

JACO

COMPRESSION TUBE
Fittings
METRIC

PRODUCT CATALOG

Unique fittings molded from four
corrosion-resistant thermoresins

PLASTIC FITTINGS

THAT REVOLUTIONIZED THE TECHNIQUES OF CONNECTING TUBES

JACO understands the needs of the plastics industry— from knowing how businesses operate to in-depth engineering design and applications.

For over 75 years, we have constantly looked for ways to make plastic parts better, and we've developed solutions in new technologies, equipment and products that have been solid contributors to industry.

JACO's innovative engineering, combined with our ability to produce precision plastic parts, led to the development of our compression fittings line.

Compression type metallic fittings have a loose ferrule which requires extra assembly. With the JACO Ferrule Nut (O-Nut), JACO has been able to mold the sleeve as an integral part of the nut, eliminating the need for a two-piece assembly. Although metal fittings were originally developed for copper tubing, other plastic fittings were later engineered with plastic grippers for plastic tubing.

Today, JACO fittings are widely used with all types of tubing including copper, plastic, aluminum, stainless steel and glass. JACO compression fittings are typically less expensive than metal fittings and they offer better resistance to corrosion and chemicals.

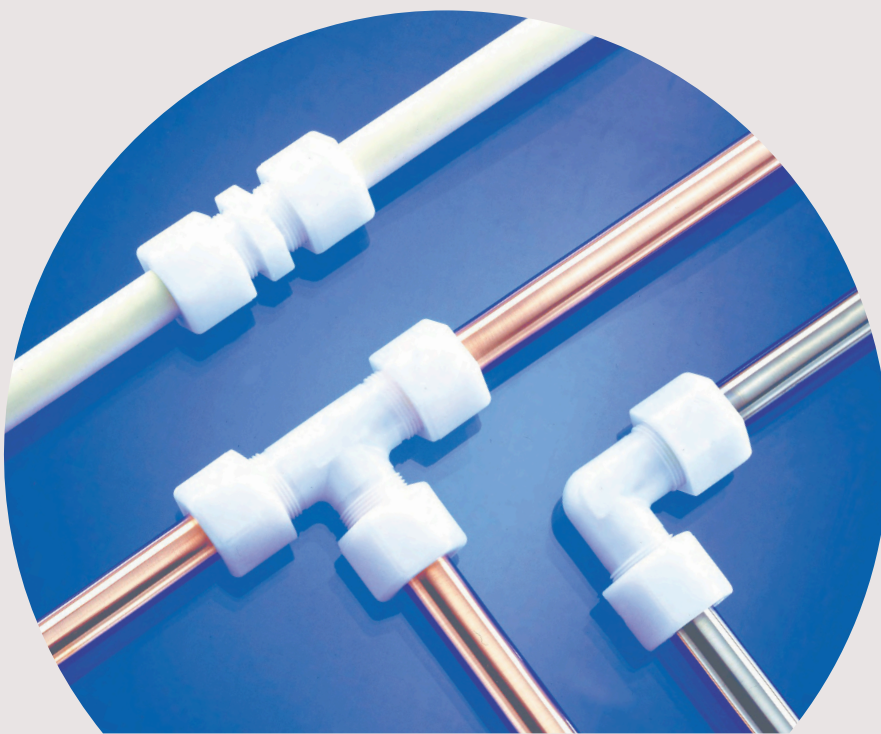
Additionally, we offer four different plastic resins for a range of applications dealing with temperatures, acids and chemicals. JACO plastic fittings offer these additional advantages:

- Exceptional electrical insulating qualities which eliminate electrolytic action that usually corrodes tubing when dissimilar metal meets a fitting.
- The ability to absorb mechanical and acoustical vibrations because of the low density and elasticity of plastic.
- An inherently low resistance to flow, due to smooth internal surfaces.
- A resistance to scale buildup.

Fittings are available in size ranges from 4mm through 12mm tube O.D. in most common configurations, such as union, male connectors, male branch tees, male run tees, tee unions and PG nuts.

Various resins are used, depending on the application. JACO plastic fittings are made of either nylon, acetal copolymer, polypropylene, or polyvinylidene fluoride (PVDF). The fittings can be manufactured in the resins natural color or in black pigment.

Note: Fittings ordered in black are considered a "special" and may require a 1000-piece minimum quantity.



JACO

JACO MANUFACTURING COMPANY

Custom Mold Capabilities

Injection Molding

Insert Molding

20 Ounce Shots

Tight Tolerances

ISO 9001

Engineering Support

In House Tooling Design

In House Tool Construction

SPC/Testing In House

Part Design Support

Laser Welding

Phone

1.440.234.4000

Toll-Free

1.800.229.JACO

sales@jacomfg.com

support@jacomfg.com

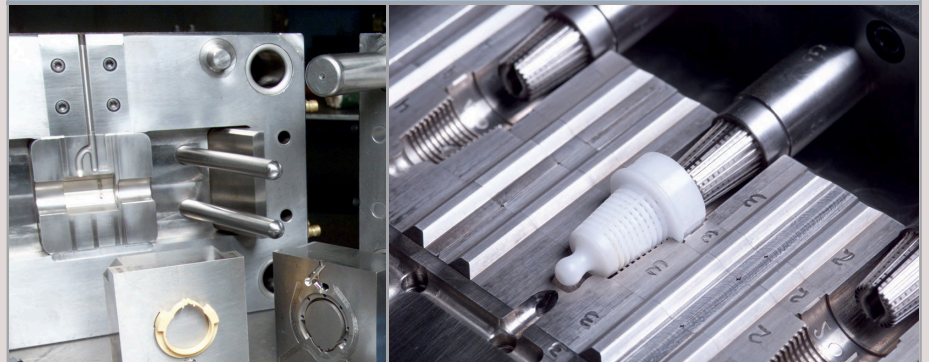
www.jacomfg.com

JACO Manufacturing Company has been built on a reputation of customer service, practical applications experience and imaginative engineering. We manufacture high quality JACO compression tube fittings for potable water and chemical systems.

JACO is also a specialist in the design and manufacture of close tolerance plastic parts. We consistently provide custom molded plastics for a variety of applications and industries. We are committed to meet and exceed our customer requirements for high quality, competitive parts and tooling.

To ensure top performance from all our products, we utilize scientific molding techniques in our molding processes as well as providing a number of testing procedures and quality control inspections. JACO's unique in-house capabilities are your assurance of quality parts, timely service and competitive pricing.

Contact JACO for more information on our wide range of products and services for the plastics industry.



HOW TO SELECT MATERIALS

(P) Polypropylene: (20% glass filled for improved strength.) Opaque flat white color, (most white of JACO Fittings). Material temperature rating is -34.44°C to 107.22°C. Polypropylene (PP) is a workhorse in the plastics industry. The general physical properties of polypropylene are similar to those of high-density polyethylene, (PE), but PP has a harder durometer and is more rigid. It is also more resistant to environmental stress cracking than PE. Polypropylene (PP) is light weight and high in chemical resistance. It is unaffected by alkalis (bases), salts and most weak acids, (particularly hydrochloric and phosphoric acids). Below 79.44°C it has good resistance to organic solvents. It is not suitable for oxidants, strong acids, chlorinated hydrocarbons, high concentrations of free chlorine, and aromatic compounds (such as benzene and toluene). PP is very inert, thus popular for high purity applications such as deionized water, etc. Avoid use in continuous sunlight. N.S.F. 14 certified, N.S.F. 61 compliant. Tensile Strength of 4,500 psi (≈31.02 MPa) increases to 6,400 psi (≈44.12 MPa) with glass fill. Durometer = 70D to 80D, (Autoclavable – yes).

(N) Nylon 6: Nylon 6 is an off-white, very light gray colored material (a little whiter than PVDF material, but not as white as Acetal). Because of Nylon's versatility it is one of the most widely used thermoplastics. Nylon 6 is a tough, strong, abrasion-resistant material with excellent impact resistance, both single and repeated. The material temperature rating is between -40°C to 121.11°C, and it has good strength at high temperatures. Since Nylon naturally absorbs water it is typically not preferred for wet applications. Moisture acts as a plasticizer, reducing tensile strength and stiffness, and increasing elongation. However, as moisture content rises, significant increases occur in impact strength and energy absorbing characteristics. Dry state properties will return as the material dries out. Nylon has good chemical resistance to organic solvents, oils, hydrocarbons, and fuels. Nylon 6 has poor chemical resistance to strong acids and bases. It is not recommended for use with ammonium, boric acid, calcium, sulfuric acid, or hydrochloric acid. N.S.F. Listed. F.D.A. Listed. Tensile Strength = 8,800psi (≈60.67 MPa), Durometer = 75D to 90D. (Autoclavable – No).

(K) PVDF (Polyvinylidene fluoride): PVDF has a semi-translucent cloudy off-white appearance. It is superior to other fitting thermoplastics in abrasion resistance and chemical resistance for handling highly corrosive fluids. It has remarkable strength over the largest working chemical range. The material is rated at -26.67°C to 135°C and has a working temperature range for fittings of -40°C to 121.11°C. PVDF's impact strength is over twice that of PVC and is extremely durable and abrasion resistant under mechanical abuse. It also has outstanding aging resistance, with its properties remaining constant after many years. PVDF also has remarkable fire-resistant properties. In the Underwriter's test PVDF was given the highest classification (V-O), indicating that it was non-flammable and self-extinguishing. PVDF has excellent chemical resistance against strong inorganic and organic acids, aliphatic and aromatic hydrocarbons, and halogenated solvents such as chlorine and bromine. PVDF is not suitable with fuming sulfuric acid, concentrated alkalis, hot bases or bases having a PH >12. For any chlorine containing compound, the material does need to be blocked from UV. The UV itself will not break down in the material, nor will the chlorine. The UV will pass right through the PVDF resin, the UV will then attack the chlorine and make the chlorine more aggressive due to free radicals. This can attack the PVDF material quicker. PVDF is FDA compliant, absolutely non-toxic and can be used in repeated contact with food products. N.S.F. Listed. Tensile Strength = 5,900 psi (≈40.67 MPa). Durometer = 75D. (Autoclavable – yes).

(C) Acetal Copolymer: Acetal has a glossy, slippery white appearance that may yellow over time. It has high tensile strength and good wear resistance over a broad range of temperatures. The material is rated at -40°C to 93.33°C in open air and rated for 82.22°C in hot water applications. Not affected by continuous hot water service and works smoothly with metal and hard surface tubing. **Note:** Acetal copolymer cannot be recommended for continuous exposure to solutions with a chlorine concentration greater than 1 ppm. (Many water treatment facilities use up to 4 ppm of chlorine concentration.) Acetal is unaffected by formaldehyde, oil, alcohols, and most inorganics. However, it is not recommended for use with acids. Good resistance to methylethylketones and has low moisture absorption rate. Listed by U.S.D.A and F.D.A. for use with coffee, milk, and antibiotics. Also N.S.F. Listed. Should not be continuously exposed to sunlight (UV). Tensile Strength = 8,800psi (≈60.67 MPa), Durometer = 90D to 95D. (Autoclavable – No).

Chemical Resistance of Thermoplastics:



Chemical & Environmental Resistance of Thermoplastics

Note: These chemical and environmental resistance ratings for thermoplastics are provided for comparison purposes only. No assurance can be implied that any compound will meet the ratings listed. End users should conduct their own evaluation of compounds to ensure satisfactory compatibility with any environmental or physical conditions to which they may be exposed.

No information supplied by JACO Manufacturing Company constitutes a warranty regarding product performance or use. Any information regarding performance or use is only offered as suggestion for investigation of use, based upon JACO or other customer experience. JACO makes no warranties, expressed or implied, concerning the suitability or fitness of any of its products for any particular purpose. It is the responsibility of the customer to determine that the product is safe, lawful and technically suitable for the intended use.

**Chemical & Environmental
Resistance of Thermoplastics**

Note: Treated water has up to 4ppm chlorine concentration

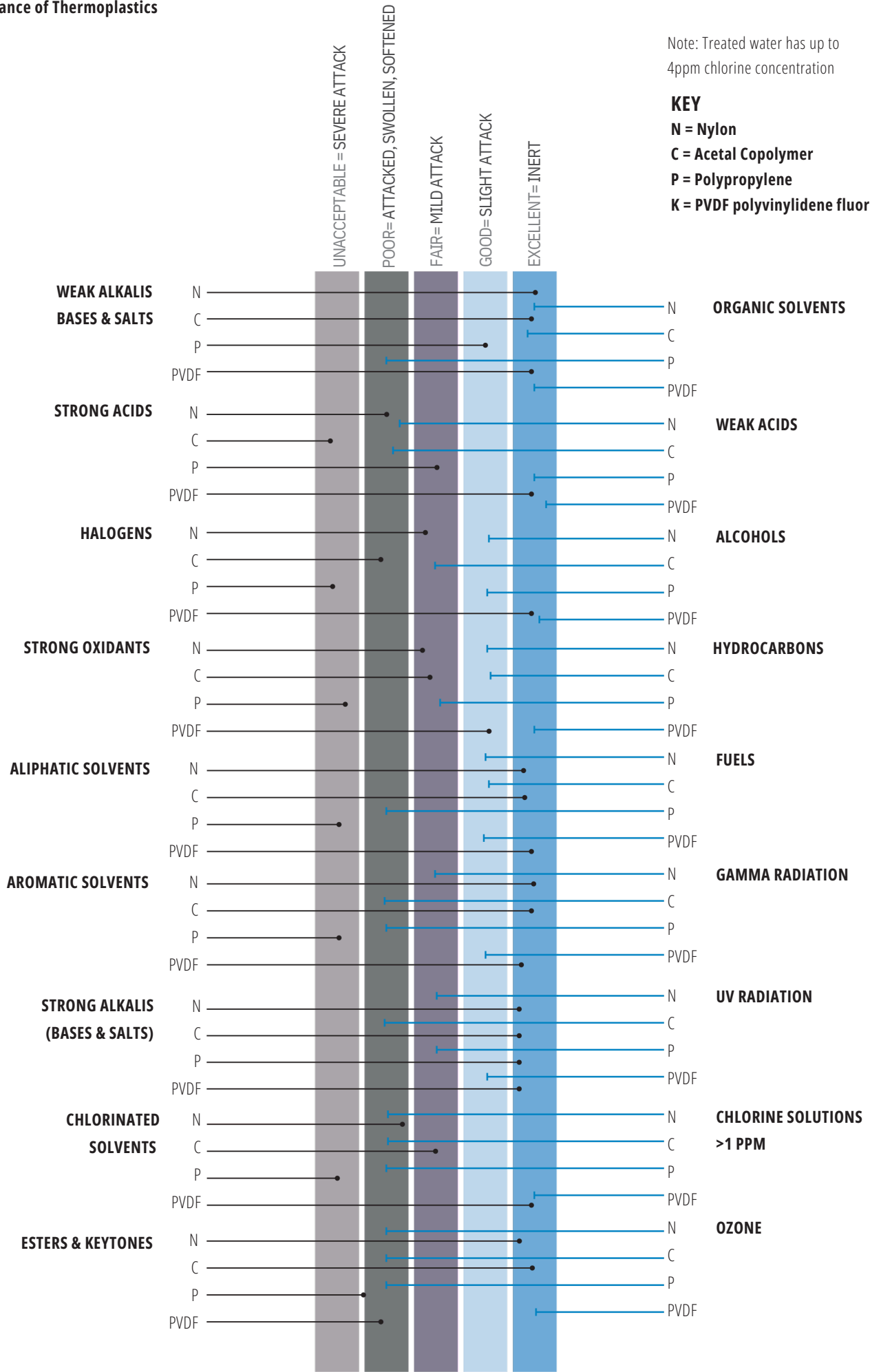
KEY

N = Nylon

C = Acetal Copolymer

P = Polypropylene

K = PVDF polyvinylidene fluoride



How to?

ORDER JACO COMPRESSION TUBE FITTINGS

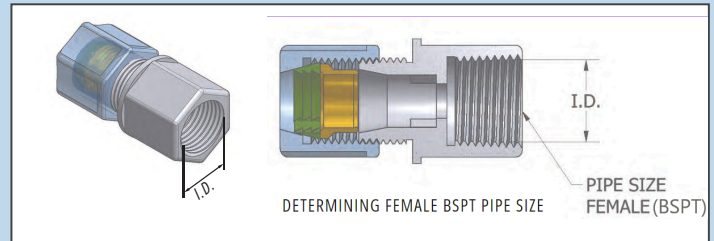
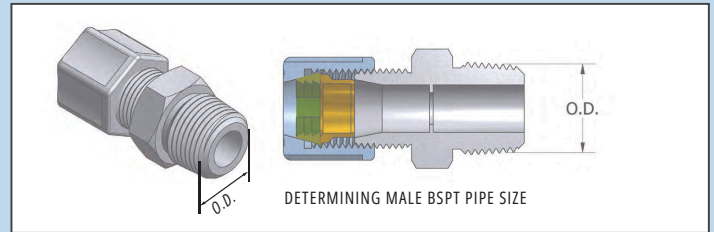
Please read before ordering: Pipe size is the accepted industry designation, not the actual measured size. To determine pipe size:

- first use a measuring device to measure the outside diameter (OD) or inside dia. (ID)
- as shown in diagram at right
- round to nearest dimension listed in the chart
- select the corresponding pipe size

Note: Fitting dimensions as described in this brochure may not reflect running changes made to improve part performance. Check with JACO Manufacturing Company in critical applications. Dimensions are in inches. Select metric sizes are available.

*Operating pressures of JACO Tube Fittings are regulated by ambient and fluid temperatures, type of fluid being carried, tubing type, and conditions of mechanical use. Temperatures listed are designated as material ratings only. Pressures in excess of above specifications in all fitting sizes should be tested by the customer in their particular application.

| | | | | | |
|---------------------------|------|------|------|------|------|
| Threaded Fitting OD or ID | 9.5 | 12.7 | 15.9 | 19.1 | 25.4 |
| Pipe Size (BSPT) | 1/8" | 1/4" | 3/8" | 1/2" | 3/4" |



Note: It is not necessary to designate the nut size when ordering complete units as this will be determined by the tube size indicated in the part number.

Pipe Thread Size

Tube Size

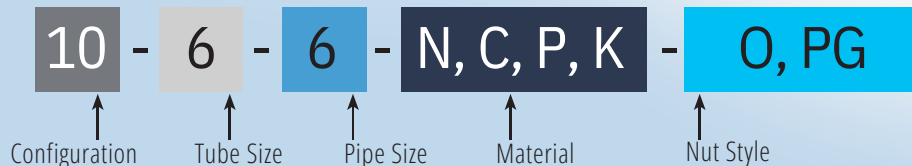
Nut Style

Configuration

Material

Custom color needed?
Our parts may be available in custom colors including black. Contact JACO for your specific needs.

Your order should contain the following specifications.
Example of a "Part Number" below:

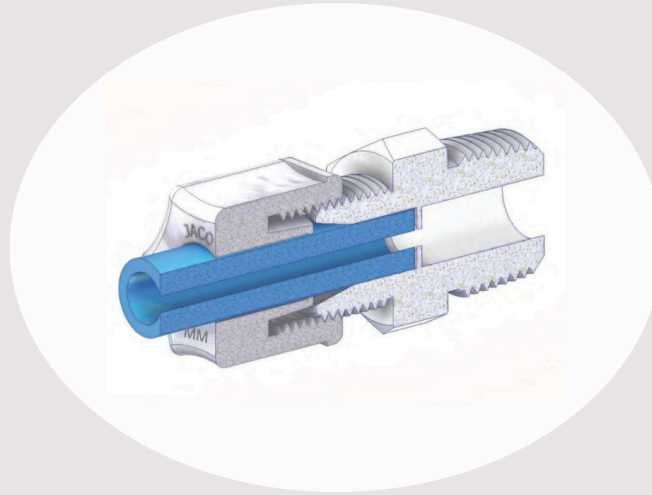




The part number for JACO compression fittings is designed so that each number and letter immediately identifies the shape, size, material and nut style.

For example: The 1st number identifies the shape/configuration, i.e.

- 10**... Male Connector
- 25**... Female Connector
- 50**... Union Elbow, etc.



Configuration

(Fitting or Part Type)

- 10**.....Male Connector
- 15**.....Union & Reducing Union
- 20**.....Bulkhead Unions
- 25**.....Female Connectors
- 40**.....Male Elbows
- 45**.....Female Elbows
- 50**.....Union & Reducing Elbows
- 60**.....Male Branch Tees
- 70**.....Union Tees
- 75**.....Male Run Tees
- CV**.....Check Valve
- B**.....Bulkhead Nut

Tube Size

(Tube O.D.)

- 4MM
- 6MM
- 8MM
- 10MM
- 12MM

Pipe Thread Size

NPT (IN.)

- 2 = 1/8 - 27 NPT
- 4 = 1/4 - 18 NPT
- 6 = 3/8 - 18 NPT
- 8 = 1/2 - 14 NPT
- 12 = 3/4 - 14 NPT

BSPT (IN.)

- 2 BSPT = 1/8 - 28 BSPT
- 4 BSPT = 1/4 - 19 BSPT
- 6 BSPT = 3/8 - 19 BSPT

Material

- N = Nylon 6
- C = Acetal Copolymer
- P = Polypropylene
- K = PVDF, Polyvinylidene Fluoride

Nut Style

O= Standard (Ferrule Nut):

- MAX 50 PSI (≈344.73 kPa)

PG= (Plastic Gripper):

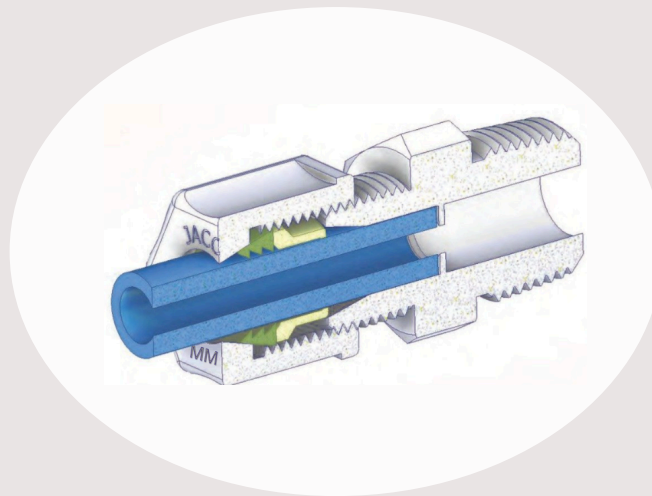
- MAX 220 PSI (≈1516.85 kPa)

The 2nd number designates the **tube size**, in 2mm increments

O

Ferrule Nut with integral sleeve low pressure applications with soft plastic tubing - MAX 50 PSI (≈344.74 kPa) (4mm)

The 3rd number designates the **Pipe Size (NPT or BSPT)**.



PG

Nut with Plastic Gripper for use with plastic tubing - MAX 220 PSI (≈1516.85 kPa) (6mm to 12mm OD)

The letter following the numbers indicates the material:

N, C, P, or K

The last letter(s) denote the nut style:

O.....Ferrule Nut: MAX 50 PSI (≈344.73 kPa)

PG.....Plastic Gripper for plastic tubing: MAX 220 PSI (≈1516.85 kPa)

INSTALLATION INSTRUCTIONS FOR JACO TUBE FITTINGS

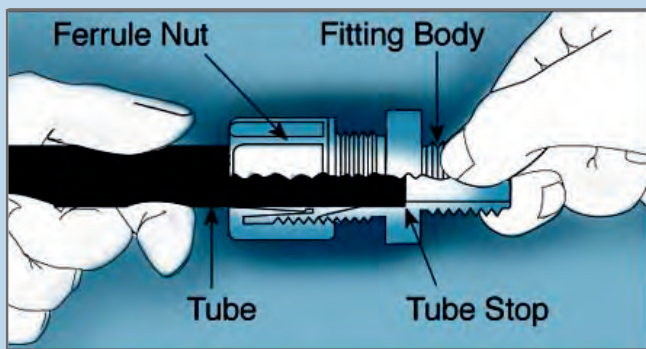
1. Cut the tubing end squarely and remove the internal and external burrs.

2. Insert the tubing through the back of the nut all the way through the nut assembly to the tube stop in the fitting body (see illustration).

3. While holding the tubing firmly against the tube stop, hand tighten the nut.

4. Wrench tighten the nut 1½ to 2 additional turns.

5. All nuts must be retightened when the system reaches projected operating temperature.



Caution: To ensure proper assembly, tubing **MUST** be fully inserted into the fitting body to the tube stop.

ASSEMBLY INSTRUCTIONS FOR JACO NUTS

Please follow these diagrams in assembling **NUTS**.

As shown below, insert **GRIPPER** into **NUT**.

Push **SLEEVE** into **NUT** assembly.

PG NUT ASSEMBLY



Notes on Installation

- If the tubing does not enter the nut easily, loosen the nut one turn and then insert the tubing all the way to the tube stop in the fitting body.
- It is not necessary to disassemble this fitting for application. Merely insert tubing to stop and tighten nut.
- Squeaking sound when tightening nut is normal.
- With metal tubing deburr and clean outside of metal surface with steel wool. Finish cleaning prepared surface with denatured alcohol.

Safe Product Selection

When selecting a product, the total system design must be considered to ensure safe, trouble-free performance. Function, temperature, material compatibility, adequate ratings, proper installation, operation, and maintenance are the responsibilities of the system designer and user.

Pipe Threads

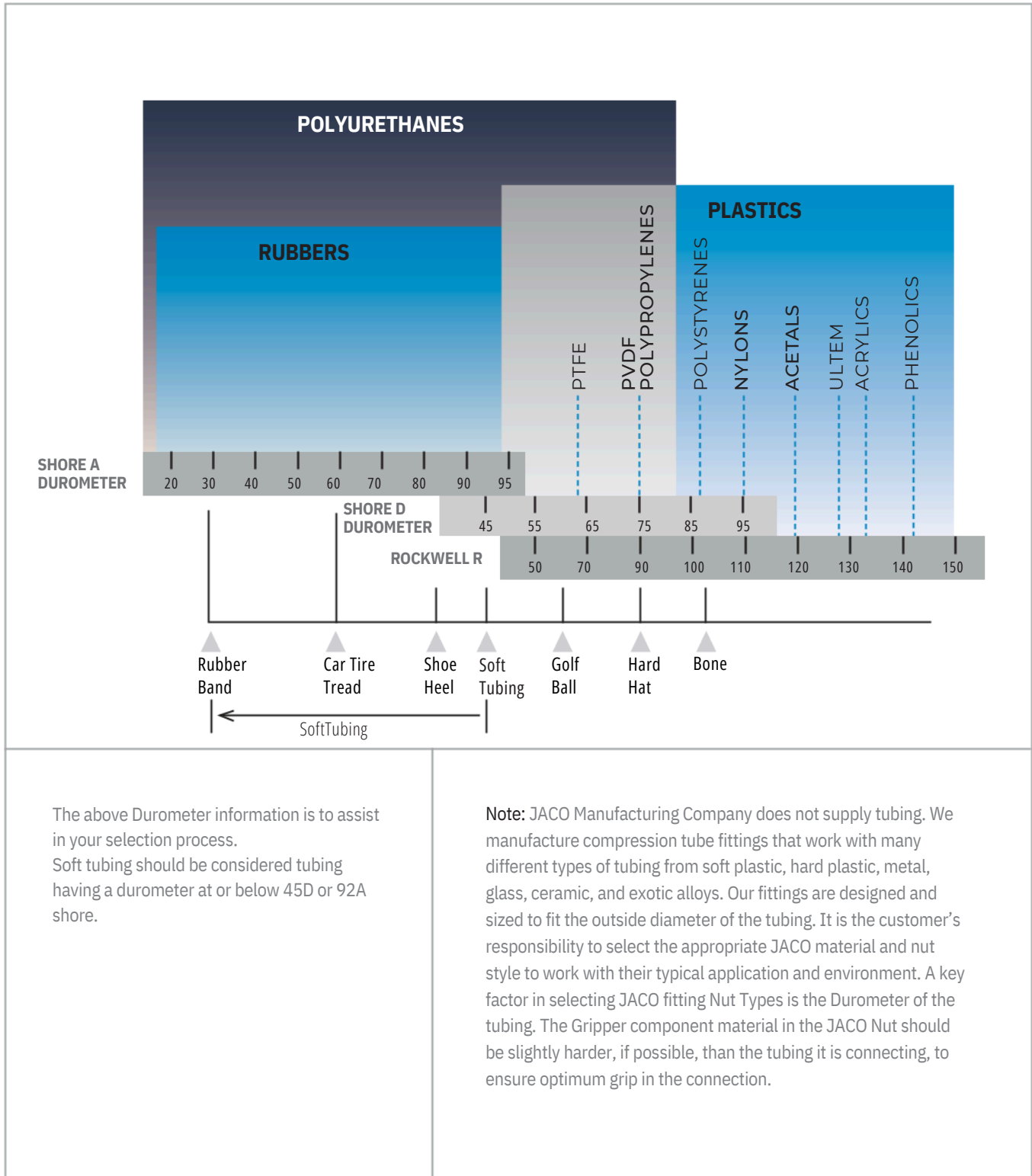
For NPT or BSPT pipe threaded connections, PTFE pipe thread sealant or PTFE pipe seal tape must be used.

Caution

Do not mix or interchange parts with those of other manufacturers. Our parts are designed specifically to be used only with other JACO compression fittings.



HARDNESS COMPARISON CHART

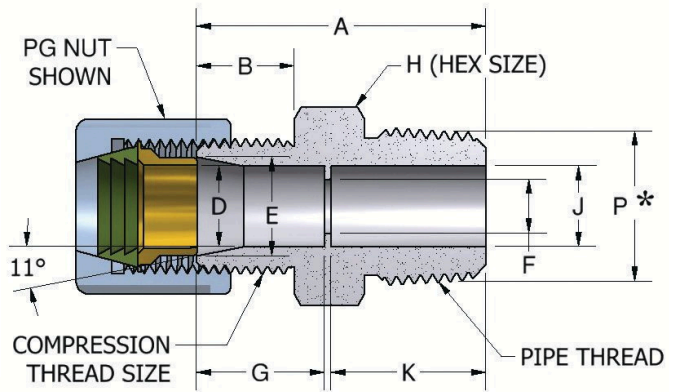


The above Durometer information is to assist in your selection process. Soft tubing should be considered tubing having a durometer at or below 45D or 92A shore.

Note: JACO Manufacturing Company does not supply tubing. We manufacture compression tube fittings that work with many different types of tubing from soft plastic, hard plastic, metal, glass, ceramic, and exotic alloys. Our fittings are designed and sized to fit the outside diameter of the tubing. It is the customer's responsibility to select the appropriate JACO material and nut style to work with their typical application and environment. A key factor in selecting JACO fitting Nut Types is the Durometer of the tubing. The Gripper component material in the JACO Nut should be slightly harder, if possible, than the tubing it is connecting, to ensure optimum grip in the connection.

MALE CONNECTORS - METRIC

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Section shown
with Nut Style, PG,
Plastic Gripper Nut

*Note: (P-1/4 in.) = Pipe Thread Size (See Table)

Male Connectors (Metric)

| JACO | | | | | Tube O.D. | Pipe Thd. | Comp. Thd. | A | B | D | E | F | G | H | J | K | P* | P*-1/4 =PIPE THD |
|----------|------|--------|-------|-----|--------------|--------------|---------------|------|------|-------------|-------------|------|------|------|-------|-------|-------|---------------------|
| Part No. | Tube | Pipe | Matl. | Nut | | | | | | | | | | | | | | |
| 10 | 4MM | 2 BSPT | C | O | 4 | 1/8-28 BSPT | 7/16-20 | ±4 | ±4 | 4.13-4.26 | 6.25-6.36 | ±3 | ±4 | ±4 | ±4 | ±4 | 10.35 | 4 |
| 10 | 6MM | 2 | NCPK | PG | 6 | 1/8-27 NPT | 7/16-20 | 25.0 | 9.5 | 6.13-6.26 | 8.26-8.38 | 4.0 | 11.9 | 15.9 | 4.76 | 11.9 | 12.35 | 6 |
| 10 | 6MM | 2 BSPT | C | | 6 | 1/8-28 BSPT | 7/16-20 | 25.0 | 9.3 | 6.13-6.26 | 8.25-8.38 | 4.0 | 11.9 | 15.7 | 4.74 | 11.9 | 12.35 | 6 |
| 10 | 6MM | 4 | NCPK | | 6 | 1/4-18 NPT | 7/16-20 | 30.2 | 9.0 | 6.13-6.26 | 8.25-8.38 | 4.2 | 11.7 | 16.0 | 8.1 | 17.3 | 12.35 | 6 |
| 10 | 6MM | 4 BSPT | CK | | 6 | 1/4-19 BSPT | 7/16-20 | 29.8 | 8.7 | 6.13-6.26 | 8.25-8.38 | 4.0 | 11.9 | 15.9 | 7.9 | 17.5 | 12.35 | 6 |
| 10 | 6MM | 6 | NCPK | | 6 | 3/8-18 NPT | 7/16-20 | 31.4 | 9.5 | 6.12-6.25 | 8.13-8.38 | 4.3 | 11.9 | 20.6 | 9.53 | 17.5 | 12.35 | 6 |
| 10 | 8MM | 4 BSPT | C | | 8 | 1/4-19 BSPT | 1/2-20 | 30.2 | 9.5 | 8.13-8.26 | 9.90-10.03 | 6.0 | 12.3 | 17.5 | 7.9 | 16.3 | 14.35 | 8 |
| 10 | 10MM | 2 | NP | | 10 | 1/8-27 NPT | 5/8-20 | 30.2 | 11.1 | 10.13-10.26 | 12.19-12.45 | 6.35 | 15.1 | 20.6 | 6.35 | Thru | 16.35 | 10 |
| 10 | 10MM | 4 | NPK | | 10 | 1/4-18 NPT | 5/8-20 | 33.3 | 11.5 | 10.13-10.26 | 12.19-12.45 | 7.9 | 15.1 | 20.6 | 7.9 | Thru | 16.35 | 10 |
| 10 | 10MM | 4 BSPT | CK | | 10 | 1/4-19 BSPT | 5/8-20 | 33.4 | 11.4 | 10.13-10.26 | 12.31-12.45 | 6.8 | 15.0 | 20.4 | 7.9 | 17.1 | 16.35 | 10 |
| 10 | 10MM | 6 | NCPK | | 10 | 3/8-18 NPT | 5/8-20 | 34.9 | 11.5 | 10.13-10.26 | 12.19-12.45 | 6.7 | 15.1 | 20.6 | 9.5 | 18.3 | 16.35 | 10 |
| 10 | 10MM | 6 BSPT | NCPK | | 10 | 3/8-19 BSPT | 5/8-20 | 34.3 | 11.5 | 10.13-10.26 | 12.31-12.45 | 6.8 | 15.0 | 20.5 | 9.5 | 17.85 | 16.35 | 10 |
| 10 | 12MM | 4 | NP | | 12 | 1/4-19 NPT | 3/4-20 | 36.9 | 14.3 | 12.13-12.26 | 14.99-15.11 | 7.9 | 17.5 | 23.8 | 7.9 | Thru | 18.35 | 12 |
| 10 | 12MM | 6 | NCPK | | 12 | 3/8-18 NPT | 3/4-20 | 37.3 | 14.3 | 12.13-12.26 | 14.99-15.11 | 9.5 | 17.5 | 23.8 | 9.5 | Thru | 18.35 | 12 |
| 10 | 12MM | 8 | CPK | | 12 | 1/2-14 NPT | 3/4-20 | 41.3 | 14.3 | 12.13-12.26 | 14.99-15.11 | 9.5 | 17.5 | 23.8 | 11.91 | 22.6 | 18.35 | 12 |

*Note: Dimensional sizes indicated throughout catalog tables are based on Acetal Copolymer and PVDF material shrink rates except where Polypropylene and/or Nylon are the only material choices available.

UNION CONNECTORS - METRIC

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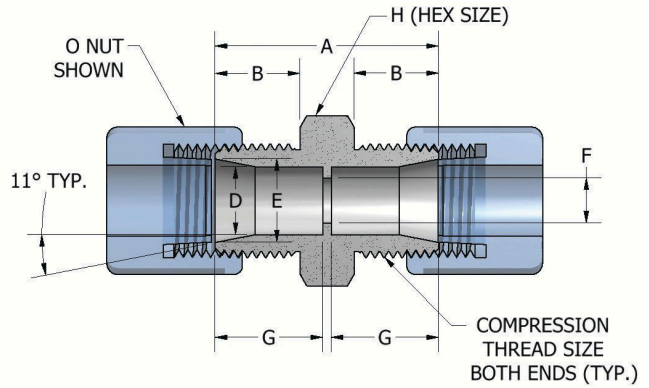
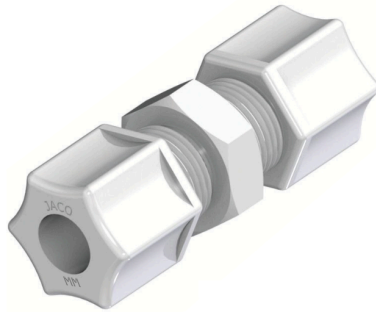


Diagram shown with Nut Style, O, Standard Ferrule Nut

Union Connectors (Metric)

| JACO | | | | Tube | Comp. | A | B | D | E | F | G | H |
|----------|------|-------|-----|------|---------|------|------|-------------|-------------|-----|------|------|
| Part No. | | | | O.D. | Thd. | | | | | | | |
| Conf. | Tube | Matl. | Nut | | | ±.4 | ±.4 | | | ±.3 | ±.4 | ±.4 |
| 15 | 4MM | C | O | 4 | 7/16-20 | 25.0 | 9.3 | 4.13-4.26 | 6.25-6.36 | 2.6 | 11.9 | 15.9 |
| 15 | 6MM | NCPK | PG | 6 | 7/16-20 | 25.0 | 9.5 | 6.13-6.26 | 8.25-8.38 | 4.0 | 11.9 | 15.9 |
| 15 | 8MM | CK | | 8 | 1/2-20 | 26.1 | 9.9 | 8.13-8.26 | 9.9-10.03 | 6.0 | 12.3 | 17.4 |
| 15 | 10MM | NC | | 10 | 5/8-20 | 31.2 | 11.7 | 10.13-10.26 | 12.31-12.45 | 6.8 | 15.0 | 20.3 |
| 15 | 12MM | P | | 12 | 3/4-20 | 37.3 | 14.3 | 12.13-12.26 | 14.99-15.11 | 9.5 | 17.5 | 23.8 |

REDUCING UNION CONNECTORS - METRIC

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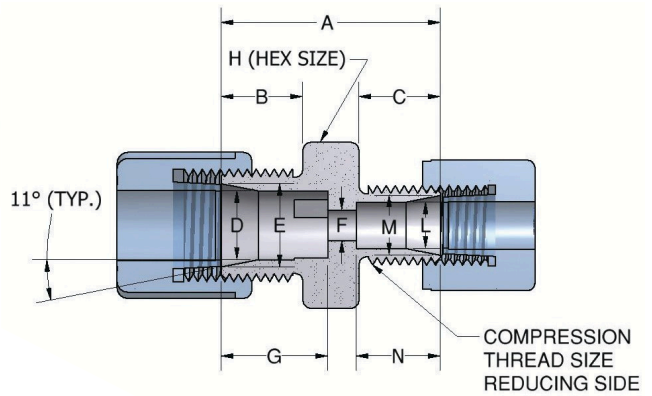
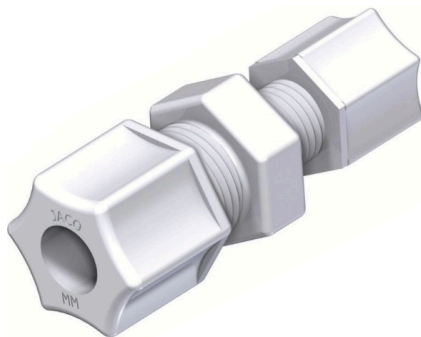


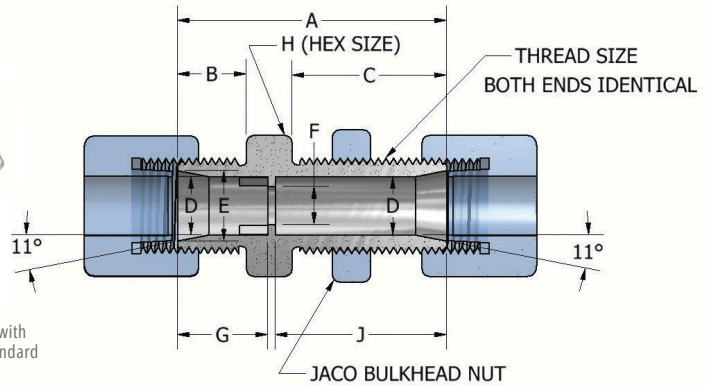
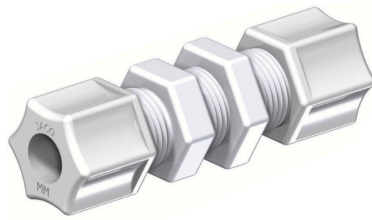
Diagram shown with Nut Style, O, Standard Ferrule Nut

Reducing Union Connectors (Metric)

| JACO | | | | Tube | Comp. | Comp. | A | B | C | D | E | F | G | H | L | M | N | |
|----------|------|------|-------|------|-------|--------|---------|------|------|------|-------------|-------------|-----|------|------|-----------|-----------|------|
| Part No. | | | | O.D. | Thd. | Thd. | | | | | | | | | | | | |
| Conf. | Tube | Tube | Matl. | Nut | | | ±.4 | ±.4 | ±.4 | | | ±.4 | ±.4 | ±.4 | | | ±.4 | |
| 15 | 10MM | 6MM | N | PG | 10-6 | 5/8-20 | 7/16-20 | 31.0 | 11.5 | 11.5 | 10.13-10.26 | 12.19-12.45 | 4.3 | 15.1 | 20.6 | 6.13-6.26 | 8.26-8.38 | 11.9 |

BULKHEAD UNIONS - METRIC

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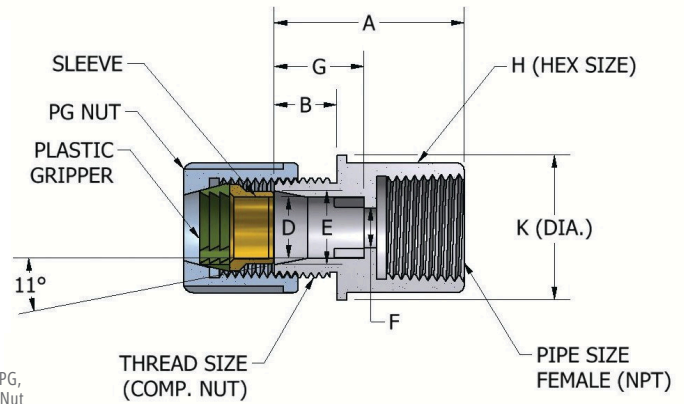


Bulkhead Unions (Metric)

| JACO Part No. | | | | Tube O.D. | Comp. Thd. | A | B | C | D | E | F | G | H | J | Bulkhead Thru Hole Clearance Recommendation |
|---------------|------|-------|-----|-----------|------------|------|------|------|-------------|-------------|-----|------|------|------|---|
| Conf. | Tube | Matl. | Nut | | | ±4 | ±4 | ±4 | | | ±4 | ±4 | ±4 | ±4 | |
| 20 | 4MM | C | O | 4 | 7/16-20 | 37.4 | 9.1 | 21.8 | 4.13-4.26 | 6.25-6.36 | 2.6 | 11.9 | 15.6 | 24.6 | 11.91 |
| 20 | 6MM | NCPK | O | 6 | 7/16-20 | 37.7 | 9.1 | 22.2 | 6.13-6.26 | 8.25-8.38 | 4.0 | 11.9 | 15.7 | 24.3 | 11.91 |
| 20 | 8MM | C | O | 8 | 1/2-20 | 41.0 | 9.3 | 24.9 | 8.13-8.26 | 9.90-10.03 | 6.0 | 12.3 | 17.3 | 26.8 | 13.49 |
| 20 | 10MM | NCP | PG | 10 | 5/8-20 | 44.8 | 11.5 | 25.8 | 10.13-10.26 | 12.19-12.45 | 6.7 | 15.1 | 20.6 | 28.6 | 16.67 |
| 20 | 12MM | NCP | PG | 12 | 3/4-20 | 47.6 | 13.9 | 26.6 | 12.13-12.26 | 14.99-15.11 | 9.5 | 17.5 | 23.8 | 28.6 | 19.84 |

FEMALE CONNECTORS - METRIC

25



Female Connectors (Metric)

| JACO Part No. | | | | | Tube O.D. | Pipe Thd. | Comp. Thd. | A | B | D | E | F | G | H | K |
|---------------|------|------|-------|-----|-----------|------------|------------|------|------|-------------|-------------|-----|------|------|------|
| Conf. | Tube | Pipe | Matl. | Nut | | | | ±4 | ±4 | | | ±3 | ±4 | ±4 | ±4 |
| 25 | 6MM | 2 | N | O | 6 | 1/8-27 NPT | 7/16-20 | 23.8 | 9.5 | 6.12-6.25 | 8.13-8.38 | 4.3 | 11.9 | 17.5 | 19.8 |
| 25 | 6MM | 4 | K | PG | 6 | 1/4-18 NPT | 7/16-20 | 27.8 | 9.5 | 6.13-6.26 | 8.38-8.51 | 4.3 | 13.9 | 20.2 | 23.0 |
| 25 | 12MM | 6 | CK | O | 12 | 3/8-18 NPT | 3/4-20 | 32.5 | 15.5 | 12.13-12.26 | 14.99-15.11 | 9.5 | 13.9 | 23.8 | N/A |

MALE ELBOWS - METRIC

40

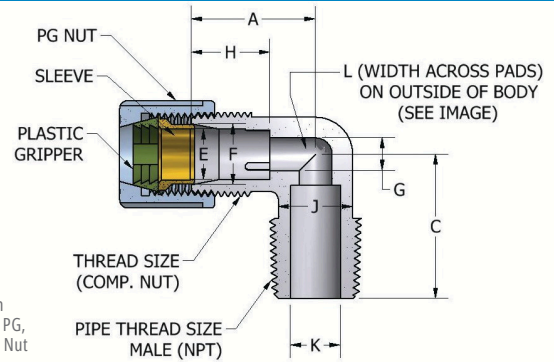


Diagram shown with Nut Style, PG, Plastic Gripper Nut

Male Elbows (Metric)

| JACO Part No. | | | | | Tube O.D. | Pipe Thd. | Comp. Thd. | A | C | E | F | G | H | J | K | L |
|---------------|------|--------|-------|-----|-----------|-------------|------------|------|------|-------------|-------------|-----|------|------|-----|------|
| Conf. | Tube | Pipe | Matl. | Nut | | | | ±4 | ±4 | | | ±.3 | ±.4 | ±.4 | ±.4 | ±.4 |
| 40 | 4MM | 2 BSPT | CP | O | 4 | 1/8-28 BSPT | 7/16-20 | 20.6 | 20.6 | 4.13-4.26 | 6.25-6.36 | 2.6 | 11.9 | 9.5 | 5.8 | 9.5 |
| 40 | 6MM | 2 BSPT | C | O | 6 | 1/8-28 BSPT | 7/16-20 | 20.6 | 20.6 | 6.13-6.26 | 8.25-8.38 | 4.0 | 11.9 | 9.5 | 5.8 | 9.5 |
| 40 | 6MM | 4 | NCPK | O | 6 | 1/4-18 NPT | 7/16-20 | 20.6 | 25.8 | 6.12-6.24 | 8.13-8.38 | 4.3 | 11.9 | 9.5 | 7.1 | 9.5 |
| 40 | 6MM | 4 BSPT | C | O | 6 | 1/4-19 BSPT | 7/16-20 | 20.6 | 24.6 | 6.13-6.26 | 8.25-8.38 | 4.0 | 11.9 | 9.5 | 7.1 | 9.5 |
| 40 | 6MM | 6 | NCP | O | 6 | 3/8-18 NPT | 7/16-20 | 22.2 | 27.8 | 6.13-6.26 | 8.25-8.38 | 4.7 | 11.9 | 14.3 | 9.5 | 14.3 |
| 40 | 6MM | 6 BSPT | CK | O | 6 | 3/8-19 BSPT | 7/16-20 | 20.6 | 27.8 | 5.99-6.24 | 8.13-8.38 | 4.8 | 12.3 | 14.3 | 9.5 | 14.3 |
| 40 | 8MM | 4 BSPT | C | PG | 8 | 1/4-19 BSPT | 1/2-20 | 23.0 | 27.3 | 8.13-8.26 | 9.9-10.03 | 6.0 | 12.3 | 11.0 | 6.3 | 11.0 |
| 40 | 10MM | 4 | NP | PG | 10 | 1/4-18 NPT | 5/8-20 | 24.2 | 26.6 | 10.13-10.26 | 12.32-12.45 | 6.5 | 14.3 | 14.3 | 7.9 | 14.3 |
| 40 | 10MM | 4 BSPT | CK | PG | 10 | 1/4-19 BSPT | 5/8-20 | 23.8 | 26.1 | 10.13-10.26 | 12.31-12.45 | 6.8 | 15.0 | 14.2 | 7.9 | 14.1 |
| 40 | 10MM | 6 | P | PG | 10 | 3/8-18 NPT | 5/8-20 | 23.8 | 28.6 | 10.13-10.26 | 12.31-12.45 | 6.5 | 14.3 | 14.5 | 9.5 | 14.3 |
| 40 | 10MM | 6 BSPT | NCP | PG | 10 | 3/8-19 BSPT | 5/8-20 | 23.8 | 27.6 | 10.13-10.26 | 12.31-12.45 | 6.8 | 15.0 | 14.1 | 9 | 14.1 |
| 40 | 12MM | 6 | NP | PG | 12 | 3/8-18 NPT | 3/4-20 | 27.4 | 28.6 | 12.13-12.26 | 14.99-15.11 | 9.5 | 17.5 | 17.5 | 9.5 | 17.5 |

FEMALE ELBOWS - METRIC

45

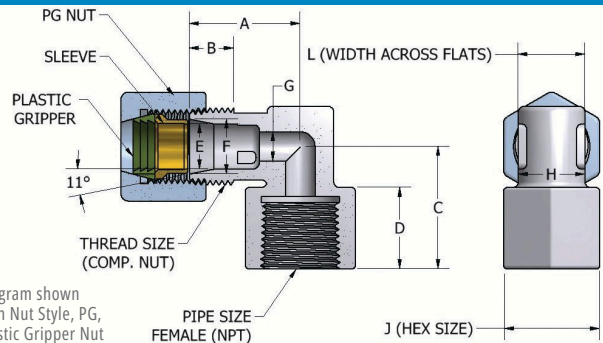


Diagram shown with Nut Style, PG, Plastic Gripper Nut

Female Elbows (Metric)

| JACO Part No. | | | | | Tube O.D. | Pipe Thd. | Comp. Thd. | A | B | C | D | E | F | G | H | J | L |
|---------------|------|------|-------|-----|-----------|------------|------------|------|-----|------|------|-----------|-----------|------|-----|-------|-----|
| Conf. | Tube | Pipe | Matl. | Nut | | | | ±.4 | ±.4 | ±.4 | ±.4 | | | ±.4 | ±.4 | ±.4 | ±.4 |
| 45 | 6MM | 4 | P | PG | 6 | 1/4-18 NPT | 7/16-20 | 20.6 | 7.9 | 24.6 | 17.5 | 6.12-6.25 | 8.38-8.51 | 4.32 | 9.5 | 20.64 | 9.9 |

UNION ELBOWS - METRIC

50

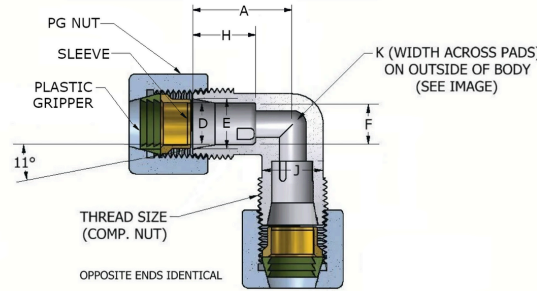
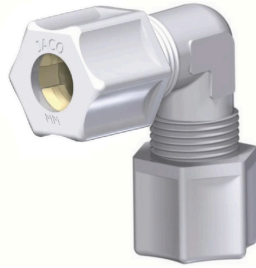


Diagram shown with Nut Style, PG, Plastic Gripper Nut

Union Elbows (Metric)

| JACO | | | | Tube | Comp. | A | D | E | F | H | J | K |
|----------|------|-------|-----|------|---------|------|-------------|-------------|-----|------|------|------|
| Part No. | | | | O.D. | Thd. | | | | | | | |
| Conf. | Tube | Matl. | Nut | | | ±.4 | | | ±.4 | ±.4 | ±.4 | ±.4 |
| 50 | 4MM | C | O | 4 | 7/16-20 | 20.5 | 4.13-4.26 | 6.25-6.36 | 2.6 | 11.9 | 9.5 | 9.5 |
| 50 | 6MM | CPK | | 6 | 7/16-20 | 20.5 | 6.13-6.26 | 8.25-8.38 | 4.0 | 11.9 | 9.5 | 9.5 |
| 50 | 8MM | CK | PG | 8 | 1/2-20 | 22.5 | 8.13-8.26 | 9.9-10.03 | 6.0 | 12.3 | 11.0 | 11.0 |
| 50 | 10MM | CK | | 10 | 5/8-20 | 23.8 | 10.13-10.26 | 12.31-12.45 | 6.8 | 15.0 | 14.1 | 14.1 |

MALE BRANCH TEES - METRIC

60

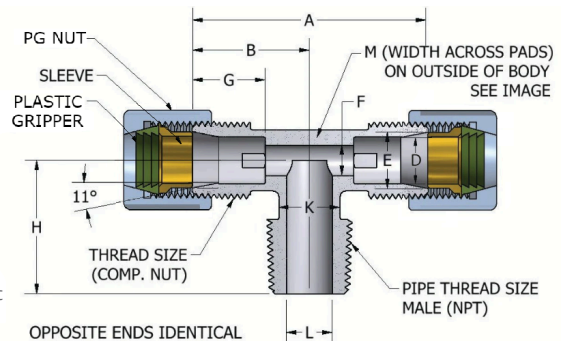
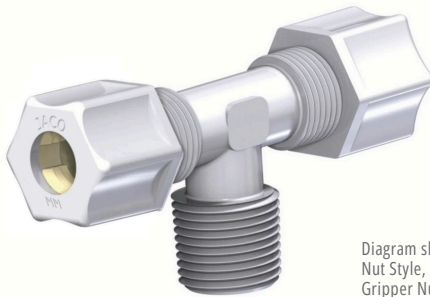


Diagram shown with Nut Style, PG, Plastic Gripper Nut

Male Branch Tees (Metric)

| JACO | | | | Tube | Pipe | Comp. | A | B | D | E | F | G | H | K | L | M | |
|----------|------|--------|-------|------|------|-------------|---------|------|------|------------|-------------|-----|------|------|------|-----|------|
| Part No. | | | | O.D. | Thd. | Thd. | | | | | | | | | | | |
| Conf. | Tube | Pipe | Matl. | Nut | | | ±.4 | ±.4 | | | ±.4 | ±.4 | ±.4 | ±.4 | ±.4 | ±.4 | |
| 60 | 6MM | 4 | NCPK | | 6 | 1/4-18 NPT | 7/16-20 | 37.3 | 18.7 | 5.99-6.25 | 8.00-8.26 | 5.6 | 11.9 | 23.8 | 9.5 | 7.9 | 9.5 |
| 60 | 8MM | 4 BSPT | CK | PG | 8 | 1/4-19 BSPT | 1/2-20 | 40.6 | 20.3 | 8.13-8.26 | 9.9-10.03 | 6.0 | 12.3 | 25.0 | 11.1 | 6.0 | 11.1 |
| 60 | 10MM | 4 | P | | 10 | 1/4-18 NPT | 5/8-20 | 49.2 | 24.6 | 9.98-10.24 | 12.19-12.45 | 6.4 | 15.1 | 27.0 | 12.7 | 7.9 | 12.7 |

UNION TEES - METRIC

70

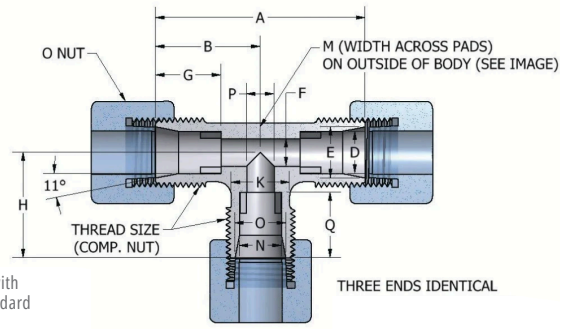
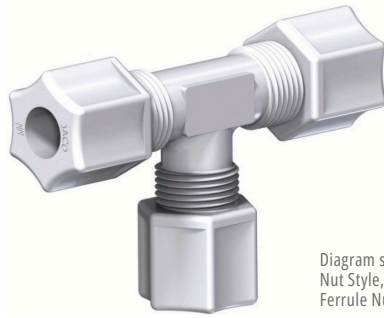


Diagram shown with Nut Style, O, Standard Ferrule Nut

Union Tees (Metric)

| JACO | | | | Tube | Comp. | A | B | D | E | F | G | H | K | M | N | O | P | Q |
|----------|------|-------|-----|------|---------|------|------|-------------|-------------|-----|------|------|------|------|-----|-----|-----|-----|
| Part No. | | | | O.D. | Thd. | | | | | | | | | | | | | |
| Conf. | Tube | Matl. | Nut | | | ±.4 | ±.4 | | | ±.4 | ±.4 | ±.4 | ±.4 | ±.4 | | | | |
| 70 | 4MM | C | O | 4 | 7/16-20 | 36.7 | 18.4 | 4.13-4.26 | 6.25-6.36 | 2.6 | 11.9 | 18.0 | 9.2 | 9.2 | N/A | N/A | N/A | N/A |
| 70 | 6MM | CK | O | 6 | 7/16-20 | 36.8 | 18.4 | 6.13-6.26 | 8.25-8.38 | 4.0 | 11.9 | 18.0 | 9.4 | 9.4 | N/A | N/A | N/A | N/A |
| 70 | 8MM | NCPK | PG | 8 | 1/2-20 | 40.5 | 20.2 | 8.13-8.26 | 9.9-10.03 | 6.0 | 12.3 | 20.3 | 11.1 | 11.5 | N/A | N/A | N/A | N/A |
| 70 | 10MM | NCPK | PG | 10 | 5/8-20 | 49.0 | 24.5 | 10.13-10.26 | 12.31-12.45 | 6.8 | 15.0 | 24.6 | 14.0 | 14.0 | N/A | N/A | N/A | N/A |
| 70 | 12MM | P | O | 12 | 3/4-20 | 55.2 | 27.4 | 12.13-12.26 | 14.99-15.11 | 9.5 | 17.5 | 27.4 | 17.1 | 17.1 | N/A | N/A | N/A | N/A |

MALE RUN TEES - METRIC

75

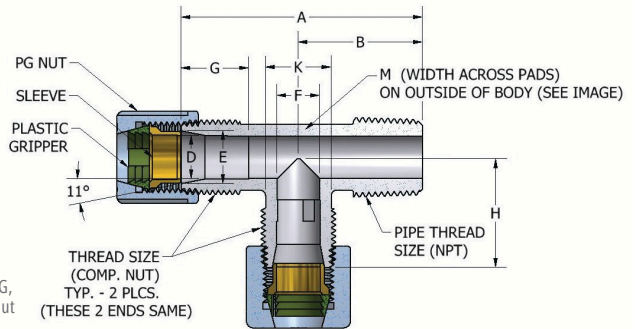


Diagram shown with Nut Style, PG, Plastic Gripper Nut

Male Run Tees (Metric)

| JACO | | | | Tube | Pipe | Comp. | A | B | D | E | F | G | H | K | M | |
|----------|------|--------|-------|------|------|-------------|---------|------|------|------------|-------------|-----|------|------|------|------|
| Part No. | | | | O.D. | Thd. | Thd. | | | | | | | | | | |
| Conf. | Tube | Pipe | Matl. | Nut | | | ±.4 | ±.4 | | | ±.3 | ±.4 | ±.4 | ±.4 | ±.4 | |
| 75 | 6MM | 2 | CP | O | 6 | 1/8-27 NPT | 7/16-20 | 38.1 | 19.1 | 5.99-6.25 | 8.00-8.26 | 5.6 | 11.9 | 18.3 | 9.5 | 9.5 |
| 75 | 10MM | 6 | CP | PG | 10 | 3/8-18 NPT | 5/8-20 | 52.4 | 28.2 | 9.98-10.24 | 12.19-12.45 | 9.1 | 15.1 | 25.0 | 12.7 | 12.7 |
| 75 | 10MM | 6 BSPT | C | O | 10 | 3/8-19 BSPT | 5/8-20 | 52.4 | 28.2 | 9.98-10.24 | 12.19-12.45 | 9.1 | 15.1 | 25.0 | 12.7 | 12.7 |

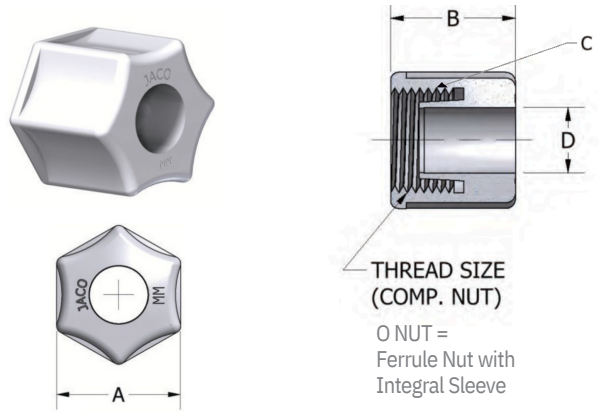
COMPRESSION NUTS - METRIC

Parts available in materials listed. Sizes indicated are based on Acetal Copolymer and PVDF material shrink rates.

Ferrule Nuts (Metric)

| JACO | | Tube | A | B | C | D | |
|----------|-----|------|-----|-------|-------|---------|---|
| Part No. | | O.D. | | | | | |
| Matl. | Nut | Tube | ±.4 | ±.4 | THD | +.5 | |
| C | O | 4MM | 4 | 15.88 | 15.88 | 7/16-20 | 4 |

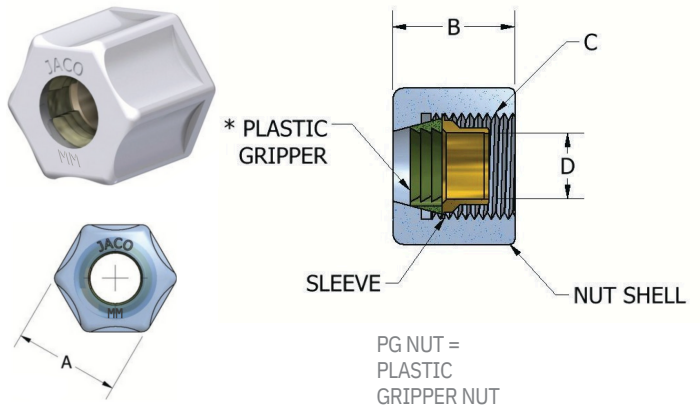
Note: Pressure rating = MAX 50 PSI (=344.74 kPa)



Plastic Gripper Nuts (Metric)

| JACO | | Tube | A | B | C | D | |
|----------|-----|------|-----|------|-------|----------|----|
| Part No. | | O.D. | | | | | |
| Matl. | Nut | Tube | ±.4 | ±.4 | THD | +2 +9 | |
| N | PG | 6MM | 6 | 15.8 | 17.0 | 7/16-20 | 6 |
| C | PG | 8MM | 8 | 17.5 | 18.6 | 1/2-20 | 8 |
| P | PG | 10MM | 10 | 20.6 | 18.5 | 5/8-20 | 10 |
| K | PG | 12MM | 12 | 23.8 | 22.22 | 3/4-20 | 12 |

Note: Pressure rating = MAX 220 PSI (=1516.85 kPa)

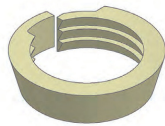


*Note: P/K Material Nut: Use PVDF Material Gripper, N/C Material Nut: Use Acetal Copolymer Gripper

GRIPPERS

Plastic Gripper (Acetal Copolymer and PVDF)

| JACO | | Tube | Tube | Conf. | Tube |
|----------|------|-------|------------|-------|------|
| Part No. | | O.D. | (use with) | | |
| Matl. | Tube | Conf. | | | |
| C | 6MM | GRP | 6 | | |
| K | 8MM | GRP | 8 | | |
| | 10MM | GRP | 10 | | |
| | 12MM | GRP | 12 | | |



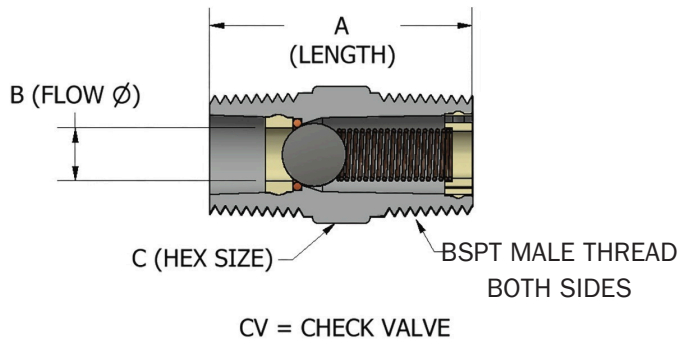
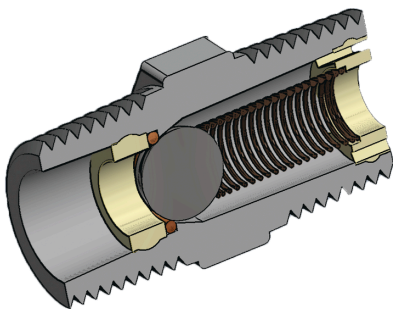
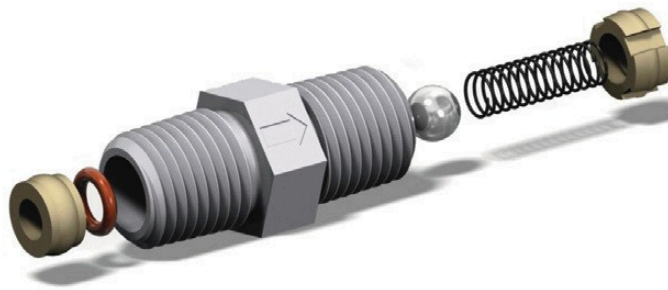
SLEEVES

Sleeves (use with PG nuts)

| JACO | | Tube | Tube | Conf. | Tube |
|----------|------|-------|------------|-------|------|
| Part No. | | O.D. | (use with) | | |
| Matl. | Tube | Conf. | | | |
| N | 6MM | GRP | 6 | | |
| C | 8MM | GRP | 8 | | |
| P | 10MM | GRP | 10 | | |
| K | 12MM | GRP | 12 | | |



JACO CHECK VALVES - BSPT



- Viton "O" Ring
- Stainless Ball & Spring (Grade 316)
- Maximum Operating Temp. 82.22°C @ 220 P.S.I./1516.85 kPa
- Cracking Pressure 1-2.5 PSI (≈6.89-17.24 kPa)
- Zero Leakage
- Male Pipe BSPT Style
- All valves 100% tested prior to shipment

*Alternate options include but not limited to: Hastelloy C Springs, Teflon Ball and many O-ring options

Check Valves (CV)

| JACO Part No. | | | Material | MALE PIPE BSPT | A | B | C |
|---------------|------|-------|----------|----------------|-------|------|-------|
| Conf. | Pipe | Matl. | | | ±.4 | ±.4 | ±.4 |
| CV - 2 | - 2 | - K | PVDF | 1/8" | 25.40 | 2.38 | 11.11 |
| CV - 4 | - 4 | - K | PVDF | 1/4" | 35.72 | 4.76 | 15.88 |
| CV - 6 | - 6 | - K | PVDF | 3/8" | 38.10 | 6.35 | 20.64 |
| CV - 8 | - 8 | - K | PVDF | 1/2" | 45.64 | 8.73 | 23.81 |

JACO Check Valve Flow Rate in L/min at Various Water Pressures

| JACO Part No. | | | 30 PSI 206.843 kPa | 50 PSI 344.738 kPa | 70 PSI 482.633 kPa | 90 PSI 620.528 kPa |
|---------------|------|-------|-----------------------|-----------------------|-----------------------|-----------------------|
| Conf. | Pipe | Matl. | | | | |
| CV - 2 | - 2 | - K | 1.70 L/min | 2.08 L/min | 2.65 L/min | 2.84 L/min |
| CV - 4 | - 4 | - K | 10.22 L/min | 11.73 L/min | 12.87 L/min | 14.38 L/min |
| CV - 6 | - 6 | - K | 11.36 L/min | 13.25 L/min | 15.14 L/min | 17.03 L/min |
| CV - 8 | - 8 | - K | 14.76 L/min | 17.79 L/min | 18.93 L/min | 20.82 L/min |

**Contact our team
for alternative
configurations
and applications.
1.800.229.JACO**

IN-HOUSE TOOLING AND MANUFACTURING ENSURE

Quality

JACO is the most unique fittings company in the industry because it engineers and designs its own fittings, constructs the tooling, and then molds the fittings—all in-house.

JACO's many years as a custom injection molder, designing and producing a wide range of precision, close tolerance parts, has provided the company with the expertise to develop high quality fittings and check valves. By having total control of all manufacturing aspects from design through production, JACO can also control the quality.

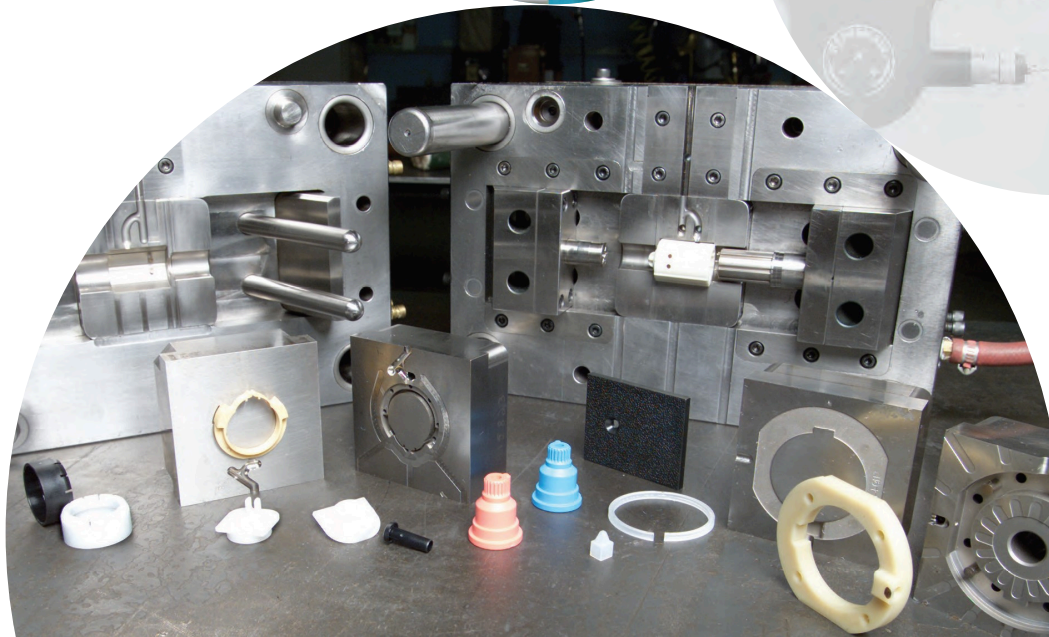
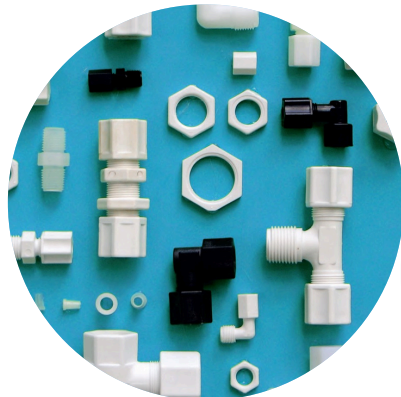
JACO's Engineering Group prepares fittings concepts into detailed engineering drawings. In JACO's Tooling Group, tooling experts use sophisticated equipment to design and craft the most complex of molds. JACO has built many varieties of fitting molds and has gained expertise in the development of threaded parts. A full complement of CNC and EDM machines, staffed by a team of professionals, contributes to the delivery of superior quality

molds. After tooling, the work transfers to JACO's Molding Group, utilizing more than 45 injection molding machines. Each day, thousands of fittings are molded to close tolerances with unflinching repeatability, using scientific molding processes.

In order to consistently meet all customer requirements and continually increase customer satisfaction, JACO is committed to the continuous improvement of our products, services, and Quality Management System. This total commitment to Quality has enabled JACO to build and maintain a reputation of absolute trustworthiness. We are dedicated to providing the personnel and resources necessary to ensure the highest quality parts. This goal is achievable with the assistance of JACO's highly trained Quality Assurance Team which accurately measures parts using precision gauges and CMM instrumentation. With JACO's various capabilities, it can continuously ensure the quality and capability of JACO fittings.

Quality Policy

At JACO, we are all personally committed to meet, and driven to exceed, our customers' expectations while continually improving our Quality Management System and satisfying applicable requirements.





JACO
MADE IN USA

JACO utilizes some of it's own line of injection molding machines with integrated process controls.

For inquiries and quotes on JACO custom molded products, please contact us:

Phone 1.440.234.4000

Toll-Free 1.800.229.JACO

Email sales@jacomfg.com

Email support@jacomfg.com

www.jacomfg.com



"We build thousands of Reverse Osmosis Systems annually and we are a large distribution house of water treatment equipment.

We are starting to do a catalog page and a web video of the reasons to use USA-made Jaco fittings whenever possible over "push-to-connect" fittings.

My 25 years of experience has shown me that "push-to-connect" fittings will leak over time due to worn o-rings. Jaco fittings may take a few seconds longer to assemble, but basically do not leak if they are assembled correctly."

Thanks,
E. Allan Horner CWS-VI, CI
(Certified Water Specialist)
Impact Water Products

TERMS

Price subject to change without notice.

Fittings are priced as complete units. Ordering Nuts and Bodies separately will not raise quantity to higher discount schedule.

Pricing is based on per order per release.

Discounts apply only to pack quantities.

Terms: TBD based on credit-worthiness

FREIGHT: EXW Berea, Ohio U.S.A.

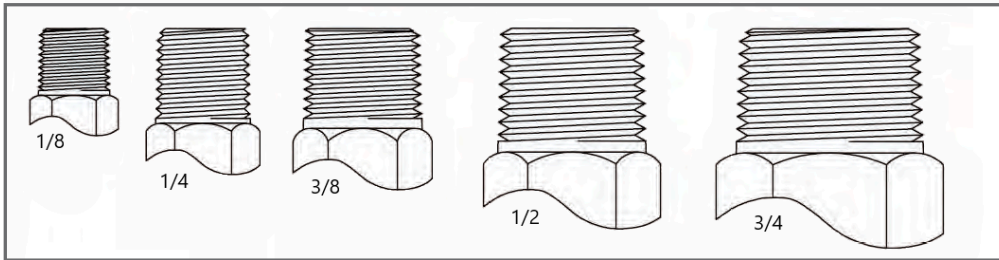
MINIMUM ORDER U.S.A. \$100.00 NET

FOREIGN \$150.00 NET

DISCOUNTS APPLY ONLY IF INVOICE TERMS ARE MET.



British Standard Pipe Taper (BSPT) Thread Size Chart



Images to scale. (position part over image to determine size.)

Pipe Thread Sealants

A thread sealant should always be used when assembling tapered threads. PTFE Pipe Thread Sealant or PTFE Pipe Seal Tape must be used. These lubricants allow for a deeper seating of the threads, and help prevent the threads from seizing when being unscrewed. These products work as a deformable filler, helping to seal the joint without hardening and make the fitting easier to tighten. Thus, caution should be observed to avoid over-tightening plastic pipe threads.

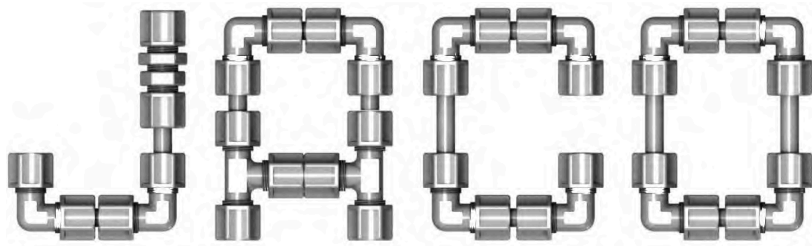
Pressure Ratings

JACO Tube Fitting Pressure Ratings

JACO tube fittings are rated to the working pressures stated in this catalog. Careful selection of high-quality tubing is important when installing safe, leak-tight systems.

Safe Product Selection When selecting a product, the total system design must be considered to ensure safe, trouble-free performance. Function, temperature, material compatibility, adequate ratings, proper installation, operation, and maintenance are the responsibilities of the system designer and user.

Caution: Do not mix or interchange parts with those of other manufacturers. Our parts are designed specifically to be used with other JACO compression fittings.



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Toll-Free 1.800.229.JACO
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