









Section A

www.parker.com/pneu/vaccup





Technical	Lifting Forces, Cup Diameters, Material Specifications	6-9
PFG Flat 	<p>Precision molded single lip flat cup for smooth or slightly curved surfaces. Low profile design makes flat pads ideal for fast response.</p> <p>Cup Sizes: 1mm to 200mm</p>	10-27
PFOG Vacuum Grooves 	<p>Anti-slip flat cup with grooves extending to the outer diameter to increase vacuum flow area. Increased friction resists slipping of product during transfer.</p> <p>Cup Sizes: 20mm to 40mm</p>	28-35
P5V-CFS Flat 	<p>Precision molded double lip flat cup for slightly curved surfaces. Double lip for additional security. If outside lip bends and loses its seal, the inner lip remains sealed. Outer ribs prevent the cup lip from being cut.</p> <p>Cup Sizes: 50mm to 300mm</p>	36-39
PBG Bellows 	<p>Versatile bellows cup design provides a flexible sealing lip for products with irregular, smooth, curved surfaces, and flexible products.</p> <p>Cup Sizes: 10mm to 150mm</p>	40-53
PJG Short Bellows 	<p>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.</p> <p>Cup Sizes: 6mm to 80mm</p>	54-69
PCG Multiple Bellows 	<p>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.</p> <p>Cup Sizes: 5mm to 90mm</p>	70-81



PKG Automotive



Versatile cup design with grooves extending to the outer diameter and different profiles for flexible products with smooth, oily surfaces.

82-91

Cup Sizes: 60mm to 110mm

PUGB Flat Swivel



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.

92-103

Cup Sizes: 10mm to 200mm

PCD Ring Cups



Some of the more popular pads for the CD Industry. High temperature and soft durometer make these pads gentle and durable.

104-107

Cup Sizes: 20mm to 46mm

PDG Sponge



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.

108-109

Cup Sizes: 4mm to 15mm

PAG Foil, Paper, Film



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.

110-119

Cup Sizes: 10mm to 50mm

Adapters & Screws

BSPP adapter fittings and cup screws.

120

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 ($a_g = 9.81\text{m/sec}^2$). 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.

Newton's Law: $F(N) = \text{mass}(kg) \times a_g(\text{m/sec}^2)$

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

$$F(N) = 10\text{kg} \times 9.81\text{m/sec}^2 = 98.1\text{ N}$$

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:

$$a = \frac{\Delta \text{ velocity}}{\text{time}} \quad a = \frac{6\text{m/sec}}{2 \text{ sec}} \quad a = 3\text{m/sec}^2$$

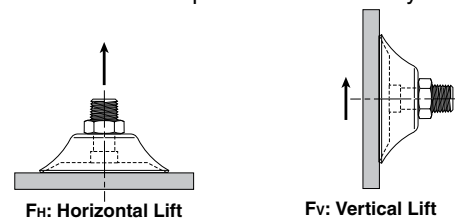
This is considered an average acceleration.

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.



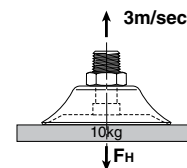
Horizontal Lifting Force

Apply Newton's Law to calculate the force on a 10kg mass with a change in acceleration of 3m/sec^2 and a safety factor of 2.

$$F_H(N) = \text{mass}(kg) \times (a_g + a) \times S_H$$

$$F_H(N) = 10\text{kg} \times (9.81\text{m/sec}^2 + 3\text{m/sec}^2) \times 2$$

$$F_H = 256.2\text{ N}$$



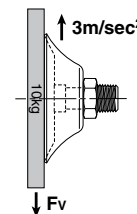
Vertical Lifting Force

Apply Newton's 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.

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

$$F_v(N) = 10\text{kg} \times (9.81\text{m/sec}^2 + 3\text{m/sec}^2) \times 4$$

$$F_v = 512.4\text{ N}$$



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 .

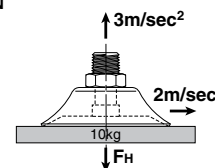
$$F_M(N) = \sqrt{F_v^2 + F_H^2}$$

$$F_M(N) = \sqrt{[(10\text{kg} \times 2\text{m/sec}^2) \times 4]^2 + [10\text{kg} \times (9.81\text{m/sec}^2 + 3\text{m/sec}^2) \times 2]^2}$$

$$F_M(N) = \sqrt{(80\text{kgm/sec}^2)^2 + [256\text{kgm/sec}^2]^2}$$

$$F_M(N) = \sqrt{6400\text{kgm/sec}^2 + 65,536\text{kgm/sec}^2}$$

$$F_M = 268.2\text{ N}$$



Analyze the Forces

Using the previous examples, consider an application where 4 cups have been selected to transfer the product.

Take the Horizontal Lifting Force (FH) of 256.2 N and divide by the number of cups (4) to obtain the individual force for each cup.

$$\frac{256.2 \text{ (N)}}{4} = 64.05 \text{ N / Cup}$$

Referring to the chart below, at 60% vacuum, select a force greater than 64.05 N. The appropriate selection is a 40mm diameter cup which has a theoretical lifting force of 76.9 N. The same calculation can be applied to the Vertical Lifting Force and the Forces in Motion examples to determine the cup diameter.

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

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.

$$D = 35.7 \sqrt{\frac{m (a_g + a) \times S}{Pv \times n}}$$

D (mm) = Diameter of Cup

m (kg) = Mass

$a_g = 9.81 \text{ m/sec}^2$

a = Motion Acceleration

S = Safety Factor

Pv (kPa) = Operating Vacuum Pressure

n = Number of Cups

$$D = 35.7 \sqrt{\frac{10 (9.81 + 3) \times 2}{61 \times 4}}$$

$$D = 36.58 \text{ mm}$$

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.

Theoretical Lifting Force Per Cup lbf (N)

Cup		Vacuum Level								
		3 in hg	6 in hg	9 in hg	12in hg	15 in hg	18 in hg	21 in hg	24 in hg	27 in hg
Diameter mm	Area cm ²	-1.5 PSIG	-3 PSIG	-4.5 PSIG	-6 PSIG	-7.5 PSIG	-9 PSIG	-10.5 PSIG	-12 PSIG	-13.5 PSIG
		10.2 kPa	20.3 kPa	30.5 kPa	40.6 kPa	50.8 kPa	61 kPa	71.1 kPa	81.3 kPa	91.4 kPa
		10%	20%	30%	40%	50%	60%	70%	80%	90%
1	0.01	0.002 (0.01)	0.004 (0.02)	0.004 (0.02)	0.007 (0.03)	0.009 (0.04)	0.011 (0.05)	0.013 (0.06)	0.016 (0.07)	0.016 (0.07)
2	0.03	0.007 (0.03)	0.013 (0.06)	0.022 (0.10)	0.029 (0.13)	0.036 (0.16)	0.043 (0.19)	0.049 (0.22)	0.056 (0.25)	0.063 (0.28)
3.5	0.10	0.022 (0.10)	0.045 (0.20)	0.065 (0.29)	0.088 (0.39)	0.110 (0.49)	0.133 (0.59)	0.155 (0.69)	0.175 (0.78)	0.198 (0.88)
5	0.20	0.045 (0.20)	0.090 (0.40)	0.135 (0.60)	0.180 (0.80)	0.225 (1.00)	0.270 (1.20)	0.315 (1.40)	0.360 (1.60)	0.405 (1.80)
6	0.28	0.065 (0.29)	0.130 (0.58)	0.196 (0.87)	0.270 (1.20)	0.315 (1.40)	0.382 (1.70)	0.450 (2.00)	0.517 (2.30)	0.585 (2.60)
7	0.39	0.088 (0.39)	0.175 (0.78)	0.265 (1.18)	0.360 (1.60)	0.450 (2.00)	0.540 (2.40)	0.607 (2.70)	0.697 (3.10)	0.787 (3.50)
8	0.50	0.117 (0.52)	0.229 (1.02)	0.346 (1.54)	0.450 (2.00)	0.585 (2.60)	0.697 (3.10)	0.809 (3.60)	0.922 (4.10)	1.034 (4.60)
10	0.79	0.180 (0.80)	0.360 (1.60)	0.540 (2.40)	0.719 (3.20)	0.899 (4.00)	1.079 (4.80)	1.259 (5.60)	1.439 (6.40)	1.619 (7.20)
15	1.77	0.404 (1.80)	0.809 (3.60)	1.216 (5.41)	1.619 (7.20)	2.023 (9.00)	2.428 (10.8)	2.833 (12.6)	3.237 (14.4)	3.642 (16.2)
18	2.55	0.585 (2.60)	1.169 (5.20)	1.751 (7.79)	2.338 (10.4)	2.923 (13.0)	3.507 (15.6)	4.069 (18.1)	4.676 (20.8)	5.238 (23.3)
20	3.14	0.719 (3.20)	1.439 (6.40)	2.158 (9.60)	2.878 (12.8)	3.597 (16.0)	4.316 (19.2)	5.036 (22.4)	5.755 (25.6)	6.474 (28.8)
25	4.91	1.124 (5.00)	2.248 (10.0)	3.372 (15.0)	4.496 (20.0)	5.620 (25.0)	6.744 (30.0)	7.868 (35.0)	8.992 (40.0)	10.116 (45.0)
30	7.07	1.619 (7.20)	3.237 (14.4)	4.856 (21.6)	6.474 (28.8)	8.093 (36.0)	9.712 (43.2)	11.330 (50.4)	12.949 (57.6)	14.568 (64.8)
35	9.62	2.203 (9.80)	4.406 (19.6)	6.609 (29.4)	8.813 (39.2)	11.016 (49.0)	13.241 (58.9)	15.422 (68.6)	17.648 (78.5)	19.828 (88.2)
40	12.6	2.900 (12.9)	5.755 (25.6)	8.655 (38.5)	11.510 (51.2)	14.388 (64.0)	17.288 (76.9)	20.143 (89.6)	23.155 (103)	25.853 (115)
50	19.6	4.519 (20.1)	8.992 (40.0)	13.511 (60.1)	17.985 (80.0)	22.481 (100)	26.977 (120)	31.473 (140)	35.969 (160)	40.466 (180)
60	28.3	6.497 (28.9)	12.949 (57.6)	19.446 (86.5)	25.853 (115)	32.372 (144)	38.892 (173)	45.411 (202)	51.931 (231)	58.226 (259)
75	44.2	10.161 (45.2)	20.233 (90.0)	30.349 (135)	40.466 (180)	50.582 (225)	60.698 (270)	70.815 (315)	80.931 (360)	91.048 (405)
80	50.3	11.555 (51.4)	22.931 (102)	34.621 (154)	46.086 (205)	57.551 (256)	69.241 (308)	80.706 (359)	92.172 (410)	103.637 (461)
90	63.6	14.635 (65.1)	29.225 (130)	43.838 (195)	58.226 (259)	72.838 (324)	87.451 (389)	102.063 (454)	116.676 (519)	131.064 (583)
95	70.9	16.299 (72.5)	32.372 (144)	48.784 (217)	64.970 (289)	81.156 (361)	97.567 (434)	113.753 (506)	129.940 (578)	146.126 (650)
110	95.0	21.851 (97.2)	43.613 (194)	65.419 (291)	87.001 (387)	108.808 (484)	130.614 (581)	152.421 (678)	174.227 (775)	195.809 (871)
120	113.1	26.078 (116)	51.706 (230)	77.784 (346)	103.637 (461)	129.490 (576)	155.568 (692)	181.421 (807)	207.274 (922)	233.127 (1037)
150	176.7	40.690 (181)	80.931 (360)	121.622 (541)	161.862 (720)	202.328 (900)	243.019 (1081)	283.259 (1260)	323.950 (1441)	364.191 (1620)
200	314.2	72.164 (321)	143.878 (640)	216.041 (961)	287.531 (1279)	359.919 (1601)	432.083 (1922)	503.797 (2241)	575.961 (2562)	647.449 (2880)

Specifications

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





















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

••••• = 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.

Symbol	Description	Symbol	Description
Suction Cup Icons			
	Flat Surface, Thin Section		Differences In Heights and Levels
	Flat Surface, Any Section		Vertical Lift
	Soft Porous Material, Thin Section		Not For Vertical Lift
	Soft Porous Material, Any Section		Rough and / or Abrasive Surfaces
	Slightly Bowed Surface, Thin Section		Thin or Narrow Item Handling
	Slightly Bowed Surface, Any Section		Oil Resistant
	Bowed Surface, Thin Section		High Lifting Force
	Bowed Surface, Any Section		Vertical Lifting Force
	Soft Material		Horizontal Lifting Force
	Metal Sheet Handling		
	Corrugated Sheet Handling		



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.



PFTF 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.



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

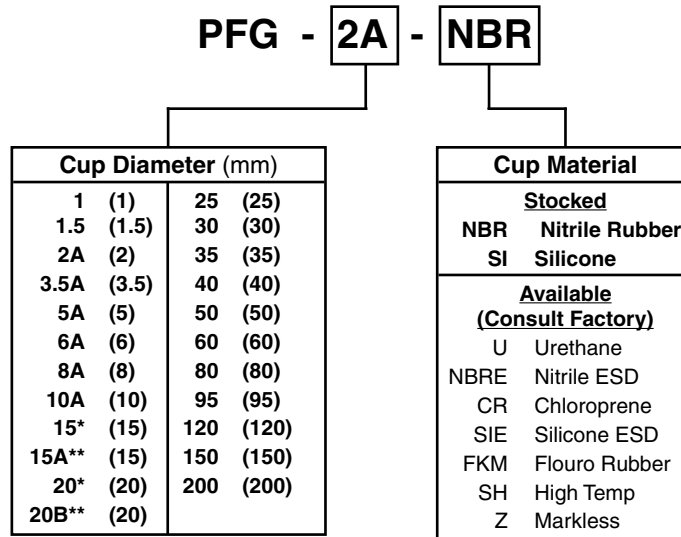
303 stainless steel construction secured with jam nuts. Spring biased compensators can absorb impacts of down-strokes and adjust for different levels of pick up points. 303 stainless corrosion resistant materials with drymet bushings increases the strength and life.





Model Number Index (Cups Only)

(Bold Items are Stocked)



* Available for PFTK & PFYK Cup Assemblies Only.

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

Note: 60 thru 200mm cups have cup cleats.

Specifications

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

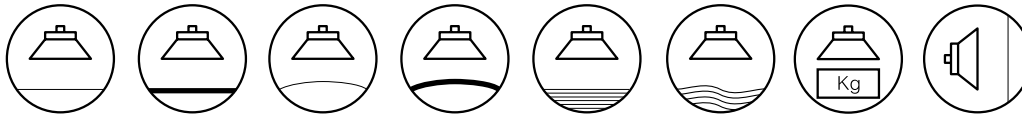
..... = excellent; = very good; = good; = medium; .. = poor; . = not recommended

* ESD: Electric Static Dissipative Material

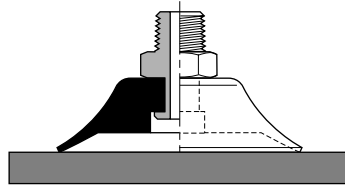


Application Guide

Flat - Smooth Surface

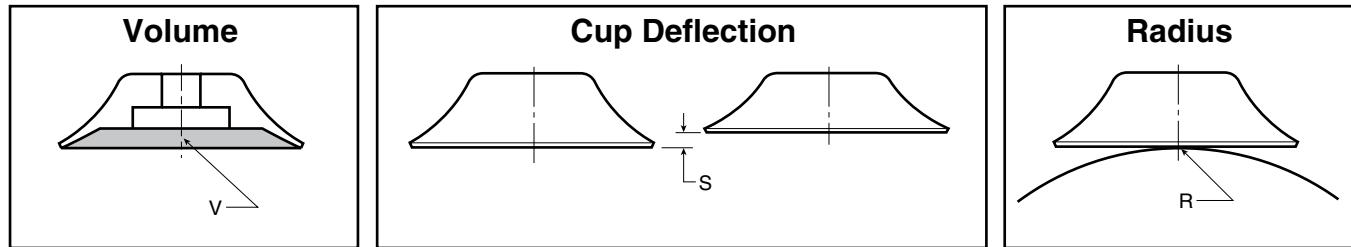


Ø 120/200
Only



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

Main Data for Flat PFG Cups



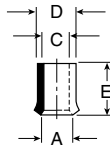
Model Number	Cup Diameter Inches (mm)	Area cm ²	Volume (V) Liters	Lifting Force @60% (N)		Cup Deflection (S) mm	Radius (R) mm
PFG-1-*	.04 (1)	0.008	0.00000015	0.05	0.025	0.1	1.6
PFG-1.5-*	.06 (1.5)	0.01	0.00000053	0.10	0.05	0.1	3.5
PFG-2A-*	.08 (2)	0.03	0.0000007	0.19	0.09	0.1	1.75
PFG-3.5A-*	.12 (3)	0.10	0.000002	0.59	0.29	0.2	2.0
PFG-5A-*	.20 (5)	0.20	0.000005	1.20	0.6	0.5	3.5
PFG-6A-*	.24 (6)	0.28	0.000008	1.70	0.85	1.0	4.0
PFG-8A-*	.31 (8)	0.50	0.00003	3.10	1.5	1.4	5.0
PFG-10A-*	.39 (10)	0.79	0.00007	4.80	2.4	1.5	6.0
PFG-15-*	.59 (15)	1.77	0.0004	10.8	5.4	1.9	6.0
PFG-15A-*	.59 (15)	1.77	0.0004	10.8	5.4	1.9	6.0
PFG-20-*	.79 (20)	3.14	0.0008	19.2	9.6	2.3	9.0
PFG-20B-*	.79 (20)	3.14	0.0008	19.2	9.6	2.3	13.0
PFG-25-*	.98 (25)	4.91	0.0013	30.0	15.0	3.0	17.5
PFG-30-*	1.18 (30)	7.07	0.0018	43.2	21.6	2.0	26
PFG-35-*	1.38 (35)	9.62	0.0026	58.9	29.5	3.0	31
PFG-40-*	1.57 (40)	12.60	0.004	76.9	38.5	3.5	37
PFG-50-*	1.97 (50)	19.60	0.007	120	60	4.0	41
PFG-60-*	2.36 (60)	28.30	0.0090	173	87	5.0	70
PFG-80-*	3.15 (80)	50.30	0.025	308	154	6.0	100
PFG-95-*	3.74 (95)	70.90	0.035	434	267	6.0	150
PFG-120-*	4.72 (120)	113.00	0.078	692	346	6.0	365
PFG-150-*	5.91 (150)	176.70	0.177	1081	541	9.0	380
PFG-200-*	7.87 (200)	314.20	0.425	1922	961	13.0	430

* Cup Material

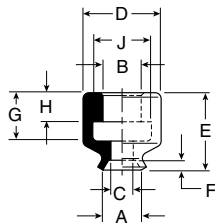


Dimensions

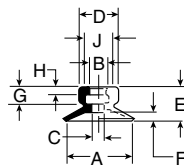
**PFG-1
PFG-1.5**



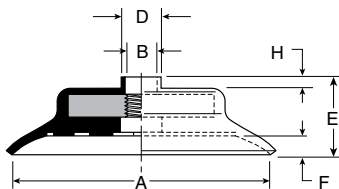
**PFG-2A
PFG-3.5A**



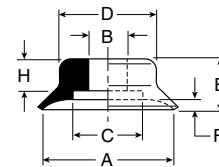
**PFG-5A
PFG-15A**



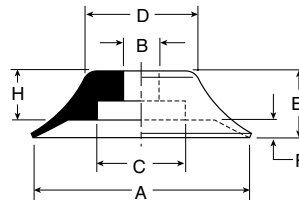
**PFG-60 thru
PFG-95**



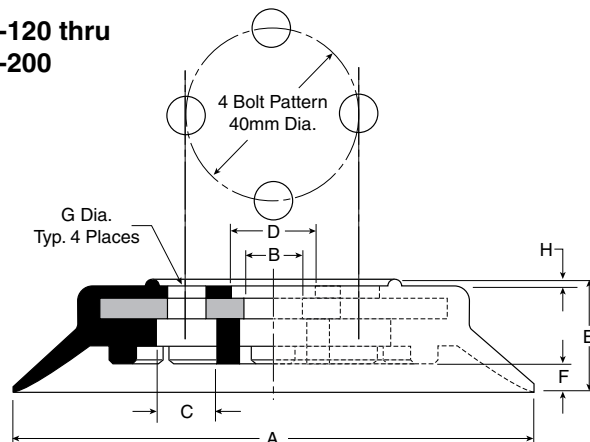
**PFG-15 thru
PFG-40**



PFG-50



**PFG-120 thru
PFG-200**



Model Number	ØA	ØB	ØC	ØD	E	F	G	H	ØJ
PFG-1-*	.04 (1)	—	.03 (.8)	.05 (1.2)	.06 (1.6)	—	—	—	—
PFG-1.5-*	.06 (1.5)	—	.05 (1.2)	.07 (1.8)	.10 (2.5)	—	—	—	—
PFG-2A-*	.08 (2)	.08 (2)	.05 (1.2)	.16 (4)	.16 (4)	.02 (.5)	.10 (2.5)	.06 (1.5)	.12 (3)
PFG-3.5A-*	.14 (3.5)	.08 (2)	.05 (1.2)	.16 (4)	.16 (4)	.02 (.5)	.10 (2.5)	.06 (1.5)	.12 (3)
PFG-5A-*	.20 (5)	.16 (4)	.06 (1.4)	.30 (7.5)	.26 (6.5)	.03 (.8)	.16 (4)	.08 (2)	.24 (6)
PFG-6A-*	.24 (6)	.16 (4)	.08 (2)	.30 (7.5)	.26 (6.5)	.03 (.8)	.16 (4)	.08 (2)	.24 (6)
PFG-8A-*	.31 (8)	.16 (4)	.08 (2)	.31 (8)	.28 (7)	.05 (1.2)	.16 (4)	.08 (2)	.24 (6)
PFG-10A-*	.39 (10)	.16 (4)	.08 (2)	.33 (8.5)	.30 (7.5)	.06 (1.5)	.16 (4)	.08 (2)	.24 (6)
PFG-15-*	.59 (15)	—	.31 (7.8)	.47 (12)	.31 (8)	.07 (1.9)	—	—	—
PFG-15A-*	.59 (15)	.16 (4)	.08 (2)	.35 (9)	.31 (8)	.08 (2)	.16 (4)	.08 (2)	.24 (6)
PFG-20-*	.79 (20)	.18 (4.6)	.43 (11)	.59 (15)	.39 (10)	.09 (2.3)	—	.18 (4.5)	—
PFG-20B-*	.79 (20)	.24 (6)	.43 (11)	.59 (15)	.49 (12.5)	.09 (2.3)	—	.28 (7)	—
PFG-25-*	.98 (25)	.24 (6)	.43 (11)	.63 (16)	.55 (14)	.12 (3)	—	.28 (7)	—
PFG-30-*	1.18 (30)	.24 (6)	.43 (11)	.55 (14)	.47 (12)	.08 (2)	—	.28 (7)	—
PFG-35-*	1.38 (35)	.24 (6)	.43 (11)	.83 (21)	.55 (14)	.12 (3)	—	.28 (7)	—
PFG-40-*	1.57 (40)	.24 (6)	.43 (11)	.94 (24)	.55 (14)	.16 (4)	—	.28 (7)	—
PFG-50-*	1.97(50)	.31 (8)	.79 (20)	1.06 (27)	.59 (15)	.14 (3.5)	—	.28 (7)	—
PFG-60-*	2.36 (60)	M10x1.25	—	.79 (12.5)	.73 (18.5)	.20 (5)	—	.10 (2.5)	—
PFG-80-*	3.15 (80)	M10x1.25	—	.79 (12.5)	.81 (20.5)	.24 (6)	—	.10 (2.5)	—
PFG-95-*	3.74 (95)	M10x1.25	—	.79 (12.5)	.83 (21)	.24 (6)	—	.10 (2.5)	—
PFG-120-*	4.72 (120)	.55 (14)	.55 (14)	.79 (20)	1.00 (25.5)	.24 (6)	4xØ8.7xØ40	.059 (1.5)	—
PFG-150-*	5.91 (150)	.51(13)	.55 (14)	.79 (20)	1.28 (32.5)	.35 (9)	4xØ8.7xØ40	.059 (1.5)	—
PFG-200-*	7.87 (200)	.51 (13)	.47 (12)	.79 (20)	1.48 (37.5)	.51 (13)	4xØ8.7xØ40	.059 (1.5)	—

Inches (mm)

* Cup Material



PFTM Vacuum Cup Assemblies



Model Number Index

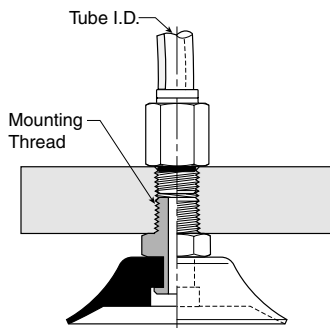
PFTM - **2A** - **NBR** - **M5**

Cup Diameter (mm)		Cup Material	Mounting Thread
1 (1)	20B (20)	Stocked	M3 M3
1.5 (1.5)	25 (25)	NBR Nitrile	M5 M5
2A (2)	30 (30)	Rubber	N1 1/8 NPT
3.5A (3.5)	35 (35)	SI Silicone	G1 1/8 BSPP
5A (5)	40 (40)	Available	M10 M10
6A (6)	50 (50)	(Consult Factory)	N2 1/4 NPT
8A (8)	60 (60)	U Urethane	G2 1/4 BSPP
10A (10)	80 (80)	NBRE Nitrile ESD	See Chart Below
15A (15)	95 (95)	CR Chloroprene	
		SIE Silicone ESD	
		FKM Fluoro Rubber	
		SH High Temp	
		Z Markless	

(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 Thread Fitting for PFG Cups

(Bold Items are Stocked)

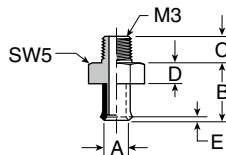
Included in Kit	Cup Diameter (mm)	Mounting Thread Code	Mounting Thread	FTM Fitting Part Number	Min. Tube ID
	1	M3	M3x0.5 Male	FTM-1-M3	.060 (1.5)
	1.5	M3	M3x0.5 Male	FTM-1.5-M3	.060 (1.5)
	2, 3.5	M5	M5x0.8 Male	FTM-2A-M5	.098 (2.5)
	5, 6, 8, 10, 15	M5	M5x0.8 Male	FTM-5A-M5H	.157 (4)
	G1	1/8 BSPP Male	FTM-5A-G1		
	20, 25, 30, 35, 40	N1	1/8 NPT Male	FTM-20B-N1	.157 (4)
		G1	1/8 BSPP Male	FTM-20B-G1H	
		G2	1/4 BSPP Male	FTM-20B-G2	
		M10	M10 x 1.25 Male	FTM-20B-M10	
50	50	N1	1/8 NPT Male	FTM-50-N1	.157 (4)
		G1	1/8 BSPP Male	FTM-50-G1H	
		G2	1/4 BSPP Male	FTM-50-G2	
	60, 80, 95	N2	1/4 NPT Male	FTM-60-N2	.25 (6.35)
		G2	1/4 BSPP Male	FTM-60-G2	
		M10	M10x1.25 Male	FTM-60-M10	

Inches (mm)

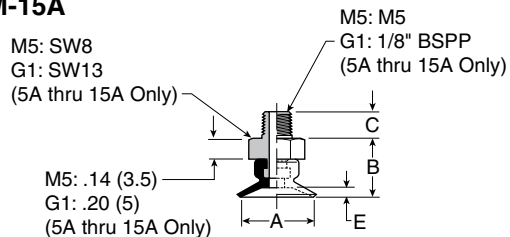


Dimensions

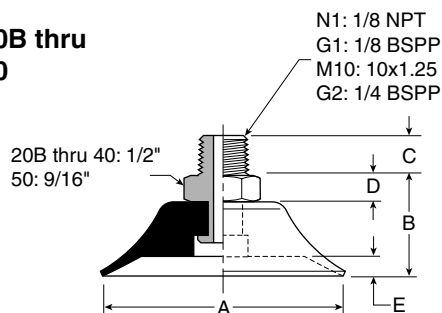
PFTM-1 and PFTM-1.5



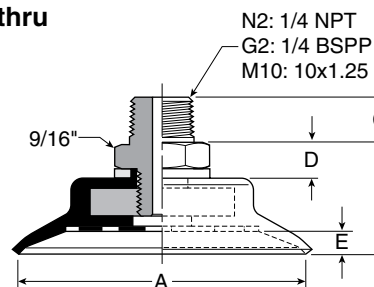
PFTM-2A thru PFTM-15A



PFTM-20B thru PFTM-50



PFTM-60 thru PFTM-95



Model Number	ØA	B	C (M3)	C (M5)	C (N1 / G1)	C (M10 / G2)	C (N2)	D	E
PFTM-1-*†	.04 (1)	.14 (3.6)	.12 (3)	—	—	—	—	.08 (2)	.003 (0.1)
PFTM-1.5-*†	.06 (1.5)	.14 (4.5)	.12 (3)	—	—	—	—	.08 (2)	.003 (0.1)
PFTM-2A-*†	.08 (2)	.30 (7.5)	—	.18 (4.5)	—	—	—	.14 (3.5)	.20 (5)
PFTM-3.5A-*†	.14 (3.5)	.30 (7.5)	—	.18 (4.5)	—	—	—	.14 (3.5)	.20 (5)
PFTM-5A-*†	.20 (5)	.39 (10)	—	.18 (4.5)	.31 (8)	—	—	See Dwg.	.31 (8)
PFTM-6A-*†	.24 (6)	.39 (10)	—	.18 (4.5)	.31 (8)	—	—	See Dwg.	.31 (8)
PFTM-8A-*†	.31 (8)	.41 (10.5)	—	.18 (4.5)	.31 (8)	—	—	See Dwg.	.05 (1.2)
PFTM-10A-*†	.39 (10)	.43 (11)	—	.18 (4.5)	.31 (8)	—	—	See Dwg.	.06 (1.5)
PFTM-15A-*†	.59 (15)	.45 (11.5)	—	.18 (4.5)	.31 (8)	—	—	See Dwg.	.08 (2)
PFTM-20B-*†	.79 (20)	.69 (17.5)	—	—	.31 (8)	.39 (10)	—	.20 (5)	.10 (2.5)
PFTM-25-*†	.98 (25)	.75 (19)	—	—	.31 (8)	.39 (10)	—	.20 (5)	.12 (3)
PFTM-30-*†	1.18 (30)	.67 (17)	—	—	.31 (8)	.39 (10)	—	.20 (5)	.08 (2)
PFTM-35-*†	1.38 (35)	.75 (19)	—	—	.31 (8)	.39 (10)	—	.20 (5)	.12 (3)
PFTM-40-*†	1.57 (40)	.75 (19)	—	—	.31 (8)	.39 (10)	—	.20 (5)	.14 (3.5)
PFTM-50-*†	1.97 (50)	.79 (20)	—	—	.31 (8)	.39 (10)	—	.20 (5)	.16 (4)
PFTM-60-*†	2.36 (60)	.90 (23)	—	—	—	.39 (10)	.59 (15)	.28 (7)	.20 (5)
PFTM-80-*†	3.15 (80)	.98 (25)	—	—	—	.39 (10)	.59 (15)	.28 (7)	.24 (6)
PFTM-95-*†	3.74 (95)	1.00 (25.5)	—	—	—	.39 (10)	.59 (15)	.28 (7)	.24 (6)

Inches (mm)

* Cup Material

† Thread Size



PFTF Vacuum Cup Assemblies



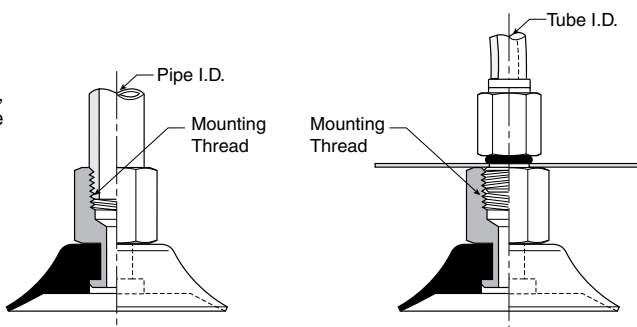
Model Number Index

PFTF - **5A** - **NBR** - **M5**

Cup Diameter (mm)		Cup Material	Mounting Thread
5A (5)	40 (40)	Stocked	M5 M5
6A (6)	50 (50)	NBR Nitrile	N1 1/8 NPT
8A (8)	60 (60)	Rubber	G1 1/8 BSPP
10A (10)	80 (80)	SI Silicone	M10 M10
15A (15)	95 (95)	Available	N2 1/4 NPT
20B (20)	120 (120)	(Consult Factory)	G2 1/4 BSPP
25 (25)	150 (150)	U Urethane	N4 1/2 NPT
30 (30)	200 (200)	NBRE Nitrile ESD	G4 1/2 BSPP
35 (35)		CR Chloroprene	See Chart Below
		SIE Silicone ESD	
		FKM Fluoro Rubber	
		SH High Temp	
		Z Markless	

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.



(Bold Items are Stocked)

Female Thread Fitting for PFG Cups

(Bold Items are Stocked)

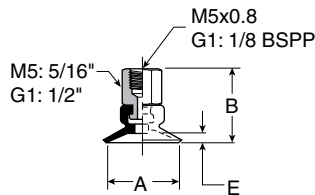
Included in Kit	Cup Diameter (mm)	Mounting Thread Code	Mounting Thread	FTF Fitting Part Number	Min. Tube ID
	5, 6, 8, 10, 15	M5	M5x0.8 Female	FTF-5A-M5	.157 (4)
		G1	1/8 BSPP Male	FTF-5A-G1	
	20, 25, 30, 35, 40	N1	1/8 NPT Female	FTF-20B-N1	.157 (4)
		G1	1/8 BSPP Female	FTF-20B-G1	
		G2	1/4 BSPP Female	FTF-20B-G2	
	50	N1	1/8 NPT Female	FTF-50-N1	.157 (4)
G1		1/8 BSPP Female	FTF-50-G1		
G2		1/4 BSPP Female	FTF-50-G2		
	60, 80, 95	N2	1/4 NPT Female	FTF-60-N2	.25 (6.35)
		G2	1/4 BSPP Female	FTF-60-G2	
	120, 150, 200	N4	1/2 NPT Female	FTF-120-N4	.312 (8)
		G4	1/2 BSPP Female	FTF-120-G4	

Inches (mm)

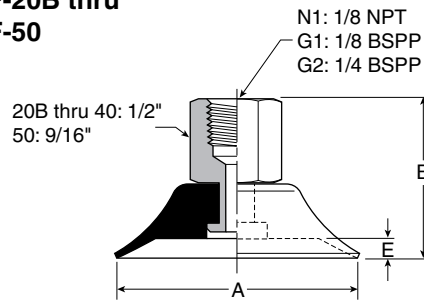


Dimensions

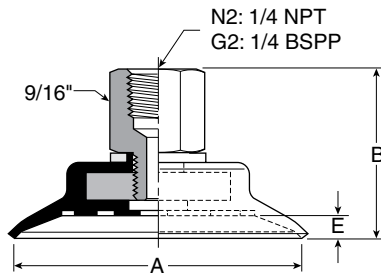
**PFTF-5A thru
PFTF-15A**



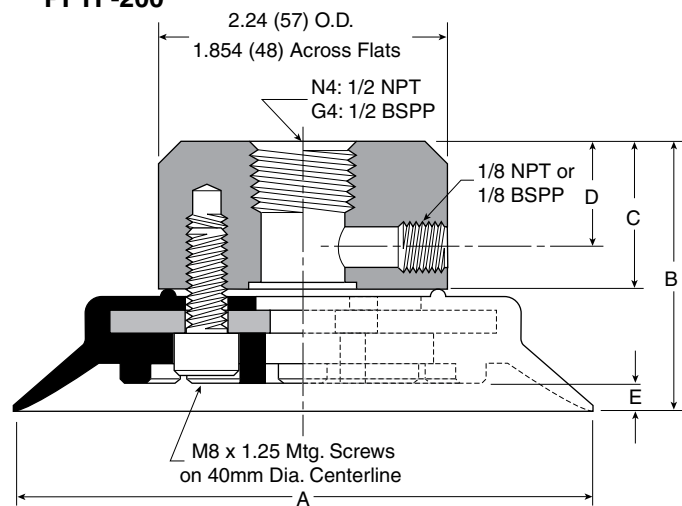
**PFTF-20B thru
PFTF-50**



**PFTF-60 thru
PFTF-95**



**PFTF-120 thru
PFTF-200**



Model Number	ØA	B	B (M5)	C	D	E
PFTF-5A-*†	.20 (5)	.57 (14.5)	.81 (20.5)	—	—	.03 (.8)
PFTF-6A-*†	.24 (6)	.57 (14.5)	.81 (20.5)	—	—	.03 (.8)
PFTF-8A-*†	.31 (8)	.59 (15)	.83 (21)	—	—	.05 (1.2)
PFTF-10A-*†	.39 (10)	.57 (14.5)	.81 (20.5)	—	—	.06 (1.5)
PFTF-15A-*†	.59 (15)	.63 (16)	.87 (22)	—	—	.08 (2)
PFTF-20B-*†	.79 (20)	1.04 (26.5)	—	—	—	.10 (2.5)
PFTF-25-*†	.98 (25)	1.10 (28)	—	—	—	.12 (3)
PFTF-30-*†	1.18 (30)	1.02 (26)	—	—	—	.08 (2)
PFTF-35-*†	1.38 (35)	1.10 (28)	—	—	—	.12 (3)
PFTF-40-*†	1.57 (40)	1.10 (28)	—	—	—	.16 (4)
PFTF-50-*†	1.97 (50)	1.14 (29)	—	—	—	.16 (4)
PFTF-60-*†	2.36 (60)	1.40 (35.5)	—	—	—	.20 (5)
PFTF-80-*†	3.15 (80)	1.48 (37.5)	—	—	—	.24 (6)
PFTF-95-*†	3.74 (95)	1.50 (38)	—	—	—	.24 (6)
PFTF-120-*†	4.72 (120)	1.83 (46.5)	—	.94 (24)	.51 (13)	.24 (6)
PFTF-150-*†	5.91 (150)	2.11 (53.5)	—	.94 (24)	.51 (13)	.35 (9)
PFTF-200-*†	7.87 (200)	2.30 (58.5)	—	.94 (24)	.51 (13)	.51 (13)

Inches (mm)
* Cup Material
† Thread size



PFTK Vacuum Cup Assemblies



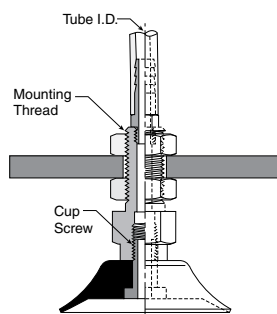
Model Number Index

PFTK - **2A** - **NBR** - **—**

Cup Diameter (mm)		Cup Material	Vacuum Port	
2A (2)	25 (25)	Stocked	Blank	Barb
3.5A (3.5)	30 (30)	NBR Nitrite	N1	1/8 NPT
5A (5)	35 (35)	Rubber	G1	1/8 BSPP
6A (6)	40 (40)	SI Silicone	R1	1/8 BSPT
8A (8)	50 (50)	Available	See Chart Below	
10A (10)	60 (60)	(Consult Factory)		
15 (15)	80 (80)	U Urethane		
20 (20)	95 (95)	NBRE Nitrile ESD		
		CR Chloroprene		
		SIE Silicone ESD		
		FKM Fluoro Rubber		
		SH High Temp		
		Z Markless		

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.



(Bold Items are Stocked)

Barbed Bulkhead for PFG Cups

(Bold Items are Stocked)

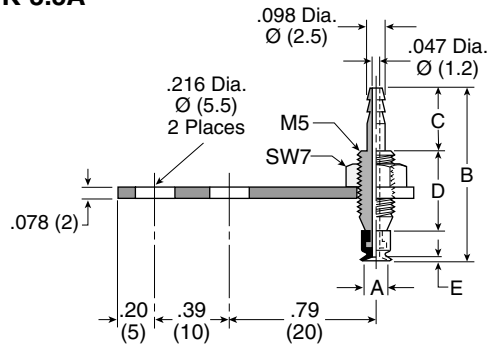
Included in Kit	Cup Diameter (mm)	Vacuum Port		FTK Fitting Part Number	Cup Screw Only	Mounting Thread	Tube ID
		Code	Thread				
	2, 3.5	Blank	Barb	FTK-2A	N/A	M5x0.5 Male	.11 (2.5)
	5, 6, 8, 10	Blank	Barb	FTK-5A	N/A	M9x1.0 Male	.157 (4)
	15	Blank	Barb	FYK-15	TN-PF-15-M5	M8x1.25 Male	.157 (4)
	20	Blank	Barb	FYK-20	TN-PF-20-M5	M8x1.25 Male	.157 (4)
	25, 30, 35, 40	Blank	Barb	FYK-25	TN-PF-25-M6	M10x1.5 Male	.157 (4)
	50	Blank	Barb	FYK-50	TN-PF-50-M8	M10x1.5 Male	.157 (4)
	60, 80, 95	N1	1/8 NPT	FTK-60-N1	N/A	M16x1.5 Male	N/A
		G1	1/8 BSPP	FTK-60-G1	N/A	M16x1.5 Male	N/A
		R1	1/8 BSPT	FTK-60-R1	N/A	M16x1.5 Male	N/A

Inches (mm)

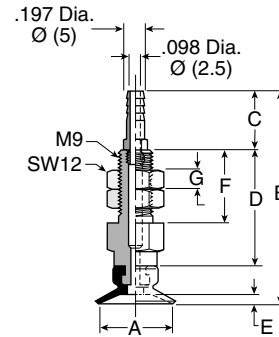


Dimensions

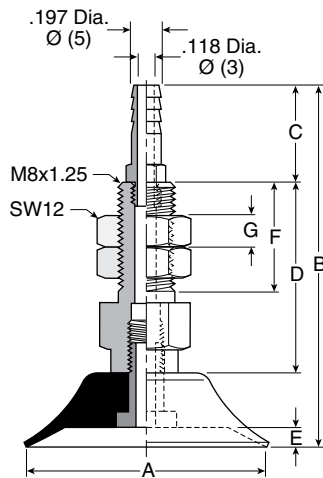
**PFTK-2A thru
PFTK-3.5A**



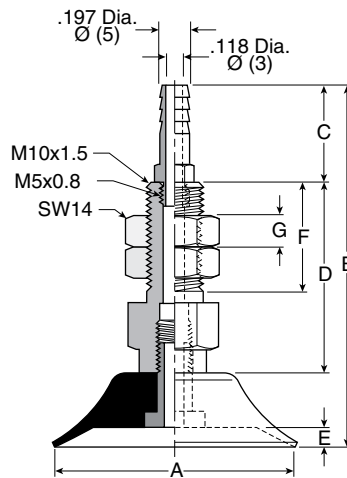
**PFTK-5A thru
PFTK-10A**



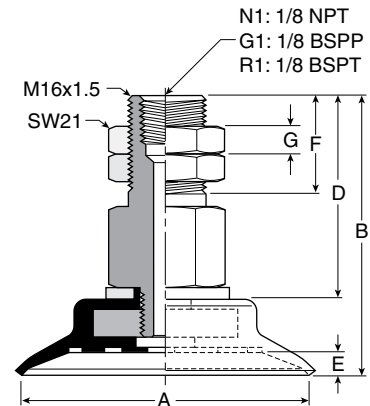
**PFTK-15 thru
PFTK-20**



**PFTK-25 thru
PFTK-50**



**PFTK-60 thru
PFTK-95**



Model Number	ØA	B	C	D	E	F	G	Wt oz. (g)
PFTK-2A-*	.08 (2)	.93 (23.5)	.33 (8.5)	.43 (11)	.02 (.5)	—	—	.28 (8)
PFTK-3.5A-*	.14 (3.5)	.93 (23.5)	.33 (8.5)	.43 (11)	.02 (.5)	—	—	.28 (8)
PFTK-5A-*	.20 (5)	1.20 (30.5)	.39 (10)	.55 (14)	.03 (.8)	.61 (15.5)	.12 (3)	.39 (11)
PFTK-6A-*	.24 (6)	1.20 (30.5)	.39 (10)	.55 (14)	.03 (.8)	.61 (15.5)	.12 (3)	.39 (11)
PFTK-8A-*	.31 (8)	1.22 (31)	.39 (10)	.55 (14)	.05 (1.2)	.61 (15.5)	.12 (3)	.39 (11)
PFTK-10A-*	.39 (10)	1.81 (46)	.63 (16)	.88 (22.5)	.06 (1.5)	.61 (15.5)	.12 (3)	.53 (15)
PFTK-15-*	.59 (15)	1.81 (46)	.63 (16)	.86 (22)	.07(1.9)	.59 (15)	.12 (3)	.71 (20)
PFTK-20-*	.79 (20)	1.89 (48)	.63 (16)	.86 (22)	.09 (2.3)	.59 (15)	.20 (5)	.71 (20)
PFTK-25-*	.98 (25)	2.44 (62)	.63 (16)	1.26 (32)	.12 (3)	.71 (20)	.20 (5)	1.41 (40)
PFTK-30-*	1.18 (30)	2.36 (60)	.63 (16)	1.26 (32)	.08 (2)	.71 (20)	.20 (5)	1.41 (40)
PFTK-35-*	1.38 (35)	2.44 (62)	.63 (16)	1.26 (32)	.12 (3)	.71 (20)	.20 (5)	1.41 (40)
PFTK-40-*	1.57 (40)	2.44 (62)	.63 (16)	1.26 (32)	.14 (3.5)	.71 (20)	.20 (5)	1.41 (40)
PFTK-50-*	1.97 (50)	2.48 (63)	.63 (16)	1.26 (32)	.16 (4)	.71 (20)	.20 (5)	1.77 (50)
PFTK-60-†	2.36 (60)	2.30 (58.5)	—	1.67 (42.5)	.20 (5)	.79 (20)	.24 (6)	4.59 (130)
PFTK-80-†	3.15 (80)	2.38 (60.5)	—	1.67 (42.5)	.24 (6)	.79 (20)	.24 (6)	6.00 (170)
PFTK-95-†	3.74 (95)	2.40 (61)	—	1.67 (42.5)	.24 (6)	.79 (20)	.24 (6)	7.77 (220)

Inches (mm)
* Cup Material
† Vacuum Port



PFYK Vacuum Cup Assemblies



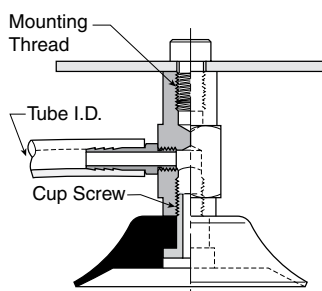
Model Number Index

PFYK - **5A** - **NBR** - **—**

Cup Diameter (mm)		Cup Material	Vacuum Port
2A (2)	35 (35)	Stocked	Blank Barb
3.5A (3.5)	40 (40)	NBR Nitrile	N1 1/8 NPT
5A (5)	50 (50)	Rubber	G1 1/8 BSPP
6A (6)	60 (60)	SI Silicone	R1 1/8 BSPT
8A (8)	80 (80)	Available	See Chart
10A (10)	95 (95)	(Consult Factory)	Below
15 (15)	120 (120)	U Urethane	
20 (20)	150 (150)	NBRE Nitrile ESD	
25 (25)	200 (200)	CR Chloroprene	
30 (30)		SIE Silicone ESD	
		FKM Fluoro Rubber	
		SH High Temp	
		Z Markless	

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.



(Bold Items are Stocked)

90° Barbed Adapter for PFG Cups

(Bold Items are Stocked)

Included in Kit	Cup Diameter (mm)	Vacuum Port		FYK Fitting Part Number	Cup Screw Only	Mounting Thread	Tube ID
		Code	Thread				
	2, 3.5	Blank	Barb	FYK-2A	N/A	M3x0.5 Female	.078 (2)
	5, 6, 8, 10	Blank	Barb	FYK-5A	N/A	M4x0.7 Female	.157 (4)
	15	Blank	Barb	FYK-15	TN-PF-15-M5	M4x0.7 Female	.157 (4)
	20	Blank	Barb	FYK-20	TN-PF-20-M5	M4x0.7 Female	
	25, 30, 35, 40	Blank	Barb	FYK-25	TN-PF-25-M6	M6x1.0 Female	
	50	Blank	Barb	FYK-50	TN-PF-50-M8	M6x1.0 Female	
	60, 80, 95	N1	1/8 NPT	FYK-60-N1	N/A	M8x1.25 Female	N/A
		G1	1/8 BSPP	FYK-60-G1		M8x1.25 Female	
		R1	1/8 BSPT	FYK-60-R1		M8x1.25 Female	
	120, 150, 200	N1	1/8 NPT	FYK-120-N1	N/A	M16x1.5 Female	N/A
		G1	1/8 BSPP	FYK-120-G1		M16x1.5 Female	
		R1	1/8 BSPT	FYK-120-R1		M16x1.5 Female	

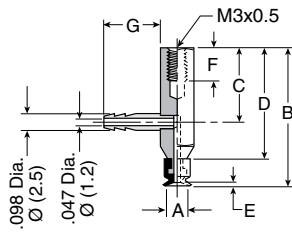
Inches (mm)



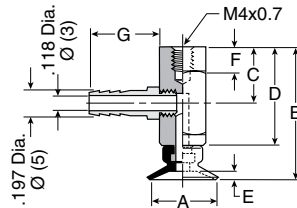
Vacuum Cups

Dimensions

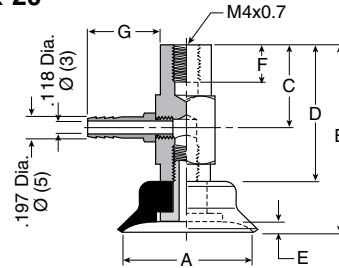
PFYK-2A thru
PFYK-3.5A



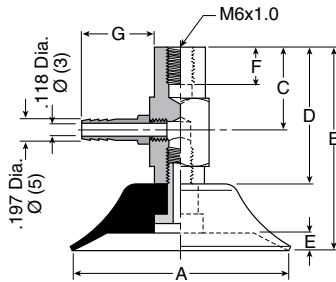
PFYK-5A thru
PFYK-10A



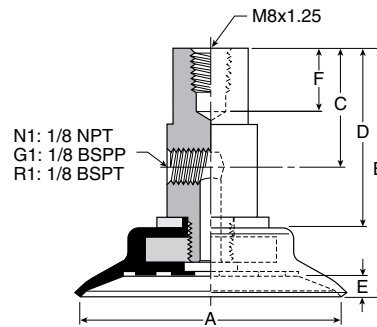
PFYK-15 thru
PFYK-20



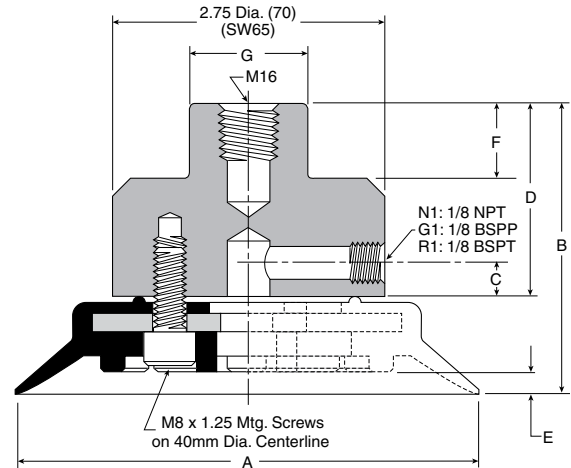
PFYK-25 thru
PFYK-50



PFYK-60 thru
PFYK-95



PFYK-120 thru
PFYK-200



Model Number	ØA	B	C	D	E	F	G	Wt oz (g)
PFYK-2A-*	.08 (2)	.79 (20)	.43 (11)	.63 (16)	.02 (.5)	.02 (.5)	.33 (8.5)	.11 (3)
PFYK-3.5A-*	.14 (3.5)	.79 (20)	.43 (11)	.63 (16)	.02 (.5)	.02 (.5)	.33 (8.5)	.11 (3)
PFYK-5A-*	.20 (5)	1.14 (29)	.51 (13)	.89 (22.5)	.03 (.8)	.24 (6)	.63 (16)	.56 (16)
PFYK-6A-*	.24 (6)	1.14 (29)	.51 (13)	.89 (22.5)	.03 (.8)	.24 (6)	.63 (16)	.56 (16)
PFYK-8A-*	.31 (8)	1.16 (29.5)	.51 (13)	.89 (22.5)	.05 (1.2)	.24 (6)	.63 (16)	.56 (16)
PFYK-10A-*	.39 (10)	1.18 (30)	.51 (13)	.89 (22.5)	.06 (1.5)	.24 (6)	.63 (16)	.56 (16)
PFYK-15-*	.59 (15)	1.18 (30)	.55 (14)	.87 (22)	.07 (1.9)	.24 (6)	.63 (16)	.71 (20)
PFYK-20-*	.79 (20)	1.26 (32)	.55 (14)	.87 (22)	.09 (2.3)	.24 (6)	.63 (16)	.71 (20)
PFYK-25-*	.98 (25)	1.81 (46)	.79 (20)	1.26 (32)	.12 (3)	.31 (8)	.63 (16)	1.41 (40)
PFYK-30-*	1.18 (30)	1.73 (44)	.79 (20)	1.26 (32)	.08 (2)	.31 (8)	.63 (16)	1.41 (40)
PFYK-35-*	1.38 (35)	1.81 (46)	.79 (20)	1.26 (32)	.12 (3)	.31 (8)	.63 (16)	1.41 (40)
PFYK-40-*	1.57 (40)	1.81 (46)	.79 (20)	1.26 (32)	.14 (3.5)	.31 (8)	.63 (16)	1.77 (50)
PFYK-50-*	1.97 (50)	1.85 (47)	.79 (20)	1.26 (32)	.16 (4)	.31 (8)	.63 (16)	1.94 (55)
PFYK-60-*.†	2.36 (60)	2.30 (58.5)	1.10 (28)	1.57 (40)	.20 (5)	.43 (11)	—	4.24 (120)
PFYK-80-*.†	3.15 (80)	2.38 (60.5)	1.10 (28)	1.57 (40)	.24 (6)	.43 (11)	—	5.65 (160)
PFYK-95-*.†	3.74 (95)	2.40 (61)	1.10 (28)	1.57 (40)	.24 (6)	.43 (11)	—	7.42 (210)
PFYK-120-*.†	4.72 (120)	2.94 (75.5)	.47 (12)	1.97 (50)	.24 (6)	.79 (20)	1.18 Dia. (30)	22.6 (640)
PFYK-150-*.†	5.91 (150)	3.25 (82.5)	.47 (12)	1.97 (50)	.35 (9)	.79 (20)	1.18 Dia. (30)	32.1 (910)
PFYK-200-*.†	7.87 (200)	3.44 (87.5)	.47 (12)	1.97 (50)	.51 (13)	.79 (20)	1.18 Dia. (30)	42.4 (1200)

Inches (mm)
* Cup Material
† Vacuum Port



PFTYS Vacuum Cup Assemblies



Model Number Index

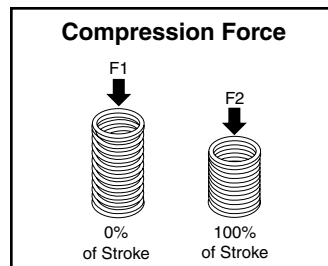
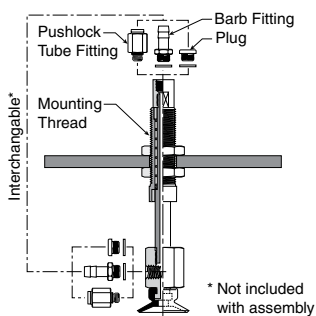
PFTYS **2A** **15** **NBR** **M5**

Cup Diameter (mm)	Stroke (mm)	Cup Material Stocked	Vacuum Port	
2A (2)	3, 10, 15	NBR Nitrile Rubber	M3 M3	
3.5A (3.5)		Rubber	M5 M5	
5A (5)		SI Silicone	N1 1/8 NPT	
6A (6)		Available (Consult Factory)	U Urethane	N2 1/4 NPT
8A (8)			NBRE Nitrile ESD	See Chart Below
10A (10)			CR Chloroprene	
15A (15)	SIE Silicone ESD			
20B (20)	FKM Fluoro Rubber			
25 (25)	6, 15, 30	SH High Temp		
30 (30)		Z Markless		
35 (35)				
40 (40)				
50 (50)				
60 (60)	30*, 0*, 70*			
80 (80)				
95 (95)				
120 (120)	20, 70			
150 (150)				
200 (200)				

(Bold Items are Stocked)

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

(Bold Items are Stocked)

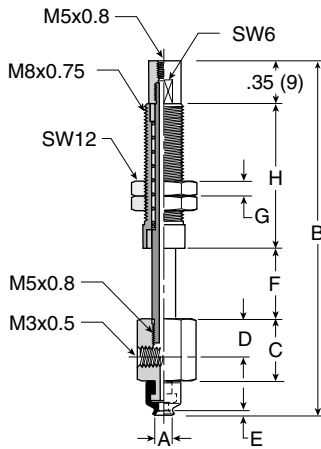
Included in Kit	Cup Diameter (mm)	Vacuum Port		TYS Assembly Part Number	Stroke	F1 lbf (N)	F2 lbf (N)
		Code	Thread				
	2, 3.5	M3	M3x0.5 Female	TYS-2A-3	3mm	.11 (.49)	.13 (.59)
				TYS-2A-10	10mm	.11 (.49)	
				TYS-2A-15	15mm	.11 (.49)	
	5, 6, 8, 10, 15	M5	M5x0.8 Female	TYS-5A-3	3mm	.11 (.49)	.13 (.59)
				TYS-5A-10	10mm	.14 (.61)	
				TYS-5A-15	15mm	.15 (.64)	
20, 25, 30, 35, 40	M5	M5x0.8 Female	TYS-20B-6	6mm	.56 (2.5)	.79 (3.4)	
			TYS-20B-15	15mm	.56 (2.5)		
			TYS-20B-30	30mm	.67 (2.9)		
	50	M5	M5x0.8 Female	TYS-50-6	6mm	.56 (2.5)	.79 (3.4)
				TYS-50-15	15mm	.56 (2.5)	
				TYS-50-30	30mm	.67 (2.9)	
	60, 80, 95	N1	1/8 NPT Female	TYS-60-30	30mm	1.6 (6.8)	3.6 (15.6)
				TYS-60-50	50mm	1.9 (8.3)	
				TYS-60-70	70mm	2.2 (9.5)	
	120, 150, 200	N2	1/4 NPT Female	TYS-120-20	20mm	3.6 (15.6)	6.8 (29)
				TYS-120-70	70mm	3.4 (14.7)	

Inches (mm)

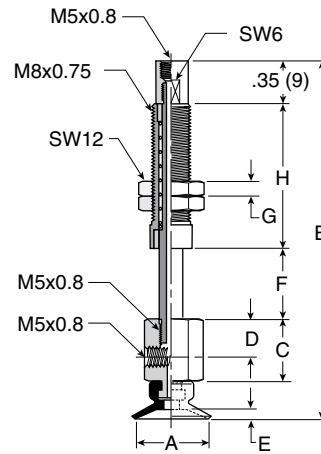


Dimensions

PFTYS2A3 thru
PFTYS3.5A15



PFTYS5A3 thru
PFTYS15A15



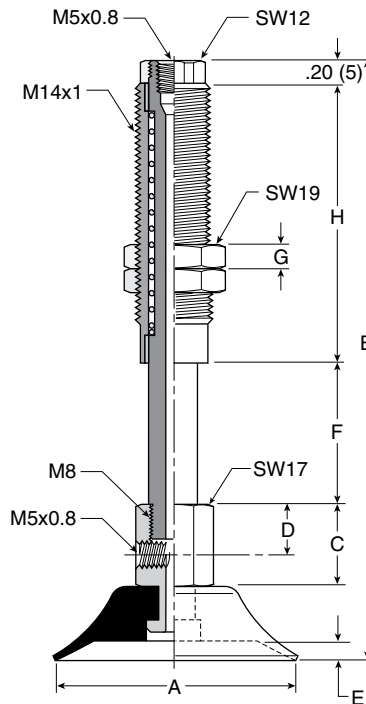
Model Number	ØA	B	C	D	E	F	G	H	Wt oz (g)
PFTYS2A3*†	.08 (2)	1.97 (50)	.43 (11)	.28 (7)	.02 (.5)	.12 (3)	.12 (3)	.91 (23)	.21 (6)
PFTYS2A10**	.08 (2)	2.24 (57)	.43 (11)	.28 (7)	.02 (.5)	.39 (10)	.12 (3)	.91 (23)	.39 (11)
PFTYS2A15**	.08 (2)	2.74 (69.5)	.43 (11)	.28 (7)	.02 (.5)	.59 (15)	.12 (3)	1.20 (30.5)	.53 (15)
PFTYS3.5A3*†	.12 (3.5)	1.97 (50)	.43 (11)	.28 (7)	.02 (.5)	.12 (3)	.12 (3)	.91 (23)	.21 (6)
PFTYS3.5A10**	.12 (3.5)	2.24 (57)	.43 (11)	.28 (7)	.02 (.5)	.39 (10)	.12 (3)	.91 (23)	.39 (11)
PFTYS3.5A15**	.12 (3.5)	2.74 (69.5)	.43 (11)	.28 (7)	.02 (.5)	.59 (15)	.12 (3)	1.20 (30.5)	.53 (15)
PFTYS5A3*†	.20 (5)	2.13 (54)	.51 (13)	.31 (8)	.03 (.8)	.12 (3)	.12 (3)	.91 (23)	.25 (7)
PFTYS5A10**	.20 (5)	2.42 (61.5)	.51 (13)	.31 (8)	.03 (.8)	.39 (10)	.12 (3)	.91 (23)	.65 (18.5)
PFTYS5A15**	.20 (5)	2.91 (74)	.51 (13)	.31 (8)	.03 (.8)	.59 (15)	.12 (3)	1.20 (30.5)	.74 (21)
PFTYS6A3*†	.24 (6)	2.15 (54.5)	.51 (13)	.31 (8)	.03 (.8)	.12 (3)	.12 (3)	.91 (23)	.25 (7)
PFTYS6A10**	.24 (6)	2.42 (61.5)	.51 (13)	.31 (8)	.03 (.8)	.39 (10)	.12 (3)	.91 (23)	.65 (18.5)
PFTYS6A15**	.24 (6)	2.91 (74)	.51 (13)	.31 (8)	.03 (.8)	.59 (15)	.12 (3)	1.20 (30.5)	.74 (21)
PFTYS8A3*†	.31 (8)	2.17 (55.5)	.51 (13)	.31 (8)	.05 (1.2)	.12 (3)	.12 (3)	.91 (23)	.25 (7)
PFTYS8A10**	.31 (8)	2.44 (62)	.51 (13)	.31 (8)	.05 (1.2)	.39 (10)	.12 (3)	.91 (23)	.65 (18.5)
PFTYS8A15**	.31 (8)	2.93 (74.5)	.51 (13)	.31 (8)	.05 (1.2)	.59 (15)	.12 (3)	1.20 (30.5)	.74 (21)
PFTYS10A3*†	.39 (10)	2.14 (54)	.51 (13)	.31 (8)	.06 (1.5)	.12 (3)	.12 (3)	.91 (23)	.64 (18)
PFTYS10A10**	.39 (10)	2.48 (63)	.51 (13)	.31 (8)	.06 (1.5)	.39 (10)	.12 (3)	.91 (23)	.65 (18.5)
PFTYS10A15**	.39 (10)	2.95 (75)	.51 (13)	.31 (8)	.06 (1.5)	.59 (15)	.12 (3)	1.20 (30.5)	.74 (21)
PFTYS15A3*†	.59 (15)	2.20 (56)	.51 (13)	.31 (8)	.08 (2)	.12 (3)	.12 (3)	.91 (23)	.64 (18)
PFTYS15A10**	.59 (15)	2.50 (63.5)	.51 (13)	.31 (8)	.08 (2)	.39 (10)	.12 (3)	.91 (23)	.65 (18.5)
PFTYS15A15**	.59 (15)	2.97 (75.5)	.51 (13)	.31 (8)	.08 (2)	.59 (15)	.12 (3)	1.20 (30.5)	.74 (21)

Inches (mm)
* Cup Material
† Vacuum Port



Dimensions

PFTYS20B6 thru
PFTYS5030



Model Number	ØA	B	C	D	E	F	G	H	Wt oz (g)
PFTYS20B6**†	.79 (20)	3.01 (76.5)	.67 (17)	.39 (10)	.09 (2.3)	.24 (6)	.20 (5)	1.42 (36)	2.3 (65)
PFTYS20B15**†	.79 (20)	3.37 (85.5)	.67 (17)	.39 (10)	.09 (2.3)	.59 (15)	.20 (5)	1.42 (36)	2.5 (71)
PFTYS20B30**†	.79 (20)	4.82 (122.5)	.67 (17)	.39 (10)	.09 (2.3)	1.18 (30)	.20 (5)	2.28 (58)	3.4 (96)
PFTYS256**†	.98 (25)	3.07 (78)	.67 (17)	.39 (10)	.12 (3)	.24 (6)	.20 (5)	1.42 (36)	2.3 (66)
PFTYS2515**†	.98 (25)	3.43 (87)	.67 (17)	.39 (10)	.12 (3)	.59 (15)	.20 (5)	1.42 (36)	2.5 (71)
PFTYS2530**†	.98 (25)	4.88 (124)	.67 (17)	.39 (10)	.12 (3)	1.18 (30)	.20 (5)	2.28 (58)	3.4 (96)
PFTYS306**†	1.18 (30)	2.99 (76)	.67 (17)	.39 (10)	.08 (2)	.24 (6)	.20 (5)	1.42 (36)	2.4 (67)
PFTYS3015**†	1.18 (30)	3.35 (85)	.67 (17)	.39 (10)	.08 (2)	.59 (15)	.20 (5)	1.42 (36)	2.5 (72)
PFTYS3030**†	1.18 (30)	4.80 (122)	.67 (17)	.39 (10)	.08 (2)	1.18 (30)	.20 (5)	2.28 (58)	3.5 (97)
PFTYS356**†	1.38 (35)	3.07 (78)	.67 (17)	.39 (10)	.12 (3)	.24 (6)	.20 (5)	1.42 (36)	2.5 (71)
PFTYS3515**†	1.38 (35)	3.43 (87)	.67 (17)	.39 (10)	.12 (3)	.59 (15)	.20 (5)	1.42 (36)	2.6 (74)
PFTYS3530**†	1.38 (35)	4.88 (124)	.67 (17)	.39 (10)	.12 (3)	1.18 (30)	.20 (5)	2.28 (58)	3.5 (99)
PFTYS406**†	1.57 (40)	3.07 (78)	.67 (17)	.39 (10)	.14 (3.5)	.24 (6)	.20 (5)	1.42 (36)	2.5 (71)
PFTYS4015**†	1.57 (40)	3.43 (87)	.67 (17)	.39 (10)	.14 (3.5)	.59 (15)	.20 (5)	1.42 (36)	2.7 (76)
PFTYS4030**†	1.57 (40)	4.88 (124)	.67 (17)	.39 (10)	.14 (3.5)	1.18 (30)	.20 (5)	2.28 (58)	3.6 (101)
PFTYS506**†	1.97 (50)	3.11 (79)	.67 (17)	.39 (10)	.16 (4)	.24 (6)	.20 (5)	1.42 (36)	2.8 (80)
PFTYS5015**†	1.97 (50)	3.46 (88)	.67 (17)	.39 (10)	.16 (4)	.59 (15)	.20 (5)	1.42 (36)	3.0 (85)
PFTYS5030**†	1.97 (50)	4.92 (125)	.67 (17)	.39 (10)	.16 (4)	1.18 (30)	.20 (5)	2.28 (58)	3.9 (110)

Inches (mm)

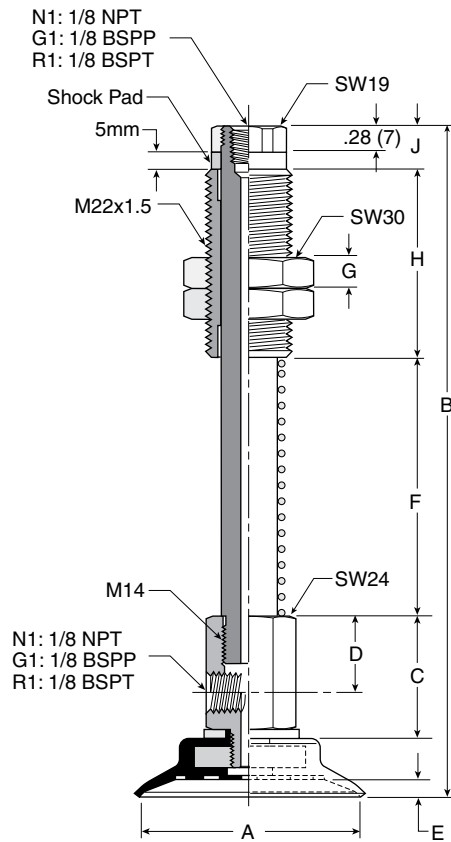
* Cup Material

† Vacuum Port

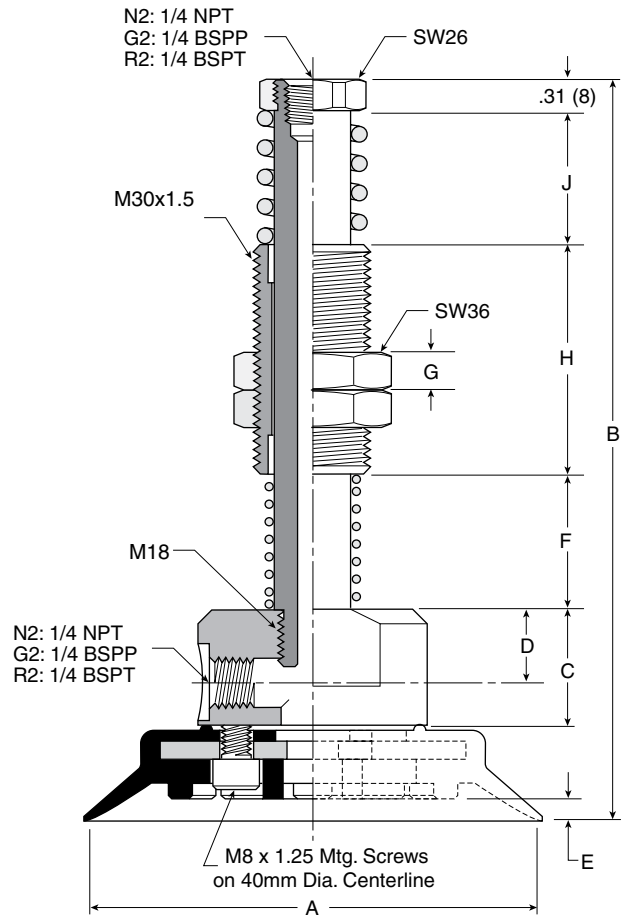


Dimensions

PFTYS6030 thru
PFTYS9570



PFTYS12020 thru
PFTYS20070



Model Number	ØA	B	C	D	E	F	G	H	J	Wt oz (g)
PFTYS6030*†	2.36 (60)	6.02 (153)	1.28 (32.5)	.78 (20)	.20 (5)	1.77 (45)	.39 (10)	1.97 (50)	.47 (12)	9.7 (282)
PFTYS6050*†	2.36 (60)	7.01 (178)	1.28 (32.5)	.78 (20)	.20 (5)	2.76 (70)	.39 (10)	1.97 (50)	.47 (12)	11.2 (316)
PFTYS6070*†	2.36 (60)	7.99 (203)	1.28 (32.5)	.78 (20)	.20 (5)	3.74 (95)	.39 (10)	1.97 (50)	.47 (12)	12.1 (343)
PFTYS8030*†	3.15 (80)	6.10 (155)	1.28 (32.5)	.78 (20)	.24 (6)	1.77 (45)	.39 (10)	1.97 (50)	.47 (12)	11 (310)
PFTYS8050*†	3.15 (80)	7.09 (180)	1.28 (32.5)	.78 (20)	.24 (6)	2.76 (70)	.39 (10)	1.97 (50)	.47 (12)	12.2 (344)
PFTYS8070*†	3.15 (80)	8.07 (205)	1.28 (32.5)	.78 (20)	.24 (6)	3.74 (95)	.39 (10)	1.97 (50)	.47 (12)	13.1 (371)
PFTYS9530*†	3.74 (95)	6.12 (156)	1.28 (32.5)	.78 (20)	.24 (6)	1.77 (45)	.39 (10)	1.97 (50)	.47 (12)	12.4 (350)
PFTYS9550*†	3.74 (95)	7.11 (181)	1.28 (32.5)	.78 (20)	.24 (6)	2.76 (70)	.39 (10)	1.97 (50)	.47 (12)	13.6 (384)
PFTYS9570*†	3.74 (95)	8.09 (201)	1.28 (32.5)	.78 (20)	.24 (6)	3.74 (95)	.39 (10)	1.97 (50)	.47 (12)	14.5 (411)
PFTYS12020*†	4.72 (120)	7.56 (192)	1.28 (32.5)	.71 (18)	.24 (6)	1.38 (35)	.39 (10)	2.36 (60)	1.38 (35)	41.2 (1165)
PFTYS12070*†	4.72 (120)	10.12 (257)	1.28 (32.5)	.71 (18)	.24 (6)	3.94 (100)	.39 (10)	2.36 (60)	1.38 (35)	44 (1246)
PFTYS15020*†	5.91 (150)	7.83 (199)	1.28 (32.5)	.71 (18)	.35 (9)	1.38 (35)	.39 (10)	2.36 (60)	1.38 (35)	49 (1389)
PFTYS15070*†	5.91 (150)	10.39 (264)	1.28 (32.5)	.71 (18)	.35 (9)	3.94 (100)	.39 (10)	2.36 (60)	1.38 (35)	52 (1471)
PFTYS20020*†	7.87 (200)	8.03 (204)	1.28 (32.5)	.71 (18)	.51 (13)	1.38 (35)	.39 (10)	2.36 (60)	1.38 (35)	62 (1755)
PFTYS20070*†	7.87 (200)	10.59 (269)	1.28 (32.5)	.71 (18)	.51 (13)	3.94 (100)	.39 (10)	2.36 (60)	1.38 (35)	64.9 (1836)

Inches (mm)
* Cup Material
† Vacuum Port

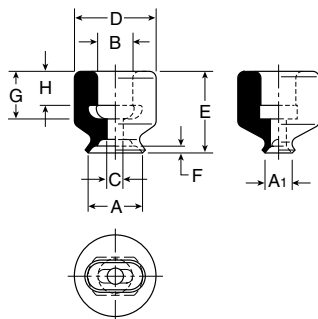


PFG Oval Vacuum Cups



Dimensions

PFG-2x4A



Model Number Index (Cups Only)

PFG - **2x4A** - **NBR**

Cup Diameter (mm)	
2x4A	(2 x 4)
3.5x7A	(3.5 x 7)

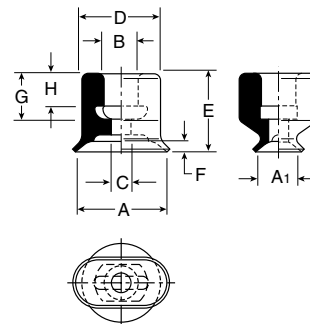
Cup Material	
Stocked	
NBR	Nitrile Rubber
SI	Silicone
Available (Consult Factory)	
NBRE	Nitrile ESD
CR	Chloroprene
SIE	Silicone ESD
U	Urethane
FKM	Flouro Rubber

(Bold Items are Stocked)

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	ØA	ØA ₁	ØB	ØC	ØD	E	F	G	H
PFG-2x4A	.16 (4)	.08 (2)	.10 (2.6)	.05 (1.2)	.24 (6)	.24 (6)	.02 (.5)	.14 (3.5)	.10 (2.5)
PFG-3.5x7A	.28 (7)	.14 (3.5)	.10 (2.6)	.06 (1.5)	.24 (6)	.24 (6)	.03 (.8)	.14 (3.5)	.10 (2.5)

Inches (mm)

PFTK Vacuum Cup Assemblies

Model Number Index

PFTK - **2x4A** - **NBR**

Cup Diameter (mm)	
2x4A	(2 x 4)
3.5x7A	(3.5 x 7)

Cup Material	
Stocked	
NBR	Nitrile Rubber
SI	Silicone
Available	
NBRE	Nitrile ESD
CR	Chloroprene
SIE	Silicone ESD
U	Urethane
FKM	Flouro Rubber

PFYK Vacuum Cup Assemblies

Model Number Index

PFYK - **2x4A** - **NBR**

Cup Diameter (mm)	
2x4A	(2 x 4)
3.5x7A	(3.5 x 7)

Cup Material	
Stocked	
NBR	Nitrile Rubber
SI	Silicone
Available	
NBRE	Nitrile ESD
CR	Chloroprene
SIE	Silicone ESD
U	Urethane
FKM	Flouro Rubber

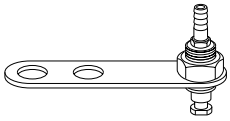


Installation



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.

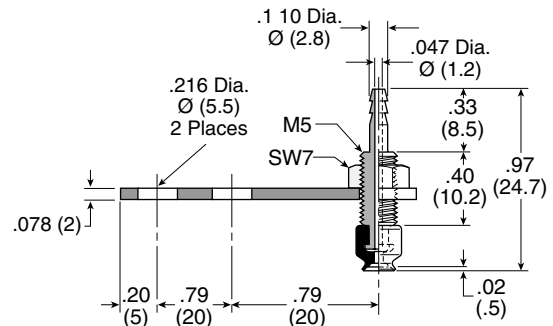
PFG Oval Cup with Top Stem Connection

PFG Oval Cup Size (mm)	FTK Fitting Assembly	Tube ID	Mounting Thread
 2 x 4 3.5 x 7	FTK-2x4A/3.5x7A	.078 (2)	M3x0.5 Male

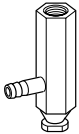
Inches (mm)



PFTK-2x4A & PFTK-3.5x7A



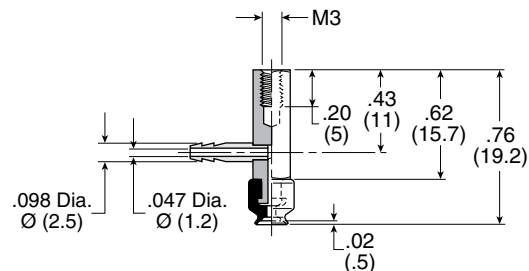
PFG Oval Cup with Side Stem Connection

PFG Oval Cup Size (mm)	FYK Fitting Part Number	Tube ID	Mounting Thread
 2 x 4 3.5 x 7	FYK-2x4A/3.5x7A	.078 (2)	M3 Female

Inches (mm)



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.

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.



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.



PFOTK Series Barbed Bulkhead

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



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.



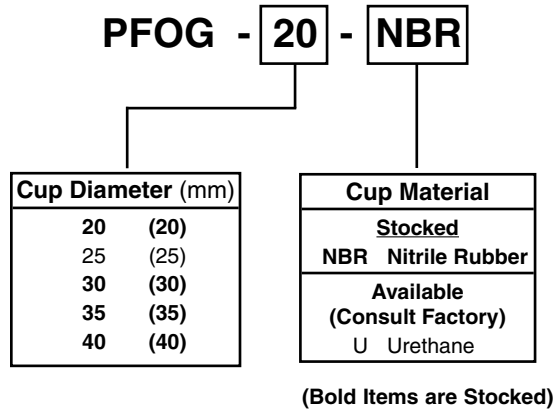
PFOTYS Series Bulkhead Level Compensator

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)



Specifications

Suction Cup Material	NBR	U
	Nitrile	Urethane
Operating Temperature (°C)	-20° to +120°	-30° to +120°
Color	Black	Blue
Hardness, Shore A (°Sh)	55 ±5	55 ±5
Wear Resistance	•••••	•••••
Tear Strength	••••	•••••
Aging Resistance	••••	•••••
Ozone Resistance	••••	•••••
Gasoline Resistance	•••••	•••••
Oil Resistance	•••••	•••••
Acid Resistance	•••	•
Alkali Resistance	••••	•
Chemical Resistance	•••	•••••
Mechanical Resistance	••••	•••••

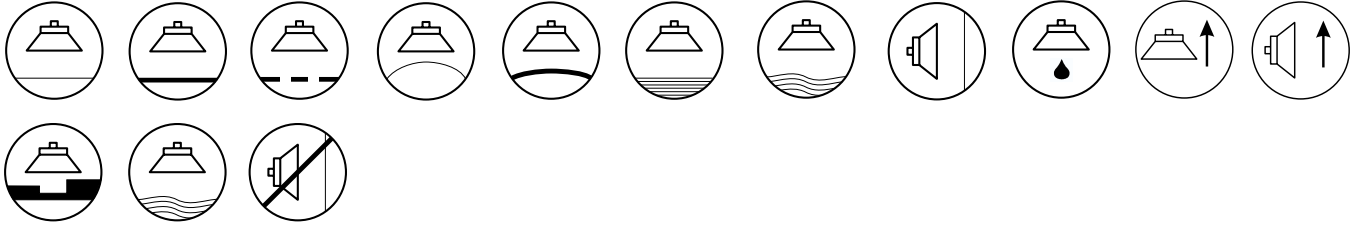
••••• = excellent; ••••• = very good; •••• = good;
 ••• = medium; •• = poor; • = not recommended

* ESD: Electric Static Dissipative Material

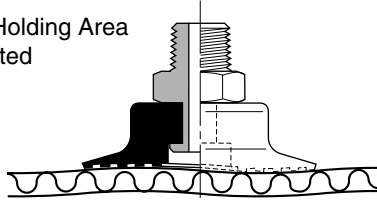


Selection Guide

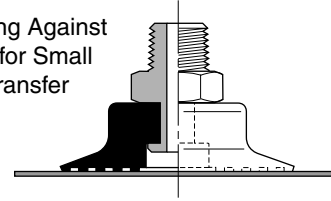
Anti-Slip Flat Cups



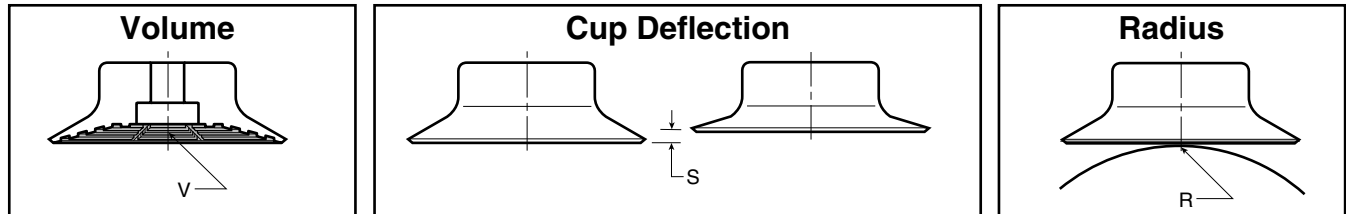
- Increased Holding Area for Corrugated



- Resists Slipping Against Oily Surfaces for Small Sheet Metal Transfer



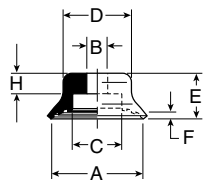
Main Data for Anti-Slip PFOG Suction Cups



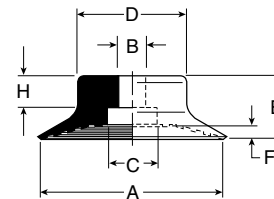
Model Number	Cup Diameter Inches (mm)	Area cm ²	Volume (V) liters	Lifting Force @ 60% (N)		Cup Deflection (S) mm	Radius R (mm)
PFOG-20	.79 (20)	3.14	0.0008	18.0	11.25	2.3	4.0
PFOG-25	.98 (25)	4.91	0.0013	29.0	18.0	3.0	17.5
PFOG-30	1.18 (30)	7.07	0.0018	42.0	26.0	2.0	26.0
PFOG-35	1.37 (35)	9.62	0.0026	57.0	35.0	3.0	37.0
PFOG-40	1.57 (40)	12.60	0.0040	74.0	46.0	3.5	41.0

Dimensions

PFOG-20



PFOG-25 thru PFOG-40



Model Number	ØA	ØB	ØC	ØD	E	F	H
PFOG-20-*	.79 (20)	.18 (4.6)	.43 (11)	.59 (15)	.39 (10)	.06 (1.5)	.18 (4.5)
PFOG-25-*	.98 (25)	.24 (6)	.43 (11)	.63 (16)	.55 (14)	.04 (1.1)	.28 (7)
PFOG-30-*	1.18 (30)	.24 (6)	.43 (11)	.55 (14)	.47 (12)	.05 (1.3)	.28 (7)
PFOG-35-*	1.37 (35)	.24 (6)	.43 (11)	.83 (21)	.47 (12)	.06 (1.6)	.28 (7)
PFOG-40-*	1.57 (40)	.24 (6)	.43 (11)	.94 (24)	.55 (14)	.11 (2.8)	.28 (7)

Inches (mm)

* Cup Material



Vacuum Cups

PFOTM Vacuum Cup Assemblies

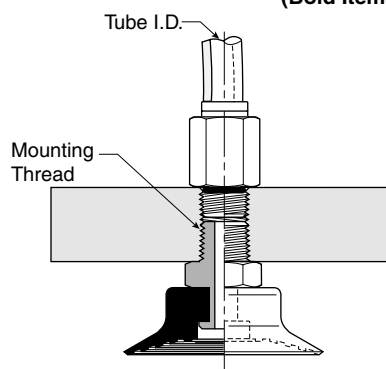


Model Number Index

PFOTM - **25** - **NBR** - **N1**

Cup Diameter (mm)	Cup Material	Mounting Thread
25 (25)	Stocked	N1 1/8 NPT
30 (30)	NBR Nitrile Rubber	G1 1/8 BSPP
35 (35)	Available (Consult Factory)	M10 M10
40 (40)	U Urethane	G2 1/4 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.

Male Threaded Fitting for PFOG Cups

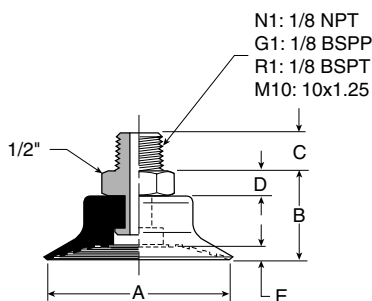
(Bold Items are Stocked)

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

Inches (mm)

Dimensions

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



Model Number	ØA	B	C	D	E
PFOTM-25-*†	.98 (25)	.75 (19)	.31 (8)	.20 (5)	.04 (1.1)
PFOTM-30-*†	1.18 (30)	.67 (17)	.31 (8)	.20 (5)	.05 (1.3)
PFOTM-35-*†	1.38 (35)	.75 (19)	.31 (8)	.20 (5)	.06 (1.6)
PFOTM-40-*†	1.57 (40)	.75 (19)	.31 (8)	.20 (5)	.11 (2.8)

Inches (mm)

* Cup Material

† Thread Size



PFOTF Vacuum Cup Assemblies



Model Number Index

PFOTF - **25** - **NBR** - **N1**

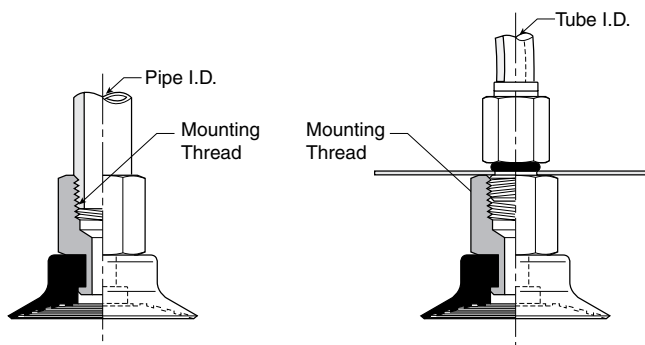
Cup Diameter (mm)	Cup Material	Mounting Thread
25 (25)	Stocked	N1 1/8 NPT
30 (30)	NBR Nitrile Rubber	G1 1/8 BSPP
35 (35)	Available (Consult Factory)	G2 1/4 BSPP
40 (40)	U Urethane	See Chart Below

(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 PFOG Cups

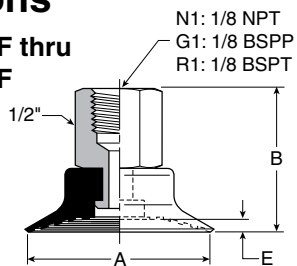
(Bold Items are Stocked)

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

Inches (mm)

Dimensions

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



Model Number	ØA	B	E
PFOTF-25-*†	.98 (25)	1.10 (28)	.04 (1.1)
PFOTF-30-*†	1.18 (30)	1.02 (26)	.05 (1.3)
PFOTF-35-*†	1.38 (35)	1.10 (28)	.06 (1.6)
PFOTF-40-*†	1.57 (40)	1.10 (28)	.11 (2.8)

Inches (mm)

* Cup Material

† Thread Size



PFOTK Vacuum Cup Assemblies



Model Number Index

PFOTK - 25 - NBR

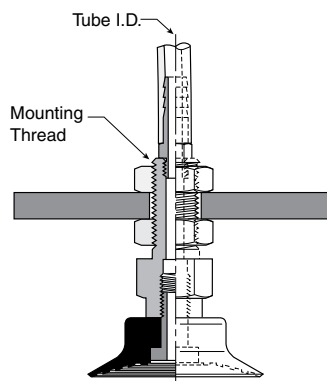
Cup Diameter (mm)	Cup Material
20 (20)	Stocked
25 (25)	NBR Nitrile Rubber
30 (30)	Available (Consult Factory)
35 (35)	U Urethane
40 (40)	

(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

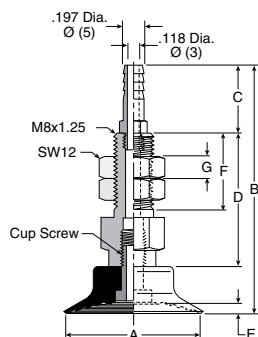
(Bold Items are Stocked)

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

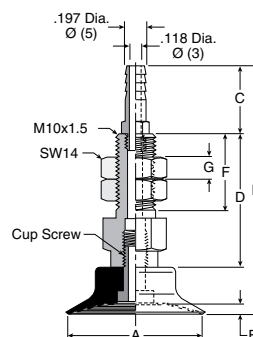
Inches (mm)

Dimensions

PFOTK-20



PFOTK-25 thru PFOTK-40



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

Inches (mm)

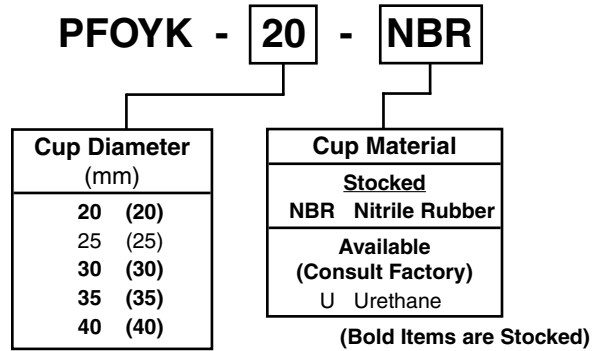
* Cup Material



PFOYK Vacuum Cup Assemblies



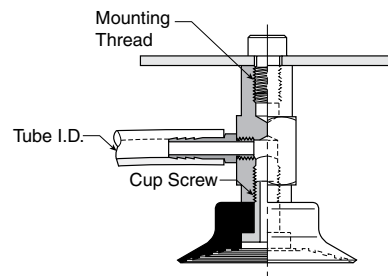
Model Number Index



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 PFOG Cups

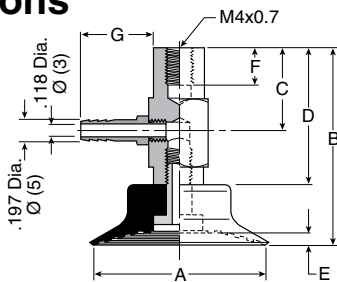
(Bold Items are Stocked)

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

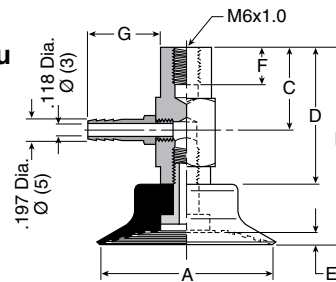
Inches (mm)

Dimensions

PFOYK-20



PFOYK-25 thru PFOYK-40



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

Inches (mm)

* Cup Material



PFOTYS Vacuum Cup Assemblies

Model Number Index

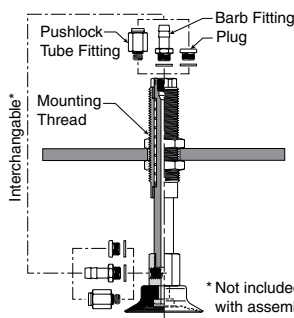


PFOTYS **25 6** **NBR**

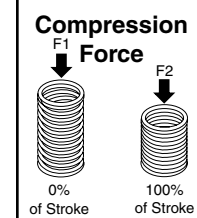
Cup Diameter (mm)	Stroke
25 (25)	6, 15, 30
30 (30)	
35 (35)	
40 (40)	

Cup Material
Stocked
NBR Nitrile Rubber
Available (Consult Factory)
U Urethane

(Bold Items are Stocked)



* Not included with assembly.



Installation

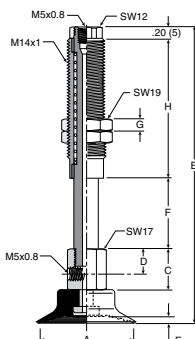
Note:
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage.
Shown are interchangeable connectors & plugs for port connections.

Bulkhead Level Compensator Fitting for PFOG Cups (Bold Items are Stocked)

Included in Kit	Cup Diameter (mm)	TYS Assembly Part Number	Stroke	Port Thread	F1 lbf (N)	F2 lbf (N)
	25, 30, 35, 40	TYS-20B-6	6mm	M5x0.8	.56 (2.5)	.79 (3.4)
		TYS-20B-15	15mm		.56 (2.5)	1.2 (4.9)
		TYS-20B-30	30mm		.67 (2.9)	1.4 (5.9)

Dimensions

PFOTYS25 thru PFOTYS40



Model Number	ØA	B	C	D	E	F	G	H	Wt oz. (g)
PFOTYS256*	.98 (25)	3.07 (78)	.67 (17)	.39 (10)	.04 (1.1)	.24 (6)	.20 (5)	1.42 (36)	2.3 (66)
PFOTYS2515*	.98 (25)	3.43 (87)	.67 (17)	.39 (10)	.04 (1.1)	.59 (15)	.20 (5)	1.42 (36)	2.5 (71)
PFOTYS2530*	.98 (25)	4.88 (124)	.67 (17)	.39 (10)	.04 (1.1)	1.18 (30)	.20 (5)	2.28 (58)	3.4 (96)
PFOTYS306*	1.18 (30)	2.99 (76)	.67 (17)	.39 (10)	.05 (1.3)	.24 (6)	.20 (5)	1.42 (36)	2.4 (67)
PFOTYS3015*	1.18 (30)	3.35 (85)	.67 (17)	.39 (10)	.05 (1.3)	.59 (15)	.20 (5)	1.42 (36)	2.5 (72)
PFOTYS3030*	1.18 (30)	4.80 (122)	.67 (17)	.39 (10)	.05 (1.3)	1.18 (30)	.20 (5)	2.28 (58)	3.5 (97)
PFOTYS356*	1.38 (35)	2.99 (76)	.67 (17)	.39 (10)	.06 (1.6)	.24 (6)	.20 (5)	1.42 (36)	2.5 (71)
PFOTYS3515*	1.38 (35)	3.35 (85)	.67 (17)	.39 (10)	.06 (1.6)	.59 (15)	.20 (5)	1.42 (36)	2.6 (74)
PFOTYS3530*	1.38 (35)	4.80 (122)	.67 (17)	.39 (10)	.06 (1.6)	1.18 (30)	.20 (5)	2.28 (58)	3.6 (99)
PFOTYS406*	1.57 (40)	3.07 (78)	.67 (17)	.39 (10)	.11 (2.8)	.24 (6)	.20 (5)	1.42 (36)	2.5 (71)
PFOTYS4015*	1.57 (40)	3.43 (87)	.67 (17)	.39 (10)	.11 (2.8)	.59 (15)	.20 (5)	1.42 (36)	2.7 (76)
PFOTYS4030*	1.57 (40)	4.88 (124)	.67 (17)	.39 (10)	.11 (2.8)	1.18 (30)	.20 (5)	2.28 (58)	3.6 (101)

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**

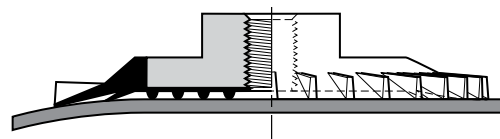
Applications

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.

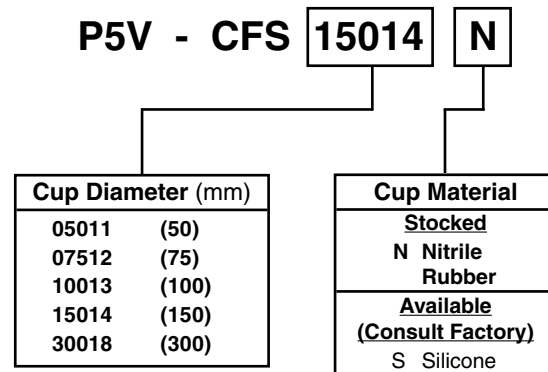


Bottom View





Model Number Index



(Bold Items are Stocked)

Specifications

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

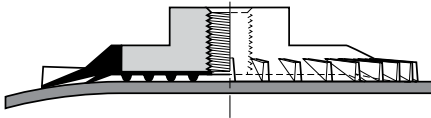
Part Number	Cup Diameter (mm)	Thread Size
05011	(50)	1/8"
07512	(75)	1/4"
10013	(100)	3/8"
15014	(150)	1/2"
30018	(300)*	1"

* 300mm Cup has an additional 1/2" female port for increase vacuum flow.



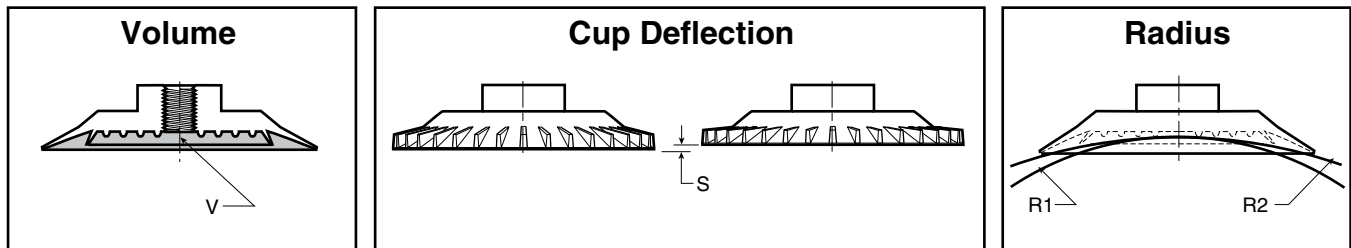
Application Guide

Flat - Smooth Surface



- Products With Smooth Surfaces
- Destacking Applications

Main Data for Flat P5V-CFS Cups

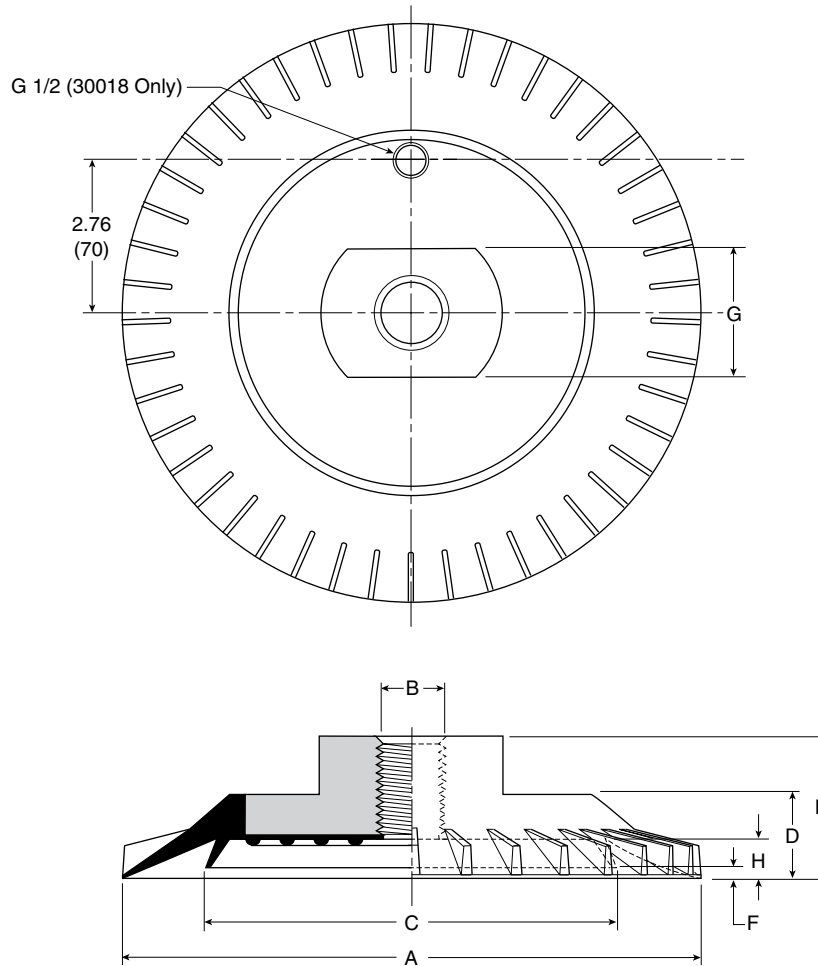


Model Number	Cup Diameter Inches (mm)		Area ^{***} cm ²	Cup Volume (V) Liters	Deflection (S) (mm)	Radius R (mm)	
	Inner	Outer				R1*	R2**
P5V-CFS05011	1.38 (35)	1.97 (50)	19.6	.001	.16 (4)	3.86 (98)	3.15 (80)
P5V-CFS07512	2.13 (54)	2.95 (75)	44.2	.03	.24 (6)	6.97 (177)	4.88 (124)
P5V-CFS10013	2.83 (72)	3.94 (100)	78.5	.0667	.30 (8)	10.00 (254)	6.34 (161)
P5V-CFS15014	4.17 (106)	5.91 (150)	176.7	.2083	.43 (11)	12.17 (309)	9.92 (252)
P5V-CFS30018	8.07 (205)	11.81 (300)	706.7	1.467	.75 (19)	45.59 (1158)	22.87 (581)

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



Dimensions



Model Number	ØA	B	ØC	D	E	F	G	H
P5V-CFS50*	1.97 (50)	G1/8	1.38 (35)	0.43 (11)	0.71 (18)	0.087 (2.2)	0.51 (13)	0.146 (3.7)
P5V-CFS75*	2.95 (75)	G1/4	2.13 (54)	0.55 (14)	0.87 (22)	0.138 (3.5)	0.67 (17)	0.217 (5.5)
P5V-CFS100*	3.94 (100)	G3/8	2.83 (72)	0.71 (18)	1.10 (28)	0.197 (5)	0.87 (22)	0.295 (7.5)
P5V-CFS150*	5.91 (150)	G1/2	4.17 (106)	1.02 (26)	1.65 (42)	0.276 (7)	1.06 (27)	0.43 (11)
P5V-CFS300*	11.81 (300)	G1	8.07 (205)	1.73 (44)	2.76 (70)	0.59 (15)	1.81 (46)	0.75 (19)

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 product. Under vacuum, the bellow 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 bellow style adds level compensation for applications that have inconsistent stack heights or uneven surfaces. The inclusive 30-degree rotation of the bellow 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 bellow cup design provides increased sealing lip and level compensation for products with irregular, smooth, curved surfaces.

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.



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.



PBTK Series Barbed Bulkhead

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



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.



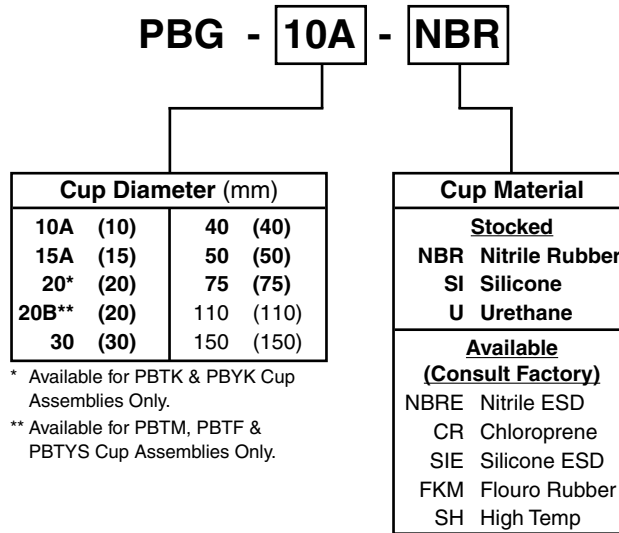
PBTYS Series Bulkhead Level Compensator

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)



(Bold Items are Stocked)

Specifications

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

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

* ESD: Electric Static Dissipative Material

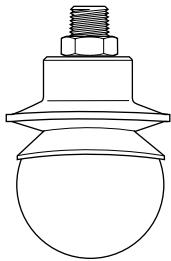


Application Guide

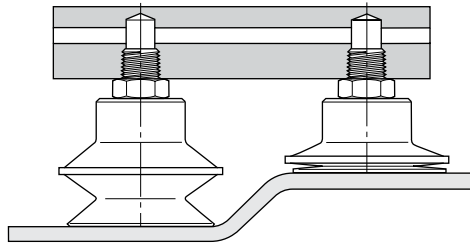
Bellows



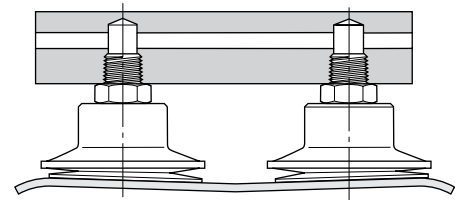
- Round Objects



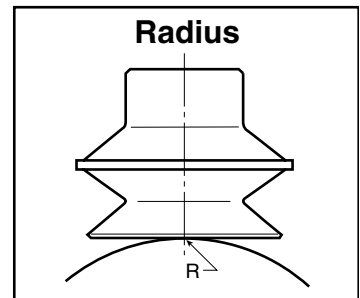
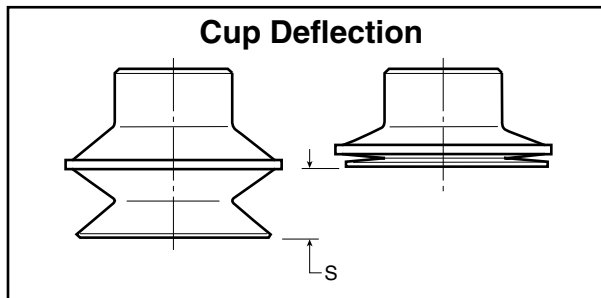
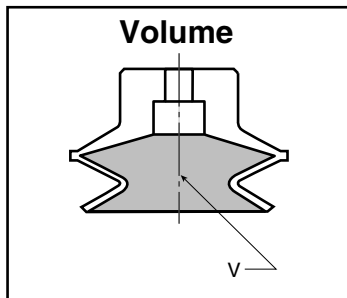
- Uneven Surfaces
- Curved Product
- Level Compensation



- Flexible Product
- Soft Seal Lip



Main Data for Bellows PBG Cups



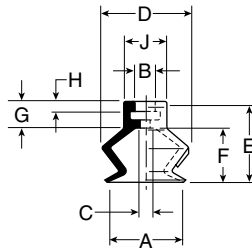
Model Number	Cup Diameter Inches (mm)	Area cm ²	Volume (V) Liters	Lifting Force @60% (N)		Cup Deflection (S) (mm)	Radius (R) (mm)
PBG-10A-*	.39 (10)	0.79	.0002	4.80	—	.16 (4)	4
PBG-15A-*	.59 (15)	1.77	.0007	10.80	—	.24 (6)	6
PBG-20-*	.79 (20)	3.14	.001	19.20	—	.35 (9)	8
PBG-20B-*	.79 (20)	3.14	.001	19.20	—	.35 (9)	8
PBG-30-*	1.18 (30)	7.07	.004	43.2	—	.51 (13)	15
PBG-40-*	1.57 (40)	12.60	.009	76.9	—	.51 (13)	30
PBG-50-*	1.97 (50)	19.60	.026	120	—	.79 (20)	40
PBG-75-*	2.95 (75)	44.02	.076	270	—	.87 (22)	70
PBG-110-*	4.33 (110)	95.00	.111	434	—	1.14 (29)	100
PBG-150-*	5.91 (150)	176.70	.260	1081	—	1.50 (38)	130

* Cup Material

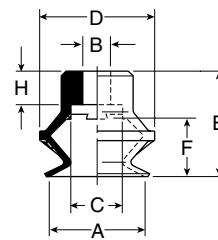


Dimensions

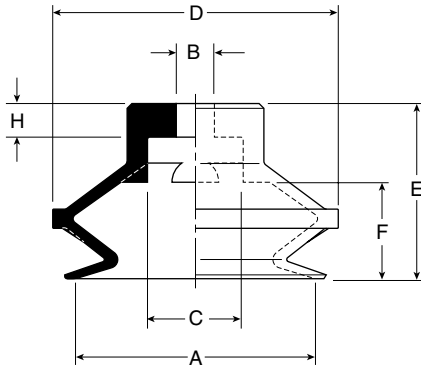
**PBG-10A and
PBG-20B**



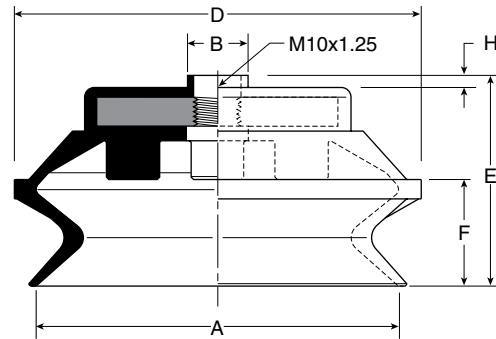
**PBG-20 thru
PBG-40**



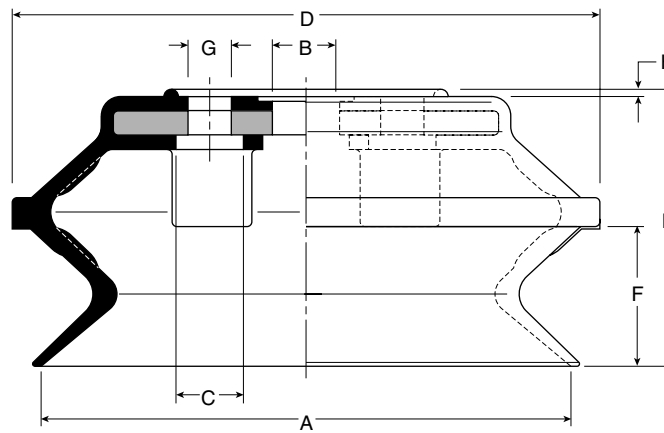
PBG-50



PBG-75



**PBG-110 and
PBG-150**



Model Number	ØA	ØB	ØC	ØD	E	F	G	H	ØJ
PBG-10A-*	.42 (10.6)	.16 (4)	.08 (2)	.79 (12.5)	.53 (13.5)	.30 (7.5)	.24 (6)	.08 (2)	.24 (6)
PBG-15A-*	.59 (15)	.16 (4)	.16 (4)	.67 (17)	.63 (16)	.39 (10)	.24 (6)	.08 (2)	.24 (6)
PBG-20B-*	.79 (20)	.24 (6)	.43 (10.8)	.94 (24)	.87 (22)	.47 (12)	—	.28 (7)	—
PBG-20-*	.79 (20)	.18 (4.6)	.43 (10.8)	.94 (24)	.77 (19.5)	.47 (12)	—	.18 (4.5)	—
PBG-30-*	1.18 (30)	.23 (5.8)	.43 (10.8)	1.42 (36)	1.20 (30.5)	.67 (17)	—	.28 (7)	—
PBG-40-*	1.57 (40)	.23 (5.8)	.43 (10.8)	1.81 (46)	1.20 (30.5)	.61 (15.5)	—	.28 (7)	—
PBG-50-*	1.97 (50)	.31 (7.8)	.78 (19.8)	2.34 (59.5)	1.44 (36.5)	.79 (20)	—	.28 (7)	—
PBG-75-*	2.95 (75)	.49 (12.5)	—	3.31 (84)	1.71 (43.5)	.87 (22)	—	.10 (2.5)	—
PBG-110-*	4.33 (110)	.55 (14)	.55 (14)	4.80 (122)	2.26 (57.5)	1.14 (29)	—	.059 (1.5)	—
PBG-150-*	5.91 (150)	.79 (20)	.55 (14)	6.57 (167)	3.01 (76.5)	1.50 (38)	4xØ9xØ40	.059 (1.5)	—

Inches (mm)
* Cup Material



PBTM Vacuum Cup Assemblies



Model Number Index

PBTM - 10A - NBR - M5

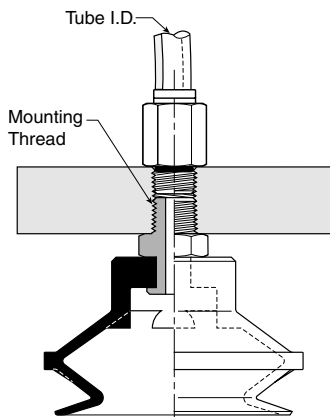
Cup Diameter (mm)		Cup Material	Mounting Thread	
10A (10)	40 (40)	Stocked	M5	M5
15A (15)	50 (50)	NBR Nitrile Rubber	N1	1/8 NPT
20B (20)	75 (75)	SI Silicone	G1	1/8 BSPP
30 (30)		U Urethane	M10	M10
		Available (Consult Factory)	N2	1/4 NPT
		NBRE Nitrile ESD	G2	1/4 BSPP
		CR Chloroprene	See Chart Below	
		SIE Silicone ESD		
		FKM Fluoro Rubber		
		SH High Temp		

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.



(Bold Items are Stocked)

Male Threaded Fitting for PBG Cups

(Bold Items are Stocked)

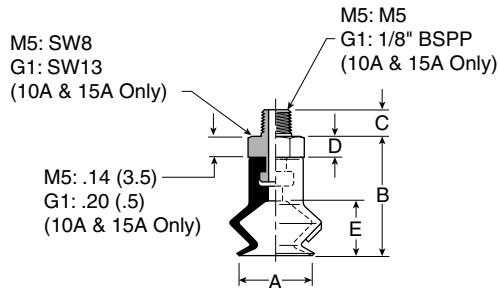
Included in Kit	Cup Diameter (mm)	Mounting Thread Code	Mounting Thread	FTM Fitting Part Number	Min. Tube ID
	10, 15	M5	M5x0.8 Male	FTM-5A-M5H	.157 (4)
		G1	1/8 BSPP Male	FTM-5A-G1	
	20, 30, 40	N1	1/8 NPT Male	FTM-20B-N1	.157 (4)
		G1	1/8 BSPP Male	FTM-20B-G1H	
		G2	1/4 BSPP Male	FTM-20B-G2	
	50	M10	M10x1.25 Male	FTM-20B-M10	
N1		1/8 NPT Male	FTM-50-N1	.157 (4)	
G1		1/8 BSPP Male	FTM-50-G1H		
G2	1/4 BSPP Male	FTM-50-G2			
	75	N2	1/4 NPT Male	FTM-60-N2	.25 (6.35)
		G2	1/4 BSPP Male	FTM-60-G2	
		M10	M10x1.25 Male	FTM-60-M10	

Inches (mm)

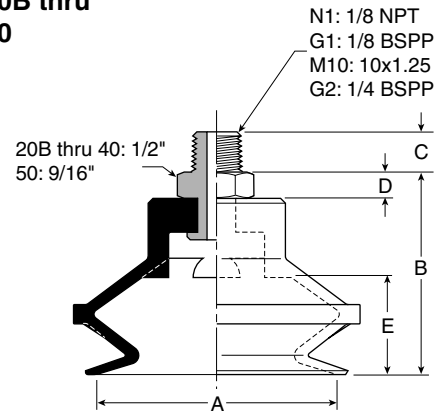


Dimensions

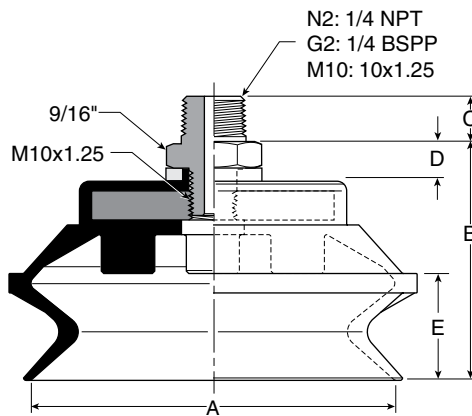
PBTM-10A thru PBTM-15



PBTM-20B thru PBTM-50



PBTM-75



Model Number	ØA	B	C (M5)	C (N1 / G1)	C (M10 / G2)	C (N2)	D	E
PBTM-10A-*†	.39 (10)	.67 (17)	.18 (4.5)	.31 (8)	—	—	See Dwg.	.30 (7.5)
PBTM-15A-*†	.59 (15)	.77 (19.5)	.18 (4.5)	.31 (8)	—	—	See Dwg.	.39 (10)
PBTM-20B-*†	.79 (20)	1.06 (27)	—	.31 (8)	.39 (10)	—	.20 (5)	.47 (12)
PBTM-30-*†	1.18 (30)	1.40 (35.5)	—	.31 (8)	.39 (10)	—	.20 (5)	.67 (17)
PBTM-40-*†	1.57 (40)	1.40 (35.5)	—	.31 (8)	.39 (10)	—	.20 (5)	.61 (15.5)
PBTM-50-*†	1.97 (50)	1.63 (41.5)	—	.31 (8)	.39 (10)	—	.20 (5)	.79 (20)
PBTM-75-*†	3.74 (95)	1.99 (50.5)	—	—	.39 (10)	.59 (15)	.28 (7)	.87 (22)

Inches (mm)
 * Cup Material
 † Thread Size



PBTF Vacuum Cup Assemblies



Model Number Index

PBTF - 10A - NBR - M5

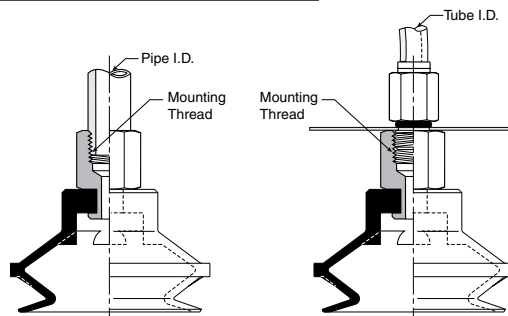
Cup Diameter (mm)			
10A	(10)	50	(50)
15A	(15)	75	(75)
20B	(20)	110	110)
30	(30)	150	(150)
40	(40)		

Cup Material	
Stocked	
NBR	Nitrile Rubber
SI	Silicone
U	Urethane
Available (Consult Factory)	
NBRE	Nitrile ESD
CR	Chloroprene
SIE	Silicone ESD
FKM	Flouro Rubber
SH	High Temp

Mounting Thread	
M5	M5
N1	1/8 NPT
G1	1/8 BSPP
N2	1/4 NPT
G2	1/4 BSPP
N4	1/2 NPT
G4	1/2 BSPP
See Chart Below	

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.



(Bold Items are Stocked)

Female Threaded Fitting for PBG Cups

(Bold Items are Stocked)

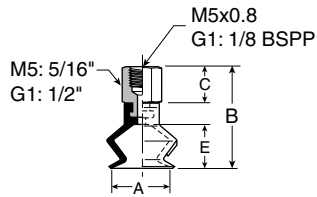
Included in Kit	Cup Diameter (mm)	Mounting Thread Code	Mounting Thread	FTF Fitting Part Number	Min. Tube ID
	10, 15	M5	M5x0.8 Female	FTF-5A-M5	.157 (4)
		G1	1/8 BSPP Male	FTF-5A-G1	
	20, 30, 40	N1	1/8 NPT Female	FTF-20B-N1	
		G1	1/8 BSPP Female	FTF-20B-G1	
		G2	1/4 BSPP Female	FTF-20B-G2	
		N1	1/8 NPT Female	FTF-50-N1	
50	G1	1/8 BSPP Female	FTF-50-G1		
	G2	1/4 BSPP Female	FTF-50-G2		
	75	N2	1/4 NPT Female	FTF-60-N2	.25 (6.35)
G2		1/4 BSPP Female	FTF-60-G2		
	110, 150	N4	1/2 NPT Female	FTF-120-N4	.312 (8)
		G4	1/2 BSPP Female	FTF-120-G4	

Inches (mm)

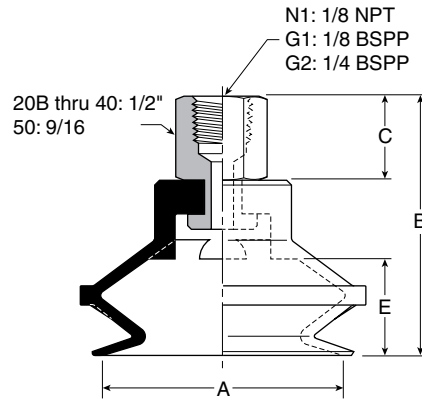


Dimensions

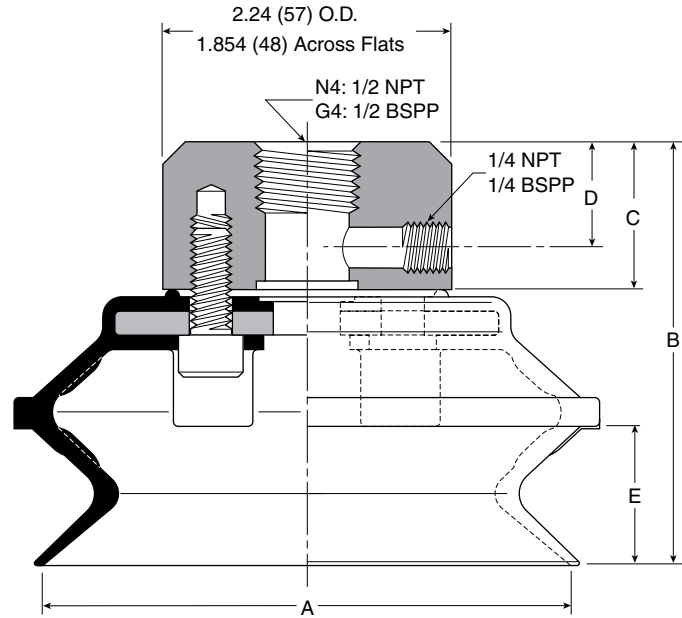
**PBTF-10A thru
 PBTF-15A**



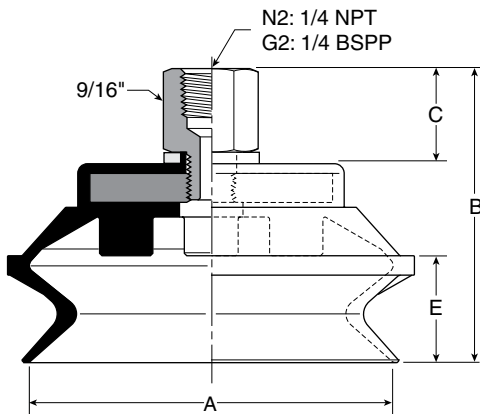
**PBTF-20B thru
 PBTF 50**



**PBTF-110 thru
 PBTF-150**



PBTF-75



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

Inches (mm)
 * Cup Material
 † Thread Size



PBTK Vacuum Cup Assemblies



Model Number Index

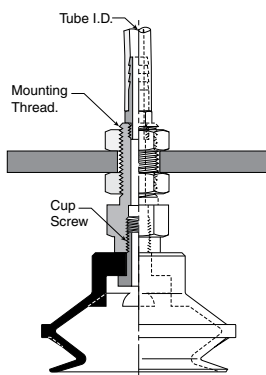
PBTK - **10A** - **NBR** - **—**

Cup Diameter (mm)		Cup Material	Vacuum Port
10A (10)	40 (40)	Stocked	Blank Barb
15A (15)	50 (50)	NBR Nitrile Rubber	N1 1/8 NPT
20 (20)	75 (75)	SI Silicone	G1 1/8 BSPP
30 (30)		U Urethane	R1 1/8 BSPT
		Available (Consult Factory)	See Chart Below
		NBRE Nitrile ESD	
		CR Chloroprene	
		SIE Silicone ESD	
		FKM Fluoro Rubber	
		SH High Temp	

(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 PBG Cups

(Bold Items are Stocked)

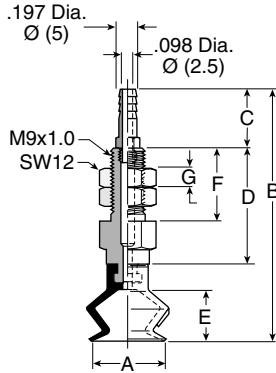
Included in Kit	Cup Diameter (mm)	Vacuum Port		FTK Fitting Part Number	Cup Screw Only	Thread	Tube ID
		Code	Thread				
	10, 15	Blank	Barb	FTK-5A	N/A	M9x1.0 Male	.157 (4)
	20	Blank	Barb	FTK-20	TN-PF-20-M5	M8x1.25 Male	.157 (4)
	30, 40	Blank	Barb	FTK-25	TN-PF-25-M6	M10x1.25 Male	
	50	Blank	Barb	FTK-50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

Inches (mm)

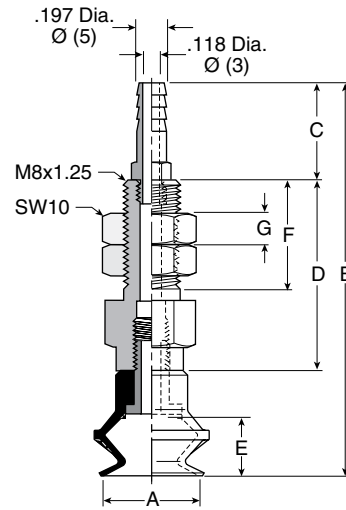


Dimensions

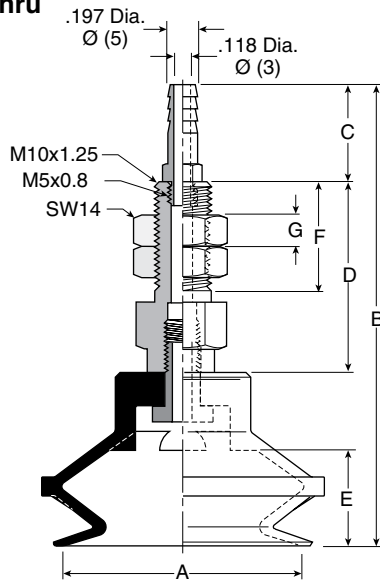
**PBTK-10A thru
 PBTK-15A**



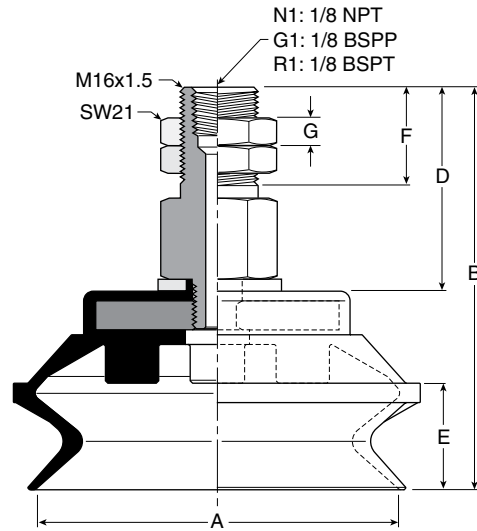
PBTK-20



**PBTK-30 thru
 PBTK-50**



PBTK-75



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

Inches (mm)
 * Cup Material
 † Vacuum Port



PBYK Vacuum Cup Assemblies



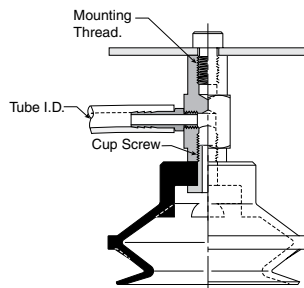
Model Number Index

PBYK - 10A - NBR - —

Cup Diameter (mm)		Cup Material	Vacuum Port	
10A (10)	40 (40)	Stocked	Blank	Barb
15A (15)	50 (50)	NBR Nitrile	N1	1/8 NPT
20 (20)	75 (75)	Rubber	G1	1/8 BSPP
30 (30)	110 (110)	SI Silicone	R1	1/8 BSPT
40 (40)	150 (150)	U Urethane	See Chart Below	
		Available (Consult Factory)		
		NBRE Nitrile ESD		
		CR Chloroprene		
		SIE Silicone ESD		
		FKM Fluoro Rubber		
		SH High Temp		

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.



(Bold Items are Stocked)

90° Barbed Adapter for PBG Cups

(Bold Items are Stocked)

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

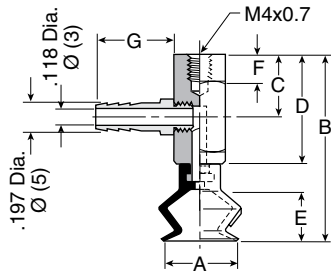
Inches (mm)



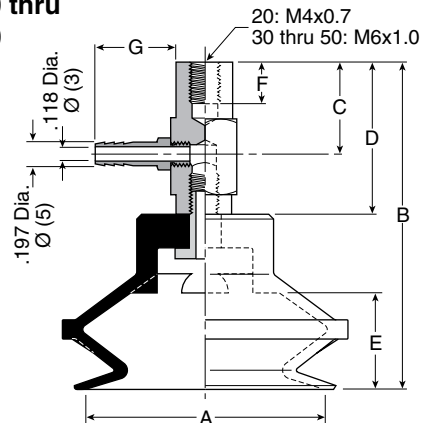
Vacuum Cups

Dimensions

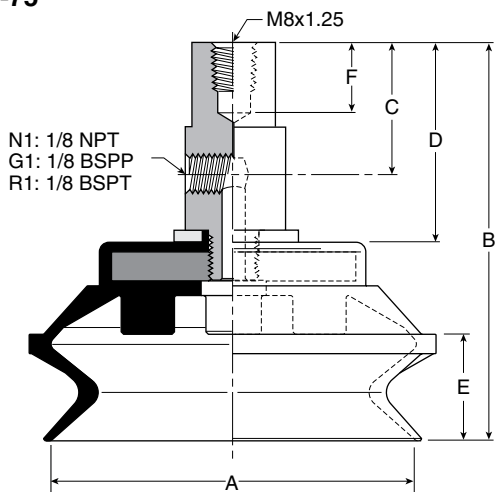
**PBYK-10A thru
PBYK-15A**



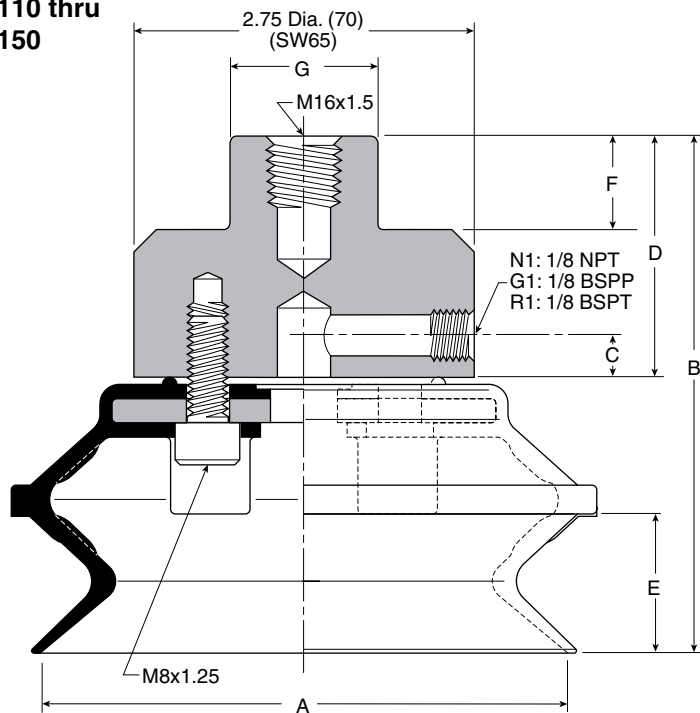
**PBYK-20 thru
PBYK-50**



PBYK-75



**PBYK-110 thru
PBYK-150**



Model Number	ØA	B	C	D	E	F	G	Wt oz (g)
PBYK-10A-*	.39 (10)	1.42 (36)	.51 (13)	.89 (22.5)	.29 (7.5)	.24 (6)	.63 (16)	.6 (16)
PBYK-15A-*	.59 (15)	1.52 (38.5)	.51 (13)	.89 (22.5)	.39 (10)	.24 (6)	.63 (16)	.6 (16)
PBYK-20-*	.79 (20)	1.63 (41.5)	.55 (14)	.87 (22)	.47 (12)	.24 (6)	.63 (16)	.7 (21)
PBYK-30-*	1.18 (30)	2.46 (62.5)	.79 (20)	1.26 (32)	.67 (17)	.24 (6)	.63 (16)	1.6 (45)
PBYK-40-*	1.57 (40)	2.46 (62.5)	.79 (20)	1.26 (32)	.61 (15.5)	.24 (6)	.63 (16)	2.0 (58)
PBYK-50-*	1.97 (50)	2.70 (68.5)	.79 (20)	1.26 (32)	.78 (20)	.24 (6)	.63 (16)	2.4 (67)
PBYK-75-*.†	3.74 (95)	3.29 (83.5)	1.10 (28)	1.67 (42.5)	.86 (22)	.43 (11)	—	6.9 (176)
PBYK-110-*.†	4.72 (120)	4.17 (106)	.47 (12)	1.97 (50)	1.14 (29)	.79 (20)	1.18 Dia. (30)	26.4 (670)
PBYK-150-*.†	5.91 (150)	4.92 (125)	.47 (12)	1.97 (50)	1.50 (38)	.79 (20)	1.18 Dia. (30)	46.5 (1180)

Inches (mm)
* Cup Material
† Vacuum Port



PBTYS Vacuum Cup Assemblies

Model Number Index



PBTYS 10A 3 NBR M5

Cup Diameter (mm)	Stroke (mm)	Cup Material	Vacuum Ports
10A (10)	3, 10, 15	Stocked	M5 M5 N1 1/8 NPT N2 1/4 NPT See Chart Below
15A (15)		NBR Nitrile Rubber	
20B (20)		SI Silicone	
30 (30)	6, 15, 30	U Urethane	See Chart Below
40 (40)		Available (Consult Factory)	
50 (50)		NBRE Nitrile ESD	
75 (75)	30*, 50*, 70*	CR Chloroprene	See Chart Below
110 (110)	20, 70	SIE Silicone ESD	
150 (150)		FKM Fluoro Rubber	
		SH High Temp	

* Stroke reduced by 5mm due to shock pad.

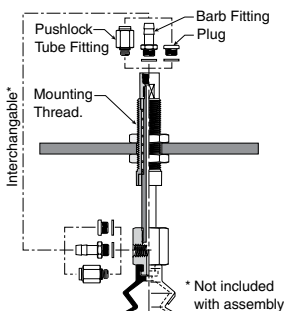
(Bold Items are Stocked)

Installation

Note:

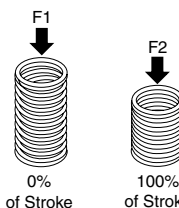
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage.

Shown are interchangeable connectors & plugs for port connections.



* Not included with assembly

Compression Force



Bulkhead Level Compensator for PBG Cups

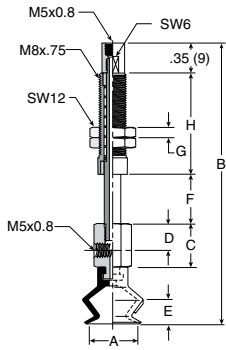
(Bold Items are Stocked)

Included in Kit	Cup Diameter (mm)	Vacuum Port		TYS Assembly Part Number	Stroke	F1 lbf (N)	F2 lbf (N)
		Code	Thread				
	10, 15	M5	M5x0.8 Female	TYS-5A-3	3mm	.11 (.49)	.13 (.59)
				TYS-5A-10	10mm	.11 (.49)	
				TYS-5A-15	15mm	.11 (.49)	
	20, 30, 40	M5	M5x0.8 Female	TYS-20B-6	6mm	.56 (2.5)	.79 (3.4)
				TYS-20B-15	15mm	.56 (2.5)	1.2 (4.9)
				TYS-20B-30	30mm	.67 (2.9)	1.4 (5.9)
	50	M5	M5x0.8 Female	TYS-50-6	6mm	.56 (2.5)	.79 (3.4)
				TYS-50-15	15mm	.56 (2.5)	1.2 (4.9)
				TYS-50-30	30mm	.67 (2.9)	1.4 (5.9)
	75	N1	1/8 NPT Female	TYS-60-30	30mm	1.6 (6.8)	3.6 (15.6)
				TYS-60-50	50mm	1.9 (8.3)	4.5 (19.6)
				TYS-60-70	70mm	2.2 (9.5)	4.8 (21)
	110, 150	N2	1/4 NPT Female	TYS-120-20	20mm	3.6 (15.6)	6.8 (29)
				TYS-120-70	70mm	3.4 (14.7)	

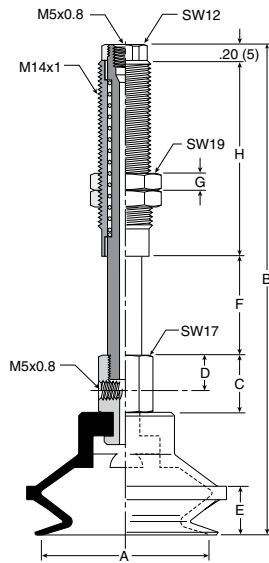


Dimensions

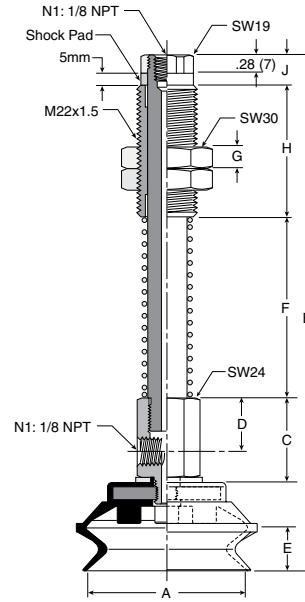
**PBTYS10A3 thru
PBTYS15A15**



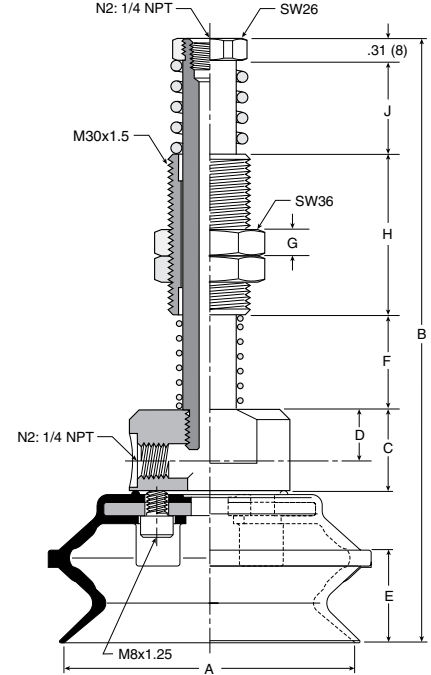
**PBTYS20B6 thru
PBTYS5030**



PBTYS7530



**PBTYS11020 thru
PBTYS15070**



Model Number	ØA	B	C	D	E	F	G	H	J	Wt oz (g)
PBTYS10A3*	.39 (10)	2.42 (61.5)	.51 (13)	.31 (8)	.30 (7.5)	.12 (3)	.12 (3)	.91 (23)	—	.6 (18)
PBTYS10A10*	.39 (10)	2.70 (68.5)	.51 (13)	.31 (8)	.30 (7.5)	.39 (10)	.12 (3)	.91 (23)	—	.65 (18.5)
PBTYS10A15*	.39 (10)	3.19 (81)	.51 (13)	.31 (8)	.30 (7.5)	.59 (15)	.12 (3)	1.20 (30.5)	—	.7 (21)
PBTYS15A3*	.59 (15)	2.52 (64)	.51 (13)	.31 (8)	.39 (10)	.12 (3)	.12 (3)	.91 (23)	—	.6 (18)
PBTYS15A10*	.59 (15)	2.80 (71)	.51 (13)	.31 (8)	.39 (10)	.39 (10)	.12 (3)	.91 (23)	—	.65 (18.5)
PBTYS15A15*	.59 (15)	3.29 (83.5)	.51 (13)	.31 (8)	.39 (10)	.59 (15)	.12 (3)	1.20 (30.5)	—	.7 (21)
PBTYS20B6*	.79 (20)	3.54 (90)	.67 (17)	.39 (10)	.47 (12)	.24 (6)	.20 (5)	1.42 (36)	—	2.4 (67)
PBTYS20B15*	.79 (20)	3.90 (99)	.67 (17)	.39 (10)	.47 (12)	.59 (15)	.20 (5)	1.42 (36)	—	2.5 (72)
PBTYS20B30*	.79 (20)	5.36 (136)	.67 (17)	.39 (10)	.47 (12)	1.18 (30)	.20 (5)	2.28 (58)	—	3.4 (97)
PBTYS306*	1.18 (30)	3.72 (94.5)	.67 (17)	.39 (10)	.67 (17)	.24 (6)	.20 (5)	1.42 (36)	—	2.5 (72)
PBTYS3015*†	1.18 (30)	4.07 (103.5)	.67 (17)	.39 (10)	.67 (17)	.59 (15)	.20 (5)	1.42 (36)	—	3.4 (97)
PBTYS3030*†	1.18 (30)	5.53 (140.5)	.67 (17)	.39 (10)	.67 (17)	1.18 (30)	.20 (5)	2.28 (58)	—	3.6 (102)
PBTYS406*†	1.57 (40)	3.72 (94.5)	.67 (17)	.39 (10)	.61 (15.5)	.24 (6)	.20 (5)	1.42 (36)	—	2.8 (78)
PBTYS4015*†	1.57 (40)	4.07 (103.5)	.67 (17)	.39 (10)	.61 (15.5)	.59 (15)	.20 (5)	1.42 (36)	—	2.9 (83)
PBTYS4030*†	1.57 (40)	5.53 (140.5)	.67 (17)	.39 (10)	.61 (15.5)	1.18 (30)	.20 (5)	2.28 (58)	—	3.8 (108)
PBTYS506*†	1.97 (50)	3.96 (100.5)	.67 (17)	.39 (10)	.78 (20)	.24 (6)	.20 (5)	1.42 (36)	—	3.3 (92)
PBTYS5015*†	1.97 (50)	4.31 (109.5)	.67 (17)	.39 (10)	.78 (20)	.59 (15)	.20 (5)	1.42 (36)	—	3.4 (97)
PBTYS5030*†	1.97 (50)	5.77 (146.5)	.67 (17)	.39 (10)	.78 (20)	1.18 (30)	.20 (5)	2.28 (58)	—	4.3 (122)
PBTYS7530*†	2.95 (75)	7.01 (178)	1.28 (32.5)	.78 (20)	.87 (22)	1.77 (45)	.39 (10)	1.97 (50)	.47 (12)	12 (339)
PBTYS7550*†	2.95 (75)	7.99 (203)	1.28 (32.5)	.78 (20)	.87 (22)	2.76 (70)	.39 (10)	1.97 (50)	.47 (12)	13 (373)
PBTYS7570*†	2.95 (75)	8.98 (228)	1.28 (32.5)	.78 (20)	.87 (22)	3.74 (95)	.39 (10)	1.97 (50)	.47 (12)	14 (400)
PBTYS11020*†	4.33 (110)	8.82 (224)	1.18 (30)	.71 (18)	1.14 (29)	1.38 (35)	.39 (10)	2.36 (60)	1.38 (35)	42 (1194)
PBTYS11070*†	4.33 (110)	11.38 (289)	1.18 (30)	.71 (18)	1.14 (29)	3.94 (100)	.39 (10)	2.36 (60)	1.38 (35)	45 (1276)
PBTYS15020*†	5.91 (150)	9.57 (243)	1.18 (30)	.71 (18)	1.50 (38)	1.38 (35)	.39 (10)	2.36 (60)	1.38 (35)	60 (1704)
PBTYS15070*†	5.91 (150)	12.13 (308)	1.18 (30)	.71 (18)	1.50 (38)	3.94 (100)	.39 (10)	2.36 (60)	1.38 (35)	63 (1786)

Inches (mm)
* Cup Material
† Vacuum Port



PJG Short Bellows Vacuum Cups



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.

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.



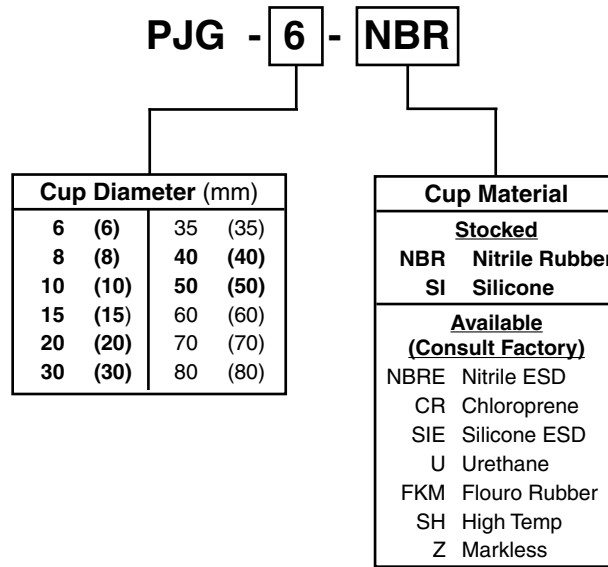
PJTYS Series Bulkhead Level Compensator

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.





Model Number Index (Cups Only)



(Bold Items are Stocked)

Specifications

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

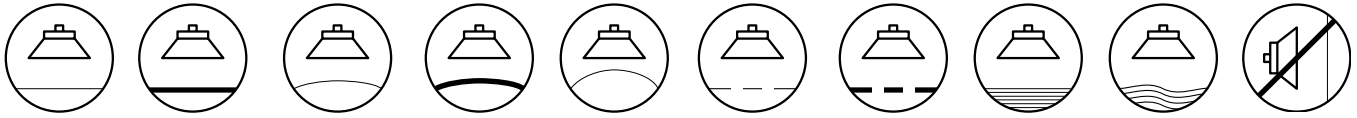
..... = excellent; = very good; = good; ... = medium; .. = poor; . = not recommended

* ESD: Electric Static Dissipative Material

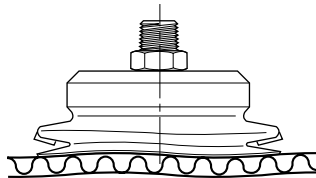


Application Guide

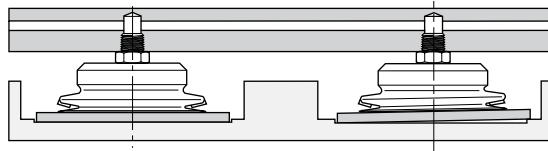
Short Bellows



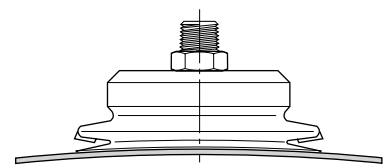
- High Speed Packaging



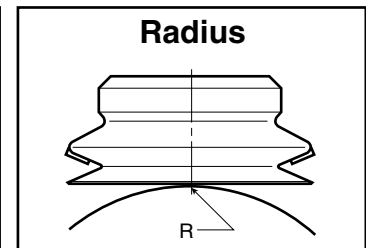
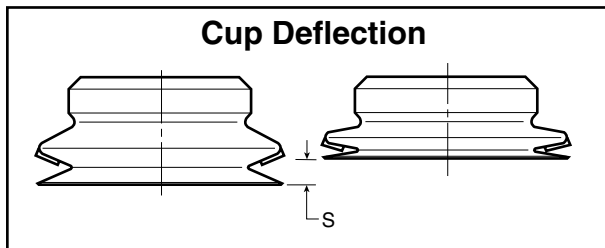
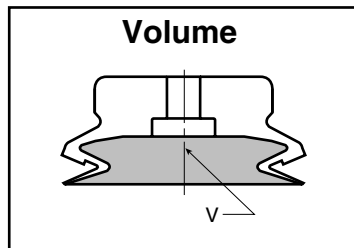
- Level Compensation for Small Electronic Components



- Flexible Product
- Soft Seal Lip



Main Data for Short Bellows PJG Cups



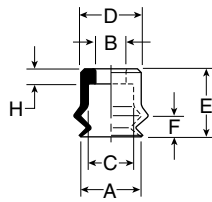
Model Number	Cup Diameter Inches (mm)	Area cm ²	Volume (V) Liters	Lifting Force @ 60% (N)		Cup Deflection (S) mm	Radius R (mm)
PJG-6-*	.24 (6)	.28	0.000016	1.70	—	4.2	4.0
PJG-8-*	.31 (8)	.50	0.00007	3.10	—	4.0	5.0
PJG-10-*	.39 (10)	0.79	0.00017	4.80	—	3.0	6.0
PJG-15-*	.59 (15)	1.77	0.0005	10.8	—	3.3	10.0
PJG-20-*	.79 (20)	3.14	0.0012	19.2	—	5.5	13.0
PJG-30-*	1.18 (30)	7.07	0.003	43.2	—	7.0	26.0
PJG-35-*	1.38 (35)	9.62	0.004	58.9	—	7.0	31.0
PJG-40-*	1.57 (40)	12.6	0.005	76.9	—	7.2	37.0
PJG-50-*	1.97 (50)	19.6	0.008	120	—	9.0	41.0
PJG-60-*	2.36 (60)	28.3	0.020	173	—	8.0	70.0
PJG-70-*	2.76 (70)	38.5	0.030	235	—	9.5	90.0
PJG-80-*	3.15 (80)	50.3	0.040	308	—	9.5	100.0

*Cup Material

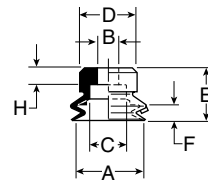


Dimensions

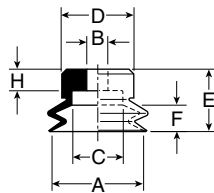
**PJG-6 and
PJG-8**



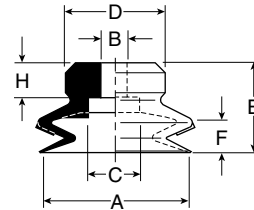
**PJG-10 and
PJG-15**



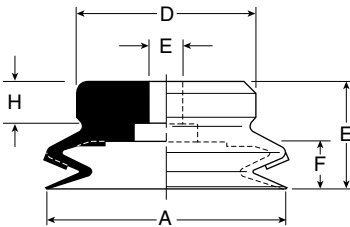
PJG-20



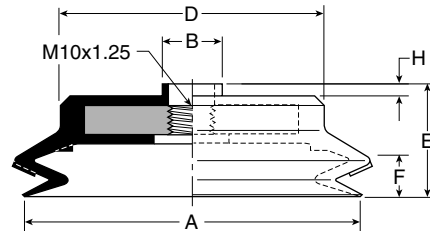
**PJG-30 thru
PJG-40**



PJG-50



**PJG-60 thru
PJG-80**



Model Number	ØA	ØB	ØC	ØD	E	F	H
PJG-6-*	.24 (6)	.16 (4)	.24 (6)	.30 (7.5)	.35 (9)	.17 (4.2)	.08 (2)
PJG-8-*	.31 (8)	.16 (4)	.24 (6)	.31 (8)	.35 (9)	.16 (4)	.08 (2)
PJG-10-*	.39 (10)	.18 (4.6)	.31 (7.8)	.43 (11)	.37 (9.5)	.12 (3)	.14 (3.5)
PJG-15-*	.59 (15)	.18 (4.6)	.31 (7.8)	.47 (12)	.43 (11)	.13 (3.3)	.14 (3.5)
PJG-20-*	.79 (20)	.18 (4.6)	.43 (10.8)	.59 (15)	.51 (13)	.22 (5.5)	.18 (4.5)
PJG-30-*	1.18 (30)	.23 (5.8)	.43 (10.8)	.78 (20)	.71 (18)	.28 (7)	.28 (7)
PJG-35-*	1.38 (35)	.23 (5.8)	.43 (10.8)	.98 (25)	.71 (18)	.28 (7)	.28 (7)
PJG-40-*	1.57 (40)	.23 (5.8)	.43 (10.8)	1.18 (30)	.71 (18)	.28 (7.2)	.28 (7)
PJG-50-*	1.97 (50)	.31 (7.8)	.78 (19.8)	1.57 (40)	.79 (20)	.35 (9)	.28 (7)
PJG-60-*	2.36 (60)	.49 (12.5)	—	1.77 (45)	.89 (22.5)	.31 (8)	.10 (2.5)
PJG-70-*	2.75 (70)	.49 (12.5)	—	2.17 (55)	.93 (23.5)	.37 (9.5)	.10 (2.5)
PJG-80-*	3.15 (80)	.49 (12.5)	—	2.68 (68)	.93 (23.5)	.37 (9.5)	.10 (2.5)

Inches (mm)

* Cup Material



PJTM Vacuum Cup Assemblies



Model Number Index

PJTM - 8 - NBR - M5

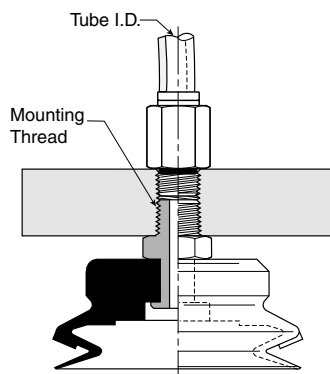
Cup Diameter (mm)	
6 (6)	35 (35)
8 (8)	40 (40)
10 (10)	50 (50)
15 (15)	60 (60)
20 (20)	70 (70)
30 (30)	80 (80)

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

Mounting Thread	
M5	M5
N1	1/8 NPT
G1	1/8 BSPP
M10	M10
N2	1/4 NPT
G2	1/4 BSPP
See Chart Below	

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.



(Bold Items are Stocked)

Male Threaded Fitting for PJG Cups

(Bold Items are Stocked)

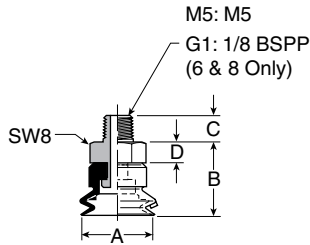
Included in Kit	Cup Diameter (mm)	Mounting Thread Code	Mounting Thread	FTM Fitting Part Number	Min. Tube ID
	6, 8	M5	M5x0.8 Male	FTM-5A-M5H	.157 (4)
		G1	1/8 BSPP Male	FTM-5A-G1	
	10, 15	M5	M8x1.25 Male	TN-PF-15-M5	.157 (4)
	20	M5	M8x1.25 Male	TN-PF-20-M5	
	30, 35, 40	N1	1/8 NPT Male	FTM-20B-N1	.157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

Inches (mm)

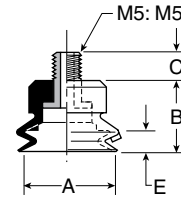


Dimensions

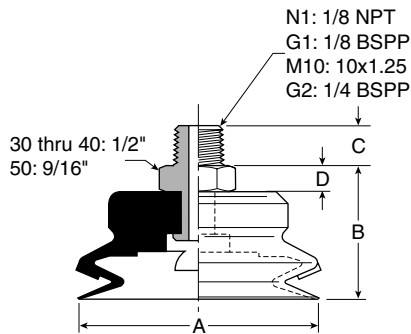
PJTM-6 and PJTM-8



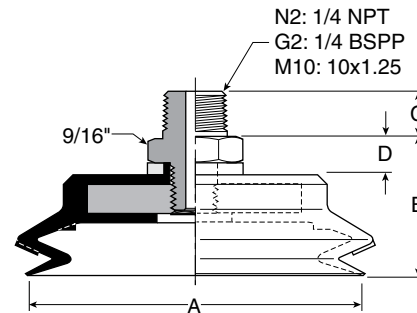
PJTM-10 thru PJTM-20



PJTM-30 thru PJTM-50



PJTM-60 thru PJTM-80



Model Number	ØA	B	C (M5)	C (N1 / G1)	C (M10 / G2)	C (N2)	D
PJTM-6-*†	.24 (6)	.49 (12.5)	.18 (4.5)	.31 (8)	—	—	.14 (3.5)
PJTM-8-*†	.31 (8)	.49 (12.5)	.18 (4.5)	.31 (8)	—	—	.14 (3.5)
PJTM-10-*†	.39 (10)	.37 (9.5)	.20 (5)	—	—	—	—
PJTM-15-*†	.59 (15)	.43 (11)	.20 (5)	—	—	—	—
PJTM-20-*†	.79 (20)	.51 (13)	.20 (5)	—	—	—	—
PJTM-30-*†	1.18 (30)	.91 (23)	—	.31 (8)	.39 (10)	—	.20 (5)
PJTM-35-*†	1.38 (35)	.91 (23)	—	.31 (8)	.39 (10)	—	.20 (5)
PJTM-40-*†	1.57 (40)	.91 (23)	—	.31 (8)	.39 (10)	—	.20 (5)
PJTM-50-*†	1.97 (50)	.98 (25)	—	.31 (8)	.39 (10)	—	.20 (5)
PJTM-60-*†	2.36 (60)	1.06 (27)	—	—	.39 (10)	.59 (15)	.28 (7)
PJTM-70-*†	2.75 (70)	1.10 (28)	—	—	.39 (10)	.59 (15)	.28 (7)
PJTM-80-*†	3.15 (80)	1.10 (28)	—	—	.39 (10)	.59 (15)	.28 (7)

Inches (mm)
 * Cup Material
 † Thread Size



PJTF Vacuum Cup Assemblies



Model Number Index

PJTF - 8 - NBR - M5

Cup Diameter (mm)	
6 (6)	50 (50)
8 (8)	60 (60)
30 (30)	70 (70)
35 (35)	80 (80)
40 (40)	

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

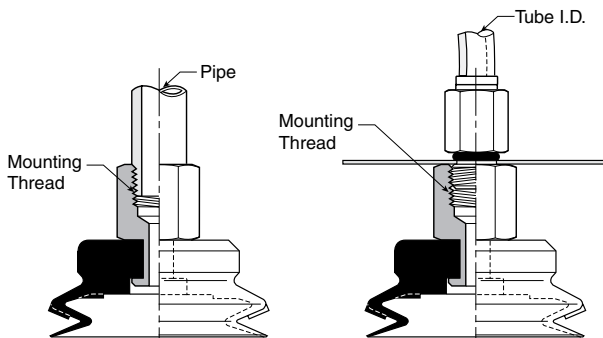
Mounting Thread	
M5	M5
N1	1/8 NPT
G1	1/8 BSPP
M10	M10
N2	1/4 NPT
G2	1/4 BSPP
See Chart Below	

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.



(Bold Items are Stocked)

Female Threaded Fitting for PJG Cups

(Bold Items are Stocked)

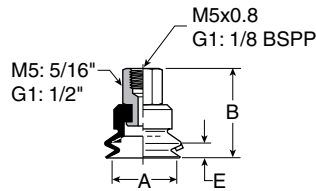
Included in Kit	Cup Diameter (mm)	Mounting Thread Code	Mounting Thread	FTF Fitting Part Number	Min. Tube ID
	6, 8, 10, 15	M5	M5x0.8 Female	FTF-5A-M5	.157 (4)
		G1	G1/8 Female	FTF-5A-G1	
	30, 35, 40	N1	1/8 NPT Female	FTF-20B-N1	.157 (4)
		G1	G1/8 Female	FTF-20B-G1	
	50	G2	G1/4 Female	FTF-20B-G2	.157 (4)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

Inches (mm)

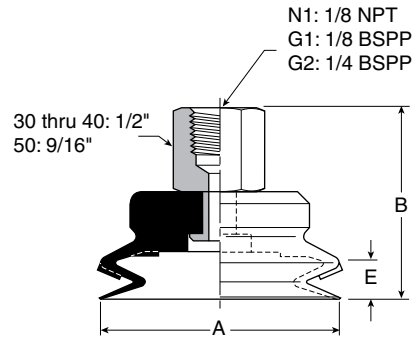


Dimensions

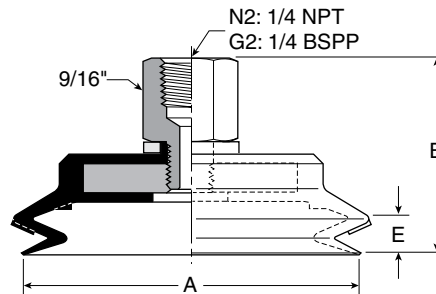
PJTF-6 and PJTF-8



PJTF-30 thru PJTF-50



PJTF-60 thru PJTF-80



Model Number	ØA	B	B (M5)	E
PJTF-6-*†	.24 (6)	.79 (20)	.55 (14)	.16 (4)
PJTF-8-*†	.31 (8)	.79 (20)	.55 (14)	.16 (4)
PJTF-10-*†	.39 (10)	.79 (20)	.55 (14)	.12 (3)
PJTF-15-*†	.59 (15)	.79 (20)	.55 (14)	.13 (3.3)
PJTF-30-*†	1.18 (30)	1.25 (32)	—	.28 (7)
PJTF-35-*†	1.18 (30)	1.25 (32)	—	.28 (7)
PJTF-40-*†	1.57 (40)	1.25(32)	—	.28 (7.2)
PJTF-50-*†	1.97 (50)	1.34 (34)	—	.35 (9)
PJTF-60-*†	2.36 (60)	1.56 (39.5)	—	.31 (8)
PJTF-70-*†	2.75 (70)	1.59 (40.5)	—	.37 (9.5)
PJTF-80-*†	3.15 (80)	1.59 (40.5)	—	.37 (9.5)

Inches (mm)
* Cup Material
† Thread Size



PJTK Vacuum Cup Assemblies



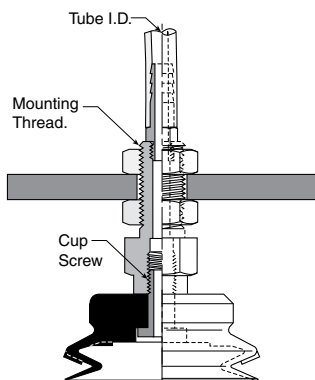
Model Number Index

PJTK - **10** - **NBR** - **—**

Cup Diameter (mm)		Cup Material	Vacuum Port	
6 (6)	35 (35)	Stocked	Blank	Barb
8 (8)	40 (40)	NBR Nitrile	N1	1/8 NPT
10 (10)	50 (50)	Rubber	G1	1/8 BSPP
15 (15)	60 (60)	SI Silicone	R1	1/8 BSPT
20 (20)	70 (70)	Available	See Chart Below	
30 (30)	80 (80)	(Consult Factory)		
		NBRE Nitrile ESD		
		CR Chloroprene		
		SIE Silicone ESD		
		U Urethane		
		FKM Fluoro Rubber		
		SH High Temp		
		Z Markless		

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.



(Bold Items are Stocked)

Barbed Bulkhead for PJG Cups

(Bold Items are Stocked)

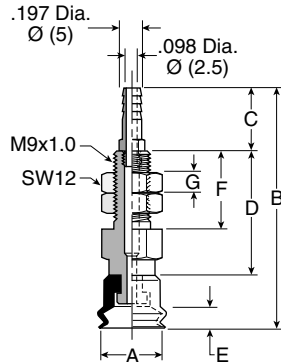
Included in Kit	Cup Diameter (mm)	Vacuum Port		FTK Fitting Part Number	Cup Screw Only	Mounting Thread	Tube ID
		Code	Thread				
	6, 8	Blank	Barb	FTK-5A	N/A	M9x1.0 Male	.157 (4)
	10, 15	Blank	Barb	FTK-15	TN-PF-15-M5	M8x1.25 Male	.157 (4)
	20	Blank	Barb	FTK-20	TN-PF-20-M5	M8x1.25 Male	
	30, 35, 40	Blank	Barb	FTK-25	TN-PF-25-M6	M10x1.5 Male	
	50	Blank	Barb	FTK-50	TN-PF-50-M8	M10x1.5 Male	
	60, 70, 80	N1	1/8 NPT	FTK-60-N1	N/A	M16x1.5 Male	N/A
		G1	1/8 BSPP	FTK-60-G1	N/A	M16x1.5 Male	
		R1	1/8 BSPT	FTK-60-R1	N/A	M16x1.5 Male	

Inches (mm)

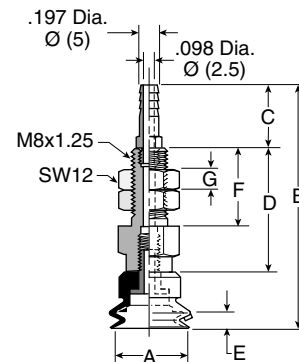


Dimensions

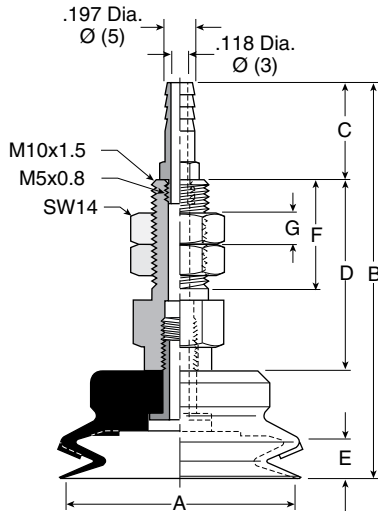
**PJTK-6 and
 PJTK-8**



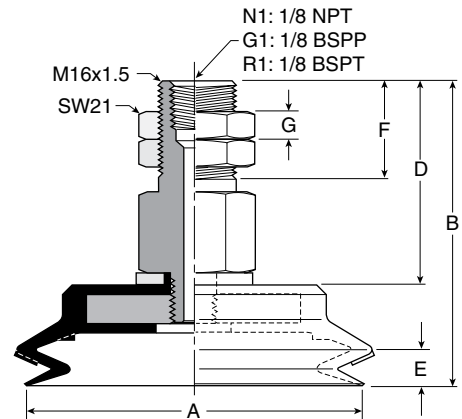
**PJTK-10 thru
 PJTK-20**



**PJTK-30 thru
 PJTK-50**



**PJTK-60 thru
 PJTK-80**



Model Number	ØA	B	C	D	E	F	G	Wt oz (g)
PJTK-6-*	.24 (6)	1.30 (33)	.39 (10)	.55 (14)	.17 (4.2)	.47 (12)	.12 (3)	.4 (11)
PJTK-8-*	.31 (8)	1.30 (33)	.39 (10)	.55 (14)	.16 (4)	.47 (12)	.12 (3)	.4 (11)
PJTK-10-*	.39 (10)	1.87 (47.5)	.63 (16)	.87 (22)	.12 (3)	.59 (15)	.12 (3)	.5 (14)
PJTK-15-*	.59 (15)	1.93 (49)	.63 (16)	.87 (22)	.13 (3.3)	.59 (15)	.12 (3)	.5 (15)
PJTK-20-*	.79 (20)	2.01 (51)	.63 (16)	.87 (22)	.22 (5.5)	.59 (15)	.20 (5)	.6 (17)
PJTK-30-*	1.18 (30)	2.60 (66)	.63 (16)	1.26 (32)	.28 (7)	.79 (20)	.20 (5)	1.5 (42)
PJTK-35-*	1.38 (35)	2.60 (66)	.63 (16)	1.26 (32)	.28 (7)	.79 (20)	.20 (5)	1.6 (44)
PJTK-40-*	1.57 (40)	2.60 (66)	.63 (16)	1.26 (32)	.28 (7.2)	.79 (20)	.20 (5)	1.6 (44)
PJTK-50-*	1.97 (50)	2.68 (68)	.63 (16)	1.26 (32)	.35 (9)	.79 (20)	.20 (5)	25.0 (58)
PJTK-60-*-†	2.36 (60)	2.46 (62.5)	—	1.67 (42.5)	.31 (8)	.79 (20)	.24 (6)	5.1 (144)
PJTK-70-*-†	2.75 (70)	2.50 (63.5)	—	1.67 (42.5)	.37 (9.5)	.79 (20)	.24 (6)	5.7 (163)
PJTK-80-*-†	3.15 (80)	2.50 (63.5)	—	1.67 (42.5)	.37 (9.5)	.79 (20)	.24 (6)	6.7 (190)

Inches (mm)
 * Cup Material
 † Vacuum Port



PJYK Vacuum Cup Assemblies



Model Number Index

PJYK - **10** - **NBR** - **—**

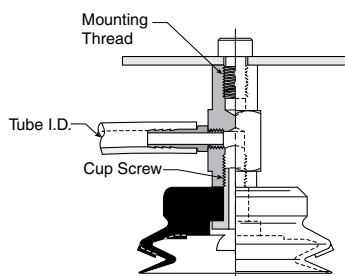
Cup Diameter (mm)		Cup Material	Vacuum Port	
6 (6)	35 (35)	Stocked	Blank	Barb
8 (8)	40 (40)	NBR Nitrile	N1	1/8 NPT
10 (10)	50 (50)	Rubber	G1	1/8 BSPP
15 (15)	60 (60)	SI Silicone	R1	1/8 BSPT
20 (20)	70 (70)	Available	See Chart Below	
30 (30)	80 (80)	(Consult Factory)		
		NBRE Nitrile ESD		
		CR Chloroprene		
		SIE Silicone		
		ESD		
		U Urethane		
		FKM Fluoro Rubber		
		SH High Temp		
		Z Markless		

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.



(Bold Items are Stocked)

90° Barbed Adapter for PJG Cups

(Bold Items are Stocked)

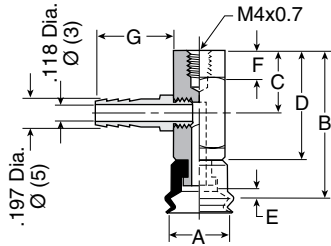
Included in Kit	Cup Diameter (mm)	Vacuum Port		FYK Fitting Part Number	Cup Screw Only	Mounting Thread	Tube ID
		Code	Thread				
	6, 8	Blank	Barb	FYK-5A	N/A	M4x0.7 Female	.157 (4)
	10, 15	Blank	Barb	FYK-15	TN-PF-15-M5	M4x0.7 Female	.157 (4)
	20	Blank	Barb	FYK-20	TN-PF-20-M5	M4x0.7 Female	
	30, 35, 40	Blank	Barb	FYK-25	TN-PF-25-M6	M6x1.0 Female	
	50	Blank	Barb	FYK-50	TN-PF-50-M8	M6x1.0 Female	
	60, 70, 80	N1	1/8 NPT	FYK-60-N1	N/A	M8x1.25 Female	N/A
		G1	1/8 BSPP	FYK-60-G1	N/A	M8x1.25 Female	
		R1	1/8 BSPT	FYK-60-R1	N/A	M8x1.25 Female	

Inches (mm)

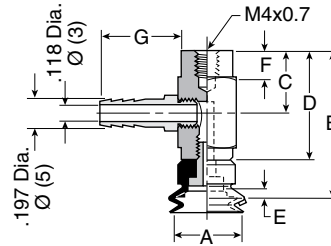


Dimensions

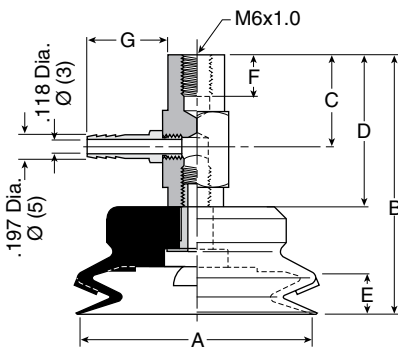
PJYK-6 and PJYK-8



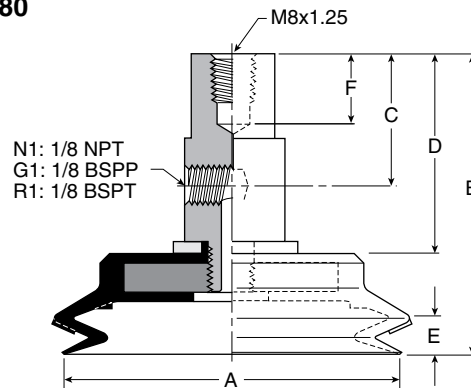
PJYK-10 thru PJYK-20



PJYK-25 thru PJYK-50



PJYK-60 thru PJYK-80



Model Number	ØA	B	C	D	E	F	G	Wt oz (g)
PJYK-6-*	.24 (6)	1.24 (31.5)	.51 (13)	.89 (22.5)	.17 (4.2)	.24 (6)	.63 (16)	.56 (16)
PJYK-8-*	.31 (8)	1.24 (31.5)	.51 (13)	.89 (22.5)	.17 (4.2)	.24 (6)	.63 (16)	.56 (16)
PJYK-10-*	.39 (10)	1.24 (31.5)	.55 (14)	.87 (22)	.12 (3)	.24 (6)	.63 (16)	.59 (17)
PJYK-15-*	.59 (15)	1.30 (33)	.55 (14)	.87 (22)	.13 (3.3)	.24 (6)	.63 (16)	.63 (18)
PJYK-20-*	.79 (20)	1.38 (35)	.55 (14)	.87 (22)	.22 (5.5)	.24 (6)	.63 (16)	.7 (20)
PJYK-30-*	1.18 (30)	1.97 (50)	.79 (20)	1.26 (32)	.28 (7)	.31 (8)	.63 (16)	1.6 (46)
PJYK-35-*	1.38 (35)	1.97 (50)	.79 (20)	1.26 (32)	.28 (7)	.31 (8)	.63 (16)	1.7 (48)
PJYK-40-*	1.57 (40)	1.97 (50)	.79 (20)	1.26 (32)	.28 (7.2)	.31 (8)	.63 (16)	1.7 (48)
PJYK-50-*	1.97 (50)	2.05 (52)	.79 (20)	1.26 (32)	.35 (9)	.31 (8)	.63 (16)	2.2 (62)
PJYK-60-†	2.36 (60)	2.46 (62.5)	1.10 (28)	1.67 (42.5)	.31 (8)	.43 (11)	—	4.9 (139)
PJYK-70-†	2.75 (70)	2.50 (63.5)	1.10 (28)	1.67 (42.5)	.37 (9.5)	.43 (11)	—	5.6 (158)
PJYK-80-†	3.15 (80)	2.50 (63.5)	1.10 (28)	1.67 (42.5)	.37 (9.5)	.43 (11)	—	6.5 (185)

Inches (mm)

* Cup Material

† Vacuum Port



PJTYS Vacuum Cup Assemblies



Model Number Index

PJTYS 10A3 NBR M5

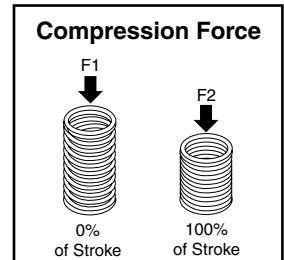
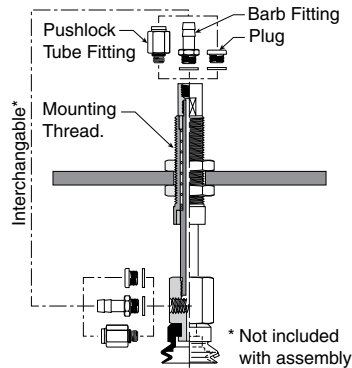
Cup Diameter (mm)	Stroke (mm)	Cup Material		Vacuum Port	
		Stocked	Available (Consult Factory)	M5	M5
6 (6)	3, 10, 15	NBR Nitrile Rubber	NBRE Nitrile ESD	N1 1/8 NPT	See Chart Below
8 (8)		SI Silicone	CR Chloroprene	See Chart Below	
10 (10)			SIE Silicone ESD		See Chart Below
15 (15)			U Urethane	See Chart Below	
20 (20)	6, 15, 30		FKM Fluoro Rubber		See Chart Below
30 (30)			SH High Temp	See Chart Below	
35 (35)			Z Markless		See Chart Below
40 (40)				See Chart Below	
50 (50)					See Chart Below
60 (60)	30*, 50*, 70*			See Chart Below	
70 (70)					See Chart Below
80 (80)						See Chart Below

* Stroke reduced by 5mm due to shock pad.

(Bold Items are Stocked)

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

(Bold Items are Stocked)

Included in Kit	Cup Diameter (mm)	Vacuum Port		TYS & JTYS Assembly Part Number	Stroke	F1 lbf (N)	F2 lbf (N)
		Code	Thread				
	6, 8	M5	M5x0.8 Female	TYS-5A-3	3mm	.11 (.49)	.13 (.59)
				TYS-5A-10	10mm	.14 (.61)	.26 (1.17)
				TYS-5A-15	15mm	.15 (.64)	.26 (1.17)
	10, 15	M5	M5x0.8 Female	JTYS-10-3	3mm	.11 (.49)	.13 (.59)
				JTYS-10-10	10mm	.56 (2.5)	1.2 (4.9)
				JTYS-10-15	15mm	.67 (2.9)	1.4 (5.9)
	20	M5	M5x0.8 Female	JTYS-20-3	3mm	.11 (.49)	.13 (.59)
				JTYS-20-10	10mm	.56 (2.5)	1.2 (4.9)
				JTYS-20-15	15mm	.67 (2.9)	1.4 (5.9)
	30, 35, 40	M5	Female	TYS-20B-6	6mm	.56 (2.5)	.79 (3.4)
				TYS-20B-15	15mm	.56 (2.5)	1.2 (4.9)
				TYS-20B-30	30mm	.67 (2.9)	1.4 (5.9)
	50	M5	M5x0.8 Female	TYS-50-6	6mm	.56 (2.5)	.79 (3.4)
				TYS-50-15	15mm	.56 (2.5)	1.2 (4.9)
				TYS-50-30	30mm	.67 (2.9)	1.4 (5.9)
	60, 70, 80	N1	1/8 NPT Female	TYS-60-30	30mm	1.6 (6.8)	3.6 (15.6)
				TYS-60-50	50mm	1.9 (8.3)	4.5 (19.6)
				TYS-60-70	70mm	2.2 (9.5)	4.8 (21)

Inches (mm)

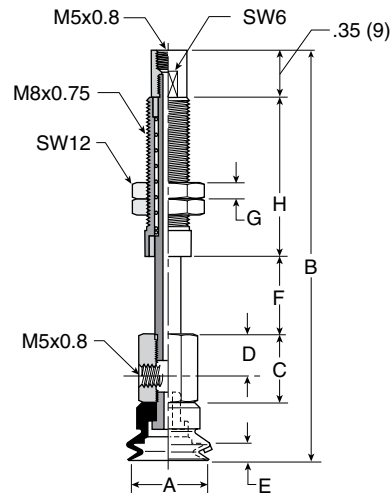
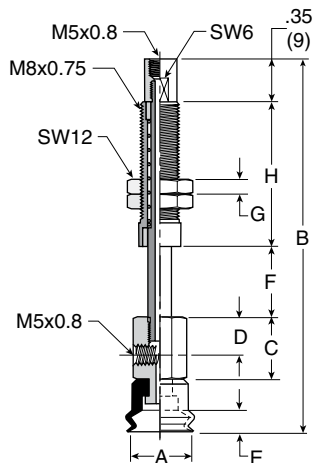


Vacuum Cups

Dimensions

PJTYS63 thru
PJTYS815

PJTYS103 thru
PJTYS2015



Model Number	ØA	B	C	D	E	F	G	H	Wt oz (g)
PJTYS63**†	.24 (6)	2.24 (57)	.51 (13)	.31 (8)	.17 (4.2)	.12 (3)	.12 (3)	.91 (23)	.2 (7)
PJTYS610**†	.24 (6)	2.52 (64)	.51 (13)	.31 (8)	.17 (4.2)	.39 (10)	.12 (3)	.91 (23)	.3 (9)
PJTYS615**†	.24 (6)	3.01 (76.5)	.51 (13)	.31 (8)	.17 (4.2)	.59 (15)	.12 (3)	1.20 (30.5)	.4 (11)
PJTYS83**†	.31 (8)	2.24 (57)	.51 (13)	.31 (8)	.16 (4)	.12 (3)	.12 (3)	.91 (23)	.2 (7)
PJTYS810**†	.31 (8)	2.52 (64)	.51 (13)	.31 (8)	.16 (4)	.39 (10)	.12 (3)	.91 (23)	.3 (9)
PJTYS815**†	.31 (8)	3.01 (76.5)	.51 (13)	.31 (8)	.16 (4)	.59 (15)	.12 (3)	1.20 (30.5)	.4 (11)
PJTYS103**†	.39 (10)	2.24 (57)	.51 (13)	.31 (8)	.12 (3)	.12 (3)	.20 (5)	.91 (23)	1.0 (30.5)
PJTYS1010**†	.39 (10)	2.52 (64)	.51 (13)	.31 (8)	.12 (3)	.39 (10)	.20 (5)	.91 (23)	1.1 (31)
PJTYS1015**†	.39 (10)	3.01 (76.5)	.51 (13)	.31 (8)	.12 (3)	.59 (15)	.20 (5)	1.20 (30.5)	1.2 (33.5)
PJTYS153**†	.59 (15)	2.32 (59)	.51 (13)	.31 (8)	.13 (3.3)	.12 (3)	.20 (5)	.91 (23)	1.1 (31)
PJTYS1510**†	.59 (15)	2.60 (66)	.51 (13)	.31 (8)	.13 (3.3)	.39 (10)	.20 (5)	.91 (23)	1.1 (32)
PJTYS1515**†	.59 (15)	3.07 (78)	.51 (13)	.31 (8)	.13 (3.3)	.59 (15)	.20 (5)	1.20 (30.5)	1.3 (34.5)
PJTYS203**†	.79 (20)	2.48 (63)	.51 (13)	.31 (8)	.22 (5.5)	.12 (3)	.20 (5)	.91 (23)	1.1 (31)
PJTYS2010**†	.79 (20)	2.83 (72)	.51 (13)	.31 (8)	.22 (5.5)	.39 (10)	.20 (5)	.91 (23)	1.1 (32)
PJTYS2015**†	.79 (20)	4.29 (109)	.51 (13)	.31 (8)	.22 (5.5)	.59 (15)	.20 (5)	1.20 (30.5)	1.3 (34.5)

Inches (mm)

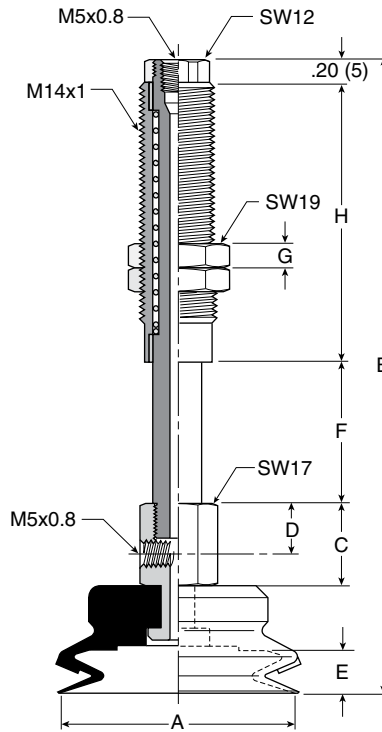
** Cup Material

† Vacuum Port



Dimensions

PJTYS306 thru
 PJTYS5030



Model Number	ØA	B	C	D	E	F	G	H	J	Wt oz (g)
PJTYS306**†	1.18 (30)	3.23 (82)	.67 (17)	.39 (10)	.28 (7)	.24 (6)	.20 (5)	1.42 (36)	—	2.4 (69)
PJTYS3015**†	1.18 (30)	3.58 (91)	.67 (17)	.39 (10)	.28 (7)	.59 (15)	.20 (5)	1.42 (36)	—	2.6 (74)
PJTYS3030**†	1.18 (30)	5.04 (128)	.67 (17)	.39 (10)	.28 (7)	1.18 (30)	.20 (5)	2.28 (58)	—	3.5 (99)
PJTYS356**†	1.38 (35)	3.23 (82)	.67 (17)	.39 (10)	.28 (7)	.24 (6)	.20 (5)	1.42 (36)	—	2.5 (71.5)
PJTYS3515**†	1.38 (35)	3.58 (91)	.67 (17)	.39 (10)	.28 (7)	.59 (15)	.20 (5)	1.42 (36)	—	2.7 (76.5)
PJTYS3530**†	1.38 (35)	5.04 (128)	.67 (17)	.39 (10)	.28 (7)	1.18 (30)	.20 (5)	2.28 (58)	—	3.6 (101.5)
PJTYS406**†	1.57 (40)	3.23 (82)	.67 (17)	.39 (10)	.28 (7.2)	.24 (6)	.20 (5)	1.42 (36)	—	2.6 (73.5)
PJTYS4015**†	1.57 (40)	3.58 (91)	.67 (17)	.39 (10)	.28 (7.2)	.59 (15)	.20 (5)	1.42 (36)	—	2.8 (78.5)
PJTYS4030**†	1.57 (40)	5.04 (128)	.67 (17)	.39 (10)	.28 (7.2)	1.18 (30)	.20 (5)	2.28 (58)	—	3.7 (103.5)
PJTYS506**†	1.97 (50)	3.31 (84)	.67 (17)	.39 (10)	.35 (9)	.24 (6)	.20 (5)	1.42 (36)	—	3.1 (89)
PJTYS5015**†	1.97 (50)	3.66 (93)	.67 (17)	.39 (10)	.35 (9)	.59 (15)	.20 (5)	1.42 (36)	—	3.3 (94)
PJTYS5030**†	1.97 (50)	5.12 (130)	.67 (17)	.39 (10)	.35 (9)	1.18 (30)	.20 (5)	2.28 (58)	—	4.2 (119)

Inches (mm)

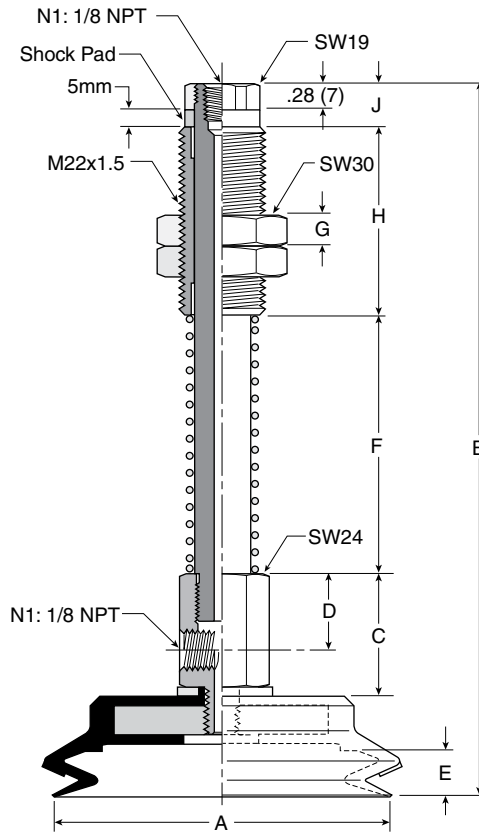
** Cup Material

† Vacuum Port



Dimensions

PJTYS6030 thru
PJTYS8070



Model Number	ØA	B	C	D	E	F	G	H	J	Wt oz (g)
PJTYS6030**†	2.36 (60)	6.18 (157)	1.18 (30)	.79 (20)	.31 (8)	1.18 (45)	.39 (10)	1.97 (50)	.47 (12)	10.4 (294)
PJTYS6050**†	2.36 (60)	7.17 (182)	1.18 (30)	.79 (20)	.31 (8)	2.76 (70)	.39 (10)	1.97 (50)	.47 (12)	11.6 (328)
PJTYS6070**†	2.36 (60)	8.15 (207)	1.18 (30)	.79 (20)	.31 (8)	3.74 (95)	.39 (10)	1.97 (50)	.47 (12)	12.5 (355)
PJTYS7030**†	2.75 (70)	6.22 (158)	1.18 (30)	.79 (20)	.37 (9.5)	1.18 (45)	.39 (10)	1.97 (50)	.47 (12)	10.9 (309)
PJTYS7050**†	2.75 (70)	7.20 (183)	1.18 (30)	.79 (20)	.37 (9.5)	2.76 (70)	.39 (10)	1.97 (50)	.47 (12)	12.2 (346)
PJTYS7070**†	2.75 (70)	8.19 (208)	1.18 (30)	.79 (20)	.37 (9.5)	3.74 (95)	.39 (10)	1.97 (50)	.47 (12)	13.1 (370)
PJTYS8030**†	3.15 (80)	6.22 (158)	1.18 (30)	.79 (20)	.37 (9.5)	1.18 (45)	.39 (10)	1.97 (50)	.47 (12)	11.9 (338)
PJTYS8050**†	3.15 (80)	7.20 (183)	1.18 (30)	.79 (20)	.37 (9.5)	2.76 (70)	.39 (10)	1.97 (50)	.47 (12)	13.1 (372)
PJTYS8070**†	3.15 (80)	8.19 (208)	1.18 (30)	.79 (20)	.37 (9.5)	3.74 (95)	.39 (10)	1.97 (50)	.47 (12)	14.1 (399)

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.

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.



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.



PCTK Series Barbed Bulkhead

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



PCYK Series 90° Barbed Adapter

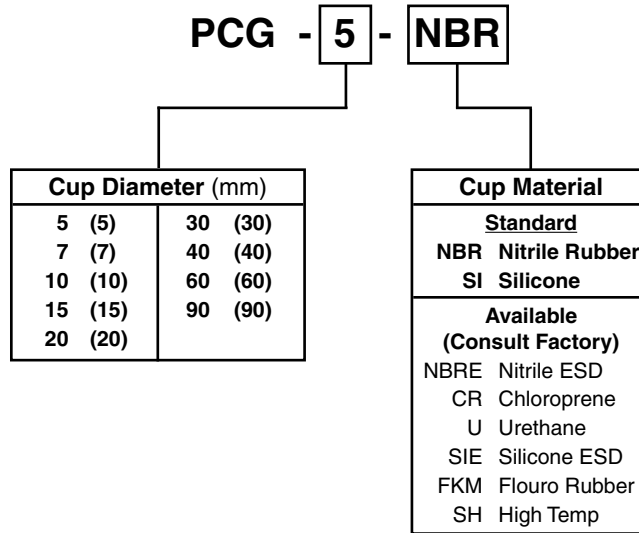
Side stem connectors allow you to secure the stem with a bolt through a plate or “L” bracket to allow the tube connection from the side port. Nickel plated brass materials.





Model Number Index (Cups Only)

(Bold Items are Stocked)



Specifications

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

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

* ESD: Electric Static Dissipative Material

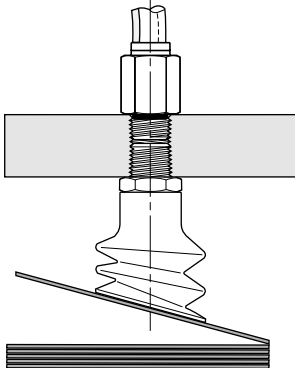


Application Guide

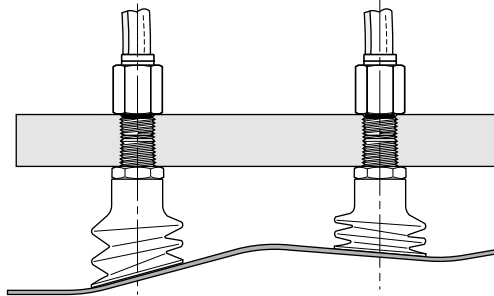
2-1/2 Bellows



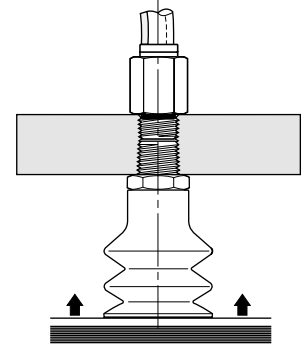
- Destack Perimeter Separation



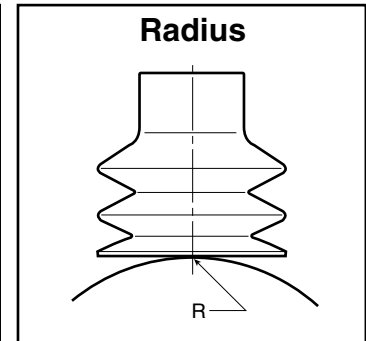
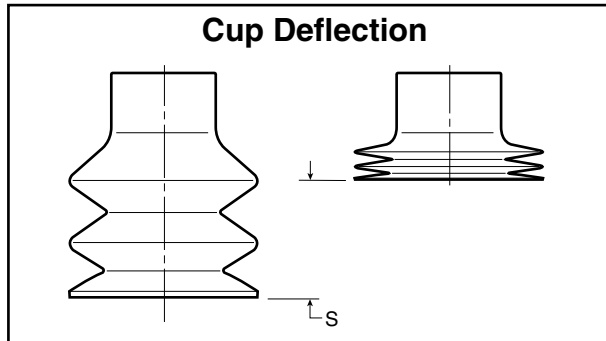
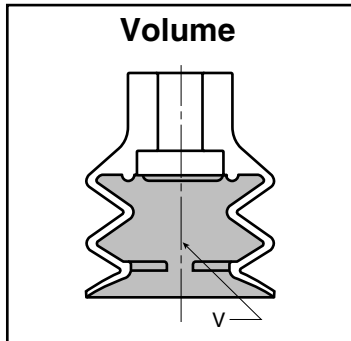
- Level Compensators for applications where Level Compensators do not have adequate space



- Controlling downstroke lifts product on contact



Main Data for 2-1/2 Bellows PJG Cups



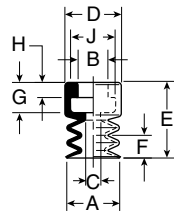
Model Number	Cup Diameter Inches (mm)	Area cm ²	Volume (V) Liters	Lifting Force @ 60% (N)		Cup Deflection (S) (mm)	Radius (R) (mm)
PCG-5-*	.20 (5)	.20	.00003	1.20	—	3	3.5
PCG-7-*	.28 (7)	.39	.00004	2.40	—	3	4.0
PCG-10-*	.39 (10)	.79	.0001	4.80	—	3	5.0
PCG-15-*	.59 (15)	1.77	.0009	10.8	—	10	6.0
PCG-20-*	.79 (20)	3.14	.002	19.2	—	10	8.0
PCG-30-*	1.18 (30)	7.07	.009	43.2	—	14.5	20.0
PCG-40-*	1.57 (40)	12.6	.018	76.9	—	22	30.0
PCG-60-*	2.36 (60)	28.3	.072	173	—	27	55.0
PCG-90-*	3.54 (90)	63.6	.1639	389	—	42	80.0

* Cup Material

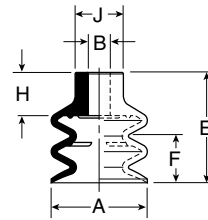


Dimensions

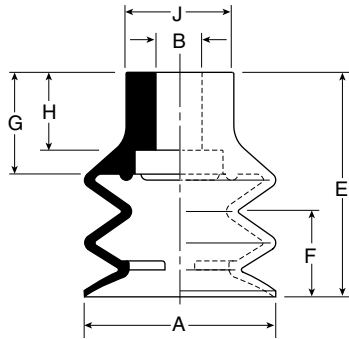
**PCG-5 and
 PCG-7**



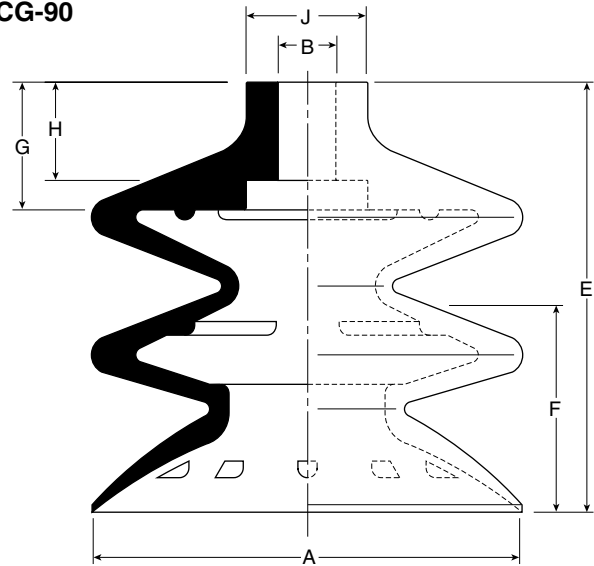
**PCG-10 thru
 PCG-20**



**PCG-30 thru
 PCG-60**



PCG-90



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)	—	—	.59 (15)	.12 (3)	.28 (7)	—	.35 (9)
PCG-15-*	.60 (15.2)	.20 (5)	—	—	.90 (22)	.39 (10)	.35 (9)	—	.39 (10)
PCG-20-*	.79 (20)	.20 (5)	—	—	.91 (23)	.39 (10)	.35 (9)	—	.39 (10)
PCG-30-*	1.26 (32)	.31 (8)	—	—	1.48 (37.5)	.57 (14.5)	.67 (17)	.51 (13)	.71 (18)
PCG-40-*	1.65 (42)	.31 (8)	—	—	1.81 (46)	.87 (22)	.67 (17)	.51 (13)	.79 (20)
PCG-60-*	2.44 (62)	.31 (8)	—	—	2.17 (55)	1.06 (27)	.71 (18)	.51 (13)	.85 (21.5)
PCG-90-*	3.46 (88)	.47 (12)	—	—	3.44 (87.5)	1.65 (42)	1.02 (26)	.79 (20)	.98 (25)

Inches (mm)
 * Cup Material



PCTM Vacuum Cup Assemblies



Model Number Index

PCTM - 5 - NBR - M5

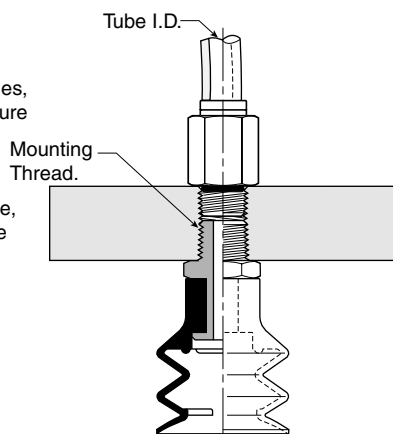
Cup Diameter (mm)		Cup Material	Mounting Thread
5 (5)	30 (30)	Stocked	M5 M5
7 (7)	40 (40)	NBR Nitrile Rubber	
10 (10)	60 (60)	SI Silicone	G1 1/8 BSPP
15 (15)	90 (90)	Available (Consult Factory)	N2 1/4 NPT
20 (208)		NBRE Nitrile ESD	G2 1/4 BSPP
		CR Chloroprene	See Chart Below
		U Urethane	
		SIE Silicone ESD	
		FKM Flouro Rubber	
		SH High Temp	

(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 PCG Cups

(Bold Items are Stocked)

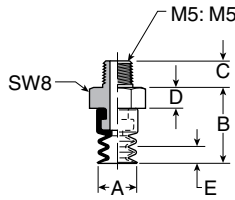
Included in Kit	Cup Diameter (mm)	Mounting Thread	Mounting Thread Code	FTM & CTM Fitting Part Number	Min. Tube ID
	5, 7	M5	M5x0.8 Male	FTM-5A-M5H	.098 (2.5mm)
	10, 15, 20	M5	M5x0.8 Male	CTM-10-M5H	.156 (4mm)
		N1	1/8 NPT Male	CTM-10-N1	
		G1	1/8 BSPP Male	CTM-10-G1H	
	30, 40, 60	N1	1/8 NPT Male	CTM-30-N1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

Inches (mm)

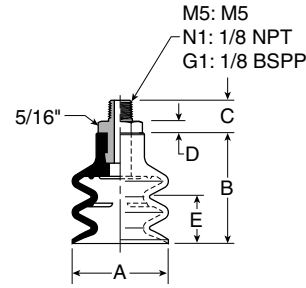


Dimensions

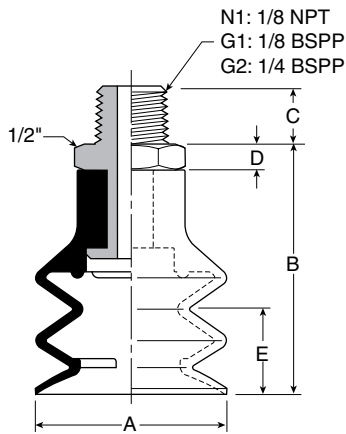
**PCTM-5 and
PCTM-7**



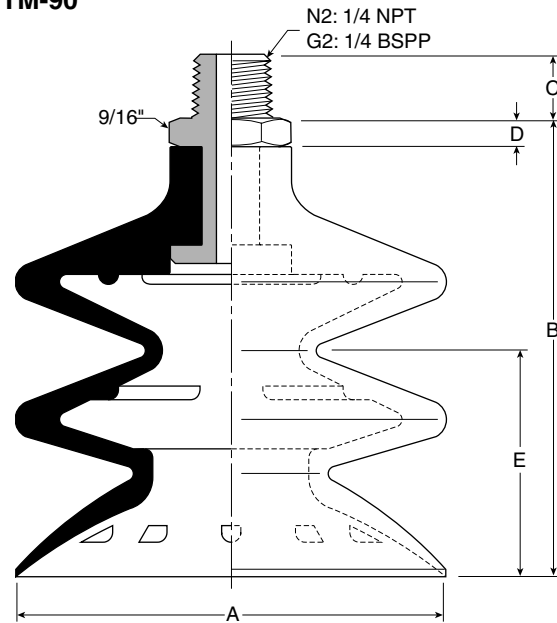
**PCTM-10 thru
PCTM-20**



**PCTM-30 thru
PCTM-60**



PCTM-90



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

Inches (mm)
* Cup Material
† Thread Size



PCTF Vacuum Cup Assemblies

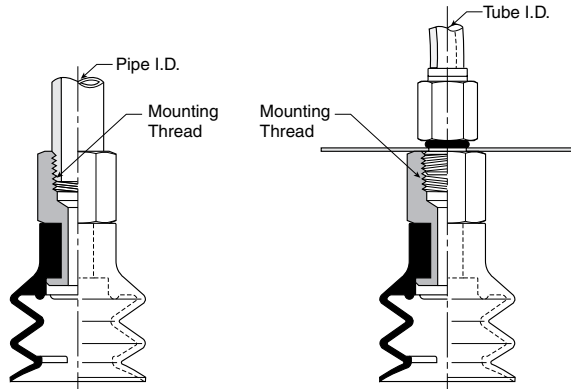


Model Number Index

PCTF - 5 - NBR - M5

Cup Diameter (mm)		Cup Material	Mounting Thread
5 (5)	30 (30)	Stocked	M5 M5 N1 1/8 NPT G1 1/8 BSPP N2 1/4 NPT G2 1/4 BSPP See Chart Below
7 (7)	40 (40)	NBR Nitrile Rubber	
10 (10)	60 (60)	SI Silicone	See Chart Below
15 (15)	90 (90)	Available (Consult Factory)	
20 (20)		NBRE Nitrile ESD	
		CR Chloroprene	
		U Urethane	
		SIE Silicone ESD	
		FKM Fluoro Rubber	
		SH High Temp	

Installation Mounting



(Bold Items are Stocked)

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

(Bold Items are Stocked)

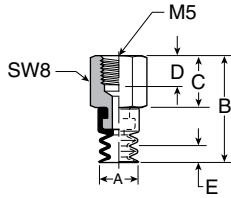
Included in Kit	Cup Diameter (mm)	Mounting Thread	Mounting Thread Code	FTF & CTF Fitting Part Number	Min. Tube ID
	5, 7	M5	M5x0.8 Female	FTF-5A-M5	.098 (2.5mm)
	10, 15, 20	G1	1/8 BSPP Female	CTF-10-G1	.156 (4mm)
	30, 40, 60	N1	1/8 NPT Female	CTF-30-N1	.25 (6.35mm)
		G1	1/8 BSPP Female	CTF-30-G1	
		G2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

Inches (mm)

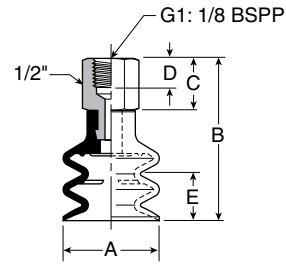


Dimensions

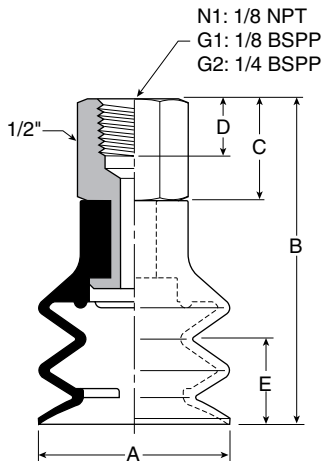
PCTF-5 and PCTF-7



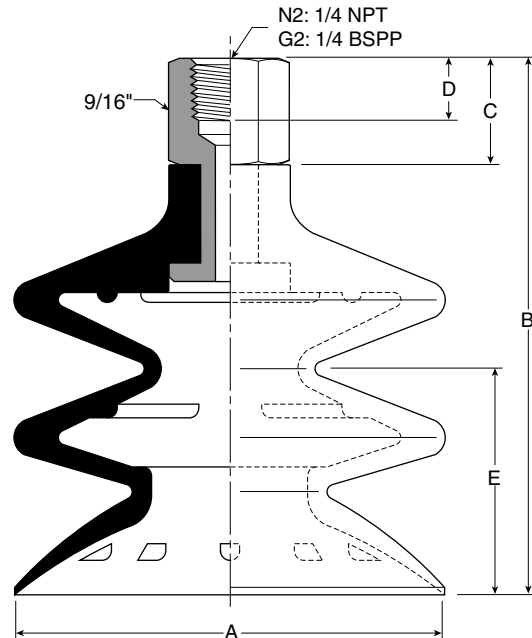
PCTF-10 thru PCTF-20



PCTF-30 thru PCTF-60



PCTF-90



Model Number	ØA	B	C	D	E
PCTF5*†	.20 (5)	.85 (21.5)	.47 (12)	.31 (8)	.12 (3)
PCTF7*†	.28 (7)	.87 (22)	.47 (12)	.31 (8)	.12 (3)
PCTF10*†	.35 (9)	1.06 (27)	.47 (12)	.31 (8)	.12 (3)
PCTF15*†	.60 (15.2)	1.38 (35)	.47 (12)	.31 (8)	.39 (10)
PCTF20*†	.79 (20)	1.38 (35)	.47 (12)	.31 (8)	.39 (10)
PCTF30*†	1.26 (32)	2.03 (51.5)	.55 (14)	.31 (8)	.57 (14.5)
PCTF40*†	1.65 (42)	2.36 (60)	.55 (14)	.31 (8)	.87 (22)
PCTF60*†	2.44 (62)	2.72 (69)	.55 (14)	.31 (8)	1.06 (27)
PCTF90*†	3.46 (88)	4.13 (105)	.69 (17.5)	.39 (10)	1.65 (42)

Inches (mm)
 * Cup Material
 † Thread Size



PCTK Vacuum Cup Assemblies



Model Number Index

PCTK - **5** - **NBR** - **—**

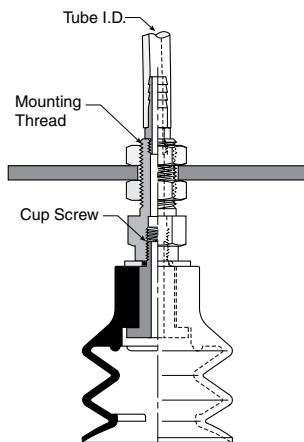
Cup Diameter (mm)		Cup Material	Vacuum Port	
5 (5)	30 (30)	Stocked	Blank	Barb
7 (7)	40 (40)	NBR Nitrile	See Chart Below	
10 (10)	60 (60)	Rubber		
15 (15)		SI Silicone		
20 (20)		Available (Consult Factory)		
		NBRE Nitrile ESD		
		CR Chloroprene		
		U Urethane		
		SIE Silicone ESD		
		FKM Fluoro Rubber		
		SH High Temp		

(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 PCG Cups

(Bold Items are Stocked)

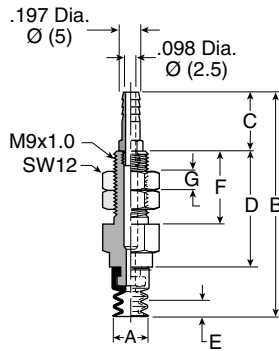
Included in Kit	Cup Diameter (mm)	Vacuum Port		FTK & CTK Fitting Part Number	Cup Screw Only	Mounting Thread	Tube ID
		Code	Thread				
	5, 7	Blank	Barb	FTK-5A	N/A	M9x1 Male	.156 (4)
	10, 15, 18, 20	Blank	Barb	CTK-10	TN-PC-10-M5	M8x1.25 Male	.156 (4)
	30, 40, 60	Blank	Barb	CTK-30	TN-PC-30-M8	M10x1.5 Male	.156 (4)

Inches (mm)

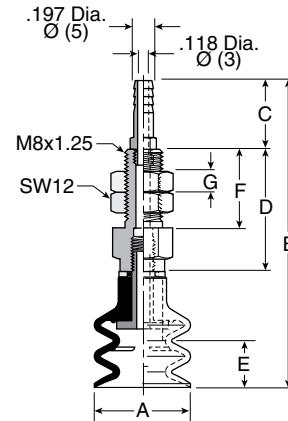


Dimensions

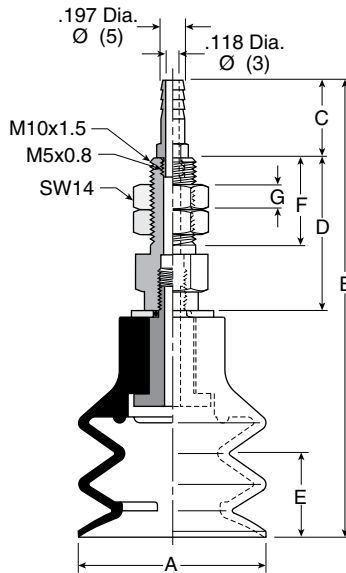
PCTK-5 and PCTK-7



PCTK-10 thru PCTK-20



PCTK-30 thru PCTK -60



Model Number	ØA	B	C	D	E	F	G	Wt oz. (g)
PCTK-5-*	.20 (5)	1.32 (33.5)	.39 (10)	.55 (14)	.12 (3)	.47 (12)	.12 (3)	.56 (11)
PCTK-7-*	.28 (7)	1.34 (34)	.39 (10)	.55 (14)	.12 (3)	.47 (12)	.12 (3)	.56 (11)
PCTK-10-*	.35 (9)	2.21 (56.2)	.63 (16)	.88 (22.5)	.12 (3)	.59 (15)	.16 (4)	.78 (22)
PCTK-15-*	.60 (15.2)	2.53 (64.2)	.63 (16)	.86 (22)	.39 (10)	.59 (15)	.16 (4)	.78 (22)
PCTK-20-*	.79 (20)	2.53 (64.2)	.63 (16)	.86 (22)	.39 (10)	.59 (15)	.16 (4)	.78 (22)
PCTK-30-*	1.26 (32)	3.42 (86.8)	.63 (16)	1.26 (32)	.57 (14.5)	.79 (20)	.20 (5)	1.62 (46)
PCTK-40-*	1.65 (42)	3.75 (95.3)	.63 (16)	1.26 (32)	.86 (22)	.79 (20)	.20 (5)	1.94 (55)
PCTK-60-*	2.44 (62)	4.11 (104.3)	.63 (16)	1.26 (32)	1.06 (27)	.79 (20)	.20 (5)	3.00 (85)

Inches (mm)
 * Cup Material
 † Vacuum Port



PCYK Vacuum Cup Assemblies



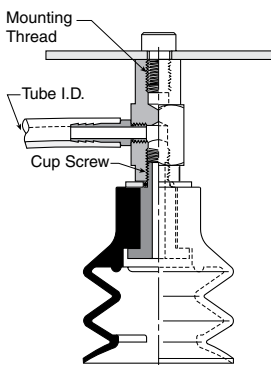
Model Number Index

PCYK - **5** - **NBR** - **—**

Cup Diameter (mm)		Cup Material	Vacuum Port	
5 (5)	30 (30)	Stocked	Blank	Barb
7 (7)	40 (40)	NBR Nitrile Rubber	N1	1/8 NPT
10 (10)	60 (60)	SI Silicone	G1	1/8 BSPP
15 (15)	90 (90)		R1	1/8 BSPT
20 (20)		Available (Consult Factory)	See Chart Below	
		NBRE Nitrile ESD		
		CR Chloroprene		
		U Urethane		
		SIE Silicone ESD		
		FKM Fluoro Rubber		
		SH High Temp		

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.



(Bold Items are Stocked)

90° Barbed Adapter for PCG Cups

(Bold Items are Stocked)

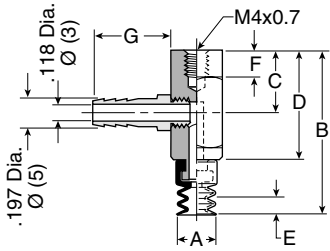
Included in Kit	Cup Diameter (mm)	Vacuum Port		FYK & CYK Fitting Part Number	Cup Screw Only	Mounting Thread	Tube ID
		Code	Thread				
	5, 7	Blank	Barb	FYK-5A	N/A	M4x0.7 Female	.156 (4)
	10, 15, 20	Blank	Barb	CYK-10	TN-PC-10-M5	M4x0.7 Female	.156 (4)
	30, 40, 60	Blank	Barb	CYK-30	TN-PC-30-M8	M6x1.0 Female	.156 (4)
	90	N1	1/8 NPT	CYK-90-N1	TN-PC-90-M12	M16x1.5 Female	N/A
		G1	1/8 BSPP	CYK-90-G1			
		R1	1/8 BSPT	CYK-90-R1			

Inches (mm)

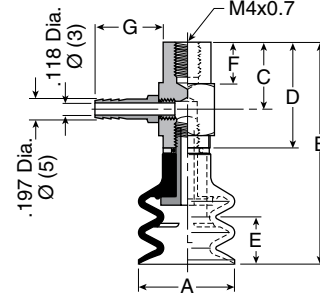


Dimensions

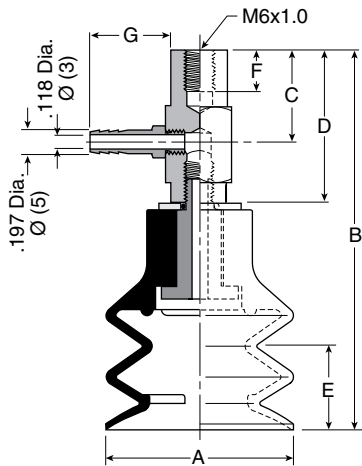
**PCYK-5 and
 PCYK-7**



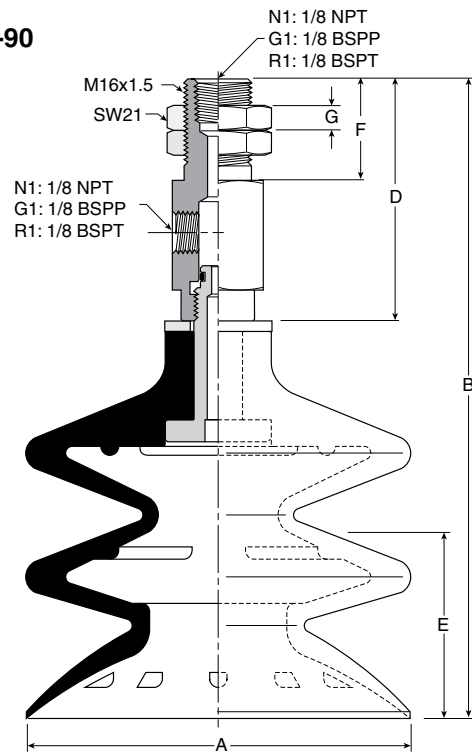
**PCYK-10 thru
 PCYK-20**



**PCYK-30 thru
 PCYK-60**



PCYK-90



Model Number	ØA	B	C	D	E	F	G	Wt oz. (g)
PCYK-5-*	.20 (5)	1.26 (32)	.51 (13)	.89 (22.5)	.12 (3)	.24 (6)	.63 (16)	.56 (16)
PCYK-7-*	.28 (7)	1.28 (32.5)	.51 (13)	.89 (22.5)	.12 (3)	.24 (6)	.63 (16)	.56 (16)
PCYK-10-*	.35 (9)	1.58 (40.2)	.55 (14)	.87 (22)	.12 (3)	.24 (6)	.63 (16)	.78 (22)
PCYK-15-*	.60 (15.2)	1.90 (48.2)	.55 (14)	.87 (22)	.39 (10)	.24 (6)	.63 (16)	.78 (22)
PCYK-20-*	.79 (20)	1.90 (48.2)	.55 (14)	.87 (22)	.39 (10)	.24 (6)	.63 (16)	.78 (22)
PCYK-30-*	1.26 (32)	2.79 (70.8)	.79 (20)	1.26 (32)	.57 (14.5)	.31 (8)	.63 (16)	1.62 (46)
PCYK-40-*	1.65 (42)	3.12 (79.3)	.79 (20)	1.26 (32)	.87 (22)	.31 (8)	.63 (16)	1.94 (55)
PCYK-60-*	2.44 (62)	3.48 (88.3)	.79 (20)	1.26 (32)	1.06 (27)	.31 (8)	.63 (16)	3.00 (85)
PCYK-90-*	3.46 (88)	5.70 (144.8)	.91 (23)	2.17 (55)	1.65 (42)	.43 (11)	—	10.58 (300)

Inches (mm)
 * Cup Material
 † Thread Size



PKG Automotive Vacuum Cups



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 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.

PKGF 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.



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.



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.



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.



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)	Cup Material
60 (60)	Stocked NBR Nitrile Rubber
75 (75)	
100 (100)	Available (Consult Factory) U Urethane

PKFG - 75 - NBR

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

PKJG - 40 - NBR

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



Specifications

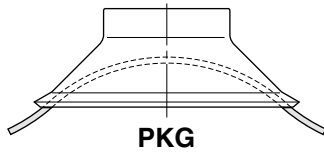
Suction Cup Material	NBR	U
	Nitrile	Urethane
Operating Temperature (°C)	-20° to +120°	-30° to +120°
Color	Black	Blue
Hardness, Shore A (°Sh)	55 ±5	55 ±5
Wear Resistance	.....	.....
Tear Strength	....	.....
Aging Resistance	....	.....
Ozone Resistance	....	.....
Gasoline Resistance	.....	.....
Oil Resistance	.....	.....
Acid Resistance	...	.
Alkali Resistance	....	.
Chemical Resistance	...	.....
Mechanical Resistance	....	.....

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

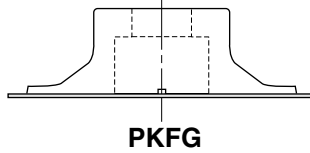


Application Guide

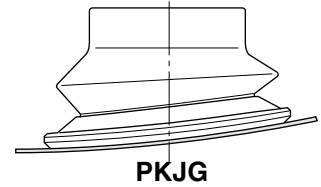
- Deep Cup for External Curves
- Slip Resistant Foot Pattern



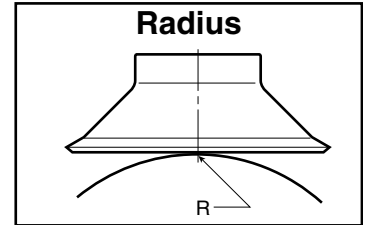
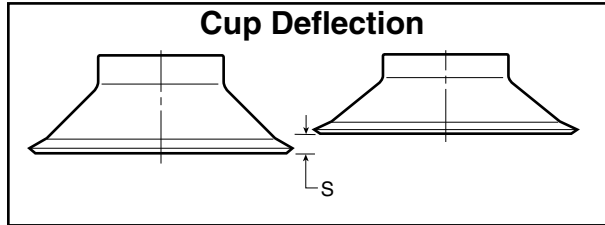
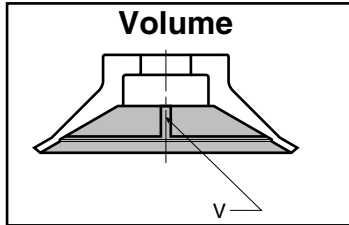
- No Deformation
- Thin Flat Sheets
- Slip Resistant Foot Pattern



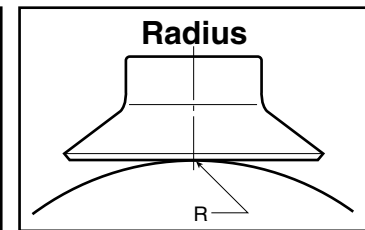
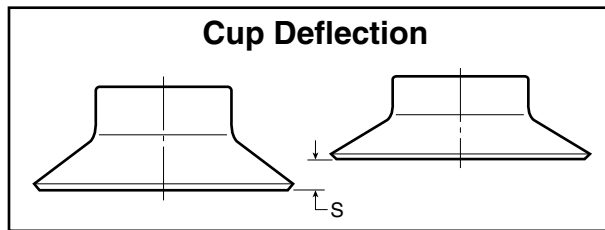
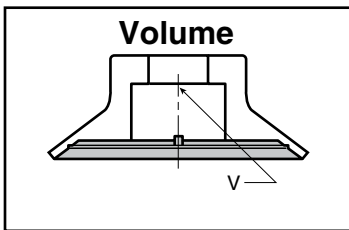
- Bellows for Any Curves
- Slip Resistant Foot Pattern



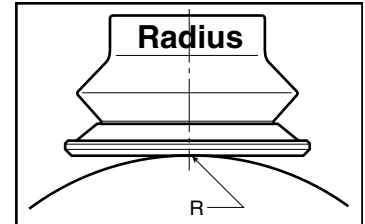
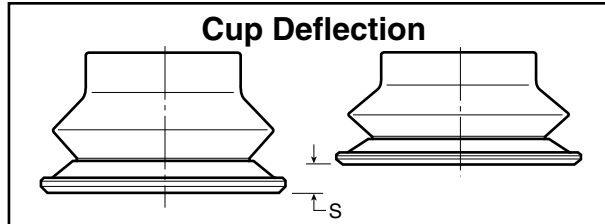
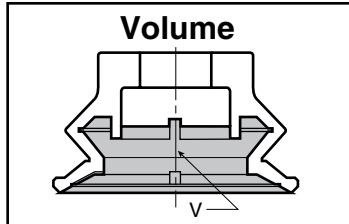
Main Data for PKG Suction Cups



Main Data for PKFG Suction Cups



Main Data for PKJG Suction Cups



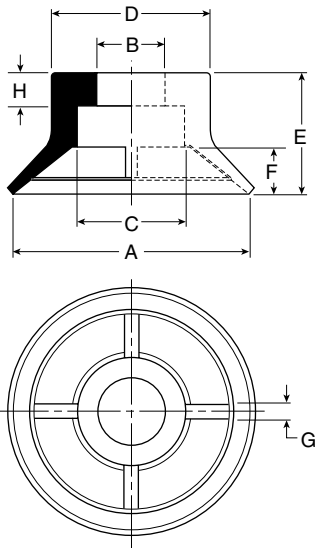
Model Number	Cup Diameter Inches (mm)	Area cm ²	Volume (V) Liters	Lifting Force @ 60% (N)		Cup Deflection (S) (mm)	Radius R (mm)
PKG-60-*	2.36 (60)	28.3	.06	173	86.5	9	60
PKG-75-*	2.95 (75)	44.2	.07	270	135	13	100
PKG-100-*	3.94 (100)	78.5	.09	480	240	17.3	150
PKFG-75-*	2.95 (75)	44.2	.03	270	65.0	5	140
PKFG-100-*	3.94 (100)	78.5	.05	480	113	8	200
PKJG-40-*	1.57 (40)	12.6	.02	76.9	—	10.5	30
PKJG-50-*	1.98 (50)	19.6	.03	120	—	19	40
PKJG-60-*	2.36 (60)	28.3	.04	173	—	14	52
PKJG-80-*	3.15 (80)	50.3	.05	308	—	17	70
PKJG-110-*	4.33 (110)	95.0	.07	581	—	23	130

* Cup Material

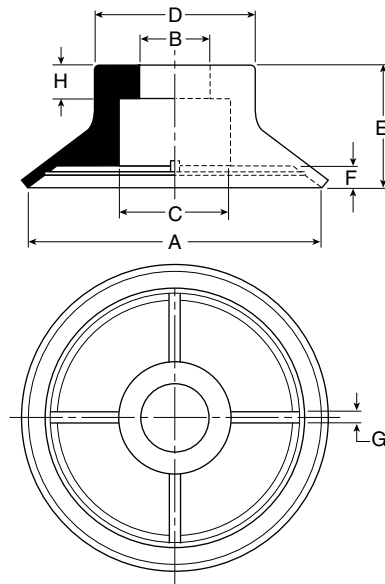


Dimensions

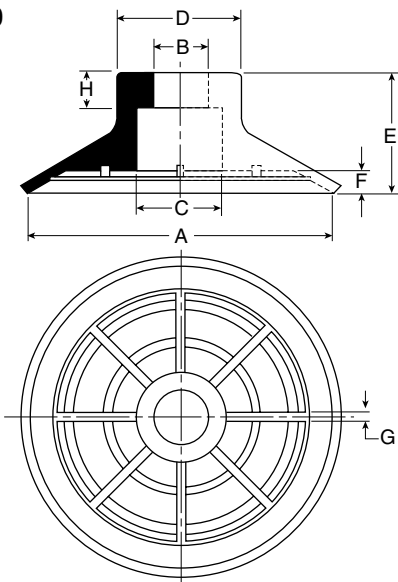
**PKG-60 thru
 PKG-100**



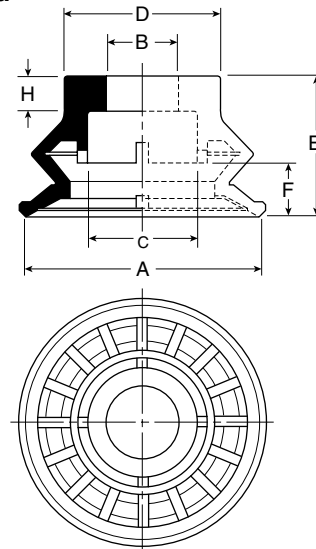
PKFG-75



PKFG-100



**PKJG-40 thru
 PKJG-110**



Model Number	ØA	ØB	ØC	ØD	E	F	G	H
PKG-60-*	2.36 (60)	.73 (18.5)	1.10 (28)	1.57 (40)	1.22 (31)	.35 (9)	.12 (3)	.35 (9)
PKG-75-*	2.95 (75)	.73 (18.5)	1.10 (28)	1.57 (40)	1.26 (32)	.51 (13)	.12 (3)	.35 (9)
PKG-100-*	3.94 (100)	.73 (18.5)	1.10 (28)	1.57 (40)	1.54 (39)	.68 (17.3)	.16 (4)	.35 (9)
PKFG-75-*	2.95 (75)	.73 (18.5)	1.10 (28)	1.57 (40)	1.26 (32)	.20 (5)	.12 (3)	.35 (9)
PKFG-100-*	3.94 (100)	.73 (18.5)	1.10 (28)	1.57 (40)	1.54 (39)	.31 (8)	.16 (4)	.35 (9)
PKJG-40-*	1.57 (40)	.73 (18.5)	1.10 (28)	1.57 (40)	1.38 (35)	.41 (10.5)	—	.37 (9.5)
PKJG-50-*	1.98 (50)	.73 (18.5)	1.10 (28)	1.57 (40)	1.38 (35)	.75 (19)	—	.35 (9)
PKJG-60-*	2.36 (60)	.73 (18.5)	1.10 (28)	1.57 (40)	1.38 (35)	.55 (14)	—	.35 (9)
PKJG-80-*	3.15 (80)	.73 (18.5)	1.10 (28)	1.57 (40)	1.54 (39)	.67 (17)	—	.35 (9)
PKJG-110-*	4.33 (110)	.73 (18.5)	1.10 (28)	1.57 (40)	1.98 (50)	.91 (23)	—	.35 (9)

Inches (mm)

* Cup Material



PKG Vacuum Cup Assemblies



Model Number Index

PKG - **60** - **NBR** - **N3**

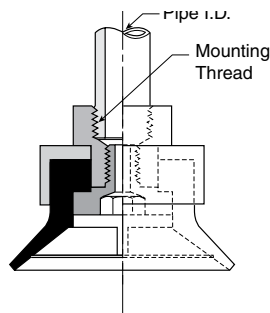
Cup Diameter (mm)	Cup Material	Mounting Thread
60 (60)	Stocked	N3 3/8 NPSF
75 (75)	NBR Nitrile Rubber	G3 3/8 BSPP
100 (100)	Available (Consult Factory)	
	U Urethane	

(Bold Items are Stocked)

Installation

Note:

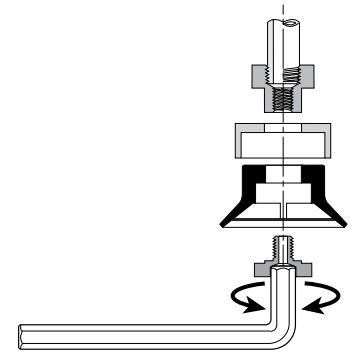
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage.



Note:

Simply remove the hex keyed male screw to replace cup.

Hex Key Size: 8mm



Female Adapter for PKG Cups

(Bold Items are Stocked)

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

Dimensions

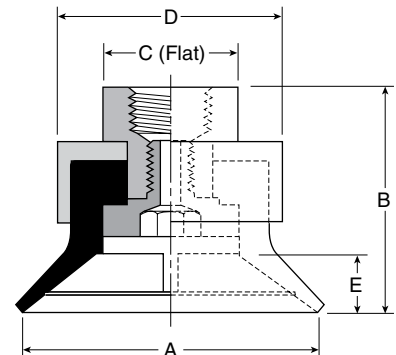
PKG-60 thru
PKG-100

Model Number	ØA	B	C	D	E
PKG-60-*†	2.36 (60)	1.85 (46.9)	1.10 (28)	1.81 (46)	.35 (9)
PKG-75-*†	2.95 (75)	1.88 (47.8)	1.10 (28)	1.81 (46)	.51 (13)
PKG-100-*†	3.94 (100)	2.16 (54.9)	1.10 (28)	1.81 (46)	.68 (17.3)

Inches (mm)

* Cup Material

† Thread Size





PKGT Vacuum Cup Assemblies



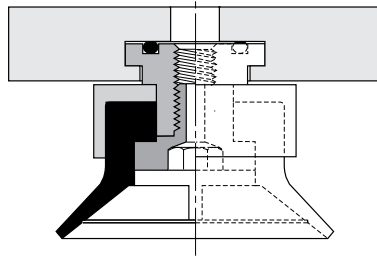
Model Number Index (Bold Items are Stocked)

PKGT - 60 - NBR

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

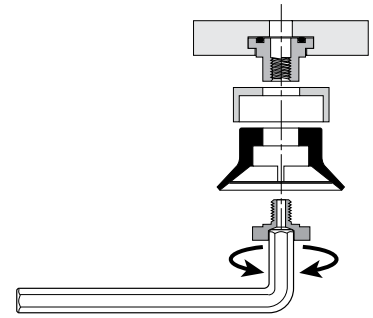
Installation

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



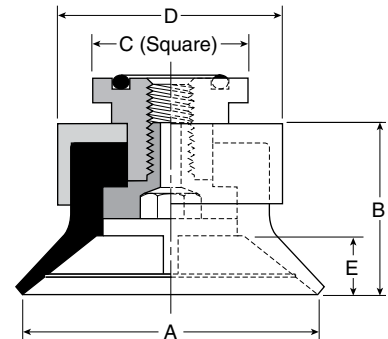
Adapter for PKG Cups (Bold Items are Stocked)

Adapter Components	Adapter Part Numbers	Thread Sizes	Description
 Adapter	TN-PK-T	—	Adapter / O-ring
 Cap	PKG-C-6710	—	Cap
 Male	TN-PK-100-M10	M10x1.5	Male Screw

Dimensions

PKGT-60 and PKGT-100

Model Number	ØA	B	C	D	E
PKGT-60-*	2.36 (60)	1.33 (34)	1.10 (28)	1.81 (46)	.04 (1.1)
PKGT-75-*	2.95 (75)	1.38 (35)	1.10 (28)	1.81 (46)	.04 (1.1)
PKGT-100-*	3.94 (100)	1.65 (42)	1.10 (28)	1.81 (46)	.05 (1.3)



Inches (mm)
* Cup Material



PKFF Vacuum Cup Assemblies



Model Number Index

PKFF - 75 - NBR - N3

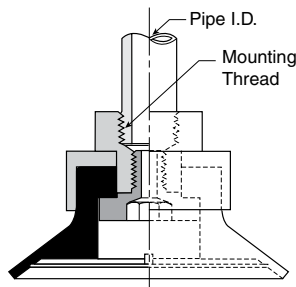
Cup Diameter (mm)	Cup Material	Mounting Thread
75 (75)	Stocked	N3 3/8 NPSF
100 (100)	NBR Nitrile Rubber	G3 3/8 BSPP
	Available (Consult Factory)	
	U Urethane	

(Bold Items are Stocked)

Installation

Note:

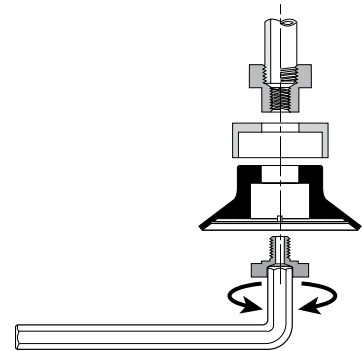
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage.



Note:

Simply remove the hex keyed male screw to replace cup.

Hex Key Size: 8mm



Female Adapter for PKFG Cups

(Bold Items are Stocked)

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

Dimensions

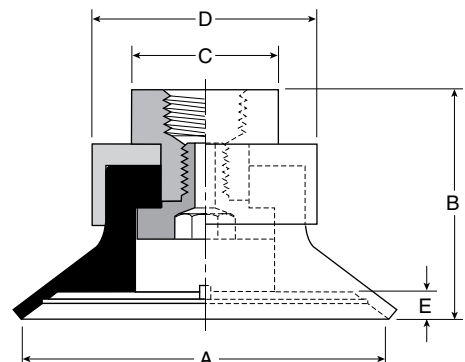
PKFF-75 thru
PKFF-100

Model Number	ØA	B	C	D	E
PKFF-75- [*] †	1.57 (40)	1.91 (48.5)	1.10 (28)	1.81 (46)	.20 (5)
PKFF-100- [*] †	1.97 (50)	2.19 (55.5)	1.10 (28)	1.81 (46)	.31 (8)

Inches (mm)

^{*} Cup Material

[†] Thread Size

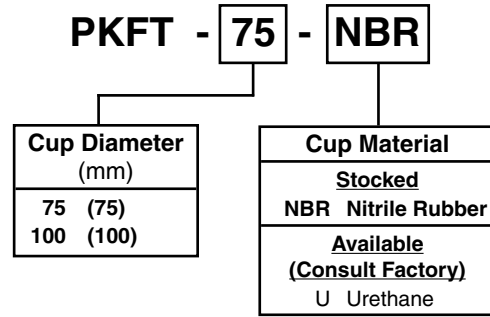




PKFT Vacuum Cup Assemblies



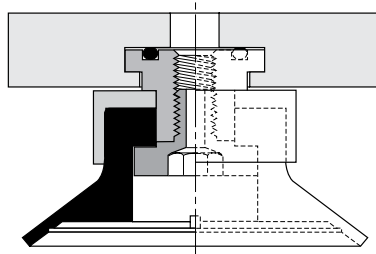
Model Number Index



(Bold Items are Stocked)

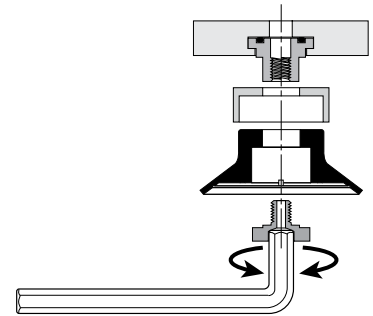
Installation

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

(Bold Items are Stocked)

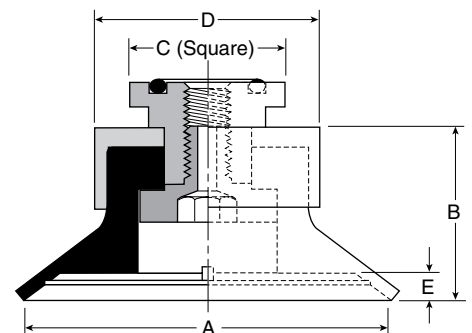
Adapter Components	Adapter Part Numbers	Thread Sizes	Description
 Adapter	TN-PK-T	—	Adapter / O-ring
 Cap	PKG-C-6710	—	Cap
 Male	TN-PK-100-M10	M10x1.5	Male Screw

Dimensions

PKFT-75 thru
PKFT-10

Model Number	ØA	B	C	D	E
PKGT-75-*	1.57 (40)	1.38 (35)	1.10 (28)	1.81 (46)	.20 (5)
PKGT-100-*	1.97 (50)	1.65 (42)	1.10 (28)	1.81 (46)	.31 (8)

Inches (mm)
* Cup Material





PKJF Vacuum Cup Assemblies



Model Number Index

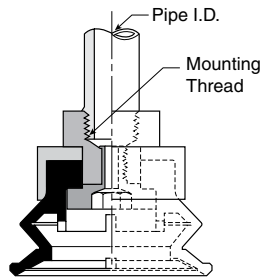
PKJF - **60** - **NBR** - **N3**

Cup Diameter (mm)	Cup Material	Mounting Thread
40 (40)	Stocked	N3 3/8 NPSF
50 (50)	NBR Nitrile Rubber	G3 3/8 BSPP
60 (60)	Available	
80 (80)	(Consult Factory)	
110 (110)	U Urethane	

(Bold Items are Stocked)

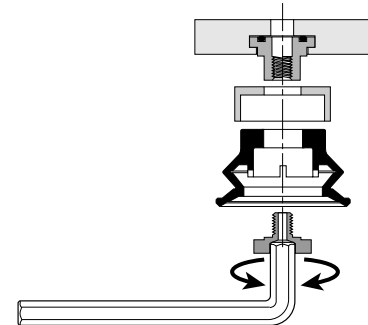
Installation

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



Female Adapter for PKFG Cups

(Bold Items are Stocked)

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

Dimensions

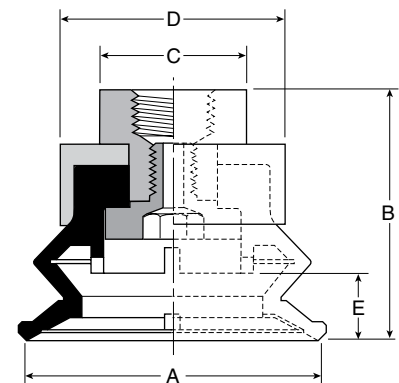
PKJF-75 thru
PKJF-100

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

Inches (mm)

* Cup Material

† Thread Size





PKJT Vacuum Cup Assemblies



Model Number Index

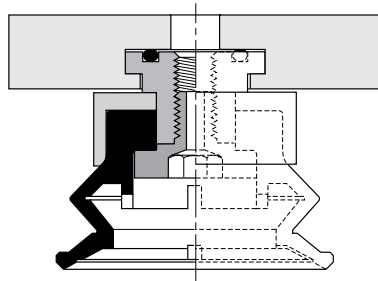
PKJT - 60 - NBR

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

(Bold Items are Stocked)

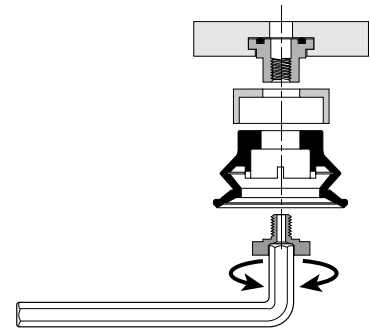
Installation

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

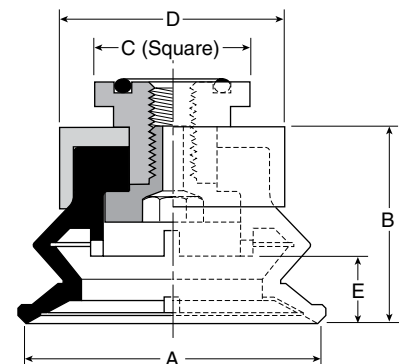
(Bold Items are Stocked)

Adapter Components	Adapter Part Numbers	Thread Sizes	Description
 Adapter	TN-PK-T	—	Adapter / O-ring
 Cap	PKG-C-6710	—	Cap
 Male	TN-PK-100-M10	M10x1.5	Male Screw

Dimensions

PKJT-40 thru
PKJT-110

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



Inches (mm)
* Cup Material



PUGB Flat Swivel Vacuum Cups



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.





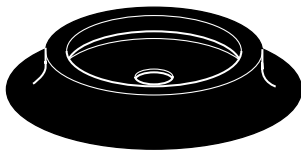
Model Number Index (Cups Only)

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

PUG Cup



(Bold Items are Stocked)

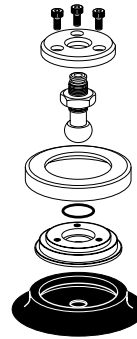
Model Number Index

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

PUGB Assembly



(Bold Items are Stocked)

Specifications

Suction Cup Material	NBR	CR	SI	U	FKM	SH
	Nitrile	Chloroprene	Silicone	Urethane	Flouro Rubber	Silicone High Temp
Operating Temperature (°C)	-20° to +120°	-30° to +140°	-60° to +250°	-30° to +120°	-10° to +230°	-50° to +300°
Color	Black	Green	White	Blue	Black / White Dot	Grey
Hardness, Shore A (°Sh)	55 ±5	55 ±5	55 ±5	55 ±5	70 ±5	55 ±5
Electrical Resistance (Ωm)	—	—	—	—	—	—
Wear Resistance	.....	.....	..	.....	...	..
Tear Strength	....	.....	.	.....	.	.
Aging Resistance	....	.....	.....	.....	.....	.....
Ozone Resistance	....	.....	.....	.....	.....	.....
Gasoline Resistance	.....	.....	....	.....	.....	....
Oil Resistance	.....	.....	.....	.....	.....	.....
Acid Resistance	...	.....	..	.	.....	...
Alkali Resistance	....	.....	..	.	.....	...
Chemical Resistance	...	....	..	.....	.....	..
Mechanical Resistance	....	....	....	.....	..	....

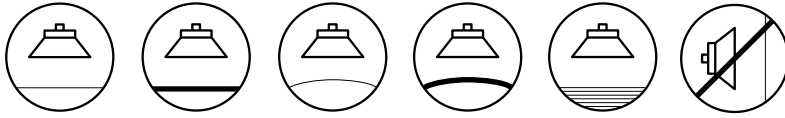
..... = excellent; = very good; = good; ... = medium; .. = poor; . = not recommended

* ESD: Electric Static Dissipative Material



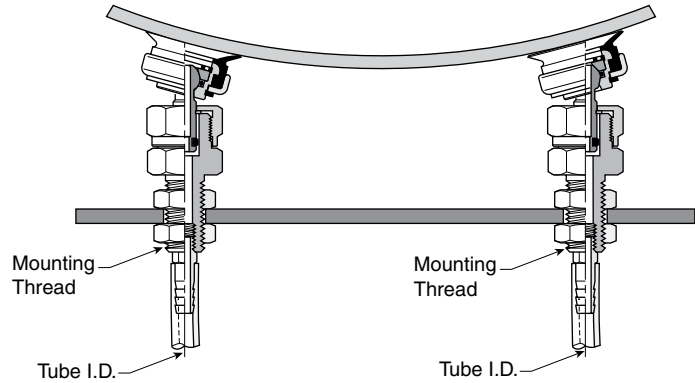
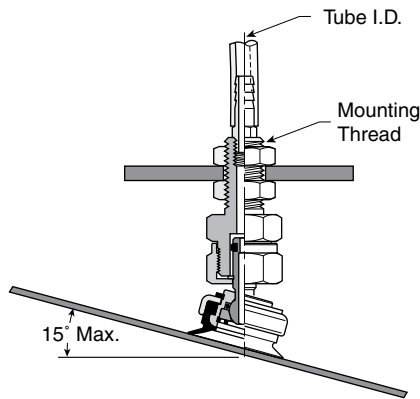
Application Guide

Swivel Bellows

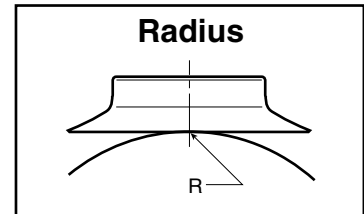
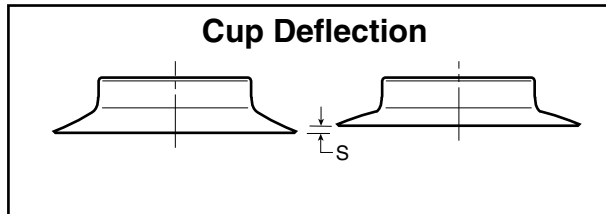
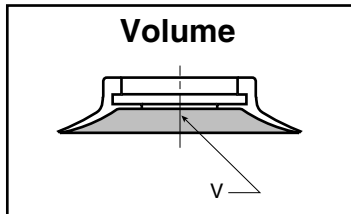


• Angles Pickup

• Fixtures for Curved Product



Main Data for Swivel Bellows PUG Cups



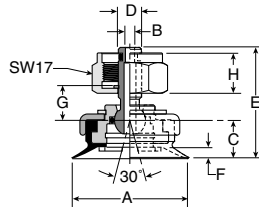
Model Number	Cup Diameter Inches (mm)	Area cm ²	Volume (V) Liters	Lifting Force @ 60% (N)		Cup Deflection (S) mm	Radius R (mm)
PUGB-25-*	.98 (25)	4.91	0.0013	30.0	—	2.5	17
PUGB-30-*	1.18 (30)	7.07	0.0018	43.2	—	2	26
PUGB-35-*	1.38 (35)	9.62	0.0026	58.9	—	3	31
PUGB-40-*	1.57 (40)	12.6	0.0040	76.9	—	3	37
PUGB-50-*	1.57 (40)	19.6	0.0070	120	—	4	41
PUGB-60-*	2.36 (60)	28.3	0.0090	173	—	5	70
PUGB-80-*	3.15(80)	50.3	0.025	308	—	6	100
PUGB-100-*	3.94 (100)	78.5	0.045	480	—	6	150
PUGB-120-*	4.72 (120)	113.1	0.078	692	—	8	365
PUGB-150-*	5.91 (150)	177.0	0.177	1081	—	10	380
PUGB-200-*	7.87 (200)	314.0	0.425	1922	—	12	430

* Cup Material

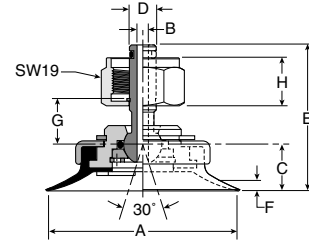


Dimensions

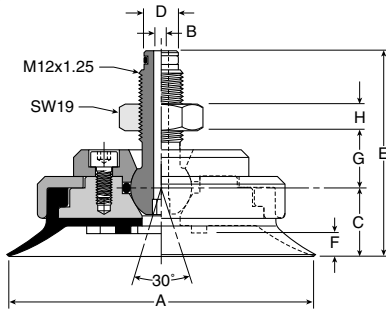
**PUGB-25 thru
PUGB-35**



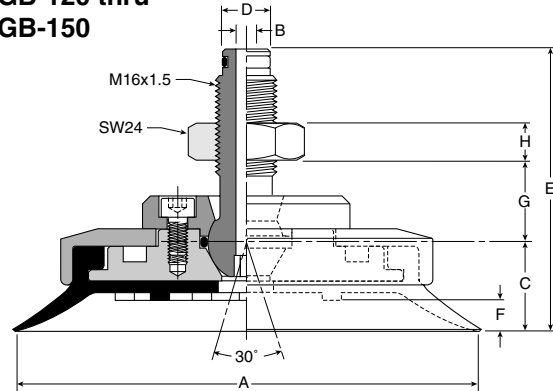
**PUGB-40 and
PUGB-50**



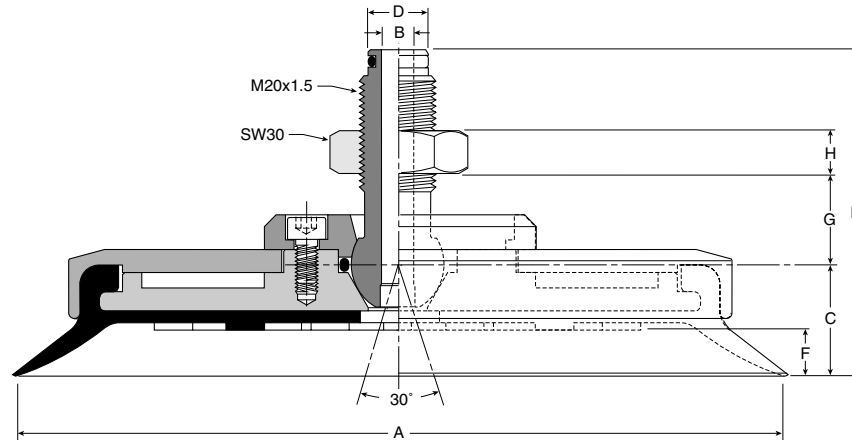
**PUGB-60 thru
PUGB-100**



**PUGB-120 thru
PUGB-150**



PUGB-200



Model Number	ØA	ØB	C	ØD	E	F	G	H
PUGB-25-*	.98 (25)	.09 (2.3)	.37 (9.5)	.24 (6)	1.12 (28.5)	.10 (2.5)	.356 (9.05)	.41 (10.5)
PUGB-30-*	1.18 (30)	.09 (2.3)	.39 (10)	.24 (6)	1.14 (29)	.08 (2)	.356 (9.05)	.41 (10.5)
PUGB-35-*	1.38 (35)	.09 (2.3)	.43 (11)	.24 (6)	1.18 (30)	.12 (3)	.356 (9.05)	.41 (10.5)
PUGB-40-*	1.57 (40)	.12 (3.0)	.43 (11)	.28 (7)	1.46 (37)	.12 (3)	.474 (12.05)	.49 (12.5)
PUGB-50-*	1.97 (50)	.12 (3.0)	.47 (12)	.28 (7)	1.50 (38)	.15 (4)	.474 (12.05)	.49 (12.5)
PUGB-60-*	2.36 (60)	.15 (3.9)	.63 (16)	.35 (9)	2.05 (52)	.20 (5)	.59 (15)	.28 (7)
PUGB-80-*	3.15 (80)	.15 (3.9)	.71 (18)	.35 (9)	2.13 (54)	.24 (6)	.59 (15)	.28 (7)
PUGB-100-*	3.94 (100)	.15 (3.9)	.71 (18)	.35 (9)	2.13 (54)	.24 (6)	.59 (15)	.28 (7)
PUGB-120-*	4.72 (120)	.23 (5.9)	.91 (23)	.51 (13)	2.87 (73)	.31 (8)	.79 (20)	.39 (10)
PUGB-150-*	5.91 (150)	.23 (5.9)	.98 (25)	.51 (13)	2.95 (75)	.39 (10)	.79 (20)	.39 (10)
PUGB-200-*	7.87 (200)	.31 (7.9)	1.14 (29)	.63 (16)	3.35 (85)	.47 (12)	.79 (20)	.47 (12)

Inches (mm)
* Cup Material



PUTK Vacuum Cup Assemblies



Model Number Index

PUTK - 10 - NBR - —

Cup Diameter (mm)		Cup Material	Vacuum Port
25 (25)	80 (80)	Stocked	Blank Barb
30 (30)	100 (100)	NBR Nitrile	N1 1/8 NPT
35 (35)	120 (120)	Rubber	G1 1/8 BSPP
40 (40)	150 (150)	SI Silicone	R1 1/8 BSPT
50 (50)	200 (200)	Available	N2 1/4 NPT
60 (60)		(Consult Factory)	G2 1/4 BSPP
		CR Chloroprene	R2 1/4 BSPT
		U Urethane	See Chart
		FKM Fluoro Rubber	Below
		SH High Temp	

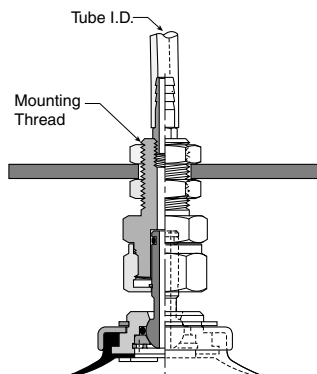
(Bold Items are Stocked)

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 PUGB Cups

(Bold Items are Stocked)

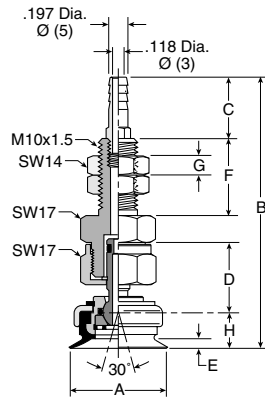
Included in Kit	Cup Diameter (mm)	Vacuum Port		Mounting Thread	UTK Fitting Part Number	Tube ID
		Code	Thread			
	25, 30, 35	Blank	Barb	M10x1.5 Male	UTK-20	.157 (4)
	40, 50	Blank	Barb	M14x1.5 Male	UTK-40	.157 (4)
	60, 80, 100	N1	1/8 NPT	M16x1.5 Male	UTK-60-N1	N/A
		G1	1/8 BSPP		UTK-60-G1	
		R1	1/8 BSPT		UTK-60-R1	
	120, 150	N1	1/8 NPT	M22x1.5 Male	UTK-120-N1	N/A
		G1	1/8 BSPP		UTK-120-G1	
		R1	1/8 BSPT		UTK-120-R1	
	200	N2	1/4 NPT	M22x1.5 Male	UTK-200-N2	N/A
		G2	1/4 BSPP		UTK-200-G2	
		R2	1/4 BSPT		UTK-200-R2	

Inches (mm)

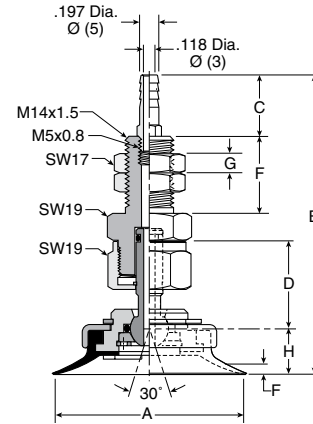


Dimensions

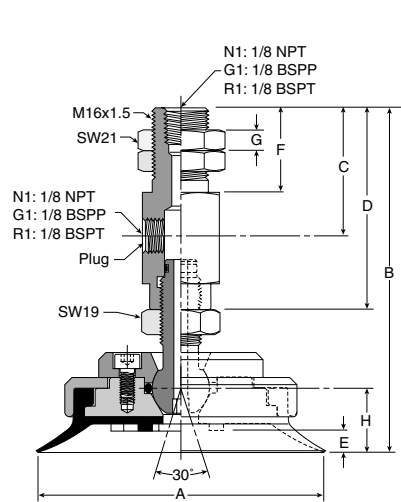
**PUTK-25 thru
 PUTK-35**



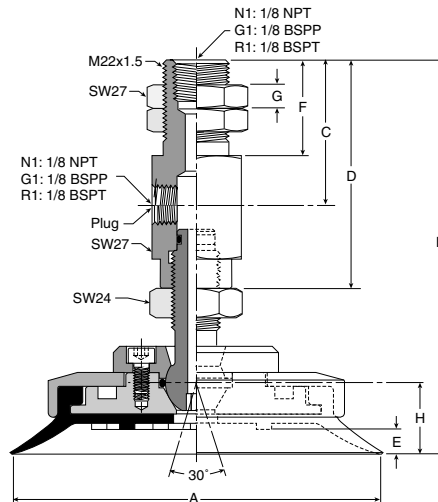
**PUTK-40 and
 PUTK-50**



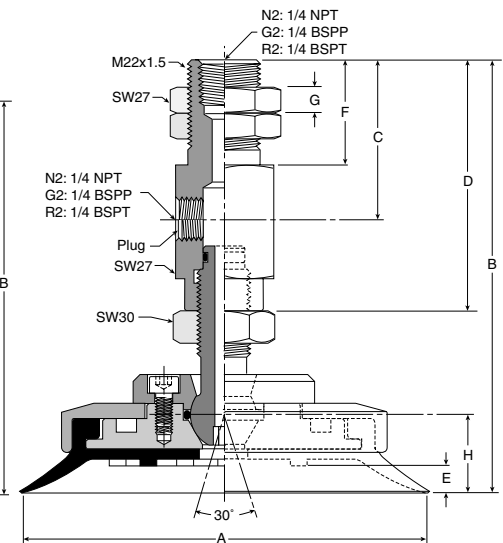
**PUTK-60 thru
 PUTK-100**



**PUTK-120 thru
 PUTK-150**



PUTK-200



Model Number	ØA	B	C	D	E	F	G	H	Wt oz (g)
PUTK-25-*	.98 (25)	2.78 (70.5)	.63 (16)	.71 (18)	.10 (2.5)	.79 (20)	.20 (5)	.53 (13.5)	2.3 (66)
PUTK-30-*	1.18 (30)	2.80 (71)	.63 (16)	.71 (18)	.08 (2)	.79 (20)	.20 (5)	.55 (14)	2.5 (71)
PUTK-35-*	1.38 (35)	2.83 (72)	.63 (16)	.71 (18)	.12 (3)	.79 (20)	.20 (5)	.59 (15)	2.5 (71)
PUTK-40-*	1.57 (40)	3.03 (77)	.63 (16)	.91 (23)	.12 (3)	.79 (20)	.20 (5)	.43 (11)	4.2 (118)
PUTK-50-*	1.97 (50)	3.07 (78)	.63 (16)	.91 (23)	.15 (4)	.79 (20)	.20 (5)	.47 (12)	4.3 (121)
PUTK-60-*	2.36 (60)	3.66 (93)	.63 (16)	1.89 (48)	.20 (5)	.91 (23)	.24 (6)	.63 (16)	12.4 (352)
PUTK-80-*	3.15 (80)	3.74 (95)	1.38 (35)	2.16 (55)	.24 (6)	.91 (23)	.24 (6)	.71 (18)	15.7 (444)
PUTK-100-*	3.94 (100)	3.74 (95)	1.38 (35)	2.16 (55)	.24 (6)	.91 (23)	.24 (6)	.71 (18)	20.0 (568)
PUTK-120-*	4.72 (120)	5.04 (128)	1.81 (46)	2.95 (75)	.37 (8)	1.26 (32)	.37 (8)	.91 (23)	34.0 (63)
PUTK-150-*	5.91 (150)	5.12 (130)	1.81 (46)	2.95 (75)	.39 (10)	1.26 (32)	.37 (8)	.98 (25)	41.0 (1107)
PUTK-200-*	7.87 (200)	5.51 (140)	1.81 (46)	2.80 (71)	.47 (12)	1.26 (32)	.37 (8)	1.14 (29)	83.0 (2340)

Inches (mm)

* Cup Material



PUYK Vacuum Cup Assemblies



Model Number Index

PUYK - 10 - NBR - —

Cup Diameter (mm)	Cup Material	Vacuum Port
25 (25)	Stocked	Blank Barb
30 (30)	NBR Nitrile Rubber	See Chart Below
35 (35)	SI Silicone	
40 (40)	Available (Consult Factory)	
50 (50)	CR Chloroprene	
	U Urethane	
	FKM Fluoro Rubber	
	SH High Temp	

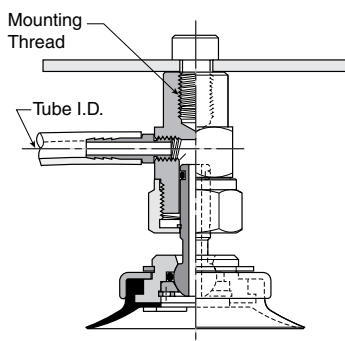
(Bold Items are Stocked)

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.



90° Barbed Adapter for PUGB Cups

(Bold Items are Stocked)

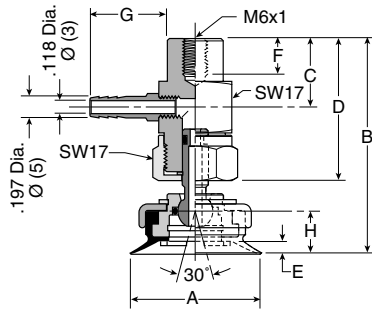
Included in Kit	Cup Diameter (mm)	Vacuum Port		Mounting Thread	UYK Fitting Part Number	Tube ID
		Code	Thread			
	25, 30, 35	Blank	Barb	M6x1 Female	UYK-20	.157 (4)
	40, 50	Blank	Barb	M8x1.25 Female	UYK-40	.157 (4)

Inches (mm)

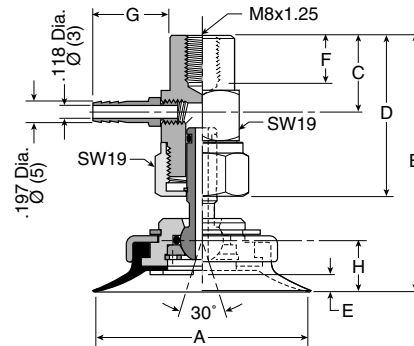


Dimensions

**PUYK-25 thru
PUYK-35**



**PUYK-40 and
PUYK-50**



Model Number	ØA	B	C	D	E	F	G	H	Wt oz (g)
PUYK-25-*	.98 (25)	1.95 (49.5)	.63 (16)	1.30 (33)	.10 (2.5)	.31 (8)	.96 (24.5)	.37 (9.5)	2.3 (66)
PUYK-30-*	1.18 (30)	1.97 (50)	.63 (16)	1.30 (33)	.08 (2)	.31 (8)	.96 (24.5)	.39 (10)	2.6 (73)
PUYK-35-*	1.38 (35)	2.01 (51)	.63 (16)	1.30 (33)	.12 (3)	.31 (8)	.96 (24.5)	.43 (11)	2.6 (73)
PUYK-40-*	1.57 (40)	2.32 (59)	.71 (18)	1.50 (38)	.12 (3)	.39 (10)	1.00 (25.5)	.43 (11)	4.0 (116)
PUYK-50-*	1.97 (50)	2.36 (60)	.71 (18)	1.50 (38)	.15 (4)	.39 (10)	1.00 (25.5)	.47 (12)	4.1 (117)

Inches (mm)

* Cup Material



PUTYS Vacuum Cup Assemblies



Model Number Index

PUTYS **103** **NBR** **M5**

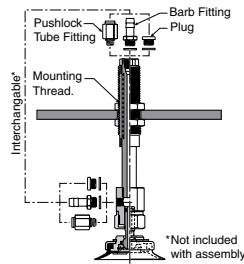
Cup Diameter (mm)	Stroke (mm)	Cup Material Stocked	Vacuum Ports
25 (25) 30 (30) 35 (35) 40 (40) 50 (50)	6, 15, 30	NBR Nitrile Rubber SI Silicone	M5 M5 N1 1/8 NPT N2 1/4 NPT
60 (60) 80 (80) 100 (100)	30*, 50*, 70*	Available (Consult Factory) CR Chloroprene U Urethane FKM Fluoro Rubber SH High Temp	See Chart Below
120 (120) 150 (150) 200 (200)	20, 70		

(Bold Items are Stocked)

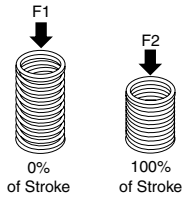
* Stroke reduced by 5mm due to shock pad.

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.



Compression Force



Bulkhead Level Compensator for PUGB Cups

(Bold Items are Stocked)

Included in Kit	Cup Diameter (mm)	Vacuum Port		UTYS Assembly Part Number	Stroke	F1 lbf (N)	F2 lbf (N)
		Code	Thread				
	25, 30, 35	M5	M5x8 Female	UTYS-20-6	6mm	.56 (2.5)	.79 (3.4)
				UTYS-20-15	15mm	.56 (2.5)	1.2 (4.9)
				UTYS-20-30	30mm	.67 (2.9)	1.4 (5.9)
	40, 50	M5	M5x8 Female	UTYS-40-6	6mm	.56 (2.5)	.79 (3.4)
				UTYS-40-15	15mm	.56 (2.5)	1.2 (4.9)
				UTYS-40-30	30mm	.67 (2.9)	1.4 (5.9)
	60, 80, 100	N1	1/8 NPT Female	UTYS-60-30	30mm	1.6 (6.8)	3.6 (15.6)
				UTYS-60-50	50mm	1.9 (8.3)	4.5 (19.6)
				UTYS-60-70	70mm	2.2 (9.5)	4.8 (21)
	120, 150	N2	1/4 NPT Female	UTYS-120-20	20mm	3.6 (15.6)	6.8 (29)
				UTYS-120-70	70mm	3.4 (14.7)	6.8 (29)
	200	N2	1/4 NPT Female	UTYS-200-20	20mm	3.6 (15.6)	6.8 (29)
				UTYS-200-70	70mm	3.4 (14.7)	6.8 (29)

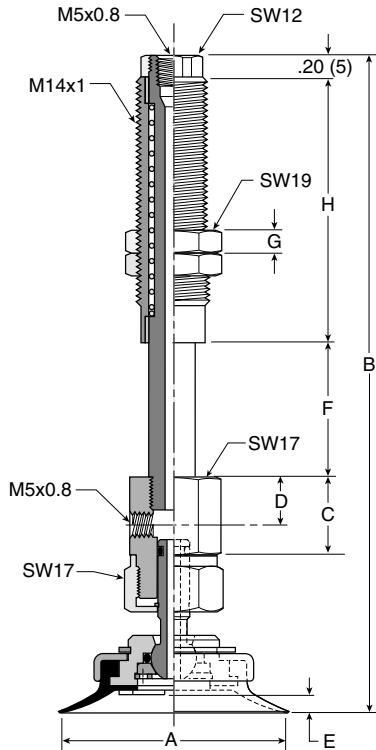
Inches (mm)



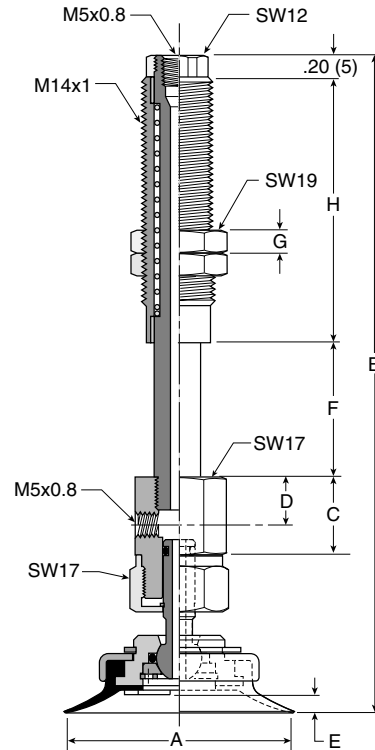
Vacuum Cups

Dimensions

PUTYS256 thru
PUTYS3530



PUTYS406 thru
PUTYS5030



Model Number	ØA	B	C	D	E	F	G	H	Wt oz (g)
PUTYS256*	.79 (20)	3.54 (90)	.63 (16)	.39 (10)	.10 (2.5)	.24 (6)	.20 (5)	1.42 (36)	3.1 (89)
PUTYS2515*	.79 (20)	3.90 (99)	.63 (16)	.39 (10)	.10 (2.5)	.59 (15)	.20 (5)	1.42 (36)	3.3 (94)
PUTYS2530*	.79 (20)	5.35 (136)	.63 (16)	.39 (10)	.10 (2.5)	1.18 (30)	.20 (5)	2.28 (58)	4.2 (119)
PUTYS306*	1.18 (30)	3.56 (90.5)	.63 (16)	.39 (10)	.08 (2)	.24 (6)	.20 (5)	1.42 (36)	3.3 (94)
PUTYS3015*	1.18 (30)	3.92 (99.5)	.63 (16)	.39 (10)	.08 (2)	.59 (15)	.20 (5)	1.42 (36)	3.5 (99)
PUTYS3030*	1.18 (30)	5.37 (136.5)	.63 (16)	.39 (10)	.08 (2)	1.18 (30)	.20 (5)	2.28 (58)	4.4 (124)
PUTYS356*	1.18 (30)	3.60 (91.5)	.63 (16)	.39 (10)	.12 (3)	.24 (6)	.20 (5)	1.42 (36)	3.3 (94)
PUTYS3515*	1.18 (30)	3.96 (100.5)	.63 (16)	.39 (10)	.12 (3)	.59 (15)	.20 (5)	1.42 (36)	3.5 (99)
PUTYS3530*	1.18 (30)	5.41 (137.5)	.63 (16)	.39 (10)	.12 (3)	1.18 (30)	.20 (5)	2.28 (58)	4.4 (124)
PUTYS406*	1.57 (40)	3.84 (97.5)	.67 (17)	.39 (10)	.12 (3)	.24 (6)	.20 (5)	1.42 (36)	4.3 (123)
PUTYS4015*	1.57 (40)	4.19 (106.5)	.67 (17)	.39 (10)	.12 (3)	.59 (15)	.20 (5)	1.42 (36)	4.5 (128)
PUTYS4030*	1.57 (40)	5.65 (143.5)	.67 (17)	.39 (10)	.12 (3)	1.18 (30)	.20 (5)	2.28 (58)	5.4 (153)
PUTYS506*	1.97 (50)	3.88 (98.5)	.67 (17)	.39 (10)	.16 (4)	.24 (6)	.20 (5)	1.42 (36)	4.3 (123)
PUTYS5015*	1.97 (50)	4.23 (107.5)	.67 (17)	.39 (10)	.16 (4)	.59 (15)	.20 (5)	1.42 (36)	4.5 (128)
PUTYS5030*	1.97 (50)	5.69 (144.5)	.67 (17)	.39 (10)	.16 (4)	1.18 (30)	.20 (5)	2.28 (58)	5.4 (154)

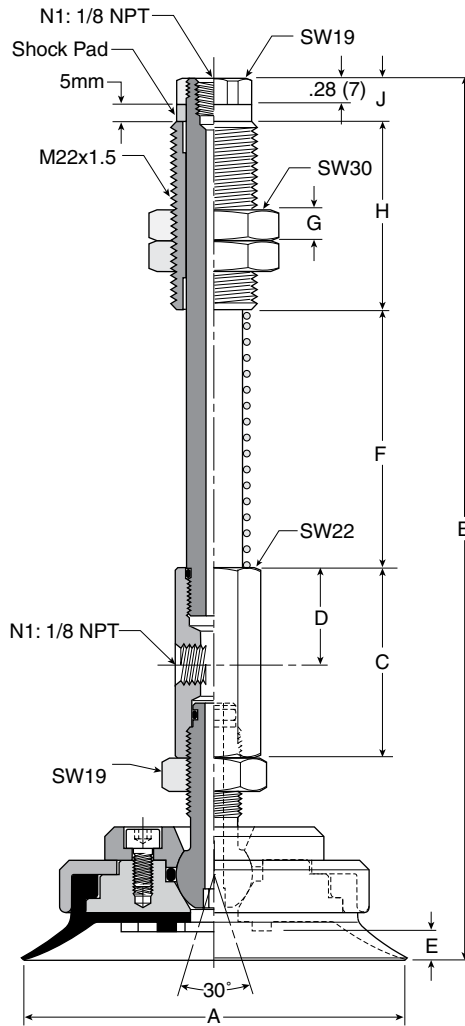
Inches (mm)

* Cup Material



Dimensions

PUTYS6030 thru
 PUTYS10070



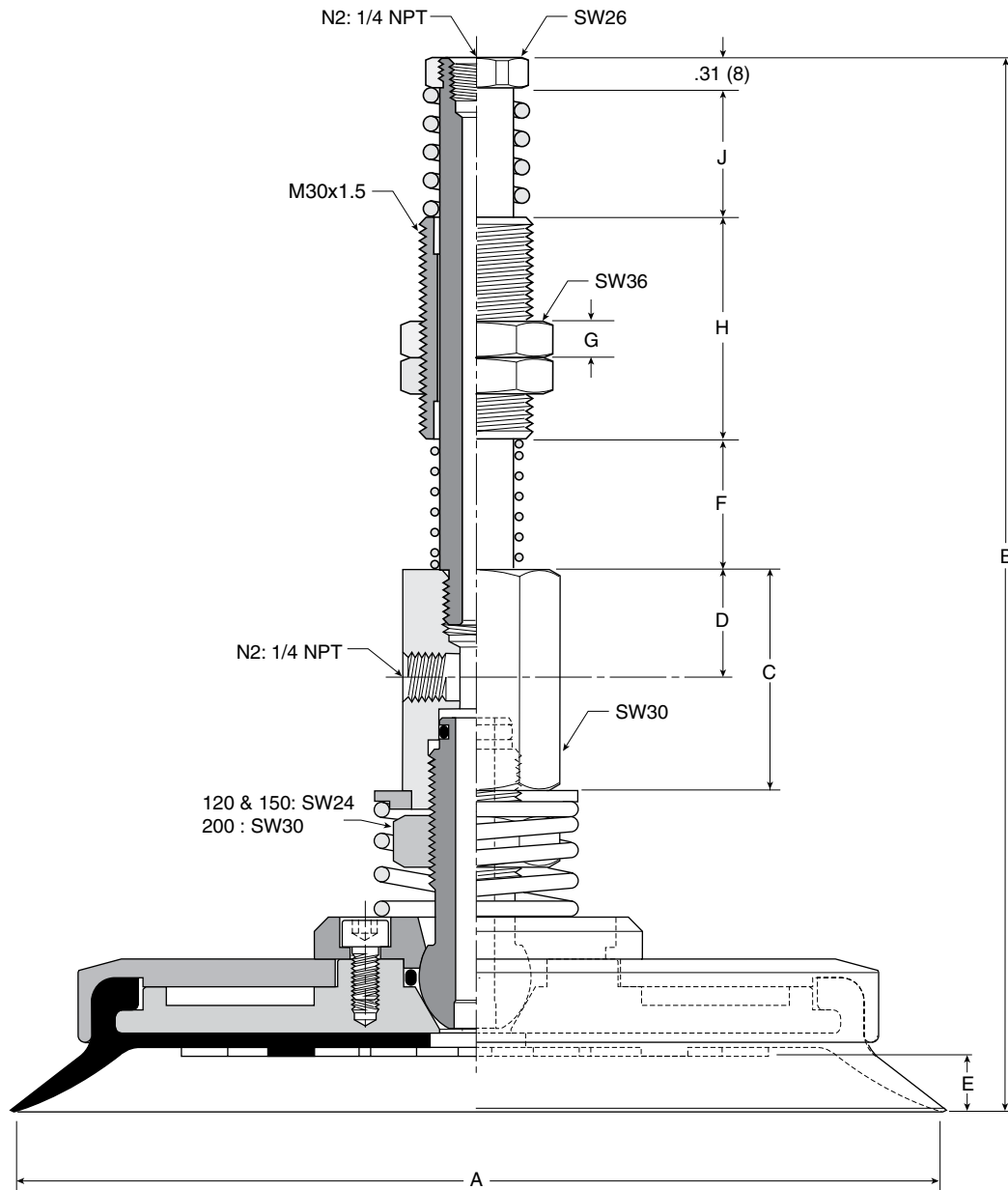
Model Number	ØA	B	C	D	E	F	G	H	J	Wt oz (g)
PUTYS6030*	2.36 (60)	7.28 (185)	1.57 (40)	.79 (20)	.20 (5)	1.77 (45)	.39 (10)	1.97 (50)	.47 (12)	17.2 (487)
PUTYS6050*	2.36 (60)	8.27 (210)	1.57 (40)	.79 (20)	.20 (5)	2.76 (70)	.39 (10)	1.97 (50)	.47 (12)	18.4 (521)
PUTYS6070*	2.36 (60)	9.25 (235)	1.57 (40)	.79 (20)	.20 (5)	3.54 (90)	.39 (10)	1.97 (50)	.47 (12)	19.3 (548)
PUTYS8030*	3.15 (80)	7.36 (187)	1.57 (40)	.79 (20)	.24 (6)	1.77 (45)	.39 (10)	1.97 (50)	.47 (12)	19.7 (559)
PUTYS8050*	3.15 (80)	8.35 (212)	1.57 (40)	.79 (20)	.24 (6)	2.76 (70)	.39 (10)	1.97 (50)	.47 (12)	20.1 (595)
PUTYS8070*	3.15 (80)	9.33 (237)	1.57 (40)	.79 (20)	.24 (6)	3.54 (90)	.39 (10)	1.97 (50)	.47 (12)	21.9 (620)
PUTYS10030*	1.18 (30)	7.36 (187)	1.57 (40)	.79 (20)	.24 (6)	1.77 (45)	.39 (10)	1.97 (50)	.47 (12)	25.7 (729)
PUTYS10050*	1.18 (30)	8.35 (212)	1.57 (40)	.79 (20)	.24 (6)	2.76 (70)	.39 (10)	1.97 (50)	.47 (12)	26.7 (756)
PUTYS10070*	1.18 (30)	9.33 (237)	1.57 (40)	.79 (20)	.24 (6)	3.54 (90)	.39 (10)	1.97 (50)	.47 (12)	49.9 (1414)

Inches (mm)
 * Cup Material



Dimensions

PUTYS12020 thru
 PUTYS20070



Model Number	ØA	B	C	D	E	F	G	H	J	Wt oz. (g)
PUTYS12020*	4.72 (120)	9.88 (251)	2.36 (60)	1.06 (27)	.31 (8)	1.38 (35)	.39 (10)	2.36 (60)	1.38 (35)	49.9 (1414)
PUTYS12070*	4.72 (120)	12.44 (316)	2.36 (60)	1.06 (27)	.31 (8)	3.94 (100)	.39 (10)	2.36 (60)	1.38 (35)	52.7 (1495)
PUTYS15020*	4.72 (120)	9.96 (253)	2.36 (60)	1.06 (27)	.39 (10)	1.38 (35)	.39 (10)	2.36 (60)	1.38 (35)	57.8 (1640)
PUTYS15070*	4.72 (120)	12.52 (318)	2.36 (60)	1.06 (27)	.39 (10)	3.94 (100)	.39 (10)	2.36 (60)	1.38 (35)	60.7 (1721)
PUTYS20020*	4.72 (120)	10.20 (279)	2.36 (60)	1.06 (27)	.47 (12)	1.38 (35)	.39 (10)	2.36 (60)	1.38 (35)	98.1 (2780)
PUTYS20070*	4.72 (120)	12.76 (324)	2.36 (60)	1.06 (27)	.47 (12)	3.94 (100)	.39 (10)	2.36 (60)	1.38 (35)	100.9 (2861)

Inches (mm)
 * Cup Material



PCD Ring Vacuum Cups



PCD Series Vacuum Cups

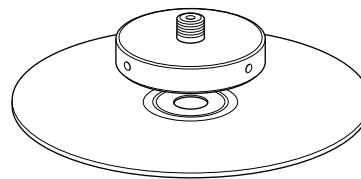
Ring suction cups with quality, friendly materials. Inherent symmetrical design provides stability during high speed transfer.

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.



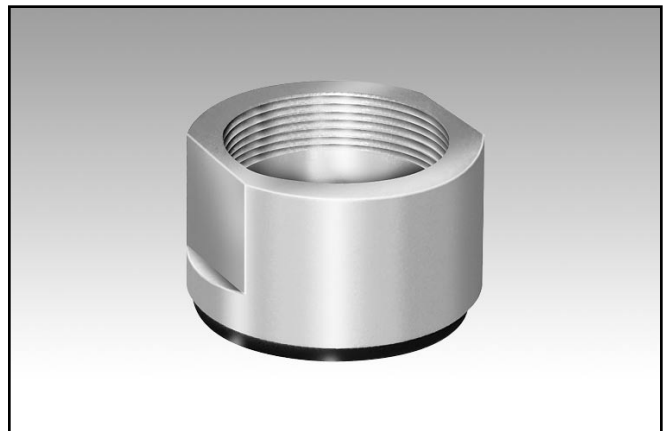
PCDM Series Male Thread Connector

Simple male connection for low profile applications.
Material: Aluminum.



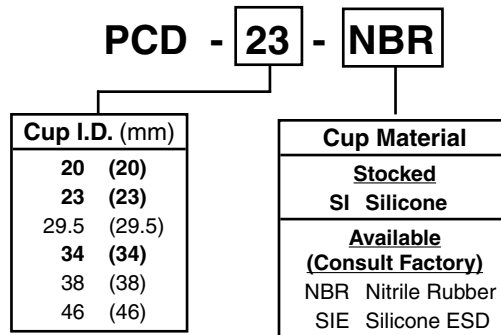
PCDF Series Female Thread Connector

Simple female connection for low profile applications.
Material: Aluminum.





Model Number Index (Cups Only)

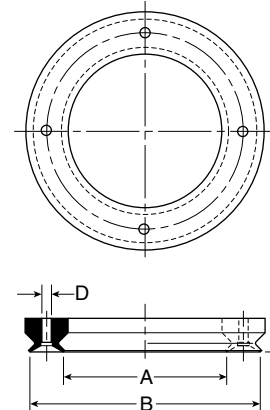


(Bold Items are Stocked)

Dimensions

Model Number	ØA	B	C	D
PCD20*	.79 (20)	1.30 (33)	.26 (6.5)	.08 (2)
PCD23*	.91 (23)	1.43 (37)	.20 (5)	.01 (3)
PCD29.5*	1.16 (29.5)	1.71 (43.5)	.20 (5)	.01 (3)
PCD34*	1.34 (34)	1.89 (48)	.28 (7)	.08 (2)
PCD38*	1.50 (38)	2.05 (52)	.20 (5)	.01 (3)
PCD46*	1.81 (46)	2.28 (58)	.28 (7)	.08 (2)

Inches (mm)
 * Cup Material



Specifications

Suction Cup Material	NBR	SI	SIE
	Nitrile	Silicone	Silicone ESD*
Operating Temperature (°C)	-20° to +120°	-60° to +250°	-60° to +250°
Color	Black	White	Black / Red Dot
Hardness, Shore A (°Sh)	55 ±5	55 ±5	55 ±5
Electrical Resistance (Ωm)	—	—	800 to 1000
Wear Resistance	•••••	••	••
Tear Strength	••••	•	•
Aging Resistance	••••	••••••	••••••
Ozone Resistance	••••	••••••	••••••
Gasoline Resistance	••••••	••••	••••
Oil Resistance	••••••	••••••	••••••
Acid Resistance	•••	•••	•••
Alkali Resistance	••••	•••	•••
Chemical Resistance	•••	•••	••
Mechanical Resistance	••••	••••	••••

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

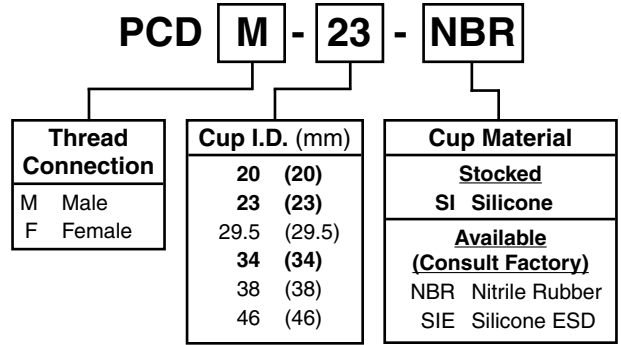
* ESD: Electric Static Dissipative Material



PCDM & PCDF Vacuum Cup Assemblies



Model Number Index



(Bold Items are Stocked)

Male Holder for PCD Cups

(Bold Items are Stocked)

Assembly	PCD Cup Diameter (mm)	Holder Part Number	Mounting Thread
	20	CDM-20	M8x1.25
	23	CDM-23	
	29.5	CDM-29.5	
	34	CDM-34	
	38	CDM-38	
	46	CDM-46	

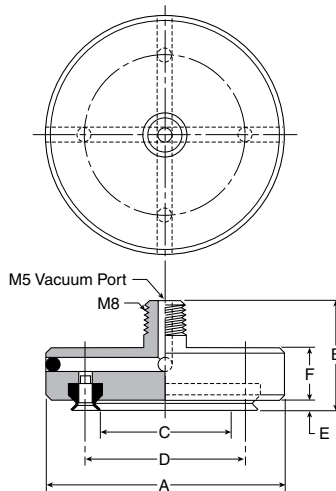
Female Holder for PCD Cups

(Bold Items are Stocked)

Assembly	PCD Cup Diameter (mm)	Holder Part Number	Vacuum Port	Mounting Thread
	20	CDF-20	M5 Female	M30x1.0
	23	CDF-23		
	29.5	CDF-29.5		
	34	CDF-34		
	38	CDF-38		



Vacuum Cups

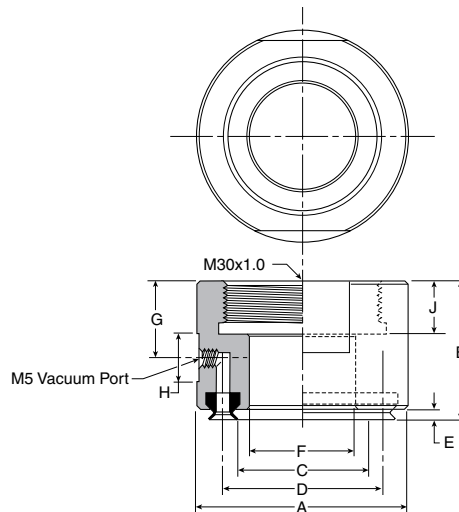


PCDM Dimensions

Model Number	ØA	B	C	D	E	F
PCDM-20-*	1.57 (40)	0.87 (22)	.79 (20)	1.02 (26)	0.12 (3)	.39 (10)
PCDM-23-*	1.77 (45)	.85 (21.5)	.91 (23)	1.18 (30)	.10 (2.5)	.39 (10)
PCDM-29.5-*	1.97 (50)	.85 (21.5)	1.16 (29.5)	1.44 (36.5)	.10 (2.5)	.39 (10)
PCDM-34-*	2.28 (58)	.85 (21.5)	1.34 (34)	1.61 (41)	.11 (2.9)	.39 (10)
PCDM-38-*	2.36 (60)	.85 (21.5)	1.50 (38)	1.77 (45)	.10 (2.5)	.39 (10)
PCDM-46-*	2.71 (69)	.87 (22)	1.81 (46)	2.28 (58)	.12 (3)	.39 (10)

Inches (mm)

* Cup Material



PCDF Dimensions

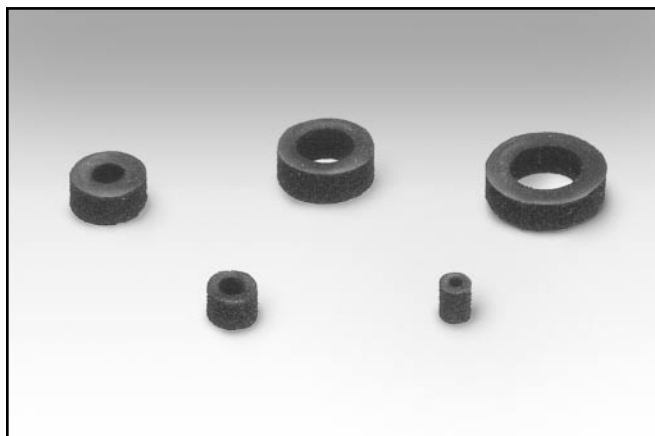
Model Number	ØA	B	C	D	E	F	G	H	J
PCDF-20-*	1.57 (40)	.96 (24.5)	.79 (20)	1.02 (26)	.11 (3)	.63 (16)	.57 (14.5)	.45 (11.5)	.39 (10)
PCDF-23-*	1.57 (40)	.94 (24)	.91 (23)	1.18 (30)	.10 (2.5)	.79 (20)	.57 (14.5)	.35 (9)	.39 (10)
PCDF-29.5-*	1.83 (46.5)	.94 (24)	1.16 (29.5)	1.44 (36.5)	.10 (2.5)	1.04 (6.5)	.57 (14.5)	.35 (9)	.39 (10)
PCDF-34-*	2.05 (52)	1.02 (26)	1.34 (34)	1.61 (41)	.11 (3)	1.12 (28.5)	.57 (14.5)	.35 (9)	.39 (10)
PCDF-38-*	2.20 (56)	1.00 (25.4)	1.50 (38)	1.77 (45)	.10 (2.5)	1.12 (28.5)	.57 (14.5)	.35 (9)	.39 (10)

Inches (mm)

* Cup Material



PDG Sponge Vacuum Cups



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.



PDTM Series Male Thread Connector

Simple male connection for low profile positions secured to a plate or bracket.

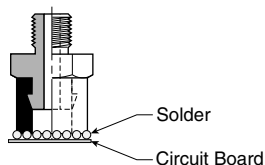
Fitting Material: Aluminum or 303 SUS.

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.



Specifications

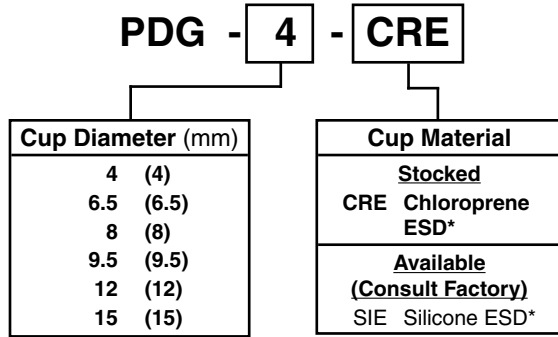
Suction Cup Material	CRE	SIE
Operating Temperature (°C)	-30° to +140°	-60° to +250°
Color	Black	Black / Red Dot
Hardness, Shore A (°Sh)	20 ±5	55 ±5
Electrical Resistance (Ωm)	10 ⁴ to 10 ⁵	10 ⁴ to 10 ⁵
Wear Resistance	•••••	••
Tear Strength	•••••	•
Aging Resistance	•••••	••••••
Ozone Resistance	•••••	••••••
Acid Resistance	•••••	•••
Alkali Resistance	•••••	•••
Chemical Resistance	••••	••
Mechanical Resistance	••••	••••

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

* ESD: Electric Static Dissipative Material



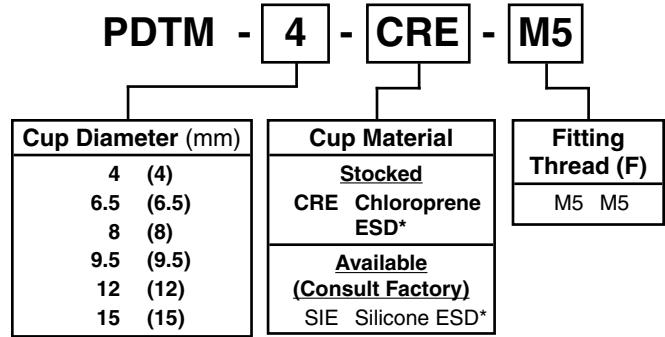
Model Number Index (Cups Only)



* ESD - Electric Static Dissipative Material

(Bold Items are Stocked)

Model Number Index



* ESD - Electric Static Dissipative Material

(Bold Items are Stocked)

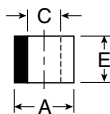
Male Fitting for PDG Cups

(Bold Items are Stocked)

Included in Kit	Cup Diameter (mm)	Mounting Thread Code	Mounting Thread	DTM Part Number	Tube ID
	4	M5	M5x0.8 Male	DTM-4-M5	.098 (2.5)
	6.5, 8	M5	M5x0.8 Male	DTM-6.5-M5	.098 (2.5)
	9.5	M5	M5x0.8 Male	DTM-9.5-M5	.098 (2.5)
	12, 15	M5	M5x0.8 Male	DTM-12-M5	.098 (2.5)

Inches (mm)

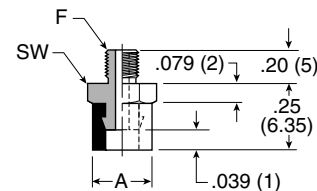
Dimensions



Model Number	ØA	ØC	E
PDG-4-*	.16 (4)	.002 (1.5)	.18 (4.5)
PDG-6.5-*	.27 (6.5)	.13 (3.2)	.18 (4.5)
PDG-8-*	.31 (8)	.13 (3.2)	.18 (4.5)
PDG-9.5-*	.37 (9.5)	.16 (4)	.18 (4.5)
PDG-12-*	.47 (12)	.16 (4)	.18 (4.5)
PDG-15-*	.59 (15)	.20 (5)	.18 (4.5)

Inches (mm)
 * Cup Material

Dimensions



Model Number	ØA	F	SW
PDTM-4-*-†	.16 (4)	M5	.16 (4)
PDTM-6.5-*-†	.27 (6.5)	M5	.27 (6.5)
PDTM-8-*-†	.31 (8)	M5	.27 (6.5)
PDTM-9.5-*-†	.37 (9.5)	M5	.37 (9.5)
PDTM-12-*-†	.47 (12)	M5	.47 (12)
PDTM-15-*-†	.59 (15)	M5	.59 (15)

Inches (mm)
 * 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

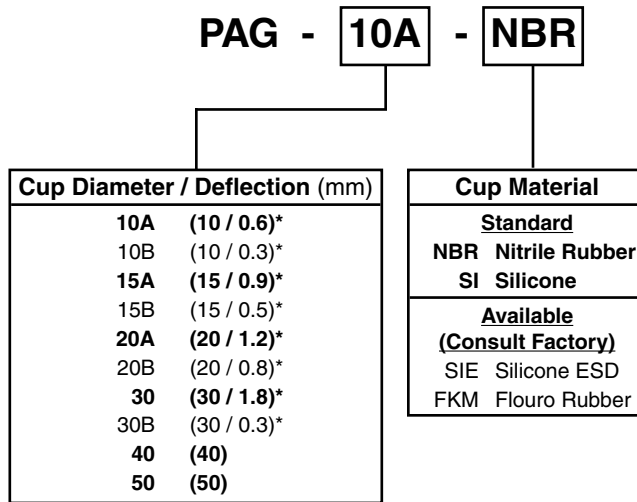
Top stem connectors secured with jam nuts and allow tubing connections at the top side. Nickel plated brass materials.





Model Number Index (Cups Only)

(Bold Items are Stocked)



* Cups with the same diameter have different cup deflection.

Specifications

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

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

* ESD: Electric Static Dissipative Material



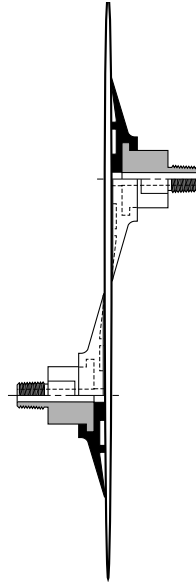
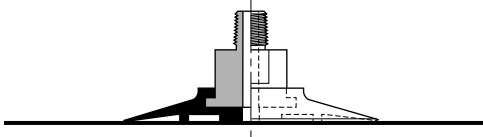
Application Guide

Thin - Smooth Surfaces

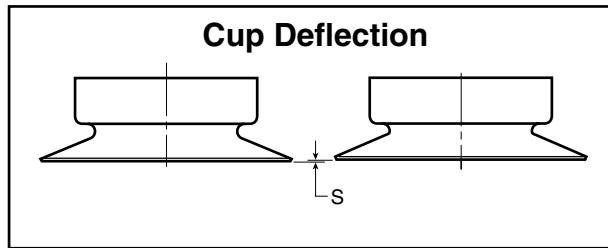
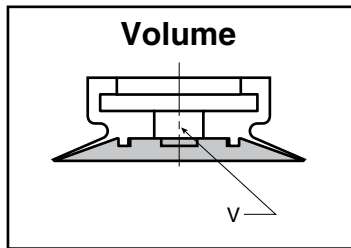


- Products With Smooth Surfaces
- Products With Micron Thickness

- When Opening Plastic or Paper Bags, Offset Cups



Main Data for PAG Cups



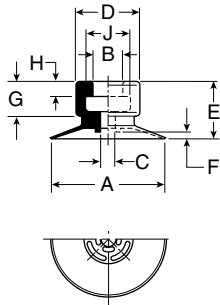
Model Number	Cup Diameter Inches (mm)	Area cm ²	Cup Deflection (S) (mm)
PAG-10A-*	.39 (10)	0.79	0.6
PAG-15A-*	.59 (15)	1.77	0.9
PAG-20A-*	.79 (20)	3.14	1.2
PAG-10B-*	.39 (10)	0.79	0.3
PAG-15B-*	.59 (15)	1.77	0.5
PAG-20B-*	.79 (20)	3.14	0.8
PAG-30B-*	1.18 (30)	7.19	0.3
PAG-30-*	1.18 (30)	7.07	1.8
PAG-40-*	1.57 (40)	12.60	2.4
PAG-50-*	1.57 (40)	19.60	3.0

Inches (mm)
* Cup Material

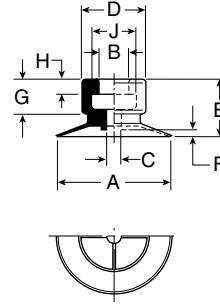


Dimensions

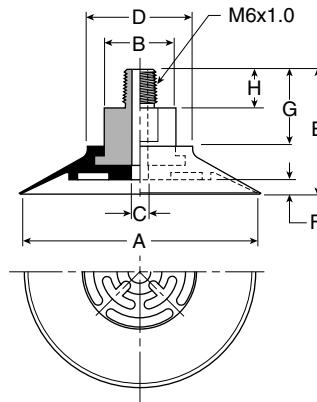
**PAG-10A and
PAG-20A**



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



**PAG-30 thru
PAG-50**



Model Number	ØA	ØB	ØC	ØD	E	F	G	H	J
PAG-10A-*	.39 (10)	.16 (4)	.08 (2)	.33 (8.5)	.30 (7.5)	.02 (.6)	.15 (4)	.08 (2)	.24 (6)
PAG-15A-*	.59 (15)	.16 (4)	.08 (2)	.33 (8.5)	.30 (7.5)	.04 (.9)	.15 (4)	.08 (2)	.24 (6)
PAG-20A-*	.79 (20)	.16 (4)	.08 (2)	.35 (9)	.39 (10)	.05 (1.2)	.15 (4)	.08 (2)	.24 (6)
PAG-10B-*	.39 (10)	.16 (4)	.08 (2)	.33 (8.5)	.30 (7.5)	.01 (.3)	.15 (4)	.08 (2)	.24 (6)
PAG-15B-*	.59 (15)	.16 (4)	.08 (2)	.33 (8.5)	.30 (7.5)	.02 (.5)	.15 (4)	.08 (2)	.24 (6)
PAG-20B-*	.79 (20)	.16 (4)	.08 (2)	.35 (9)	.39 (10)	.03 (.8)	.15 (4)	.08 (2)	.24 (6)
PAG-30B-*	1.18 (30)	.24 (6)	.12 (3)	.59 (15)	.43 (11)	.06 (1.5)	.28 (7)	.15 (4)	.39 (10)
PAG-30-*	1.18 (30)	1.02 (26)	.12 (3)	.87 (22)	1.02 (26)	.07 (1.8)	.63 (16)	.31 (8)	—
PAG-40-*	1.57 (40)	1.02 (26)	.12 (3)	.87 (22)	1.02 (26)	.09 (2.4)	.63 (16)	.31 (8)	—
PAG-50-*	1.97 (50)	1.02 (26)	.12 (3)	.87 (22)	1.02 (26)	.12 (3)	.63 (16)	.31 (8)	—

Inches (mm)

* Cup Material



PATM Vacuum Cup Assemblies



Model Number Index

PATM - 10A - NBR - M5

Cup Diameter (mm)	Cup Material	Mounting Thread
10A (10)	Stocked NBR Nitrile Rubber	M5 M5
10B (10)		
15A (15)	SI Silicone	G1 1/8 BSPP
15B (15)		
20A (20)	Available (Consult Factory) SIE Silicone ESD	See Chart Below
20B (20)		
30 (30)	FKM Flouro Rubber	
30B (30)		
40 (40)		
50 (50)		

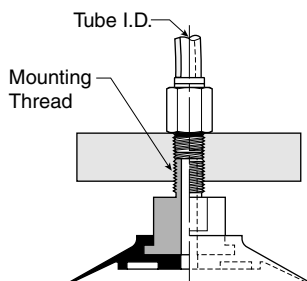
(Bold Items are Stocked)

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.



Male Fitting for PAG Cups

(Bold Items are Stocked)

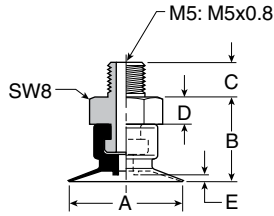
Included in Kit	Cup Diameter (mm)	Mounting Thread Code	Mounting Thread	FTM Fitting Part Number	Tube ID
	10, 15, 20	M5	M5X0.8 Male	FTM-5A-M5	.157 (4)
	30, 40, 50	G1	1/8 BSPP Male	ADA-G1M-M6F	.157 (4)

Inches (mm)

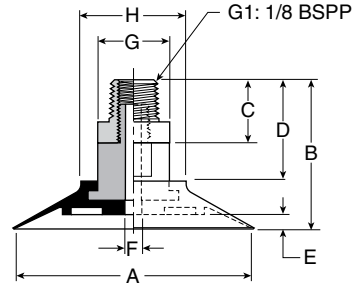


Dimensions

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



**PATM-30 thru
PATM-50**



Model Number	ØA	B	C	D	E	F	G	H
PATM-10A-*†	.39 (10)	.44 (11)	.18 (4.5)	.14 (3.5)	.02 (.6)	—	—	—
PATM-15A-*†	.59 (15)	.44 (11)	.18 (4.5)	.14 (3.5)	.04 (.9)	—	—	—
PATM-20A-*†	.79 (20)	.53 (13.5)	.18 (4.5)	.14 (3.5)	.05 (1.2)	—	—	—
PATM-10B-*†	.39 (10)	.44 (11)	.18 (4.5)	.14 (3.5)	.01 (.3)	—	—	—
PATM-15B-*†	.59 (15)	.44 (11)	.18 (4.5)	.14 (3.5)	.02 (.5)	—	—	—
PATM-20B-*†	.79 (20)	.53 (13.5)	.18 (4.5)	.14 (3.5)	.03 (.8)	—	—	—
PATM-30B-*†	1.18 (30)	.57 (14.5)	.51 (13)	.83 (21)	.06 (1.5)	—	—	—
PATM-30-*†	1.18 (30)	1.22 (31)	.51 (13)	.83 (21)	.07 (1.8)	.12 (3)	.59 (15)	.87 (22)
PATM-40-*†	1.57 (40)	1.22 (31)	.51 (13)	.83 (21)	.09 (2.4)	.12 (3)	.59 (15)	.87 (22)
PATM-50-*†	1.97 (50)	1.22 (31)	.51 (13)	.83 (21)	.12 (3)	.12 (3)	.59 (15)	.87 (22)

Inches (mm)

* Cup Material

† Thread Size



PATK Vacuum Cup Assemblies



Model Number Index

PATK - 10A - NBR

Cup Diameter (mm)	
10A	(10)
10B	(10)
15A	(15)
15B	(15)
20A	(20)
20B	(20)
30	(30)
30B	(30)
40	(40)
50	(50)

Cup Material
Stocked
NBR Nitrile Rubber
SI Silicone
Available
(Consult Factory)
SIE Silicone ESD
FKM Fluoro Rubber

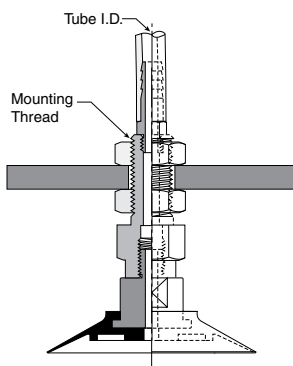
(Bold Items are Stocked)

Installation

Note:


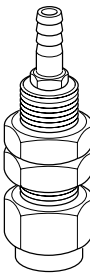
When installing cup assemblies, use a sealant material to secure the assembly and prevent vacuum leakage.

Tube I.D. shown below is a recommended minimum value to optimize response time of the system. Your requirements may vary.



Barbed Bulkhead for PAG Cups

(Bold Items are Stocked)

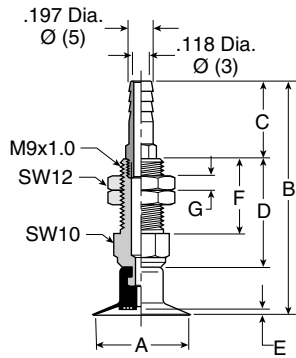
Included in Kit	Cup Diameter (mm)	Mounting Thread	FTK Fitting Part Number	Tube ID
	10, 15, 20	M9x1.0 Male	FTK-5A	.157 (4)
	30, 40, 50	M10x1.5 Male	FTK-25	.157 (4)

Inches (mm)

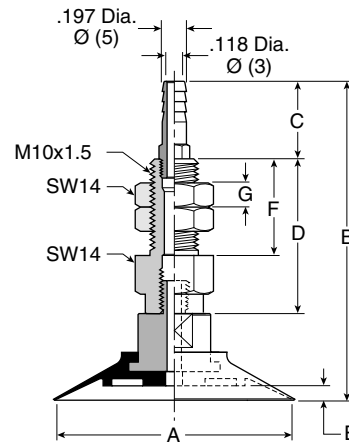


Dimensions

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



**PATK-30 thru
PATK-50**



Model Number	ØA	B	C	D	E	F	G
PATK-10A-*	.39 (10)	1.81 (46)	.63 (16)	.89 (22.5)	.02 (.6)	.61 (15.5)	.12 (3)
PATK-15A-*	.59 (15)	1.81 (46)	.63 (16)	.89 (22.5)	.04 (.9)	.61 (15.5)	.12 (3)
PATK-20A-*	.79 (20)	1.91 (48.5)	.63 (16)	.89 (22.5)	.05 (1.2)	.61 (15.5)	.12 (3)
PATK-10B-*	.39 (10)	1.81 (46)	.63 (16)	.89 (22.5)	.01 (.3)	.61 (15.5)	.12 (3)
PATK-15B-*	.59 (15)	1.81 (46)	.63 (16)	.89 (22.5)	.02 (.5)	.61 (15.5)	.12 (3)
PATK-20B-*	.79 (20)	1.91 (48.5)	.63 (16)	.89 (22.5)	.03 (.8)	.61 (15.5)	.12 (3)
PATK-30B-*	1.18 (30)	2.61 (66.2)	.63 (16)	.89 (22.5)	.06 (1.5)	.79 (20)	.20 (5)
PATK-30-*	1.18 (30)	2.61 (66.2)	.63 (16)	1.27 (32.2)	.07 (1.8)	.79 (20)	.20 (5)
PATK-40-*	1.57 (40)	2.61 (66.2)	.63 (16)	1.27 (32.2)	.09 (2.4)	.79 (20)	.20 (5)
PATK-50-*	1.97 (50)	2.61 (66.2)	.63 (16)	1.27 (32.2)	.12 (3)	.79 (20)	.20 (5)

Inches (mm)

* Cup Material



PAYK Vacuum Cup Assemblies



Model Number Index

PAYK - 10A - NBR

Cup Diameter (mm)	
10A	(10)
10B	(10)
15A	(15)
15B	(15)
20A	(20)
20B	(20)
30	(30)
30B	(30)
40	(40)
50	(50)

Cup Material
Stocked
NBR Nitrile Rubber
SI Silicone
Available
(Consult Factory)
SIE Silicone ESD
FKM Flouro Rubber

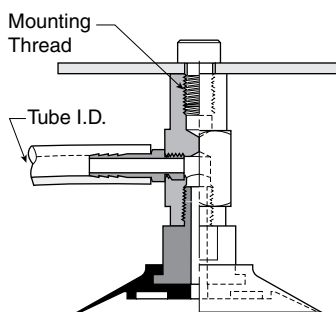
(Bold Items are Stocked)

Installation

Note:

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

Tube I.D. shown below is a recommended minimum value to optimize response time of the system. Your requirements may vary.



90° Barbed Adapter for PAG Cups

(Bold Items are Stocked)

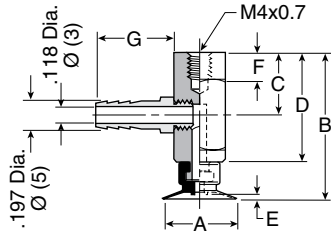
Included in Kit	Cup Diameter (mm)	Mounting Thread	FYK Fitting Part Number	Tube ID
	10, 15, 20	M4x0.7 Female	FYK-5A	.157 (4)
	30, 40, 50	M6x1.0 Female	FYK-25	.157 (4)

Inches (mm)

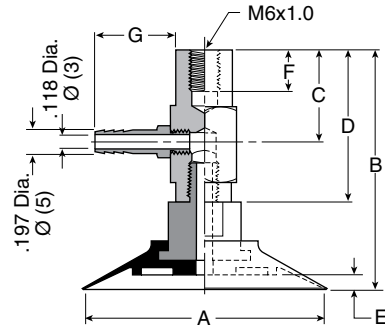


Dimensions

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



**PAYK-30 thru
PAYK-50**

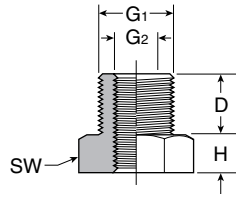


Model Number	ØA	B	C	D	E	F	G
PAYK-10A-*	.39 (10)	1.18 (30)	.51 (13)	.89 (22.5)	.02 (.6)	.24 (6)	.63 (16)
PAYK-15A-*	.59 (15)	1.18 (30)	.51 (13)	.89 (22.5)	.04 (.9)	.24 (6)	.63 (16)
PAYK-20A-*	.79 (20)	1.28 (32.4)	.79 (20)	.89 (22.5)	.05 (1.2)	.24 (6)	.63 (16)
PAYK-10B-*	.39 (10)	1.18 (30)	.51 (13)	.89 (22.5)	.01 (.3)	.24 (6)	.63 (16)
PAYK-15B-*	.59 (15)	1.18 (30)	.51 (13)	.89 (22.5)	.02 (.5)	.24 (6)	.63 (16)
PAYK-20B-*	.79 (20)	1.28 (32.4)	.79 (20)	.89 (22.5)	.03 (.8)	.24 (6)	.63 (16)
PAYK-30B-*	1.18 (30)	1.97 (50)	.79 (20)	1.26 (32)	.06 (1.5)	.31 (8)	.63 (16)
PAYK-30-*	1.18 (30)	1.97 (50)	.79 (20)	1.26 (32)	.07 (1.8)	.31 (8)	.63 (16)
PAYK-40-*	1.57 (40)	1.97 (50)	.79 (20)	1.26 (32)	.09 (2.4)	.31 (8)	.63 (16)
PAYK-50-*	1.97 (50)	1.97 (50)	.79 (20)	1.26 (32)	.12 (3)	.31 (8)	.63 (16)

Inches (mm)
* Cup Material

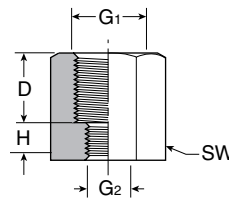


Adapters



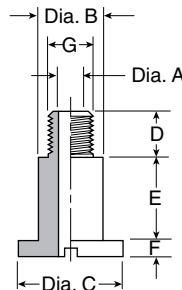
Part Number	G ₁	SW	H	D	G ₂
ADA-G1M-M5F	G1/8"	.51 (13)	.51 (5)	.31 (8)	M5
ADA-G1M-M6F	G1/8"	.51 (13)	.51 (5)	.31 (8)	M6
ADA-G2M-M6F	G1/4"	.67 (17)	.69 (5)	.39 (10)	M6
ADA-G2M-M8F	G1/4"	.67 (17)	.69 (5)	.39 (10)	M8

Inches (mm)



Part Number	G ₁	SW	H	D	G ₂
ADA-G1F-M5F	G1/8"	.51 (13)	.55 (14)	.35 (9)	M5
ADA-G1F-M6F	G1/8"	.51 (13)	.55 (14)	.35 (9)	M6
ADA-G2F-M6F	G1/4"	.67 (17)	.69 (17.5)	.43 (11)	M6
ADA-G2F-M8F	G1/4"	.67 (17)	.69 (17.5)	.43 (11)	M8
ADA-M5F-M5F	M5F	.47 (12)	.39 (10)	.39 (10)	M5

Inches (mm)



Part Number	A	B	C	D	E	F	G
TN-PF-15-M5	.10 (2.5)	.20 (5)	.31 (8)	.22 (5.5)	.06 (1.5)	(2)	M5
TN-PF-20-M5	.10 (2.5)	.20 (5)	.43 (11)	.24 (6)	.12 (3)	(2)	M5
TN-PF-25-M6	.14 (3.5)	.33 (8.5)	.55 (14)	.24 (6)	.43 (11)	(2)	M6
TN-PF-50-M6	.14 (3.5)	.31 (8)	.79 (20)	.24 (6)	.24 (6)	(2)	M6
TN-PF-50-M8	.16 (4)	.31 (8)	.79 (20)	.39 (10)	.20 (5)	(2)	M8
TN-PF-10-M5	.10 (2.5)	.12 (3)	.24 (6)	.22 (5.5)	.08 (2)	(2)	M5
TN-PF-30-M6	.13 (3.4)	.31 (8)	.59 (15)	.41 (10.5)	.41 (10.5)	(3)	M6
TN-PC-30-M8	.15 (3.9)	.31 (8)	.29 (15)	.47 (12)	.39 (10)	(3)	M8
TN-PC-90-M12	.15 (3.9)	.47 (12)	.98 (25)	.43 (11)	.75 (19)	(5)	M12

Inches (mm)



Male Threaded Cup Fittings

	Cup Fitting	Cup Series	Cup Assembly	Vacuum Port
	FTM-1-M3	PFG	PFTM	M3
	FTM-1.5-M3	PFG	PFTM	M3
	FTM-2A-M5	PFG	PFTM	M5
	FTM-5A-M5H	PFG / PBG / PJG / PCG	PFTM / PBTM / PJTM / PCTM	M5
	FTM-5A-G1	PFG / PBG / PJG / PCG	PFTM / PBTM / PJTM / PCTM	1/8 BSPP
	FTM-20B-G1H	PFG / PFOG / PBG / PJG	PFTM / PFOTM / PBTM / PJTM	1/8 BSPP
	FTM-20B-N1	PFG / PFOG / PBG / PJG	PFTM / PFOTM / PBTM / PJTM	1/8 NPT
	FTM-20B-G2	PFG / PFOG / PBG / PJG	PFTM / PFOTM / PBTM / PJTM	1/8 BSPP
	FTM-20B-M10	PFG / PFOG / PBG / PJG	PFTM / PFOTM / PBTM / PJTM	M10
	FTM-50-N1	PFG / PBG / PJG	PFTM / PBTM / PJTM	1/8 NPT
	FTM-50-G1H	PFG / PBG / PJG	PFTM / PBTM / PJTM	1/8 BSPP
	FTM-50-G2	PFG / PBG / PJG	PFTM / PBTM / PJTM	1/8 BSPP
	FTM-60-N2	PFG / PBG / PJG	PFTM / PBTM / PJTM	1/4 NPT
	FTM-60-G2	PFG / PBG / PJG	PFTM / PBTM / PJTM	1/8 BSPP
	FTM-60-M10	PFG / PBG / PJG	PFTM / PBTM / PJTM	M10
	CTM-10-M5H	PCG	PCTM	M5
	CTM-10-N1	PCG	PCTM	1/8 NPT
	CTM-10-G1H	PCG	PCTM	1/8 BSPP
	CTM-30-N1	PCG	PCTM	1/8 NPT
	CTM-30-G1H	PCG	PCTM	1/8 BSPP
	CTM-30-G2	PCG	PCTM	1/8 BSPP
	CTM-90-N2	PCG	PCTM	1/4 NPT
	CTM-90-G2	PCG	PCTM	1/8 BSPP
	TN-PK-100-M10	PKG	PKGF / PKGT / PKFF / PKFT / PKJF / PKJT	M10
	CDM-20	PCD	PCDM	M5
	CDM-23			
	CDM-29.5			
	CDM-34			
	CDM-38			
	CDM-46			
	DTM-4-M5	PDG	PDTM	M5
	DTM-6.5-M5			
	DTM-8-M5			
	DTM-9.5-M5			
	DTM-12-M5			

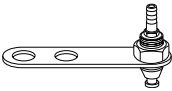

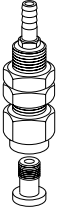
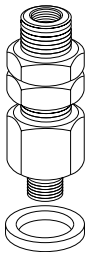
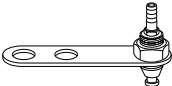


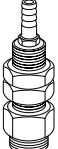
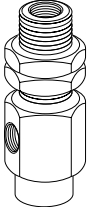


Female Threaded Cup Fittings

	Cup Fitting	Cup Series	Cup Assembly	Vacuum Port
	FTF-5A-M5	PFG / PBG / PJG / PAG	PFTF / PBTF / PJTF / PATF	M5
	FTF-5A-G1	PFG / PBG / PJG	PFTF / PBTF / PJTF	1/8 BSPP
	FTF-20B-N1	PFG / PFOG / PBG / PJG	PFTF / PFOTF / PBTF / PJTF	1/8 NPT
	FTF-20B-G1	PFG / PFOG / PBG / PJG	PFTF / PFOTF / PBTF / PJTF	1/8 BSPP
	FTF-20B-G2	PFG / PFOG / PBG / PJG	PFTF / PFOTF / PBTF / PJTF	1/8 BSPP
	FTF-50-N1	PFG / PBG / PJG	PFTF / PBTF / PJTF	1/8 NPT
	FTF-50-G1	PFG / PBG / PJG	PFTF / PBTF / PJTF	1/8 BSPP
	FTF-50-G2	PFG / PBG / PJG	PFTF / PBTF / PJTF	1/8 BSPP
	FTF-60-N2	PFG / PBG / PJG	PFTF / PBTF / PJTF	1/4 NPT
	FTF-60-G2	PFG / PBG / PJG	PFTF / PBTF / PJTF	1/8 BSPP
	FTF-120-N4	PFG / PBG	PFTF / PBTF	1/2 NPT
	FTF-120-G4	PFG / PBG	PFTF / PBTF	1/2 BSPP
	CTF-10-G1	PCG	PCTF	1/8 BSPP
	CTF-30-N1	PCG	PCTF	1/8 NPT
	CTF-30-G1	PCG	PCTF	1/8 BSPP
	CTF-30-G2	PCG	PCTF	1/8 BSPP
	CTF-90-N2	PCG	PCTF	1/4 NPT
	CTF-90-G2	PCG	PCTF	1/8 BSPP
	TN-PK-F-N3	PKG	PKGF / PKFF / PKJF	3/8 NPT
	TN-PK-F-G3	PKG	PKGF / PKFF / PKJF	3/8 BSPP
	CDF-20	PCD	PCDF	M5
	CDF-23			
	CDF-29.5			
	CDF-34			
	CDF-38			
	CDF-46			



Bulkhead Cup Fittings

	Cup Fitting	Cup Series	Cup Assembly	Vacuum Port
	FTK-2A	PFG	PFTK	Barb Fitting
	FTK-5A	PFG / PBG / PJG / PCG / PAG	PFTK / PBTK / PJTK / PCTK / PATK	Barb Fitting
	FTK-15	PFG / PBG / PJG	PFTK / PBTK / PJTK	Barb Fitting
	FTK-20	PFG / PFOG / PBG / PJG	PFTK / PFOTK / PBTK / PJTK	Barb Fitting
	FTK-25	PFG / PFOG / PBG / PJG / PAG	PFTK / PFOTK / PBTK / PJTK / PATK	Barb Fitting
	FTK-50	PFG / PBG / PJG	PFTK / PBTK / PJTK	Barb Fitting
	FTK-60-N1	PFG / PBG / PJG	PFTK / PBTK / PJTK	1/8 NPT
	FTK-60-G1	PFG / PBG / PJG	PFTK / PBTK / PJTK	1/8 BSPP
	FTK-60-R1	PFG / PBG / PJG	PFTK / PBTK / PJTK	1/8 BSPT
	FTK-2X4A/ 3.5X7A	PFG	PFTK	Barb Fitting
	CTK-10	PCG	PCTK	Barb Fitting
	CTK-30	PCG	PCTK	Barb Fitting
	UTK-20	PUGB	PUTK	Barb Fitting
	UTK-40			
	UTK-60-N1	PUGB	PUTK	1/8 NPT
	UTK-60-G1	PUGB	PUTK	1/8 BSPP
	UTK-60-R1	PUGB	PUTK	1/8 BSPT
	UTK-120-N1	PUGB	PUTK	1/8 NPT
	UTK-120-G1	PUGB	PUTK	1/8 BSPP
	UTK-120-R1	PUGB	PUTK	1/8 BSPT
	UTK-200-N2	PUGB	PUTK	1/4 NPT
	UTK-200-G2	PUGB	PUTK	1/4 BSPP
UTK-200-R2	PUGB	PUTK	1/4 BSPT	




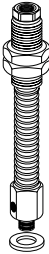
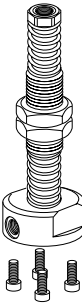

90° Cup Fittings

	Cup Fitting	Cup Series	Cup Assembly	Vacuum Port
	FYK-2A	PFG	PFYK	Barb Fitting
	FYK-5A	PFG / PBG / PJG / PCG / PAG	PFYK / PBYK / PJYK / PCYK / PAYK	Barb Fitting
	FYK-15	PFG / PBG / PJG	PFYK / PBYK / PJYK	Barb Fitting
	FYK-20	PFG / PFOG / PBG / PJG	PFYK / PFOYK / PBYK / PJYK	
	FYK-25	PFG / PFOG / PBG / PJG / PAG	PFYK / PFOYK / PBYK / PJYK / PAYK	
	FYK-50	PFG / PBG / PJG	PFYK / PBYK / PJYK	
	FYK-60-N1	PFG / PBG / PJG	PFYK / PBYK / PJYK	1/8 NPT
	FYK-60-G1			
	FYK-60-R1			
	FYK-120-N1	PFG / PBG	PFYK / PBYK	1/8 NPT
	FYK-120-G1			
	FYK-120-R1			
	FYK-2X4A/ 3.5X7A	PFG	PFYK	Barb Fitting
	CYK-10	PCG	PCYK	Barb Fitting
	CYK-30	PCG	PCYK	Barb Fitting
	CYK-90-N1	PCG	PCYK	1/8 NPT
	CYK-90-G1			1/8 BSPP
	CYK-90-R1			1/8 BSPT
	UYK-20	PUGB	PUYK	Barb Fitting
	UYK-40			



Level Compensator

Vacuum
Cups

	Assembly Part Number	Cup Series	Cup Assembly	Compensator Only	Cup Fitting	
	TYS-2A-3	PFG / PBG / PJG	PFTYS / PBTYS / PJTYS	TYS-M5-3-M5	FTY-2A-M5-M3	
	TYS-2A-10			TYS-M5-15-M5		
	TYS-2A-15			TYS-M5-10-M5		
		TYS-5A-3	PFG / PBG	PFTYS / PBTYS	TYS-M5-3-M5	FTY-5A-M5-M5
		TYS-5A-10			TYS-M5-15-M5	
		TYS-5A-15			TYS-M5-10-M5	
		TYS-20B-6	PFG / PBG / PJG	PFTYS / PBTYS / PJTYS	TYS-M8-6-M5	FTY-20B-M8-M5
		TYS-20B-15			TYS-M8-30-M5	
		TYS-20B-30			TYS-M8-15-M5	
		TYS-50-6	PFG / PBG / PJG	PFTYS / PBTYS / PJTYS	TYS-M8-6-M5	FTY-50-M8-M5
		TYS-50-15			TYS-M8-30-M5	
		TYS-50-30			TYS-M8-15-M5	
	TYS-60-30	PFG / PBG / PJG	PFTYS / PBTYS / PJTYS	TYS-M14-25-N	FTY-60/95	
	TYS-60-50			TYS-M14-45-N		
	TYS-60-70			TYS-M14-65-N		
	TYS-120-20	PFG / PBG	PFTYS / PBTYS	TYS110/200M1820	FTY-120-N2	
	TYS-120-70	PFG / PBG	PFTYS / PBTYS	TYS110/200M1870	FTY-120-N2	
	JTYS-10-3	PJG	PJTYS	TYS-M5-3-M5	CTY-10/20	
	JTYS-10-10			TYS-M5-10-M5		
	JTYS-10-15			TYS-M5-15-M5		
	JTYS-20-6	PJG	PJTYS	TYS-M5-3-M5	CTY-10/20	
	JTYS-20-15			TYS-M5-10-M5		
	JTYS-20-30			TYS-M5-15-M5		



Level Compensator

	Assembly Part Number	Cup Series	Cup Assembly	Compensator Only	Cup Fitting
	UTYS-20-6	PUGB	PUTYS	TYS-M8-6-M5	UTY-20-M8-M5
	UTYS-20-15			TYS-M8-15-M5	
	UTYS-20-30			TYS-M8-30-M5	
	UTYS-40-6	PUGB	PUTYS	TYS-M8-6-M5	UTY-40-M8-M5
	UTYS-40-15			TYS-M8-15-M5	
	UTYS-40-30			TYS-M8-30-M5	
	UTYS-60-30	PUGB	PUTYS	TYS-M14-25-N	UTY-60-M14-N1
	UTYS-60-50			TYS-M14-45-N	
	UTYS-60-70			TYS-M14-65-N	
	UTYS-120-20	PUGB	PUTYS	TYS110/200M1820	UTY-120-M18-N2
	UTYS-120-70			TYS110/200M1870	
	UTYS-200-20	PUGB	PUTYS	TYS110/200M1820	UTY-200-M18-N2
	UTYS-200-70			TYS110/200M1870	