

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 diameters of tube 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



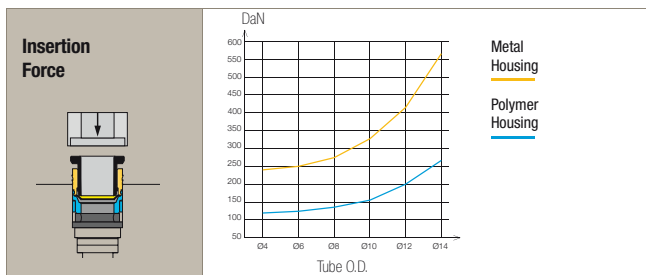
Applications

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

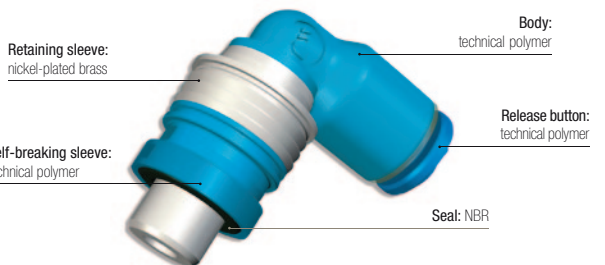
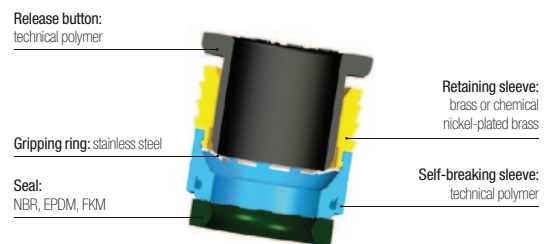
Technical Characteristics

| | 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



Silicone-free

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

Cartridges

Polymer Cartridges

Compressed Air

3100
Carstick®
Page 2-8



3086
Quick Fitting
Page 2-8



3089
Quick Fitting
Page 2-8



3082
Quick Fitting
Page 2-8



3081
Quick Fitting
Page 2-9



3088
Quick Fitting
Page 2-9



3100 - Inch
Carstick®
Page 2-8



Fluids and Gases

6300
Carstick® LIQUIfit®
Page 2-10



6300 - Inch
Carstick® LIQUIfit®
Page 2-10



Metal Cartridges

Fluids and Gases

3600
Page 2-13



3800
3900
Page 2-13



TL
Page 2-13



TLT
Disconnection
Tool
Page 2-13

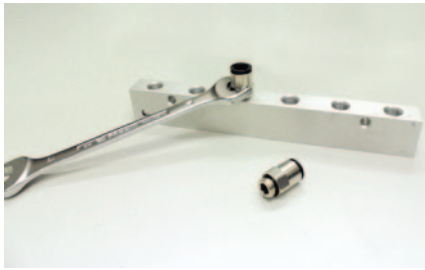


Assembly Options

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

Threaded Fittings

For small quantities or non-standard assembly operations:
The threaded solution remains the most advantageous.



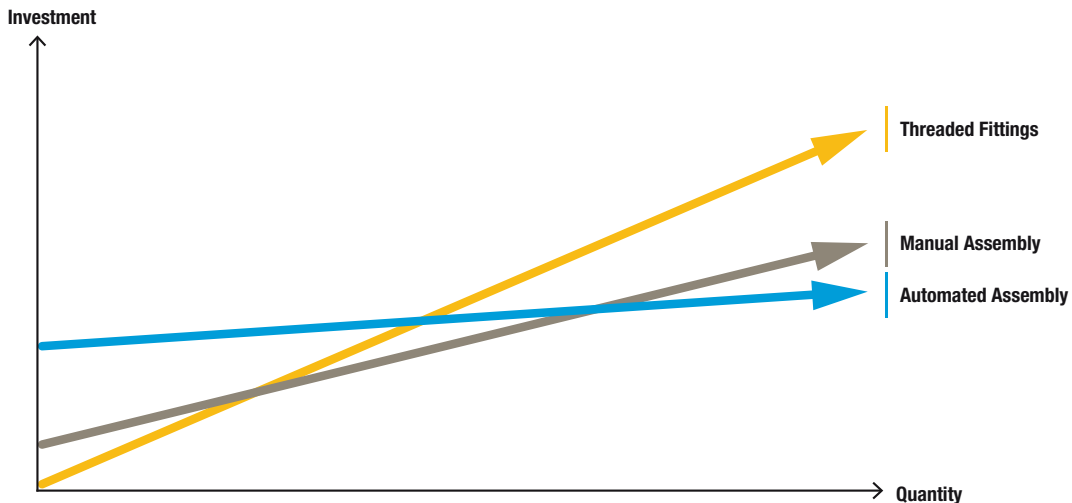
Carstick®: Manual Assembly

For medium quantities:
Assembly by manually-operated press offers the most economic solution.



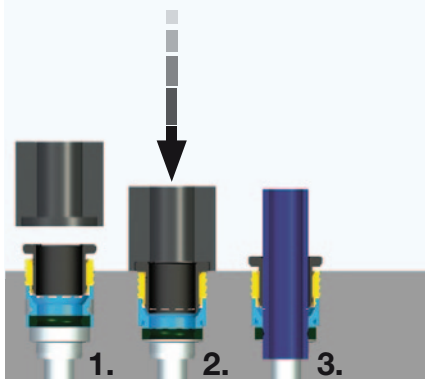
Carstick®: Automated Assembly

For repetitive operations and large quantities:
Investment in an automated manufacturing solution is quickly recovered, providing significant long-term savings.

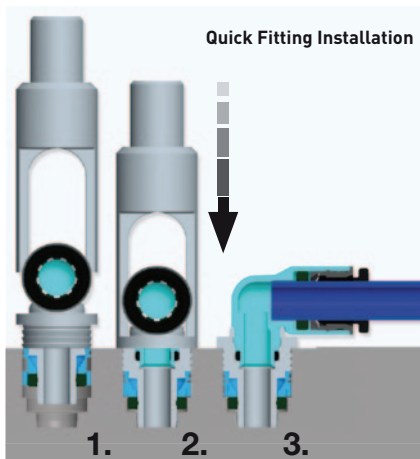


Installation

Carstick® Installation



Quick Fitting 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.


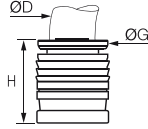

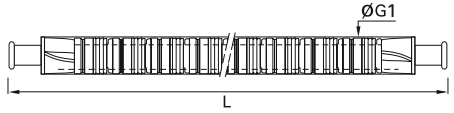


Assembly tool:
For details on the assembly tool, please contact us.




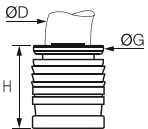

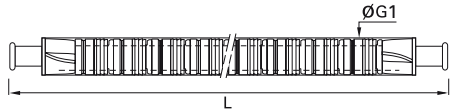
Polymer Cartridges for Compressed Air

3100 Carstick® Cartridge


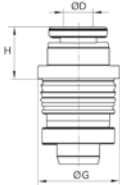

| | | | | | | | | |
|---|---|-----------|---|----------|-----------|----------|----------|---|
|  | Brass, NBR  | ØD |  | G | G1 | H | L | kg |
| | | 4 | 3100 04 00 | 8 | 11 | 10 | 554 | 0.001 |
| | | 6 | 3100 06 00 | 10 | 14.5 | 11.5 | 629 | 0.002 |
| | | 8 | 3100 08 00 | 13 | 15 | 15 | 794 | 0.002 |
| | | 10 | 3100 10 00 | 15.5 | 19.5 | 17 | 930 | 0.005 |
| | | 12 | 3100 12 00 | 19.5 | 21 | 19.5 | 1038 | 0.010 |
| 50 cartridges per Carstick® | | | | | | | | |
| | | | | | | | |  |

3100 Carstick® Cartridge


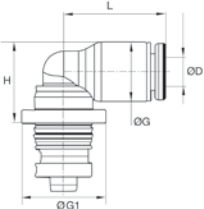

Inch

| | | | | | | | | |
|---|---|-----------|---|----------|-----------|----------|----------|---|
|  | 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 | | | | | | | | |
| | | | | | | | |  |


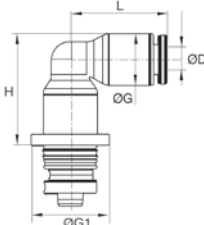

3086 Quick Fitting Reducer

| | | | | | | | | |
|---|---|-----------|---|---------------|----------|----------|-----------|--|
|  | 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 |
| | | | 3089 06 04 | 4 | 11 | 12.5 | 14 | 17 | 0.004 |
| | | 6 | 3089 06 06 | 6 | 11 | 12.5 | 12.5 | 17 | 0.006 |
| | | | 3089 06 08 | 8 | 11 | 14.5 | 13 | 17 | 0.010 |
| | | | 3089 08 08 | 8 | 13.5 | 14.5 | 16 | 23 | 0.011 |
| | | 8 | 3089 08 10 | 10 | 13.5 | 19 | 16 | 23 | 0.021 |
| | | | 3089 10 10 | 10 | 16 | 19 | 19 | 26.5 | 0.017 |
| | | | 3089 10 12 | 12 | 16 | 20 | 19 | 26.5 | 0.028 |
| | | 12 | 3089 12 12 | 12 | 19 | 20 | 22 | 31 | 0.030 |

3082 Quick Fitting Extended Elbow

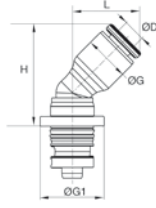
| | | | | | | | | | | |
|---|--|----------------------|---|---------------|----------|-----------|----------|----------|-----------|--|
|  | Technical polymer, nickel-plated brass, NBR  | ØD |  | Cavity | G | G1 | H | L | kg | |
| | | 4 | 3082 04 04 | 4 | 9 | 12.5 | 16 | 15 | 0.006 | |
| | | | 3082 04 06 | 6 | 9 | 12.5 | 15 | 15 | 0.009 | |
| | | | 3082 06 06 | 6 | 9 | 12.5 | 23 | 19 | 0.010 | |
| | | 6 | 3082 06 08 | 8 | 10.5 | 14 | 29 | 18.5 | 0.014 | |
| | | | 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 | |
| | | | 3082 12 12 | 12 | 19 | 23 | 39 | 31 | 0.056 | |
| | | Available on request | | | | | | | | |

Polymer Cartridges for Compressed Air

3081 Quick Fitting 45° Elbow



Technical polymer, nickel-plated brass, NBR



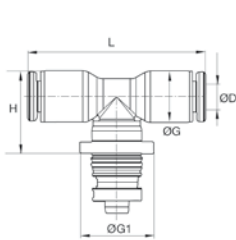
| ØD | | Cavity | G | G1 | H | L | kg |
|----|----------------------------|--------|------|------|------|------|-------|
| 4 | 3081 04 04 | 4 | 9 | 12.5 | 19 | 13 | 0.004 |
| 6 | 3081 06 06 | 6 | 11 | 12.5 | 22 | 14.5 | 0.006 |
| 8 | 3081 08 08 | 8 | 13.5 | 14.5 | 26 | 19 | 0.011 |
| 10 | 3081 10 10 | 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

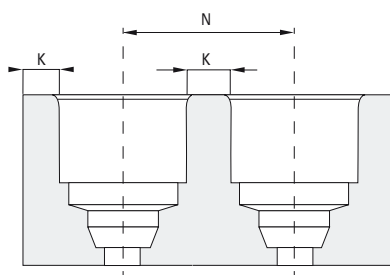
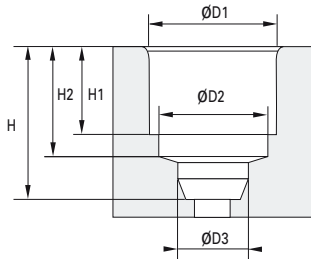


Technical polymer, nickel-plated brass, NBR



| 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 | 8 | 10.6 | 14.5 | 15 | 33.5 | 0.011 |
| 8 | 3088 08 08 | 8 | 14 | 14.5 | 19 | 46 | 0.013 |
| | 3088 08 10 | 10 | 14 | 19 | 19 | 46 | 0.023 |
| 10 | 3088 10 10 | 10 | 16 | 19 | 21 | 53 | 0.020 |
| | 3088 10 12 | 12 | 16 | 20 | 21 | 53 | 0.031 |
| 12 | 3088 12 12 | 12 | 19 | 20 | 24 | 61 | 0.035 |

Cavity Dimensions



Carstick® et 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 | 7.45 | 5.3 | 9.5 |
| 5/32* | 4.1 | 8.15 | 6 | 10 |
| 1/4 | 6.45 | 10.15 | 8 | 12.5 |
| 5/16* | 8.15 | 12.45 | 9.9 | 15.5 |
| 3/8 | 9.65 | 14.35 | 11.7 | 19 |

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 | 10.05 | 13.1 | 17.1 | 2 |

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


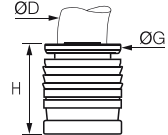


All our dimensions are in millimeters.

*Carstick® / **Quick Fitting


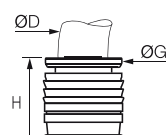


*5/32" = 4 mm and 5/16" = 8 mm

Polymer Cartridges for Fluids and Gases

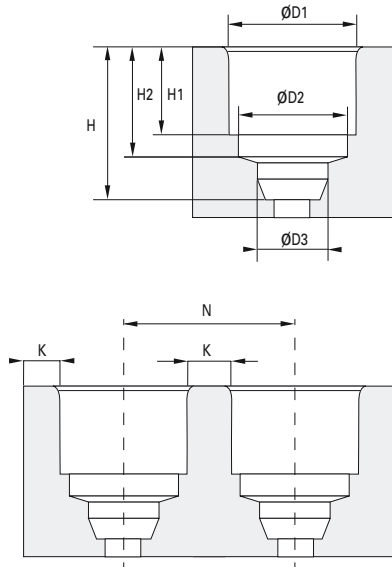
6300 LIQUIfit® Cartridge

| | | | | | | | | |
|---|---|---|---|----------|-----------|----------|----------|-----------|
|  | Laiton, 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

| | | | | | | | | |
|---|---|---|---|----------|-----------|----------|----------|-----------|
|  | Laiton, 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 | 7.45 | 5.3 | 9.5 |
| 5/32* | 4.1 | 8.15 | 6 | 10 |
| 1/4 | 6.45 | 10.15 | 8 | 12.5 |
| 5/16* | 8.15 | 12.45 | 9.9 | 15.5 |
| 3/8 | 9.65 | 14.35 | 11.7 | 19 |

Polyamide Cavity

| Cavity | ØD1 | ØD2 | K | N |
|--------|-------|-------|------|-----|
| 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 | K | N |
|--------|-------|-------|------|-----|
| 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 | K | N |
|--------|-------|-------|------|-----|
| 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 | K | N |
|--------|-------|-------|-------|-----|
| 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 | K | N |
|--------|-------|-------|-------|-----|
| 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 | K | N |
|--------|-------|-------|-------|-----|
| 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 | 10.05 | 13.1 | 17.1 | 2 |

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

All our dimensions are in millimeters.

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

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 TL, the possibility of removal.

Product Advantages

- LF Cartridges**
 - LF 3600** All the advantages of the LF 3600, LF 3800 and LF 3900 fittings applied to cartridge technology
 - 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
- TL Cartridge** Possibility to have several tubing diameters in the same cavity
Visible retention and sealing system, can be disassembled using the dedicated tool



- Applications**
- Robotics
 - Automotive Process
 - Pneumatics
 - Semi-Conductors
 - Refrigeration
 - Packaging
 - Vacuum

Technical Characteristics

| LF Cartridges | | TL 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 |


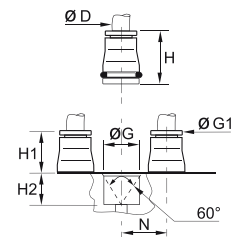

Regulations

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


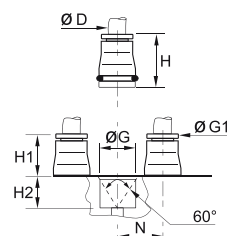


Reliable performance is dependent upon the type of fluid conveyed, component materials and tubing being used. Guaranteed for use with a vacuum of 755 mm Hg (99% vacuum).

Metal Cartridges for Fluids and Gases

3600 One-Piece Cartridge


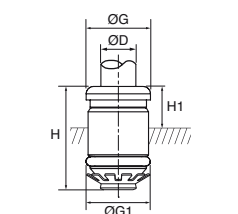

| | | | | | | | | | | |
|---|--|-----------|---|----------|-----------|----------|-----------|-----------|----------|-----------|
|  | <p>FDA chemical nickel-plated brass, FKM</p>  | ØD |  | G | G1 | H | H1 | H2 | N | kg |
| | | 4 | 3600 04 00 | 9.8 | 8 | 17 | 8.5 | 8.5 | 11 | 0.006 |
| | | 6 | 3600 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

| | | | | | | | | | | | |
|---|--|-----------|---|---|----------|-----------|----------|-----------|-----------|----------|-----------|
|  | <p>Stainless steel 316L, FKM</p>  | 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 | 0.023 |


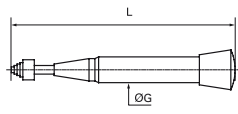

3800: collet in 303 stainless steel
3900: collet in 316L stainless steel

TL Cartridge

| | | | | | | | | | | |
|---|---|-----------|---------------|---|----------|-----------|----------|-----------|------------|-----------|
|  | <p>Brass, NBR</p>  | ØD | Cavity |  | G | G1 | H | H1 | H1* | kg |
| | | 4 | 4 | FTL4 | 8 | 8 | 14.5 | 4.5 | 7.5 | 0.003 |
| | | 4 | 6 | FTL4-6 | 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 |

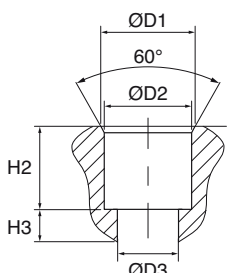
*Can be mounted in a short hole with extremely close porting

TLT Disconnection Tool

| | | | | | |
|---|---|---|----------|----------|-----------|
|  |  |  | G | L | kg |
| | | TLT | 28 | 156 | 0.235 |

Only for use with TL cartridges

Cavity Dimensions



TL 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