    | Unequal Union Y            | KG   | Unequal Triple Tee       |
| KVG  | Unequal Twin Triple Tee | ZB   | Unequal Cross           | ZC   | Reducing Cross             | GJ   | Unequal Plug-in Straight |
| LJ   | Plug-in Elbow           | LGJ  | Unequal Plug-in Elbow   | LLGJ | Unequal Plug-in Long Elbow | LHJ  | 45° Plug-in Elbow        |
| LLJ  | Long Plug-in Elbow      | YJ   | Plug-in Y               | WJ   | Unequal Plug-in Y          | KJ   | Plug-in Triple Tee       |
| RJ   | Plug-in Double Y        | F    | Extension Screw Adaptor | FF   | Unequal Screw Union        | IJ   | Union Stem               |
| IG   | Unequal Union Stem      | TJ   | PT Jack                 | PF   | Cap                        | P    | Plug                     |

※   parts are redesigned models.

### ② Tube dia. (※ In case that ② indicates thread, select thread size from table ③)

| Tube dia.   | inch size |       |       |       |       |       |        | mm size |    |    |     |     |     |
|-------------|-----------|-------|-------|-------|-------|-------|--------|---------|----|----|-----|-----|-----|
|             | Code      | 5/32  | 3/16  | 1/4   | 5/16  | 3/8   | 1/2    | 5/8     | 4  | 6  | 8   | 10  | 12  |
| Size (mm)   | ø3.97     | ø4.76 | ø6.35 | ø7.94 | ø9.53 | ø12.7 | ø15.88 | ø4      | ø6 | ø8 | ø10 | ø12 | ø16 |
| O.D. (inch) | 5/32      | 3/16  | 1/4   | 5/16  | 3/8   | 1/2   | 5/8    |         |    |    |     |     |     |

※ Visit **MINI** fittings for 1/8" O.D. or 3mm, 2mm, 1.8mm O.D. and 1/4", 5/32", 4mm, 6mm O.D. with smaller body fitting.

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

| Thread | UNF thread | National pipe taper thread |        |        |        |        |
|--------|------------|----------------------------|--------|--------|--------|--------|
|        | Code       | U10U                       | N0U    | N1U    | N2U    | N3U    |
| Size   | 10-32UNF   | NPT1/16                    | NPT1/8 | NPT1/4 | NPT3/8 | NPT1/2 |

※ The unit of wrench size is inch (the code suffix is "U").

| Thread | Metric thread (mm) |        | British pipe taper thread |      |      |      |
|--------|--------------------|--------|---------------------------|------|------|------|
|        | Code               | M5     | M6                        | 01   | 02   | 03   |
| Size   | M5 × 0.8           | M6 × 1 | R1/8                      | R1/4 | R3/8 | R1/2 |

※ R thread is same as BSPT

### ④ Color and Packaging option

| Code    | Color and Package classification | Color Combination |                   | Remark             |
|---------|----------------------------------|-------------------|-------------------|--------------------|
|         |                                  | Release ring(※)   | Fitting body      |                    |
| No code | Std.                             | Black, White      | Black             |                    |
| -C      | Clean-room package               | Light-blue, White | Light-gray, Black | Optional selection |
| W       | Light-gray                       | Light-gray        | Light-gray        | Optional selection |
| W-C     | Light-gray + Clean-room pkg.     | Light-gray        | Light-gray        | Optional selection |
| -UC     | Clean-wash and Clean-room pkg.   | Light-blue        | Light-gray        | Optional selection |

※ . Release-ring color is white for inch-size products.

※ . Imperial sizes - Clean-room Package comes with black body. Ask us for the options W, W-C, -UC

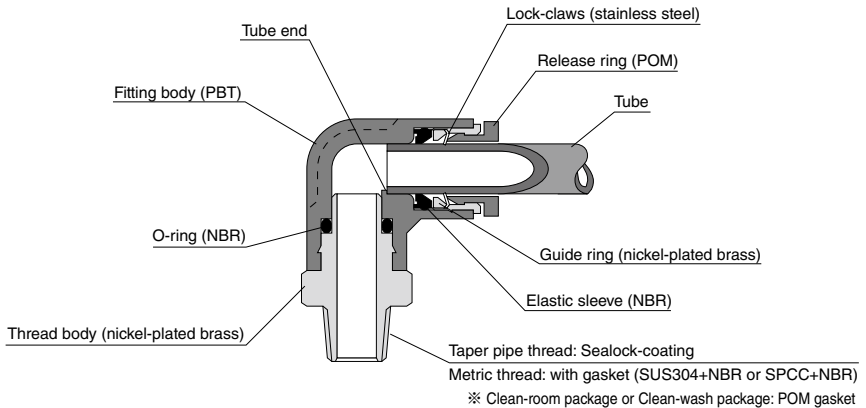
## Specifications

|                         |                                     |
|-------------------------|-------------------------------------|
| Fluid medium            | Air / Water (※)                     |
| Max. operating pressure | 150psi (1.0MPa)                     |
| Max. vacuum             | -29.5in. Hg (-100kPa)               |
| Operating temp. range   | 32 ~ 140°F (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.
  2. Tap water can be used. Consult with PISCO for using other kind of water.
  3. Be sure to place Insert Ring into the tube edge when using water as a fluid medium.

## Construction (Elbow: PL)



## △ Detailed Safety Instructions

Before using PISCO products, be sure to read "Safety Instructions" and "Common Safety Instructions for Products Listed in This Catalog" and "Common Safety Instructions for Fittings"

### Warning

1. When the fluid medium is water, do not use Tube Fitting Standard Series unless the operating environment meets all the described specifications in the catalog. Otherwise, it may cause damage to the products, the escape of tubes and a fluid leakage.

### Caution

1. To adjust the direction of the elbow fitting after fixing PML (Bulkhead Union Elbow) type, turn it in the clock-wise (right) direction.
2. Attach a rubber washer to the aluminum nut side when installing PML (Bulkhead Union Elbow) type. The bulkhead parts may be loosened or the rubber washer may deform if attaching it to the hexagonal side.

### Caution (Clean-room package, clean-wash package)

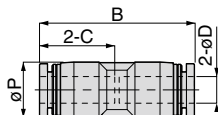
1. As for Push-In Fitting, the functional part where tube is inserted may slightly slide due to an internal pressure change and this may generate dusts. Avoid using the fitting in the clean room of ISO class from 1 to 5. Under the vibrating condition, check the amount of dust generated from the fitting and tubes, by using actual facilities.

### Caution (Clean-wash package)

1. Tube insertion into the push-in fitting with clean-wash spec. is tighter than that of standard spec. due to its oil-free specification. Make sure to insert tube up to tube end.

**PU** Union Straight

RoHS compliant

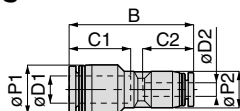


Unit : mm

| Model code | Tube O.D.<br>øD | B    | øP   | Tube end<br>C | Orifice bore<br>(ømm) | Weight<br>(g) | CAD<br>file name |
|------------|-----------------|------|------|---------------|-----------------------|---------------|------------------|
| PU5/32④    | 5/32"           | 30.8 | 10   | 14.9          | 2.8                   | 4.7           | PU5_32           |
| PU3/16④    | 3/16"           | 35.7 | 12.5 | 17.4          | 3.3                   | 6.7           | PU3_16           |
| PU1/4④     | 1/4"            | 34.9 | 12.5 | 17            | 5                     | 6.4           | PU1_4            |
| PU5/16④    | 5/16"           | 37.8 | 14.5 | 18.1          | 7                     | 9.4           | PU5_16           |
| PU3/8④     | 3/8"            | 41.4 | 17.5 | 20.2          | 9                     | 16            | PU3_8            |
| PU1/2④     | 1/2"            | 48.4 | 21   | 23.7          | 11                    | 21            | PU1_2            |
| PU5/8④     | 5/8"            | 49.4 | 25   | 24.1          | 13                    | 26            | PU5_8            |
| PU4④       | 4               | 30.8 | 10   | 14.9          | 2.8                   | 4.7           | PU4              |
| PU6④       | 6               | 34.9 | 12.5 | 17            | 4.3                   | 6.5           | PU6              |
| PU8④       | 8               | 37.8 | 14.5 | 18.1          | 7                     | 9.4           | PU8              |
| PU10④      | 10              | 41.4 | 17.5 | 20.2          | 9                     | 16            | PU10             |
| PU12④      | 12              | 47.8 | 21   | 23.4          | 11                    | 22            | PU12             |
| PU16④      | 16              | 49.4 | 25   | 24.1          | 13                    | 26            | PU16             |

**PG** Unequal Union Straight

RoHS compliant



Unit : mm

| Model code   | Tube O.D.<br>øD1 | Tube O.D.<br>øD2 | B    | øP1  | øP2  | Tube end<br>C1 | Tube end<br>C2 | Orifice bore<br>(ømm) | Weight<br>(g) | CAD<br>file name |
|--------------|------------------|------------------|------|------|------|----------------|----------------|-----------------------|---------------|------------------|
| PG3/16-5/32④ | 3/16"            | 5/32"            | 34.8 | 12.5 | 12.5 | 17.4           | 14.9           | 2.8                   | 6.4           | PG3_16-5_32      |
| PG1/4-5/32④  | 1/4"             | 5/32"            | 34.4 | 12.5 | 12.5 | 17             | 14.9           | 2.8                   | 6.3           | PG1_4-5_32       |
| PG1/4-4④     |                  | 4                |      |      |      |                |                |                       |               | PG1_4-4          |
| PG1/4-3/16④  | 5/16"            | 3/16"            | 35.3 | 14.5 | 14.5 | 18.1           | 17.4           | 3.3                   | 6.5           | PG1_4-3_16       |
| PG5/16-3/16④ |                  | 3/16"            | 38.3 |      |      |                |                |                       |               | PG5_16-3_16      |
| PG5/16-1/4④  | 5/16"            | 1/4"             | 37.9 | 17.5 | 13   | 20.2           | 17             | 4.3                   | 12            | PG5_16-1_4       |
| PG3/8-1/4④   |                  | 1/4"             | 39.8 |      |      |                |                |                       |               | PG3_8-1_4        |
| PG3/8-5/16④  | 3/8"             | 5/16"            | 41.1 | 21   | 14.5 | 23.7           | 18.1           | 6.5                   | 15            | PG3_8-5_16       |
| PG1/2-1/4④   |                  | 1/4"             | 44.4 |      |      |                |                |                       |               | PG1_2-1_4        |
| PG1/2-5/16④  | 1/2"             | 5/16"            | 44.3 | 25   | 25   | 24.1           | 18.1           | 6.2                   | 16            | PG1_2-5_16       |
| PG1/2-3/8④   |                  | 3/8"             | 47.9 |      |      |                |                |                       |               | 21               |
| PG5/8-1/2④   | 5/8"             | 1/2"             | 49.8 | 25   | 25   | 24.1           | 23.7           | 10.7                  | 26            | PG5_8-1_2        |
| PG6-4④       | 6                | 4                | 34.4 | 12.5 | 12.5 | 17             | 14.9           | 2.8                   | 6.4           | PG6-4            |
| PG8-4④       | 8                | 4                | 36.6 | 14.5 | 10.7 | 18.1           | 14.9           | 2.8                   | 7.2           | PG8-4            |
| PG8-6④       |                  | 6                | 37.9 |      |      |                |                |                       |               | 14.5             |
| PG10-6④      | 10               | 6                | 39.8 | 17.5 | 13   | 20.2           | 17             | 4.3                   | 12            | PG10-6           |
| PG10-8④      |                  | 8                | 41.1 |      |      |                |                |                       |               | 17.5             |
| PG12-8④      | 12               | 8                | 44   | 21   | 14.5 | 23.4           | 18.1           | 6.2                   | 16            | PG12-8           |
| PG12-10④     |                  | 10               | 47.6 |      |      |                |                |                       |               | 21               |
| PG12-3/8④    | 12               | 3/8"             | 47.6 | 25   | 25   | 24.1           | 20.7           | 8.4                   | 35            | PG12-3_8         |
| PG16-10④     |                  | 10               | 52.1 |      |      |                |                |                       |               | 25               |
| PG16-12④     | 16               | 12               | 49.5 |      |      |                |                |                       |               | PG16-12          |

Common caution in this page

※ 1. ④ in Model code / Replaced with "W" for Light-gray color, "-C" for Clean-room package, "W-C" for Light-gray color and Clean-room package, "-UC" for Clean-wash and Clean-room package

※ 2. Orifice bore is the smallest passage converted in terms of the diameter.



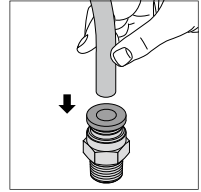
## How to insert and disconnect

### 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.

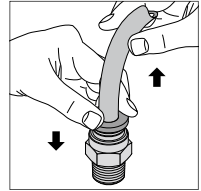
Refer to "6. Instructions for Tube Insertion" under "Common Safety Instructions for Products Listed in This Catalog".



#### 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.

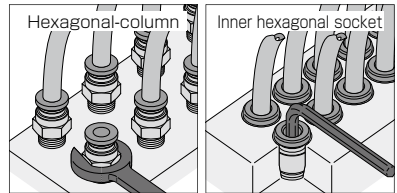


### 2. How to tighten thread

#### ① Tightening thread

There are two ways to tighten thread. Use a spanner or an impact wrench for a hexagonal-column. A hex key is for an inner hexagonal socket. Inner hexagonal type can save spaces.

Refer to "Table 2: Tightening torque / Sealock color / Gasket materials" under "8. Instructions for Installing a fitting" in "Common Safety Instructions for Products Listed in This Catalog".



**See "Find Part # " for Inch NPT  
and Metric Push-In fittings**

## Common Safety Instructions for Fittings

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

### Warning

1. Use PISCO products within the range of the specifications for each series. Consult with PISCO for use outside the specifications.

### Caution









1. A panel mounting nut of Bulkhead Union (PM), Bulkhead Union P (PMP), and Bulkhead Union Elbow (PML) should be tightened within the specified tightening torque range.

#### ● Bulkhead nut tightening torque

| Series            | Tube size | Tightening torque   |  |
|-------------------|-----------|---------------------|--|
|                   |           | Bulkhead Union (PM) | Bulkhead Union P (PMP), Bulkhead Union Elbow (PML) |
| Tube Fitting      | 4         | 12.0 ~ 14.0N·m      | 0.4 ~ 0.6N·m                                       |
|                   | 6         | 18.0 ~ 21.0N·m      | 0.9 ~ 1.1N·m                                       |
|                   | 8         | 18.0 ~ 21.0N·m      | 1.1 ~ 1.3N·m                                       |
|                   | 10        | 19.0 ~ 21.0N·m      | 2.3 ~ 2.7N·m                                       |
|                   | 12        | 19.0 ~ 21.0N·m      | 2.7 ~ 3.3N·m                                       |
|                   | 16        | 42.0 ~ 54.0N·m      | —  |
| Tube Fitting Mini | 1.8       | 0.8 ~ 1.0N·m        | —  |
|                   | 2         | 0.8 ~ 1.0N·m        |  |
|                   | 3         | 2.5 ~ 3.5N·m        |  |
|                   | 4         | 5.0 ~ 7.0N·m        |  |
|                   | 6         | 12.0 ~ 14.0N·m      |  |

2. If an object between the bulkhead nut and fitting body is deformable or has oil on its surface, the nut may loosen after tightening.
3. PISCO pneumatic fittings are designed for use with tube inserted. Air supply without tube insertion such as air flushing may cause an elastic sleeve to fly out of the fitting.

# Identification of fittings

| Tube Fitting Standard  | Tube Fitting Standard Clean-room Package   |
|--|--|
|  <p>Fitting body : Black</p> <p>Release ring : Black</p>  |  <p>Fitting body : Light-gray</p> <p>Release ring : Light-blue</p>  |
| Tube Fitting Mini  | Tube Fitting Mini Clean-room Package   |
|  <p>Fitting body : Black</p> <p>Release ring : Black</p>  |  <p>Fitting body : Light-gray</p> <p>Release ring : Light-blue</p>  |
| Tube Fitting Stainless SUS303 Equivalent Corrosivity   | Tube Fitting Stainless SUS304  |
|  <p>Guide ring : Without V groove</p> <p>Fitting body : Black</p> <p>Release ring : Dark blue</p> <p>Thread body : Without Flat groove on the hexagonal column</p> |  <p>Guide ring : With V groove</p> <p>Fitting body : Black</p> <p>Release ring : Dark blue</p> <p>Thread body : With Flat groove on the hexagonal column</p> |
| Tube Fitting PP (Thread material : PP)   | Tube Fitting PP (Thread material : SUS304)   |
|  <p>Fitting body : Translucent</p> <p>Release ring : Translucent</p> <p>Thread body : Resin thread</p>  |  <p>Fitting body : Translucent</p> <p>Release ring : Translucent</p> <p>Thread body : Metal thread</p>  |