

# Parker Legris: Connection Solutions

for Life Sciences & Clean Rooms

aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



The Fluid System Connectors Division Europe (Legris) of Parker Hannifin, the global leader in motion and control technologies, has edited this Life Sciences catalogue to promote the many different ranges of leak-free and compact push-in fittings, tubing, function fittings, valves and complementary products specific to Life Sciences and Clean Room applications.

With more than 40 years of experience in the manufacturing and marketing of high quality fittings, Parker Legris today proposes a wide range of proven solutions for medical and clean room environments: bio-medical equipment, breathing systems, diagnosis devices, pharmaceutical process...

For advice or more information, please do not hesitate to contact us.

Visit our web site today: www.parkerlegris.com.





P. 5



Part Number Identification

P. 6



Range of Push-In Fittings

P. 10



Range of Cartridges

P. 20



PFA Tubing

P. 22



Ball Valves

P. 24



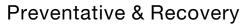
# MEDICAL

# Connection Solutions for Life Sciences & Clean Room Applications



### Respiratory

Oxygen Therapy/Oxygen Gas/Transfilling/Concentrators/ Oxygen Conserving Devices/Sleep Apnea/ICU/Aerosol



Perioperative Temperature Mgmt./Pre-OP/OR/Post-OP/
Therapeutic/Compression Therapy/Alternating Support Surfaces



## **Bio-Fluid Management**

Dialysis/Medical Autoclaves/Dental/Hospital Infection Control/ Suction Therapy/Wound Therapy



### Surgical & Diagnosis

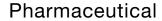
Surgical Power Tools/Imaging Equipment/Home Diagnostic Equipment/Advanced Prosthetics



Gas Control/AA Spectrometry/Thermal Conductivity Detector



Air/Vacuum Conditioning Unit/Air Bearing Controller/ Semi-Conductor/Neonatal Ventilator/Filling & Packing



Air & Nitrogen Supply/Buffer Preparation/Bioreactor Production/ Chromatography/Diafiltration & Concentration/Dosing/ Filling & Packing

## Respiratory

Anti-Dust Systems/O, Delivery Systems









INDUSTRIAL

# Directives and Regulations: the Parker Legris Offer



#### European RoHS Directives: 2011/65/EC

Relating to the limitation of the use of 6 hazardous substances in electrical and electronic equipment (mercury, lead, cadmium, hexavalent chromium, PBB and PBDE).

ISO 14001

Environmental Management Systems: Requirements with Guidance for Use.



#### REACH Regulation: no. 1907/2006

As product manufacturer, we are subject to article 33 of the regulation which defines a duty to inform when a candidate substance is present at more than 0.1% weight for weight.

ISO 14644-1

Clean Rooms and Associated Controlled Environments. PART 1 : Classification of Air Cleanliness

The document covers the classification of air cleanliness in clean rooms and associated controlled environments exclusively in terms of concentration of airborne particles. Only particle populations having cumulative size distributions based on threshold (lower limit) size ranging from 0.1 <my>m to 5 <my>m are considered for classification purposes.



#### Pressurised Equipment Directive: 97/23/EC

This directive regulates the design, manufacture and assessment of pressurised equipment to ensure operating safety.

**ISO 13485** (pending)

Medical Devices - Quality Management Systems: Requirements for Regulatory Purposes

This International Standard specifies requirements for a quality management system where an organization needs to demonstrate its ability to provide medical devices and related services that consistently meet customer requirements and regulatory requirements applicable to medical devices and related services.



### ATEX Directive: 94/9/EC mandatory since 01/07/2003

This directive is mandatory for electrical and nonelectrical equipment used in explosive gaseous or dusty atmospheres. The use of our products in these areas must be determined in accordance with the ATEX environment. ISO 15001:2010

## Anaesthetic and Respiratory Equipment, Compatibility with Oxygen

ISO 15001:2010 specifies requirements for the oxygen compatibility of materials, components and devices for anaesthetic and respiratory applications, which can come into contact with oxygen in normal conditions or in single fault conditions at gas pressures greater than 50 kPa.



#### CFR 21: Code of Federal Regulation Title 21: Food and Drugs

This code consists of lists of prohibited substances for materials intended to come into contact with foodstuffs.



#### CGA G-4.1

#### Cleaning Equipment for Oxygen Service

The cleaning methods described in this publication are intended for cleaning equipment used in the production, storage, distribution, and use of liquid and gaseous oxygen.



#### Standard Practice for Cleaning Methods and Cleanliness Levels for Material and Equipment Used in Oxygen-Enriched Environments

This practice covers the selection of methods and apparatus for cleaning materials and equipment intended for service in oxygen-enriched environments. Contamination problems encountered in the use of enriched air, mixtures of oxygen with other gases, or any other oxidizing gas may be solved by the same cleaning procedures applicable to most metallic and non-metallic materials and equipment.



**Protecting natural resources:** By saving energy through the performance of our production facilities.

Improving performance: By changing habits in order to promote new materials and concepts. Asserting our values for the protection of the environment: By having all our sites ISO 14001 certified in order to unify all our employees around clear objectives regarding the management of the environment.



For grease used in fittings only.

The Parker Legris product range offers compliance with numerous European standards associated in particular with the directives and regulations referred to above. The official texts of these directives are available on the site: http://eur-lex.europa.eu.

#### **Certificates and Regulations**

Certificates of conformity for our products are available on our web site. Contact us for any further information you require.



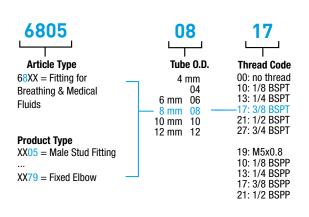
## Part Number Identification

The part numbers used for our product ranges are coded in such a way as to make it easy to identify any particular item.

#### **Part Number Construction for Fittings**

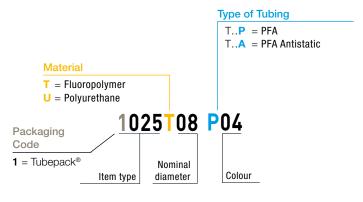
The part numbers are selected using a technical mnemonic code. Each fitting and valve is identified by:

- model series (4 digits)
- nominal diameter (2 digits)
- thread or 2<sup>nd</sup> nominal diameter (2 digits)
- a suffix, if applicable



The part numbers are selected using a technical mnemonic code. Each tube is identified by:

- model series (4 digits and a letter)
- nominal diameter (2 digits)
- colour (2 digits)
- inside diameter, if applicable



Nominal diameter code: equates to the outside diameter.

Colour code: see below

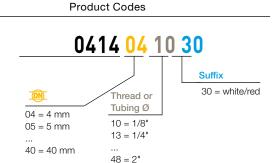
00 = (clear, USP Class VI)

12 = 13 = 14 = 1

01 = (antistatic)

#### **Complementary Products upon Request**

Based on the standard components of the universal series, these ball valves allow the valve to be adapted to specific needs. These products are identified by the specific colour identification on the handle and are manufactured according to a special process (greased and degreased) guaranteeing perfect chemical compatibility with breathable fluids.



#### Identification

Each series may be easily identified by a colour marking on the



Identifica	tion		Body	Lever	Ball	Stem and Wear- Compensation Seals	Seat Seals	Grease	
Suffix on the body		our ds on lever	Nickel- plated brass	Standard	Nickel- plated polished brass	EPDM	Rilsan: graphite- impregnated	Compatible Oxygen BAM certified	Application Examples
30			•	•	•	•	•	•	Gaseous oxygen & breathable circuits



## **Product Ranges for Life Sciences & Clean Rooms**

#### Push-In Fittings, with Polymer or Metal Adaptor (P.10)



Fluids: Clean air, breathing and medical

fluids

Materials: biopolymer, EPDM, FDA

nickel-plated brass **Pressure:** 16 bar

Temperature: -10°C to +95°C Ø metric: 4 mm to 12 mm

Cartridges (P.20)



Fluids: Air and clean air, breathing and

medical fluids

Materials: biopolymer, EPDM, stainless steel

316L or nickel-plated brass

Pressure: 16 bar

Temperature: -10°C to +95°C Ø metric: 4 mm to 12 mm

#### **PFA Tubing**

(P.22)



Fluids: many fluids

#### Materials:

- 3 grades of perfluoroalkoxy
- High purity medical-grade, clear
- Standard food-grade, 3 "crystal" colours

- Antistatic (0.2 Ω.m), black

Pressure: 36 bar

Temperature: -196°C to +260°C 0.D. metric: 4 mm to 12 mm

#### Ball Valves, Universal Series

(P. 24)



Fluids: industrial fluids, oxygen

Materials: nickel-plated forged brass

Pressure: 40 bar

Temperature: -20°C to +80°C

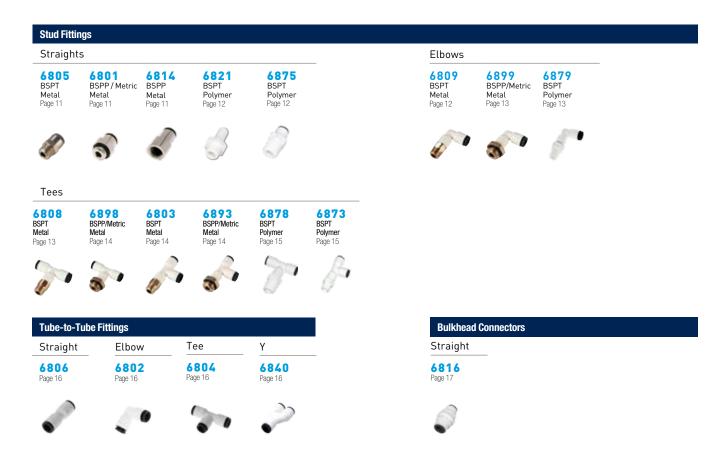
(DN): 4 mm to 40 mm



#### Sterile Medical Packaging

All fittings are packed individually in an antistatic and airtight bag, guaranteeing impeccable cleanliness for safe and easy use.

## Product Ranges for Life Sciences & Clean Rooms



Plug-In Fittir	Plug-In Fittings and Accessories						
Elbow	Tees		Accessor	ies			
<b>6882</b> Page 17	<b>6888</b> Page 17	<b>6883</b> Page 17	<b>6866</b> Page 18	<b>6822</b> Page 18	<b>6851</b> Page 18	<b>6826</b> Page 18	<b>6830</b> Page 18
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#### Polymer Cartridges for Life Sciences & Clean Rooms

Carstick®

6800



Flexible Calibrated Tub	ing	Industria	l Valves: Univer	sal and Universal Customised Series	3
Fluoropolymer Tubing		In-Line		In-Line with Fixing Holes and Panel Mounting	In-Line, 3-Way with Fixing Holes and Panel Mounting
PFA		0402	0401	<b>0446</b> 2/2	0452 3/2
	1010TP 1050TP 1100TP	Page 25	Page 25	Page25	9/2 Page 25

## Push-In Fittings for Life Sciences & Clean Rooms

This "eco-designed" medical range proposes an innovative solution for respiratory and anesthesia applications. These fittings ensure cleanliness and guarantee no fluid contamination to meet the most demanding applications.

### **Product Advantages**

Ease of Use Ergonomic and aesthetic design

Compact product fully adapted to portable devices

Easy-to-clean external surfaces

Eco-designed (materials, manufacturing process, weight,

dimensions, performance and cleanliness)

Antistatic and airtight packaging to prevent contamination

**Purity &** Security

High cleanliness level, according to ASTM G93: level B and particle size level 300

Safety clip to secure connection and identify circuits

100% leak-tested in production

Date coding to guarantee quality and traceability

Materials Complying with Health Regulations

**Hi-Tech** Bio-sourced polymer, FDA chemical nickel-plated brass Compatible with cleaning agents recommended for decontamination processes

> Excellent chemical and mechanical resistance, even at high temperatures

Suitable for ETO gamma ray sterilization



Respirator Bio-Fluid Management Clean Rooms Pharmaceutical Process Laboratory

#### **Technical Characteristics**

Compatible Fluids	Breathing, neutral & medical gases Medical cleaning agents Other fluids: please consult us								
Working Pressure	Vacuum to 16 bar								
Working Temperature	-10°C to +9	-10°C to +95°C							
Tightening Torques	Thread	Thread 1/8" and 1/4" 3/8" a							
(BSPT/NPTF)	daN.m		0.15		0.30				
Tightening Torques (Metric & BSPP)	Thread	M5 x 0.8	G1/8	G1/4	G3/8	G1/2			
(Medic & Doff)	daN.m	0.16	8.0	1.2	3	3.5			

Reliable performance is dependent upon the type of fluid conveyed, component materials and tubing being used. Use is guaranteed with a vacuum of 755 mm Hg (99% vacuum).



DI: 2002/95/EC (RoHS), 2011/65/EC

**DI:** 1907/2006 (REACH) FDA: 21 CFR **ASTM** G93-03

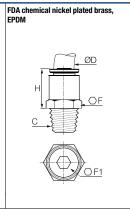
**ISO** 15001

**BAM** grease certification

**CGA** G4.1

#### 6805 Stud Fitting, Male BSPT Thread

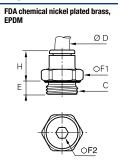




ØD	C	€	F	F1	Н	kg
4	R1/8	6805 04 10	10	3	9.5	0.005
4	R1/4	6805 04 13	14	3	6.5	0.012
6	R1/8	6805 06 10	10	4	11.5	0.005
0	R1/4	6805 06 13	14	4	8.5	0.011
	R1/8	6805 08 10	13	5	20	0.011
8	R1/4	6805 08 13	14	6	17	0.014
	R3/8	6805 08 17	17	6	13	0.021
	R1/4	6805 10 13	16	7	20	0.017
10	R3/8	6805 10 17	17	8	16.5	0.019
	R1/2	6805 10 21	21	8	14	0.037
12	R3/8	6805 12 17	19	9	24	0.028
12	R1/2	6805 12 21	21	10	19.5	0.036

#### **6801** Stud Fitting, Male BSPP and Metric Thread

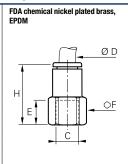




ØD	C	•	E F F1	Н	kg
	M5x0.8	6801 04 19	3 8 2.5	14	0.003
4	G1/8	6801 04 10	5.5 13 3	11.5	0.007
	G1/4	6801 04 13	5.5 16 3	10.5	0.011
	M5x0.8	6801 06 19	3 10 2.5	16	0.005
6	G1/8	6801 06 10	4.5 13 4	13	0.007
	G1/4	6801 06 13	5.5 16 4	12.5	0.011
	G1/8	6801 08 10	4.5 13 5	20.5	0.011
8	G1/4	6801 08 13	5.5 16 6	19.5	0.016
	G3/8	6801 08 17	5.5 20 6	18	0.022
	G1/4	6801 10 13	5.5 16 7	23	0.018
10	G3/8	6801 10 17	5.5 20 8	19.5	0.021
	G1/2	6801 10 21	7 24 8	18	0.033
12	G3/8	6801 12 17	5.5 20 9	27	0.029
-12	G1/2	6801 12 21	7 24 10	22.5	0.035

#### **6814** Stud Fitting, Female BSPP and Metric Thread

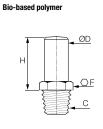




ØD	C	•		E	F	Н	kg
	M5x0.8	6814 04 19		6.5	8	19.5	0.005
4	G1/8	6814 04 10		9.5	13	22.5	0.010
	G1/4	6814 04 13	1	3.5	16	26.5	0.015
6	G1/8	6814 06 10		9.5	13	24.5	0.011
	G1/4	6814 06 13	1	3.5	16	28.5	0.017
	G1/8	6814 08 10		9.5	13	29	0.015
8	G1/4	6814 08 13	1	3.5	16	33	0.021
	G3/8	6814 08 17		14	19	34	0.025
	G1/4	6814 10 13	1	3.5	16	36	0.027
10	G3/8	6814 10 17		14	19	36	0.027
	G1/2	6814 10 21	1	9.5	24	41.5	0.048
12	G3/8	6814 12 17		14	19	40	0.033
12	G1/2	6814 12 21	1	9.5	24	45.5	0.052
14	G3/8	6814 14 17		14	22	42.5	0.057
16	G1/2	6814 16 21		15	27	49	0.096
			·				

#### 6821 Stud Standpipe, Male BSPT Thread



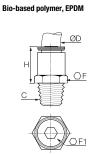


ØD	C	•	F	Н	kg
	R1/8	6821 06 10	13	19	0.002
6	R1/4	6821 06 13	14	19	0.003
	R3/8	6821 06 17	17	19	0.004
	R1/8	6821 08 10	19	23	0.003
8	R1/4	6821 08 13	19	23	0.004
	R3/8	6821 08 17	19	23	0.004
	R1/4	6821 10 13	19	25	0.004
10	R3/8	6821 10 17	19	25	0.005
	R1/2	6821 10 21	22	25	0.008
12	R3/8	6821 12 17	22	28	0.005
12	R1/2	6821 12 21	22	28	0.007

Thread without pre-coating.

#### **6875** Stud Fitting, Male BSPT Thread



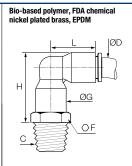


ØD	C		F	F1	Н	kg
4	R1/8	6875 04 10	11	3	18	0.003
4	R1/4	6875 04 13	14	3	18	0.004
6	R1/8	6875 06 10	11	4	18	0.002
	R1/4	6875 06 13	14	4	18	0.004
	R1/8	6875 08 10	17	6	20	0.004
8	R1/4	6875 08 13	14	6	20	0.004
	R3/8	6875 08 17	17	6	20	0.005
	R1/4	6875 10 13	17	7	21.5	0.005
10	R3/8	6875 10 17	19	7	21.5	0.007
	R1/2	6875 10 21	22	7	21.5	0.010
12	R3/8	6875 12 17	19	9	24.5	0.008
12	R1/2	6875 12 21	22	9	24.5	0.012
Thunand	, dela a , de sa se	. coating				

Thread without pre-coating.

#### **6809** Stud Elbow, Male BSPT Thread

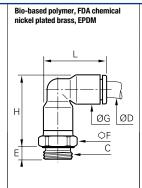




ØD	C	•	F	G	Н	L	kg
4	R1/8	6809 04 10	10	8.5	23	19	0.008
4	R1/4	6809 04 13	14	8.5	23.5	19	0.018
6	R1/8	6809 06 10	10	10.5	27	22.5	0.010
O	R1/4	6809 06 13	14	10.5	27.5	22.5	0.020
	R1/8	6809 08 10	13	13.5	33.5	29.5	0.018
8	R1/4	6809 08 13	14	13.5	32.5	29.5	0.022
	R3/8	6809 08 17	17	13.5	33	29.5	0.032
	R1/4	6809 10 13	15	16	39.5	34	0.031
10	R3/8	6809 10 17	17	16	39.5	34	0.041
	R1/2	6809 10 21	21	16	39.5	34	0.060
12	R3/8	6809 12 17	19	19	45.5	40.5	0.051
12	R1/2	6809 12 21	21	19	45.5	40.5	0.065

#### 5899 Stud Elbow, Male BSPP and Metric Thread

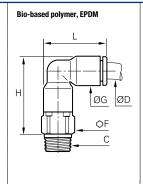




ØD	C	1	EF G H	L	kg
	M5x0.8	6899 04 19	3.5 8 8.5 23	19	0.002
4	G1/8	6899 04 10	4.5 13 8.5 22.5	19	0.006
	G1/4	6899 04 13	5.5 16 8.5 22.5	19	0.011
	M5x0.8	6899 06 19	3.5 10 10.5 26.5	22.5	0.003
6	G1/8	6899 06 10	4.5 13 10.5 26.5	22.5	0.006
	G1/4	6899 06 13	5.5 16 10.5 26.5	22.5	0.011
	G1/8	6899 08 10	4.5 13 13.5 35	29.5	0.009
8	G1/4	6899 08 13	5.5 16 13.5 33	29.5	0.012
	G3/8	6899 08 17	5.5 20 13.5 33	29.5	0.017
	G1/4	6899 10 13	5.5 16 16 40.5	34	0.014
10	G3/8	6899 10 17	5.5 20 16 39	34	0.017
	G1/2	6899 10 21	7 24 16 39	34	0.026
12	G3/8	6899 12 17	5.5 20 19 42	40	0.019
12	G1/2	6899 12 21	7 24 19 42	40	0.029

#### **6879** Stud Elbow, Male BSPT Thread



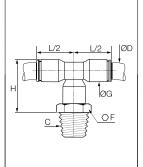


ØD	C	€	F	G	Н	L	kg
	R1/8	6879 06 10	13	10.5	28	24	0.037
6	R1/4	6879 06 13	14	10.5	28	24	0.007
	R3/8	6879 06 17	17	10.5	28	24	0.008
	R1/8	6879 08 10	19	13.5	34	29.5	0.010
8	R1/4	6879 08 13	19	13.5	34	29.5	0.011
	R3/8	6879 08 17	19	13.5	34	29.5	0.011
	R1/4	6879 10 13	19	16	38	34.5	0.019
10	R3/8	6879 10 17	19	16	38	34.5	0.020
	R1/2	6879 10 21	22	16	38	34.5	0.023
12	R3/8	6879 12 17	22	19	44	40	0.022
12	R1/2	6879 12 21	22	19	44	40	0.024

Thread without pre-coating; the body swivels for positioning purposes.

#### 6808 Stud Branch Tee, Male BSPT Thread





Bio-based polymer, FDA chemical nickel plated brass, EPDM

ØD	C	€	F	G	Н	L/2 kg
4	R1/8	6808 04 10	10	8.5	17	140.007
4	R1/4	6808 04 13	14	8.5	17	140.017
6	R1/8	6808 06 10	10	10.5	23	160.008
0	R1/4	6808 06 13	14	10.5	23	160.018
	R1/8	6808 08 10	13	13.5	30	230.010
8	R1/4	6808 08 13	14	13.5	30	230.018
	R3/8	6808 08 17	17	13.5	30	230.022
	R1/4	6808 10 13	15	16	34.5	26.50.019
10	R3/8	6808 10 17	17	16	34.5	26.50.024
	R1/2	6808 10 21	21	16	34.5	26.50.036
12	R3/8	6808 12 17	19	19	40.5	310.029
12	R1/2	6808 12 21	21	19	40.5	310.041

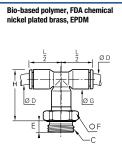


#### Sterile Medical Packaging

All fittings are packed individually in an antistatic and airtight bag, guaranteeing impeccable cleanliness for safe and easy use.

#### **6898** Stud Branch Tee, Male BSPP and Metric Thread

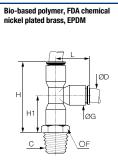




ØD	C	<b></b>		E	F	G	Н	L/2	kg
	M5x0.8	6898 04 19		3.5	8	8.5	24	14	0.003
4	G1/8	6898 04 10		5	13	8.5	22	14	0.007
	G1/4	6898 04 13		5.5	16	8.5	22	14	0.012
	M5x0.8	6898 06 19	;	3.5	10	10.5	30	16	0.004
6	G1/8	6898 06 10		5	13	10.5	29	16	0.008
	G1/4	6898 06 13		5.5	16	10.5	29	16	0.013
	G1/8	6898 08 10		4.5	13	13.5	38	23	0.012
8	G1/4	6898 08 13		5.5	16	13.5	36	23	0.015
	G3/8	6898 08 17		5.5	20	13.5	36	23	0.021
	G1/4	6898 10 13		5.5	16	16	43	26.5	0.019
10	G3/8	6898 10 17		5.5	20	16	43	26.5	0.022
	G1/2	6898 10 21		7.5	24	16	43	26.5	0.032
10	G3/8	6898 12 17		5.5	20	19	45.5	31	0.026
12	G1/2	6898 12 21		7	24	19	45.5	31	0.036

#### 6803 Stud Run Tee, Male BSPT Thread

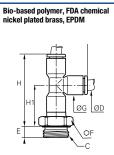




ØD	C	•	F	G	Н	H1	L	kg
4	R1/8	6803 04 10	10	8.5	31	18	14.5	0.007
4	R1/4	6803 04 13	14	8.5	31	19	14.5	0.017
6	R1/8	6803 06 10	10	10.5	38	22	17.5	0.008
O	R1/4	6803 06 13	14	10.5	39	23	17.5	0.018
	R1/8	6803 08 10	13	13.5	53	30	23	0.010
8	R1/4	6803 08 13	14	13.5	52	29	23	0.017
	R3/8	6803 08 17	17	13.5	52	29	23	0.022
	R1/4	6803 10 13	15	16	61	35	26.5	0.019
10	R3/8	6803 10 17	17	16	61	35	26.5	0.024
	R1/2	6803 10 21	21	16	61	35	26.5	0.036
10	R3/8	6803 12 17	19	19	70	39	31	0.029
12	R1/2	6803 12 21	21	19	70	39	31	0.041
12	R3/8	6803 12 17	19	19	70	39		31

#### 6893 Stud Run Tee, Male BSPP and Metric Thread

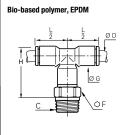




ØD	C		E	F	G	Н	H1	L	kg
	M5x0.8	6893 04 19	3.5	8	8.5	32	19	14.5	0.003
4	G1/8	6893 04 10	5	13	8.5	30	18	14.5	0.007
	G1/4	6893 04 13	5.5	16	8.5	30	18	14.5	0.012
	M5x0.8	6893 06 19	3.5	10	10.5	39	23	17.5	0.004
6	G1/8	6893 06 10	5	13	10.5	38	22	17.5	0.008
	G1/4	6893 06 13	5.5	16	10.5	38	22	17.5	0.013
	G1/8	6893 08 10	4.5	13	13.5	54	31	23	0.012
8	G1/4	6893 08 13	5.5	16	13.5	52	29	23	0.015
	G3/8	6893 08 17	5.5	20	13.5	52	29	23	0.021
	G1/4	6893 10 13	5.5	16	16	61	35	26.5	0.019
10	G3/8	6893 10 17	5.5	20	16	61	35	26.5	0.022
	G1/2	6893 10 21	7.5	24	16	61	35	26.5	0.032
12	G3/8	6893 12 17	5.5	20	19	67	36	31	0.026
12	G1/2	6893 12 21	7	24	19	67	36	31	0.042

#### 6878 Branch Tee, Male BSPT Thread

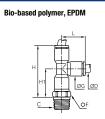




ØD	C		F	G	Н	L/2	kg
	R1/8	6878 06 10	13	10.5	28	18	0.008
6	R1/4	6878 06 13	14	10.5	28	18	0.009
	R3/8	6878 06 17	17	10.5	28	18	0.010
	R1/8	6878 08 10	19	13.5	34	23	0.012
8	R1/4	6878 08 13	19	13.5	34	23	0.013
	R3/8	6878 08 17	19	13.5	34	23	0.013
	R1/4	6878 10 13	19	16	38	26.5	0.018
10	R3/8	6878 10 17	19	16	38	26.5	0.019
	R1/2	6878 10 21	22	16	38	26.5	0.022
12	R3/8	6878 12 17	22	19	44	31	0.024
12	R1/2	6878 12 21	22	19	44	31	0.026
Thread v	vithout pre	e-coating; the body swivels for positioning purposes.					

6873 Run Tee, Male BSPT Thread





ØD	C	<b>[</b>	F	G	Н	H1	L	kg
	R1/8	6873 06 10	13	10.5	40	22	18.5	0.008
6	R1/4	6873 06 13	14	10.5	40	22	18.5	0.009
	R3/8	6873 06 17	17	10.5	40	22	18.5	0.010
	R1/8	6873 08 10	19	13.5	50	27	23	0.012
8	R1/4	6873 08 13	19	13.5	50	27	23	0.013
	R3/8	6873 08 17	19	13.5	50	27	23	0.013
	R1/4	6873 10 13	19	16	56.5	30	26.5	0.018
10	R3/8	6873 10 17	19	16	56.5	30	26.5	0.019
	R1/2	6873 10 21	22	16	56.5	30	26.5	0.022
10	R3/8	6873 12 17	22	19	65.5	34.5	31	0.024
12	R1/2	6873 12 21	22	19	65.5	34.5	31	0.026

Thread without pre-coating; the body swivels for positioning purposes.

Our coloured safety clips and tubing allow for circuit identification for breathable fluids according to the normalized rules in medical environments.



 $0_2$  and  $0_2$ 



Vacuum



Medical Air



N



In all cases, to secure your circuits

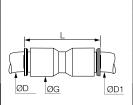




## **Tube-to-Tube Fittings**

# Equal and Unequal Tube-to-Tube Connector Bio-based polymer, EPDM ØD ØD1

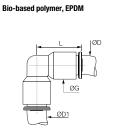




ØD	ØD1	€	G	L	kg
	4	6806 04 00	8.5	26.5	0.002
4	6	6806 04 06	10.5	29	0.002
	8	6806 04 08	13.5	37	0.005
	6	6806 06 00	10.5	30	0.004
6	8	6806 06 08	13.5	37	0.005
	10	6806 06 10	16	42	0.007
	8	6806 08 00	13.5	37	0.004
8	10	6806 08 10	16	42	0.007
	12	6806 08 12	19	50	0.012
10	10	6806 10 00	16	42	0.009
10	12	6806 10 12	19	50	0.013
12	12	6806 12 00	19	50.5	0.009

#### **6802** Equal and Unequal Elbow

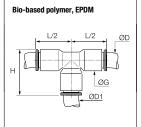




ØD	ØD1		G	L	kg
4	4	6802 04 00	8.5	19	0.002
	6	6802 04 06	10.5	24	0.004
6	6	6802 06 00	10.5	24	0.004
	8	6802 06 08	13.5	29.5	0.006
8	8	6802 08 00	13.5	29	0.004
0	10	6802 08 10	16	34.5	0.008
10	10	6802 10 00	16	34.5	0.005
10	12	6802 10 12	19	40.5	0.013
12	12	6802 12 00	19	40.5	0.010

### 6804 Equal Tee

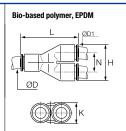




ØD	ØD1		G	Н	L/2	kg
4	4	6804 04 00	8.5	20	15.5	0.004
6	6	6804 06 00	10.5	23	18	0.006
8	8	6804 08 00	13.5	29	22.5	0.006
10	10	6804 10 00	16	34.5	26.5	0.009
12	12	6804 12 00	19	40	31	0.014

#### **6840** Equal Single Y Piece



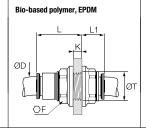


ØD	ØD1		H	K	L	N	kg
4	4	6840 04 00	17.5	8.5	30	9	0.004
6	6	6840 06 00	21.5	10.5	36.5	11	0.008
8	8	6840 08 00	28	13.5	44.5	14.5	0.007
10	10	6840 10 00	33	16	53	17	0.010
12	12	6840 12 00	39	19	60.5	20	0.025

## **Bulkhead Connectors and Plug-In Fittings**

#### **6816** Equal Bulkhead Connector

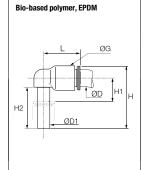




ØD		F	max	L	L1	min	kg
4	6816 04 00	13	5.5	15.5	10.5	10.5	0.018
6	6816 06 00	15	8.5	20	10	12.5	0.004
8	6816 08 00	18	14.5	27	10.5	15.5	0.007
10	6816 10 00	22	14.5	30	13	18.5	0.012
12	6816 12 00	26	18.5	35	15.5	22.5	0.020

#### **6882** Equal and Unequal Plug-In Elbow

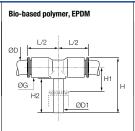




ØD	ØD1		G	Н	H1	H2	L	kg
4	4	6882 04 00	8.5	23	6	15.5	15	0.003
4	6	6882 04 06	10.5	26.5	7	17	16.5	0.002
	6	6882 06 00	10.5	26.5	7	17	17	0.003
6	4	6882 06 04	10.5	25	7	15.5	17	0.001
	8	6882 06 08	13.5	33.5	8	21.5	22.5	0.004
8	8	6882 08 00	13.5	33.5	8	21.5	22.5	0.004
	10	6882 08 10	16	39	9.5	24.5	26	0.007
10	10	6882 10 00	16	39	9.5	24.5	26.5	0.004
10	12	6882 10 12	19	44.5	10	27	30	0.011
12	12	6882 12 00	19	44.5	10	27	31	0.012

## 6888 Plug-In Equal Branch Tee

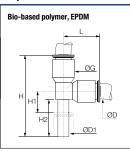




ØD	ØD1		G	Н	H1	H2	L/2	kg
4	4	6888 04 00	8.5	25	6	15.5	15	0.005
6	6	6888 06 00	10.5	28.5	7	17	16	0.006
8	8	6888 08 00	13.5	33.5	8	21.5	23	0.005
10	10	6888 10 00	16	41	9.5	24.5	26.5	0.007
12	12	6888 12 00	19	46.5	10	27	31	0.016

#### 6883 Plug-In Equal Run Tee



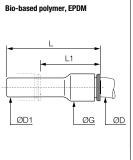


ØD	ØD1		G		Н	H1	H2	L	kg
4	4	6883 04 00	8.	5	33	6	15.5	15	0.002
6	6	6883 06 00	10.	5	38.5	7	17	18	0.002
8	8	6883 08 00	13.	5	49	8	21.5	23	0.005
10	10	6883 10 00	16		57	10.5	25.5	26.5	0.012
12	12	6883 12 00	19		65	36.5	27	31	0.016

## Plug-In Fittings and Accessories

#### 6866 Plug-In Reducer

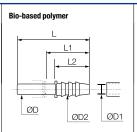




ØD	ØD1		G	L	L1	kg
4	6	6866 04 06	8.5	38	23.5	0.004
4	8	6866 04 08	8.5	38	19	0.004
6	8	6866 06 08	10.5	38	20	0.004
O	10	6866 06 10	10.5	39	17.5	0.002
8	10	6866 08 10	13.5	48.5	28.5	0.009
0	12	6866 08 12	13.5	48.5	24.5	0.004
10	12	6866 10 12	16	52	33.5	0.005
10	14	6866 10 14	16	53	33.5	0.005
12	14	6866 12 14	19	55.5	33.5	0.023

#### 6822 Plug-In Barb Connector

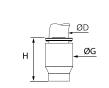




ØD	ØD1	ØD2	•	L	L1	L2	kg
6	4	7	6822 06 04	39	25	17	0.004
8	6	8.5	6822 08 06	43	25	17	0.005
10	7	8	6822 10 07	50	29.5	22	0.006
12	12.5	15.5	6822 12 62	56	32	27.5	0.004

#### **6851** End Cap



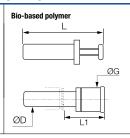


Bio-based polymer, EPDM

ØD	€	G H	kg
4	6851 04 00	8.5 15	0.001
6	6851 06 00	10.5 17	0.002
8	6851 08 00	13.5 21.5	0.003
10	6851 10 00	16 22	0.003
12	6851 12 00	19 27.5	0.006

### 6826 Blanking Plug





ØD	€	G	L	L1	kg
4	6826 04 00	6	30	15.5	0.001
6	6826 06 00	8	33	16.5	0.001
8	6826 08 00	10	35	17.5	0.002
10	6826 10 00	12	42	21	0.003
12	6826 12 00	14	45	22	0.004

#### **6830** Tamper-Proof Safety Clip



ØD	9						Н	K	kg
4	6830 04 01	6830 04 02	6830 04 03	6830 04 04	6830 04 05	6830 04 10	6.60	3.00	0.001
6	6830 06 01	6830 06 02	6830 06 03	6830 06 04	6830 06 05	6830 06 10	7.80	3.10	0.001
8	6830 08 01	6830 08 02	6830 08 03	6830 08 04	6830 08 05	6830 08 10	9.50	4.30	0.001
10	6830 10 01	6830 10 02	6830 10 03	6830 10 04	6830 10 05	6830 10 10	10.80	4.20	0.002
12	6830 12 01	6830 12 02	6830 12 03	6830 12 04	6830 12 05	6830 12 10	12.50	5.10	0.003
14	6830 14 01	6830 14 02	6830 14 03	6830 14 04	6830 14 05	6830 14 10	12.50	5.10	0.004
-									



## **Cartridges**

Parker Legris has developed the range of patented **Carstick®** cartridges **fully adapted to life sciences & clean room environments** and guaranteeing **the integrity of the sealing system**.

### **Product Advantages**

Time & Space Saving No thread to be machined for inserting the fitting into its cavity

Seal pre-assembled

Self-centring of the cartridge in the cavity

Product protected against contamination, from manufacture

to installation

Individual antistatic and airtight plastic bags

Proven Technology

Push-in connection

Full flow

Optimum flow at pressure and vacuum

Compatible with medical fluids and clean room requirements

Automated Installation

Ensures that the product will be correctly assembled

Connection fully integrated in the cavity

Carstick® packaging designed for an automatic assembly process



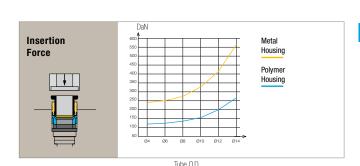
Respiratory Bio-Fluid Management Clean Rooms Pharmaceutical Process Laboratory

#### **Technical Characteristics**

Compatible Fluids	Food fluids, inert gases
Working Pressure	Vacuum to 16 bar
Working Temperature	-10°C to +95°C

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).





#### Regulations

DI: 2002/95/EC (RoHS), 2011/65/EC DI: 1907/2006 (REACH) FDA: 21 CFR

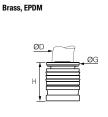
ASTM G93

ISO 15001 BAM CGA G4.1

ISO 13485 (pending)

#### 6800 Cartridge

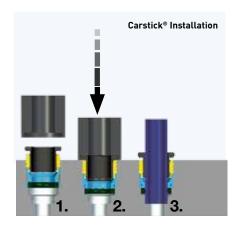




ØD		G	H	kg
4	6800 04 00	8	10	0.002
6	6800 06 00	10	11.5	0.002
8	6800 08 00	13	15	0.003
10	6800 10 00	15.5	17	0.005
12	6800 12 00	18.5	19.5	0.010

50 cartridges per Carstick®

#### Installation





Assembly tool: For details on the assembly tool, please contact us.

- 1. Self-centering of the cartridge in the
- The seal protection is broken.
   The seal slides into the cavity.
   The cartridge is in place.





3. Tube connection.



#### **Related Products**

In order to meet your needs, we can offer customised products by re-engineering the design of our fittings.

These customised cartridges can be ordered as a special product, upon request.

Designed specifically for gas and air filtration, they can also be requested as "clean" cartridges, conforming to the requirements of medical and clean room processes.

Available diameters: from 4 to 12 mm.

Parker Legris PFA (perfluoroalkoxy) tubing offers 10 times greater durability than other fluoropolymer tubings (PTFE, FEP and PVDF) under severe chemical and mechanical conditions. This tubing range is available in three material grades, offering perfect compatibility with all applications, even in extreme environments.

### **Product Advantages**

#### Great Versatility

Exceptional chemical inertia

A flexible alternative to stainless steel tubing

Broad range of working temperatures, from cryogenic to extreme heat

Non-stick properties allowing conveyance of many

fluids & gases

Outstanding resistance to ageing

Fluoropolymer with the lowest permeability

Non-flammable

**UV-transparent** 

Tube marking on request

Tubing cut to length on request

Silicone-free



Clear High Purity PFA (USP, Class VI): to cover all applications, including those requiring maximum mechanical resistance

Coloured PFA: for circuit identification

Black Antistatic PFA: eliminates all risk of electrostatic

discharge



Respiratory Bio-Fluid Management Clean Rooms Pharmaceutical Process Semiconductors Laboratory

Packaging

Tubepack®: 10 m, 50 m, 100 m

#### **Technical Characteristics**

Compatible Fluids	Medical, bio-compatible, gas, compressed air
Working Pressure	Vacuum to 36 bar
Working Temperature	-196°C to +260°C
Component Materials	Perfluoroalkoxy - 55 Shore D • High Purity PFA • Translucent coloured PFA • Antistatic PFA

Reliable performance is dependent upon the type of fluid conveyed and fittings being used. Use is guaranteed with a vacuum of 755 mm Hg (99% vacuum).

#### Medical & Pharmaceutical

USP: Class VI (A) (clear HP PFA) External communication devices

UL94 V-0 (Fire resistance)

DI: 2002/95/EC (RoHS), 2011/65/EC

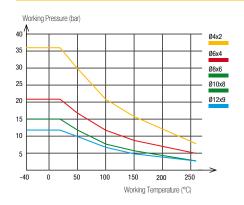
DI: 97/23/EC (PED) RG:1907/2006 (REACH) DI: 94/09/EC (ATEX, black tubing)

Food Industry

FDA: 21 CFR 177.1550 (clear, translucent coloured)

RG: 1935/2004

#### **Performance of PFA Tubing**



Tube 0.D.	Tube O.D. Tolerance
4 to 8 mm	+0.10 / -0.10
10 to 12 mm	+0.15 / -0.15

Connected to Parker Legris push-in fittings, the calibration of Parker Legris tubing ensures perfect sealing based on NF E49-100.

To calculate burst pressure, the values in this graph should be multiplied by 3.



## **1010T...P** Fluoropolymer (PFA) Tubing

#### Tubepack® 10 m

<b>0.D.</b> (mm)	<b>I.D.</b> (mm)	<b>€</b> R	USP Class VI High purity	crystal	crystal	crystal	kg
4	2	12	1010T04P00	1010T04P12	1010T04P13	1010T04P14	0.087
6	4	34	1010T06P00	1010T06P12	1010T06P13	1010T06P14	0.237
8	6	60	1010T08P00	1010T08P12	1010T08P13	1010T08P14	0.410
10	8	95	1010T10P00	1010T10P12	1010T10P13	1010T10P14	0.723
12	9	120	1010T12P00	1010T12P12	1010T12P13	1010T12P14	1.148

Ø 10 mm and 12 mm: green, red and blue colours are available upon request, with minimum order quantity.

#### 1050T...P Fluoropolymer (PFA) Tubing

#### Tubepack® 50 m

<b>O.D.</b> (mm)	<b>I.D.</b> (mm)	<b>€</b> R	USP Class VI High purity	crystal	crystal	crystal	kg
4	2	12	1050T04P00	1050T04P12	1050T04P13	1050T04P14	0.435
6	4	34	1050T06P00	1050T06P12	1050T06P13	1050T06P14	1.185
8	6	60	1050T08P00	1050T08P12	1050T08P13	1050T08P14	2.050
10	8	95	1050T10P00	1050T10P12	1050T10P13	1050T10P14	3.615
12	9	120	1050T12P00	1050T12P12	1050T12P13	1050T12P14	5.740

 $<sup>\</sup>emptyset$  10 mm and 12 mm: green, red and blue colours are available upon request, with minimum order quantity.

#### 1100T...P Fluoropolymer (PFA) Tubing

#### Tubepack® 100 m

<b>0.D.</b> (mm)	<b>I.D.</b> (mm)	<b>€</b> R	High purity	kg
4	2	12	1100T04P00	0.870
6	4	34	1100T06P00	2.370
8	6	60	1100T08P00	4.100
10	8	95	1100T10P00	7.230
12	9	120	1100T12P00	11.480

#### 1010T...A Fluoropolymer (PFA) Antistatic Tubing - Tubepack® 10 m

<b>O.D.</b> (mm)	<b>I.D.</b> (mm)	<b>€</b> R	<b>E</b>	kg
4	2	12	1010T04A01	0.087
6	4	34	1010T06A01	0.237
8	6	60	1010T08A01	0.410
10	8	95	1010T10A01	0.723
12	9	120	1010T12A01	1.148

#### **1050T...A** Fluoropolymer (PFA) Antistatic Tubing - Tubepack® 50 m

<b>0.D.</b> (mm)	<b>I.D.</b> (mm)	<b>€</b> R	<b>E</b>	kg
4	2	12	1010T04A01	0.087
6	4	34	1010T06A01	0.237
8	6	60	1010T08A01	0.410
10	8	95	1010T10A01	0.723
12	9	120	1010T12A01	1.148

#### Special Product Upon Request: USP Class VI PU Ether Tubing

Upon request, we can supply USP Class VI PU Ether Tubing, 85 Shore A (36 Shore D).

Tubing in accordance with REACH/SVHC (Substances of Very High Concern).



## Ball Valves, Universal Series

This range of valves has patented **seal wear compensating** technology for **reliable** and durable sealing, protecting any system whether under pressure or vacuum.

### **Product Advantages**

Durability & Reliability

Automatic seal wear compensation for long-term reliability Robust, corrosion-resistant materials 100% leak-tested in production Date coding to guarantee quality and traceability

Versatility & Performance Ideal for ensuring the performance of pneumatic circuits Customised valves for all special applications Unequalled performance under vacuum Smooth operation thanks to self-lubricating seals Large range of working pressures and temperatures Lever can be repositioned and replaced Many configurations to satisfy all system requirements



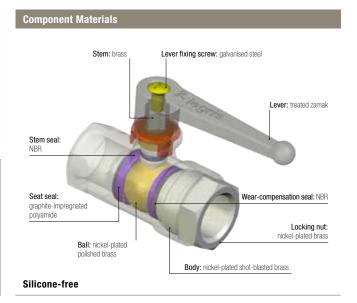
Respiratory Bio-Fluid Management Vacuum Clean Rooms Pharmaceutical Process Laboratory

#### **Technical Characteristics**

Compatible Fluids	Industrial fluids, oxygen (suffix 30)
Working Pressure	Vacuum to 40 bar
Working Temperature	-20°C to + 80°C

	Threads	G1/8	G1/4	G3/8	G1/2	G3/4	G1
Tightening	daN.m	0.10 to 0.20	0.10 to 0.20	0.15 to 0.25	0.20 to 0.35	0.50 to 0.70	0.50 to 0.70
Torques	Threads	G11/4	G1½	G2			
	daN.m	0.40 to 0.60	0.80 to 1.20	0.80 to 1.20			

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).



DI: 97/23/EC (module PED A - diameters greater than 25 mm)

DI: 2006/42/EC (Machinery Directive)

DI: 2002/95/EC (RoHS) RG: 1907/2006 (REACH)

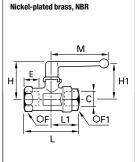


## Universal and Universal Customised Series

#### 0402 2/2 In-Line Ball Valve, Female BSPP Thread





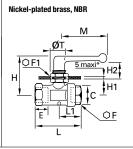


C	(DN)	<b></b>	E	F	F1	Н	H1	L	L1	M	kg
G1/8	4	0402 04 10 30	8	-	14	35	29	44	25	48	0.094
u1/0	7	0402 07 10 30	8	19	19	38	31	51	27	48	0.166
G1/4	7	0402 07 13 30	12	19	19	38	31	53	28	48	0.156
G3/8	10	0402 10 17 30	12	24	24	45	43	59	31	69	0.244
G1/2	13	0402 13 21 30	15	27	27	47	44	67	34	69	0.292
G3/4	20	0402 20 27 30	16.5	32	38	63	54	80	39	108	0.655
G1	23	0402 23 34 30	19	41	46	67	57	94	47	108	1.036
G11⁄4	32	0402 32 42 30*	21.5	55	60	97	115	112	59	180	2.467
G1½	32	0402 32 49 30*	22	55	60	97	115	120	62	180	2.340
U172	40	0402 40 49 30*	22	55	55	104	-	111	55	190	2.445
G2	40	0402 40 48 30*	26	70	70	104	-	122	61	190	2.614

\*Models with CE marking Maximum working pressure: 40 bar

#### 0446 2/2 In-Line Panel-Mountable Ball Valve, Female BSPP Thread



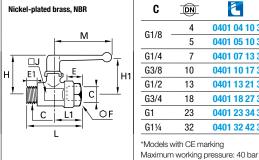


C	DN		E	F	F1	Н	H1	H2	L	L1	M	ØT	kg
G1/8	4	0446 04 10 30	8	14	22	37	14	12	44	25	48	16.5	0.112
G1/4	7	0446 07 13 30	12	19	24	45	19	14	53	28	48	20.5	0.188
G3/8	10	0446 10 17 30	12	24	27	50	21	21	59	31	69	20.5	0.294
G1/2	13	0446 13 21 30	15	27	27	51	23	21	67	34	69	20.5	0.338

Maximum working pressure: 20 bar \*For G1/8 version, maximum panel thickness = 3 mm

#### 0401 2/2 In-Line Ball Valve, Male/Female BSPP Thread



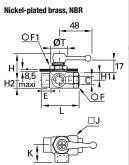


C	DN		E	E1	F	Н	H1	J	L	L1	M	kg
G1/8	4	0401 04 10 30	8	7	14	35	29	14	45	25	48	0.094
	5	0401 05 10 30	8	7	19	38	31	19	51	27	48	0.160
G1/4	7	0401 07 13 30	12	9	19	38	31	19	52	28	48	0.150
G3/8	10	0401 10 17 30	12	11	24	45	43	24	58	31	69	0.234
G1/2	13	0401 13 21 30	15	12	27	47	44	27	66	34	69	0.286
G3/4	18	0401 18 27 30	16.5	12	38	63	54	39	79	39	108	0.652
G1	23	0401 23 34 30	19	15	46	67	57	48	91	47	108	0.952
G11⁄4	32	0401 32 42 30*	21.5	18	60	97	115	55	113	59	108	2.385
*Models with CE marking												

## 3/2 Panel-Mountable Equal Plane Ball Valve, Female BSPP Thread







C	DN		E	F	F1	Н	H1	H2	J	K	L	ØT	kg
G1/8	4	0452 04 10 30	8	14	22	39	10	8	16	18	25	19	0.130
G1/4	6	0452 06 13 30	12	19	24	40	11	11	23	24	28	20	0.206

Maximum working pressure: 20 bar





More than 20 different models are available in our master Catalogue, among them the following:









0432

# Together, We Can Build Sustainable Development

Parker Legris, ISO 14001 certified, has made the conservation of resources and protection of the environment a major priority. We have incorporated improved environmental management as a permanent feature in the vision and mission of the company, aiming to benefit nature, technology and mankind.

#### Our actions are coupled with your environmental process

## Reducing the impact on industrial sites

Parker Legris has integrated environmental protection management into the operation of its industrial sites. This approach has enabled 85% of waste to be recovered and has reduced energy consumption by 15%.

## Offering ecologically responsible products

Under its continuous improvement process, Parker Legris has integrated ecological design as an input parameter to innovation and uses Life Cycle Assessment (LCA) to optimise the environmental impact of its products.

## **Providing information on the PEP** (Product Environmental Profile)

This communication tool is common to all industries and professions and delivers a reliable and clear message for promoting ecological advances and incorporating this data within the LCA equipment.

#### Getting ahead of regulations

Parker Legris goes beyond its statutory obligations and endeavours to find a good match between choice of materials, limitation of hazardous substances, selection of recycling channels and industrial performance to encourage the recycling of products at end of life.

#### Using our technology reduces the environmental impact

LIQUIfit®

Tube-to-Tube Connector



Market Standard

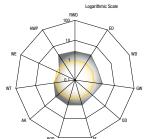
Tube-to-Tube Connector

Parker Legris
Market Standard in PP

RWD: Raw Material Depletion ED: Energy Depletion

WD: Water Depletion GW: Global Warming

Tube-to-Tube Connector



OZ: Ozone Depletion

: Air Toxicity

POC: Photochemical Ozone Creation

AA: Air Acidification

ECO DESIGN

WT: Water Toxicity

WE: Water Eutrophication HWP: Hazardous Waste Production





## Parker's Motion & Control Technologies

At Parker, we're guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. Whatever the motion and control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker. For further info call 00800 27 27 5374.



#### Aerospace

#### Kev Markets

Aftermarket services Commercial transports Engines General & business aviation Helicopters Launch vehicles Military aircraft Missiles

#### **Kev Products**

Power generation

Regional transports

Unmanned aerial vehicles

Control systems & actuation products Engine systems & components Fluid conveyance systems & components Fluid metering, delivery & atomization devices Fuel systems & components Fuel tank inerting systems Hydraulic systems & components Thermal management Wheels & brakes



#### Climate Control

#### Kev Markets

Agriculture Air conditioning Construction Machinery Food & beverage Industrial machinery Life sciences Oil & gas Precision cooling Process Refrigeration Transportation



Advanced actuators CO., controls Flectronic controllers Filter driers Hand shut-off valves Heat exchangers Hose & fittings Pressure regulating valves Refrigerant distributors Safety relief valves Smart pumps Solenoid valves Thermostatic expansion valves



#### Flectromechanical

#### Key Markets Aerospace

Factory automation Life science & medical Machine tools Packaging machinery Paper machinery Plastics machinery & converting Primary metals Semiconductor & electronics Textile Wire & cable

#### **Key Products** AC/DC drives & systems

Electric actuators, gantry robots & slides Electrohydrostatic actuation systems Electromechanical actuation systems Human machine interface Linear motors Stepper motors, servo motors, drives & controls Structural extrusions



#### **Filtration**

#### Key Markets

Aerospace Food & beverage Industrial plant & equipment Life sciences Marine Mobile equipment Oil & gas Power generation & renewable energy Process Transportation Water Purification

#### **Key Products**

Analytical das denerators Compressed air filters & dryers Engine air, coolant, fuel & oil filtration systems Fluid condition monitoring systems Hydraulic & lubrication filters Hydrogen, nitrogen & zero air generators Instrumentation filters Membrane & fiber filters Sterile air filtration Water desalination & purification filters &



#### Fluid & Gas Handling

#### **Key Markets**

Agriculture Bulk chemical handling Construction machinery Food & beverage Fuel & gas delivery Industrial machinery Life sciences Marine Mining Oil & nas Renewable energy Transportation

#### **Key Products**

Check valves Connectors for low pressure fluid conveyance Deep sea umbilicals Diagnostic equipment Hose couplings Industrial hose Mooring systems & power cables PTFE hose & tubing Quick couplings Rubber & thermoplastic hose Tube fittings & adapters Tubing & plastic fittings



#### **Hydraulics**

#### **Key Markets**

Aerial lift Agriculture Alternative energy Construction machinery Forestry Industrial machinery Machine tools Marine Material handling Mining Oil & gas Power generation Refuse vehicles Renewable energy Truck hydraulics Turf equipment

#### **Key Products**

Accumulators Cartridge valves Electrohydraulic actuators Human machine interfaces Hybrid drives Hydraulic cylinders Hydraulic motors & pumps Hydraulic systems Hydraulic valves & controls Hydrostatic steering Integrated hydraulic circuits Power take-offs Rotary actuators



#### **Pneumatics**

#### Key Markets

Aerospace Conveyor & material handling Factory automation Life science & medical Machine tools Packaging machinery Transportation & automotive

#### Key Products

Air preparation Brass fittings & valves Manifolds Pneumatic accessories Pneumatic actuators & grippers Pneumatic valves & controls Quick disconnects Rotary actuators Rubber & thermoplastic hose & couplings Structural extrusions Thermoplastic tubing & fittings Vacuum generators, cups & sensors



#### Process Control

#### Key Markets

Alternative fuels Biopharmaceuticals Chemical & refining Food & beverage Marine & shipbuilding Medical & dental Microelectronics Nuclear Power Offshore oil exploration Oil & gas Pharmaceuticals Power generation Pulp & paper Water/wastewater

**Kev Products** Analytical Instruments Analytical sample conditioning products & system Chemical injection fittings Fluoropolymer chemical delivery fittings, valves & pumps High purity gas delivery fittings, valves, regulators & digital flow controllers Industrial mass flow meters/ Permanent no-weld tube fittings Precision industrial regulators & flow controllers Process control double block & bleeds Process control fittings, valves, regulators & manifold valves



#### Sealing & Shielding

#### **Key Markets**

Aerospace Chemical processing Consumer Fluid power General industrial Information technology Life sciences Microelectronics Military Oil & gas Power generation Renewable energy Telecommunications Transportation

#### **Key Products**

Flastomeric o-rings Electro-medical instrument design & assembly EMI shieldina Extruded & precision-cut, fabricated elastomeric seals High temperature metal seals Homogeneous & inserted elastomeric shapes Medical device fabrication & assembly Metal & plastic retained composite seals Shielded optical windows Silicone tubing & extrusions Thermal management Vibration dampening

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