Section A
www.parker.com/pneu/vaccup
<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Cup Sizes:</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>PFG Flat</td>
<td>Precision molded single lip flat cup for smooth or slightly curved surfaces.</td>
<td>1mm to 200mm</td>
<td>10-27</td>
</tr>
<tr>
<td>PFOG Vacuum Grooves</td>
<td>Anti-slip flat cup with grooves extending to the outer diameter to increase vacuum flow area. Increased friction resists slipping of product during transfer.</td>
<td>20mm to 40mm</td>
<td>28-35</td>
</tr>
<tr>
<td>P5V-CFS Flat</td>
<td>Precision molded double lip flat cup for slightly curved surfaces.</td>
<td>50mm to 300mm</td>
<td>36-39</td>
</tr>
<tr>
<td>PBG Bellows</td>
<td>Versatile bellows cup design provides a flexible sealing lip for products with irregular, smooth, curved surfaces, and flexible products.</td>
<td>10mm to 150mm</td>
<td>40-53</td>
</tr>
<tr>
<td>PJG Short Bellows</td>
<td>Versatile bellows cup design provides a flexible sealing lip for products with irregular, smooth, curved surfaces, and slightly flexible products. Shorter stroke provides fast response.</td>
<td>6mm to 80mm</td>
<td>54-69</td>
</tr>
<tr>
<td>PCG Multiple Bellows</td>
<td>Versatile bellows cup design provides a flexible sealing lip for products with irregular, smooth, or curved surfaces. 2 1/2 bellows design minimizes contact pressure applied to products.</td>
<td>5mm to 90mm</td>
<td>70-81</td>
</tr>
<tr>
<td><strong>PKG Automotive</strong></td>
<td>Versatile cup design with grooves extending to the outer diameter and different profiles for flexible products with smooth, oily surfaces.</td>
<td>82-91</td>
<td></td>
</tr>
<tr>
<td>---</td>
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<td></td>
</tr>
<tr>
<td>Cup Sizes: 60mm to 110mm</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>PUBG Flat Swivel</strong></th>
<th>30° swivel single lip flat cup for smooth surfaces, slightly curved surfaces, and flexible products. Rigid stem or level compensator provides good stability for horizontal lift.</th>
<th>92-103</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cup Sizes: 10mm to 200mm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>PCD Ring Cups</strong></th>
<th>Some of the more popular pads for the CD Industry. High temperature and soft durometer make these pads gentle and durable.</th>
<th>104-107</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cup Sizes: 20mm to 46mm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>PDG Sponge</strong></th>
<th>Sponge cup for workpieces having irregular or uneven surfaces. The 20-durometer-sponge material conforms to the product allowing the desired vacuum level to be achieved.</th>
<th>108-109</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cup Sizes: 4mm to 15mm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>PAG Foil, Paper, Film</strong></th>
<th>These cups have an ultra thin edge that creates the vacuum seal by conforming to the shape of the product. The complete foot pattern to the center of the cup prevents the vacuum from deforming or &quot;puckering&quot; thin, flexible products.</th>
<th>110-119</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cup Sizes: 10mm to 50mm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Adapters &amp; Screws</strong></th>
<th>BSPP adapter fittings and cup screws.</th>
<th>120</th>
</tr>
</thead>
</table>

| **Cup Data** | Cup / Fitting Cross Reference. | 121-126 |
Selecting the Proper Vacuum Cup

⚠️ CAUTION:
Selecting the type of vacuum cup, material, and size suitable for an application is important to the overall vacuum system. Calculating the forces involved for each application is recommended to determine the vacuum cup size. It should be noted that these calculations are basic theoretical guidelines and each application must be tested for actual results. With all vacuum applications, certain practical assumptions concerning cup materials, environmental conditions, and product characteristics to name a few, may not be consistent with the performance. Again, the user should determine the efficiency, performance, and safety factor of the cup selection.

Calculating Pad Diameter and Forces

Mass
The term mass is a quantity of matter and its ability to resist motion when acted on by an external force. The magnitude of an object is represented as a certain number of kilograms (kg) and is symbolized as "m". The easiest way to determine the mass of an object is to measure the weight with a scale within the earth's gravitational field ($a_g = 9.8 \text{m/sec}^2$). Likewise, outside of any gravitational field, a mass could potentially be weightless.

Forces
For vacuum applications, force is a vector quantity in a defined direction either horizontal or vertical. The standard international unit of force is measured in Newtons (N) which is the equivalent of (kgm/sec$^2$). The force can be calculated by measuring the effect of a change in acceleration on a mass.

Newtons Law: $F(N) = \text{mass(kg)} \times (a_g + a) \times S$

Consider an object with a mass of 10kg. The gravitational force on this object would be:

$F(N) = 10\text{kg} \times 9.8\text{m/sec}^2 = 98.1\text{ N}$

Acceleration
Acceleration is the change in velocity of a moving object. Acceleration is a vector, a directional quantity expressed in units of meters per second squared (m/sec$^2$) and symbolized as "a". To explain the magnitude of acceleration consider an object with a change in velocity of 2 meters per second (m/sec) over a 4 second time frame. The acceleration can be calculated with:

$a = \frac{\Delta \text{velocity}}{\text{time}} = 6\text{m/sec} \times 2$ sec

This is considered an average acceleration.

Coefficient of Friction
Certain values for coefficient of friction should be taken into consideration when calculating the combined forces in motion. Actual values between suction cups and surfaces are difficult to determine. Therefore, coefficient of friction values from published charts, should be used as a reference to adjust the safety factors accordingly.

Lifting Forces
When calculating lifting forces, safety factors of 2 for horizontal lifts and 4 for vertical lifts are minimum values. Applications with irregular shapes, difficult surfaces, and awkward motions will require increased safety factors.

Horizontal Lifting Force
Apply Newtons Law to calculate the force on a 10kg mass with a change in acceleration of 3m/sec$^2$ and a safety factor of 2.

$F_h(N) = \text{mass(kg)} \times (a_g + a) \times S_h$

$F_h(N) = 10\text{kg} \times (9.8\text{m/sec}^2 + 3\text{m/sec}^2) \times 2$

$F_h = 256.2\text{ N}$

Vertical Lifting Force
Apply Newtons Law to calculate the force on a 10kg mass with a dry surface, a change in acceleration of 3m/sec$^2$ and a safety factor of 4.

$F_v(N) = \text{mass(kg)} \times (a_g + a) \times S_v$

$F_v(N) = 10\text{kg} \times (9.8\text{m/sec}^2 + 3\text{m/sec}^2) \times 4$

$F_v = 512.4\text{ N}$

Combined Vertical Lift and Horizontal Motion
Calculate the force on a 10kg mass with a dry surface, a change in acceleration of 3m/sec$^2$, and a change in travel acceleration of 2m/sec$^2$.

$F_m(N) = \sqrt{F_v^2 + F_h^2}$

$F_m(N) = \sqrt{(10\text{kg} \times 2\text{m/sec}^2) \times 4^2 + [10\text{kg} \times (9.8\text{m/sec}^2 + 3\text{m/sec}^2) \times 2]^2}$

$F_m(N) = \sqrt{64\text{kgm/sec}^2 + 65,536\text{kgm/sec}^2}$

$F_m = 268.2\text{ N}$
Theoretical Lifting Force Per Cup lbf (N)

<table>
<thead>
<tr>
<th>Cup</th>
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<tbody>
<tr>
<td>Diameter (mm)</td>
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<td>1</td>
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<td>2</td>
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<td>3.5</td>
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<td>110</td>
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<tr>
<td>120</td>
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<tr>
<td>150</td>
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<tr>
<td>200</td>
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</tbody>
</table>

Vacuum Cups

Technical Information

**Calculate the Diameter of the Cup**

Calculate the cup diameter for horizontal lift at 60% of full vacuum using the information from the previous page.

\[ D = \sqrt[6]{\frac{m (a + a) \times S}{Pv \times n}} \]

\[ D (\text{mm}) = \text{Diameter of Cup} \]

\[ m (\text{kg}) = \text{Mass} \]

\[ a = 9.81 \text{m/sec}^2 \]

\[ a = \text{Motion Acceleration} \]

\[ S = \text{Safety Factor} \]

\[ Pv (\text{kPa}) = \text{Operating Vacuum Pressure} \]

\[ n = \text{Number of Cups} \]

**D = 35.7**

Referring to the chart below, at 60% vacuum, select a cup diameter equal to or greater than 37mm. The appropriate selection is a 40mm diameter cup which has a theoretical lifting force of 76.9 N.

To convert Pounds (Lbf) to Newton (N), multiply Lbf x 4.4.
# Specifications

Cup material should be considered for temperature resistance, chemical resistance, oil resistance, abrasion resistance, markless properties and electrical properties.

<table>
<thead>
<tr>
<th>Suction Cup Material</th>
<th>NBR</th>
<th>NBRE</th>
<th>CR</th>
<th>SI</th>
<th>SIE</th>
<th>U</th>
<th>FKM</th>
<th>SH</th>
<th>Z</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Nitrile</td>
<td>Nitrile ESD*</td>
<td>Chloroprene</td>
<td>Silicone</td>
<td>Silicone ESD*</td>
<td>Urethane</td>
<td>Fluoro Rubber</td>
<td>Silicone High Temp</td>
<td>Markless</td>
</tr>
<tr>
<td>Operating Temperature (°C)</td>
<td>-20° to +120°</td>
<td>-30° to +140°</td>
<td>-60° to +250°</td>
<td>-30° to +250°</td>
<td>-30° to +250°</td>
<td>-10° to +230°</td>
<td>-50° to +300°</td>
<td>-10° to +230°</td>
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<td>Black</td>
<td>Black / Blue Dot</td>
<td>Green</td>
<td>White</td>
<td>Black / Red Dot</td>
<td>Blue</td>
<td>Black / White Dot</td>
<td>Grey</td>
<td>Black / Yellow Dot</td>
</tr>
<tr>
<td>Hardness, Shore A (°Sh)</td>
<td>55 ±5</td>
<td>70 ±5</td>
<td>55 ±5</td>
<td>55 ±5</td>
<td>55 ±5</td>
<td>70 ±5</td>
<td>55 ±5</td>
<td>70 ±5</td>
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<tr>
<td>Electrical Resistance (Ωm)</td>
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<td>800 to 1000</td>
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<td>Wear Resistance</td>
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<tr>
<td>Tear Strength</td>
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<tr>
<td>Aging Resistance</td>
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<tr>
<td>Ozone Resistance</td>
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<tr>
<td>Gasoline Resistance</td>
<td>*****</td>
<td>*****</td>
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<td>*****</td>
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<tr>
<td>Oil Resistance</td>
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<td>*****</td>
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<td>****</td>
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<tr>
<td>Acid Resistance</td>
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<td>****</td>
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<tr>
<td>Alkali Resistance</td>
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<td>Chemical Resistance</td>
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<td>**</td>
<td>****</td>
<td>**</td>
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<td></td>
</tr>
</tbody>
</table>

***** = excellent; **** = very good; *** = good; ** = medium; * = poor; * = not recommended

* ESD: Electric Static Dissipative Material
## Index of Vacuum Component Symbols

These Symbols will be located in each cup section as a guide for cup usage.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
<th>Symbol</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td><img src="image1" alt="Symbol" /></td>
<td>Flat Surface, Thin Section</td>
<td><img src="image2" alt="Symbol" /></td>
<td>Differences In Heights and Levels</td>
</tr>
<tr>
<td><img src="image3" alt="Symbol" /></td>
<td>Flat Surface, Any Section</td>
<td><img src="image4" alt="Symbol" /></td>
<td>Vertical Lift</td>
</tr>
<tr>
<td><img src="image5" alt="Symbol" /></td>
<td>Soft Porous Material, Thin Section</td>
<td><img src="image6" alt="Symbol" /></td>
<td>Not For Vertical Lift</td>
</tr>
<tr>
<td><img src="image7" alt="Symbol" /></td>
<td>Soft Porous Material, Any Section</td>
<td><img src="image8" alt="Symbol" /></td>
<td>Rough and / or Abrasive Surfaces</td>
</tr>
<tr>
<td><img src="image9" alt="Symbol" /></td>
<td>Slightly Bowed Surface, Thin Section</td>
<td><img src="image10" alt="Symbol" /></td>
<td>Thin or Narrow Item Handling</td>
</tr>
<tr>
<td><img src="image11" alt="Symbol" /></td>
<td>Slightly Bowed Surface, Any Section</td>
<td><img src="image12" alt="Symbol" /></td>
<td>Oil Resistant</td>
</tr>
<tr>
<td><img src="image13" alt="Symbol" /></td>
<td>Bowed Surface, Thin Section</td>
<td><img src="image14" alt="Symbol" /></td>
<td>High Lifting Force</td>
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<tr>
<td><img src="image15" alt="Symbol" /></td>
<td>Bowed Surface, Any Section</td>
<td><img src="image16" alt="Symbol" /></td>
<td>Vertical Lifting Force</td>
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<tr>
<td><img src="image17" alt="Symbol" /></td>
<td>Soft Material</td>
<td><img src="image18" alt="Symbol" /></td>
<td>Horizontal Lifting Force</td>
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<tr>
<td><img src="image19" alt="Symbol" /></td>
<td>Metal Sheet Handling</td>
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<tr>
<td><img src="image20" alt="Symbol" /></td>
<td>Corrugated Sheet Handling</td>
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</tr>
</tbody>
</table>
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatic

PFG Flat Vacuum Cups

Features
- Universal Flat Design for Most Smooth Surface Applications
- Stable Vertical / Horizontal Lift
- Strong Low Profile Design for Fast Response Needed for Short Cycles
- 1mm to 200mm Diameters
- Bottom Cleats on 60 to 200mm

Applications
Exceptional for any smooth flat or surface that will benefit from stability and fast response of the cup design. This is a multi-versatile and multi-industry cup. Typical applications could be chip mounting, electrical components, semiconductor chips, glass, injection mold, sheet metal, press transfer, fixtures, woodworking.

PFG Series Vacuum Cups
Precision molded single lip flat cup for smooth or slightly curved surfaces.

PFTM Series Male Thread Connector
Simple male connection for low profile positions secured to a plate or bracket. UNF, NPT, G, metric threads. Internal hex for easy assembly. Fitting Material: Aluminum.

PFTK Series Barbed Bulkhead
Top stem connectors secured with jam nuts and allow tubing connections at the top side. Nickel plated brass materials.

PFYK Series 90° Barbed Adapter
Side stem connectors allow you to secure the stem with a bolt thru a plate or "L" bracket to allow the tube connection from the side port. Nickel plated brass materials.

PFTYS Series Bulkhead Level Compensator
303 stainless steel construction secured with jam nuts. Spring biased compensators can absorb impacts of down-strokes and adjust for different levels of pick up points. 303 stainless corrosion resistant materials with drymet bushings increases the strength and life.
### Model Number Index (Cups Only)

(Bold Items are Stocked)

- **PFG - 2A - NBR**

<table>
<thead>
<tr>
<th>Cup Diameter (mm)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (1)</td>
<td>25 (25)</td>
</tr>
<tr>
<td>1.5 (1.5)</td>
<td>30 (30)</td>
</tr>
<tr>
<td>2A (2)</td>
<td>35 (35)</td>
</tr>
<tr>
<td>3.5A (3.5)</td>
<td>40 (40)</td>
</tr>
<tr>
<td>5A (5)</td>
<td>50 (50)</td>
</tr>
<tr>
<td>6A (6)</td>
<td>60 (60)</td>
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<td>80 (80)</td>
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<tr>
<td>10A (10)</td>
<td>95 (95)</td>
</tr>
<tr>
<td>15* (15)</td>
<td>120 (120)</td>
</tr>
<tr>
<td>15A** (15)</td>
<td>150 (150)</td>
</tr>
<tr>
<td>20* (20)</td>
<td>200 (200)</td>
</tr>
</tbody>
</table>

* Available for PFTK & PFYK Cup Assemblies Only.

** Available for PFTM, PFTF & PFTYS Cup Assemblies Only.

**Note:** 60 thru 200mm cups have cup cleats.

### Specifications

<table>
<thead>
<tr>
<th>Suction Cup Material</th>
<th>NBR Nitrile</th>
<th>NBRE Nitrile ESD*</th>
<th>CR Chloroprene</th>
<th>SI Silicone</th>
<th>SIE Silicone ESD*</th>
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<th>FKM Flouro Rubber</th>
<th>SH Silicone High Temp</th>
<th>Z Markless</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature (°C)</td>
<td>-20° to +120°</td>
<td>-30° to +120°</td>
<td>-30° to +140°</td>
<td>-60° to +250°</td>
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<tr>
<td>Color</td>
<td>Black</td>
<td>Black / Blue Dot</td>
<td>Green</td>
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<td>55 ±5</td>
<td>70 ±5</td>
<td>55 ±5</td>
<td>55 ±5</td>
<td>55 ±5</td>
<td>55 ±5</td>
<td>55 ±5</td>
<td>55 ±5</td>
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<tr>
<td>Electrical Resistance (Ω)</td>
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<tr>
<td>Wear Resistance</td>
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<td>Tear Strength</td>
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<td>Aging Resistance</td>
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<td>Ozone Resistance</td>
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<tr>
<td>Gasoline Resistance</td>
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<tr>
<td>Oil Resistance</td>
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<td>Chemical Resistance</td>
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</tbody>
</table>

* ***** = excellent;  ***** = very good;  ***** = good;  ***** = medium;  * = poor;  * = not recommended

* ESD: Electric Static Dissipative Material
### Application Guide

**Flat - Smooth Surface**

- Products With Smooth Surfaces
- Products With Minimum Flex
- Products That Will Not Permanently Deform

### Main Data for Flat PFG Cups

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Cup Diameter (mm)</th>
<th>Area cm²</th>
<th>Volume (L)</th>
<th>Lifting Force @60% (N)</th>
<th>Cup Deflection (S) mm</th>
<th>Radius (R) mm</th>
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<tbody>
<tr>
<td>PFG-1-*</td>
<td>.04 (1)</td>
<td>0.008</td>
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<td>0.05</td>
<td>0.1</td>
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<td>PFG-1.5-*</td>
<td>.06 (1.5)</td>
<td>0.01</td>
<td>0.000000053</td>
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<td>0.1</td>
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<td>PFG-2A-*</td>
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<td>0.00000007</td>
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<td>0.2</td>
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<td>PFG-6A-*</td>
<td>.24 (6)</td>
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<td>1.0</td>
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<td>PFG-8A-*</td>
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<td>PFG-20-*</td>
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<td>0.0008</td>
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<td>PFG-35-*</td>
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<td>PFG-40-*</td>
<td>1.57 (40)</td>
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<td>PFG-50-*</td>
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<td>19.60</td>
<td>0.007</td>
<td>120</td>
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<td>PFG-60-*</td>
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<td>28.30</td>
<td>0.0090</td>
<td>173</td>
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<td>PFG-80-*</td>
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<td>50.30</td>
<td>0.025</td>
<td>308</td>
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<tr>
<td>PFG-95-*</td>
<td>3.74 (95)</td>
<td>70.90</td>
<td>0.035</td>
<td>434</td>
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<tr>
<td>PFG-120-*</td>
<td>4.72 (120)</td>
<td>113.00</td>
<td>0.078</td>
<td>692</td>
<td>6.0</td>
<td>365</td>
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<tr>
<td>PFG-150-*</td>
<td>5.91 (150)</td>
<td>176.70</td>
<td>0.177</td>
<td>1081</td>
<td>9.0</td>
<td>380</td>
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<td>PFG-200-*</td>
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<td>0.425</td>
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<td>13.0</td>
<td>430</td>
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* Cup Material
### Dimensions

#### PFG-1
- ØA: 0.04 (1)
- ØB: —
- ØC: 0.03 (8)
- ØD: 0.05 (1.2)
- E: 0.06 (1.6)
- F: —
- G: —
- H: —
- ØJ: —

#### PFG-1.5
- ØA: 0.06 (1.5)
- ØB: —
- ØC: 0.05 (1.2)
- ØD: 0.07 (1.8)
- E: 0.10 (2.5)
- F: —
- G: —
- H: —
- ØJ: —

#### PFG-2A
- ØA: 0.08 (2)
- ØB: 0.08 (2)
- ØC: 0.05 (1.2)
- ØD: 0.16 (4)
- E: 0.16 (4)
- F: 0.02 (5)
- G: 0.10 (2.5)
- H: 0.06 (1.5)
- ØJ: 0.12 (3)

#### PFG-3.5A
- ØA: 0.14 (3.5)
- ØB: 0.08 (2)
- ØC: 0.05 (1.2)
- ØD: 0.16 (4)
- E: 0.16 (4)
- F: 0.02 (5)
- G: 0.10 (2.5)
- H: 0.06 (1.5)
- ØJ: 0.12 (3)

#### PFG-5A
- ØA: 0.20 (5)
- ØB: 0.16 (4)
- ØC: 0.06 (1.4)
- ØD: 0.30 (7.5)
- E: 0.26 (6.5)
- F: 0.03 (8)
- G: 0.16 (4)
- H: 0.08 (2)
- ØJ: 0.24 (6)

#### PFG-6A
- ØA: 0.24 (6)
- ØB: 0.16 (4)
- ØC: 0.08 (2)
- ØD: 0.30 (7.5)
- E: 0.26 (6.5)
- F: 0.03 (8)
- G: 0.16 (4)
- H: 0.08 (2)
- ØJ: 0.24 (6)

#### PFG-8A
- ØA: 0.31 (8)
- ØB: 0.16 (4)
- ØC: 0.08 (2)
- ØD: 0.31 (8)
- E: 0.28 (7)
- F: 0.05 (1.2)
- G: 0.16 (4)
- H: 0.08 (2)
- ØJ: 0.24 (6)

#### PFG-10A
- ØA: 0.39 (10)
- ØB: 0.16 (4)
- ØC: 0.08 (2)
- ØD: 0.33 (8.5)
- E: 0.30 (7.5)
- F: 0.06 (1.5)
- G: 0.16 (4)
- H: 0.08 (2)
- ØJ: 0.24 (6)

#### PFG-15
- ØA: 0.59 (15)
- ØB: 0.15 (4)
- ØC: 0.08 (2)
- ØD: 0.31 (8)
- E: 0.31 (8)
- F: 0.07 (1.9)
- G: —
- H: —
- ØJ: —

#### PFG-15A
- ØA: 0.59 (15)
- ØB: 0.15 (4)
- ØC: 0.08 (2)
- ØD: 0.35 (9)
- E: 0.31 (8)
- F: 0.08 (2)
- G: 0.16 (4)
- H: 0.08 (2)
- ØJ: 0.24 (6)

#### PFG-20
- ØA: 0.79 (20)
- ØB: 0.18 (4.6)
- ØC: 0.43 (11)
- ØD: 0.59 (15)
- E: 0.39 (10)
- F: 0.09 (2.3)
- G: —
- H: —
- ØJ: 0.18 (4.5)

#### PFG-20B
- ØA: 0.79 (20)
- ØB: 0.24 (6)
- ØC: 0.43 (11)
- ØD: 0.59 (15)
- E: 0.49 (12.5)
- F: 0.09 (2.3)
- G: —
- H: —
- ØJ: 0.28 (7)

#### PFG-25
- ØA: 0.98 (25)
- ØB: 0.24 (6)
- ØC: 0.43 (11)
- ØD: 0.63 (16)
- E: 0.55 (14)
- F: 0.12 (3)
- G: —
- H: —
- ØJ: 0.28 (7)

#### PFG-30
- ØA: 1.18 (30)
- ØB: 0.24 (6)
- ØC: 0.43 (11)
- ØD: 0.55 (14)
- E: 0.47 (12)
- F: 0.08 (2)
- G: —
- H: —
- ØJ: 0.28 (7)

#### PFG-35
- ØA: 1.38 (35)
- ØB: 0.24 (6)
- ØC: 0.43 (11)
- ØD: 0.83 (21)
- E: 0.55 (14)
- F: 0.12 (3)
- G: —
- H: —
- ØJ: 0.28 (7)

#### PFG-40
- ØA: 1.57 (40)
- ØB: 0.24 (6)
- ØC: 0.43 (11)
- ØD: 0.94 (24)
- E: 0.55 (14)
- F: 0.16 (4)
- G: —
- H: —
- ØJ: 0.28 (7)

#### PFG-50
- ØA: 1.97 (50)
- ØB: 0.31 (8)
- ØC: 0.79 (20)
- ØD: 1.06 (27)
- E: 0.59 (15)
- F: 0.14 (3.5)
- G: —
- H: —
- ØJ: 0.28 (7)

#### PFG-60
- ØA: 2.36 (60)
- ØB: M10x1.25
- ØC: —
- ØD: 0.79 (12.5)
- E: 0.73 (18.5)
- F: 0.20 (5)
- G: —
- H: —
- ØJ: 0.10 (2.5)

#### PFG-80
- ØA: 3.15 (80)
- ØB: M10x1.25
- ØC: —
- ØD: 0.79 (12.5)
- E: 0.81 (20.5)
- F: 0.24 (6)
- G: —
- H: —
- ØJ: 0.10 (2.5)

#### PFG-95
- ØA: 3.75 (95)
- ØB: M10x1.25
- ØC: —
- ØD: 0.79 (12.5)
- E: 0.83 (21)
- F: 0.24 (6)
- G: —
- H: —
- ØJ: 0.10 (2.5)

#### PFG-120
- ØA: 4.72 (120)
- ØB: 0.55 (14)
- ØC: 0.55 (14)
- ØD: 0.79 (20)
- E: 1.00 (25.5)
- F: 0.24 (6)
- G: 4.08 x 0.7 x 0.4
- H: 0.059 (1.5)
- ØJ: —

#### PFG-150
- ØA: 5.91 (150)
- ØB: 0.51 (13)
- ØC: 0.55 (14)
- ØD: 0.79 (20)
- E: 1.28 (32.5)
- F: 0.35 (9)
- G: 4.08 x 0.7 x 0.4
- H: 0.059 (1.5)
- ØJ: —

#### PFG-200
- ØA: 7.87 (200)
- ØB: 0.51 (13)
- ØC: 0.47 (12)
- ØD: 0.79 (20)
- E: 1.48 (37.5)
- F: 0.51 (13)
- G: 4.08 x 0.7 x 0.4
- H: 0.059 (1.5)
- ØJ: —

* Cup Material
Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatic

PFTM Vacuum Cup Assemblies

Model Number Index

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Cup Diameter (mm)</th>
<th>Cup Material</th>
<th>Mounting Thread</th>
</tr>
</thead>
<tbody>
<tr>
<td>PFTM - 2A - NBR - M5</td>
<td>1 (1) 20B (20)</td>
<td>Stocked NBR Nitrile Rubber NBR ESD Si Silicone</td>
<td>M3 M3</td>
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<td>1.5 (1.5) 25 (25)</td>
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<td>M5 M5</td>
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<td>2A (2) 30 (30)</td>
<td></td>
<td>N1 1/8 NPT</td>
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<tr>
<td></td>
<td>3.5A (3.5) 35 (35)</td>
<td></td>
<td>G1 1/8 BSPP</td>
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<td>5A (5) 40 (40)</td>
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<td>M10 M10</td>
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<td>6A (6) 50 (50)</td>
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<td>N2 1/4 NPT</td>
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<td>8A (8) 60 (60)</td>
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<td>G2 1/4 BSPP</td>
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<td>10A (10) 80 (80)</td>
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<tr>
<td></td>
<td>15A (15) 95 (95)</td>
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Installation

Note:
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage. Tube I.D. listed below is a recommended minimum value, for that cup range, to optimize response time of the system. Your requirements may vary.

Male Thread Fitting for PFG Cups

<table>
<thead>
<tr>
<th>Included in Kit</th>
<th>Cup Diameter (mm)</th>
<th>Mounting Thread Code</th>
<th>Mounting Thread</th>
<th>FTM Fitting Part Number</th>
<th>Min. Tube ID</th>
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<tbody>
<tr>
<td>1</td>
<td>M3</td>
<td>M3 x 0.5 Male</td>
<td>FTM-1-M3</td>
<td>.060 (1.5)</td>
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<tr>
<td>1.5</td>
<td>M3</td>
<td>M3 x 0.5 Male</td>
<td>FTM-1.5-M3</td>
<td>.060 (1.5)</td>
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<tr>
<td>2, 3.5</td>
<td>M5</td>
<td>M5 x 0.8 Male</td>
<td>FTM-2A-M5</td>
<td>.098 (2.5)</td>
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<tr>
<td>5, 6, 8, 10, 15</td>
<td>M5</td>
<td>M5 x 0.8 Male</td>
<td>FTM-5A-M5</td>
<td>.157 (4)</td>
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<tr>
<td>20, 25, 30, 35, 40</td>
<td>G1</td>
<td>1/8 BSPP Male</td>
<td>FTM-5A-G1</td>
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<tr>
<td>50</td>
<td>N1</td>
<td>1/8 NPT Male</td>
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<tr>
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<td>G1</td>
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<td>FTM-2B-G1H</td>
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<tr>
<td></td>
<td>G2</td>
<td>1/4 BSPP Male</td>
<td>FTM-2B-G2</td>
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<tr>
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<td>M10</td>
<td>M10 x 1.25 Male</td>
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<tr>
<td>60, 80, 95</td>
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<td>1/4 BSPP Male</td>
<td>FTM-60-G2</td>
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<td>M10 x 1.25 Male</td>
<td>FTM-60-M10</td>
<td>.25 (6.35)</td>
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### Vacuum Cups

**PFTM Vacuum Cup Assemblies**

## Dimensions

### PFTM-1 and PFTM-1.5

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA</th>
<th>B</th>
<th>C (M3)</th>
<th>C (M5)</th>
<th>C (N1 / G1)</th>
<th>C (M10 / G2)</th>
<th>C (N2)</th>
<th>D</th>
<th>E</th>
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<td>.003</td>
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<td>.3</td>
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<td>.28</td>
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- **ØA**: Cup Material
- **B**: Thread Size
- **C**: Dimensions (inches / mm)
- **D**: See Dwg.
- **E**: See Dwg.

---

* Inches (mm)  
* Cup Material  
* Thread Size
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatic

Pneumatic Vacuum Cup Assemblies

Ordering Information

Vacuum Cups

PFTF Vacuum Cup Assemblies

Model Number Index

<table>
<thead>
<tr>
<th>PFTF</th>
<th>5A</th>
<th>NBR</th>
<th>M5</th>
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<td>35 (35)</td>
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Cup Material

Stocked
- NBR Nitrile Rubber
- SI Silicone

Available
- U Urethane
- NBRE Nitrile ESD
- CR Chloroprene
- SIE Silicone ESD
- FKM Fluoro Rubber
- SH High Temp
- Z Markless

Mounting Thread
- M5 M5
- N1 1/8 NPT
- G1 1/8 BSPP
- M10 M10
- N2 1/4 NPT
- G2 1/4 BSPP
- N4 1/2 NPT
- G4 1/2 BSPP

See Chart Below

(Bold Items are Stocked)

Installation

Note:
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage. Tube I.D. listed below is a recommended minimum value, for that cup range, to optimize response time of the system. Your requirements may vary.

Female Thread Fitting for PFG Cups

<table>
<thead>
<tr>
<th>Included in Kit</th>
<th>Cup Diameter (mm)</th>
<th>Mounting Thread Code</th>
<th>Mounting Thread</th>
<th>FTF Fitting Part Number</th>
<th>Min. Tube ID</th>
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<tbody>
<tr>
<td>5, 6, 8, 10, 15</td>
<td>M5</td>
<td>M5x0.8 Female</td>
<td>FTF-5A-M5</td>
<td>.157 (4)</td>
<td></td>
</tr>
<tr>
<td>G1</td>
<td>1/8 BSPP Male</td>
<td>FTF-5A-G1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N1</td>
<td>1/8 NPT Female</td>
<td>FTF-20B-N1</td>
<td>.157 (4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G1</td>
<td>1/8 BSPP Female</td>
<td>FTF-20B-G1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G2</td>
<td>1/4 BSPP Female</td>
<td>FTF-20B-G2</td>
<td></td>
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</tr>
<tr>
<td>N1</td>
<td>1/8 NPT Female</td>
<td>FTF-50-N1</td>
<td>.157 (4)</td>
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<td>G1</td>
<td>1/8 BSPP Female</td>
<td>FTF-50-G1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G2</td>
<td>1/4 BSPP Female</td>
<td>FTF-50-G2</td>
<td></td>
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</tr>
<tr>
<td>20, 25, 30, 35, 40</td>
<td>N2</td>
<td>1/4 NPT Female</td>
<td>FTF-60-N2</td>
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</tr>
<tr>
<td>G2</td>
<td>1/4 BSPP Female</td>
<td>FTF-60-G2</td>
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<tr>
<td>60, 80, 95</td>
<td>N4</td>
<td>1/2 NPT Female</td>
<td>FTF-120-N4</td>
<td>.312 (8)</td>
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<tr>
<td>120, 150, 200</td>
<td>G4</td>
<td>1/2 BSPP Female</td>
<td>FTF-120-G4</td>
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</table>

(Bold Items are Stocked)

Installation Note:
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage. Tube I.D. listed below is a recommended minimum value, for that cup range, to optimize response time of the system. Your requirements may vary.

Female Thread Fitting for PFG Cups

<table>
<thead>
<tr>
<th>Included in Kit</th>
<th>Cup Diameter (mm)</th>
<th>Mounting Thread Code</th>
<th>Mounting Thread</th>
<th>FTF Fitting Part Number</th>
<th>Min. Tube ID</th>
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<tbody>
<tr>
<td>5, 6, 8, 10, 15</td>
<td>M5</td>
<td>M5x0.8 Female</td>
<td>FTF-5A-M5</td>
<td>.157 (4)</td>
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<tr>
<td>G1</td>
<td>1/8 BSPP Male</td>
<td>FTF-5A-G1</td>
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<tr>
<td>N1</td>
<td>1/8 NPT Female</td>
<td>FTF-20B-N1</td>
<td>.157 (4)</td>
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<tr>
<td>G1</td>
<td>1/8 BSPP Female</td>
<td>FTF-20B-G1</td>
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</tr>
<tr>
<td>G2</td>
<td>1/4 BSPP Female</td>
<td>FTF-20B-G2</td>
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<tr>
<td>N1</td>
<td>1/8 NPT Female</td>
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<td>G1</td>
<td>1/8 BSPP Female</td>
<td>FTF-50-G1</td>
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<tr>
<td>G2</td>
<td>1/4 BSPP Female</td>
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<tr>
<td>20, 25, 30, 35, 40</td>
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<td>1/4 NPT Female</td>
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<td>60, 80, 95</td>
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<td>1/2 NPT Female</td>
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<td>FTF-120-G4</td>
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</table>
Dimensions

Pneumatic Vacuum Cup Assemblies

**PFTF-5A thru PFTF-15A**

- Model Number: PFTF-5A-
- ØA: 0.20 (5)
- B: 0.57 (14.5)
- B (M5): 0.81 (20.5)
- C: —
- D: —
- E: 0.03 (0.8)

**PFTF-6A thru PFTF-8A**

- Model Number: PFTF-6A-
- ØA: 0.2 (6)
- B: 0.5 (12.7)
- B (M5): 0.8 (20.3)
- C: —
- D: —
- E: 0.03 (0.8)

**PFTF-8A thru PFTF-10A**

- Model Number: PFTF-8A-
- ØA: 0.3 (7.6)
- B: 0.59 (15)
- B (M5): 0.83 (21.0)
- C: —
- D: —
- E: 0.05 (1.3)

**PFTF-10A thru PFTF-15A**

- Model Number: PFTF-10A-
- ØA: 0.39 (10)
- B: 0.57 (14.5)
- B (M5): 0.81 (20.5)
- C: —
- D: —
- E: 0.06 (1.6)

**PFTF-15A thru PFTF-20A**

- Model Number: PFTF-15A-
- ØA: 0.59 (15)
- B: 0.63 (16)
- B (M5): 0.87 (22)
- C: —
- D: —
- E: 0.08 (2.0)

**PFTF-20A thru PFTF-25A**

- Model Number: PFTF-20A-
- ØA: 0.79 (20)
- B: 0.85 (21.5)
- B (M5): 1.04 (26.5)
- C: —
- D: —
- E: 0.10 (2.5)

**PFTF-25 thru PFTF-30**

- Model Number: PFTF-25-
- ØA: 0.98 (25)
- B: 1.1 (28)
- B (M5): 1.3 (33)
- C: —
- D: —
- E: 0.12 (3.0)

**PFTF-30 thru PFTF-35**

- Model Number: PFTF-30-
- ØA: 1.18 (30)
- B: 1.2 (30)
- B (M5): 1.42 (36.2)
- C: —
- D: —
- E: 0.12 (3.0)

**PFTF-35 thru PFTF-40**

- Model Number: PFTF-35-
- ØA: 1.38 (35)
- B: 1.1 (28)
- B (M5): 1.35 (34.2)
- C: —
- D: —
- E: 0.12 (3.0)

**PFTF-40 thru PFTF-50**

- Model Number: PFTF-40-
- ØA: 1.57 (40)
- B: 1.1 (28)
- B (M5): 1.45 (36.8)
- C: —
- D: —
- E: 0.16 (4.1)

**PFTF-50 thru PFTF-60**

- Model Number: PFTF-50-
- ØA: 1.97 (50)
- B: 1.1 (28)
- B (M5): 1.45 (36.8)
- C: —
- D: —
- E: 0.16 (4.1)

**PFTF-60 thru PFTF-70**

- Model Number: PFTF-60-
- ØA: 2.36 (60)
- B: 1.4 (35.5)
- B (M5): 1.83 (46.5)
- C: —
- D: —
- E: 0.20 (5.0)

**PFTF-70 thru PFTF-80**

- Model Number: PFTF-70-
- ØA: 3.15 (80)
- B: 1.48 (37.5)
- B (M5): 1.83 (46.5)
- C: —
- D: —
- E: 0.24 (6.0)

**PFTF-80 thru PFTF-95**

- Model Number: PFTF-80-
- ØA: 3.74 (95)
- B: 1.5 (38)
- B (M5): 1.83 (46.5)
- C: —
- D: —
- E: 0.24 (6.0)

**PFTF-95 thru PFTF-120**

- Model Number: PFTF-95-
- ØA: 4.72 (120)
- B: 1.83 (46.5)
- B (M5): 2.2 (56)
- C: 0.94 (24)
- D: 0.51 (13)
- E: 0.24 (6.0)

**PFTF-120 thru PFTF-150**

- Model Number: PFTF-120-
- ØA: 5.91 (150)
- B: 2.11 (53.5)
- B (M5): 2.2 (56)
- C: 0.94 (24)
- D: 0.51 (13)
- E: 0.35 (9.0)

**PFTF-150 thru PFTF-200**

- Model Number: PFTF-150-
- ØA: 7.87 (200)
- B: 2.3 (58.5)
- B (M5): 2.3 (58.5)
- C: 0.94 (24)
- D: 0.51 (13)
- E: 0.51 (13)

---

Inches (mm)

* Cup Material

† Thread size
### PFTK Vacuum Cup Assemblies

**Installation**

Note: When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage. Tube I.D. listed below is a recommended minimum value, for that cup range, to optimize response time of the system. Your requirements may vary.

### Barbed Bulkhead for PFG Cups

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<tr>
<th>Included in Kit</th>
<th>Cup Diameter (mm)</th>
<th>Vacuum Port Code</th>
<th>FTK Fitting Part Number</th>
<th>Cup Screw Only</th>
<th>Mounting Thread</th>
<th>Tube ID</th>
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<tbody>
<tr>
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<td>2, 3.5</td>
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<td>FTK-2A</td>
<td>N/A</td>
<td>M5x0.5 Male</td>
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<td>5, 6, 8, 10</td>
<td>Blank Barb</td>
<td>FTK-5A</td>
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<td>60, 80, 95</td>
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<td>M16x1.5 Male</td>
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<td>R1</td>
<td>FTK-60-R1</td>
<td>N/A</td>
<td>M16x1.5 Male</td>
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Inches (mm)
### Dimensions

#### PFTK-2A thru PFTK-3.5A

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<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>Wt oz.</th>
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<td>.08 (2)</td>
<td>.93 (23.5)</td>
<td>.33 (8.5)</td>
<td>.43 (11)</td>
<td>.02 (.5)</td>
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<td>.28 (8)</td>
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<tr>
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<td>.93 (23.5)</td>
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<td>.43 (11)</td>
<td>.02 (.5)</td>
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<td>.28 (8)</td>
</tr>
<tr>
<td>PFTK-5A-*</td>
<td>.20 (5)</td>
<td>1.20 (30.5)</td>
<td>.39 (10)</td>
<td>.55 (14)</td>
<td>.03 (.8)</td>
<td>.61 (15.5)</td>
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<td>.39 (11)</td>
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<tr>
<td>PFTK-6A-*</td>
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<td>1.20 (30.5)</td>
<td>.39 (10)</td>
<td>.55 (14)</td>
<td>.03 (.8)</td>
<td>.61 (15.5)</td>
<td>.12 (3)</td>
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<tr>
<td>PFTK-8A-*</td>
<td>.31 (8)</td>
<td>1.22 (31)</td>
<td>.39 (10)</td>
<td>.55 (14)</td>
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<td>.53 (15)</td>
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<td>PFTK-15-*</td>
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<td>1.81 (46)</td>
<td>.63 (16)</td>
<td>.86 (22)</td>
<td>.07 (1.9)</td>
<td>.59 (15)</td>
<td>.12 (3)</td>
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<tr>
<td>PFTK-20-*</td>
<td>.79 (20)</td>
<td>1.89 (48)</td>
<td>.63 (16)</td>
<td>.86 (22)</td>
<td>.09 (2.3)</td>
<td>.59 (15)</td>
<td>.20 (5)</td>
<td>.71 (20)</td>
</tr>
<tr>
<td>PFTK-25-*</td>
<td>.98 (25)</td>
<td>2.44 (62)</td>
<td>.63 (16)</td>
<td>1.26 (32)</td>
<td>.12 (3)</td>
<td>.71 (20)</td>
<td>.20 (5)</td>
<td>1.41 (40)</td>
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<tr>
<td>PFTK-30-*</td>
<td>1.18 (30)</td>
<td>2.36 (60)</td>
<td>.63 (16)</td>
<td>1.26 (32)</td>
<td>.08 (2)</td>
<td>.71 (20)</td>
<td>.20 (5)</td>
<td>1.41 (40)</td>
</tr>
<tr>
<td>PFTK-35-*</td>
<td>1.38 (35)</td>
<td>2.44 (62)</td>
<td>.63 (16)</td>
<td>1.26 (32)</td>
<td>.12 (3)</td>
<td>.71 (20)</td>
<td>.20 (5)</td>
<td>1.41 (40)</td>
</tr>
<tr>
<td>PFTK-40-*</td>
<td>1.57 (40)</td>
<td>2.44 (62)</td>
<td>.63 (16)</td>
<td>1.26 (32)</td>
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Inches (mm)

* Cup Material
† Vacuum Port
PFYK Vacuum Cup Assemblies

Installation
Note:
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage. Tube I.D. listed below is a recommended minimum value, for that cup range, to optimize response time of the system. Your requirements may vary.

90° Barbed Adapter for PFG Cups

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<th>Mounting Thread</th>
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**Vacuum Cups**

**PFYK Vacuum Cup Assemblies**

### Dimensions

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<td>.79</td>
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Inches (mm)

* Cup Material

† Vacuum Port

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatic
PFTYS Vacuum Cup Assemblies

Installation

Note: When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage. Shown are interchangeable connectors & plugs for port connections.

Bulkhead Level Compensator for PFG Cups

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<tr>
<th>Included in Kit</th>
<th>Cup Diameter (mm)</th>
<th>Vacuum Port Code</th>
<th>Thread</th>
<th>TYS Assembly Part Number</th>
<th>Stroke</th>
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<th>F2 (lbf)</th>
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Compression Force

See Chart Below

Inches (mm)
### Vacuum Cups

**PFTYS Vacuum Cup Assemblies**

#### Dimensions

**PFTYS2A3 thru**
**PFTYS3.5A15**

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<th>E</th>
<th>F</th>
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1. Inches (mm)
2. * Cup Material
3. † Vacuum Port
## Dimensions

**PFTYS20B6 thru PFTYS5030**

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<td>.12 (3)</td>
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Inches (mm)

* Cup Material
† Vacuum Port

---

24

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Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatic
### Dimensions

#### PFTYS6030 thru PFTYS9570

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>Wt oz (g)</th>
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<td>PFTYS6030†</td>
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<td>2.84</td>
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<td>.75</td>
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<td>12.4 (350)</td>
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<td>.75</td>
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<td>13.8 (35)</td>
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<td>PFTYS12070†</td>
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<td>2.02</td>
<td>.5</td>
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<td>.75</td>
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<td>.75</td>
<td>9.2</td>
<td>13.8 (35)</td>
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<td>.5</td>
<td>.37</td>
<td>.19</td>
<td>.75</td>
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<td>13.8 (35)</td>
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<td>.75</td>
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<td>2.02</td>
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<td>.37</td>
<td>.19</td>
<td>.75</td>
<td>9.2</td>
<td>13.8 (35)</td>
</tr>
</tbody>
</table>

Inches (mm)

* Cup Material
† Vacuum Port

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**Vacuum Cups**

Pneumatic Division
Richland, Michigan
www.parker.com/pneumatic
PFG Oval Vacuum Cups

Dimensions

PFG-2x4A

Model Number Index (Cups Only)

Model Number Index (Cups Only)

Applications

These suction cups are for applications where insufficient surface areas are available for standard round PFG cups to secure vacuum for transfer. The oval or rectangular design allows you to maximize the available space to properly lift the product in high speed automation. These cups are non-rotational.

PFG-3.5x7A

Model Number Index (Cups Only)

PFTK Vacuum Cup Assemblies

Model Number Index

PFYK Vacuum Cup Assemblies

Model Number Index

Cup Diameter (mm)

Cup Material

Stocked

NBR Nitrile Rubber

SI Silicone

Available

NBRE Nitrile ESD

CR Chloroprene

SIE Silicone ESD

U Urethane

FKM Flouro Rubber

(Bold Items are Stocked)

Inches (mm)

Cup Diameter (mm)

Cup Material

Stocked

NBR Nitrile Rubber

SI Silicone

Available

NBRE Nitrile ESD

CR Chloroprene

SIE Silicone ESD

U Urethane

FKM Flouro Rubber

(Bold Items are Stocked)
Installation

Note: When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage. Tube I.D. listed below is a recommended minimum value, for that cup, to optimize response time of the system. Your requirements may vary.

PFG Oval Cup with Top Stem Connection

<table>
<thead>
<tr>
<th>PFG Oval Cup Size (mm)</th>
<th>FTK Fitting Assembly</th>
<th>Tube ID</th>
<th>Mounting Thread</th>
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<tbody>
<tr>
<td>2 x 4</td>
<td>FTK-2x4A/3.5x7A</td>
<td>.078 (2)</td>
<td>M3×0.5 Male</td>
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</table>

PFTK-2x4A & PFTK-3.5x7A

PFG Oval Cup with Side Stem Connection

<table>
<thead>
<tr>
<th>PFG Oval Cup Size (mm)</th>
<th>FYK Fitting Part Number</th>
<th>Tube ID</th>
<th>Mounting Thread</th>
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</thead>
<tbody>
<tr>
<td>2 x 4</td>
<td>FYK-2x4A/3.5x7A</td>
<td>.078 (2)</td>
<td>M3 Female</td>
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PFYK-2x4A & PFYK-3.5x7A
PFOG Grooved Vacuum Cups

**Features**

- Vacuum Grooves On Underside Increases Holding Area
- Resists Acceleration and Deceleration Shear
- Shear Resistance Is Increased By 25%
- 20mm to 40mm Diameters

**Applications**

The anti-slip flat cups are for pick-and-place applications that require an increased holding force without having to increase the diameter of the cup. The grooved foot pattern channels the vacuum flow to the cup's outer diameter which increases resistance to the shear force by 25% over conventional flat pads. These cups are perfect for high speed press transfer of small to medium sized stamped metal products with oily surfaces. This cup also works well with corrugated product.

---

**PFOG Series Vacuum Cups**

Special grooved flat cup with single lip provides increases vacuum flow area. Increased holding force resists against slipping of products with oily surfaces. Increased holding force also works well with corrugated product.

**PFOTK Series Barbed Bulkhead**

Top stem connectors secured with jam nuts and allow tubing connections at the top side. Nickel plated brass materials.

**PFOTM Series Male Thread Connector**

Simple male connection for low profile positions secured to a plate or bracket. UNF, NPT, G, BSPT, metric threads. Internal hex for easy assembly. Fitting Material: Aluminum.

**PFOYK Series 90° Barbed Adapter**

Side stem connectors allow you to secure the stem with a bolt through a plate or "L" bracket to allow the tube connection from the side port. Nickel plated brass materials.

**PFOTF Series Female Thread Connector**

Simple female connection for low profile positions secured to a plate or bracket. NPSF, G threads. Internal hex for easy assembly. Fitting Material: Aluminum.

**PFOTYS Series Bulkhead Level Compensator**

303 stainless steel construction secured with jam nuts. Spring biased compensators can absorb impacts of down-strokes and adjust for different levels of pick up points. 303 stainless corrosion resistant materials with drymet bushings increases the strength and life.
### Model Number Index (Cups Only)

**PFOG - 20 - NBR**

<table>
<thead>
<tr>
<th>Cup Diameter (mm)</th>
<th>Stocked</th>
<th>Available (Consult Factory)</th>
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<tbody>
<tr>
<td>20 (20)</td>
<td>NBR Nitrile Rubber</td>
<td></td>
</tr>
<tr>
<td>25 (25)</td>
<td>U Urethane</td>
<td></td>
</tr>
<tr>
<td>30 (30)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35 (35)</td>
<td></td>
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<tr>
<td>40 (40)</td>
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(Bold items are Stocked)

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### Specifications

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<th>NBR - Nitrile</th>
<th>U - Urethane</th>
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<tbody>
<tr>
<td>Operating Temperature (°C)</td>
<td>-20° to +120°</td>
<td>-30° to +120°</td>
</tr>
<tr>
<td>Color</td>
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<td>Blue</td>
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<tr>
<td>Hardness, Shore A (°Sh)</td>
<td>55 ±5</td>
<td>55 ±5</td>
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<tr>
<td>Wear Resistance</td>
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<td>*****</td>
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<tr>
<td>Tear Strength</td>
<td>****</td>
<td>*****</td>
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<tr>
<td>Aging Resistance</td>
<td>****</td>
<td>*****</td>
</tr>
<tr>
<td>Ozone Resistance</td>
<td>*****</td>
<td>*****</td>
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<tr>
<td>Gasoline Resistance</td>
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<td>*****</td>
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<tr>
<td>Oil Resistance</td>
<td>*****</td>
<td>*****</td>
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<tr>
<td>Acid Resistance</td>
<td>***</td>
<td>*</td>
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<tr>
<td>Alkali Resistance</td>
<td>****</td>
<td>*</td>
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<tr>
<td>Chemical Resistance</td>
<td>***</td>
<td>*****</td>
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<tr>
<td>Mechanical Resistance</td>
<td>****</td>
<td>*****</td>
</tr>
</tbody>
</table>

- ***** = excellent;  ***** = very good;  **** = good;  *** = medium;  ** = poor;  * = not recommended

* ESD: Electric Static Dissipative Material
Selection Guide
Anti-Slip Flat Cups

- Increased Holding Area for Corrugated
- Resists Slipping Against Oily Surfaces for Small Sheet Metal Transfer

Main Data for Anti-Slip PFOG Suction Cups

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Cup Diameter Inches (mm)</th>
<th>Area cm²</th>
<th>Volume (V) liters</th>
<th>Lifting Force @ 60% (N)</th>
<th>Cup Deflection (S) mm</th>
<th>Radius R (mm)</th>
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</thead>
<tbody>
<tr>
<td>PFOG-20</td>
<td>.79 (20)</td>
<td>3.14</td>
<td>0.0008</td>
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<td>29.0</td>
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<td>1.18 (30)</td>
<td>7.07</td>
<td>0.0018</td>
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<td>46.0</td>
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Dimensions

<table>
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<th>Model Number</th>
<th>ØA</th>
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<th>ØC</th>
<th>ØD</th>
<th>E</th>
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<td>.63 (16)</td>
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<td>.04 (1.1)</td>
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<td>.11 (2.8)</td>
<td>.28 (7)</td>
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Inches (mm)
* Cup Material
PFOTM Vacuum Cup Assemblies

Model Number Index

- **PFOTM - 25 - NBR - N1**
- **PFOTM - 30 - NBR - N1**
- **PFOTM - 35 - NBR - N1**
- **PFOTM - 40 - NBR - N1**

<table>
<thead>
<tr>
<th>Cup Diameter (mm)</th>
<th>Cup Material</th>
<th>Mounting Thread</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 (25)</td>
<td>NBR Nitrile Rubber Stocked</td>
<td>N1 1/8 NPT</td>
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<tr>
<td>30 (30)</td>
<td></td>
<td>G1 1/8 BSPP</td>
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<tr>
<td>35 (35)</td>
<td></td>
<td>G2 1/4 BSPP</td>
</tr>
<tr>
<td>40 (40)</td>
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<td>M10 M10</td>
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</tbody>
</table>

Inches (mm)

**Installation**

*Note:* When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage.

Tube I.D. listed below is a recommended minimum value, for that cup range, to optimize response time of the system. Your requirements may vary.

**Male Threaded Fitting for PFOG Cups**

<table>
<thead>
<tr>
<th>Included in Kit</th>
<th>Cup Diameter (mm)</th>
<th>Mounting Thread Code</th>
<th>Mounting Thread</th>
<th>FTM Fitting Part Number</th>
<th>Min. Tube ID</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25, 30, 35, 40</td>
<td>N1</td>
<td>1/8 NPT</td>
<td>FTM-20B-N1</td>
<td>.157 (4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G1</td>
<td>1/8 BSPP</td>
<td>FTM-20B-G1H</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>G2</td>
<td>1/4 BSPP</td>
<td>FTM-20B-G2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>M10</td>
<td>M10x1.25</td>
<td>FTM-20B-M10</td>
<td></td>
</tr>
</tbody>
</table>

Inches (mm)

**Dimensions**

PFOTM-25-1/8 thru PFOTM-40-1/8

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>PFOTM-25-<em>-</em></td>
<td>.98</td>
<td>.75</td>
<td>.31</td>
<td>.20</td>
<td>.04</td>
</tr>
<tr>
<td>PFOTM-30-<em>-</em></td>
<td>1.18</td>
<td>.67</td>
<td>.31</td>
<td>.20</td>
<td>.05</td>
</tr>
<tr>
<td>PFOTM-35-<em>-</em></td>
<td>1.38</td>
<td>.75</td>
<td>.31</td>
<td>.20</td>
<td>.06</td>
</tr>
<tr>
<td>PFOTM-40-<em>-</em></td>
<td>1.57</td>
<td>.75</td>
<td>.31</td>
<td>.20</td>
<td>.11</td>
</tr>
</tbody>
</table>

Inches (mm)

* Cup Material
* Thread Size
**PFOTF Vacuum Cup Assemblies**

**Installation**

**Note:** When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage. Tube I.D. listed below is a recommended minimum value, for that cup range, to optimize response time of the system. Your requirements may vary.

**Female Threaded Fitting for PFOG Cups**

<table>
<thead>
<tr>
<th>Included in Kit</th>
<th>Cup Diameter (mm)</th>
<th>Mounting Thread Code</th>
<th>Mounting Thread</th>
<th>FTF Fitting Part Number</th>
<th>Min. Tube ID</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25, 30, 35, 40</td>
<td>N1</td>
<td>1/8 NPT</td>
<td>FTF-20B-N1</td>
<td>.157 (4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G1</td>
<td>1/8 BSPP</td>
<td>FTF-20B-G1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>G2</td>
<td>1/4 BSPP</td>
<td>FTF-20B-G2</td>
<td></td>
</tr>
</tbody>
</table>

**Dimensions**

PFOTF-25-1/8F thru PFOTF-40-1/8F

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA</th>
<th>B</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>PFOTF-25-*-†</td>
<td>.98 (25)</td>
<td>1.10 (28)</td>
<td>.04 (1.1)</td>
</tr>
<tr>
<td>PFOTF-30-*-†</td>
<td>1.18 (30)</td>
<td>1.02 (26)</td>
<td>.05 (1.3)</td>
</tr>
<tr>
<td>PFOTF-35-*-†</td>
<td>1.38 (35)</td>
<td>1.10 (28)</td>
<td>.06 (1.6)</td>
</tr>
<tr>
<td>PFOTF-40-*-†</td>
<td>1.57 (40)</td>
<td>1.10 (28)</td>
<td>.11 (2.8)</td>
</tr>
</tbody>
</table>

Inches (mm)

* Cup Material
† Thread Size

---

**Model Number Index**

<table>
<thead>
<tr>
<th>PFOTF - 25 - NBR - N1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cup Diameter (mm)</td>
</tr>
<tr>
<td>25 (25)</td>
</tr>
<tr>
<td>30 (30)</td>
</tr>
<tr>
<td>35 (35)</td>
</tr>
<tr>
<td>40 (40)</td>
</tr>
</tbody>
</table>

(Bold Items are Stocked)
**PFOTK Vacuum Cup Assemblies**

**Model Number Index**

<table>
<thead>
<tr>
<th>Cup Diameter (mm)</th>
<th>Cup Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 (20)</td>
<td>NBR Nitride Rubber</td>
</tr>
<tr>
<td>25 (25)</td>
<td>NBR Nitride Rubber</td>
</tr>
<tr>
<td>30 (30)</td>
<td>NBR Nitride Rubber</td>
</tr>
<tr>
<td>35 (35)</td>
<td>NBR Nitride Rubber</td>
</tr>
<tr>
<td>40 (40)</td>
<td>NBR Nitride Rubber</td>
</tr>
</tbody>
</table>

(Bold Items are Stocked)

### Installation

**Note:**
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage.

Tube I.D. listed below is a recommended minimum value, for that cup range, to optimize response time of the system. Your requirements may vary.

### Barbed Bulkhead for PFOG Cups

<table>
<thead>
<tr>
<th>Included in Kit</th>
<th>Cup Diameter (mm)</th>
<th>FTK Fitting Part Number</th>
<th>Cup Screw Only</th>
<th>Mounting Thread</th>
<th>Min. Tube ID</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20</td>
<td>FTK-20</td>
<td>TN-PF-20-M5</td>
<td>M8x1.25</td>
<td>.157 (4)</td>
</tr>
<tr>
<td></td>
<td>25, 30, 35, 40</td>
<td>FTK-25</td>
<td>TN-PF-25-M6</td>
<td>M10x1.5 Female</td>
<td>.157 (4)</td>
</tr>
</tbody>
</table>

(Bold Items are Stocked)

### Dimensions

**PFOTK-20**

**PFOTK-25 thru PFOTK-40**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA (mm)</th>
<th>B (mm)</th>
<th>C (mm)</th>
<th>D (mm)</th>
<th>E (mm)</th>
<th>F (mm)</th>
<th>G (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PFOTK-20-*</td>
<td>.79 (20)</td>
<td>1.89 (48)</td>
<td>.63 (16)</td>
<td>.87 (22)</td>
<td>.07 (1.7)</td>
<td>.59 (15)</td>
<td>.20 (5)</td>
</tr>
<tr>
<td>PFOTK-25-*</td>
<td>.98 (25)</td>
<td>2.44 (62)</td>
<td>.63 (16)</td>
<td>1.26 (32)</td>
<td>.04 (1.1)</td>
<td>.79 (20)</td>
<td>.20 (5)</td>
</tr>
<tr>
<td>PFOTK-30-*</td>
<td>1.18 (30)</td>
<td>2.36 (60)</td>
<td>.63 (16)</td>
<td>1.26 (32)</td>
<td>.05 (1.3)</td>
<td>.79 (20)</td>
<td>.20 (5)</td>
</tr>
<tr>
<td>PFOTK-35-*</td>
<td>1.38 (35)</td>
<td>2.44 (62)</td>
<td>.63 (16)</td>
<td>1.26 (32)</td>
<td>.06 (1.6)</td>
<td>.79 (20)</td>
<td>.20 (5)</td>
</tr>
<tr>
<td>PFOTK-40-*</td>
<td>1.57 (40)</td>
<td>2.44 (62)</td>
<td>.63 (16)</td>
<td>1.26 (32)</td>
<td>.11 (2.8)</td>
<td>.79 (20)</td>
<td>.20 (5)</td>
</tr>
</tbody>
</table>

* Cup Material

---

**Parker Hannifin Corporation**
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatic
PFOYK Vacuum Cup Assemblies

Model Number Index

<table>
<thead>
<tr>
<th>Cup Diameter (mm)</th>
<th>Cup Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 (20)</td>
<td>NBR Nitrile Rubber</td>
</tr>
<tr>
<td>25 (25)</td>
<td></td>
</tr>
<tr>
<td>30 (30)</td>
<td></td>
</tr>
<tr>
<td>35 (35)</td>
<td></td>
</tr>
<tr>
<td>40 (40)</td>
<td></td>
</tr>
</tbody>
</table>

Inches (mm)

Installation

Note:
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage.

90° Barbed Adapter for PFOG Cups

<table>
<thead>
<tr>
<th>Included in Kit</th>
<th>Cup Diameter (mm)</th>
<th>FYK Fitting Part Number</th>
<th>Cup Screw Only</th>
<th>Mounting Thread</th>
<th>Min. Tube ID</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20</td>
<td>FYK-20</td>
<td>TN-PF-20-M5</td>
<td>M4x0.7 Female</td>
<td>.157 (4)</td>
</tr>
<tr>
<td>25, 30, 35, 40</td>
<td>FYK-25</td>
<td>TN-PF-25-M6</td>
<td>M6x1.0 Female</td>
<td>.157 (4)</td>
<td></td>
</tr>
</tbody>
</table>

Dimensions

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>PFOYK-20-*</td>
<td>.79 (20)</td>
<td>1.30 (33)</td>
<td>.55 (14)</td>
<td>.87 (22)</td>
<td>.07 (1.7)</td>
<td>.39 (10)</td>
<td>.63 (16)</td>
</tr>
<tr>
<td>PFOYK-25-*</td>
<td>.98 (25)</td>
<td>1.81 (46)</td>
<td>.79 (20)</td>
<td>1.26 (32)</td>
<td>.04 (1.1)</td>
<td>.39 (10)</td>
<td>.63 (16)</td>
</tr>
<tr>
<td>PFOYK-30-*</td>
<td>1.18 (30)</td>
<td>1.73 (44)</td>
<td>.79 (20)</td>
<td>1.26 (32)</td>
<td>.05 (1.3)</td>
<td>.39 (10)</td>
<td>.63 (16)</td>
</tr>
<tr>
<td>PFOYK-35-*</td>
<td>1.38 (35)</td>
<td>1.73 (44)</td>
<td>.79 (20)</td>
<td>1.26 (32)</td>
<td>.06 (1.6)</td>
<td>.39 (10)</td>
<td>.63 (16)</td>
</tr>
<tr>
<td>PFOYK-40-*</td>
<td>1.57 (40)</td>
<td>1.81 (46)</td>
<td>.79 (20)</td>
<td>1.26 (32)</td>
<td>.11 (2.8)</td>
<td>.39 (10)</td>
<td>.63 (16)</td>
</tr>
</tbody>
</table>

Inches (mm)

* Cup Material
PFOTYS Vacuum Cup Assemblies

Installation

Note:
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage.
Shown are interchangeable connectors & plugs for port connections.

Bulkhead Level Compensator Fitting for PFOG Cups

<table>
<thead>
<tr>
<th>Model Number Index</th>
<th>PFOTYS 25</th>
<th>30</th>
<th>35</th>
<th>40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stroke (inches)</td>
<td>6, 15, 30</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cup Material</th>
<th>NBR Nitrile Rubber</th>
<th>U Urethane</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Cup Diameter (mm)</th>
<th>Stroke (inches)</th>
<th>Port Thread</th>
<th>F1 lbf (N)</th>
<th>F2 lbf (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>6, 15, 30</td>
<td>M5x0.8</td>
<td>.56 (2.5)</td>
<td>.79 (3.4)</td>
</tr>
<tr>
<td>30</td>
<td>6, 15, 30</td>
<td>M5x0.8</td>
<td>.56 (2.5)</td>
<td>1.2 (4.9)</td>
</tr>
<tr>
<td>35</td>
<td>6, 15, 30</td>
<td>M5x0.8</td>
<td>.67 (2.9)</td>
<td>1.4 (5.9)</td>
</tr>
<tr>
<td>40</td>
<td>6, 15, 30</td>
<td>M5x0.8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dimensions

PFOTYS25 thru PFOTYS40

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>Wt oz. (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PFOTYS256*</td>
<td>.98</td>
<td>3.07</td>
<td>.67</td>
<td>.39</td>
<td>.04</td>
<td>.24</td>
<td>.20</td>
<td>1.42</td>
<td>2.3 (66)</td>
</tr>
<tr>
<td>PFOTYS2515*</td>
<td>.98</td>
<td>3.43</td>
<td>.67</td>
<td>.39</td>
<td>.04</td>
<td>.59</td>
<td>.20</td>
<td>1.42</td>
<td>2.5 (71)</td>
</tr>
<tr>
<td>PFOTYS2530*</td>
<td>.98</td>
<td>4.88</td>
<td>.67</td>
<td>.39</td>
<td>.04</td>
<td>1.18</td>
<td>.20</td>
<td>2.28</td>
<td>3.4 (96)</td>
</tr>
<tr>
<td>PFOTYS306*</td>
<td>1.18</td>
<td>2.99</td>
<td>.67</td>
<td>.39</td>
<td>.05</td>
<td>.24</td>
<td>.20</td>
<td>1.42</td>
<td>2.4 (67)</td>
</tr>
<tr>
<td>PFOTYS3015*</td>
<td>1.18</td>
<td>3.35</td>
<td>.67</td>
<td>.39</td>
<td>.05</td>
<td>.59</td>
<td>.20</td>
<td>1.42</td>
<td>2.5 (72)</td>
</tr>
<tr>
<td>PFOTYS3030*</td>
<td>1.18</td>
<td>4.00</td>
<td>.67</td>
<td>.39</td>
<td>.05</td>
<td>1.18</td>
<td>.20</td>
<td>2.28</td>
<td>3.5 (97)</td>
</tr>
<tr>
<td>PFOTYS356*</td>
<td>1.38</td>
<td>2.99</td>
<td>.67</td>
<td>.39</td>
<td>.06</td>
<td>.24</td>
<td>.20</td>
<td>1.42</td>
<td>2.5 (71)</td>
</tr>
<tr>
<td>PFOTYS3515*</td>
<td>1.38</td>
<td>3.35</td>
<td>.67</td>
<td>.39</td>
<td>.06</td>
<td>.59</td>
<td>.20</td>
<td>1.42</td>
<td>2.6 (74)</td>
</tr>
<tr>
<td>PFOTYS3530*</td>
<td>1.38</td>
<td>4.00</td>
<td>.67</td>
<td>.39</td>
<td>.06</td>
<td>1.18</td>
<td>.20</td>
<td>2.28</td>
<td>3.6 (99)</td>
</tr>
<tr>
<td>PFOTYS406*</td>
<td>1.57</td>
<td>3.07</td>
<td>.67</td>
<td>.39</td>
<td>.11</td>
<td>.24</td>
<td>.20</td>
<td>1.42</td>
<td>2.5 (71)</td>
</tr>
<tr>
<td>PFOTYS4015*</td>
<td>1.57</td>
<td>3.43</td>
<td>.67</td>
<td>.39</td>
<td>.11</td>
<td>.59</td>
<td>.20</td>
<td>1.42</td>
<td>2.7 (76)</td>
</tr>
<tr>
<td>PFOTYS4030*</td>
<td>1.57</td>
<td>4.88</td>
<td>.67</td>
<td>.39</td>
<td>.11</td>
<td>1.18</td>
<td>.20</td>
<td>2.28</td>
<td>3.6 (101)</td>
</tr>
</tbody>
</table>

Inches (mm)

* Cup Material
P5V-CFS

Double Lip
Flat Cups

Features
- Double Sealing Lips for Flexible Sheet Handling
- Vacuum Cup Grooves on Underside Increase Holding Area
- Resists Acceleration and Deceleration Shear Forces
- Strong Low Profile for Fast Response
- Metal Insert Fitting for Stable Vertical and Horizontal Lifts

Applications
These suction cups are ideal for applications where the product may flex when being lifted. All cups have a double sealing lip and cleats to increase holding capacity. The top of the cup has a ribbed outer lip to prevent it from rolling over the surface to be lifted.

Dual sealing lips provide 2 seals for vacuum. As the product flexes, the outer lip seal may break, but the inner lip seal will hold the degree of vacuum for continued lifting capacity. In these types of applications, sizing should be done on the inner diameter cup dimension.
Model Number Index

P5V - CFS 15014 N

<table>
<thead>
<tr>
<th>Cup Diameter (mm)</th>
<th>05011 (50)</th>
<th>07512 (75)</th>
<th>10013 (100)</th>
<th>15014 (150)</th>
<th>30018 (300)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Cup Material</th>
<th>Stocked</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N Nitrile Rubber</td>
</tr>
<tr>
<td>Available</td>
<td>(Consult Factory)</td>
</tr>
<tr>
<td></td>
<td>S Silicone</td>
</tr>
</tbody>
</table>

(Bold Items are Stocked)

Specifications
All Cups come standard with Female Vacuum Ports. (BSPP)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Cup Diameter (mm)</th>
<th>Thread Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>05011</td>
<td>(50)</td>
<td>1/8&quot;</td>
</tr>
<tr>
<td>07512</td>
<td>(75)</td>
<td>1/4&quot;</td>
</tr>
<tr>
<td>10013</td>
<td>(100)</td>
<td>3/8&quot;</td>
</tr>
<tr>
<td>15014</td>
<td>(150)</td>
<td>1/2&quot;</td>
</tr>
<tr>
<td>30018</td>
<td>(300)*</td>
<td>1&quot;</td>
</tr>
</tbody>
</table>

* 300mm Cup has an additional 1/2" female port for increase vacuum flow.
Application Guide
Flat - Smooth Surface

- Products With Smooth Surfaces
- Destacking Applications

Main Data for Flat P5V-CFS Cups

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Cup Diameter Inches (mm)</th>
<th>Area***</th>
<th>Cup Volume (V) Liters</th>
<th>Deflection (S) (mm)</th>
<th>Radius R (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inner</td>
<td>Outer</td>
<td></td>
<td>R1*</td>
<td>R2**</td>
</tr>
<tr>
<td>P5V-CFS05011</td>
<td>1.38 (35)</td>
<td>1.97 (50)</td>
<td>19.6</td>
<td>.001</td>
<td>.16 (4)</td>
</tr>
<tr>
<td>P5V-CFS07512</td>
<td>2.13 (54)</td>
<td>2.95 (75)</td>
<td>44.2</td>
<td>.03</td>
<td>.24 (6)</td>
</tr>
<tr>
<td>P5V-CFS10013</td>
<td>2.83 (72)</td>
<td>3.94 (100)</td>
<td>78.5</td>
<td>.0667</td>
<td>.30 (8)</td>
</tr>
<tr>
<td>P5V-CFS15014</td>
<td>4.17 (106)</td>
<td>5.91 (150)</td>
<td>176.7</td>
<td>.2083</td>
<td>.43 (11)</td>
</tr>
<tr>
<td>P5V-CFS30018</td>
<td>8.07 (205)</td>
<td>11.81 (300)</td>
<td>706.7</td>
<td>1.467</td>
<td>.75 (19)</td>
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</table>

* Minimum permissible radius for lifting using inner lip.
** Minimum permissible radius for lifting using outer lip.
*** Area based on Outer Cup Diameter
**Dimensions**

**Vacuum Cups**

**P5V-CFS Vacuum Cups**

---

<table>
<thead>
<tr>
<th></th>
<th></th>
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<tbody>
<tr>
<td>P5V-CFS50*</td>
<td>1.97 (50)</td>
<td>G1/8</td>
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<td>2.95 (75)</td>
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<td>4.17 (106)</td>
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<td>8.07 (205)</td>
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<td>0.59 (15)</td>
<td>1.81 (46)</td>
<td>0.75 (19)</td>
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</tbody>
</table>

- Inches (mm)
- * Cup Material
PBG Bellows Vacuum Cups

Features
- Bellows Design for Level Compensation Within Restricted Clearances
- Sheet Separation for Flexible and Stacked Products
- Soft Seal Lip for Flexible Products
- 10mm to 150mm Diameters

Applications
These cups are for curved, corrugated, lightly textured surfaces and flexible products. Under vacuum, the bellows cup will collapse on contact and lift the product for a short distance. This inherent performance facilitates lifting and destack operations by breaking the vacuum between stacked product. The bellows style adds level compensation for applications that have inconsistent stack heights or uneven surfaces. The inclusive 30-degree rotation of the bellows helps maintain the vacuum seal when lifting sheet products that flex. Because of its shape however the bellows suction cup is not suitable for applications involving lifting vertical surfaces.

PBG Series Vacuum Cups
Versatile bellows cup design provides increased sealing lip and level compensation for products with irregular, smooth, curved surfaces.

PBTK Series Barbed Bulkhead
Top stem connectors secured with jam nuts and allow tubing connections at the top side. Nickel plated brass materials.

PBTM Series Male Thread Connector
Simple male connection for low profile positions secured to a plate or bracket. UNF, NPT, G, metric threads. Internal hex for easy assembly. Fitting Material: Aluminum.

PBYK Series 90° Barbed Adapter
Side stem connectors allow you to secure the stem with a bolt through a plate or "L" bracket to allow the tube connection from the side port. Nickel plated brass materials.

PBTF Series Female Thread Connector
Simple female connection for low profile positions secured to a plate or bracket. NPSF, G threads. Internal hex for easy assembly. Fitting Material: Aluminum.

PBTYS Series Bulkhead Level Compensator
303 stainless steel construction secured with jam nuts. Spring biased compensators can absorb impacts of down-strokes and adjust for different levels of pick up points. 303 stainless corrosion resistant materials with drymet bushings increases the strength and life.
## Model Number Index (Cups Only)

**PBG - 10A - NBR**

<table>
<thead>
<tr>
<th>Cup Diameter (mm)</th>
<th>Cup Material</th>
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<tbody>
<tr>
<td>10A (10)</td>
<td>NBR Nitrile Rubber</td>
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<tr>
<td>15A (15)</td>
<td>SI Silicone</td>
</tr>
<tr>
<td>20* (20)</td>
<td>U Urethane</td>
</tr>
<tr>
<td>20B** (20)</td>
<td>NBRE Nitrile ESD</td>
</tr>
<tr>
<td>30 (30)</td>
<td>CR Chloroprene</td>
</tr>
<tr>
<td></td>
<td>SIE Silicone ESD</td>
</tr>
<tr>
<td></td>
<td>FKM Flouro Rubber</td>
</tr>
<tr>
<td></td>
<td>SH High Temp</td>
</tr>
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</table>

* Available for PBTK & PBYK Cup Assemblies Only.
** Available for PBTM, PBTF & PBTYS Cup Assemblies Only.

(Bold Items are Stocked)

## Specifications

<table>
<thead>
<tr>
<th>Suction Cup Material</th>
<th>NBR</th>
<th>NBRE</th>
<th>CR</th>
<th>SI</th>
<th>SIE</th>
<th>U</th>
<th>FKM</th>
<th>SH</th>
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<td>Nitrile</td>
<td>Nitrile ESD*</td>
<td>Chloroprene</td>
<td>Silicone</td>
<td>Silicone ESD*</td>
<td>Urethane</td>
<td>Flouro Rubber</td>
<td>Silicone High Temp</td>
</tr>
<tr>
<td>Operating Temperature (°C)</td>
<td>-20° to +120°</td>
<td>-30° to +120°</td>
<td>-30° to +140°</td>
<td>-60° to +250°</td>
<td>-60° to +250°</td>
<td>-10° to +230°</td>
<td>-50° to +300°</td>
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<td>Color</td>
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<td>Black / Blue Dot</td>
<td>Green</td>
<td>White</td>
<td>Black / Red Dot</td>
<td>Blue</td>
<td>Black / White Dot</td>
<td>Grey</td>
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<td>Hardness, Shore A (*Sh)</td>
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<td>70 ±5</td>
<td>55 ±5</td>
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<td>70 ±5</td>
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<td>Electrical Resistance (Ωm)</td>
<td>—</td>
<td>800 to 1000</td>
<td>—</td>
<td>—</td>
<td>800 to 1000</td>
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<tr>
<td>Wear Resistance</td>
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<td>*****</td>
<td>*****</td>
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<tr>
<td>Ozone Resistance</td>
<td>****</td>
<td>*****</td>
<td>*****</td>
<td>*****</td>
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<td>Gasoline Resistance</td>
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<td>Chemical Resistance</td>
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<td>Mechanical Resistance</td>
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<td>****</td>
<td>*****</td>
<td>*****</td>
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<td></td>
</tr>
</tbody>
</table>

***** = excellent; ****** = very good; ***** = good; **** = medium; *** = poor; * = not recommended

* ESD: Electric Static Dissipative Material
Application Guide

Bellows

• Round Objects
• Uneven Surfaces
• Curved Product
• Level Compensation
• Flexible Product
• Soft Seal Lip

Main Data for Bellows PBG Cups

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Cup Diameter</th>
<th>Area cm²</th>
<th>Volume (V) Liters</th>
<th>Lifting Force @60% (N)</th>
<th>Cup Deflection (S) (mm)</th>
<th>Radius (R) (mm)</th>
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<tbody>
<tr>
<td>PBG-10A-*</td>
<td>.39 (10)</td>
<td>.79</td>
<td>.0002</td>
<td>4.80</td>
<td>—</td>
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<td>PBG-15A-*</td>
<td>.59 (15)</td>
<td>1.77</td>
<td>.0007</td>
<td>10.80</td>
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<td>PBG-20-*</td>
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<td>.001</td>
<td>19.20</td>
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<td>PBG-20B-*</td>
<td>.79 (20)</td>
<td>3.14</td>
<td>.001</td>
<td>19.20</td>
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<td>.004</td>
<td>43.2</td>
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<td>.51 (13)</td>
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<td>76.9</td>
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<td>PBG-110-*</td>
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<td>.260</td>
<td>1081</td>
<td>—</td>
<td>1.50 (38)</td>
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* Cup Material
## Dimensions

### PBG-10A and PBG-20B

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA (mm)</th>
<th>ØB (mm)</th>
<th>ØC (mm)</th>
<th>ØD (mm)</th>
<th>E (mm)</th>
<th>F (mm)</th>
<th>G (mm)</th>
<th>H (mm)</th>
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<td>PBG-10A-*</td>
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<td>.08 (2)</td>
<td>.79 (12.5)</td>
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<td>.30 (7.5)</td>
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<td>.08 (2)</td>
<td>.24 (6)</td>
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<td>PBG-15A-*</td>
<td>.59 (15)</td>
<td>.16 (4)</td>
<td>.16 (4)</td>
<td>.67 (17)</td>
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<td>.39 (10)</td>
<td>.24 (6)</td>
<td>.08 (2)</td>
<td>.24 (6)</td>
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<td>PBG-20B-*</td>
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<td>.24 (6)</td>
<td>.43 (10.8)</td>
<td>.94 (24)</td>
<td>.87 (22)</td>
<td>.47 (12)</td>
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<td>.28 (7)</td>
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<td>.18 (4.6)</td>
<td>.43 (10.8)</td>
<td>.94 (24)</td>
<td>.77 (19.5)</td>
<td>.47 (12)</td>
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<td>.18 (4.5)</td>
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<tr>
<td>PBG-30-*</td>
<td>1.18 (30)</td>
<td>.23 (5.8)</td>
<td>.43 (10.8)</td>
<td>1.42 (36)</td>
<td>1.20 (30.5)</td>
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<td>.28 (7)</td>
<td>—</td>
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<td>.43 (10.8)</td>
<td>1.81 (46)</td>
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<td>.28 (7)</td>
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<td>.31 (7.8)</td>
<td>.78 (19.8)</td>
<td>2.34 (59.5)</td>
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<td>—</td>
<td>.28 (7)</td>
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</tr>
<tr>
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<td>.49 (12.5)</td>
<td>—</td>
<td>3.31 (84)</td>
<td>1.71 (43.5)</td>
<td>.87 (22)</td>
<td>—</td>
<td>.10 (2.5)</td>
<td>—</td>
</tr>
<tr>
<td>PBG-110-*</td>
<td>4.33 (110)</td>
<td>.55 (14)</td>
<td>.55 (14)</td>
<td>4.80 (122)</td>
<td>2.26 (57.5)</td>
<td>1.14 (29)</td>
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<tr>
<td>PBG-150-*</td>
<td>5.91 (150)</td>
<td>.79 (20)</td>
<td>.55 (14)</td>
<td>6.57 (167)</td>
<td>3.01 (76.5)</td>
<td>1.50 (38)</td>
<td>4xØ9xØ40</td>
<td>.059 (1.5)</td>
<td>—</td>
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</table>

Inches (mm)  
* Cup Material
PBTM Vacuum Cup Assemblies

Installation

Note: When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage. Tube I.D. listed below is a recommended minimum value, for that cup range, to optimize response time of the system. Your requirements may vary.

Model Number Index

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Cup Material</th>
<th>Mounting Thread</th>
</tr>
</thead>
<tbody>
<tr>
<td>PBTM - 10A - NBR - M5</td>
<td>Stocked NBR Nitrile Rubber NBR Nitrile ESD</td>
<td>M5 M5</td>
</tr>
<tr>
<td>PBTM - 15A - SI - M5x0.8</td>
<td>Available CR Chloroprene SIE Silicone ESD FKM Fluoro Rubber SH High Temp</td>
<td></td>
</tr>
<tr>
<td>PBTM - 20B - M10 - N2</td>
<td>Available (Consult Factory) NBR Nitrile ESD CR Chloroprene SIE Silicone ESD FKM Fluoro Rubber SH High Temp</td>
<td></td>
</tr>
<tr>
<td>PBTM - 30 - U - M10 - G2</td>
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Male Threaded Fitting for PBG Cups

<table>
<thead>
<tr>
<th>Included in Kit</th>
<th>Cup Diameter (mm)</th>
<th>Mounting Thread Code</th>
<th>Mounting Thread</th>
<th>FTM Fitting Part Number</th>
<th>Min. Tube ID</th>
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<tbody>
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<td>Tube I.D.</td>
<td>10, 15</td>
<td>M5</td>
<td>M5x0.8 Male</td>
<td>FTM-5A-M5H</td>
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<td></td>
<td>G1</td>
<td>1/8 BSPP Male</td>
<td>FTM-5A-G1</td>
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</tr>
<tr>
<td></td>
<td>20, 30, 40</td>
<td>N1</td>
<td>1/8 NPT Male</td>
<td>FTM-20B-N1</td>
<td>.157 (4)</td>
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<tr>
<td></td>
<td></td>
<td>G1</td>
<td>1/8 BSPP Male</td>
<td>FTM-20B-G1H</td>
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<td></td>
<td></td>
<td>G2</td>
<td>1/4 BSPP Male</td>
<td>FTM-20B-G2</td>
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<td></td>
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<td>M10</td>
<td>M10x1.25 Male</td>
<td>FTM-20B-M10</td>
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<td></td>
<td>50</td>
<td>N1</td>
<td>1/8 NPT Male</td>
<td>FTM-50-N1</td>
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<td>1/8 BSPP Male</td>
<td>FTM-50-G1H</td>
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<tr>
<td></td>
<td></td>
<td>G2</td>
<td>1/4 BSPP Male</td>
<td>FTM-50-G2</td>
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<tr>
<td></td>
<td>75</td>
<td>N2</td>
<td>1/4 NPT Male</td>
<td>FTM-60-N2</td>
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<td>G2</td>
<td>1/4 BSPP Male</td>
<td>FTM-60-G2</td>
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<tr>
<td></td>
<td></td>
<td>M10</td>
<td>M10x1.25 Male</td>
<td>FTM-60-M10</td>
<td></td>
</tr>
</tbody>
</table>

Inches (mm)
Dimensions

PBTM-10A thru
PBTM-15

M5: M5
G1: 1/8" BSPP
(10A & 15A Only)

M5: .14 (3.5)
G1: .20 (5.5)
(10A & 15A Only)

PBTM-20B thru
PBTM-50

N1: 1/8 NPT
G1: 1/8 BSPP
M10: 10x1.25
G2: 1/4 BSPP

20B thru 40: 1/2"
50: 9/16"
Vacuum Cups

PBTF Vacuum Cup Assemblies

### Model Number Index

**PBTF - 10A - NBR - M5**

<table>
<thead>
<tr>
<th>Cup Diameter (mm)</th>
<th>Cup Material</th>
<th>Mounting Thread</th>
</tr>
</thead>
<tbody>
<tr>
<td>10A (10)</td>
<td>Stocked NBR Nitrile Rubber</td>
<td>M5</td>
</tr>
<tr>
<td>15A (15)</td>
<td>NBR Nitrile Rubber</td>
<td>M5</td>
</tr>
<tr>
<td>20B (20)</td>
<td>SI Silicone</td>
<td>M1</td>
</tr>
<tr>
<td>30 (30)</td>
<td>U Urethane</td>
<td>M1</td>
</tr>
<tr>
<td>40 (40)</td>
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<td>M1</td>
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**Available (Consult Factory)**

<table>
<thead>
<tr>
<th>Mounting Thread</th>
</tr>
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<tbody>
<tr>
<td>M5</td>
</tr>
<tr>
<td>N1 1/8 NPT</td>
</tr>
<tr>
<td>G1 1/8 BSPP</td>
</tr>
<tr>
<td>N2 1/4 NPT</td>
</tr>
<tr>
<td>G2 1/4 BSPP</td>
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<tr>
<td>N4 1/2 NPT</td>
</tr>
<tr>
<td>G4 1/2 BSPP</td>
</tr>
</tbody>
</table>

See Chart Below (Bold Items are Stocked)

### Installation

**Note:**

When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage.

Tube I.D. listed below is a recommended minimum value, for that cup range, to optimize response time of the system. Your requirements may vary.

### Female Threaded Fitting for PBG Cups

**Included in Kit**

<table>
<thead>
<tr>
<th>Cup Diameter (mm)</th>
<th>Cup Material</th>
<th>Stocked</th>
</tr>
</thead>
<tbody>
<tr>
<td>10, 15</td>
<td>NBR Nitrile</td>
<td>U Urethane</td>
</tr>
<tr>
<td>20, 30, 40</td>
<td>CR Chloroprene</td>
<td>SI Silicone</td>
</tr>
<tr>
<td>50</td>
<td>FKM Fluoro Rubber</td>
<td>SH High Temp</td>
</tr>
</tbody>
</table>

**Model Number Index**

![Model Number Index Diagram](image)

**Min. Tube ID**

- 10, 15: M5x0.8 Female, FTF-5A-M5
- 20, 30, 40: 1/8 BSPP Male, FTF-20B-G1
- 50: 1/4 BSPP Female, FTF-50-G2
- 75: 1/4 NPT Female, FTF-60-N2
- 110, 150: 1/2 BSPP Female, FTF-120-G4

**Ordering Information**

- **Vacuum Cups**
- **PBTF Vacuum Cup Assemblies**
- **Parker Hannifin Corporation**
- **Pneumatic Division**
- **Richland, Michigan**
- **www.parker.com/pneumatic**
### Dimensions

**PBTF-10A thru PBTF-15A**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA</th>
<th>B</th>
<th>B (M5)</th>
<th>C</th>
<th>C (M5)</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>PBTF-10A-*-†</td>
<td>.39 (10)</td>
<td>.85 (21.5)</td>
<td>1.08 (27.5)</td>
<td>.31 (8)</td>
<td>.55 (14)</td>
<td>—</td>
<td>.30 (7.5)</td>
</tr>
<tr>
<td>PBTF-15A-*-†</td>
<td>.59 (15)</td>
<td>.94 (24)</td>
<td>1.18 (30)</td>
<td>.31 (8)</td>
<td>.55 (14)</td>
<td>—</td>
<td>.39 (10)</td>
</tr>
<tr>
<td>PBTF-20B-*-†</td>
<td>.79 (20)</td>
<td>1.42 (36)</td>
<td>—</td>
<td>.55 (14)</td>
<td>—</td>
<td>—</td>
<td>.47 (12)</td>
</tr>
<tr>
<td>PBTF-30-*-†</td>
<td>1.18 (30)</td>
<td>1.75 (44.5)</td>
<td>—</td>
<td>.55 (14)</td>
<td>—</td>
<td>—</td>
<td>.70 (17)</td>
</tr>
<tr>
<td>PBTF-40-*-†</td>
<td>1.57 (40)</td>
<td>1.75 (44.5)</td>
<td>—</td>
<td>.55 (14)</td>
<td>—</td>
<td>—</td>
<td>.61 (15.5)</td>
</tr>
<tr>
<td>PBTF-50-*-†</td>
<td>1.97 (50)</td>
<td>1.99 (50.5)</td>
<td>—</td>
<td>.55 (14)</td>
<td>—</td>
<td>—</td>
<td>.79 (20)</td>
</tr>
<tr>
<td>PBTF-75-*-†</td>
<td>3.74 (95)</td>
<td>2.38 (60.5)</td>
<td>—</td>
<td>.77 (19.5)</td>
<td>—</td>
<td>—</td>
<td>.87 (22)</td>
</tr>
<tr>
<td>PBTF-110-*-†</td>
<td>4.72 (120)</td>
<td>3.07 (78)</td>
<td>—</td>
<td>.94 (24)</td>
<td>—</td>
<td>.51 (13)</td>
<td>1.14 (29)</td>
</tr>
<tr>
<td>PBTF-150-*-†</td>
<td>5.91 (150)</td>
<td>3.82 (97)</td>
<td>—</td>
<td>.94 (24)</td>
<td>—</td>
<td>.51 (13)</td>
<td>1.50 (38)</td>
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**PBTF-20B thru PBTF 50**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA</th>
<th>B</th>
<th>B (M5)</th>
<th>C</th>
<th>C (M5)</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>PBTF-20B-*-†</td>
<td>—</td>
<td>2.24 (57) O.D.</td>
<td>1.854 (48) Across Flats</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>PBTF-50-*-†</td>
<td>—</td>
<td>5.9 (50)</td>
<td>3.82 (9)</td>
<td>—</td>
<td>.94 (24)</td>
<td>—</td>
<td>.51 (13)</td>
</tr>
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</table>

**PBTF-110 thru PBTF-150**

<table>
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<tr>
<th>Model Number</th>
<th>ØA</th>
<th>B</th>
<th>B (M5)</th>
<th>C</th>
<th>C (M5)</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>PBTF-75</td>
<td>2.2 (5)</td>
<td>0.85 (2.5)</td>
<td>.08 (2.5)</td>
<td>.3 (8)</td>
<td>.55 (14)</td>
<td>—</td>
<td>.30 (7.5)</td>
</tr>
<tr>
<td>PBTF-110</td>
<td>3.82 (97)</td>
<td>—</td>
<td>.94 (24)</td>
<td>—</td>
<td>.51 (13)</td>
<td>1.50 (38)</td>
<td>—</td>
</tr>
</tbody>
</table>

* Cup Material
† Thread Size

Inches (mm)
PBTK Vacuum Cup Assemblies

Installation

Note: When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage. Tube I.D. listed below is a recommended minimum value, for that cup range, to optimize response time of the system. Your requirements may vary.

Barbed Bulkhead for PBG Cups

<table>
<thead>
<tr>
<th>Included in Kit</th>
<th>Cup Diameter (mm)</th>
<th>Vacuum Port Code</th>
<th>FTK Fitting Part Number</th>
<th>Cup Screw Only</th>
<th>Thread</th>
<th>Tube ID</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10, 15</td>
<td>Blank Barb</td>
<td>FTK-5A</td>
<td>N/A</td>
<td>M9x1.0 Male</td>
<td>.157 (4)</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>Blank Barb</td>
<td>FTK-20</td>
<td>TN-PF-20-M5</td>
<td>M8x1.25 Male</td>
<td></td>
</tr>
<tr>
<td></td>
<td>30, 40</td>
<td>Blank Barb</td>
<td>FTK-25</td>
<td>TN-PF-25-M6</td>
<td>M10x1.25 Male</td>
<td>.157 (4)</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>Blank Barb</td>
<td>FTK-50</td>
<td>TN-PF-50-M8</td>
<td>M10x1.25 Male</td>
<td></td>
</tr>
<tr>
<td></td>
<td>75</td>
<td>N1 1/8 NPT</td>
<td>FTK-60-N1</td>
<td>N/A</td>
<td>M16x1.5 Male</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>G1 1/8 BSPP</td>
<td>FTK-60-G1</td>
<td>N/A</td>
<td>M16x1.5 Male</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R1 1/8 BSPT</td>
<td>FTK-60-R1</td>
<td>N/A</td>
<td>M16x1.5 Male</td>
<td></td>
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</table>

Inches (mm)
### Dimensions

#### PBTK-10A thru
PBTK-15A

![Diagram](image1)

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>Wt (oz (g))</th>
</tr>
</thead>
<tbody>
<tr>
<td>PBTK-10A-*</td>
<td>.39 (10)</td>
<td>2.05 (52)</td>
<td>.39 (10)</td>
<td>.89 (22.5)</td>
<td>.30 (7.5)</td>
<td>.24 (6)</td>
<td>.61 (15.5)</td>
<td>.5 (15)</td>
</tr>
<tr>
<td>PBTK-15A-*</td>
<td>.59 (15)</td>
<td>2.15 (54.5)</td>
<td>.39 (10)</td>
<td>.89 (22.5)</td>
<td>.39 (10)</td>
<td>.24 (6)</td>
<td>.61 (15.5)</td>
<td>.5 (15)</td>
</tr>
<tr>
<td>PBTK-20-*</td>
<td>.79 (20)</td>
<td>2.26 (57.5)</td>
<td>.63 (16)</td>
<td>.87 (22)</td>
<td>.47 (12)</td>
<td>.24 (6)</td>
<td>.59 (15)</td>
<td>.7 (21)</td>
</tr>
<tr>
<td>PBTK-30-*</td>
<td>1.18 (30)</td>
<td>3.09 (78.5)</td>
<td>.63 (16)</td>
<td>1.26 (32)</td>
<td>.67 (17)</td>
<td>.24 (6)</td>
<td>.79 (20)</td>
<td>1.6 (45)</td>
</tr>
<tr>
<td>PBTK-40-*</td>
<td>1.57 (40)</td>
<td>3.09 (78.5)</td>
<td>.63 (16)</td>
<td>1.26 (32)</td>
<td>.61 (15.5)</td>
<td>.24 (6)</td>
<td>.79 (20)</td>
<td>1.7 (48)</td>
</tr>
<tr>
<td>PBTK-50-*</td>
<td>1.97 (50)</td>
<td>3.33 (84.5)</td>
<td>.63 (16)</td>
<td>1.26 (32)</td>
<td>.79 (20)</td>
<td>.24 (6)</td>
<td>.79 (20)</td>
<td>2.2 (62)</td>
</tr>
<tr>
<td>PBTK-75-*†</td>
<td>3.74 (95)</td>
<td>3.29 (83.5)</td>
<td>—</td>
<td>1.67 (42.5)</td>
<td>.87 (22)</td>
<td>.43 (11)</td>
<td>—</td>
<td>6.5 (186)</td>
</tr>
</tbody>
</table>

* Cup Material
† Vacuum Port

---

#### PBTK-20

![Diagram](image2)

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>PBTK-20</td>
<td>.197 Dia. Ø (5)</td>
<td>.118 Dia. Ø (3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### PBTK-30 thru
PBTK-50

![Diagram](image3)

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>Wt (oz (g))</th>
</tr>
</thead>
<tbody>
<tr>
<td>PBTK-30-*</td>
<td>.197 Dia. Ø (5)</td>
<td>118 Dia. Ø (3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PBTK-50-*</td>
<td>.197 Dia. Ø (5)</td>
<td>118 Dia. Ø (3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### PBTK-75

![Diagram](image4)

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>Wt (oz (g))</th>
</tr>
</thead>
<tbody>
<tr>
<td>PBTK-75-*†</td>
<td>1.67 (42.5)</td>
<td>.87 (22)</td>
<td>.43 (11)</td>
<td>—</td>
<td>—</td>
<td>6.5 (186)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PBYK Vacuum Cup Assemblies

Installation

Note: When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage. Tube I.D. listed below is a recommended minimum value, for that cup range, to optimize response time of the system. Your requirements may vary.

90° Barbed Adapter for PBG Cups

<table>
<thead>
<tr>
<th>Included in Kit</th>
<th>Cup Diameter (mm)</th>
<th>Vacuum Port Code</th>
<th>F KY Fitting Part Number</th>
<th>Cup Screw Only</th>
<th>Mounting Thread</th>
<th>Tube ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>10, 15</td>
<td>Blank Barb</td>
<td>F KY-5A</td>
<td>N/A</td>
<td>M4x0.7 Female</td>
<td>.157 (4)</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Blank Barb</td>
<td>F KY-20</td>
<td>TN-PF-20-M5</td>
<td>M4x0.7 Female</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30, 40</td>
<td>Blank Barb</td>
<td>F KY-25</td>
<td>TN-PF-25-M6</td>
<td>M6x1.0 Female</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>Blank Barb</td>
<td>F KY-50</td>
<td>TN-PF-50-M8</td>
<td>M6x1.0 Female</td>
<td></td>
<td></td>
</tr>
<tr>
<td>75</td>
<td>N1 1/8 NPT</td>
<td>F KY-60-N1</td>
<td>N/A</td>
<td>M8x1.25 Female</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>G1 1/8 BSPP</td>
<td>F KY-60-G1</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>R1 1/8 BSPT</td>
<td>F KY-60-R1</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N1 1/8 NPT</td>
<td>F KY-120-N1</td>
<td>N/A</td>
<td>M16x1.5 Female</td>
<td></td>
<td></td>
</tr>
<tr>
<td>110, 150</td>
<td>G1 1/8 BSPP</td>
<td>F KY-120-G1</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>R1 1/8 BSPT</td>
<td>F KY-120-R1</td>
<td>N/A</td>
<td>N/A</td>
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</table>
### Dimensions

#### PBYK-10A thru PBYK-15A

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>Wt oz (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PBYK-10A-*</td>
<td>.39</td>
<td>1.42</td>
<td>.51</td>
<td>.89</td>
<td>.92</td>
<td>.24</td>
<td>.63</td>
<td>.6 (16)</td>
</tr>
<tr>
<td>PBYK-15A-*</td>
<td>.59</td>
<td>1.52</td>
<td>.51</td>
<td>.89</td>
<td>.39</td>
<td>.24</td>
<td>.63</td>
<td>.6 (16)</td>
</tr>
<tr>
<td>PBYK-20-*</td>
<td>.79</td>
<td>1.63</td>
<td>.55</td>
<td>.87</td>
<td>.47</td>
<td>.24</td>
<td>.63</td>
<td>.7 (21)</td>
</tr>
<tr>
<td>PBYK-30-*</td>
<td>1.18</td>
<td>2.46</td>
<td>.79</td>
<td>1.26</td>
<td>.67</td>
<td>.24</td>
<td>.63</td>
<td>1.6 (45)</td>
</tr>
<tr>
<td>PBYK-40-*</td>
<td>1.57</td>
<td>2.46</td>
<td>.79</td>
<td>1.26</td>
<td>.61</td>
<td>.24</td>
<td>.63</td>
<td>2.0 (58)</td>
</tr>
<tr>
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<td>1.97</td>
<td>2.70</td>
<td>.79</td>
<td>1.26</td>
<td>.78</td>
<td>.24</td>
<td>.63</td>
<td>2.4 (67)</td>
</tr>
<tr>
<td>PBYK-75-*</td>
<td>3.74</td>
<td>3.29</td>
<td>1.10</td>
<td>1.67</td>
<td>.86</td>
<td>.43</td>
<td>.6</td>
<td>6.9 (176)</td>
</tr>
<tr>
<td>PBYK-110-**</td>
<td>4.72</td>
<td>4.17</td>
<td>.47</td>
<td>1.97</td>
<td>1.14</td>
<td>.79</td>
<td>1.18</td>
<td>26.4 (670)</td>
</tr>
<tr>
<td>PBYK-150-**</td>
<td>5.91</td>
<td>4.92</td>
<td>.47</td>
<td>1.97</td>
<td>1.50</td>
<td>.79</td>
<td>1.18</td>
<td>46.5 (1180)</td>
</tr>
</tbody>
</table>

* Cup Material
** Vacuum Port

#### PBYK-20 thru PBYK-50

#### PBYK-110 thru PBYK-150
**PBTYS Vacuum Cup Assemblies**

### Installation

**Note:** When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage. Shown are interchangable connectors & plugs for port connections.

---

**Bulkhead Level Compensator for PBG Cups**

<table>
<thead>
<tr>
<th>Included in Kit</th>
<th>Cup Diameter (mm)</th>
<th>Vacuum Port</th>
<th>TYS Assembly Part Number</th>
<th>Stroke</th>
<th>F1 (lbf)</th>
<th>F2 (lbf)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10, 15</td>
<td>M5</td>
<td>TYS-5A-3</td>
<td>3mm</td>
<td>.11 (.49)</td>
<td>.13 (.59)</td>
</tr>
<tr>
<td></td>
<td>10, 15</td>
<td>M5</td>
<td>TYS-5A-10</td>
<td>10mm</td>
<td>.11 (.49)</td>
<td>.13 (.59)</td>
</tr>
<tr>
<td></td>
<td>10, 15</td>
<td>M5</td>
<td>TYS-5A-15</td>
<td>15mm</td>
<td>.11 (.49)</td>
<td>.13 (.59)</td>
</tr>
<tr>
<td></td>
<td>20, 30, 40</td>
<td>M5</td>
<td>TYS-20B-6</td>
<td>6mm</td>
<td>.56 (2.5)</td>
<td>.79 (3.4)</td>
</tr>
<tr>
<td></td>
<td>20, 30, 40</td>
<td>M5</td>
<td>TYS-20B-15</td>
<td>15mm</td>
<td>.56 (2.5)</td>
<td>1.2 (4.9)</td>
</tr>
<tr>
<td></td>
<td>20, 30, 40</td>
<td>M5</td>
<td>TYS-20B-30</td>
<td>30mm</td>
<td>.67 (2.9)</td>
<td>1.4 (5.9)</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>M5</td>
<td>TYS-50-6</td>
<td>6mm</td>
<td>.56 (2.5)</td>
<td>.79 (3.4)</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>M5</td>
<td>TYS-50-15</td>
<td>15mm</td>
<td>.56 (2.5)</td>
<td>1.2 (4.9)</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>M5</td>
<td>TYS-50-30</td>
<td>30mm</td>
<td>.67 (2.9)</td>
<td>1.4 (5.9)</td>
</tr>
<tr>
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**Model Number Index**

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<th>Cup Diameter (mm)</th>
<th>Stroke (mm)</th>
<th>Cup Material</th>
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<tr>
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<td>3, 10, 15</td>
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**Compression Force**

- **F1**: 0% of Stroke
- **F2**: 100% of Stroke

---

* Bold Items are Stocked

---

* Stroke reduced by 5mm due to shock pad.
## Dimensions

### PBTYS10A3 thru PBTYS15A15

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<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>Wt oz (g)</th>
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<td>2.36 (60)</td>
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* Cup Material
† Vacuum Port

Inches (mm)

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<th>ØA</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
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<th>J</th>
<th>Wt oz (g)</th>
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Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatic
** PJG Short Bellows Vacuum Cups **

** PJG Series Vacuum Cups **
Versatile bellow cup design provides increased sealing lip and level compensation for products with irregular, smooth, curved surfaces, or flexible sheets.

** PJTM Series Male Thread Connector **
Simple male connection for low profile positions secured to a plate or bracket. UNF, NPT, G, metric threads. Internal hex for easy assembly. Fitting Material: Aluminum.

** PJTF Series Female Thread Connector **
Simple female connection for low profile positions secured to a plate or bracket. NPSF, G threads. Internal hex for easy assembly. Fitting Material: Aluminum.

** PJTK Series Barbed Bulkhead **
Top stem connectors secured with jam nuts and allow tubing connections at the top side. Nickel plated brass materials.

** PJYK Series 90° Barbed Adapter **
Side stem connectors allow you to secure the stem with a bolt through a plate or “L” bracket to allow the tube connection from the side port. Nickel plated brass materials.

** PJTYS Series Bulkhead Level Compensator **
303 stainless steel construction secured with jam nuts. Spring biased compensators can absorb impacts of down-strokes and adjust for different levels of pick up points. 303 stainless corrosion resistant materials with drymet bushings increases the strength and life.

** Features **
- Short Bellows for Fast Response
- More Lip Seal Contact for Corrugated, Textured Surfaces
- Soft Sealing Lip
- 6mm to 80mm

** Applications **
The short stroke bellow suction cup has an extra thin sealing edge and shorter stroke versus the traditional bellows for faster response. The cups are good for corrugated and smooth surfaces.
# Vacuum Cups

## PJG Vacuum Cups

### Model Number Index (Cups Only)

**PJG - 6 - NBR**

<table>
<thead>
<tr>
<th>Cup Diameter (mm)</th>
<th>Cup Material</th>
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<td>NBR Nitrile Rubber</td>
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<td>20 (20)</td>
<td></td>
</tr>
<tr>
<td>30 (30)</td>
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### Cup Material

- **Stocked**
  - NBR Nitrile Rubber
  - SI Silicone
- **Available (Consult Factory)**
  - NBRE Nitrile ESD
  - CR Chloroprene
  - SIE Silicone ESD
  - U Urethane
  - FKM Flouro Rubber
  - SH High Temp
  - Z Markless

### Specifications

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<th>Suction Cup Material</th>
<th>NBR</th>
<th>NBRE</th>
<th>CR</th>
<th>SI</th>
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<th>U</th>
<th>FKM</th>
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<td>Silicone</td>
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<td>Markless</td>
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<td>-30° to +140°</td>
<td>-30° to +250°</td>
<td>-60° to +120°</td>
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<td>Green</td>
<td>White</td>
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</tbody>
</table>

* Bold Items are Stocked

---

* = excellent; **** = very good; ***** = good; **** = medium; * = poor; * = not recommended

* ESD: Electric Static Dissipative Material
## Application Guide

**Short Bellows**

- High Speed Packaging
- Level Compensation for Small Electronic Components
- Flexible Product
- Soft Seal Lip

### Main Data for Short Bellows PJG Cups

#### Volume

*Volume (V)*

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Cup Diameter (Inches)</th>
<th>Area cm²</th>
<th>Volume (V) Liters</th>
<th>Lifting Force @ 60% (N)</th>
<th>Cup Deflection (S)</th>
<th>Radius R (mm)</th>
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<td>—</td>
<td>7.0</td>
</tr>
<tr>
<td>PJG-40-*</td>
<td>1.57 (40)</td>
<td>12.6</td>
<td>0.005</td>
<td>76.9</td>
<td>—</td>
<td>7.2</td>
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<td>PJG-60-*</td>
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<td>0.020</td>
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<td>8.0</td>
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<tr>
<td>PJG-70-*</td>
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<td>0.030</td>
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<td>—</td>
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<tr>
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<td>50.3</td>
<td>0.040</td>
<td>308</td>
<td>—</td>
<td>9.5</td>
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*Cup Material*
**Dimensions**

**PJG-6 and PJG-8**

![Diagram](image1)

**PJG-20**

![Diagram](image2)

**PJG-30 thru PJG-40**

![Diagram](image3)

**PJG-50**

![Diagram](image4)

**PJG-60 thru PJG-80**

![Diagram](image5)

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA</th>
<th>ØB</th>
<th>ØC</th>
<th>ØD</th>
<th>E</th>
<th>F</th>
<th>H</th>
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<td>PJG-6-*</td>
<td>.24 (6)</td>
<td>.16 (4)</td>
<td>.24 (6)</td>
<td>.30 (7.5)</td>
<td>.35 (9)</td>
<td>.17 (4.2)</td>
<td>.08 (2)</td>
</tr>
<tr>
<td>PJG-8-*</td>
<td>.31 (8)</td>
<td>.16 (4)</td>
<td>.24 (6)</td>
<td>.31 (8)</td>
<td>.35 (9)</td>
<td>.16 (4)</td>
<td>.08 (2)</td>
</tr>
<tr>
<td>PJG-10-*</td>
<td>.39 (10)</td>
<td>.18 (4.6)</td>
<td>.31 (7.8)</td>
<td>.43 (11)</td>
<td>.37 (9.5)</td>
<td>.12 (3)</td>
<td>.14 (3.5)</td>
</tr>
<tr>
<td>PJG-15-*</td>
<td>.59 (15)</td>
<td>.18 (4.6)</td>
<td>.31 (7.8)</td>
<td>.47 (12)</td>
<td>.43 (11)</td>
<td>.13 (3.3)</td>
<td>.14 (3.5)</td>
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<tr>
<td>PJG-20-*</td>
<td>.79 (20)</td>
<td>.18 (4.6)</td>
<td>.43 (10.8)</td>
<td>.59 (15)</td>
<td>.51 (13)</td>
<td>.22 (5.5)</td>
<td>.18 (4.5)</td>
</tr>
<tr>
<td>PJG-30-*</td>
<td>1.18 (30)</td>
<td>.23 (5.8)</td>
<td>.43 (10.8)</td>
<td>.78 (20)</td>
<td>.71 (18)</td>
<td>.28 (7)</td>
<td>.28 (7)</td>
</tr>
<tr>
<td>PJG-35-*</td>
<td>1.38 (35)</td>
<td>.23 (5.8)</td>
<td>.43 (10.8)</td>
<td>.98 (25)</td>
<td>.71 (18)</td>
<td>.28 (7)</td>
<td>.28 (7)</td>
</tr>
<tr>
<td>PJG-40-*</td>
<td>1.57 (40)</td>
<td>.23 (5.8)</td>
<td>.43 (10.8)</td>
<td>1.18 (30)</td>
<td>.71 (18)</td>
<td>.28 (7)</td>
<td>.28 (7)</td>
</tr>
<tr>
<td>PJG-50-*</td>
<td>1.97 (50)</td>
<td>.31 (7.8)</td>
<td>.78 (19.8)</td>
<td>1.57 (40)</td>
<td>.79 (20)</td>
<td>.35 (9)</td>
<td>.28 (7)</td>
</tr>
<tr>
<td>PJG-60-*</td>
<td>2.36 (60)</td>
<td>.49 (12.5)</td>
<td>—</td>
<td>1.77 (45)</td>
<td>.89 (22.5)</td>
<td>.31 (8)</td>
<td>.10 (2.5)</td>
</tr>
<tr>
<td>PJG-70-*</td>
<td>2.75 (70)</td>
<td>.49 (12.5)</td>
<td>—</td>
<td>2.17 (55)</td>
<td>.93 (23.5)</td>
<td>.37 (9.5)</td>
<td>.10 (2.5)</td>
</tr>
<tr>
<td>PJG-80-*</td>
<td>3.15 (80)</td>
<td>.49 (12.5)</td>
<td>—</td>
<td>2.68 (68)</td>
<td>.93 (23.5)</td>
<td>.37 (9.5)</td>
<td>.10 (2.5)</td>
</tr>
</tbody>
</table>

Inches (mm)

* Cup Material
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatic

Catalog 0802-3/USA
Ordering Information

PJTM Vacuum Cup Assemblies

Model Number Index

<table>
<thead>
<tr>
<th>PJTM - 8 - NBR - M5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cup Diameter (mm)</td>
</tr>
<tr>
<td>6 (6) 35 (35)</td>
</tr>
<tr>
<td>8 (8) 40 (40)</td>
</tr>
<tr>
<td>10 (10) 50 (50)</td>
</tr>
<tr>
<td>15 (15) 60 (60)</td>
</tr>
<tr>
<td>20 (20) 70 (70)</td>
</tr>
<tr>
<td>30 (30) 80 (80)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cup Material</th>
<th>Stocked</th>
<th>NBR Nitrile Rubber</th>
<th>SI Silicone</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>NBRE Nitrile ESD</td>
<td>CR Chloroprene</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SIE Silicone ESD</td>
<td>U Urethane</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FKM Flouro Rubber</td>
<td>SH High Temp</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Z Markless</td>
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<table>
<thead>
<tr>
<th>Mounting Thread</th>
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<tbody>
<tr>
<td>M5 M5</td>
</tr>
<tr>
<td>N1 1/8 NPT</td>
</tr>
<tr>
<td>G1 1/8 BSPP</td>
</tr>
<tr>
<td>M10 M10</td>
</tr>
<tr>
<td>N2 1/4 NPT</td>
</tr>
<tr>
<td>G2 1/4 BSPP</td>
</tr>
</tbody>
</table>

(Bold Items are Stocked)

Installation

Note:
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage. Tube I.D. listed below is a recommended minimum value, for that cup range, to optimize response time of the system. Your requirements may vary.

Male Threaded Fitting for PJG Cups

<table>
<thead>
<tr>
<th>Included in Kit</th>
<th>Cup Diameter (mm)</th>
<th>Mounting Thread Code</th>
<th>Mounting Thread</th>
<th>FTM Fitting Part Number</th>
<th>Min. Tube ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>6, 8</td>
<td>6 (6)</td>
<td>M5</td>
<td>M5x0.8 Male</td>
<td>FTM-5A-M5H</td>
<td>.157 (4)</td>
</tr>
<tr>
<td></td>
<td>8 (8)</td>
<td>G1</td>
<td>1/8 BSPP Male</td>
<td>FTM-5A-G1</td>
<td></td>
</tr>
<tr>
<td>10, 15</td>
<td>10 (10)</td>
<td>M5</td>
<td>M8x1.25 Male</td>
<td>TN-PF-15-M5</td>
<td>.157 (4)</td>
</tr>
<tr>
<td></td>
<td>15 (15)</td>
<td>G1</td>
<td>1/8 BSPP Male</td>
<td>TN-PF-20-M5</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>20 (20)</td>
<td>M5</td>
<td>M8x1.25 Male</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30, 35, 40</td>
<td>30 (30)</td>
<td>N1</td>
<td>1/8 NPT Male</td>
<td>FTM-20B-N1</td>
<td>.157 (4)</td>
</tr>
<tr>
<td></td>
<td>35 (35)</td>
<td>G1</td>
<td>1/8 BSPP Male</td>
<td>FTM-20B-G1H</td>
<td></td>
</tr>
<tr>
<td></td>
<td>40 (40)</td>
<td>M10</td>
<td>M10x1.25 Male</td>
<td>FTM-20B-M10</td>
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<tr>
<td>50</td>
<td>50 (50)</td>
<td>N1</td>
<td>1/8 NPT Male</td>
<td>FTM-50-N1</td>
<td>.157 (4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G1</td>
<td>1/8 BSPP Male</td>
<td>FTM-50-G1H</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>G2</td>
<td>1/4 BSPP Male</td>
<td>FTM-50-G2</td>
<td></td>
</tr>
<tr>
<td>60, 70, 80</td>
<td>60 (60)</td>
<td>N2</td>
<td>1/4 NPT Male</td>
<td>FTM-60-N2</td>
<td>.25 (6.35)</td>
</tr>
<tr>
<td></td>
<td>70 (70)</td>
<td>G2</td>
<td>1/4 BSPP Male</td>
<td>FTM-60-G2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>80 (80)</td>
<td>M10</td>
<td>M10x1.25 Male</td>
<td>FTM-60-M10</td>
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</tr>
</tbody>
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(Bold Items are Stocked)

Inches (mm)

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatic
**Dimensions**

**PJTM-6 and PJTM-8**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA</th>
<th>B</th>
<th>C (M5)</th>
<th>C (N1 / G1)</th>
<th>C (M10 / G2)</th>
<th>C (N2)</th>
<th>D</th>
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<tbody>
<tr>
<td>PJTM-6-<em>-</em></td>
<td>.24 (6)</td>
<td>.49 (12.5)</td>
<td>.18 (4.5)</td>
<td>.31 (8)</td>
<td>—</td>
<td>—</td>
<td>.14 (3.5)</td>
</tr>
<tr>
<td>PJTM-8-<em>-</em></td>
<td>.31 (8)</td>
<td>.49 (12.5)</td>
<td>.18 (4.5)</td>
<td>.31 (8)</td>
<td>—</td>
<td>—</td>
<td>.14 (3.5)</td>
</tr>
<tr>
<td>PJTM-10-<em>-</em></td>
<td>.39 (10)</td>
<td>.37 (9.5)</td>
<td>.20 (5)</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>PJTM-15-<em>-</em></td>
<td>.59 (15)</td>
<td>.43 (11)</td>
<td>.20 (5)</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>PJTM-20-<em>-</em></td>
<td>.79 (20)</td>
<td>.51 (13)</td>
<td>.20 (5)</td>
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<td>—</td>
<td>—</td>
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<td>.89 (30)</td>
<td>.91 (23)</td>
<td>—</td>
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<td>.39 (10)</td>
<td>—</td>
<td>.20 (5)</td>
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<tr>
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<td>.91 (23)</td>
<td>—</td>
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<td>—</td>
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<td>—</td>
<td>.31 (8)</td>
<td>.39 (10)</td>
<td>—</td>
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<td>.98 (25)</td>
<td>—</td>
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<td>.39 (10)</td>
<td>—</td>
<td>.20 (5)</td>
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<td>2.36 (60)</td>
<td>1.06 (27)</td>
<td>—</td>
<td>—</td>
<td>.39 (10)</td>
<td>.59 (15)</td>
<td>.28 (7)</td>
</tr>
<tr>
<td>PJTM-70-<em>-</em></td>
<td>2.75 (70)</td>
<td>1.10 (28)</td>
<td>—</td>
<td>—</td>
<td>.39 (10)</td>
<td>.59 (15)</td>
<td>.28 (7)</td>
</tr>
<tr>
<td>PJTM-80-<em>-</em></td>
<td>3.15 (80)</td>
<td>1.10 (28)</td>
<td>—</td>
<td>—</td>
<td>.39 (10)</td>
<td>.59 (15)</td>
<td>.28 (7)</td>
</tr>
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</table>

Inches (mm)

* Cup Material

† Thread Size
### PJTF Vacuum Cup Assemblies

**Installation**

**Note:** When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage. Tube I.D. listed below is a recommended minimum value, for that cup range, to optimize response time of the system. Your requirements may vary.

### Model Number Index

**PJTF - 8 - NBR - M5**

<table>
<thead>
<tr>
<th>Cup Diameter (mm)</th>
<th>Cup Material</th>
<th>Mounting Thread</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 (6) 50 (50)</td>
<td>Stocked NBR Nitrile Rubber SI Silicone Available (Consult Factory)</td>
<td>M5 M5</td>
</tr>
<tr>
<td>8 (8) 60 (60)</td>
<td></td>
<td>N1 1/8 NPT G1 1/8 BSPP</td>
</tr>
<tr>
<td>30 (30) 70 (70)</td>
<td></td>
<td>M10 M10</td>
</tr>
<tr>
<td>35 (35) 80 (80)</td>
<td></td>
<td>N2 1/4 NPT G2 1/4 BSPP</td>
</tr>
<tr>
<td>40 (40)</td>
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</tr>
</tbody>
</table>

### Female Threaded Fitting for PJG Cups

(Bold Items are Stocked)

<table>
<thead>
<tr>
<th>Included in Kit</th>
<th>Cup Diameter (mm)</th>
<th>Mounting Thread Code</th>
<th>Mounting Thread</th>
<th>FTF Fitting Part Number</th>
<th>Min. Tube ID</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6, 8, 10,15</td>
<td>M5</td>
<td>M5x0.8 Female</td>
<td>FTF-5A-M5</td>
<td>.157 (4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G1</td>
<td>G1/8 Female</td>
<td>FTF-5A-G1</td>
<td>.157 (4)</td>
</tr>
<tr>
<td></td>
<td>30, 35, 40</td>
<td>N1</td>
<td>1/8 NPT Female</td>
<td>FTF-20B-N1</td>
<td>.157 (4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G1</td>
<td>G1/8 Female</td>
<td>FTF-20B-G1</td>
<td>.157 (4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G2</td>
<td>G1/4 Female</td>
<td>FTF-20B-G2</td>
<td>.157 (4)</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>N1</td>
<td>1/8 NPT Female</td>
<td>FTF-50-N1</td>
<td>.157 (4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G1</td>
<td>G1/8 Female</td>
<td>FTF-50-G1</td>
<td>.157 (4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G2</td>
<td>G1/4 Female</td>
<td>FTF-50-G2</td>
<td>.157 (4)</td>
</tr>
<tr>
<td></td>
<td>60, 70, 80</td>
<td>N2</td>
<td>1/4 NPT Female</td>
<td>FTF-60-N2</td>
<td>.25 (6.35)</td>
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<tr>
<td></td>
<td></td>
<td>G2</td>
<td>G1/4 Female</td>
<td>FTF-60-G2</td>
<td>.25 (6.35)</td>
</tr>
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</table>

Inches (mm)
Dimensions

PJTF-6 and PJTF-8

PJTF-30 thru PJTF-50

PJTF-60 thru PJTF-80

<table>
<thead>
<tr>
<th>Model Number</th>
<th>OA</th>
<th>B</th>
<th>B (M5)</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
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<td>.24 (6)</td>
<td>.79 (20)</td>
<td>.55 (14)</td>
<td>.16 (4)</td>
</tr>
<tr>
<td>PJTF-8-*.†</td>
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<td>.79 (20)</td>
<td>.55 (14)</td>
<td>.16 (4)</td>
</tr>
<tr>
<td>PJTF-10-*.†</td>
<td>.39 (10)</td>
<td>.79 (20)</td>
<td>.55 (14)</td>
<td>.12 (3)</td>
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<td>PJTF-15-*.†</td>
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<td>.79 (20)</td>
<td>.55 (14)</td>
<td>.13 (3.3)</td>
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<td>PJTF-30-*.†</td>
<td>1.18 (30)</td>
<td>1.25 (32)</td>
<td>—</td>
<td>.28 (7)</td>
</tr>
<tr>
<td>PJTF-35-*.†</td>
<td>1.18 (30)</td>
<td>1.25 (32)</td>
<td>—</td>
<td>.28 (7)</td>
</tr>
<tr>
<td>PJTF-40-*.†</td>
<td>1.57 (40)</td>
<td>1.25(32)</td>
<td>—</td>
<td>.28 (7.2)</td>
</tr>
<tr>
<td>PJTF-50-*.†</td>
<td>1.97 (50)</td>
<td>1.34 (34)</td>
<td>—</td>
<td>.35 (9)</td>
</tr>
<tr>
<td>PJTF-60-*.†</td>
<td>2.36 (60)</td>
<td>1.56 (39.5)</td>
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<td>.31 (8)</td>
</tr>
<tr>
<td>PJTF-70-*.†</td>
<td>2.75 (70)</td>
<td>1.59 (40.5)</td>
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<td>.37 (9.5)</td>
</tr>
<tr>
<td>PJTF-80-*.†</td>
<td>3.15 (80)</td>
<td>1.59 (40.5)</td>
<td>—</td>
<td>.37 (9.5)</td>
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</tbody>
</table>

Dimensions

Inches (mm)

* Cup Material
† Thread Size
**PJTK Vacuum Cup Assemblies**

**Installation**

*Note:* When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage. Tube I.D. listed below is a recommended minimum value, for that cup range, to optimize response time of the system. Your requirements may vary.

**Barbed Bulkhead for PJG Cups**

<table>
<thead>
<tr>
<th>Included in Kit</th>
<th>Cup Diameter (mm)</th>
<th>Vacuum Port</th>
<th>FTK Fitting Part Number</th>
<th>Cup Screw Only</th>
<th>Mounting Thread</th>
<th>Tube ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>6, 8</td>
<td>Blank Barb</td>
<td>FTK-5A</td>
<td>N/A</td>
<td>M9x1.0 Male</td>
<td>.157 (4)</td>
<td></td>
</tr>
<tr>
<td>10, 15</td>
<td>Blank Barb</td>
<td>FTK-15</td>
<td>TN-PF-15-M5</td>
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*Inches (mm)*
## Dimensions

### PJTK-6 and PJTK-8

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* Cup Material
* Vacuum Port

### PJTK-10 thru PJTK-20

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<td>M9x1.0</td>
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<td>PJTK-80-******</td>
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* Cup Material
* Vacuum Port

### PJTK-30 thru PJTK-50

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<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
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<td>PJTK-80-***<em>:</em></td>
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* Cup Material
* Vacuum Port

### PJTK-60 thru PJTK-80

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<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
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<th>Wt oz (g)</th>
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<td>.79</td>
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<td>2.50 (63.5)</td>
<td>—</td>
<td>1.67</td>
<td>.37</td>
<td>.79</td>
<td>.24</td>
<td>5.7 (163)</td>
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<td>PJTK-80-**<em>:</em></td>
<td>3.15</td>
<td>2.50 (63.5)</td>
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<td>.37</td>
<td>.79</td>
<td>.24</td>
<td>6.7 (190)</td>
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* Cup Material
* Vacuum Port
 PJYK Vacuum Cup Assemblies

Model Number Index

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<th>Diameter (mm)</th>
<th>Material</th>
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<td>8 (8)</td>
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<tr>
<td>N1 1/8 NPT</td>
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<tr>
<td>G1 1/8 BSPP</td>
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<td>R1 1/8 BSPT</td>
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Installation

**Note:**
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage. Tube I.D. listed below is a recommended minimum value, for that cup range, to optimize response time of the system. Your requirements may vary.

90° Barbed Adapter for PJG Cups

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<th>Cup Diameter (mm)</th>
<th>Vacuum Port Code</th>
<th>Vacuum Port Thread</th>
<th>FYK Fitting Part Number</th>
<th>Cup Screw Only</th>
<th>Mounting Thread</th>
<th>Tube ID</th>
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<td>FYK-5A</td>
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<td>10, 15</td>
<td>Blank Barb</td>
<td>FYK-15</td>
<td>TN-PF-15-M5</td>
<td>M4x0.7 Female</td>
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<td>30, 35, 40</td>
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<td>FYK-25</td>
<td>TN-PF-25-M6</td>
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Inches (mm)
## Dimensions

### PJYK-6 and PJYK-8

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<th>D (in)</th>
<th>E (in)</th>
<th>F (oz)</th>
<th>G (lbs)</th>
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Inches (mm)

* Cup Material

† Vacuum Port
PJTYS Vacuum Cup Assemblies

Model Number Index

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<th>Stroke (mm)</th>
<th>Cup Material</th>
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<td>3, 10, 15</td>
<td>Stocked NBR Nitrile Rubber SI Silicone</td>
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<td>8 (8)</td>
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<td>30*, 50*, 70*</td>
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<td>80 (80)</td>
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Available (Consult Factory)
- NBRE Nitrile ESD
- CR Chloroprene
- SIE Silicone
- ESD
- U Urethane
- FKM Flouro Rubber
- SH High Temp
- Z Markless

Vacuum Port
- M5
- M5 M5 N1 1/8 NPT
- See Chart Below

Compression Force
- F1
- F2

Installation

Note:
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage. Shown are interchangeable connectors & plugs for port connections.

Bulkhead Level Compensator for PJG Cups

<table>
<thead>
<tr>
<th>Included in Kit</th>
<th>Cup Diameter (mm)</th>
<th>Vacuum Port Code</th>
<th>Thread</th>
<th>TYS &amp; JTYS Assembly Part Number</th>
<th>Stroke</th>
<th>F1 lbf (N)</th>
<th>F2 lbf (N)</th>
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* Stroke reduced by 5mm due to shock pad.

* Not included with assembly

Inches (mm)
## Dimensions

**PJTYS63 thru PJTYS815**

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* Inches (mm)  
** Cup Material  
† Vacuum Port
### Dimensions

#### PJTYS306 thru PJTYS5030

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Inches (mm)

** Cup Material

† Vacuum Port
### Dimensions

**PJTYS6030 thru PJTYS8070**

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*Inches (mm)*

** Cup Material

† Vacuum Port
PCG
Multiple Bellows Vacuum Cups

Features
- Soft Touch
- Extra Level Compensation
- Flexible Sealing Lip for Irregular Curved Surfaces
- 5mm to 90mm in Diameter

Applications
These multiple bellow cups are designed for applications that require additional level compensation, more flexibility, or minimum back pressure for a "soft touch". The multiple bellow has a soft sealing edge good for a variety of sensitive applications; such as food packaging, CD / DVD, medical packaging, and highly irregular curved surfaces. Cups can also be used to assist with sheet separation in destack operations.

PCG Series Vacuum Cups
2-1/2 bellows design minimizes contact pressure applied to the product. The soft seal lip and touch allows the cup to conform to the product's surface to make a vacuum seal.

PCTK Series
Barbed Bulkhead
Top stem connectors secured with jam nuts and allow tubing connections at the top side. Nickel plated brass materials.

PCTM Series Male Thread Connector
Simple male connection for low profile positions secured to a plate or bracket. UNF, NPT, G, metric threads. Internal hex for easy assembly. Fitting Material: Aluminum.

PCYK Series
90° Barbed Adapter
Side stem connectors allow you to secure the stem with a bolt through a plate or "L" bracket to allow the tube connection from the side port. Nickel plated brass materials.

PCTF Series Female Thread Connector
Simple female connection for low profile positions secured to a plate or bracket. NPSF, G threads. Internal hex for easy assembly. Fitting Material: Aluminum.
### Model Number Index (Cups Only)

(Bold Items are Stocked)

**PCG** - **5** - **NBR**

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### Cup Material

- **Standard**
  - NBR Nitrile Rubber
  - SI Silicone

- **Available (Consult Factory)**
  - NBRE Nitrile ESD
  - CR Chloroprene
  - U Urethane
  - SIE Silicone ESD
  - FKM Flouro Rubber
  - SH High Temp

### Specifications

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<td>Wear Resistance</td>
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<td>Acid Resistance</td>
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<td>Alkali Resistance</td>
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<td>*****</td>
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<tr>
<td>Chemical Resistance</td>
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<td>*****</td>
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<td>*****</td>
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<tr>
<td>Mechanical Resistance</td>
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<td>*****</td>
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</tr>
</tbody>
</table>

* **** = excellent; ***** = very good; **** = good; *** = medium; ** = poor; * = not recommended

* ESD: Electric Static Dissipative Material
### Application Guide

**2-1/2 Bellows**

- Destack Perimeter Separation
- Level Compensation for applications where Level Compensators do not have adequate space
- Controlling downstroke lifts product on contact

### Main Data for 2-1/2 Bellows PJG Cups

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Cup Diameter Inches (mm)</th>
<th>Area cm²</th>
<th>Volume (V) Liters</th>
<th>Lifting Force @ 60% (N)</th>
<th>Cup Deflection (S) (mm)</th>
<th>Radius (R) (mm)</th>
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<tbody>
<tr>
<td>PCG-5-*</td>
<td>.20 (5)</td>
<td>.20</td>
<td>.00003</td>
<td>1.20</td>
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<tr>
<td>PCG-7-*</td>
<td>.28 (7)</td>
<td>.39</td>
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<td>PCG-10-*</td>
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<td>4.80</td>
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<td>PCG-15-*</td>
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<td>1.77</td>
<td>.0009</td>
<td>10.8</td>
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<td>10</td>
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<tr>
<td>PCG-20-*</td>
<td>.79 (20)</td>
<td>3.14</td>
<td>.002</td>
<td>19.2</td>
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<td>PCG-30-*</td>
<td>1.18 (30)</td>
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<td>.009</td>
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<td>—</td>
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<td>.018</td>
<td>76.9</td>
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<td>22</td>
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<tr>
<td>PCG-60-*</td>
<td>2.36 (60)</td>
<td>28.3</td>
<td>.072</td>
<td>173</td>
<td>—</td>
<td>27</td>
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<tr>
<td>PCG-90-*</td>
<td>3.54 (90)</td>
<td>63.6</td>
<td>.1639</td>
<td>389</td>
<td>—</td>
<td>42</td>
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</tbody>
</table>

* Cup Material
### Dimensions

#### PCG-5 and PCG-7

![Diagram of PCG-5 and PCG-7]

- ØA: .20 (5)
- ØB: .16 (4)
- ØC: .08 (2)
- ØD: .30 (7.5)
- E: .37 (9.5)
- F: .12 (3)
- G: .16 (4)
- H: .08 (2)
- J: .24 (6)

#### PCG-10 thru PCG-20

![Diagram of PCG-10 thru PCG-20]

- ØA: .28 (7)
- ØB: .16 (4)
- ØC: .08 (2)
- ØD: .30 (7.5)
- E: .39 (10)
- F: .12 (3)
- G: .16 (4)
- H: .08 (2)
- J: .35 (9)

#### PCG-30 thru PCG-60

![Diagram of PCG-30 thru PCG-60]

- ØA: .35 (9)
- ØB: .20 (5)
- ØC: .12 (3)
- ØD: .59 (15)
- E: .90 (22)
- F: .39 (10)
- G: .35 (9)
- H: .39 (10)

#### PCG-90

![Diagram of PCG-90]

- ØA: .60 (15.2)
- ØB: .20 (5)
- ØC: .08 (2)
- ØD: .30 (7.5)
- E: .91 (23)
- F: .39 (10)
- G: .35 (9)
- H: .39 (10)

---

**Model Number | ØA | ØB | ØC | ØD | E | F | G | H | J**
---|---|---|---|---|---|---|---|---|---
PCG-5-* | .20 (5) | .16 (4) | .08 (2) | .30 (7.5) | .37 (9.5) | .12 (3) | .16 (4) | .08 (2) | .24 (6) |
PCG-7-* | .28 (7) | .16 (4) | .08 (2) | .30 (7.5) | .39 (10) | .12 (3) | .16 (4) | .08 (2) | .24 (6) |
PCG-10-* | .35 (9) | .20 (5) | .12 (3) | .59 (15) | .28 (7) | — | .35 (9) | — | .39 (10) |
PCG-15-* | .60 (15.2) | .20 (5) | .39 (10) | .90 (22) | .35 (9) | — | .39 (10) | — | .39 (10) |
PCG-20-* | .79 (20) | .20 (5) | .39 (10) | .91 (23) | .35 (9) | — | .39 (10) | — | .39 (10) |
PCG-30-* | 1.26 (32) | .31 (8) | .57 (14.5) | 1.48 (37.5) | .67 (17) | .51 (13) | .71 (18) | — | — |
PCG-40-* | 1.65 (42) | .31 (8) | .87 (22) | 1.81 (46) | .67 (17) | .51 (13) | .79 (20) | — | — |
PCG-60-* | 2.44 (62) | .31 (8) | 1.06 (27) | 2.17 (55) | .71 (18) | .51 (13) | .85 (21.5) | — | — |
PCG-90-* | 3.46 (88) | .47 (12) | 1.65 (42) | 3.44 (87.5) | 1.02 (26) | .79 (20) | .98 (25) | — | — |

* Cup Material

Inches (mm)
PCTM Vacuum Cup Assemblies

Installation
Note:
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage.
Tube I.D. listed below is a recommended minimum value, for that cup range, to optimize response time of the system.
Your requirements may vary.

Male Threaded Fitting for PCG Cups

<table>
<thead>
<tr>
<th>Included in Kit</th>
<th>Cup Diameter (mm)</th>
<th>Mounting Thread</th>
<th>Mounting Thread Code</th>
<th>FTM &amp; CTM Fitting Part Number</th>
<th>Min. Tube ID</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5, 7</td>
<td>M5</td>
<td>M5x0.8 Male</td>
<td>FTM-5A-M5H</td>
<td>.098 (2.5mm)</td>
</tr>
<tr>
<td></td>
<td>10, 15, 20</td>
<td>M5</td>
<td>M5x0.8 Male</td>
<td>CTM-10-M5H</td>
<td>.156 (4mm)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N1</td>
<td>1/8 NPT Male</td>
<td>CTM-10-N1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>G1</td>
<td>1/8 BSPP Male</td>
<td>CTM-10-G1H</td>
<td></td>
</tr>
<tr>
<td></td>
<td>30, 40, 60</td>
<td>N1</td>
<td>1/8 NPT Male</td>
<td>CTM-30-N1</td>
<td>.25 (6.35mm)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G1</td>
<td>1/8 BSPP Male</td>
<td>CTM-30-G1H</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>G2</td>
<td>1/4 BSPP Male</td>
<td>CTM-30-G2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>90</td>
<td>N2</td>
<td>1/4 NPT Male</td>
<td>CTM-90-N2</td>
<td>.31 (8mm)</td>
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<td></td>
<td>G2</td>
<td>1/4 BSPP Male</td>
<td>CTM-90-G2</td>
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## Dimensions

### PCTM-5 and PCTM-7

![Diagram](image)

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA</th>
<th>B</th>
<th>C (M5)</th>
<th>C (N1 / G1)</th>
<th>C (M10 / G2)</th>
<th>C (N2)</th>
<th>D</th>
<th>E</th>
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</thead>
<tbody>
<tr>
<td>PCTM-5-*†</td>
<td>.20 (5)</td>
<td>.51 (13)</td>
<td>.18 (4.5)</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>.14 (3.5)</td>
<td>.12 (3)</td>
</tr>
<tr>
<td>PCTM-7-*†</td>
<td>.28 (7)</td>
<td>.53 (13.5)</td>
<td>.18 (4.5)</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>.14 (3.5)</td>
<td>.12 (3)</td>
</tr>
<tr>
<td>PCTM-10-*†</td>
<td>.35 (9)</td>
<td>.69 (17.5)</td>
<td>.18 (4.5)</td>
<td>.31 (8)</td>
<td>—</td>
<td>—</td>
<td>.10 (2.5)</td>
<td>.12 (3)</td>
</tr>
<tr>
<td>PCTM-15-*†</td>
<td>.60 (15.2)</td>
<td>1.04 (25.5)</td>
<td>.18 (4.5)</td>
<td>.31 (8)</td>
<td>—</td>
<td>—</td>
<td>.10 (2.5)</td>
<td>.39 (10)</td>
</tr>
<tr>
<td>PCTM-20-*†</td>
<td>.79 (20)</td>
<td>1.04 (25.5)</td>
<td>.18 (4.5)</td>
<td>.31 (8)</td>
<td>—</td>
<td>—</td>
<td>.10 (2.5)</td>
<td>.39 (10)</td>
</tr>
<tr>
<td>PCTM-30-*†</td>
<td>1.26 (32)</td>
<td>1.67 (42.5)</td>
<td>—</td>
<td>.31 (8)</td>
<td>.39 (10)</td>
<td>—</td>
<td>.20 (5)</td>
<td>.57 (14.5)</td>
</tr>
<tr>
<td>PCTM-40-*†</td>
<td>1.65 (42)</td>
<td>2.01 (51)</td>
<td>—</td>
<td>.31 (8)</td>
<td>.39 (10)</td>
<td>—</td>
<td>.20 (5)</td>
<td>.87 (22)</td>
</tr>
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<td>PCTM-60-*†</td>
<td>2.44 (62)</td>
<td>2.36 (60)</td>
<td>—</td>
<td>.31 (8)</td>
<td>.39 (10)</td>
<td>—</td>
<td>.20 (5)</td>
<td>1.06 (27)</td>
</tr>
<tr>
<td>PCTM-90-*†</td>
<td>3.46 (88)</td>
<td>3.64 (92.5)</td>
<td>—</td>
<td>—</td>
<td>.39 (10)</td>
<td>.59 (15)</td>
<td>.20 (5)</td>
<td>1.65 (42)</td>
</tr>
</tbody>
</table>

Inches (mm)

* Cup Material
† Thread Size
PCTF Vacuum Cup Assemblies

Installation Mounting

PCTF - 5 - NBR - M5

Model Number Index

Cup Diameter (mm) | Cup Material | Mounting Thread
---|---|---
5 (5) | NBR Nitrile Rubber | M5
7 (7) | NBR Nitrile Rubber | M5
10 (10) | NBR Nitrile Rubber | G1
15 (15) | NBR Nitrile Rubber | G1
20 (20) | SI Silicone Rubber | G2

Available (Consult Factory)
- NBRE Nitrile ESD
- CR Chloroprene
- U Urethane
- SIE Silicone ESD
- FKM Fluoro Rubber
- SH High Temp

Note:
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage. Tube I.D. listed below is a recommended minimum value, for that cup range, to optimize response time of the system. Your requirements may vary.

Female Threaded Fitting for PCG Cups

<table>
<thead>
<tr>
<th>Included in Kit</th>
<th>Cup Diameter (mm)</th>
<th>Mounting Thread</th>
<th>Mounting Thread Code</th>
<th>FTF &amp; CTF Fitting Part Number</th>
<th>Min. Tube ID</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5, 7</td>
<td>M5</td>
<td>M5x0.8 Female</td>
<td>FTF-5A-M5</td>
<td>.098 (2.5mm)</td>
</tr>
<tr>
<td></td>
<td>10, 15, 20</td>
<td>G1</td>
<td>1/8 BSPP Female</td>
<td>CTF-10-G1</td>
<td>.156 (4mm)</td>
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<tr>
<td></td>
<td>30, 40, 60</td>
<td>N1</td>
<td>1/8 NPT Female</td>
<td>CTF-30-N1</td>
<td>.25 (6.35mm)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G1</td>
<td>1/8 BSPP Female</td>
<td>CTF-30-G1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>G2</td>
<td>1/4 BSPP Female</td>
<td>CTF-30-G2</td>
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</tr>
<tr>
<td></td>
<td>90</td>
<td>N2</td>
<td>1/4 NPT Female</td>
<td>CTF-90-N2</td>
<td>.31 (8)</td>
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<tr>
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<td></td>
<td>G2</td>
<td>1/4 BSPP Female</td>
<td>CTF-90-G2</td>
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## Dimensions

### PCTF-5 and PCTF-7

<table>
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<td>PCTF-5*†</td>
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### PCTF-10 thru PCTF-20

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### PCTF-30 thru PCTF-60

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<td>PCTF-40*†</td>
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<td>PCTF-60*†</td>
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### PCTF-90

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### Dimensions Table

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<tr>
<td>PCTF-7*†</td>
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<tr>
<td>PCTF-10*†</td>
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<tr>
<td>PCTF-15*†</td>
</tr>
<tr>
<td>PCTF-20*†</td>
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</tr>
<tr>
<td>PCTF-60*†</td>
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<table>
<thead>
<tr>
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<th>C</th>
<th>D</th>
<th>E</th>
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<td>.85 (21.5)</td>
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<td>.31 (8)</td>
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<td>.28 (7)</td>
<td>.87 (22)</td>
<td>.47 (12)</td>
<td>.31 (8)</td>
<td>.12 (3)</td>
</tr>
<tr>
<td>.35 (9)</td>
<td>1.06 (27)</td>
<td>.47 (12)</td>
<td>.31 (8)</td>
<td>.12 (3)</td>
</tr>
<tr>
<td>.60 (15.2)</td>
<td>1.38 (35)</td>
<td>.47 (12)</td>
<td>.31 (8)</td>
<td>.39 (10)</td>
</tr>
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<td>.79 (20)</td>
<td>1.38 (35)</td>
<td>.47 (12)</td>
<td>.31 (8)</td>
<td>.39 (10)</td>
</tr>
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<td>1.26 (32)</td>
<td>2.03 (51.5)</td>
<td>.55 (14)</td>
<td>.31 (8)</td>
<td>.57 (14.5)</td>
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<tr>
<td>1.65 (42)</td>
<td>2.36 (60)</td>
<td>.55 (14)</td>
<td>.31 (8)</td>
<td>.87 (22)</td>
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<td>2.44 (62)</td>
<td>2.72 (69)</td>
<td>.55 (14)</td>
<td>.31 (8)</td>
<td>1.06 (27)</td>
</tr>
<tr>
<td>3.46 (88)</td>
<td>4.13 (105)</td>
<td>.69 (17.5)</td>
<td>.39 (10)</td>
<td>1.65 (42)</td>
</tr>
</tbody>
</table>

---

**Inches (mm)**

* Cup Material
† Thread Size
PCTK Vacuum Cup Assemblies

Installation

Note:
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage. Tube I.D. listed below is a recommended minimum value, for that cup range, to optimize response time of the system. Your requirements may vary.

Model Number Index

<table>
<thead>
<tr>
<th>Cup Diameter (mm)</th>
<th>Cup Material</th>
<th>Vacuum Port</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 (5)</td>
<td>NBR Nitrile Rubber</td>
<td>Blank Barb</td>
</tr>
<tr>
<td>7 (7)</td>
<td>SI Silicone</td>
<td>Blank Barb</td>
</tr>
<tr>
<td>10 (10)</td>
<td>NBR Nitrile Rubber</td>
<td>See Chart Below</td>
</tr>
<tr>
<td>15 (15)</td>
<td>SI Silicone</td>
<td>See Chart Below</td>
</tr>
<tr>
<td>20 (20)</td>
<td>NBR Nitrile Rubber</td>
<td>See Chart Below</td>
</tr>
</tbody>
</table>

Barbed Bulkhead for PCG Cups

<table>
<thead>
<tr>
<th>Included in Kit</th>
<th>Cup Diameter (mm)</th>
<th>Vacuum Port Code</th>
<th>FTK &amp; CTK Fitting Part Number</th>
<th>Cup Screw Only</th>
<th>Mounting Thread</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5, 7</td>
<td>Blank Barb</td>
<td>FTK-5A</td>
<td>N/A</td>
<td>M9x1 Male</td>
</tr>
<tr>
<td></td>
<td>10, 15, 18, 20</td>
<td>Blank Barb</td>
<td>CTK-10</td>
<td>TN-PC-10-M5</td>
<td>M8x1.25 Male</td>
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<tr>
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<td>30, 40, 60</td>
<td>Blank Barb</td>
<td>CTK-30</td>
<td>TN-PC-30-M8</td>
<td>M10x1.5 Male</td>
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(Bold Items are Stocked)
## Dimensions

### PCTK-5 and PCTK-7

<table>
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<tr>
<th>Model Number</th>
<th>ØA</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>Wt oz. (g)</th>
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<tbody>
<tr>
<td>PCTK-5-5</td>
<td>.20 (5)</td>
<td>1.32 (33.5)</td>
<td>.39 (10)</td>
<td>.55 (14)</td>
<td>.12 (3)</td>
<td>.47 (12)</td>
<td>.12 (3)</td>
<td>.56 (11)</td>
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<td>PCTK-7-5</td>
<td>.28 (7)</td>
<td>1.34 (34)</td>
<td>.39 (10)</td>
<td>.55 (14)</td>
<td>.12 (3)</td>
<td>.47 (12)</td>
<td>.12 (3)</td>
<td>.56 (11)</td>
</tr>
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<td>PCTK-10-5</td>
<td>.35 (9)</td>
<td>2.21 (56.2)</td>
<td>.63 (16)</td>
<td>.88 (22.5)</td>
<td>.12 (3)</td>
<td>.59 (15)</td>
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<td>.79 (20)</td>
<td>.20 (5)</td>
<td>3.00 (85)</td>
</tr>
</tbody>
</table>

* Cup Material
* Vacuum Port

**Vacuum Port**

---

**Catalog 0802-3/USA**

**Parker Hannifin Corporation**

**Pneumatic Division**

**Richland, Michigan**

**www.parker.com/pneumatic**
PCYK Vacuum Cup Assemblies

Installation

Note:
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage.
Tube I.D. listed below is a recommended minimum value, for that cup range, to optimize response time of the system. Your requirements may vary.

90° Barbed Adapter for PCG Cups

<table>
<thead>
<tr>
<th>Included in Kit</th>
<th>Cup Diameter (mm)</th>
<th>Vacuum Port</th>
<th>FYK &amp; CYK Fitting Part Number</th>
<th>Cup Screw Only</th>
<th>Mounting Thread</th>
<th>Tube ID</th>
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<td>FYK-5A</td>
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<td></td>
<td>90</td>
<td>N1 1/8 NPT</td>
<td>CYK-90-N1</td>
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<td>M16x1.5 Female</td>
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<td></td>
<td></td>
<td>G1 1/8 BSPP</td>
<td>CYK-90-G1</td>
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<tr>
<td></td>
<td></td>
<td>R1 1/8 BSPT</td>
<td>CYK-90-R1</td>
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Model Number Index

PCYK - 5 - NBR - —

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<th>Cup Diameter (mm)</th>
<th>Cup Material</th>
<th>Vacuum Port</th>
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<tr>
<td>5 (5)</td>
<td>Stocked</td>
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<tr>
<td>7 (7)</td>
<td>NBR Nitrile Rubber</td>
<td>1/8 NPT</td>
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<tr>
<td>10 (10)</td>
<td>SI Silicone</td>
<td>G1 1/8 BSPP</td>
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<td>15 (15)</td>
<td></td>
<td>R1 1/8 BSPT</td>
</tr>
<tr>
<td>20 (20)</td>
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</tbody>
</table>

Available
Consult Factory

- NBRE Nitrile ESD
- CR Chloroprene
- U Urethane
- SIE Silicone
e- ESD
- FKM Flouro Rubber
- SH High Temp

Note:
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage.
Tube I.D. listed below is a recommended minimum value, for that cup range, to optimize response time of the system. Your requirements may vary.
### Dimensions

#### PCYK-5 and PCYK-7

![Diagram of PCYK-5 and PCYK-7]

#### PCYK-10 thru PCYK-20

![Diagram of PCYK-10 and PCYK-20]

#### PCYK-30 thru PCYK-60

![Diagram of PCYK-30 and PCYK-60]

#### PCYK-90

![Diagram of PCYK-90]

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<th>E</th>
<th>F</th>
<th>G</th>
<th>Wt (oz. g)</th>
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<td>.78 (22)</td>
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<td>.60 (15.2)</td>
<td>1.90 (48.2)</td>
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<td>.78 (22)</td>
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<td>.24 (6)</td>
<td>.63 (16)</td>
<td>.78 (22)</td>
</tr>
<tr>
<td>PCYK-30-*</td>
<td>1.26 (32)</td>
<td>2.79 (70.8)</td>
<td>.79 (20)</td>
<td>1.26 (32)</td>
<td>.57 (14.5)</td>
<td>.31 (8)</td>
<td>.63 (16)</td>
<td>1.62 (46)</td>
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<tr>
<td>PCYK-40-*</td>
<td>1.65 (42)</td>
<td>3.12 (79.3)</td>
<td>.79 (20)</td>
<td>1.26 (32)</td>
<td>.87 (22)</td>
<td>.31 (8)</td>
<td>.63 (16)</td>
<td>1.94 (55)</td>
</tr>
<tr>
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<td>2.44 (62)</td>
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<td>1.26 (32)</td>
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<td>.31 (8)</td>
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<td>3.00 (85)</td>
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<td>3.46 (88)</td>
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<td>.43 (11)</td>
<td>—</td>
<td>10.58 (300)</td>
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</table>

* Cup Material
† Thread Size

Inches (mm)
PKG Automotive Vacuum Cups

PKG Series Vacuum Cups
The PKG is a single edge deep cup for products with a radius. The PKFG is a single lip design with a grooved foot pattern to prevent vacuum from deforming thin products. The PKJG is a single bellow cup designed to work with flexible and curved products. All of these designs incorporate a grooved and textured underside to increase frictional and holding forces. The cup assembly has a variety of connector designs to replace only the cup to minimize operating expenses.

Features
• Flat Design To Prevent Deforming Product
• Cup Replacement Simplified
• Recyclable Rubber
• Lower Maintenance Cost
• Soft Durometers
• Silicon Free
• 40mm to 110mm Diameters

Applications
The PKG Cups are well suited for all operations within automotive manufacturing; sheet metal destack, body assembly, press transfer, final assembly, fixtures.

PKG Female Adapter Series
Simple female connection for low profile positions secured to a plate or bracket.
Male screw to secure cup has an internal hex for easy assembly.
Fitting Material: Aluminum.

PKGT Adapter Series
Simple adapter connection for low profile positions secured to a plate or bracket.
Male screw to secure cup has an internal hex for easy assembly.
Fitting Material: Aluminum. O-Ring-210 Buna.

PKFF Female Adapter Series
Simple female connection for low profile positions secured to a plate or bracket.
Male screw to secure cup has an internal hex for easy assembly.
Fitting Material: Aluminum.

PKFT Adapter Series
Simple adapter connection for low profile positions secured to a plate or bracket.
Male screw to secure cup has an internal hex for easy assembly.
Fitting Material: Aluminum. O-Ring-210 Buna.

PKJF Female Adapter Series
Simple female connection for low profile positions secured to a plate or bracket.
Male screw to secure cup has an internal hex for easy assembly.
Fitting Material: Aluminum.

PKJT Adapter Series
Simple adapter connection for low profile positions secured to a plate or bracket. Male screw to secure cup has an internal hex for easy assembly.
Fitting Material: Aluminum. O-Ring-210 Buna.
Model Number Index (Cups Only) *(Bold Items are Stocked)*

**PKG - 60 - NBR**
- **Cup Diameter (mm):**
  - 60 (60)
  - 75 (75)
  - 100 (100)
- **Cup Material:**
  - Stocked: NBR Nitrile Rubber
  - Available (Consult Factory): U Urethane

**PKFG - 75 - NBR**
- **Cup Diameter (mm):**
  - 75 (75)
  - 100 (100)
- **Cup Material:**
  - Stocked: NBR Nitrile Rubber
  - Available (Consult Factory): U Urethane

**PKJG - 40 - NBR**
- **Cup Diameter (mm):**
  - 40 (40)
  - 50 (50)
  - 60 (60)
  - 80 (80)
  - 110 (110)
- **Cup Material:**
  - Stocked: NBR Nitrile Rubber
  - Available (Consult Factory): U Urethane

**Specifications**

<table>
<thead>
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<th>Suction Cup Material</th>
<th>NBR</th>
<th>U</th>
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<tbody>
<tr>
<td></td>
<td>Nitrile</td>
<td>Urethane</td>
</tr>
<tr>
<td>Operating Temperature (°C)</td>
<td>-20° to +120°</td>
<td>-30° to +120°</td>
</tr>
<tr>
<td>Color</td>
<td>Black</td>
<td>Blue</td>
</tr>
<tr>
<td>Hardness, Shore A (°Sh)</td>
<td>55 ±5</td>
<td>55 ±5</td>
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<td>Wear Resistance</td>
<td>• • • • •</td>
<td>• • • • •</td>
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<tr>
<td>Tear Strength</td>
<td>• • • • •</td>
<td>• • • • •</td>
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<tr>
<td>Aging Resistance</td>
<td>• • • • •</td>
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<td>Ozone Resistance</td>
<td>• • • • •</td>
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<td>Gasoline Resistance</td>
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<td>Oil Resistance</td>
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<td>Acid Resistance</td>
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<td>Mechanical Resistance</td>
<td>• •</td>
<td>• • • • •</td>
</tr>
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</table>

**Note:**
- • • • • • = excellent; • • • • = very good; • • • = good; • • = medium; • = poor; * = not recommended.
Application Guide

- Deep Cup for External Curves
- Slip Resistant Foot Pattern
- No Deformation
- Thin Flat Sheets
- Slip Resistant Foot Pattern
- Bellows for Any Curves
- Slip Resistant Foot Pattern

Main Data for PKG Suction Cups

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Cup Diameter Inches (mm)</th>
<th>Area cm²</th>
<th>Volume (V) Liters</th>
<th>Lifting Force @ 60% (N)</th>
<th>Cup Deflection (S) mm</th>
<th>Radius R (mm)</th>
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<tbody>
<tr>
<td>PKG-60-*</td>
<td>2.36 (60)</td>
<td>28.3</td>
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<td>86.5</td>
<td>9</td>
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<tr>
<td>PKG-75-*</td>
<td>2.95 (75)</td>
<td>44.2</td>
<td>.07</td>
<td>270</td>
<td>135</td>
<td>13</td>
</tr>
<tr>
<td>PKG-100-*</td>
<td>3.94 (100)</td>
<td>78.5</td>
<td>.09</td>
<td>480</td>
<td>240</td>
<td>17.3</td>
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<td>.03</td>
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<td>581</td>
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* Cup Material

Main Data for PKFG Suction Cups

Main Data for PKJG Suction Cups

• Deep Cup for External Curves
• Slip Resistant Foot Pattern
• No Deformation
• Thin Flat Sheets
• Slip Resistant Foot Pattern
• Bellows for Any Curves
• Slip Resistant Foot Pattern

• Deep Cup for External Curves
• Slip Resistant Foot Pattern
• No Deformation
• Thin Flat Sheets
• Slip Resistant Foot Pattern
• Bellows for Any Curves
• Slip Resistant Foot Pattern

Main Data for PKJG Suction Cups

• Deep Cup for External Curves
• Slip Resistant Foot Pattern
• No Deformation
• Thin Flat Sheets
• Slip Resistant Foot Pattern
• Bellows for Any Curves
• Slip Resistant Foot Pattern
### Vacuum Cups

#### PKG, PKFG, PKJG Vacuum Cups

**Dimensions**

**PKG-60 thru PKG-100**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA</th>
<th>ØB</th>
<th>ØC</th>
<th>ØD</th>
<th>E</th>
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<td>.41 (10.5)</td>
<td>—</td>
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<td>.73 (18.5)</td>
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<td>.75 (19)</td>
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<td>.73 (18.5)</td>
<td>1.10 (28)</td>
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<td>.55 (14)</td>
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<td>.35 (9)</td>
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<td>1.54 (39)</td>
<td>.67 (17)</td>
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<td>.91 (23)</td>
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<td>.35 (9)</td>
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* Cup Material

Inches (mm)
PKGF Vacuum Cup Assemblies

Model Number Index

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<thead>
<tr>
<th>PKGF - 60 - NBR - N3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cup Diameter (mm)</strong></td>
</tr>
<tr>
<td>60 (60) 75 (75) 100 (100)</td>
</tr>
<tr>
<td><strong>Cup Material</strong></td>
</tr>
<tr>
<td>Stocked NBR Nitrile Rubber</td>
</tr>
<tr>
<td>Available (Consult Factory)</td>
</tr>
<tr>
<td>U Urethane</td>
</tr>
<tr>
<td><strong>Mounting Thread</strong></td>
</tr>
<tr>
<td>N3 3/8 NPSF</td>
</tr>
<tr>
<td>G3 3/8 BSPP</td>
</tr>
</tbody>
</table>

(Bold Items are Stocked)

Installation

Note:
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage.

Note:
Simply remove the hex keyed male screw to replace cup.
Hex Key Size: 8mm

Female Adapter for PKG Cups

<table>
<thead>
<tr>
<th>Adapter Components</th>
<th>Adapter Part Numbers</th>
<th>Thread Sizes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female Cap Male</td>
<td>TN-PK-F-N3</td>
<td>3/8 NPT</td>
<td>Female Port</td>
</tr>
<tr>
<td></td>
<td>TN-PK-F-G3</td>
<td>3/8 BSPP</td>
<td>Female Port</td>
</tr>
<tr>
<td></td>
<td>TN-PK-100-M10</td>
<td>M10x1.5</td>
<td>Male Screw</td>
</tr>
<tr>
<td></td>
<td>PKG-C-6710</td>
<td>——</td>
<td>Cap</td>
</tr>
</tbody>
</table>

(Bold Items are Stocked)

Dimensions

PKGF-60 thru PKGF-100

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>PKGF-60-<em>-</em>-1</td>
<td>2.36 (60)</td>
<td>1.85 (46.9)</td>
<td>1.10 (28)</td>
<td>1.81 (46)</td>
<td>.35 (9)</td>
</tr>
<tr>
<td>PKGF-75-<em>-</em>-1</td>
<td>2.95 (75)</td>
<td>1.88 (47.8)</td>
<td>1.10 (28)</td>
<td>1.81 (46)</td>
<td>.51 (13)</td>
</tr>
<tr>
<td>PKGF-100-<em>-</em>-1</td>
<td>3.94 (100)</td>
<td>2.16 (54.9)</td>
<td>1.10 (28)</td>
<td>1.81 (46)</td>
<td>.68 (17.3)</td>
</tr>
</tbody>
</table>

Inches (mm)
* Cup Material
† Thread Size
PKGT Vacuum Cup Assemblies

Model Number Index (Bold Items are Stocked)

PKGT - 60 - NBR

<table>
<thead>
<tr>
<th>Cup Diameter (mm)</th>
<th>Cup Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 (60)</td>
<td>NBR Nitrile Rubber</td>
</tr>
<tr>
<td>75 (75)</td>
<td></td>
</tr>
<tr>
<td>100 (100)</td>
<td></td>
</tr>
</tbody>
</table>

Installation

**Note:**
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage.

Note:
Simply remove the hex keyed male screw to replace cup.

Hex Key Size: 8mm

Adapter for PKG Cups (Bold Items are Stocked)

<table>
<thead>
<tr>
<th>Adapter Components</th>
<th>Adapter Part Numbers</th>
<th>Thread Sizes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adapter</td>
<td>TN-PK-T</td>
<td>—</td>
<td>Adapter / O-ring</td>
</tr>
<tr>
<td>Cap</td>
<td>PKG-C-6710</td>
<td>—</td>
<td>Cap</td>
</tr>
<tr>
<td>Male</td>
<td>TN-PK-100-M10</td>
<td>M10x1.5</td>
<td>Male Screw</td>
</tr>
</tbody>
</table>

Dimensions

PKG-60 and PKGT-100

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>PKGT-60-*</td>
<td>2.36 (60)</td>
<td>1.33 (34)</td>
<td>1.10 (28)</td>
<td>1.81 (46)</td>
<td>.04 (1.1)</td>
</tr>
<tr>
<td>PKGT-75-*</td>
<td>2.95 (75)</td>
<td>1.38 (35)</td>
<td>1.10 (28)</td>
<td>1.81 (46)</td>
<td>.04 (1.1)</td>
</tr>
<tr>
<td>PKGT-100-*</td>
<td>3.94 (100)</td>
<td>1.65 (42)</td>
<td>1.10 (28)</td>
<td>1.81 (46)</td>
<td>.05 (1.3)</td>
</tr>
</tbody>
</table>

Inches (mm)
* Cup Material
**PKFF Vacuum Cup Assemblies**

**Model Number Index**

- **PKFF - 75 - NBR - N3**
  - **Cup Diameter (mm)**
    - 75 (75)
    - 100 (100)
  - **Cup Material**
    - Stocked: NBR Nitrile Rubber
    - Available: (Consult Factory) U Urethane
  - **Mounting Thread**
    - N3 3/8 NPSF
    - G3 3/8 BSPP

**Installation**

**Note:** When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage.

**Note:** Simply remove the hex keyed male screw to replace cup. Hex Key Size: 8mm

**Female Adapter for PKFG Cups**

<table>
<thead>
<tr>
<th>Adapter Components</th>
<th>Adapter Part Numbers</th>
<th>Thread Sizes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female Cap</td>
<td>TN-PK-F-N3</td>
<td>3/8 NPT</td>
<td>Female Port</td>
</tr>
<tr>
<td>Male</td>
<td>TN-PK-F-G3</td>
<td>3/8 BSPP</td>
<td>Female Port</td>
</tr>
<tr>
<td></td>
<td>TN-PK-100-M10</td>
<td>M10x1.5</td>
<td>Male Screw</td>
</tr>
<tr>
<td></td>
<td>PKG-C-6710</td>
<td>—</td>
<td>Cap</td>
</tr>
</tbody>
</table>

**Dimensions**

PKFF-75 thru PKFF-100

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
</table>
| PKFF-75-*  
| PKFF-100-*   | 1.57 (40) | 1.91 (48.5) | 1.10 (28) | 1.81 (46) | .20 (5) |
| PKFF-75-*  
| PKFF-100-*   | 1.97 (50) | 2.19 (55.5) | 1.10 (28) | 1.81 (46) | .31 (8) |

Inches (mm)

* Cup Material
† Thread Size
PKFT Vacuum Cup Assemblies

Model Number Index

<table>
<thead>
<tr>
<th>PKFT - 75 - NBR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cup Diameter (mm)</td>
</tr>
<tr>
<td>75 (75)</td>
</tr>
<tr>
<td>100 (100)</td>
</tr>
<tr>
<td>Cup Material</td>
</tr>
<tr>
<td>Stocked</td>
</tr>
<tr>
<td>NBR Nitrile Rubber</td>
</tr>
<tr>
<td>Available (Consult Factory)</td>
</tr>
<tr>
<td>U Urethane</td>
</tr>
</tbody>
</table>

(Bold Items are Stocked)

Installation

Note:
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage.

Note:
Simply remove the hex keyed male screw to replace cup.
Hex Key Size: 8mm

Adapter for PKFG Cups

<table>
<thead>
<tr>
<th>Adapter Components</th>
<th>Adapter Part Numbers</th>
<th>Thread Sizes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adapter</td>
<td>TN-PK-T</td>
<td>—</td>
<td>Adapter / O-ring</td>
</tr>
<tr>
<td>Cap</td>
<td>PKG-C-6710</td>
<td>—</td>
<td>Cap</td>
</tr>
<tr>
<td>Male</td>
<td>TN-PK-100-M10</td>
<td>M10x1.5</td>
<td>Male Screw</td>
</tr>
</tbody>
</table>

(Bold Items are Stocked)

Dimensions

PKFT-75 thru
PKFT-10

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>PKGT-75-*</td>
<td>1.57 (40)</td>
<td>1.38 (35)</td>
<td>1.10 (28)</td>
<td>1.81 (46)</td>
<td>.20 (5)</td>
</tr>
<tr>
<td>PKGT-100-*</td>
<td>1.97 (50)</td>
<td>1.65 (42)</td>
<td>1.10 (28)</td>
<td>1.81 (46)</td>
<td>.31 (8)</td>
</tr>
</tbody>
</table>

Inches (mm)
* Cup Material
PKJF Vacuum Cup Assemblies

**Model Number Index**

<table>
<thead>
<tr>
<th>PKJF</th>
<th>60</th>
<th>NBR</th>
<th>N3</th>
</tr>
</thead>
</table>

- **Cup Diameter (mm):**
  - 40 (40)
  - 50 (50)
  - 60 (60)
  - 80 (80)
  - 110 (110)

- **Cup Material:**
  - Stocked: NBR, Nitrile Rubber
  - Available: Consult Factory, Urethane

- **Mounting Thread:**
  - N3 3/8 NPSF
  - G3 3/8 BSPP

(Bold Items are Stocked)

**Installation**

*Note:* When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage.

**Note:** Simply remove the hex keyed male screw to replace cup.

Hex Key Size: 8mm

**Female Adapter for PKFG Cups**

<table>
<thead>
<tr>
<th>Adapter Components</th>
<th>Adapter Part Numbers</th>
<th>Thread Sizes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female Cap</td>
<td>TN-PK-F-N3</td>
<td>3/8 NPT</td>
<td>Female Port</td>
</tr>
<tr>
<td>Male</td>
<td>TN-PK-F-G3</td>
<td>3/8 BSPP</td>
<td>Female Port</td>
</tr>
<tr>
<td></td>
<td>TN-PK-100-M10</td>
<td>M10x1.5</td>
<td>Male Screw</td>
</tr>
<tr>
<td></td>
<td>PKG-C-6710</td>
<td>—</td>
<td>Cap</td>
</tr>
</tbody>
</table>

(Bold Items are Stocked)

**Dimensions**

**PKJF-75 thru PKJF-100**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA (mm)</th>
<th>B (mm)</th>
<th>C (mm)</th>
<th>D (mm)</th>
<th>E (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PKJF-40-*-†</td>
<td>1.57 (40)</td>
<td>2.03 (51.5)</td>
<td>1.10 (28)</td>
<td>1.81 (46)</td>
<td>.41 (10.5)</td>
</tr>
<tr>
<td>PKJF-50-*-†</td>
<td>1.97 (50)</td>
<td>2.03 (51.5)</td>
<td>1.10 (28)</td>
<td>1.81 (46)</td>
<td>.75 (19)</td>
</tr>
<tr>
<td>PKJF-60-*-†</td>
<td>2.23 (60)</td>
<td>2.03 (51.5)</td>
<td>1.10 (28)</td>
<td>1.81 (46)</td>
<td>.55 (14)</td>
</tr>
<tr>
<td>PKJF-80-*-†</td>
<td>3.15 (80)</td>
<td>2.19 (55.5)</td>
<td>1.10 (28)</td>
<td>1.81 (46)</td>
<td>.67 (17)</td>
</tr>
<tr>
<td>PKJF-110-*-†</td>
<td>4.33 (110)</td>
<td>2.62 (66.5)</td>
<td>1.10 (28)</td>
<td>1.81 (46)</td>
<td>.91 (23)</td>
</tr>
</tbody>
</table>

Inches (mm)

* Cup Material
† Thread Size
PKJT Vacuum Cup Assemblies

Model Number Index

<table>
<thead>
<tr>
<th>PKJT - 60 - NBR</th>
</tr>
</thead>
</table>

Cup Diameter (mm)

| 40 (40) | 50 (50) | 60 (60) | 80 (80) | 110 (110) |

Cup Material

- Stocked
- NBR Nitrile Rubber
- Available
  - (Consult Factory)
    - U Urethane

(Bold Items are Stocked)

Installation

Note:
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage.

Note:
Simply remove the hex keyed male screw to replace cup.

Hex Key Size: 8mm

Adapter for PKJG Cups

<table>
<thead>
<tr>
<th>Adapter Components</th>
<th>Adapter Part Numbers</th>
<th>Thread Sizes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adapter / O-ring</td>
<td>TN-PK-T</td>
<td>—</td>
<td>Adapter / O-ring</td>
</tr>
<tr>
<td>Cap</td>
<td>PKG-C-6710</td>
<td>—</td>
<td>Cap</td>
</tr>
<tr>
<td>Male Screw</td>
<td>TN-PK-100-M10</td>
<td>M10x1.5</td>
<td>Male Screw</td>
</tr>
</tbody>
</table>

Dimensions

PKJT-40 thru
PKJT-110

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>PKJT-40-*</td>
<td>1.57 (40)</td>
<td>1.50 (38)</td>
<td>1.10 (28)</td>
<td>1.81 (46)</td>
<td>.41 (10.5)</td>
</tr>
<tr>
<td>PKJT-50-*</td>
<td>1.97 (50)</td>
<td>1.50 (38)</td>
<td>1.10 (28)</td>
<td>1.81 (46)</td>
<td>.75 (19)</td>
</tr>
<tr>
<td>PKJT-60-*</td>
<td>2.23 (60)</td>
<td>1.50 (38)</td>
<td>1.10 (28)</td>
<td>1.81 (46)</td>
<td>.55 (14)</td>
</tr>
<tr>
<td>PKJT-80-*</td>
<td>3.15 (80)</td>
<td>1.65 (42)</td>
<td>1.10 (28)</td>
<td>1.81 (46)</td>
<td>.67 (17)</td>
</tr>
<tr>
<td>PKJT-110-*</td>
<td>4.33 (110)</td>
<td>2.09 (53)</td>
<td>1.10 (28)</td>
<td>1.81 (46)</td>
<td>.91 (23)</td>
</tr>
</tbody>
</table>

Inches (mm)

* Cup Material
**PUGB**

**Flat Swivel Vacuum Cups**

![PUGB Vacuum Cups](image)

**Features**
- Internal Swivel Joint Design
- 30° Inclusive Angle for Flexible Products
- Increased Stability for Horizontal Lifts
- Lower Maintenance Costs
- 10mm to 200mm Diameters

**Applications**
The single edge swivel cup is for smooth surfaces with slightly curved surfaces or flexible sheets with substantial weights. Typically, lift capacities and break away forces are higher for flat cups which may be necessary for good stability during lift and transfer. The position of the internal swivel joint minimizes moments during lift and transfer. The swivel joint compensates for load and angular misalignment instead of the cup material, prolonging cup life. Maintenance costs are minimized by replacing only the cup portion of the assembly.

**PUGB Series Vacuum Cups**

30° inclusive swivel, single lip cup for smooth, slightly curved surfaces and flexible products. Rigid construction provides good stability against acceleration and deceleration forces during product transfer.

**PUTK Series**

**Barbed Bulkhead**

Top stem connectors secured with jam nuts and allow tubing connections at the top side. Nickel plated brass materials.

**PUTYS Series Bulkhead Level Compensator**

303 stainless steel construction secured with jam nuts. Spring biased compensators can absorb impacts of down-strokes and adjust for different levels of pick up points. 303 stainless corrosion resistant materials with drymet bushings increases the strength and life.
**Model Number Index (Cups Only)**

**PUG - 10 - NBR**

- **Cup Diameter (mm)**
  - 25 (25) 80 (80)
  - 30 (30) 100 (100)
  - 35 (35) 120 (120)
  - 40 (40) 150 (150)
  - 50 (50) 200 (200)
  - 60 (60)

- **Cup Material**
  - Stocked
  - NBR Nitrile Rubber
  - Silicone

  **Available (Consult Factory)**
  - CR Chloroprene
  - U Urethane
  - FKM Flouro Rubber
  - SH High Temp

**Model Number Index**

**PUGB - 10 - NBR**

- **Cup Diameter (mm)**
  - 25 (25) 80 (80)
  - 30 (30) 100 (100)
  - 35 (35) 120 (120)
  - 40 (40) 150 (150)
  - 50 (50) 200 (200)
  - 60 (60)

- **Cup Material**
  - Stocked
  - NBR Nitrile Rubber
  - Silicone

  **Available (Consult Factory)**
  - CR Chloroprene
  - U Urethane
  - FKM Flouro Rubber
  - SH High Temp

**Specifications**

<table>
<thead>
<tr>
<th>Suction Cup Material</th>
<th>NBR Nitrile</th>
<th>CR Chloroprene</th>
<th>SI Silicone</th>
<th>U Urethane</th>
<th>FKM Flouro Rubber</th>
<th>SH High Temp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Black</td>
<td>Green</td>
<td>White</td>
<td>Blue</td>
<td>Black / White Dot</td>
<td>Grey</td>
</tr>
<tr>
<td>Hardness, Shore A (“Sh)</td>
<td>55 ±5</td>
<td>55 ±5</td>
<td>55 ±5</td>
<td>55 ±5</td>
<td>70 ±5</td>
<td>55 ±5</td>
</tr>
<tr>
<td>Electrical Resistance (Ωm)</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Wear Resistance</td>
<td>*****</td>
<td>*****</td>
<td>—</td>
<td>*****</td>
<td>*****</td>
<td>****</td>
</tr>
<tr>
<td>Tear Strength</td>
<td>*****</td>
<td>*****</td>
<td>—</td>
<td>*****</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Aging Resistance</td>
<td>*****</td>
<td>*****</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
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<tr>
<td>Ozone Resistance</td>
<td>*****</td>
<td>*****</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
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<tr>
<td>Gasoline Resistance</td>
<td>*****</td>
<td>*****</td>
<td>—</td>
<td>—</td>
<td>—</td>
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</tr>
<tr>
<td>Oil Resistance</td>
<td>*****</td>
<td>*****</td>
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<td>Alkali Resistance</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
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</tr>
<tr>
<td>Chemical Resistance</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Mechanical Resistance</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

- ***** = excellent;  ***** = very good;  ***** = good;  **** = medium;  *** = poor;  * = not recommended

* ESD: Electric Static Dissipative Material
Application Guide

Swivel Bellows

- Angles Pickup
- Fixtures for Curved Product

Main Data for Swivel Bellows PUG Cups

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Cup Diameter Inches (mm)</th>
<th>Area cm²</th>
<th>Volume (V) Liters</th>
<th>Lifting Force @ 60% (N)</th>
<th>Cup Deflection (S) mm</th>
<th>Radius R (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUGB-25-*</td>
<td>.98 (25)</td>
<td>4.91</td>
<td>0.0013</td>
<td>30.0</td>
<td></td>
<td>2.5</td>
</tr>
<tr>
<td>PUGB-30-*</td>
<td>1.18 (30)</td>
<td>7.07</td>
<td>0.0018</td>
<td>43.2</td>
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<td>2</td>
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<tr>
<td>PUGB-35-*</td>
<td>1.38 (35)</td>
<td>9.62</td>
<td>0.0026</td>
<td>58.9</td>
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<td>3</td>
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<tr>
<td>PUGB-40-*</td>
<td>1.57 (40)</td>
<td>12.6</td>
<td>0.0040</td>
<td>76.9</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>PUGB-50-*</td>
<td>1.57 (40)</td>
<td>19.6</td>
<td>0.0070</td>
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<tr>
<td>PUGB-60-*</td>
<td>2.36 (60)</td>
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<td>0.0090</td>
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<td>PUGB-80-*</td>
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<td>PUGB-100-*</td>
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<td>0.045</td>
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<td>PUGB-150-*</td>
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<td>0.177</td>
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<td>PUGB-200-*</td>
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<td>314.0</td>
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* Cup Material
PUTK Vacuum Cup Assemblies

**Installation**

*Note:* When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage. Tube I.D. listed below is a recommended minimum value, for that cup range, to optimize response time of the system. Your requirements may vary.

---

**Barbed Bulkhead for PUGB Cups**

(Bold Items are Stocked)

<table>
<thead>
<tr>
<th>Included in Kit</th>
<th>Cup Diameter (mm)</th>
<th>Vacuum Port</th>
<th>Mounting Thread</th>
<th>UTK Fitting Part Number</th>
<th>Tube ID</th>
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<tr>
<td></td>
<td>25, 30, 35</td>
<td>Blank Barb</td>
<td>M10x1.5 Male</td>
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<td></td>
<td>40, 50</td>
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<tr>
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<td>60, 80, 100</td>
<td>N1 1/8 NPT</td>
<td>M16x1.5 Male</td>
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<tr>
<td></td>
<td></td>
<td>G1 1/8 BSPP</td>
<td></td>
<td>UTK-60-G1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>R1 1/8 BSPT</td>
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<td>UTK-60-R1</td>
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<tr>
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<td>120, 150</td>
<td>N1 1/8 NPT</td>
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<td>G1 1/8 BSPP</td>
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<td>UTK-120-G1</td>
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<td>200</td>
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<td></td>
<td>G2 1/4 BSPP</td>
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<td>UTK-200-G2</td>
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<td>R2 1/4 BSPT</td>
<td></td>
<td>UTK-200-R2</td>
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</tr>
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</table>

*Bold Items are Stocked*
## Dimensions

### PUTK-25 thru PUTK-35

**PUTK-25-**
- ØA: 0.98 (25)
- B: 2.28 (70.5)
- C: 0.63 (16)
- D: 0.71 (18)
- E: 0.10 (2.5)
- F: 0.79 (20)
- G: 0.20 (5)
- H: 0.53 (13.5)
- Wt: 2.3 (66)

**PUTK-30-**
- ØA: 1.18 (30)
- B: 2.80 (71)
- C: 0.63 (16)
- D: 0.71 (18)
- E: 0.08 (2)
- F: 0.79 (20)
- G: 0.20 (5)
- H: 0.55 (14)
- Wt: 2.5 (71)

**PUTK-35-**
- ØA: 1.38 (35)
- B: 2.83 (72)
- C: 0.63 (16)
- D: 0.71 (18)
- E: 0.12 (3)
- F: 0.79 (20)
- G: 0.20 (5)
- H: 0.59 (15)
- Wt: 2.5 (71)

**PUTK-40-**
- ØA: 1.57 (40)
- B: 3.03 (77)
- C: 0.63 (16)
- D: 0.91 (23)
- E: 0.12 (3)
- F: 0.79 (20)
- G: 0.20 (5)
- H: 0.43 (11)
- Wt: 4.2 (118)

**PUTK-50-**
- ØA: 1.97 (50)
- B: 3.07 (78)
- C: 0.63 (16)
- D: 0.91 (23)
- E: 0.15 (4)
- F: 0.79 (20)
- G: 0.20 (5)
- H: 0.47 (12)
- Wt: 4.3 (121)

**PUTK-60-**
- ØA: 2.36 (60)
- B: 3.66 (93)
- C: 0.63 (16)
- D: 1.09 (29)
- E: 0.24 (6)
- F: 0.91 (23)
- G: 0.24 (6)
- H: 0.63 (16)
- Wt: 12.4 (352)

**PUTK-75-**
- ØA: 3.15 (75)
- B: 3.74 (95)
- C: 1.38 (35)
- D: 2.16 (55)
- E: 0.24 (6)
- F: 0.91 (23)
- G: 0.24 (6)
- H: 0.71 (18)
- Wt: 15.7 (444)

**PUTK-100-**
- ØA: 3.94 (100)
- B: 3.74 (95)
- C: 1.38 (35)
- D: 2.16 (55)
- E: 0.24 (6)
- F: 0.91 (23)
- G: 0.24 (6)
- H: 0.71 (18)
- Wt: 20.0 (568)

**PUTK-120-**
- ØA: 4.72 (120)
- B: 5.04 (128)
- C: 1.81 (46)
- D: 2.95 (75)
- E: 0.37 (8)
- F: 1.26 (32)
- G: 0.37 (8)
- H: 0.91 (23)
- Wt: 34.0 (930)

**PUTK-150-**
- ØA: 5.91 (150)
- B: 5.12 (130)
- C: 1.81 (46)
- D: 2.95 (75)
- E: 0.39 (10)
- F: 1.26 (32)
- G: 0.37 (8)
- H: 0.98 (25)
- Wt: 41.0 (1107)

**PUTK-200-**
- ØA: 7.87 (200)
- B: 5.51 (140)
- C: 1.81 (46)
- D: 2.80 (71)
- E: 0.47 (12)
- F: 1.26 (32)
- G: 0.37 (8)
- H: 1.14 (29)
- Wt: 83.0 (2340)

---

**PUTK-60 thru PUTK-100**

**PUTK-120 thru PUTK-150**

**PUTK-200**

* Model Number
  - PUTK-25*
  - PUTK-30*
  - PUTK-35*
  - PUTK-40*
  - PUTK-50*
  - PUTK-60*
  - PUTK-75*
  - PUTK-100*
  - PUTK-120*
  - PUTK-150*
  - PUTK-200*

* Cup Material

**Inches (mm)**

---

**Model Number** | ØA (In) | B (In) | C (In) | D (In) | E (In) | F (In) | G (In) | H (In) | Wt (oz)
--- | --- | --- | --- | --- | --- | --- | --- | --- | ---
PUTK-25* | 0.98 (25) | 2.28 (70.5) | 0.63 (16) | 0.71 (18) | 0.10 (2.5) | 0.79 (20) | 0.20 (5) | 0.53 (13.5) | 2.3 (66)
PUTK-30* | 1.18 (30) | 2.80 (71) | 0.63 (16) | 0.71 (18) | 0.08 (2) | 0.79 (20) | 0.20 (5) | 0.55 (14) | 2.5 (71)
PUTK-35* | 1.38 (35) | 2.83 (72) | 0.63 (16) | 0.71 (18) | 0.12 (3) | 0.79 (20) | 0.20 (5) | 0.59 (15) | 2.5 (71)
PUTK-40* | 1.57 (40) | 3.03 (77) | 0.63 (16) | 0.91 (23) | 0.12 (3) | 0.79 (20) | 0.20 (5) | 0.43 (11) | 4.2 (118)
PUTK-50* | 1.97 (50) | 3.07 (78) | 0.63 (16) | 0.91 (23) | 0.15 (4) | 0.79 (20) | 0.20 (5) | 0.47 (12) | 4.3 (121)
PUTK-60* | 2.36 (60) | 3.66 (93) | 0.63 (16) | 1.09 (29) | 0.20 (5) | 0.91 (23) | 0.24 (6) | 0.63 (16) | 12.4 (352)
PUTK-75* | 3.15 (75) | 3.74 (95) | 1.38 (35) | 2.16 (55) | 0.24 (6) | 0.91 (23) | 0.24 (6) | 0.71 (18) | 15.7 (444)
PUTK-100* | 3.94 (100) | 3.74 (95) | 1.38 (35) | 2.16 (55) | 0.24 (6) | 0.91 (23) | 0.24 (6) | 0.71 (18) | 20.0 (568)
PUTK-120* | 4.72 (120) | 5.04 (128) | 1.81 (46) | 2.95 (75) | 0.37 (8) | 1.26 (32) | 0.37 (8) | 0.91 (23) | 34.0 (930)
PUTK-150* | 5.91 (150) | 5.12 (130) | 1.81 (46) | 2.95 (75) | 0.39 (10) | 1.26 (32) | 0.37 (8) | 0.98 (25) | 41.0 (1107)
PUTK-200* | 7.87 (200) | 5.51 (140) | 1.81 (46) | 2.80 (71) | 0.47 (12) | 1.26 (32) | 0.37 (8) | 1.14 (29) | 83.0 (2340)

---

**Inches (mm)**

---

* Cup Material
PUYK Vacuum Cup Assemblies

Model Number Index

PUYK - 10 - NBR - —

<table>
<thead>
<tr>
<th>Cup Diameter (mm)</th>
<th>Vacuum Port</th>
<th>Mounting Thread</th>
<th>UYK Fitting Part Number</th>
<th>Tube ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 (25)</td>
<td>Blank</td>
<td>Barb</td>
<td>M6x1 Female</td>
<td>UYK-20</td>
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<td>30 (30)</td>
<td>Blank</td>
<td>Barb</td>
<td></td>
<td>.157 (4)</td>
</tr>
<tr>
<td>35 (35)</td>
<td>Blank</td>
<td>Barb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40 (40)</td>
<td>Blank</td>
<td>Barb</td>
<td>M8x1.25 Female</td>
<td>UYK-40</td>
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<tr>
<td>50 (50)</td>
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<td>Barb</td>
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<td>.157 (4)</td>
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90° Barbed Adapter for PUGB Cups

<table>
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<tr>
<th>Included in Kit</th>
<th>Cup Diameter (mm)</th>
<th>Vacuum Port</th>
<th>Mounting Thread</th>
<th>UYK Fitting Part Number</th>
<th>Tube ID</th>
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<tr>
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<td>25, 30, 35</td>
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<td>Barb</td>
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<td>UYK-20</td>
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<td>Blank</td>
<td>Barb</td>
<td>M8x1.25 Female</td>
<td>UYK-40</td>
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Installation

Note:
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage. Tube I.D. listed below is a recommended minimum value, for that cup range, to optimize response time of the system. Your requirements may vary.

Note:
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage. Tube I.D. listed below is a recommended minimum value, for that cup range, to optimize response time of the system. Your requirements may vary.

90° Barbed Adapter for PUGB Cups

<table>
<thead>
<tr>
<th>Included in Kit</th>
<th>Cup Diameter (mm)</th>
<th>Vacuum Port</th>
<th>Mounting Thread</th>
<th>UYK Fitting Part Number</th>
<th>Tube ID</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25, 30, 35</td>
<td>Blank</td>
<td>Barb</td>
<td>M6x1 Female</td>
<td>UYK-20</td>
</tr>
<tr>
<td></td>
<td>40, 50</td>
<td>Blank</td>
<td>Barb</td>
<td>M8x1.25 Female</td>
<td>UYK-40</td>
</tr>
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Inches (mm)
# Vacuum Cups

## PUYK Vacuum Cup Assemblies

### Dimensions

#### PUYK-25 thru PUYK-35

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>Wt oz (g)</th>
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</thead>
<tbody>
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<td>PUYK-25-*</td>
<td>.98</td>
<td>1.95</td>
<td>.63</td>
<td>1.30</td>
<td>.10</td>
<td>.31</td>
<td>.96</td>
<td>.37</td>
<td>2.3 (66)</td>
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<tr>
<td>PUYK-30-*</td>
<td>1.18</td>
<td>1.97</td>
<td>.63</td>
<td>1.30</td>
<td>.08</td>
<td>.31</td>
<td>.96</td>
<td>.39</td>
<td>2.6 (73)</td>
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<tr>
<td>PUYK-35-*</td>
<td>1.38</td>
<td>2.01</td>
<td>.63</td>
<td>1.30</td>
<td>.12</td>
<td>.31</td>
<td>.96</td>
<td>.43</td>
<td>2.6 (73)</td>
</tr>
<tr>
<td>PUYK-40-*</td>
<td>1.57</td>
<td>2.32</td>
<td>.71</td>
<td>1.50</td>
<td>.12</td>
<td>.39</td>
<td>1.00</td>
<td>.43</td>
<td>4.0 (116)</td>
</tr>
<tr>
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<td>2.36</td>
<td>.71</td>
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<td>.15</td>
<td>.39</td>
<td>1.00</td>
<td>.47</td>
<td>4.1 (117)</td>
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Inches (mm)

* Cup Material

#### PUYK-40 and PUYK-50

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<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>Wt oz (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUYK-40-*</td>
<td>1.18</td>
<td>1.97</td>
<td>.63</td>
<td>1.30</td>
<td>.08</td>
<td>.31</td>
<td>.96</td>
<td>.39</td>
<td>2.6 (73)</td>
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<tr>
<td>PUYK-50-*</td>
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<td>2.01</td>
<td>.63</td>
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<td>.12</td>
<td>.31</td>
<td>.96</td>
<td>.43</td>
<td>2.6 (73)</td>
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</table>
### PUTYS Vacuum Cup Assemblies

![PUTYS Vacuum Cup Assemblies](image)

**Installation**

**Note:**
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage. Shown are interchangeable connectors & plugs for port connections.

### Bulkhead Level Compensator for PUGB Cups

<table>
<thead>
<tr>
<th>Included in Kit</th>
<th>Cup Diameter (mm)</th>
<th>Vacuum Port</th>
<th>UTYS Assembly Part Number</th>
<th>Stroke</th>
<th>F1 lbf (N)</th>
<th>F2 lbf (N)</th>
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<tbody>
<tr>
<td></td>
<td>25, 30, 35</td>
<td>M5</td>
<td>UTYS-20-6</td>
<td>6mm</td>
<td>.56 (2.5)</td>
<td>.79 (3.4)</td>
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<td>UTYS-20-15</td>
<td>15mm</td>
<td>.56 (2.5)</td>
<td>1.2 (4.9)</td>
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<td></td>
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<td></td>
<td>UTYS-20-30</td>
<td>30mm</td>
<td>.67 (2.9)</td>
<td>1.4 (5.9)</td>
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<tr>
<td></td>
<td>40, 50</td>
<td>M5</td>
<td>UTYS-40-6</td>
<td>6mm</td>
<td>.56 (2.5)</td>
<td>.79 (3.4)</td>
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<tr>
<td></td>
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<td>UTYS-40-15</td>
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<td>1.2 (4.9)</td>
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<td>UTYS-40-30</td>
<td>30mm</td>
<td>.67 (2.9)</td>
<td>1.4 (5.9)</td>
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<tr>
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<td>60, 80, 100</td>
<td>N1</td>
<td>UTYS-60-30</td>
<td>30mm</td>
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<td>3.6 (15.6)</td>
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<td>UTYS-60-70</td>
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<td>4.8 (21)</td>
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<tr>
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<td>120, 150</td>
<td>N2</td>
<td>UTYS-120-20</td>
<td>20mm</td>
<td>3.6 (15.6)</td>
<td>6.8 (29)</td>
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<tr>
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<td></td>
<td></td>
<td>UTYS-120-70</td>
<td>70mm</td>
<td>3.4 (14.7)</td>
<td>6.8 (29)</td>
</tr>
<tr>
<td></td>
<td>200</td>
<td>N2</td>
<td>UTYS-200-20</td>
<td>20mm</td>
<td>3.6 (15.6)</td>
<td>6.8 (29)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>UTYS-200-70</td>
<td>70mm</td>
<td>3.4 (14.7)</td>
<td>6.8 (29)</td>
</tr>
</tbody>
</table>

**NOTE:**
*Stroke reduced by 5mm due to shock pad.

---

**Model Number Index**

<table>
<thead>
<tr>
<th>PUTYS</th>
<th>NBR</th>
<th>M5</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Cup Diameter (mm):** 25, 30, 35, 30 (30), 35 (35), 40 (40), 50 (50), 60 (60), 80 (80), 100 (100), 120 (120), 150 (150), 200 (200)

- **Stroke (mm):** 6, 15, 30, 30*, 80 (80), 50*, 70*, 20, 70

- **Cup Material:**
  - **Stocked:** NBR Nitrile Rubber, SI Silicone
  - **Available (Consult Factory):** CR Chloroprene, U Urethane, FKM Flouro Rubber, SH High Temp

- **Vacuum Ports:**
  - M5 M5 N1 1/8 NPT N2 1/4 NPT

**Compression Force**

![Compression Force](image)

- **F1** 0% of Stroke
- **F2** 100% of Stroke

---

**PUTYS Vacuum Cup Assemblies**

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatic
Dimensions

PUTYS256 thru PUTYS3530

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>Wt oz (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUTYS256*</td>
<td>.79 (20)</td>
<td>3.54 (90)</td>
<td>.63 (16)</td>
<td>.39 (10)</td>
<td>.10 (2.5)</td>
<td>.24 (6)</td>
<td>.20 (5)</td>
<td>1.42 (36)</td>
<td>3.1 (89)</td>
</tr>
<tr>
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Inches (mm)

* Cup Material
## Dimensions

**PUTYS6030 thru PUTYS10070**

### Dimensions

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<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>Wt oz (g)</th>
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Inches (mm)

* Cup Material
## Dimensions

**PUTYS12020 thru PUTYS20070**

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<th>E (in)</th>
<th>F (in)</th>
<th>G (in)</th>
<th>H (in)</th>
<th>J (in)</th>
<th>Wt oz. (g)</th>
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Inches (mm)

* Cup Material
PCD Ring Vacuum Cups

Features
- Ring Design
- Stable Compensation for Transfer
- Minimum Contact
- 28mm to 50mm Diameters

Applications
These ring suction cups are popular in CD / DVD manufacturing and semi-conductor wafer handling applications. The small edge design minimizes contact with the product. The short stroke minimizes response time and provides stability during transfer in high speed production.

PCD Series Vacuum Cups
Ring suction cups with quality, friendly materials. Inherent symmetrical design provides stability during high speed transfer.

PCDM Series Male Thread Connector
Simple male connection for low profile applications.
Material: Aluminum.

PCDF Series Female Thread Connector
Simple female connection for low profile applications.
Material: Aluminum.
Ordering Information

Model Number Index (Cups Only)

PCD - 23 - NBR

Cup I.D. (mm)

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<tr>
<th>Cup I.D. (mm)</th>
<th>20 (20)</th>
<th>23 (23)</th>
<th>29.5 (29.5)</th>
<th>34 (34)</th>
<th>38 (38)</th>
<th>46 (46)</th>
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Cup Material

- Stocked
- SI Silicone

Available (Consult Factory)
- NBR Nitrile Rubber
- SIE Silicone ESD

(Bold Items are Stocked)

Dimensions

<table>
<thead>
<tr>
<th>Model Number</th>
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<th>C</th>
<th>D</th>
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Inches (mm) * Cup Material

Specifications

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<td>Silicone</td>
<td>Silicone ESD*</td>
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<td>White</td>
<td>Black / Red Dot</td>
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<td>55 ±5</td>
<td>55 ±5</td>
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<td>—</td>
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<td>Oil Resistance</td>
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******** = excellent; ***** = very good; **** = good; *** = medium; ** = poor; * = not recommended

* ESD: Electric Static Dissipative Material
### PCDM & PCDF Vacuum Cup Assemblies

![Image of PCD Vacuum Cups](image_url)

#### Male Holder for PCD Cups

<table>
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<th>PCD Cup Diameter (mm)</th>
<th>Holder Part Number</th>
<th>Mounting Thread</th>
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<td>CDM-20</td>
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<td>CDM-23</td>
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#### Female Holder for PCD Cups

<table>
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<td>CDF-38</td>
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#### Model Number Index

**PCD**

- **Thread Connection**
  - M Male
  - F Female

- **Cup I.D. (mm)**
  - 20 (20)
  - 23 (23)
  - 29.5 (29.5)
  - 34 (34)
  - 38 (38)
  - 46 (46)

- **Cup Material**
  - Stocked: SI Silicone
  - Available (Consult Factory):
    - NBR Nitrile Rubber
    - SIE Silicone ESD

(Bold Items are Stocked)
### PCDM Dimensions

<table>
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<th>F</th>
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* Cup Material

### PCDF Dimensions

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<td>.79 (20)</td>
<td>.57 (14.5)</td>
<td>.35 (9)</td>
<td>.39 (10)</td>
</tr>
<tr>
<td>PCDF-29.5-*</td>
<td>1.83 (46.5)</td>
<td>.94 (24)</td>
<td>1.16 (29.5)</td>
<td>1.44 (36.5)</td>
<td>.10 (2.5)</td>
<td>1.04 (6.5)</td>
<td>.57 (14.5)</td>
<td>.35 (9)</td>
<td>.39 (10)</td>
</tr>
<tr>
<td>PCDF-34-*</td>
<td>2.05 (52)</td>
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<td>1.34 (34)</td>
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<td>1.12 (28.5)</td>
<td>.57 (14.5)</td>
<td>.35 (9)</td>
<td>.39 (10)</td>
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<tr>
<td>PCDF-38-*</td>
<td>2.20 (56)</td>
<td>1.00 (25.4)</td>
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<td>1.77 (45)</td>
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<td>1.12 (28.5)</td>
<td>.57 (14.5)</td>
<td>.35 (9)</td>
<td>.39 (10)</td>
</tr>
</tbody>
</table>

* Cup Material

Inches (mm)
PDG Sponge Vacuum Cups

Features
- ESD Sponge Material (Electric Static Dissipative Material)
- Conforms to Product
- Electronic Assembly and Packaging
- 4mm to 15mm Diameters

Applications
These sponge cups are for small lightweight products where flat surfaces are unavailable for conventional flat cups. The 20 durometer sponge material easily conforms to the product surface creating an adequate vacuum level for transfer; like BGA or CSP chips. The cups are available in silicon static dissipative materials.

PDG Series Vacuum Cups
Sponge cup for lightweight product having irregular or uneven surfaces where vacuum leakage is a concern. The sponge material conforms to the surface minimizing vacuum leakage while protecting product surface.

Specifications

<table>
<thead>
<tr>
<th>Suction Cup Material</th>
<th>CRE</th>
<th>SIE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature (°C)</td>
<td>-30° to +140°</td>
<td>-60° to +250°</td>
</tr>
<tr>
<td>Color</td>
<td>Black</td>
<td>Black / Red Dot</td>
</tr>
<tr>
<td>Hardness, Shore A (°Sh)</td>
<td>20 ±5</td>
<td>55 ±5</td>
</tr>
<tr>
<td>Electrical Resistance (Ωm)</td>
<td>10⁴ to 10⁵</td>
<td>10⁴ to 10⁵</td>
</tr>
<tr>
<td>Wear Resistance</td>
<td>*****</td>
<td>**</td>
</tr>
<tr>
<td>Tear Strength</td>
<td>*****</td>
<td>*</td>
</tr>
<tr>
<td>Aging Resistance</td>
<td>*****</td>
<td>*****</td>
</tr>
<tr>
<td>Ozone Resistance</td>
<td>*****</td>
<td>*****</td>
</tr>
<tr>
<td>Acid Resistance</td>
<td>*****</td>
<td>***</td>
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<tr>
<td>Alkali Resistance</td>
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<td>***</td>
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<tr>
<td>Chemical Resistance</td>
<td>****</td>
<td>**</td>
</tr>
<tr>
<td>Mechanical Resistance</td>
<td>****</td>
<td>**</td>
</tr>
</tbody>
</table>

***** = excellent; **** = very good; **** = good; **** = medium; ** = poor; * = not recommended

* ESD: Electric Static Dissipative Material

PDTM Series Male Thread Connector
Simple male connection for low profile positions secured to a plate or bracket.
Fitting Material: Aluminum or 303 SUS.
Model Number Index (Cups Only)

<table>
<thead>
<tr>
<th>PDG - 4 - CRE</th>
<th>PDG - 6.5 - CRE</th>
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</thead>
<tbody>
<tr>
<td>Cup Diameter (mm)</td>
<td>Cup Diameter (mm)</td>
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<tr>
<td>4 (4)</td>
<td>4 (4)</td>
</tr>
<tr>
<td>6.5 (6.5)</td>
<td>6.5 (6.5)</td>
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<tr>
<td>8 (8)</td>
<td>8 (8)</td>
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<tr>
<td>9.5 (9.5)</td>
<td>9.5 (9.5)</td>
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<tr>
<td>12 (12)</td>
<td>12 (12)</td>
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<tr>
<td>15 (15)</td>
<td>15 (15)</td>
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</table>

Cup Material
- Stocked
- CRE Chloroprene ESD*
- Available (Consult Factory)
- SIE Silicone ESD*

Model Number Index

<table>
<thead>
<tr>
<th>PDTM - 4 - CRE - M5</th>
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<tbody>
<tr>
<td>Fitting Thread (F)</td>
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<tr>
<td>M5 M5</td>
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<table>
<thead>
<tr>
<th>Cup Diameter (mm)</th>
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<tr>
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<td>6.5 (6.5)</td>
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<td>8 (8)</td>
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<tr>
<td>9.5 (9.5)</td>
</tr>
<tr>
<td>12 (12)</td>
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<tr>
<td>15 (15)</td>
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Cup Material
- Stocked
- CRE Chloroprene ESD*
- Available (Consult Factory)
- SIE Silicone ESD*

Male Fitting for PDG Cups

<table>
<thead>
<tr>
<th>Included in Kit</th>
<th>Cup Diameter (mm)</th>
<th>Mounting Thread Code</th>
<th>Mounting Thread</th>
<th>DTM Part Number</th>
<th>Tube ID</th>
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<tbody>
<tr>
<td>4</td>
<td>M5</td>
<td>M5x0.8 Male</td>
<td>DTM-4-M5</td>
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<tr>
<td>6.5, 8</td>
<td>M5</td>
<td>M5x0.8 Male</td>
<td>DTM-6.5-M5</td>
<td>.098 (2.5)</td>
<td></td>
</tr>
<tr>
<td>9.5</td>
<td>M5</td>
<td>M5x0.8 Male</td>
<td>DTM-9.5-M5</td>
<td>.098 (2.5)</td>
<td></td>
</tr>
<tr>
<td>12, 15</td>
<td>M5</td>
<td>M5x0.8 Male</td>
<td>DTM-12-M5</td>
<td>.098 (2.5)</td>
<td></td>
</tr>
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</table>

Inches (mm)

Dimensions

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA</th>
<th>ØC</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDG-4-*</td>
<td>.16 (4)</td>
<td>.002 (1.5)</td>
<td>.18 (4.5)</td>
</tr>
<tr>
<td>PDG-6.5-*</td>
<td>.27 (6.5)</td>
<td>.13 (3.2)</td>
<td>.18 (4.5)</td>
</tr>
<tr>
<td>PDG-8-*</td>
<td>.31 (8)</td>
<td>.13 (3.2)</td>
<td>.18 (4.5)</td>
</tr>
<tr>
<td>PDG-9.5-*</td>
<td>.37 (9.5)</td>
<td>.16 (4)</td>
<td>.18 (4.5)</td>
</tr>
<tr>
<td>PDG-12-*</td>
<td>.47 (12)</td>
<td>.16 (4)</td>
<td>.18 (4.5)</td>
</tr>
<tr>
<td>PDG-15-*</td>
<td>.59 (15)</td>
<td>.20 (5)</td>
<td>.18 (4.5)</td>
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</table>

* Cup Material

Dimensions

<table>
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<th>F</th>
<th>SW</th>
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<tr>
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<td>.16 (4)</td>
<td>M5</td>
<td>.16 (4)</td>
</tr>
<tr>
<td>PDTM-6.5-*</td>
<td>.27 (6.5)</td>
<td>M5</td>
<td>.27 (6.5)</td>
</tr>
<tr>
<td>PDTM-8-*</td>
<td>.31 (8)</td>
<td>M5</td>
<td>.27 (6.5)</td>
</tr>
<tr>
<td>PDTM-9.5-*</td>
<td>.37 (9.5)</td>
<td>M5</td>
<td>.37 (9.5)</td>
</tr>
<tr>
<td>PDTM-12-*</td>
<td>.47 (12)</td>
<td>M5</td>
<td>.47 (12)</td>
</tr>
<tr>
<td>PDTM-15-*</td>
<td>.59 (15)</td>
<td>M5</td>
<td>.59 (15)</td>
</tr>
</tbody>
</table>

* Cup Material
† Thread Size
PAG
Foil, Paper, Film Vacuum Cups

Features
• Ultra Thin Lip Design
• Cup Conforms to Product
• 10mm to 50mm Diameter

Applications
The PAG Cups are ideal for paper feeding, plastic bags and foil. The choice between the 10A & 10B, 15 & 15B, 20A & 20B, 30 & 30B is application dependent. The A cups have a thinner lip design than the B cups. This thinner lip design is more suited to plastic bags and foils. The B design is better suited for thin rigid items like solar battery cells.

PAG Series Vacuum Cups
These cups have an ultra thin edge that creates the vacuum seal by conforming to the shape of the product. The complete foot pattern to the center of the cup prevents the vacuum from deforming or “puckering” thin, flexible products.

PATM Series Male Thread Connector
Simple male connection for low profile positions secured to a plate or bracket. UNF, NPT, G, metric threads. Fitting Material: Aluminum.

PAYK Series 90° Barbed Adapter
Side stem connectors allow you to secure the stem with a bolt through a plate or “L” bracket to allow the tube connection from the side port. Nickel plated brass materials.

PATK Series Barbed Bulkhead
Top stem connectors secured with jam nuts and allow tubing connections at the top side. Nickel plated brass materials.
# Model Number Index (Cups Only)

(Bold Items are Stocked)

<table>
<thead>
<tr>
<th>Cup Diameter / Deflection (mm)</th>
<th>PAG -</th>
<th>NBR</th>
</tr>
</thead>
<tbody>
<tr>
<td>10A</td>
<td>(10 / 0.6)*</td>
<td></td>
</tr>
<tr>
<td>10B</td>
<td>(10 / 0.3)*</td>
<td></td>
</tr>
<tr>
<td>15A</td>
<td>(15 / 0.9)*</td>
<td></td>
</tr>
<tr>
<td>15B</td>
<td>(15 / 0.5)*</td>
<td></td>
</tr>
<tr>
<td>20A</td>
<td>(20 / 1.2)*</td>
<td></td>
</tr>
<tr>
<td>20B</td>
<td>(20 / 0.8)*</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>(30 / 1.8)*</td>
<td></td>
</tr>
<tr>
<td>30B</td>
<td>(30 / 0.3)*</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>(40)</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>(50)</td>
<td></td>
</tr>
</tbody>
</table>

* Cups with the same diameter have different cup deflection.

---

## Specifications

<table>
<thead>
<tr>
<th>Suction Cup Material</th>
<th>NBR</th>
<th>SI</th>
<th>SIE</th>
<th>FKM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nitrile</td>
<td>Silicone</td>
<td>Silicone ESD*</td>
<td>Flouro Rubber</td>
</tr>
<tr>
<td>Operating Temperature (°C)</td>
<td>-20° to +120°</td>
<td>-60° to +250°</td>
<td>-60° to +250°</td>
<td>-10° to +230°</td>
</tr>
<tr>
<td>Color</td>
<td>Black</td>
<td>White</td>
<td>Black / Red Dot</td>
<td>Black / White Dot</td>
</tr>
<tr>
<td>Hardness, Shore A (*Sh)</td>
<td>55 ±5</td>
<td>55 ±5</td>
<td>55 ±5</td>
<td>70 ±5</td>
</tr>
<tr>
<td>Electrical Resistance (Ωm)</td>
<td>—</td>
<td>—</td>
<td>800 to 1000</td>
<td>—</td>
</tr>
<tr>
<td>Wear Resistance</td>
<td>*****</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Tear Strength</td>
<td>*****</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Aging Resistance</td>
<td>*****</td>
<td>*****</td>
<td>*****</td>
<td>*****</td>
</tr>
<tr>
<td>Ozone Resistance</td>
<td>*****</td>
<td>*****</td>
<td>*****</td>
<td>*****</td>
</tr>
<tr>
<td>Gasoline Resistance</td>
<td>*****</td>
<td>****</td>
<td>*****</td>
<td>*****</td>
</tr>
<tr>
<td>Oil Resistance</td>
<td>*****</td>
<td>*****</td>
<td>*****</td>
<td>*****</td>
</tr>
<tr>
<td>Acid Resistance</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>Alkali Resistance</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>Chemical Resistance</td>
<td>***</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Mechanical Resistance</td>
<td>*****</td>
<td>*****</td>
<td>**</td>
<td>**</td>
</tr>
</tbody>
</table>

***** = excellent; ***** = very good; ***** = good; ***** = medium; ***** = poor; * = not recommended

* ESD: Electric Static Dissipative Material
Applications & Technical Data

Vacuum Cups
PAG Vacuum Cups

Application Guide
Thin - Smooth Surfaces

- Products With Smooth Surfaces
- Products With Micron Thickness

- When Opening Plastic or Paper Bags, Offset Cups

Main Data for PAG Cups

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Cup Diameter Inches (mm)</th>
<th>Area cm²</th>
<th>Cup Deflection (S) (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAG-10A-*</td>
<td>.39 (10)</td>
<td>0.79</td>
<td>0.6</td>
</tr>
<tr>
<td>PAG-15A-*</td>
<td>.59 (15)</td>
<td>1.77</td>
<td>0.9</td>
</tr>
<tr>
<td>PAG-20A-*</td>
<td>.79 (20)</td>
<td>3.14</td>
<td>1.2</td>
</tr>
<tr>
<td>PAG-10B-*</td>
<td>.39 (10)</td>
<td>0.79</td>
<td>0.3</td>
</tr>
<tr>
<td>PAG-15B-*</td>
<td>.59 (15)</td>
<td>1.77</td>
<td>0.5</td>
</tr>
<tr>
<td>PAG-20B-*</td>
<td>.79 (20)</td>
<td>3.14</td>
<td>0.8</td>
</tr>
<tr>
<td>PAG-30B-*</td>
<td>1.18 (30)</td>
<td>7.19</td>
<td>0.3</td>
</tr>
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<td>1.18 (30)</td>
<td>7.07</td>
<td>1.8</td>
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<tr>
<td>PAG-40-*</td>
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<td>12.60</td>
<td>2.4</td>
</tr>
<tr>
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<td>19.60</td>
<td>3.0</td>
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</tbody>
</table>

Inches (mm)
* = Cup Material
### Dimensions

**PAG-10A and PAG-20A**

**PAG-10B and PAG-20B**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA</th>
<th>ØB</th>
<th>ØC</th>
<th>ØD</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
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<tbody>
<tr>
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<td>.16 (4)</td>
<td>.08 (2)</td>
<td>.33 (8.5)</td>
<td>.30 (7.5)</td>
<td>.02 (6)</td>
<td>.15 (4)</td>
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<td>.24 (6)</td>
</tr>
<tr>
<td>PAG-15A-*</td>
<td>.59 (15)</td>
<td>.16 (4)</td>
<td>.08 (2)</td>
<td>.33 (8.5)</td>
<td>.30 (7.5)</td>
<td>.04 (9)</td>
<td>.15 (4)</td>
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<td>.24 (6)</td>
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<td>PAG-20A-*</td>
<td>.79 (20)</td>
<td>.16 (4)</td>
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<td>.05 (12)</td>
<td>.15 (4)</td>
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<td>.24 (6)</td>
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<td>PAG-10B-*</td>
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<td>.33 (8.5)</td>
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<td>.01 (3)</td>
<td>.15 (4)</td>
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<td>.24 (6)</td>
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<td>PAG-15B-*</td>
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<td>.16 (4)</td>
<td>.08 (2)</td>
<td>.33 (8.5)</td>
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<td>.15 (4)</td>
<td>.08 (2)</td>
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<tr>
<td>PAG-20B-*</td>
<td>.79 (20)</td>
<td>.16 (4)</td>
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<td>.03 (8)</td>
<td>.15 (4)</td>
<td>.08 (2)</td>
<td>.24 (6)</td>
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<tr>
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<td>.24 (6)</td>
<td>.12 (3)</td>
<td>.59 (15)</td>
<td>.43 (11)</td>
<td>.06 (15)</td>
<td>.28 (7)</td>
<td>.15 (4)</td>
<td>.39 (10)</td>
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<td>1.02 (26)</td>
<td>.12 (3)</td>
<td>.87 (22)</td>
<td>1.02 (26)</td>
<td>.07 (1.8)</td>
<td>.63 (16)</td>
<td>.31 (8)</td>
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<tr>
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<td>1.02 (26)</td>
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<td>.87 (22)</td>
<td>1.02 (26)</td>
<td>.09 (2.4)</td>
<td>.63 (16)</td>
<td>.31 (8)</td>
<td>—</td>
</tr>
<tr>
<td>PAG-50-*</td>
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<td>1.02 (26)</td>
<td>.12 (3)</td>
<td>.87 (22)</td>
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<td>.12 (3)</td>
<td>.63 (16)</td>
<td>.31 (8)</td>
<td>—</td>
</tr>
</tbody>
</table>

* Cup Material

Inches (mm)
**PATM Vacuum Cup Assemblies**

**Model Number Index**

<table>
<thead>
<tr>
<th>Cup Diameter (mm)</th>
<th>Cup Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>10A (10)</td>
<td>Stocked NBR Nitrile Rubber</td>
</tr>
<tr>
<td>10B (10)</td>
<td>Stocked SI Silicone</td>
</tr>
<tr>
<td>15A (15)</td>
<td>Stocked SIE Silicone ESD</td>
</tr>
<tr>
<td>15B (15)</td>
<td>Stocked FKM Flouro Rubber</td>
</tr>
<tr>
<td>20A (20)</td>
<td>Available (Consult Factory)</td>
</tr>
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<td>20B (20)</td>
<td></td>
</tr>
<tr>
<td>30 (30)</td>
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</tr>
<tr>
<td>30B (30)</td>
<td></td>
</tr>
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<td>40 (40)</td>
<td></td>
</tr>
<tr>
<td>50 (50)</td>
<td></td>
</tr>
</tbody>
</table>

**Installation**

**Note:**
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage. Tube I.D. shown below is a recommended minimum value to optimize response time of the system. Your requirements may vary.

**Male Fitting for PAG Cups**

<table>
<thead>
<tr>
<th>Included in Kit</th>
<th>Cup Diameter (mm)</th>
<th>Mounting Thread Code</th>
<th>Mounting Thread</th>
<th>FTM Fitting Part Number</th>
<th>Tube ID</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Male Fitting" /></td>
<td>10, 15, 20</td>
<td>M5</td>
<td>M5X0.8 Male</td>
<td>FTM-5A-M5</td>
<td>.157 (4)</td>
</tr>
<tr>
<td><img src="image" alt="Male Fitting" /></td>
<td>30, 40, 50</td>
<td>G1</td>
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### PATM Vacuum Cup Assemblies

#### Dimensions

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<th>D</th>
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<th>F</th>
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</table>

Inches (mm)

* Cup Material
† Thread Size
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatic

PATK Vacuum Cup Assemblies

Model Number Index

<table>
<thead>
<tr>
<th>Cup Diameter (mm)</th>
<th>Cup Material</th>
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<tr>
<td>10A (10)</td>
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</tr>
<tr>
<td>10B (10)</td>
<td>NBR Nitrile Rubber</td>
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<tr>
<td>15A (15)</td>
<td>SI Silicone</td>
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<td>15B (15)</td>
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<tr>
<td>20A (20)</td>
<td>(Consult Factory)</td>
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<tr>
<td>20B (20)</td>
<td>SIE Silicone ESD</td>
</tr>
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<td>30 (30)</td>
<td>FKM Flouro Rubber</td>
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<tr>
<td>30B (30)</td>
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<td>50 (50)</td>
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(Bold Items are Stocked)

Installation

Note:
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage. Tube I.D. shown below is a recommended minimum value to optimize response time of the system. Your requirements may vary.

Barbed Bulkhead for PAG Cups

<table>
<thead>
<tr>
<th>Included in Kit</th>
<th>Cup Diameter (mm)</th>
<th>Mounting Thread</th>
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<tbody>
<tr>
<td></td>
<td>10, 15, 20</td>
<td>M9x1.0 Male</td>
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Inches (mm)
## Dimensions

### PATK-10A thru PATK-20A and PATK-10B thru PATK-20B

<table>
<thead>
<tr>
<th>Model Number</th>
<th>ØA</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
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<td>.39 (10)</td>
<td>1.81 (46)</td>
<td>.63 (16)</td>
<td>.89 (22.5)</td>
<td>.02 (.6)</td>
<td>.61 (15.5)</td>
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<tr>
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<td>1.81 (46)</td>
<td>.63 (16)</td>
<td>.89 (22.5)</td>
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Inches (mm)

* Cup Material
PAYK Vacuum Cup Assemblies

Installation

Note:
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage. Tube I.D. shown below is a recommended minimum value to optimize response time of the system. Your requirements may vary.

Model Number Index

Payk - 10A - NBR

<table>
<thead>
<tr>
<th>Cup Diameter (mm)</th>
<th>Cup Material</th>
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<tbody>
<tr>
<td>10A (10)</td>
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<td>10B (10)</td>
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<td>15A (15)</td>
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<td>30B (30)</td>
<td>SIE Silicone ESD</td>
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<td>30 (30)</td>
<td>FKM Flouro Rubber</td>
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<td>40 (40)</td>
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90° Barbed Adapter for PAG Cups

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## Dimensions

**PAYK-10A thru PAYK-20A and PAYK-10B thru PAYK-20B**

<table>
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<th>Model Number</th>
<th>ØA</th>
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Inches (mm)

* Cup Material
## Adapters

### NPT Adapters

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Inches (mm)

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Inches (mm)

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Inches (mm)
### Male Threaded Cup Fittings

<table>
<thead>
<tr>
<th>Cup Fitting</th>
<th>Cup Series</th>
<th>Cup Assembly</th>
<th>Vacuum Port</th>
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<tbody>
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<td>PFG</td>
<td>PFTM</td>
<td>M3</td>
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<td>FTM-1.5-M3</td>
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<td>PFTM</td>
<td>M3</td>
</tr>
<tr>
<td>FTM-2A-M5</td>
<td>PFG</td>
<td>PFTM</td>
<td>M5</td>
</tr>
<tr>
<td>FTM-5A-M5H</td>
<td>PFG / PBG / PJG / PCG</td>
<td>PFTM / PBTM / PJTM / PCTM</td>
<td>M5</td>
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<td>FTM-5A-G1</td>
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<tr>
<td>FTM-20B-G1H</td>
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<td>PFTM / PFOTM / PBTM / PJTM</td>
<td>1/8 BSPP</td>
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<td>FTM-20B-N1</td>
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<td>M10</td>
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<tr>
<td>FTM-50-N1</td>
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<td>PFTM / PBTM / PJTM</td>
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<td>FTM-50-G1H</td>
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Catalog 0802-3/USA

Vacuum Cups

Cup Data

Level Compensator Assemblies
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