Thermal Management
Fluid Handling Solutions for Tempering & Cooling
Parker LPCE
Provider of Fluid Handling Solutions for Thermal Management

For more than 60 years, we strive to design, manufacture and customise safe and reliable quick connection solutions, distributed anywhere across the globe.

OUR BRANDS

OUR DIFFERENTIATORS

• A GLOBAL PRESENCE
• CUSTOMER ENGINEERING INTIMACY
• IN-HOUSE ENGINEERING AND MANUFACTURING

OUR QUALITY MANAGEMENT

• IATF 16949, ISO 9001 AND ISO 14001 CERTIFIED

KEY FIGURES

4500 shipments a day
70M finished goods / year
850 employees
7 locations in Europe
Thermal management is critical in all industries. The overheating effects of any process can be disastrous and irreversible for the manufactured products as well as for the machine itself. While liquid cooling systems are the preferred option for small spaces, dusty environments, quiet zones and high power rating applications, water circuit design requires particular care.

**Liquid cooling applications at a glance**

- **Industrial**
  - Laser Processing
  - Plastic Moulding
  - Robotic Welding
  - Printing

- **Power Generation**
  - Power Conversion
  - Li-on Batteries
  - Energy Storage
  - Frequency Converters

- **Electronics**
  - Data Centers
  - Computing Systems
  - Semiconductor Machinery
  - Computing Systems
Through our products brands Transair, Legris and Rectus, we continually endeavor to develop fluidic global solutions to support our customers overcome the difficulties of water management.

<table>
<thead>
<tr>
<th>YOUR CHALLENGES</th>
<th>OUR SOLUTIONS</th>
</tr>
</thead>
</table>
| REACH THE BEST THERMAL EFFICIENCY | - Support and tools to select the right diameter  
- Flow diagrams including pressure drop and flow rate  
- Strong partnership with accredited labs for fluid mechanics expertise |
| OPTIMIZE THE DESIGN OF YOUR CIRCUIT | - FEA ANSYS numerical simulations  
- MOLDFLOW rheology  
- Fast prototyping thanks to quick molding technologies |
| ENSURE THE DURABILITY OF YOUR MACHINE | - Right materials recommendation to preserve water quality and to avoid any damage due to corrosion |
| IMPROVE YOUR PRODUCTIVITY | - In-house plastic injection molding  
- High cadence automated assembly process  
- On-time delivery focus: dedicated teams for each order follow-up |
| SIMPLIFY THE MAINTENANCE OF YOUR MACHINE | - Quick connections solutions for recurrent disassembly |
Parker LPCE Fluid Handling Solutions

Fluid handling solutions from chillers to every stages of your cooling process

GLOBAL RANGE TO OFFER THE BEST SOLUTION FOR YOU
Extensive range of piping, coupling, fitting, tubing and valves suitable for liquid handling from the cooling unit to the cold plates.

FAST & EASY
+ Connection without tools.
+ No need to weld, glue or crimp
+ Automatical sealing and gripping
+ Easy handling

COMPACT & FLEXIBLE
+ Numerous configurations offering highly flexible installation solutions
+ Space saving with cartridge systems

SAFE & RESISTANT
+ Robust test protocols are applied: ageing, endurance and mechanical tests such as vibrations, shock or burst pressure
+ Push-In fittings 100% leak-tested and individually dated in production
+ Safety locking function

SMART & EFFICIENT
+ Unrestricted design for maximal flow
+ Double shut-off coupling system
+ Flat sealing coupling system
+ Self-alignment coupling system
Transair® innovative technology takes into account the specific requirements of each diameter and provides the user with an optimum safety coefficient and easy connection.

Because users need versatile but reliable and safe solutions, Transair® has developed different technologies for the best compromise between safety, efficiency and adaptability.

<table>
<thead>
<tr>
<th>Diameters</th>
<th>Ø16.5mm to Ø40mm</th>
<th>Ø42mm to Ø63mm</th>
<th>Ø76mm to Ø168mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connector Materials</td>
<td>Brass, Polymer, Stainless steel</td>
<td>Polymer Aluminium</td>
<td>Treated Steel Stainless steel</td>
</tr>
<tr>
<td>Technology</td>
<td>Gripping Ring Instant Connection</td>
<td>SnapRing Quick-fit Connection</td>
<td>Lug &amp; Clamp Quick-fit Connection</td>
</tr>
</tbody>
</table>

Our global piping, coupling and fitting solution is generally suitable for a temperature range of -20°C to +90°C.

All performances are available in our interactive catalogue on www.parker.com.
Our rectus couplers stand out for their high level of compatibility with the broadest range of liquids (for example water or heat exchange oils) and the application environment. Likewise, their resistance to mechanical influences is vital.

One of the most important requirements in the cooling of electronic systems is the avoidance of leaks, as this is the only way to guarantee fault-free function of the installation.

**Dry-Break System**

Dry-break coupling system with single-hand operation

**Cartridge Couplings**

Dry-break cartridge couplings without locking mechanism

<table>
<thead>
<tr>
<th>Series</th>
<th>DN (mm)</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>200KL</td>
<td>4-6-9-12-16-19-25</td>
<td>Nickel-Plated Brass Stainless Steel</td>
</tr>
<tr>
<td>200KLEK</td>
<td>3-4-6-9-12-19</td>
<td>Stainless Steel</td>
</tr>
</tbody>
</table>

Dry break – extremely low dead volume remaining. Absolutely no air pockets when coupling and only a barely noticeable film of the medium being channeled on the valve bodies when uncoupling.

**Working Conditions**

- **+90°C**
- **-20°C**
- **Up to 15 bar**
- Maximum static working pressure with design factor 4 to 1.

Our global piping, coupling and fitting solution is commonly designed for working from -20°C to +90°C. However, we can offer couplers which can work as low as -40°C or up to +200°C.

**Flat Sealing Design**

On the coupling and plug, our flat sealing coupling systems have valves that build up no dead-space volume. As such, when the connection is broken, no drops of the medium being channeled are able to escape. This variant is especially suitable for transporting aggressive media or in sensitive environments – e.g. in cleanrooms.

Maximum static working pressure with design factor 4 to 1.

The responsive flow charts will be in our catalogue on www.parker.com

**Cartridge couplings:**

The couplings are installed on floating bearings, which facilitates optimum balancing in the case of axial deviations.
The connection performances are closely linked to the fitting and tubing combination. The choice of the tubing material depends on the gripping technology. In some cases, a tube support can be recommended.

Parker Legris fluidic fittings and tubing have been engineered to outperform, working together with a system approach that offers reliable, leak-free connections, streamlines development and speeds manufacturing.

Parker Legris push-in fittings are 100% leak-tested and individually dated in production. They are designed to ensure full flow and to minimize pressure drop.

Working Conditions

+90°C

-20°C

Up to 30 bar

Our global piping, coupling and fitting solution is commonly designed for working from -20°C to +90°C. However, we can offer fittings which can work as low as -40°C or up to +150°C.

The tubing performances are available in our interactive catalogue on www.parker.com

Gripping Technology

Gripping Ring

Gripping Collet

Manual connection and disconnection

Manual connection Disconnection with tool

The connection performances are closely linked to the fitting and tubing combination. The choice of the tubing material depends on the gripping technology. In some cases, a tube support can be recommended.

Robustness Lightness Space Saving

<table>
<thead>
<tr>
<th>Outer Diameter</th>
<th>Ø4 to Ø22mm</th>
<th>Ø4 to Ø16mm</th>
<th>Ø4 to Ø16mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inner Diameter</td>
<td>DN2 to DN18mm</td>
<td>DN2 to DN13mm</td>
<td>DN2 to DN13mm</td>
</tr>
<tr>
<td>Materials</td>
<td>Nickel-Plated Brass Stainless Steel</td>
<td>Polyamide</td>
<td>Brass Polyamide</td>
</tr>
<tr>
<td>Gripping Technology</td>
<td>Ring / Collet</td>
<td>Ring</td>
<td>Ring / Collet</td>
</tr>
</tbody>
</table>

Parker Legris fluidic fittings and tubing have been engineered to outperform, working together with a system approach that offers reliable, leak-free connections, streamlines development and speeds manufacturing.
Parker Legris tubings are calibrated on the external diameter complying with NF E49-100. Diameter, material, remaining length and batch number are marked on the full length of the roll.

In case of dynamic application (tubing movements, mechanical strains or vibrations), we strongly recommend using an additional tube support.

### Total Versatility
- **Material**: Polyethylene
- **Outer Diameter**: Ø4 to Ø22mm
- **Inner Diameter**: DN2 to DN18mm

### High Resistance
- **Material**: Fluoropolymer
- **Outer Diameter**: Ø4 to Ø22mm
- **Inner Diameter**: DN2 to DN18mm

### High Flexibility
- **Material**: Anti-Spark Polyurethane
- **Outer Diameter**: Ø4 to Ø14mm
- **Inner Diameter**: DN2,5 to DN9,5mm

A wide range of flexible tubings from Ø4 to Ø22 in multiple materials and colors.

Polymer coupling series recommended for liquid cooling applications.
Your unique cooling partner

As a global player, we provide you with premium customer service to any of your locations across the globe.

Partners in your projects, we offer you support and guidance to surpass technological challenges to develop your fully adapted solutions.

OUR CUSTOMER SUPPORT

+ Markets and applications expertise to provide guidance and support
+ Co-creation & validation loop with the user
+ Dedicated Application Engineer for each customer project

Contact us

Please contact us for any support webcontact@parker.com

• Because your application is unique we can help you to define the right solution.

• Together, we can design your integrated customized liquid cooling circuit.

• We can bring more value if we are involved at the early stage of your project.
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

Parker’s Motion & Control Technologies

**Fluid & Gas Handling**
- **Key Markets**
  - Aerial lift
  - Agriculture
  - Bulk chemical handling
  - Construction machinery
  - Food & beverage
  - Industrial machinery
  - Life sciences
  - Marine
  - Mining
  - Mobile
  - Oil & gas
  - 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
  - Tubing & plastic fittings

**Hydraulics**
- **Key Markets**
  - Aerial lift
  - Agriculture
  - Bulk chemical handling
  - Construction machinery
  - Food & beverage
  - Industrial machinery
  - Life sciences
  - Marine
  - Mining
  - Mobile
  - Oil & gas
  - Renewable energy
  - Transportation
- **Key Products**
  - Accumulators
  - Cartridge valves
  - Electrohydraulic actuators
  - Human machine interfaces
  - Housed valves
  - Hydraulic cylinders
  - Hydraulic motors & pumps
  - Hydraulic systems
  - Hydraulic valves & controls
  - Hydrostatic steering
  - Integrated hydraulic circuits
  - Power take-offs
  - Power units
  - Rotary actuators
  - Sensors

**Pneumatics**
- **Key Markets**
  - Aerospace
  - Construction/Machinery
  - Food & beverage
  - Industrial machinery
  - Life sciences
  - Marine
  - Material handling
  - Mining
  - Oil & gas
  - Power generation
  - Renewable energy
  - Transportation
- **Key Products**
  - Accumulators
  - Cartridge valves
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  - Hydraulic cylinders
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  - Hydraulic systems
  - Hydraulic valves & controls
  - Hydrostatic steering
  - Integrated hydraulic circuits
  - Power take-offs
  - Power units
  - Rotary actuators
  - 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
  - Steel
  - Water & wastewater
- **Key Products**
  - Analytical Instruments
  - Analytical sample conditioning products & systems
  - Chemical injection fittings & valves
  - Coaxial fluid delivery
  - Fluid delivery systems
  - High purity gas delivery
  - High pressure fluid delivery systems
  - Industrial process control
  - Process control systems
  - Process control valves
  - Vacuum generators & pumps & sensors

**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**
  - Dynamic seals
  - Elastomeric o-rings
  - Electro-mechanical components
  - EM shielding
  - Exhausted & precision cut, fabricated elastomeric seals
  - High temperature metal seals
  - Homogeneous & inverted elastomeric shapes
  - Medical device fabrication & assembly
  - Metal & plastic retained components
  - Shielded optical windows
  - Silicone tubing & extrusions
  - Thermal management
  - Vibration dampening

**Electromechanical**
- **Key Markets**
  - Aerospace
  - Construction/Machinery
  - Food & beverage
  - Industrial machinery
  - Life sciences
  - Marine
  - Material handling
  - Oil & gas
  - Power generation & renewable energy
  - Transportation
  - Water Purification
- **Key Products**
  - AC/DC drives & systems
  - Electric actuators, rotary robots & drives
  - Electrohydrostatic actuation systems
  - Electromechanical actuation systems
  - Human machine interfaces
  - Linear motors
  - Servo motors, servo drives & controls
  - Structural actuators

**Filtration**
- **Key Markets**
  - Aerospace
  - Food & beverage
  - Industrial plant & equipment
  - Life sciences
  - Marine
  - Material handling
  - Oil & gas
  - Power generation & renewable energy
  - Transportation
  - Water Purification
- **Key Products**
  - Analytical gas generators
  - Compressed air filters & dryers
  - Engine air, coolant, fuel & oil filtration systems
  - Fluid condition monitoring systems
  - Hydraulics & lubrication filters
  - Hydrogen, nitrogen & zero air generators
  - Instrumentation filters
  - Membrane & filter systems
  - Microfiltration
  - Ultrafiltration
  - Water desalination & purification filters & systems

**Aerospace**
- **Key Markets**
  - Commercial transports
  - Engines
  - General & business aviation
  - Helicopters
  - Launch vehicles
  - Military aircraft
  - Missiles
  - Power generation
  - Regional transports
  - Unmanned aerial vehicles
- **Key Products**
  - Control systems & actuators
  - Engine systems & components
  - Fluid conveyance systems & components
  - Fluid metering, delivery & aspiration devices
  - Fuel systems & components
  - Fuel tank lining systems
  - Hydraulic systems & components
  - Thermal management
  - Wheels & brakes

**Climate Control**
- **Key Markets**
  - Agriculture
  - Air conditioning
  - Construction/Machinery
  - Food & beverage
  - Industrial machinery
  - Life sciences
  - Military & aerospace
  - Precision cooling
  - Process
  - Refrigeration
  - Transportation
- **Key Products**
  - Accumulators
  - Advanced actuators
  - CO2 controls
  - Electronic controllers
  - Filter driers
  - Hand shut-off valves
  - Heat exchangers
  - Hose & fittings
  - Pressure regulating valves
  - Refrigerant distributors
  - Safety relief valves
  - Small pumps
  - Sight gauges
  - Thermostatic expansion valves

**Electrical & Electronic**
- **Key Markets**
  - Aerospace
  - Industrial equipment
  - Life sciences
  - Marine
  - Military
  - Oil & gas
  - Power generation & renewable energy
  - Transportation
  - Water Purification
- **Key Products**
  - Compressed air filters & dryers
  - Engine air, coolant, fuel & oil filtration systems
  - Fluid condition monitoring systems
  - Hydraulics & lubrication filters
  - Hydrogen, nitrogen & zero air generators
  - Instrumentation filters
  - Membrane & filter systems
  - Microfiltration
  - Ultrafiltration
  - Water desalination & purification filters & systems

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