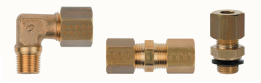
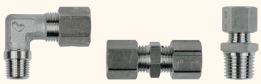
	Materials	Fluids	Maximum Pressure (bar)	Temperature		Performance in Aggressive Environments		Page
				Min.	Max.	Mechanical	Chemical	
Compression Fittings								
Brass Compression Fittings 	Brass	Compressed air, industrial fluids	550 (depending on the type of tubing used)	-60°C	+250°C	Excellent	Moderate	**137**
Stainless Steel Compression Fittings 	Stainless steel 316L	All fluids	400 (80 bar in aggressive environment)	-60°C	+250°C	Excellent	Excellent	**151**

Compression Fitting Part Numbers

0105 14 27 99

Item Type
01XX: brass
18XX: stainless steel

Ø
04 = 4 mm
06 = 6 mm
...
20 = 20 mm
28 = 28 mm

Thread
10 = 1/8
13 = 1/4
...
21 = 1/2
27 = 3/4

Suffix
39: bonded seal
40: treated steel
60: nut
70: polymer nut
99: chemical nickel

PL Fitting Part Numbers

F3BPL 8/10 -1/4

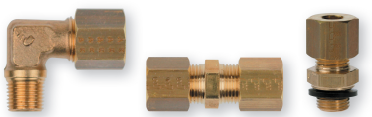
Item Type
FBPL
F3BPL
HBPL
WBPL
...

Ø
2.7/4
4/6
6/8
7.5/10
8/10
10/12
11/14

Thread
BSPT:
1/8
1/4
3/8
...
Metric:
M10
M12

NPT: with adaptor
BSPT and NPT

Brass Compression Fittings / Stud Fittings



These "universal" fittings provide users with numerous connection options for a wide variety of tube materials without the need for tube threading or soldering guarantee excellent long-term sealing and performance.

Ø metric:
4 to 28 mm

Technical Characteristics

- **Compatible Fluids:** Water, machining oil, fuel, hydraulic oil, compressed air, chemical fluids, disinfectants
- **Working Pressure:** Vacuum to 550 bar
- **Working Temperature:** -60°C to +250°C without sealing washer, with metal tubing

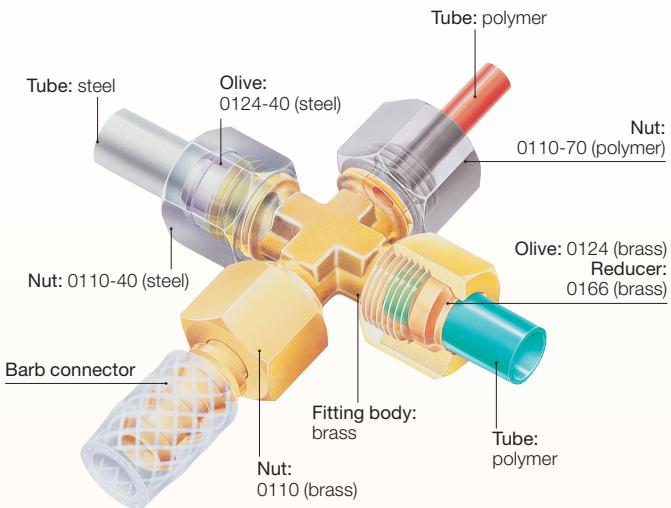
Working temperature: -20°C to +100°C, with sealing washer and polyamide tubing.

Reliable performance is dependent upon the type of fluid conveyed, component materials and tubing being used.

Guaranteed for use with a vacuum of 755 mm Hg (99% vacuum).

Thread sealing must be guaranteed by user.

Component Materials



Advantages

- 22 configurations
- Excellent sealing due to the tightening of the olive onto the tube
- Metallic sealing for optimum service life, pressure and temperature ranges
- Connection of different types of tubing and hose: metal, polymer, steel, rubber, etc.
- Multiple tube diameters can be connected using the Legris reducer assembly system

Regulations

- **PED**
- **REACH**
- **RoHS**

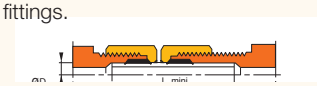
Maximum Bore Diameters

The table below shows the recommended compatibility of tube size, BSPP male thread and maximum bore.

Tube O.D.	BSPP Thread	Max. Bore
4-5-6	G1/8	4
6-8-10	G1/4	7
10-12-14	G3/8	11
14-15-16-18	G1/2	14
18-20-22	G3/4	18
22-25-28	G1	24

Tube Length for Assembly

Minimum length of tube (L) between 2 fittings.



ØD	L (mm)	ØD	L (mm)	ØD	L (mm)
4	26.5	12	39	20	51
5	26	14	41	22	54
6	26	15	41	25	62
8	32	16	46.5	28	62
10	39	18	49.5		

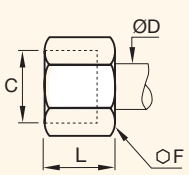
Regulations

CNOMO: E07.21.115N
(for robotic equipment in the automotive industry)

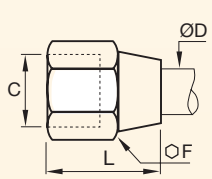
DI: 97/23/EC (PED)
RG: 1907/2006 (REACH)
DI: 2002/95/EC (RoHS)
DI: 94/9/EC (ATEX)

Recommended Nut Tightening Torque

Tightening torque in daN.m =
maximum tightening torque of a 0110 nut and 0124 olive with copper, brass or steel tube.



Nut 0110 and 0110..40



Nut 0110..60

Ø D (mm)	⬡F 0110	⬡F 0110..60	Max. daN.m Copper or Brass	⬡F 0110..40	Max. daN.m Steel
4	10	11	0.7	10	1.5
5	12	13	0.7	12	1.5
6	13	13	1.5	13	2.5
8	14	16	1.5	14	2.5
10	19	20	1.8	19	3
12	22	22	3	22	4.5
14	24	24	3.5	24	5.5
15	24	24	4	24	6
16	27	27	5	27	7
18	30	30	6	30	9
20	32	32	6	32	10
22	36	36	7	36	12
25	41	41	8	41	13
28	42		9		

Brass Compression Fittings / Stud Fittings

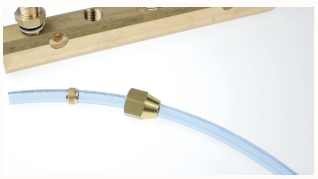
Installation

Cutting the Tube

Cut the polymer or metal tube square.

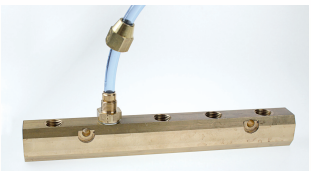
Preparing the Connection

For metal tubing, de-burr the tube prior to connection. Tube bending should be done before connection.



Slide the nut onto the tube; lubricate the threads on the body and nut along with the olive to facilitate tightening (for metal tubing as well). Fit the olive onto the end of the tube.

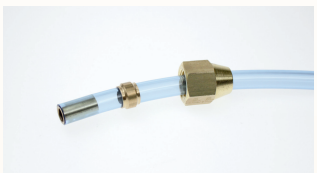
Connecting the Tube



Push the tube up against the shoulder of the body of the fitting and hand tighten.

Final Assembly

Tighten the nut using a spanner or torque wrench to enable the olive to bite on the tube, the connection being completed when the recommended tightening torque is reached (see tables below).



It is recommended to use an insert in order to prevent tube creeping (diameter > 14mm)

Recommended Tube Type

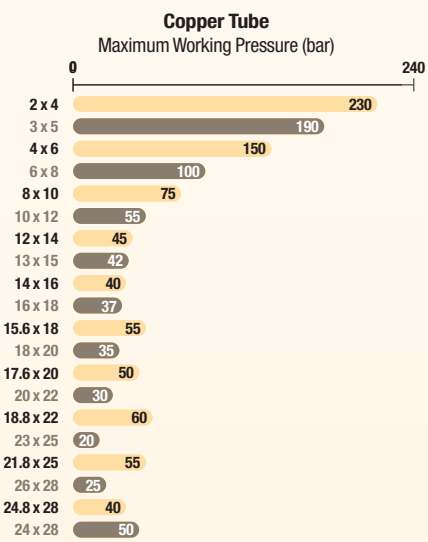
Copper tube: copper which has been "cold rolled", cold drawn and in straight lengths.
Brass tube: in cold-rolled straight lengths (same working pressure as for copper tube).
"Coiled annealed" copper tube: reduces working pressure by 35%; must be avoided completely if vibration is present.

Steel tube: "thin wall" cold drawn, seamless, bright annealed and in straight lengths.
6 mm to 16 mm O.D.: max. wall thickness 1 mm
Above 16 mm O.D.: max. wall thickness 1.5 mm

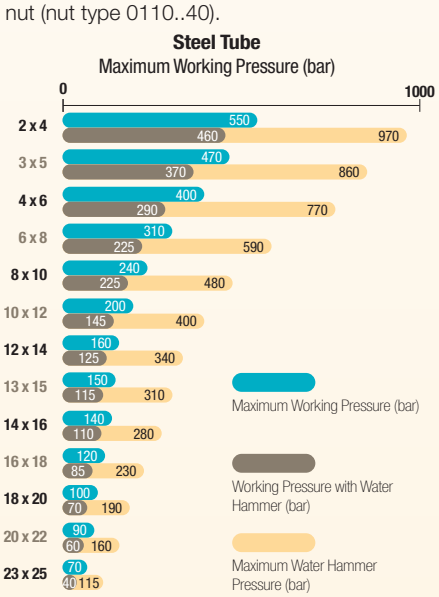
Polyamide tube: semi-rigid
For rigid polyamide tube, multiply the figures in this table by 1.8.

Recommended Tube-Fitting Assembly Configurations

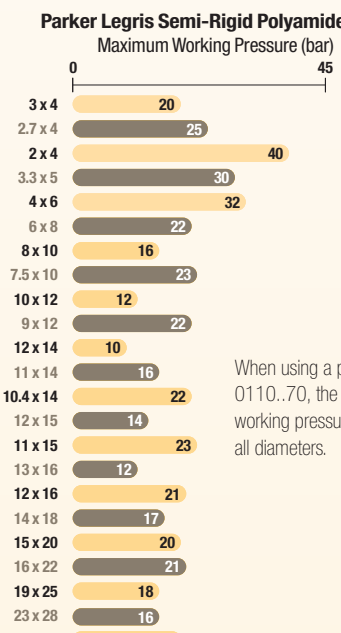
Assembled using Parker Legris brass olive and nut.



Assembled using Parker Legris steel olive and nut (nut type 0110..40).



Assembled using Parker Legris brass olive and nut.



When using a plastic nut type 0110..70, the maximum working pressure is 10 bar, for all diameters.

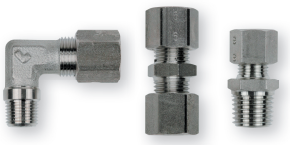
Working Pressure Coefficients for Semi-Rigid Polyamide Tubing

Temperature °C	-40°C / -15°C	-15°C / +30°C	+30°C / +50°C	+50°C /+70°C	+70°C /+100°C
Factor	1.8	1	0.68	0.55	0.31

Parker Legris brass compression fittings are not compatible with ammonia and its derivatives.

The above recommendations are given in good faith. However, since each application is different, it is advisable to undertake tests in actual working conditions.

Stainless Steel Compression Fittings / Stud Fittings



These "universal" compression fittings offer excellent resistance to environmental conditions and corrosive fluids. They are pressure and temperature-resistant and are able to withstand strong vibration and water hammer. Suitable for food fluids.

Ø metric:
6 to 16 mm

Technical Characteristics

- **Compatible Fluids:** Many fluids
- **Working Pressure:** Vacuum to 400 bar (80 bar in corrosive environments)
- **Working Temperature:** -60°C to +250°C with metal tubing

Tightening Torques	DN	6	8	10	12	16
	daN.m	2	3	4	6.5	9.5

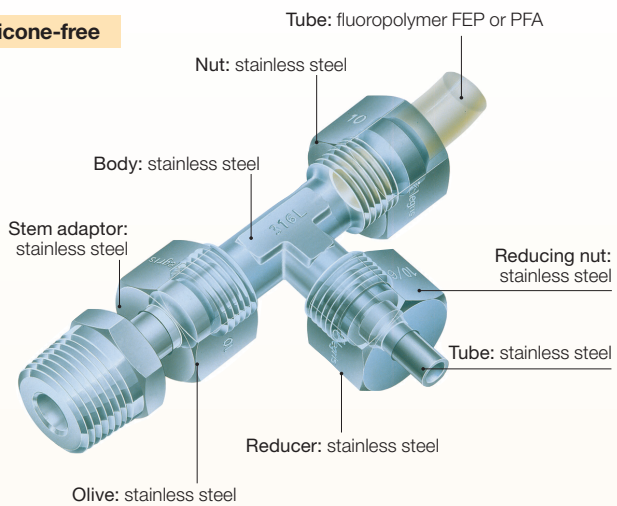
Reliable performance is dependent upon the type of fluid conveyed and tubing being used.

Guaranteed for use with a vacuum of 755 mm Hg (99% vacuum).

Thread sealing must be guaranteed by user.

Component Materials

Silicone-free



Regulations

- **RoHS**
- **PED**
- **REACH**
- **1935/2004**

Advantages

- Excellent sealing and retention of the tube
- Metallic sealing guarantees maximum service life
- Connection of different types of pipes and tubes: metal, polymers, steel, rubber,...
- No tube support required for rigid and semi-rigid polyamide tubing below 12 mm
- Connection of several pipe diameters thanks to the Parker Legris assembly reduction system
- Range of associated accessories in 316L stainless steel

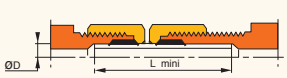
Maximum Bore Diameters

The table below shows the recommended compatibility of tube size, BSPP male thread and maximum bore.

Tube O.D	BSPP Thread	Max. Bore
6	G1/8	4
6-8-10	G1/4	7
10-12	G3/8	11
16	G1/2	14

Tube Length for Assembly

Minimum length of tube (L) between 2 fittings.



ØD	L mm	ØD	L mm
4	26.5	10	39
6	26	12	39
8	32	16	46.5

The use of Parker Legris stainless steel compression fittings is dependant on the tube material. Tables of recommended working pressure for the different tubes are shown below.

Recommended Tube Type

Semi-rigid polyamide or fluoropolymer tube

Stainless steel tube
"Thin Wall" cold-drawn seamless, annealed and passivated:
wall thickness tolerance +/-0.1 mm.
For use with "thin wall" stainless steel tube from 6 mm to 16 mm O.D., maximum wall thickness 1 mm.

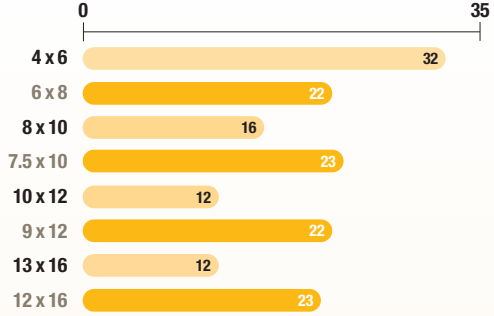
Recommended Tube/Fitting Assembly Configurations

Assembled using Parker Legris olive and nut in stainless steel, with a tube support.

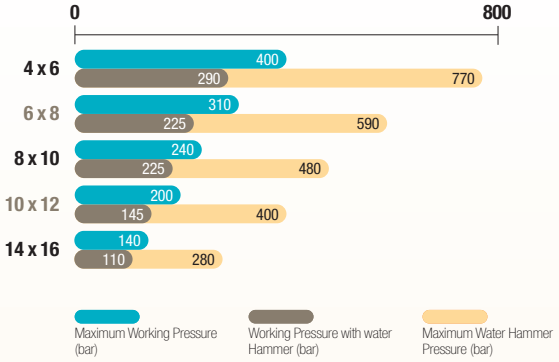
Stainless steel tube
Stainless steel tube: in cold-rolled straight lengths
Coiled annealed stainless tube : reduces working pressure by 35%; do not use if there is vibration.

Stainless Steel Compression Fittings / Stud Fittings

Semi-Rigid Polyamide Tube
Maximum Working Pressure (bar)



Stainless Steel Tube
Maximum Working Pressure (bar)



Working Pressure Coefficients for Semi-Rigid Tubing

Temperature °C	-40°C / -15°C	-15°C / +30°C	+30°C / +50°C	+50°C/+70°C	+70°C/+100°C
Factor	1.8	1	0.68	0.55	0.31

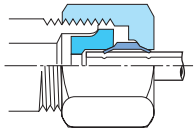
The above recommendations are given in good faith. However, since each application is different, it is advisable to undertake tests in actual working conditions.

Installations

Fitting

The fitting comprises three parts (body/olive/nut). For assembly procedure, please see Brass Compression Fitting page.

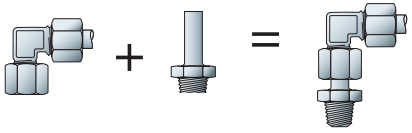
Diagram: Assembled Fitting



A very slight distortion of the tube appears; this shows the fitting has been correctly tightened.

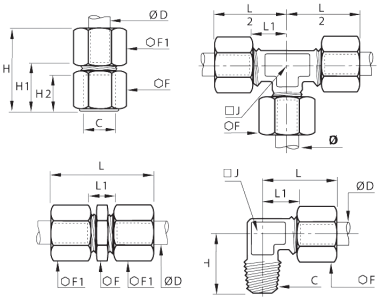
Orientable Elbow Assembly

Elbow **1802** + Adaptor **1820** =

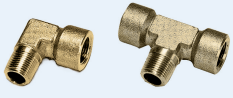
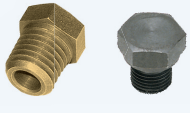


Customised Fittings

If our standard range does not meet your needs, Parker Legris can develop customised solutions for your applications.



Adaptors and Manifolds

	Materials	Fluids	Maximum Pressure (bar)	Temperature		Performance in Aggressive Environments		Page
				Min.	Max.	Mechanical	Chemical	
Adaptors and Manifolds								
Nickel-Plated Brass Adaptors 	Nickel-plated brass	Compressed air	60	-10°C	+80°C	Good	Moderate	**163**
Brass Adaptors 	Brass	Compressed air	200	-40°C	+150°C	Good	Moderate	**168**
Stainless Steel Adaptors 	316L stainless steel	All fluids	200	-20°C	+180°C	Excellent	Excellent	**173**
Manifolds 	Anodised aluminium, brass	Compressed air	20	-10°C	+80°C	Excellent	Good	**176**
Plugs 	Brass, nickel-plated brass, stainless steel, steel	All fluids (depending on materials)	200	-60°C	+180°C	Excellent	Moderate to excellent	**178**
Accessories 	FKM, copper, polymer	All fluids (depending on materials)	250	-250°C	+260°C		Excellent	**182**