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Cartridges and www.hccl.ie Customised Products



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Cartridges and
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Cartridges

Cartridges and Customised Products

Polymer Cartridges

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Fluids and Gases

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Polymer Cartridges: LF 3000® and LIQUIfit® Carstick®, Quick Fitting

Parker Legris has developed the range of patented **Carstick®** cartridges guaranteeing **the integrity of the sealing system** before and after assembly in non-threaded cavities. The **compact design** of the one-piece Carstick® cartridge enables **automation** of your manufacturing process and improves the **reliability** of your system.

Product Advantages

- Time-Saving**
 - No thread to be machined for inserting the fitting into its cavity
 - Seal pre-assembled, greased and protected
 - Self-centring of the cartridge in the cavity
 - Product protected against contamination, from manufacture to installation
 - Possible to have several tube diameters in the same cavity (Quick Fitting)
- Proven Technology**
 - Technical performances of the LF 3000®
 - Push-in connection
 - Full flow
 - Optimum flow at pressure and vacuum
 - LIQUIfit® Carstick® compatible with drinking water and food fluids
- Automated Installation**
 - Ensures that the product will be correctly assembled
 - Connection fully integrated in the cavity
 - Carstick® packaging designed for an automatic assembly process

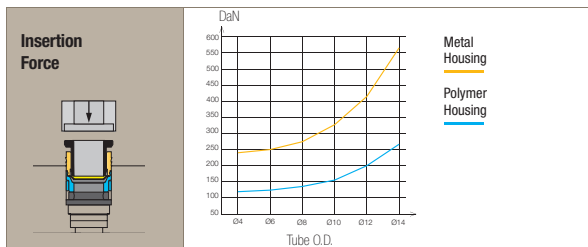


Applications
 Robotics
 Automotive Process
 Pneumatics
 Semi-Conductors
 Water & Beverage
 Packaging
 Vacuum

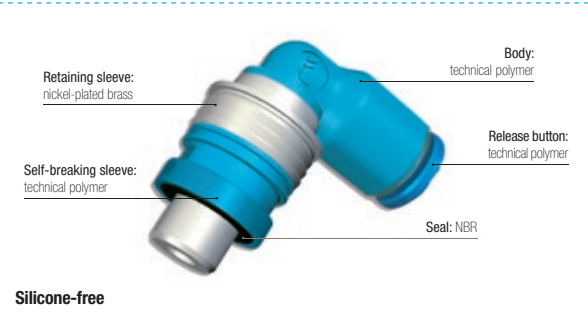
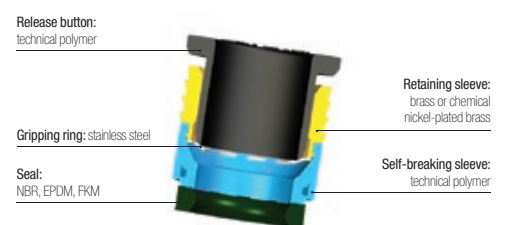
Technical Characteristics

	LF 3000® Carstick® and Quick Fitting	LIQUIfit® Carstick®
Compatible Fluids	Compressed air	Food fluids, inert gases
Working Pressure	Vacuum to 20 bar	Vacuum to 16 bar*
Working Temperature	-20°C to +80°C	-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). *The pressure/temperature information is shown in Chapter 1, in the "LIQUIfit®" section.



Component Materials



Regulations

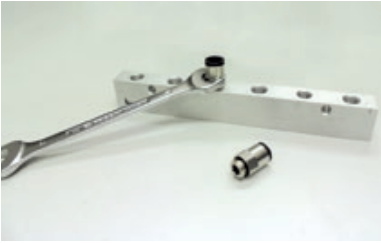


LF 3000® Carstick® and Quick Fitting
 ISO 14743: Pneumatic fluid power, push-in fittings for thermoplastic tubes
 DI: 2002/95/CE (RoHS), 2011/65/CE
 DI: 97/23/CE (PED)

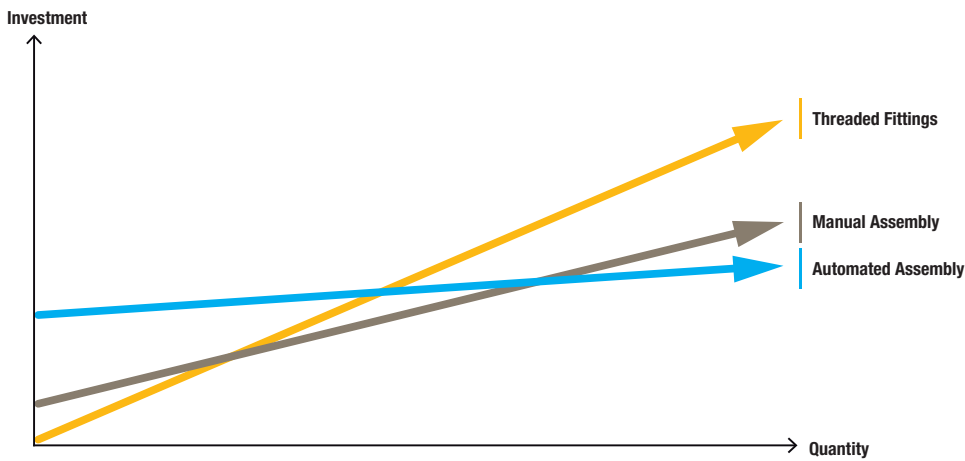
LIQUIfit® Carstick®
 RG: 1935/2004/CE
 FDA: 21 CFR 177.1550
 NSF 51 to 95°C
 ACS
 DM 174 (Italy)

DI: 2002/95/CE (RoHS), 2011/65/CE
 DI: 97/23/CE (PED)
 WRAS
 NSF/ANSI 61 - C HOT
 KTW: cartridges on request

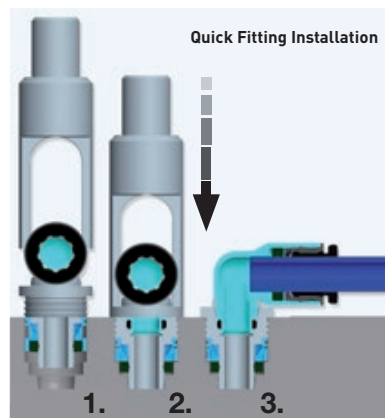
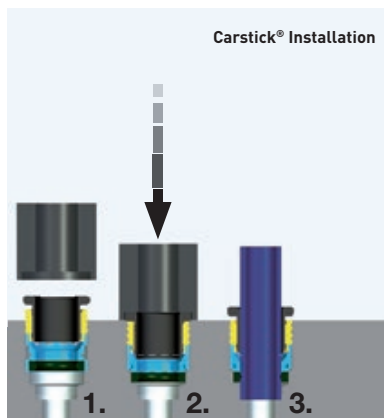
Assembly Options

Cartridge solutions quickly pay for themselves when they enable production to be rationalised:

<p>Threaded Fittings</p> <p>For small quantities or non-standard assembly operations: The threaded solution remains the most advantageous.</p>	<p>Carstick®: Manual Assembly</p> <p>For medium quantities: Assembly by manually-operated press offers the most economic solution.</p>	<p>Carstick®: Automated Assembly</p> <p>For repetitive operations and large quantities: Investment in an automated manufacturing solution is quickly recovered, providing significant long-term savings.</p>
		



Installation



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



3. Tube connection.

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



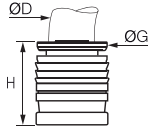
Assembly tool:
For details on the assembly tool, please contact us.



Polymer Cartridges for Compressed Air

3100 Carstick® Cartridge

Brass, NBR



ØD		G	G1	H	L	kg
4	3100 04 00	8	11	10	554	0.001
6	3100 06 00	10	14.5	11.5	629	0.002
8	3100 08 00	13	15	15	794	0.002
10	3100 10 00	15.5	19.5	17	930	0.005
12	3100 12 00	19.5	21	19.5	1038	0.010
14	3100 14 00	21	24.5	22.5	1110	0.013

50 cartridges per Carstick®.

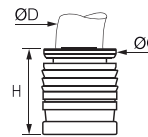
For cartridge Ø14, please consult us for the cavity dimensions.



3100 Carstick® Cartridge

Inch

Nickel-plated brass, NBR



ØD		G	G1	H	L	kg
1/8	3100 53 00 99	7	10	9	508	0.002
1/4	3100 56 00 99	10.5	14.5	12	600	0.003
3/8	3100 60 00 99	15.5	19	16.5	930	0.006

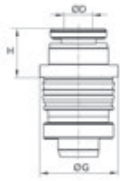
50 cartridges per Carstick®

5/32" (4 mm) and 5/16" (8 mm) also available.



3086 Quick Fitting Reducer

Nickel-plated brass, NBR

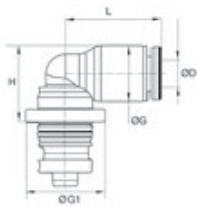


ØD		Cavity	G	H	kg
4	3086 04 06	6	12.5	7	0.005
6	3086 06 08	8	14	7.5	0.008

Available on request

3089 Quick Fitting Elbow

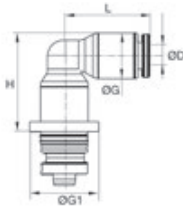
Technical polymer, nickel-plated brass, NBR



ØD		Cavity	G	G1	H	L	kg
4	3089 04 04	4	9	12.5	11.5	15	0.004
	3089 04 06	6	9	12.5	11.5	15	0.005
6	3089 06 04	4	11	12.5	14	17	0.004
	3089 06 06	6	11	12.5	12.5	17	0.006
8	3089 06 08	8	11	14.5	13	17	0.010
	3089 08 08	8	13.5	14.5	16	23	0.011
10	3089 08 10	10	13.5	19	16	23	0.021
	3089 10 10	10	16	19	19	26.5	0.017
12	3089 10 12	12	16	20	19	26.5	0.028
	3089 12 12	12	19	20	22	31	0.030

3082 Quick Fitting Extended Elbow

Technical polymer, nickel-plated brass, NBR



ØD		Cavity	G	G1	H	L	kg
4	3082 04 04	4	9	12.5	16	15	0.006
	3082 04 06	6	9	12.5	15	15	0.009
6	3082 06 06	6	9	12.5	23	19	0.010
	3082 06 08	8	10.5	14	29	18.5	0.014
8	3082 08 08	8	13.5	17	29.5	22.5	0.021
	3082 08 10	10	13.5	19	29	23	0.025
10	3082 10 10	10	16	20	33	26	0.029
	3082 10 12	12	16	20	33	26	0.040
12	3082 12 12	12	19	23	39	31	0.056

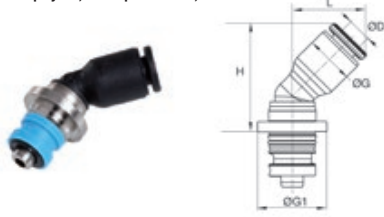
Available on request


Polymer Cartridges for Compressed Air

Cartridges and Customised Products

3081 Quick Fitting 45° Elbow

Technical polymer, nickel-plated brass, NBR

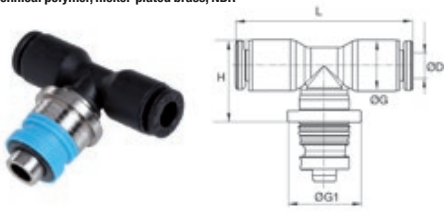



ØD		Cavity	G	G1	H	L	kg
4	3081 04 04	4	9	12.5	19	13	0.004
6	3081 06 06	6	11	12.5	22	14.5	0.006
8	3081 08 08	8	13.5	14.5	26	19	0.011
10	3081 10 10	10	16	19	30	22	0.017
12	3081 12 12	12	19	20	35.5	26	0.031

Available on request

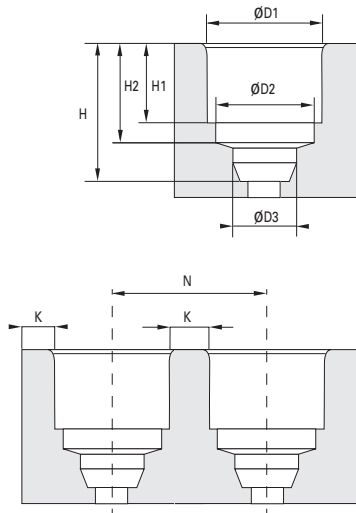
3088 Quick Fitting Tee

Technical polymer, nickel-plated brass, NBR



ØD		Cavity	G	G1	H	L	kg
4	3088 04 04	4	9	12.5	14	30	0.005
	3088 04 06	6	8.6	12.5	12.5	29.5	0.006
6	3088 06 06	6	11	12.5	14.5	34	0.007
	3088 06 08	6	10.6	14.5	15	33.5	0.011
8	3088 08 08	8	14	14.5	19	46	0.013
	3088 08 10	8	14	19	19	46	0.023
10	3088 10 10	10	16	19	21	53	0.020
	3088 10 12	10	16	20	21	53	0.031
12	3088 12 12	12	19	20	24	61	0.035

Cavity Dimensions



Carstick® and Quick Fitting Metric

Cavity	ØD3	H	H1	H2
4	4.1	10	6	8.15
6	6.1	12	7.5	9.65
8	8.15	15.5	9.9	12.45
10	10.25	19	11.7	14.35
12	12.17	22	13.9	16.75

Carstick® Inch

Cavity	ØD3	H	H1	H2
1/8	3.25	9.5	5.3	7.45
5/32*	4.1	10	6	8.15
1/4	6.45	12.5	8	10.15
5/16*	8.15	15.5	9.9	12.45
3/8	9.65	19	11.7	14.35

Polyamide Cavity

Cavity	ØD1	ØD2	N*	N**	K
4	8.25	7.05	9.8	12.3	1.5
6	10.2	9.15	12.2	12.3	2
8	12.15	10.85	14.2	14.3	2
10	14.8	13.2	16.8	19	2
12	17.5	15.5	20	20.2	2.5

Cavity	ØD1	ØD2	N	K
1/8	7.05	6.02	8.6	1.5
5/32*	8.25	7.05	9.75	1.5
1/4	10.55	9.35	12.6	2
5/16*	12.15	10.85	14.2	2
3/8	14.8	13.1	16.8	2

Aluminium Cavity

Cavity	ØD1	ØD2	N*	N**	K*	K**
4	8.25	7.5	11.5	12.3	3	1.5
6	10.3	9.15	13.5	12.3	3	2
8	12.2	10.85	15.2	15.2	3	2
10	15.05	13.2	17.1	19	2	2
12	17.5	15.5	20	20.2	2.5	2.5

Cavity	ØD1	ØD2	N	K
1/8	7.1	6.2	8.6	1.5
5/32*	8.25	7.05	11.25	3
1/4	10.6	9.35	12.65	2
5/16*	12.2	10.85	15.2	3
3/8	15.05	13.1	17.1	2

Brass Cavity

Cavity	ØD1	ØD2	N*	N**	K*	K**
4	8.25	7.05	10.25	12.3	2	1.5
6	10.25	9.1	12.25	12.3	2	2
8	12.2	10.85	14.25	14.3	2	2
10	15.05	13.2	17.1	19	2	2
12	17.65	15.5	20	20.2	2.5	2.5

Cavity	ØD1	ØD2	N	K
1/8	7.1	6.2	8.6	1.5
5/32*	8.25	7.05	10.25	2
1/4	10.6	9.35	12.65	2
5/16*	12.2	10.85	14.25	2
3/8	15.05	13.1	17.1	2

Please consult us for detailed drawings of cavity dimensions and tolerances.

All our dimensions are in millimeters.

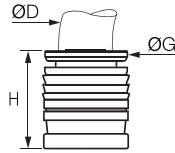
*Carstick® / **Quick Fitting

*5/32" = 4 mm and 5/16" = 8 mm

Polymer Cartridges for Fluids and Gases

6300 LIQUIfit® Cartridge

Brass, EPDM



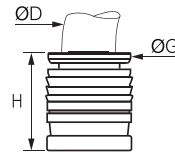
ØD		G	G1	H	L	kg
4	6300 04 00	8	11	10	554	0.002
6	6300 06 00	10	14.5	11.5	629	0.002
8	6300 08 00	13	15	15	794	0.003
10	6300 10 00	15.5	19.5	17	930	0.005
12	6300 12 00	18.5	21	19.5	1038	0.010

50 cartridges per Carstick®



6300 LIQUIfit® Cartridge

Brass, EPDM



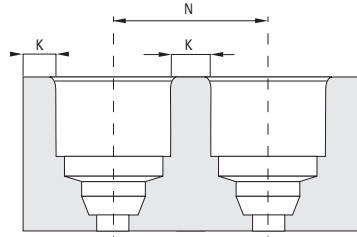
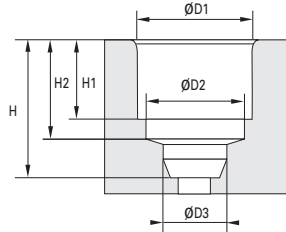
ØD		G	G1	H	L	kg
1/4	6300 56 00	10.5	14.5	12.5	600	0.002
3/8	6300 60 00	15.5	19	17	930	0.005
1/2	6300 62 00	22	25	23	1038	0.011

50 cartridges per Carstick®

5/32" (4 mm) and 5/16" (8 mm) also available.



LIQUIfit® Cavity Dimensions



LIQUIfit® Carstick®

Metric

Cavity	ØD3	H	H1	H2
4	4.1	10	6	8.15
6	6.1	12	7.5	9.65
8	8.15	15.5	9.9	12.45
10	10.25	19	11.7	14.35
12	12.17	22	13.9	16.75

LIQUIfit® Carstick®

Inch

Cavity	ØD3	H	H1	H2
1/8	3.25	9.5	5.3	7.45
5/32*	4.1	10	6	8.15
1/4	6.45	12.5	8	10.15
5/16*	8.15	15.5	9.9	12.45
3/8	9.65	19	11.7	14.35

Polyamide Cavity

Cavity	ØD1	ØD2	N	K
4	8.25	7.05	9.8	1.5
6	10.2	9.15	12.2	2
8	12.15	10.85	14.2	2
10	14.8	13.2	16.8	2
12	17.5	15.5	20	2.5

Cavity	ØD1	ØD2	N	K
1/8	7.05	6.02	8.6	1.5
5/32*	8.25	7.05	9.75	1.5
1/4	10.55	9.35	12.6	2
5/16*	12.15	10.85	14.2	2
3/8	14.8	13.1	16.8	2

Aluminium Cavity

Cavity	ØD1	ØD2	N	K
4	8.25	7.5	11.5	3
6	10.3	9.15	13.5	3
8	12.2	10.85	15.2	3
10	15.05	13.2	17.1	2
12	17.5	15.5	20	2.5

Cavity	ØD1	ØD2	N	K
1/8	7.1	6.2	8.6	1.5
5/32*	8.25	7.05	11.25	3
1/4	10.6	9.35	12.65	2
5/16*	12.2	10.85	15.2	3
3/8	15.05	13.1	17.1	2

Brass Cavity

Cavity	ØD1	ØD2	N	K
4	8.25	7.05	10.25	2
6	10.25	9.1	12.25	2
8	12.2	10.85	14.25	2
10	15.05	13.2	17.1	2
12	17.65	15.5	20	2.5

Cavity	ØD1	ØD2	N	K
1/8	7.1	6.2	8.6	1.5
5/32*	8.25	7.05	10.25	2
1/4	10.6	9.35	12.65	2
5/16*	12.2	10.85	14.25	2
3/8	15.05	13.1	17.1	2

*5/32" = 4 mm and 5/16" = 8 mm

Please consult us for detailed drawings of cavity dimensions and tolerances.

All our dimensions are in millimeters.



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E Plan 1x

Cartridges and
Customised Products

Metal Cartridges

For full **compatibility** with **many fluids** and severe conditions (**+150°C**), Parker Legris has developed two types of patented cartridges. Using our metal cartridges allows for **optimisation of installation configurations** and for the FTL, the possibility of removal.

Product Advantages

- LF Cartridges** All the advantages of the LF 3600, LF 3800 and LF 3900 fittings applied to cartridge technology
- LF 3600**
 - LF 3800** All-metal product to provide the greatest mechanical strength and chemical resistance
 - LF 3900**
 - Resistant at high temperatures (+150°C)
 - Can be installed in either polymer or metal housings
- FTL Cartridge** Possibility to have several tubing diameters in the same cavity
- Visible retention and sealing system, can be disassembled using the dedicated tool



Robotics
Automotive Process
Pneumatics
Semi-Conductors
Refrigeration
Packaging
Vacuum

Applications

Technical Characteristics

LF 3600, LF 3800, LF 3900		FTL Cartridge	
Compatible Fluids	Fluids: see corresponding chapters	Compatible Fluids	Compressed air
Working Pressure	Vacuum to 30 bar	Working Pressure	0.01 to 16 bar
Working Temperature	-20°C to +150°C	Working Temperature	-25°C to +80°C
Component Materials	See corresponding chapters	Component Materials	Body: brass Release button: technical polymer Gripping ring: stainless steel Seals: NBR

Regulations

LF 3600, LF 3800, LF 3900
 DI: 97/23/CE (PED)
 RG: 21 CFR (FDA)
 RG: 1935/2004/CE
 (minimum flow 0.02 l/hr)
 DI: 2011/65/CE (RoHS)
 USDA NSF H1: grease
 ASTM B733-04: self-catalytic nickel coating
 DI: 94/9/CE (ATEX)

FTL

DI: 97/23/CE (PED)
 DI: 2011/65/CE (RoHS)

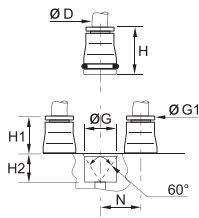
Reliable performance is dependent upon the type of fluid conveyed, component materials and tubing being used. Guaranteed for use with a vacuum of 755 mm Hg (99% vacuum).

Metal Cartridges for Fluids and Gases

Cartridges and Customised Products

3600 One-Piece Cartridge

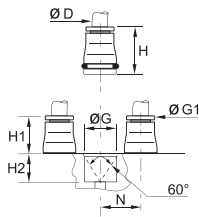
FDA chemical nickel-plated brass, FKM



ØD		G	G1	H	H1	H2	N	kg
4	3600 04 00	9.8	8	17	8.5	8.5	11	0.006
6	3600 06 00	12.1	10	19	10.5	8.5	13.5	0.009
8	3600 08 00	14.8	13	21	12.5	8.5	16	0.012
10	3600 10 00	17.5	15	24.5	14	10.5	20	0.019
12	3600 12 00	20	17	25	14.5	10.5	22.5	0.023
14	3600 14 00	22	20	28.5	16.5	12	25	0.031

3800/3900 One-Piece Cartridge

Stainless steel 316L, FKM



ØD			G	G1	H	H1	H2	N	kg
4	3800 04 00	3900 04 00	9.8	8	17	8.5	8.5	11	0.006
6	3800 06 00	3900 06 00	12.1	10	19	10.5	8.5	13.5	0.008
8	3800 08 00	3900 08 00	14.8	13	21	12.5	8.5	16	0.012
10	3800 10 00	3900 10 00	17.5	15	24.5	14	10.5	20	0.019
12	3800 12 00	3900 12 00	20	17	25	14.5	10.5	22.5	0.022

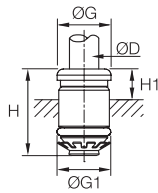
3800: collet in stainless steel 303

3900: collet in stainless steel 316L

Cavity dimensions are available in chapter 2.

FTL Cartridge

Brass, NBR

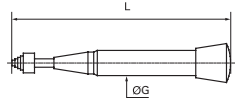


ØD	Cavity		G	G1	H	H1	H2	kg
4	4	FTL4	8	8	14.5	4.5	7.5	0.003
4	6	FTL6-4	8	10	17	4.5	9.5	0.003
6	6	FTL6	10.5	10	17	4.5	9.5	0.004
4	8	FTL8-4	8	12	17.5	5	10.5	0.008
6	8	FTL8-6	10.5	12	18	5.5	11	0.008
8	8	FTL8	13.5	12	19	6.5	12	0.005

* Can be mounted in a short hole with extremely close porting

TLT Dismounting Tool

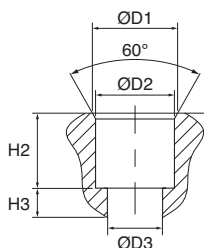
Nickel-plated brass



	G	L	kg
TLT	28	156	0.235

* Can be mounted in a short hole with extremely close porting

Cavity Dimensions



FTL Cartridge

Cavity	ØD1	ØD2	ØD3	H2	H3
4	9	8	5.5	9	1.5
6	11	10	8	11	1.5
8	13	12	8.5	11.5	1.5
4C*	9	8	5.5	6	1.5
6C*	11	10	8	6	1.5
8C*	13	12	8.5	6	1.5

*Can be mounted in a short hole with extremely close porting

Customised Solutions

Parker Legris has made **the development of customised products** one of its specialities. These dedicated products provide our customers with a **technical and economic solution** which fully meets their needs.

Customised Solution Development Process

- 1. Define the Function Parameters**

Specify the pressure, temperature, environment, fluids, materials and product function you need.

Estimate the quantity requirements.

Our product engineers are available to help you refine your requirements.
- 2. Send Your Request to our Technical Department**

Complete the online request form at www.parkerlegris.com, "Special Products".

Specify your quantities, technical and commercial requirements.
- 3. Request Analysis**

We assess the feasibility of the product based on the information you have sent us.

We carry out a technical study and produce drawings (prototypes and testing as necessary).
- 4. Parker Legris Proposes the Customised Solution**

We submit the optimum technical and commercial proposal.

If our proposal is accepted, we launch the production process.
- 5. Serial Production**

We will continually update you as to the status of your order and delivery date.

Customised Products

Cartridges



Fittings



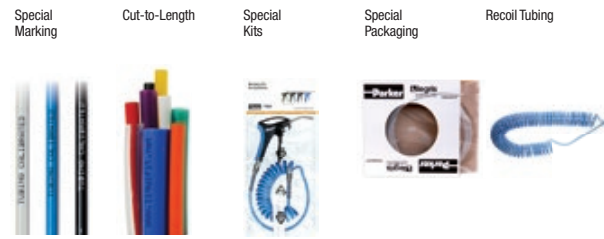
Function Fittings



Multi-Connectors and Manifolds



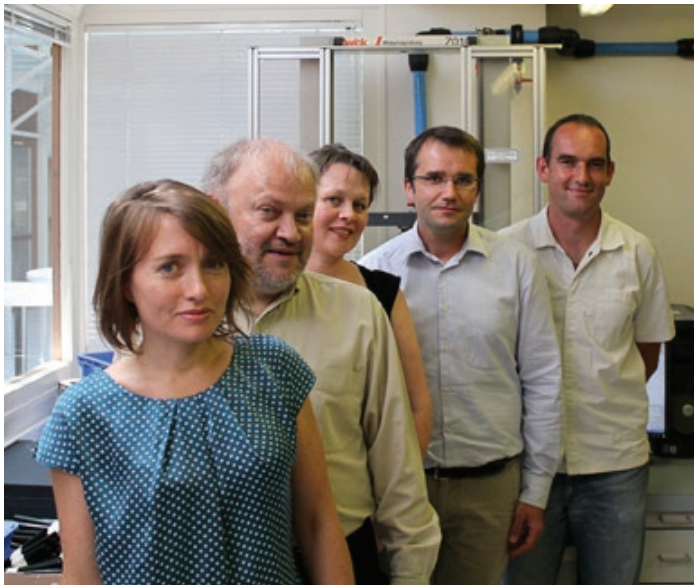
Tubing and Blowguns



Valves



Skilled and Dedicated People Provide You with the Best Solution



More than 40 years' experience in the design of push-in fittings also means more than 40 years spent in producing customised solutions for our customers.

We have a team of motivated and experienced engineers skilled in using the latest design tools: calculation and digital simulation tools, CAD, rheology (plastic injection modelling), quick prototyping and performance measuring in the laboratory.

Customised Fittings

To meet your needs, we can re-engineer the design of our fittings.

To complement our wide range of fittings, we can offer customised products.

Longer threads, different types of seal, special grease, specific cleaning processes, colours, packaging, etc. are all parameters which we can easily modify.



Low Temperature Carstick®
Resistant at -40°C



Filter Fittings for Medical and Clean Room Applications
Designed specifically for the filtration of air and gas
Can be made available with cleanliness specifications meeting requirements for medical processes and clean rooms



Metal Cartridges
Cartridges adapted to the client's dimensional and environmental requirements
Combination of the patented Carstick® system (seal protection) and LF 3600 performance levels



Multi-Component Stud Cartridges
Direct installation into a cavity with no thread
Can be custom-designed: seal, release button, etc.



Built-In Cartridge
Designed to be extremely compact, this cartridge can be built right into a cavity with no thread, and can also be disassembled



Fitting for Life Sciences & Clean Rooms
Specific gripping feature, cleanliness, oxygen-compatible grease
Reinforced leak testing
Special packaging



Fitting with Silencer, Two-in-One
Meeting requirements for saving space, this lightweight component includes a push-in connection as well as a silencer function



Fitting for the Transmission of Deionised Cooling Water in Frequency Inverters
Water-resistant materials
Stainless steel threads
Special seals



150°C Stud Fitting
Developed for use in steam circuits of coffee machines
Extreme pressure and temperature resistance
Fully compatible with drinking water circuits



Fitting for the Transmission of Water in Ceiling-Mounted Air Conditioning Systems
Brass body
Double seal
Crimped to hose



Orifice Fitting
Allows accurate flow regulation
Minimum orifice diameter: 0.5 mm



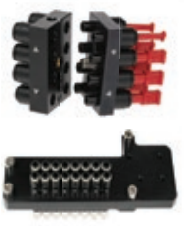
Safety Standpipe Fitting
Perfect tear resistance
Designed for applications with extremely high cadences



Non-Return Valve
Developed for systems carrying breathable air
Low cracking threshold
Oxygen-compatible grease, cleanliness



Compact Flow Regulator with Recessed Screw and FKM Seals
Improved external chemical resistance
Custom logo



Multi-Connector
Allows disconnection of up to 16 tubes in a single operation
Compact design suitable for the operating environment



Polymer Body with Integrated Fittings
For connection of pneumatic lines between the truck cab and chassis



Polymer Manifold
Reinforced integrated connections
Dedicated to the distribution of compressed air for truck auxiliary systems e.g. cab seat, air horn, gauges...

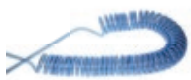
Customised Tubing and Blowguns

We can adapt the formulation of polymers and customise tubing or blowguns to suit your requirements.

We can offer custom modifications such as: special additives and materials, non-standard diameters, customised marking, specific packaging, custom colours, custom tube cutting, pre-formed tubing, packaged solutions (tubes + fittings or couplers, blowgun kits).



Tube marked with customer's name
Tubes cut to specific lengths



Upon request, Parker Legris can propose any type of coiled tubing
All material available for standard requests can be adapted for recoil tubing



Marked with the customer's logo and part number
In lengths of 5 m, 10 m, 25 m, 50 m and 100 m, depending on the tube material
For flexible or semi-rigid tubing
Optimised tube packaging
Easy identification of the tube type
Integrated reel for easy handling



Marked with the customer's logo and part number
Up to 1000 m lengths
Immediate identification of the tube for easy handling
Suitable for workshop hose reels



Blowgun customised in customer's colours
Specific logo
Customised packaging



Production of a "tube + coupler + blowgun" assembly in dedicated and customised packaging

Customised Valves

Over and above our range of standard valves, Parker Legris can supply application-specific valves adapted to our customers' environment.

We offer custom modifications such as: longer threads, different types of seal, special grease, lever options, specific cleaning process, materials and surface treatments, assemblies, etc.



Transport Valve
 Mounted on the wheel rims of armoured vehicles
 For managing tyre pressures through an integrated inflation valve



Auto-Process Valve
 Designed to simultaneously control both the inlet and outlet of a cooling line
 Also allows one of the lines to be closed independently



Valve for Breathable Air
 Dedicated to the transmission of oxygen-enriched air in hospital networks
 Special seals, cleanliness, specific grease, very high reliability