LTC Series
Up to 1.7 LPM Free Flow

Miniature Diaphragm Pumps (liquid)

LTC Miniature Diaphragm Pumps are offered in both brush and brushless DC motor drives that can be configured for your specific performance requirements and handle a wide range of liquid media over a wide range of pressures. LTC’s patented Fluid-Blok™ Advanced Sealing Technology provides redundant sealing capabilities to eliminate potential leaks. Monolithic diaphragm design enables maximum suction, priming, and continuous dry operation. Ideal for waste, transfer and bulk movement of liquids.

Features
- LTC Series Pumps set the highest benchmark for service free life-expectancy with our advanced proprietary diaphragm elastomer.
- Multiple port designs available for simple integration: Barb tubing connection, 6MM compression fitting, or 1/4-28 UNF threads with top and bottom face sealing.
- Overmolded diaphragm eliminates metal components in the wetted path resulting in a design that is inert to variety of media.
- Incorporating the lightweight EZ Mount Accessory facilitates simple system assembly while dampening vibration and reducing noise levels.
- Our 100% oil and grease-free pump and compressor design maintains the purity of your system and are commonly used in FDA-approved systems.
- RoHS Compliant

Markets
- Clinical Diagnostics
- Analytical Chemistry
- Printing

Applications
- Clinical Chemistry
- Wash and Waste Circuits
- Urinalysis
- Liquid Chromatography
- Large Format Printers
- Photo Processing Printers

Product Specifications*

Physical Properties
- Operating Environment¹:
  - 41 to 122°F (5 to 50°C)
- Storage Environment:
  - -4 to 212°F (-20 to 100°C)
- Media:
  - Most Gases and Liquids
- Humidity:
  - 0 – 95% Relative Humidity
- Pump Assembly Rated Life²:
  - PMDC Iron Core Brush - 3,000 hrs
  - Brushless Slotted - 10,000 hrs
- Weight:
  - 7.0 oz. (198 g) single head PMDC Iron Core Brush
  - 5.0 oz. (142 g) single head
    Brushless Slotted
  - 11.7 oz. (333 g) dual head
    Brushless Slotted (High Torque)

Electrical
- Motor Type (DC):
  - PMDC Iron Core Brush, Brushless Slotted
- Nominal Motor Voltages³:
  - 12, or 24 VDC
  - Other voltages available upon request
- Electrical Termination:
  - PMDC Iron Core Brush: 22 AWG Wire Leads, Length 10” (254 mm)
  - Brushless Slotted Motor: 22 AWG Wire Leads, Length 20” (508 mm)

Pneumatic
- Head Configuration:
  - Single
  - Dual Head
- Maximum Unrestricted Flow:
  - 1.0 LPM single head
  - 1.7 LPM dual head in parallel
- Pressure Range (Liquid):
  - 0 - 30 psig (0 - 193 kPa)
- Vacuum Range (Air):
  - 0 - 14.5 in Hg (0 - 368 mm Hg)
- Filtration:
  - 40 microns - recommended

Diaphragm:
- EPDM, AEPDM, FKM, PTFE / EPDM Laminate

Valves:
- EPDM, AEPDM, FKM, FFKM

Pump Head:
- Vectra (Liquid Crystal Polymer)

* See Appendix A for details.
LTC Series  
Miniature Diaphragm Pumps (liquid)

Performance Specifications

Typical flow performance is shown with standard high flow configurations with barb ports and brushless DC motor. Performance will vary depending on port and motor selection. Please contact Parker for the typical flow performance for a specific part number and configuration.

All LTC performance data is collected using water at 800 feet (244m) above sea level at 75°F (24°C). Performance will vary depending on barometric pressure and media temperature. Curves are representative of standard pump configurations. Pump configurations could be customized for higher or lower flows, depending on specific customer requirements.

Please contact Parker Precision Fluidics Applications Engineering for other considerations.
Miniature Diaphragm Pumps (liquid)  LTC Series

Sizing and Selection

LTC Series

<table>
<thead>
<tr>
<th></th>
<th>PMDC Iron Core Brush</th>
<th>Brushless Slotted Motor</th>
<th>Brushless Slotted (High torque) Motor</th>
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<tbody>
<tr>
<td>Efficiency¹</td>
<td>Good</td>
<td>Better</td>
<td>High Efficiency at high loads</td>
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<tr>
<td>Life²</td>
<td>Good - 3,000 hrs</td>
<td>Best - 10,000 hrs</td>
<td>Best - 10,000 hrs</td>
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<tr>
<td>Cost</td>
<td>Best</td>
<td>Better</td>
<td>Good</td>
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<table>
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<tr>
<th>Fittings/Tubing</th>
<th>6mm OD, 4mm ID (or 1/4” OD)</th>
<th>6mm OD, 4mm ID (or 1/4” OD)</th>
<th>1/4-28 UNF</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Nut, Ferrule, and Retaining ring included</td>
<td>Bottom sealing or face sealing</td>
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</tbody>
</table>

Mounting Guidelines:

- Bracket options available for mounting consideration (See EZ Mount catalog pages).
- Hole in the center of the bottom of housing is for manufacturing only—not to be used for mounting.
- Mounting holes are drilled for #6-20 self-tapping screws with 1/4” (6 mm) thread engagement torque to 4 in-lbs (0.45 N-m).

Port Connections:

- Flow direction is marked on the pump head with arrows.
- Barb ports are designed for 1/4” or 6MM OD tubing
- Compression fittings are designed for 4MM ID / 6MM OD tubing
- Threaded ports are sized for 1/4”-28 UNF male fittings.
LTC Series

Miniature Diaphragm Pumps (liquid)

Mechanical Integration

Dimensions

Single head LTC PMDC Iron Core Brush

Head position 3 shown
(Other head position options may be available)

Single head LTC Brushless Slotted Motor

Head position 3 shown, with ports away from motor
(Other head position options may be available)
**Miniature Diaphragm Pumps (liquid)**

**LTC Series**

**Mechanical Integration**

**Dimensions**

Dual head LTC-IIS Brushless Slotted (High Torque) Motor

**Electrical Integration and Motor Control**

**PMDC Iron Core Brush Motor**

<table>
<thead>
<tr>
<th>2 Wire</th>
<th>Red (+), Black (-)</th>
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<tbody>
<tr>
<td>Wire specification</td>
<td>22AWG, Insulation OD 0.051 in (1.30 mm) 10” (254 mm) Wire Leads</td>
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**Brushless Motor Control Options**

<table>
<thead>
<tr>
<th>2 Wire</th>
<th>Red (+), Black (-)</th>
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<tbody>
<tr>
<td>Wire specification</td>
<td>22AWG, Insulation OD 0.051 in (1.30 mm) 20” (508 mm) Wire Leads</td>
</tr>
</tbody>
</table>

**Other Motor Control Considerations**

The drive electronics for the BLDC motors are integrated into the motor itself, all that is needed is a power supply with the sufficient voltage and current.

**Key Things to Remember**

The pump is not a pressure holding device. An external check valve is recommended, if there is a pressure holding requirement.

Pump orientation does not affect performance or life.
**LTC Series**

**Miniature Diaphragm Pumps (liquid)**

**Typical Flow Diagram**

LTC pump used for liquid transfer in a printing application

![Diagram of LTC pump flow](image)

**LTC Waste Pump**

USED LIQUID EXTRICATION MANIFOLD

WASTE CONTAINER 2.5 GAL.

![Diagram of LTC waste pump](image)
Miniature Diaphragm Pumps (liquid)  

Accessory Information

EZ Mount available

EZ Mount provides ease of installation and effective control of vibration transfer. EZ Mount was designed to mount easily to the Precision Fluidic LTC Family of diaphragm pumps.

Features

- Isolation feet on the EZ mount can be rotated in any one of three ninety-degree planes and is designed for top-down or bottom-up mounting providing simple installation.
- EZ Mount was designed to minimize weight added to the pump assembly. Approximate weights are: Style A - 0.63 oz [18 g], Style B - 0.71 oz [20 g].
- Effectively absorbs vibration to minimize most vibration-induced noise and vibration transfer into an instrument.
- Designed to keep height and size to a minimum.
- Engineered for Parker LTC and LTC-IIS pumps to ease integration into your system.

Physical Properties

<table>
<thead>
<tr>
<th>Operating Environment:</th>
<th>41 - 158°F (5 - 70°C)</th>
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<tr>
<td>Humidity:</td>
<td>0 - 95% Relative Humidity</td>
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<tr>
<td>Base Plate:</td>
<td>Noryl GTX830</td>
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<tr>
<td>Feet:</td>
<td>Silicone</td>
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<tr>
<td>Feet Insert:</td>
<td>Brass</td>
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<tr>
<td>Hardware:</td>
<td>Zinc-Plated Steel</td>
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</table>

EZ Mount kits include all necessary hardware and detailed instructions. Isolation Feet are available in either threaded or thru-hole clearance for standard #4-40 or #6-32 [M3 for clearance hole only] hardware and can be mounted in any of three ninety-degree planes.

Dimensions

**Style A - Brushless Slotted Motor**

**Style B - PMDC Iron Core Brush Motor**
### LTC Series

**Miniature Diaphragm Pumps (liquid)**

### Accessory Information

### Dimensions

![Dimensions Diagram]

**Style B - Brushless Slotted (High Torque) Motor**

### Ordering Information

#### EZ Mount for LTC Single Head Pump with PMDC Iron Core Brush Motor

<table>
<thead>
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<th>Part Number</th>
<th>Style</th>
<th>Description</th>
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<tbody>
<tr>
<td>00329-10-A45S</td>
<td>B</td>
<td>#4-40 Threaded</td>
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<tr>
<td>00329-10-B45S</td>
<td>B</td>
<td>#4 Clearance</td>
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<tr>
<td>00329-10-D45S</td>
<td>B</td>
<td>#6-32 Threaded</td>
</tr>
<tr>
<td>00329-10-C45S</td>
<td>B</td>
<td>#6 / M3 Clearance</td>
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#### EZ Mount for LTC Single Head Pump with Brushless Slotted Motor

<table>
<thead>
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<th>Style</th>
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<td>00328-10-B45S</td>
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<td>#4 Clearance</td>
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<tr>
<td>00328-10-D45S</td>
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<td>00328-10-C45S</td>
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<td>#6 / M3 Clearance</td>
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#### EZ Mount for LTC-IIS Dual Head Pump with Brushless Slotted (High Torque) Motor

<table>
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<th>Part Number</th>
<th>Style</th>
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<td>B</td>
<td>#6-32 Threaded</td>
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<tr>
<td>00331-10-C45S</td>
<td>B</td>
<td>#6 / M3 Clearance</td>
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### LTC Compression Fitting Spares Kit

1. Black Knurled Nut - 20x
2. Metal Compression Sleeve - 20x
3. Plastic Compression Ferrule - 20x

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Comments</th>
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<tr>
<td>01842-KT</td>
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<td>Kit includes 20 pieces of each fitting component</td>
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Chemical Compatibility Chart*

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Chemical Compatibility of Wetted Path Materials</th>
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<td>Bleach 12%</td>
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<tr>
<td>Ink (MEK)</td>
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<tr>
<td>Sodium Hydroxide 20%</td>
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*The above is an Abbreviated Chemical Compatibility Chart. Please consult factory for details. Temperature range for chart is 5-50°C. See Application Engineering for compatibility with any specific acids or bases.

Compatibility Legend

1. EXCELLENT
   Minimal or no effect
2. GOOD
   Possible swelling and/or loss of physical properties
3. DOUBTFUL
   Moderate or severe swelling and loss of physical properties
4. NOT RECOMMENDED
   Severe effect and should not be considered

Note: Consult factory for other gases.

Ordering Information

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Voltage</th>
<th>Connection</th>
<th>Part Number</th>
<th>Liquid Flow (Water) mLPM @ Load</th>
<th>FF</th>
<th>Dry Vacuum</th>
<th>Max Pressure (Water)</th>
<th>Wetted Materials</th>
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<th>Valves</th>
<th>Gasket</th>
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<td>Brush Motor 12</td>
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<td>12</td>
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<td>12</td>
<td>1/4-28 Thread</td>
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</tr>
</tbody>
</table>

Note: The Ordering Information Section includes a few selected part numbers for the product line. Other performances and configurations are available. Please contact your Sales Representative or an Application Engineer to discuss your application needs.
LTC Series  

Miniature Diaphragm Pumps (liquid)

Please click on the Order On-line button below (or go to www.parker.com/precisionfluidics/ltc) to configure your LTC Miniature Diaphragm Pump.

Serviceable – PPF products are designed for use through the rated life and Parker does not sell replacement parts, and these products are not meant to be serviced in the field. Please contact Customer Service with any questions.

Note: In addition to Parker’s innovative and flexible pump designs, we offer applications engineering expertise to our customers in order to configure and recommend the optimal pump for the application. Contact Parker Applications Engineering to discuss and configure alternate pump configurations to meet your specific application requirements. Providing information on the following requirements will assist us in developing an optimal solution for your application:

- Noise
- Operating Pressure / Vacuum
- Power Consumption
- Life Requirement
- Description of pump function in the application

- Size
- Motor Control
- Media
- Voltage

Parker Hannifin Precision Fluidics Division reserves the right to make changes. Drawings are for reference only.

Appendix A

All performance data is typical based on standard conditions: 70°F and 14.7 psia (21°C and 1 bar).

1. Duty Dependent. For operation above 122°F (50°C) consult factory
2. Life rating can vary depending on application and operating conditions.
3. Custom motor options available. Custom motors may require a significant application potential. The standard motors can be configured with a special winding to meet a particular operation point at a specified voltage
4. Current range is dependent on motor type, voltage, pressure/vacuum and flow requirement. Lower levels possible depending on application.
5. Pump efficiency is a measure of the flow rate generated per unit of power consumed. Efficiency may change dependent on application and operating condition at free flow.