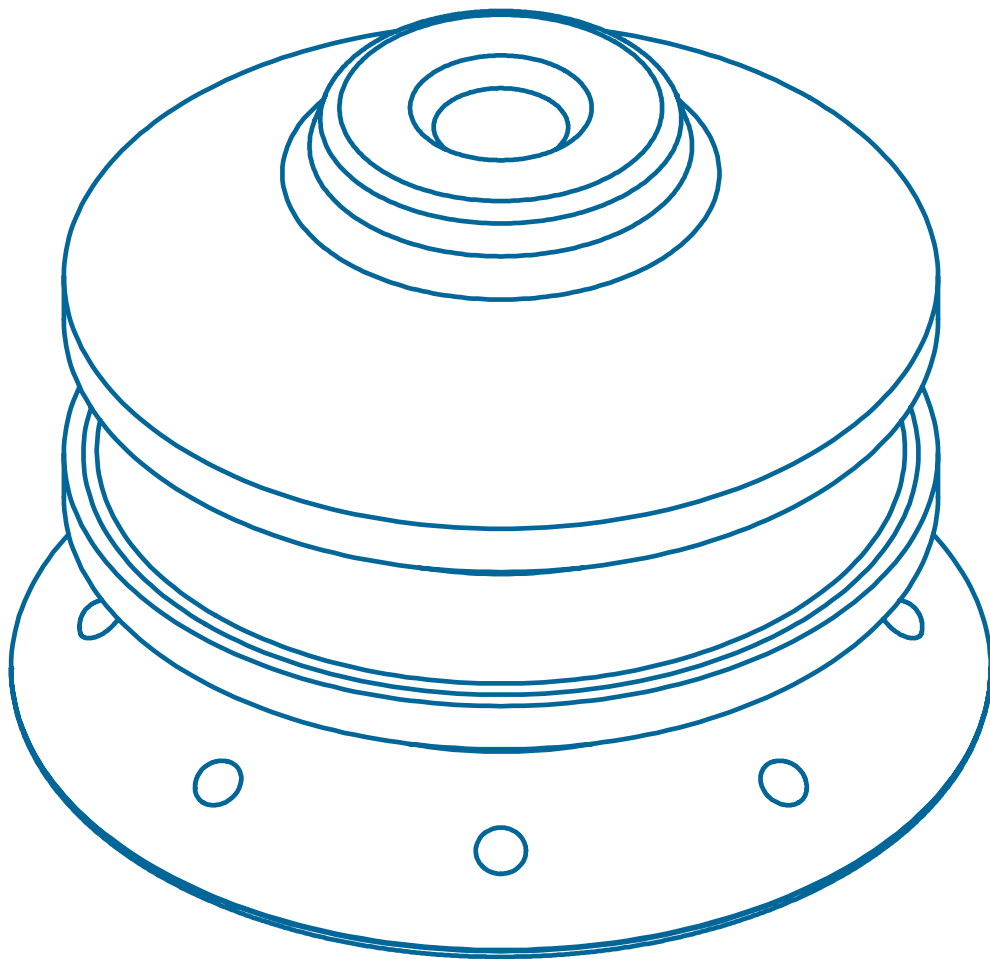
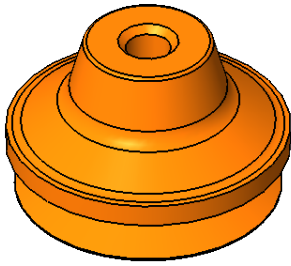


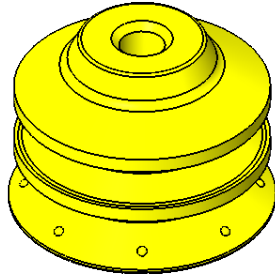
SECTION 2

VACUUM CUPS

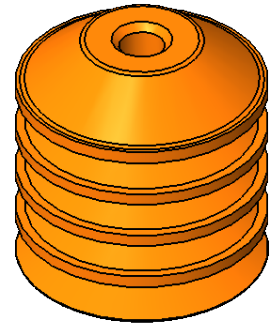




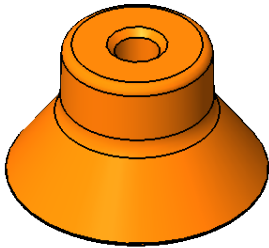
Bellows



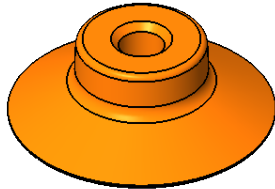
Double Bellows



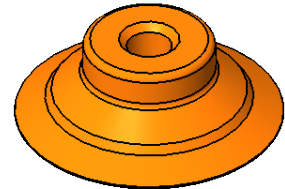
Multi-Bellows



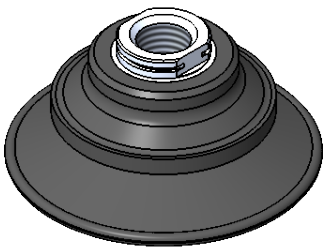
Deep



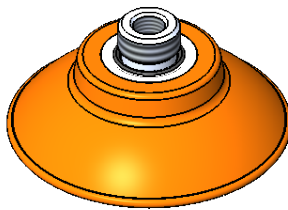
Flat



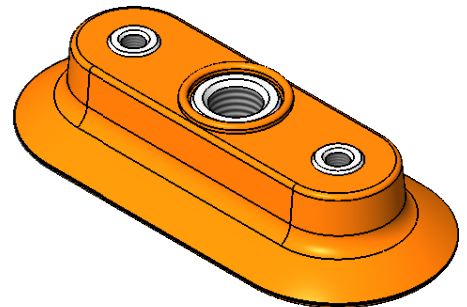
Universal



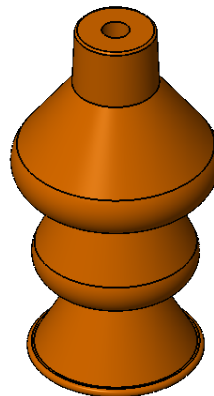
Bellows Flat



Flat-Concave



Oval



Special

Bellows	3-6
Double Bellows	7
Bellows Flat	8
Multi-Bellows	9
Deep	10
Flat	11-14
Flat-Concave	15, 16
Oval	17
Universal	18, 19
Special	20
Information	21

Bellows Vacuum Cups

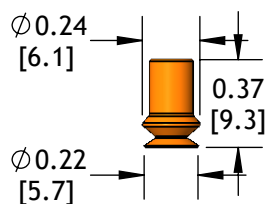
	Cup Size	Cup Material ¹	Cup Fitting	Filter
XP-B	15	CS	-10M	-FD
5	Ø 5 mm	A Ameriflex ⁴	(Blank) None	(Blank) None
8	Ø 8 mm	CS Conductive Silicone ³	See cup fittings for available threads.	-FD PE Filter Disc
10	Ø 10 mm	D Duramax ⁴		-FS SS Filter Screen
15	Ø 15 mm	N Nitrile		See cup fittings for availability.
20	Ø 20 mm	S Silicone		
		V Viton		

¹All cups are available in Nitrile and Silicone. Check availability for other materials before ordering.

²All figures for shear load are 18" Hg. using a 0.5 coefficient of friction. Adjust coefficient of friction to suit your conditions, then apply a generous factor of safety (3:1 or greater) to shear loads.

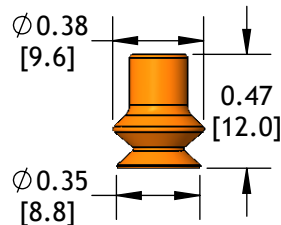
³Not available on XP-B15 or XP-B20.

⁴Not available on XP-B5, XP-B8, XP-B10, or XP-B15.



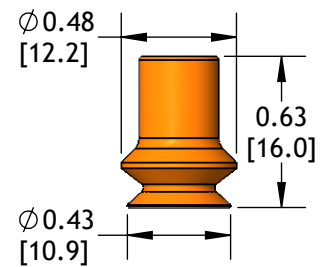
XP-B5

Cup Diameter: in [mm]	5 mm
Thru Hole: in [mm]	0.08 [2.0]
Stroke: in [mm]	0.06 [1.5]
Cup Weight: oz [g]	0.004 [0.11]
Internal Volume: cu in [cc]	0.01 [0.2]
Force @ 6 inHG: lb [n]	0.07 [0.3]
Force @ 18 inHG: lb [n]	0.10 [0.4]
Minimum Radius: in [mm]	0.06 [1.5]
Shear Load ² : lb [n]	0.05 [0.2]



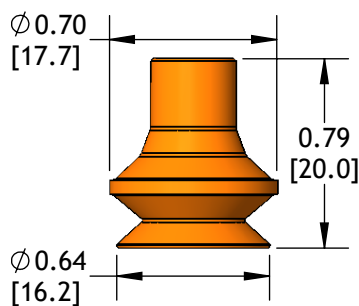
XP-B8

Cup Diameter: in [mm]	8 mm
Thru Hole: in [mm]	0.08 [2.0]
Stroke: in [mm]	0.13 [3.3]
Cup Weight: oz [g]	0.01 [0.3]
Internal Volume: cu in [cc]	0.01 [0.2]
Force @ 6 inHG: lb [n]	0.18 [0.8]
Force @ 18 inHG: lb [n]	0.36 [1.6]
Minimum Radius: in [mm]	0.07 [1.8]
Shear Load ² : lb [n]	0.18 [0.8]



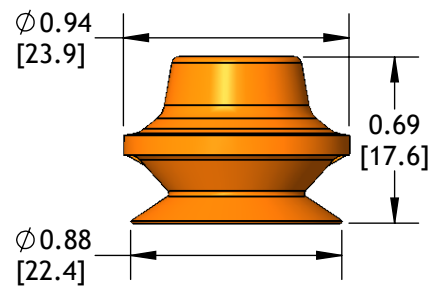
XP-B10

Cup Diameter: in [mm]	10 mm
Thru Hole: in [mm]	0.14 [3.7]
Stroke: in [mm]	0.18 [4.5]
Cup Weight: oz [g]	0.03 [0.9]
Internal Volume: cu in [cc]	0.03 [0.5]
Force @ 6 inHG: lb [n]	0.3 [1.3]
Force @ 18 inHG: lb [n]	0.8 [3.6]
Minimum Radius: in [mm]	0.16 [4.1]
Shear Load ² : lb [n]	0.4 [1.7]



XP-B15

Cup Diameter: in [mm]	15 mm
Thru Hole: in [mm]	0.14 [3.7]
Stroke: in [mm]	0.26 [6.6]
Cup Weight: oz [g]	0.04 [1.1]
Internal Volume: cu in [cc]	0.07 [1.2]
Force @ 6 inHG: lb [n]	0.70 [3.1]
Force @ 18 inHG: lb [n]	1.30 [5.8]
Minimum Radius: in [mm]	0.20 [5.1]
Shear Load ² : lb [n]	0.70 [3.1]



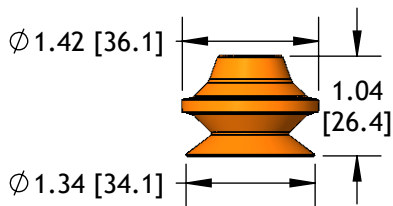
XP-B20

Cup Diameter: in [mm]	20 mm
Thru Hole: in [mm]	0.20 [5.1]
Stroke: in [mm]	0.39 [9.9]
Cup Weight: oz [g]	0.08 [2.3]
Internal Volume: cu in [cc]	0.16 [2.6]
Force @ 6 inHG: lb [n]	1.30 [5.8]
Force @ 18 inHG: lb [n]	2.20 [9.8]
Minimum Radius: in [mm]	0.39 [9.9]
Shear Load ² : lb [n]	1.10 [4.8]

Bellows Vacuum Cups

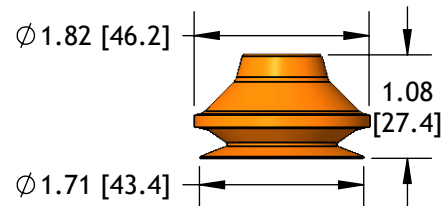
	Cup Size	Cup Material ¹	Cup Fitting	Filter Option
XP-B	50	V	-38F	-FS
30	Ø 30 mm	A Ameriflex	(Blank) None	(Blank) None
40	Ø 40 mm	D Duramax	See cup fittings for available threads.	-FD PE Filter Disc
50	Ø 50 mm	N Nitrile		-FS SS Filter Screen
65	Ø 65 mm	S Silicone ³		See cup fittings for availability.
		V Viton ³		

¹All cups are available in Nitrile and Silicone. Check availability for other materials before ordering.
²All figures for shear load are 18”Hg. using a 0.5 coefficient of friction. Adjust coefficient of friction to suit your conditions, then apply a generous factor of safety (3:1 or greater) to shear loads.
³Not available on XP-B65.



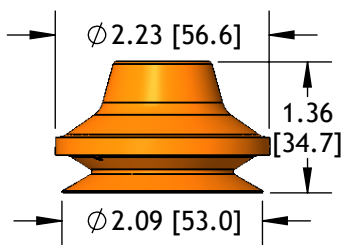
XP-B30

Cup Diameter: in [mm]	30 mm
Thru Hole: in [mm]	0.20 [5.1]
Stroke: in [mm]	0.59 [14.9]
Cup Weight: oz [g]	0.25 [7.1]
Internal Volume: cu in [cc]	0.61 [10.0]
Force @ 6 inHG: lb [n]	2.70 [12.0]
Force @ 18 inHG: lb [n]	4.90 [21.8]
Minimum Radius: in [mm]	0.59 [15.0]
Shear Load ² : lb [n]	2.50 [11.1]



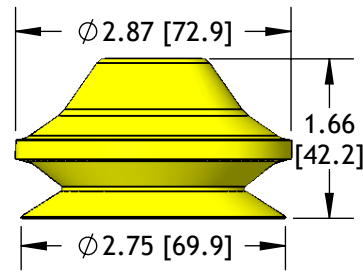
XP-B40

Cup Diameter: in [mm]	40 mm
Thru Hole: in [mm]	0.29 [7.4]
Stroke: in [mm]	0.59 [14.9]
Cup Weight: oz [g]	0.40 [11.3]
Internal Volume: cu in [cc]	0.90 [14.7]
Force @ 6 inHG: lb [n]	4.90 [21.8]
Force @ 18 inHG: lb [n]	8.80 [39.1]
Minimum Radius: in [mm]	0.79 [20.1]
Shear Load ² : lb [n]	4.40 [19.5]



XP-B50

Cup Diameter: in [mm]	50 mm
Thru Hole: in [mm]	0.36 [9.1]
Stroke: in [mm]	0.79 [20.0]
Cup Weight: oz [g]	0.75 [21.3]
Internal Volume: cu in [cc]	2.00 [32.8]
Force @ 6 inHG: lb [n]	7.40 [32.9]
Force @ 18 inHG: lb [n]	14.60 [64.9]
Minimum Radius: in [mm]	0.98 [24.9]
Shear Load ² : lb [n]	7.30 [32.4]



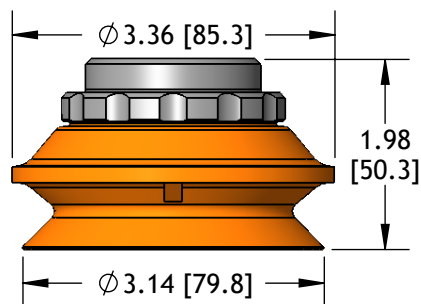
XP-B65

Cup Diameter: in [mm]	65 mm
Thru Hole: in [mm]	0.50 [12.7]
Stroke: in [mm]	0.90 [22.9]
Cup Weight: oz [g]	1.29 [36.5]
Internal Volume: cu in [cc]	3.90 [63.9]
Force @ 6 inHG: lb [n]	13.30 [59.2]
Force @ 18 inHG: lb [n]	26.30 [117.0]
Minimum Radius: in [mm]	1.22 [31.0]
Shear Load ² : lb [n]	13.1 [58.3]

Bellows Vacuum Cups

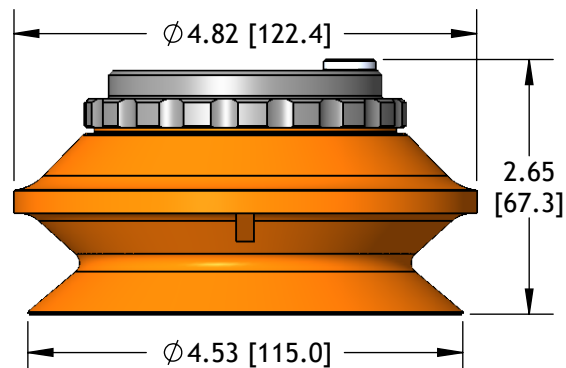
	Cup Size	Cup Material	Cup Fitting
XP-B	75	S	-12F
75	Ø 75 mm	N Nitrile	(Blank) None
110	Ø 110 mm	S Silicone	See cup fittings for available threads.
150	Ø 150 mm	V Viton	

²All figures for shear load are 18"Hg. using a 0.5 coefficient of friction. Adjust coefficient of friction to suit your conditions, then apply a generous factor of safety (3:1 or greater) to shear loads.



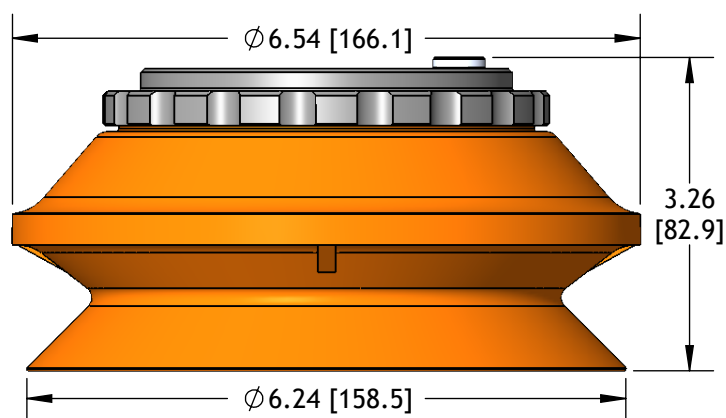
XP-B75

Cup Diameter: in [mm]	75 mm
Stroke: in [mm]	0.79 [20.0]
Cup Weight: oz [g]	1.80 [51.0]
Internal Volume: cu in [cc]	6.70 [110.0]
Force @ 6 inHG: lb [n]	16.00 [71.2]
Force @ 18 inHG: lb [n]	37.00 [164.0]
Minimum Radius: in [mm]	1.60 [40.6]
Shear Load ² : lb [n]	19.00 [84.5]



XP-B110

Cup Diameter: in [mm]	110 mm
Stroke: in [mm]	1.32 [33.2]
Cup Weight: oz [g]	5.10 [145.0]
Internal Volume: cu in [cc]	19.00 [311.0]
Force @ 6 inHG: lb [n]	30.00 [133.0]
Force @ 18 inHG: lb [n]	77.00 [342.0]
Minimum Radius: in [mm]	2.40 [61.0]
Shear Load ² : lb [n]	39.00 [173.5]



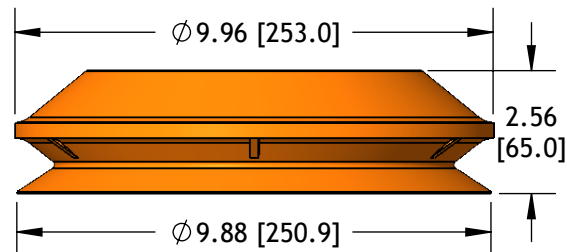
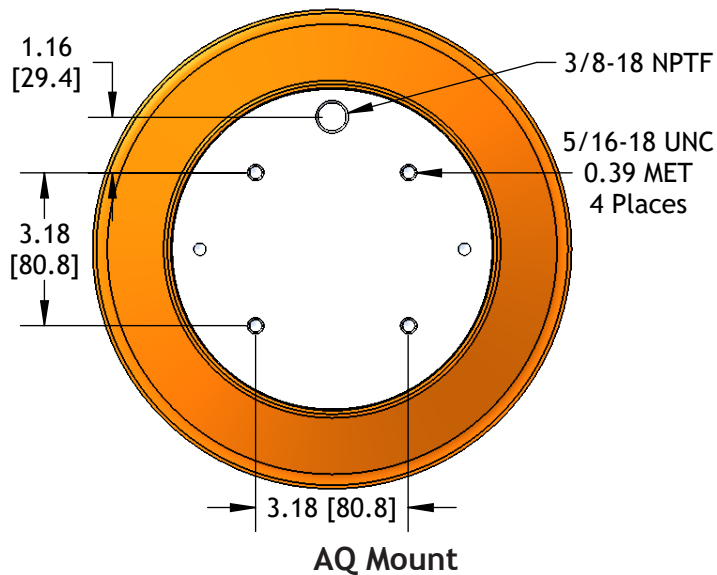
XP-B150

Cup Diameter: in [mm]	150 mm
Stroke: in [mm]	1.75 [44.4]
Cup Weight: oz [g]	13.00 [369.0]
Internal Volume: cu in [cc]	40.00 [656.0]
Force @ 6 inHG: lb [n]	66.00 [294.0]
Force @ 18 inHG: lb [n]	154.00 [685.0]
Minimum Radius: in [mm]	3.00 [76.2]
Shear Load ² : lb [n]	77.00 [342.0]

Bellows Vacuum Cups

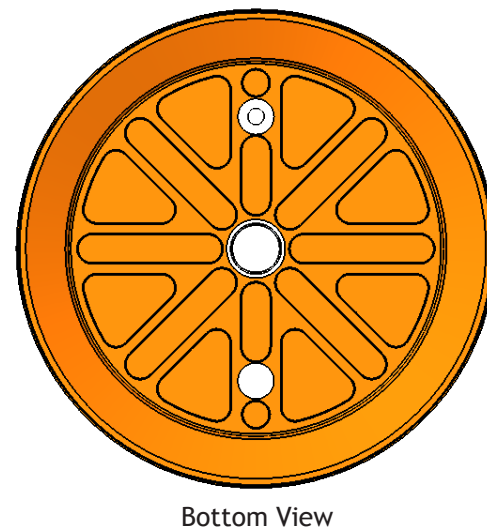
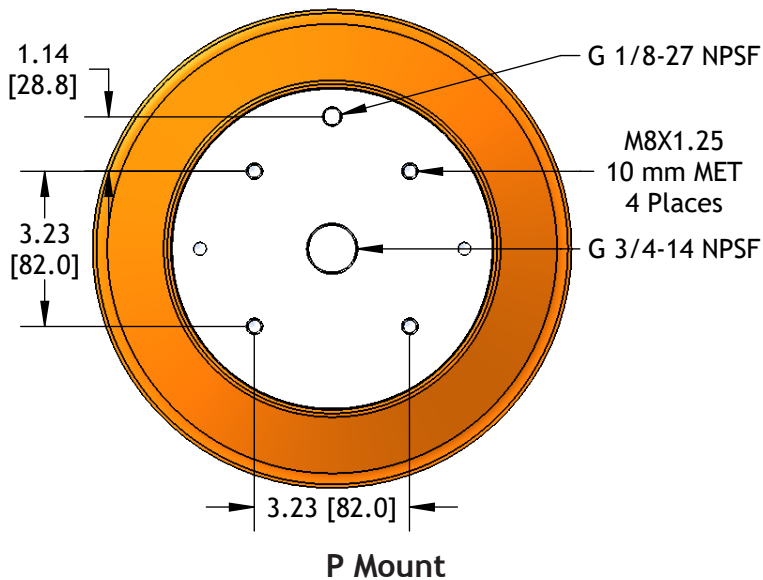
Cup Material		Mount	
XP-B250	N	-	AQ
N	Nitrile	AQ	Quad Mount, Side Port
S	Silicone	P	Quad Mount, Centered Port

²All figures for shear load are 18”Hg. using a 0.5 coefficient of friction. Adjust coefficient of friction to suit your conditions, then apply a generous factor of safety (3:1 or greater) to shear loads.



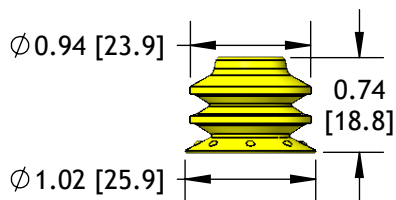
XP-B250

Cup Diameter: in [mm]	250 mm
Stroke: in [mm]	1.44 [36.6]
Cup Weight: oz [g]	3.57 [1.62]
Internal Volume: cu in [cc]	85.40 [1400.0]
Force @ 18 inHG: lb [n]	450.00 [2002.0]
Minimum Radius: in [mm]	10.00 [254.0]
Shear Load ² : lb [n]	225.00 [1001.0]



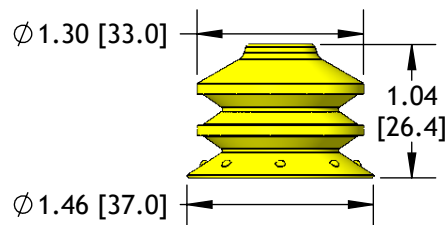
Double Bellows Vacuum Cups

	Cup Size	Cup Material	Cup Fitting	Filter
XP-2B	65	D	-18MS	
25	Ø 25 mm	A Ameriflex	(Blank) None	(Blank) None
35	Ø 35 mm	D Duramax	See cup fittings for available threads.	-FD PE Filter Disc
50	Ø 50 mm	N Nitrile		-FS SS Filter Screen
65	Ø 65 mm			See cup fittings for availability.



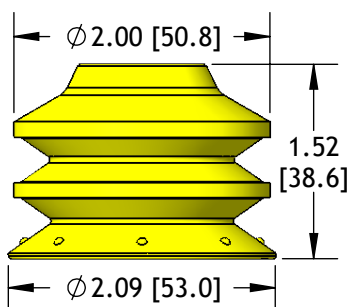
XP-2B25

Cup Diameter: in [mm]	25 mm
Thru Hole: in [mm]	0.20 [5.1]
Stroke: in [mm]	0.38 [9.7]
Cup Weight: oz [g]	0.11 [3.1]
Internal Volume: cu in [cc]	0.18 [3.0]
Force @ 6 inHG: lb [n]	2.02 [9.0]
Force @ 18 inHG: lb [n]	3.15 [14.0]
Minimum Radius: in [mm]	0.31 [7.9]



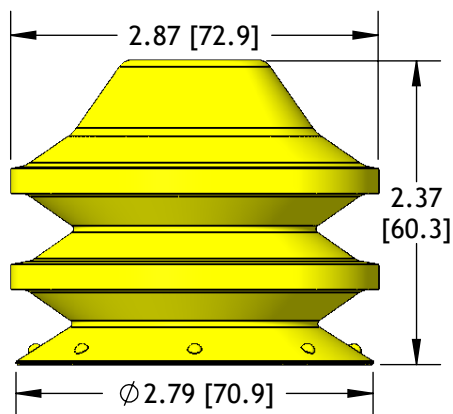
XP-2B35

Cup Diameter: in [mm]	35 mm
Thru Hole: in [mm]	0.20 [5.1]
Stroke: in [mm]	0.59 [15.0]
Cup Weight: oz [g]	0.28 [7.9]
Internal Volume: cu in [cc]	0.61 [10.0]
Force @ 6 inHG: lb [n]	3.37 [15.0]
Force @ 18 inHG: lb [n]	5.62 [25.0]
Minimum Radius: in [mm]	0.39 [9.9]



XP-2B50

Cup Diameter: in [mm]	50 mm
Thru Hole: in [mm]	0.36 [9.1]
Stroke: in [mm]	0.82 [20.8]
Cup Weight: oz [g]	0.85 [24.1]
Internal Volume: cu in [cc]	1.83 [30.0]
Force @ 6 inHG: lb [n]	8.32 [37.0]
Force @ 18 inHG: lb [n]	13.30 [59.2]
Minimum Radius: in [mm]	1.26 [32.0]



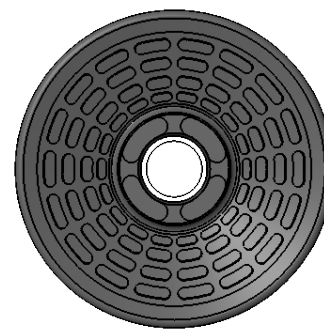
XP-2B65

Cup Diameter: in [mm]	65 mm
Thru Hole: in [mm]	0.50 [12.7]
Stroke: in [mm]	1.30 [33.0]
Cup Weight: oz [g]	2.20 [63.0]
Internal Volume: cu in [cc]	5.85 [95.9]
Force @ 6 inHG: lb [n]	8.40 [37.4]
Force @ 18 inHG: lb [n]	21.00 [93.4]
Minimum Radius: in [mm]	1.22 [31.0]

Bellows Flat Vacuum Cups

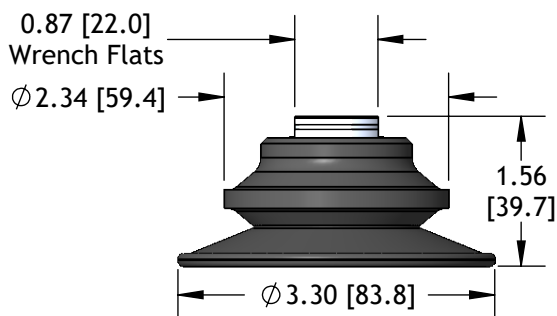
The Bellows Flat style vacuum cups combine the versatility of a Bellows cup with a large anti-skid tread pattern to provide maximum holding power and high resistance to shear loads even when lubrication is present. BF Cups are ideal for feeding sheet metal blanks to stamping presses or other robotic applications where it is necessary to resist loads caused by rapid acceleration and deceleration.

²All figures for shear load are 18”Hg. using a 0.5 coefficient of friction. Adjust coefficient of friction to suit your conditions, then apply a generous factor of safety (3:1 or greater) to shear loads.



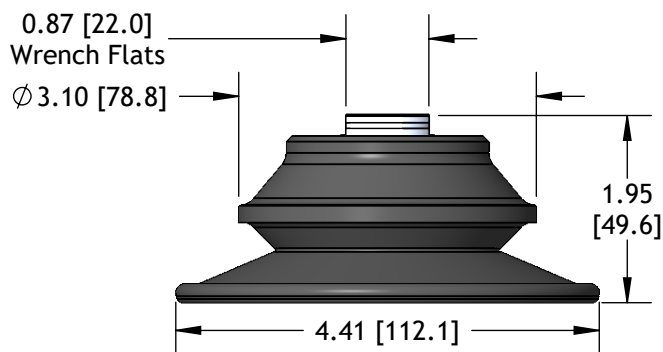
Bottom View

Cup Size		Cup Material		Fitting	
XP-BF 80		N		-38F	
80	Ø 80 mm	N	Nitrile	-38F	3/8-18 NPSF Female
100	Ø 100 mm				



XP-BF80

Cup Diameter: in [mm]	80 mm
Stroke: in [mm]	0.58 [14.7]
Cup Weight: oz [g]	1.70 [48.2]
Internal Volume: cu in [cc]	1.80 [29.5]
Force @ 6 inHG: lb [n]	17.00 [75.6]
Force @ 18 inHG: lb [n]	42.00 [187.0]
Minimum Radius: in [mm]	2.80 [71.1]
Shear Load ² : lb [n]	45.00 [200.0]



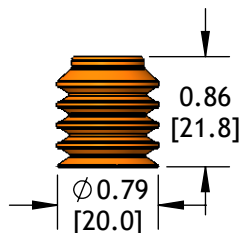
XP-BF100

Cup Diameter: in [mm]	100 mm
Stroke: in [mm]	0.95 [24.1]
Cup Weight: oz [g]	2.40 [68.0]
Internal Volume: cu in [cc]	4.90 [80.3]
Force @ 6 inHG: lb [n]	28.00 [125.0]
Force @ 18 inHG: lb [n]	78.00 [347.0]
Minimum Radius: in [mm]	3.60 [91.5]
Shear Load ² : lb [n]	53.00 [236.0]

Multi-Bellows Vacuum Cups

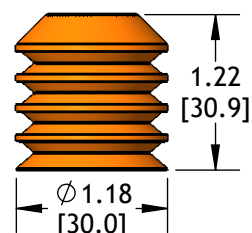
	Cup Size	Cup Material ¹	Cup Fitting	Filter
XP-BL	30	A	-G14F	-FS
20	Ø 20 mm	A Ameriflex	(Blank) None	(Blank) None
30	Ø 30 mm	D Duramax	See cup fittings for available threads.	-FD PE Filter Disc
40	Ø 40 mm	N Nitrile		-FS SS Filter Screen
50	Ø 50 mm	S Silicone		See cup fittings for availability.

¹All cups are available in Nitrile and Silicone. Check availability for other materials before ordering.



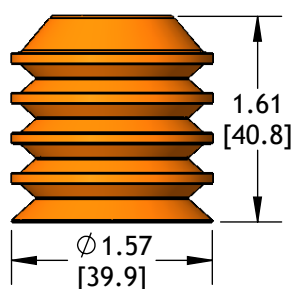
XP-BL20

Cup Diameter: in [mm]	20 mm
Thru Hole: in [mm]	0.20 [5.1]
Stroke: in [mm]	0.51 [13.0]
Cup Weight: oz [g]	0.07 [2.0]
Internal Volume: cu in [cc]	0.24 [3.9]
Force @ 6 inHG: lb [n]	0.70 [3.1]
Force @ 18 inHG: lb [n]	1.40 [6.2]
Minimum Radius: in [mm]	0.16 [4.1]



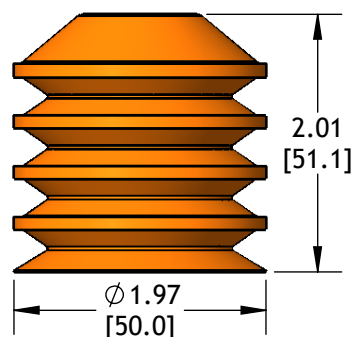
XP-BL30

Cup Diameter: in [mm]	30 mm
Thru Hole: in [mm]	0.20 [5.1]
Stroke: in [mm]	0.79 [20.1]
Cup Weight: oz [g]	0.21 [6.0]
Internal Volume: cu in [cc]	0.80 [13.1]
Force @ 6 inHG: lb [n]	1.40 [6.2]
Force @ 18 inHG: lb [n]	3.60 [16.0]
Minimum Radius: in [mm]	0.31 [7.9]



XP-BL40

Cup Diameter: in [mm]	40 mm
Thru Hole: in [mm]	0.29 [7.4]
Stroke: in [mm]	0.98 [24.9]
Cup Weight: oz [g]	0.43 [12.2]
Internal Volume: cu in [cc]	1.6 [26.2]
Force @ 6 inHG: lb [n]	2.50 [11.1]
Force @ 18 inHG: lb [n]	4.90 [21.8]
Minimum Radius: in [mm]	0.60 [15.2]

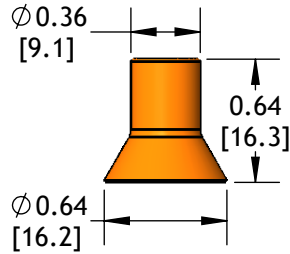


XP-BL50

Cup Diameter: in [mm]	50 mm
Thru Hole: in [mm]	0.36 [9.1]
Stroke: in [mm]	1.10 [27.9]
Cup Weight: oz [g]	0.82 [23.2]
Internal Volume: cu in [cc]	3.40 [55.7]
Force @ 6 inHG: lb [n]	3.80 [16.9]
Force @ 18 inHG: lb [n]	9.60 [42.7]
Minimum Radius: in [mm]	0.60 [15.2]

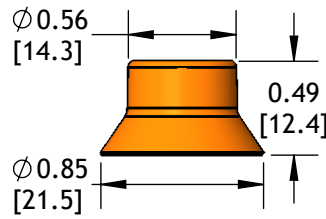
Deep Vacuum Cups

	Cup Size	Cup Material	Cup Fitting	Filter
XP-D	15	S	-5F	
15	Ø 15 mm	N Nitrile	(Blank) None	(Blank) None
20	Ø 20 mm	S Silicone	See cup fittings for available threads.	-FD PE Filter Disc
30	Ø 30 mm			-FS SS Filter Screen
40	Ø 40 mm			
50	Ø 50 mm			See cup fittings for availability.



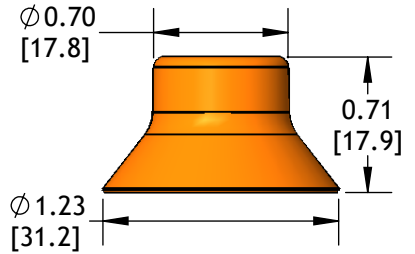
XP-D15

Cup Diameter: in [mm]	15 mm
Thru Hole: in [mm]	0.14 [3.6]
Stroke: in [mm]	0.12 [3.0]
Cup Weight: oz [g]	0.03 [0.9]
Internal Volume: cu in [cc]	0.06 [1.0]
Force @ 6 inHG: lb [n]	0.65 [2.8]
Force @ 18 inHG: lb [n]	1.70 [7.5]
Minimum Radius: in [mm]	0.24 [6.1]



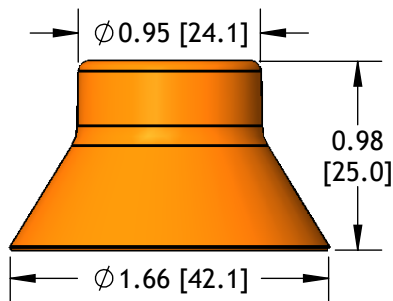
XP-D20

Cup Diameter: in [mm]	20 mm
Thru Hole: in [mm]	0.20 [5.1]
Stroke: in [mm]	0.18 [4.6]
Cup Weight: oz [g]	0.05 [1.4]
Internal Volume: cu in [cc]	0.12 [2.0]
Force @ 6 inHG: lb [n]	1.30 [5.7]
Force @ 18 inHG: lb [n]	3.30 [14.6]
Minimum Radius: in [mm]	0.32 [8.1]



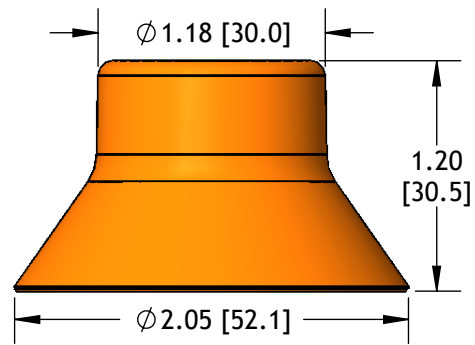
XP-D30

Cup Diameter: in [mm]	30 mm
Thru Hole: in [mm]	0.20 [5.1]
Stroke: in [mm]	0.20 [5.1]
Cup Weight: oz [g]	0.11 [3.1]
Internal Volume: cu in [cc]	0.30 [5.0]
Force @ 6 inHG: lb [n]	3.10 [13.8]
Force @ 18 inHG: lb [n]	5.80 [25.8]
Minimum Radius: in [mm]	0.51 [13.0]



XP-D40

Cup Diameter: in [mm]	40 mm
Thru Hole: in [mm]	0.29 [7.4]
Stroke: in [mm]	0.31 [7.9]
Cup Weight: oz [g]	0.30 [8.5]
Internal Volume: cu in [cc]	0.80 [13.0]
Force @ 6 inHG: lb [n]	5.40 [24.0]
Force @ 18 inHG: lb [n]	11.30 [50.3]
Minimum Radius: in [mm]	0.65 [16.5]

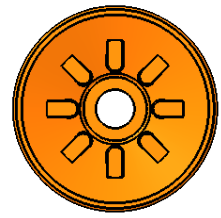


XP-D50

Cup Diameter: in [mm]	50 mm
Thru Hole: in [mm]	0.36 [9.1]
Stroke: in [mm]	0.39 [9.9]
Cup Weight: oz [g]	0.54 [15.3]
Internal Volume: cu in [cc]	1.40 [23.0]
Force @ 6 inHG: lb [n]	8.10 [36.0]
Force @ 18 inHG: lb [n]	17.00 [75.6]
Minimum Radius: in [mm]	0.98 [24.9]

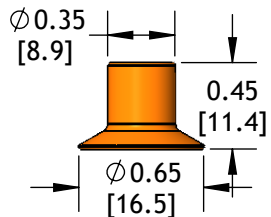
Flat Vacuum Cups

	Cup Size	Cup Material ¹	Cup Fitting	Filter
XP-F	20	A	-14M	-FS
15	Ø 15 mm	A Ameriflex ³	(Blank) None	(Blank) None
20	Ø 20 mm	D Duramax ³	See cup fittings for available threads.	-FD PE Filter Disc
25	Ø 25 mm	N Nitrile		-FS SS Filter Screen
30	Ø 30 mm	S Silicone		See cup fittings for availability.
		V Viton		



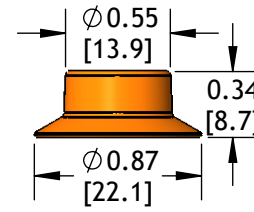
Bottom View
All Flat Cups have cleats.

¹All cups are available in Nitrile and Silicone. Check availability for other materials before ordering.
²All figures for shear load are 18”Hg. using a 0.5 coefficient of friction. Adjust coefficient of friction to suit your conditions, then apply a generous factor of safety (3:1 or greater) to shear loads.
³Not available on XP-F15.



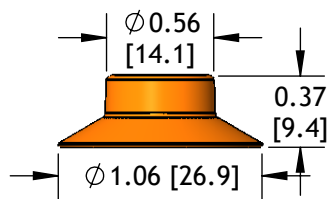
XP-F15

Cup Diameter: in [mm]	15 mm
Thru Hole: in [mm]	0.14 [3.6]
Stroke: in [mm]	0.03 [0.8]
Cup Weight: oz [g]	0.03 [0.85]
Internal Volume: cu in [cc]	0.20 [0.3]
Force @ 6 inHG: lb [n]	0.80 [3.6]
Force @ 18 inHG: lb [n]	1.90 [8.5]
Minimum Radius: in [mm]	0.51 [13.0]
Shear Load ² : lb [n]	0.90 [4.0]



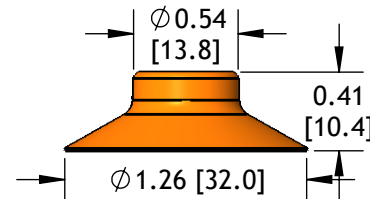
XP-F20

Cup Diameter: in [mm]	20 mm
Thru Hole: in [mm]	0.20 [5.1]
Stroke: in [mm]	0.06 [1.5]
Cup Weight: oz [g]	0.05 [1.4]
Internal Volume: cu in [cc]	0.06 [1.0]
Force @ 6 inHG: lb [n]	1.30 [5.8]
Force @ 18 inHG: lb [n]	3.30 [14.7]
Minimum Radius: in [mm]	0.71 [7.6]
Shear Load ² : lb [n]	1.70 [7.6]



XP-F25

Cup Diameter: in [mm]	25 mm
Thru Hole: in [mm]	0.20 [5.1]
Stroke: in [mm]	0.06 [1.5]
Cup Weight: oz [g]	0.06 [1.7]
Internal Volume: cu in [cc]	0.07 [1.2]
Force @ 6 inHG: lb [n]	2.00 [8.9]
Force @ 18 inHG: lb [n]	4.30 [19.1]
Minimum Radius: in [mm]	0.98 [24.9]
Shear Load ² : lb [n]	2.10 [9.3]

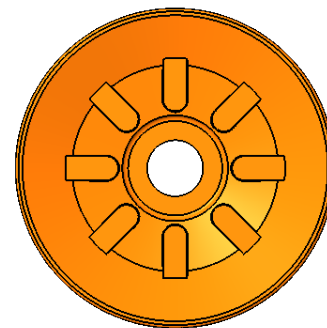


XP-F30

Cup Diameter: in [mm]	30 mm
Thru Hole: in [mm]	0.20 [5.1]
Stroke: in [mm]	0.09 [2.3]
Cup Weight: oz [g]	0.08 [2.3]
Internal Volume: cu in [cc]	0.12 [2.0]
Force @ 6 inHG: lb [n]	2.70 [12.0]
Force @ 18 inHG: lb [n]	5.60 [24.9]
Minimum Radius: in [mm]	0.98 [24.9]
Shear Load ² : lb [n]	2.80 [12.5]

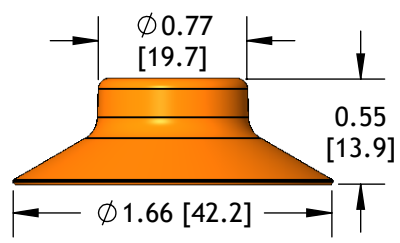
Flat Vacuum Cups

	Cup Size	Cup Material ¹	Cup Fitting	Filter
XP-F	50	D	-38M	-FS
40	Ø 40 mm	A Ameriflex	(Blank) None	(Blank) None
50	Ø 50 mm	D Duramax	See cup fittings for available threads.	-FD PE Filter Disc
65	Ø 65 mm	N Nitrile		-FS SS Filter Screen
		S Silicone ³		See cup fittings for availability.
		V Viton ³		



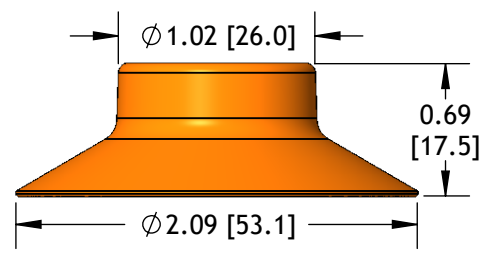
Bottom View
All Flat Cups have cleats.

¹All cups are available in Nitrile and Silicone. Check availability for other materials before ordering.
²All figures for shear load are 18”Hg. using a 0.5 coefficient of friction. Adjust coefficient of friction to suit your conditions, then apply a generous factor of safety (3:1 or greater) to shear loads.
³Not available on XP-F65.



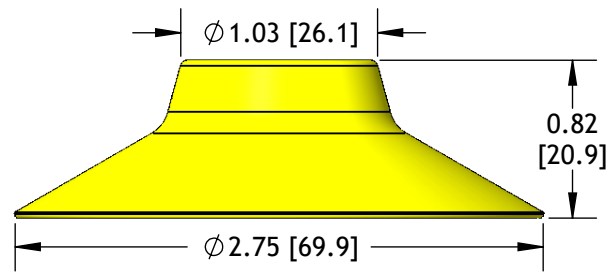
XP-F40

Cup Diameter: in [mm]	40 mm
Thru Hole: in [mm]	0.30 [7.6]
Stroke: in [mm]	0.10 [2.5]
Cup Weight: oz [g]	0.18 [5.1]
Internal Volume: cu in [cc]	0.29 [4.8]
Force @ 6 inHG: lb [n]	4.50 [20.0]
Force @ 18 inHG: lb [n]	9.00 [40.0]
Minimum Radius: in [mm]	2.05 [52.1]
Shear Load ² : lb [n]	4.50 [20.0]



XP-F50

Cup Diameter: in [mm]	50 mm
Thru Hole: in [mm]	0.36 [9.1]
Stroke: in [mm]	0.12 [3.0]
Cup Weight: oz [g]	0.40 [11.3]
Internal Volume: cu in [cc]	0.61 [10.0]
Force @ 6 inHG: lb [n]	8.10 [36.0]
Force @ 18 inHG: lb [n]	16.6 [73.8]
Minimum Radius: in [mm]	2.17 [55.1]
Shear Load ² : lb [n]	8.30 [36.9]



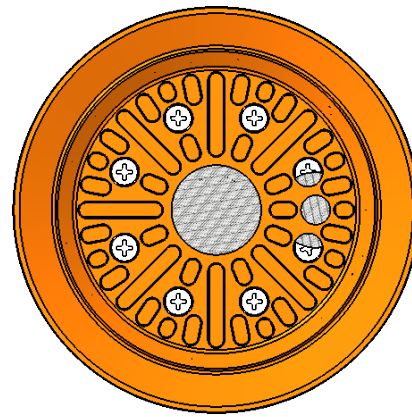
XP-F65

Cup Diameter: in [mm]	65 mm
Thru Hole: in [mm]	0.50 [12.7]
Stroke: in [mm]	0.15 [2.5]
Cup Weight: oz [g]	0.51 [14.5]
Internal Volume: cu in [cc]	1.46 [24.0]
Force @ 6 inHG: lb [n]	9.00 [40.0]
Force @ 18 inHG: lb [n]	22.00 [98.0]
Minimum Radius: in [mm]	5.50 [140.0]
Shear Load ² : lb [n]	11.00 [49.0]

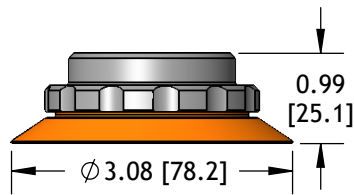
Flat Vacuum Cups

	Cup Size	Cup Material	Cup Fitting
XP-F	110	S	-38F
75	Ø 75 mm	A Ameriflex	(Blank) None
110	Ø 110 mm	N Nitrile	See cup fittings for available threads.
150	Ø 150 mm	S Silicone	
		V Viton	

²All figures for shear load are 18”Hg. using a 0.5 coefficient of friction. Adjust coefficient of friction to suit your conditions, then apply a generous factor of safety (3:1 or greater) to shear loads.

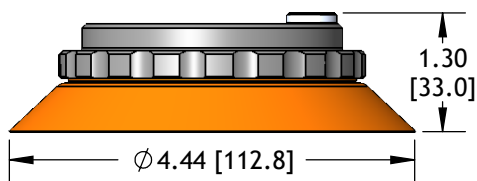


Bottom View
All Flat Cups have cleats.



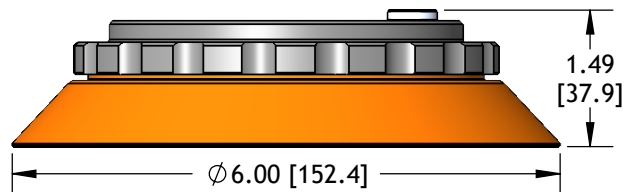
XP-F75

Cup Diameter: in [mm]	75 mm
Stroke: in [mm]	0.09 [2.3]
Cup Weight: oz [g]	1.00 [28.3]
Internal Volume: cu in [cc]	1.20 [19.7]
Force @ 6 inHG: lb [n]	18.00 [80.1]
Force @ 18 inHG: lb [n]	45.00 [20.0]
Minimum Radius: in [mm]	5.90 [150.0]
Shear Load ² : lb [n]	23.00 [102.0]



XP-F110

Cup Diameter: in [mm]	110 mm
Stroke: in [mm]	0.21 [5.3]
Cup Weight: oz [g]	3.10 [87.9]
Internal Volume: cu in [cc]	4.30 [70.5]
Force @ 6 inHG: lb [n]	32.00 [142.0]
Force @ 18 inHG: lb [n]	94.00 [418.0]
Minimum Radius: in [mm]	9.80 [249.0]
Shear Load ² : lb [n]	47.00 [209.0]



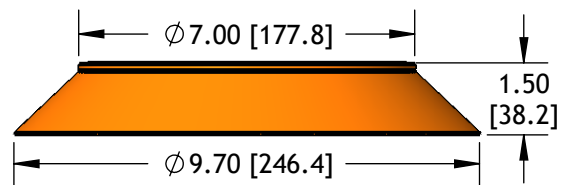
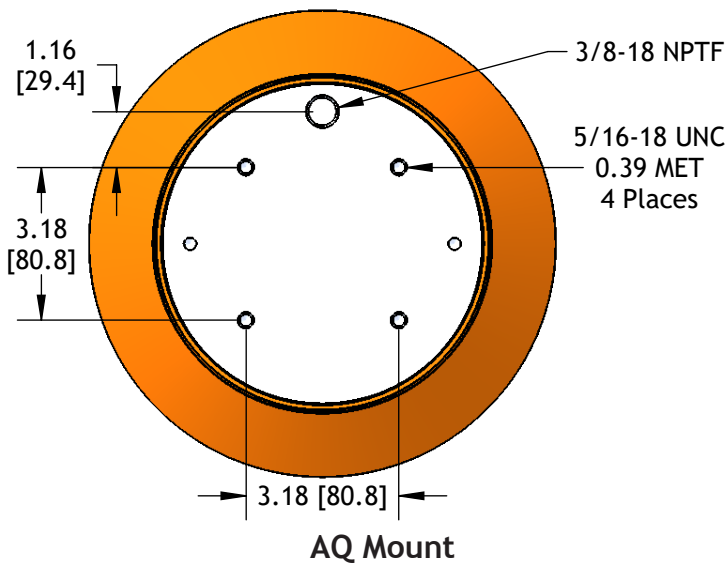
XP-F150

Cup Diameter: in [mm]	150 mm
Stroke: in [mm]	0.33 [8.4]
Cup Weight: oz [g]	7.30 [207.0]
Internal Volume: cu in [cc]	9.80 [161.0]
Force @ 6 inHG: lb [n]	67.00 [298.0]
Force @ 18 inHG: lb [n]	191.00 [850.0]
Minimum Radius: in [mm]	19.70 [500.0]
Shear Load ² : lb [n]	95.00 [422.0]

Flat Vacuum Cups

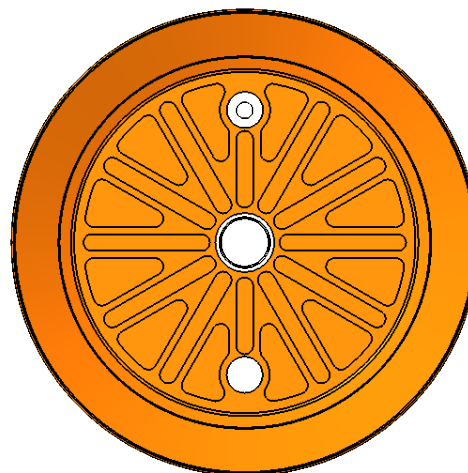
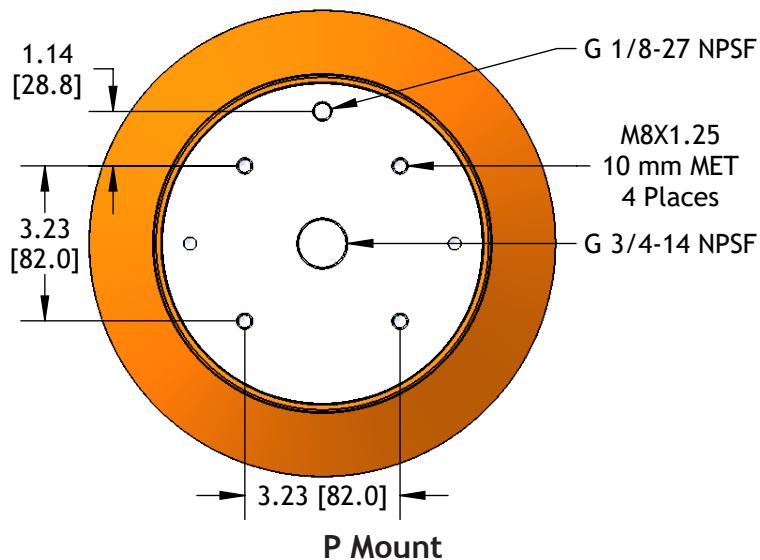
Cup Material		Mount	
XP-F240	S	-	P
NP	Neoprene	AQ	Quad Mount, Side Port
S	Silicone	P	Quad Mount, Centered Port

²All figures for shear load are 18”Hg. using a 0.5 coefficient of friction. Adjust coefficient of friction to suit your conditions, then apply a generous factor of safety (3:1 or greater) to shear loads.



XP-F240

Cup Diameter: in [mm]	240 mm
Stroke: in [mm]	0.62 [15.7]
Cup Weight: oz [g]	2.80 [1.3]
Internal Volume: cu in [cc]	33.00 [541.0]
Force @ 18 inHG: lb [n]	450.00 [2002.0]
Minimum Radius: in [mm]	20.00 [508.0]
Shear Load ² : lb [n]	225.00 [1001.0]

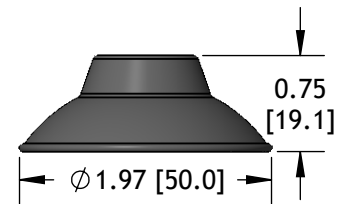


Bottom View
All Flat Cups have cleats.

Flat-Concave Vacuum Cups

Cup Material		Cup Fitting		Filter	
XP-FC50		A	-14F	-FD	
A	Ameriflex	(Blank)	None	(Blank)	None
N	Nitrile	See cup fittings for available threads.		-FD	PE Filter Disc
				-FS	SS Filter Screen
				See cup fittings for availability.	

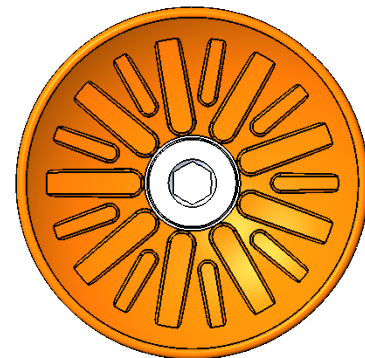
²All figures for shear load are 18”Hg. using a 0.5 coefficient of friction. Adjust coefficient of friction to suit your conditions, then apply a generous factor of safety (3:1 or greater) to shear loads.



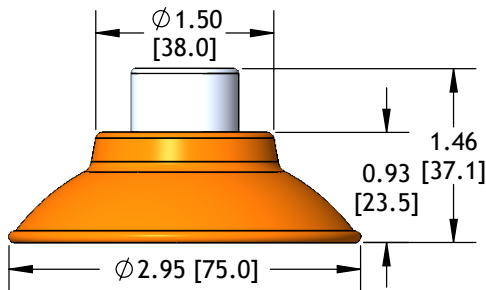
Cup Diameter: in [mm]	50 mm
Thru Hole: in [mm]	0.36 [9.1]
Stroke: in [mm]	0.25 [6.4]
Cup Weight: oz [g]	0.30 [7.9]
Internal Volume: cu in [cc]	0.70 [11.5]
Force @ 6 inHG: lb [n]	7.80 [34.7]
Force @ 18 inHG: lb [n]	19.00 [84.5]
Minimum Radius: in [mm]	2.09 [53.1]
Shear Load ² : lb [n]	10.00 [44.5]

Cup Material		Fitting	
XP-FC75		S	38F
N	Nitrile	38F	3/8-18 NPSF Female
S	Silicone	G38M	G 3/8-19 Male

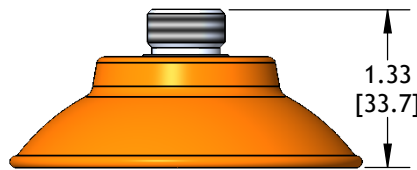
²All figures for shear load are 18”Hg. using a 0.5 coefficient of friction. Adjust coefficient of friction to suit your conditions, then apply a generous factor of safety (3:1 or greater) to shear loads.



Bottom View
Concave cleats on bottom.
8 mm Hex Socket



XP-FC75-38F



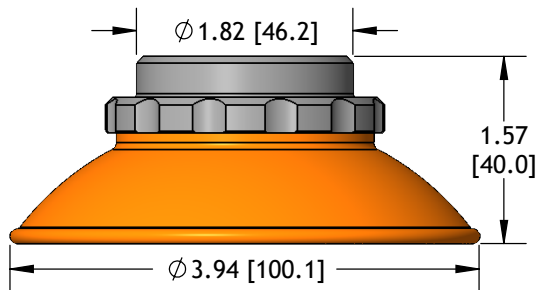
XP-FC75-G38M

Cup Diameter: in [mm]	75 mm
Stroke: in [mm]	0.36 [9.1]
Cup Weight: oz [g]	1.70 [48.2]
Internal Volume: cu in [cc]	1.80 [29.5]
Force @ 6 inHG: lb [n]	17.00 [75.6]
Force @ 18 inHG: lb [n]	35.00 [154.0]
Minimum Radius: in [mm]	2.80 [71.1]
Shear Load ² : lb [n]	45.00 [200.0]

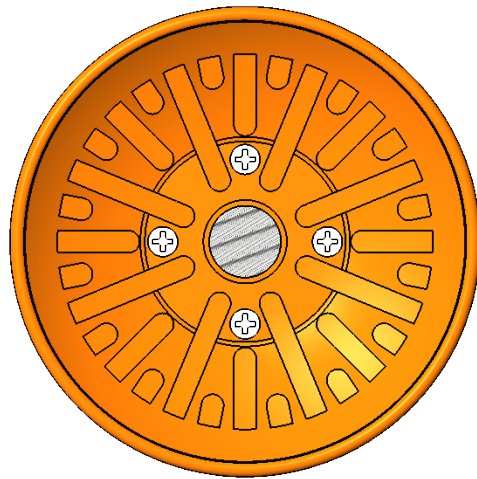
Flat-Concave Vacuum Cups

Cup Material		Cup Fitting	
XP-FC100	N	-18F	
N	Nitrile	(Blank)	None
S	Silicone	See cup fittings for available threads.	

²All figures for shear load are 18”Hg. using a 0.5 coefficient of friction. Adjust coefficient of friction to suit your conditions, then apply a generous factor of safety (3:1 or greater) to shear loads.



Cup Diameter: in [mm]	100 mm
Stroke: in [mm]	0.48 [12.2]
Cup Weight: oz [g]	1.90 [54.0]
Internal Volume: cu in [cc]	4.90 [80.3]
Force @ 6 inHG: lb [n]	31.00 [138.0]
Force @ 18 inHG: lb [n]	64.00 [285.0]
Minimum Radius: in [mm]	4.30 [109.0]
Shear Load ² : lb [n]	53.00 [236.0]

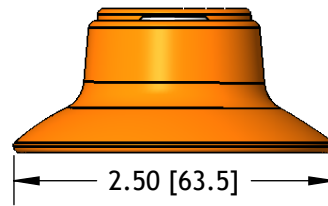
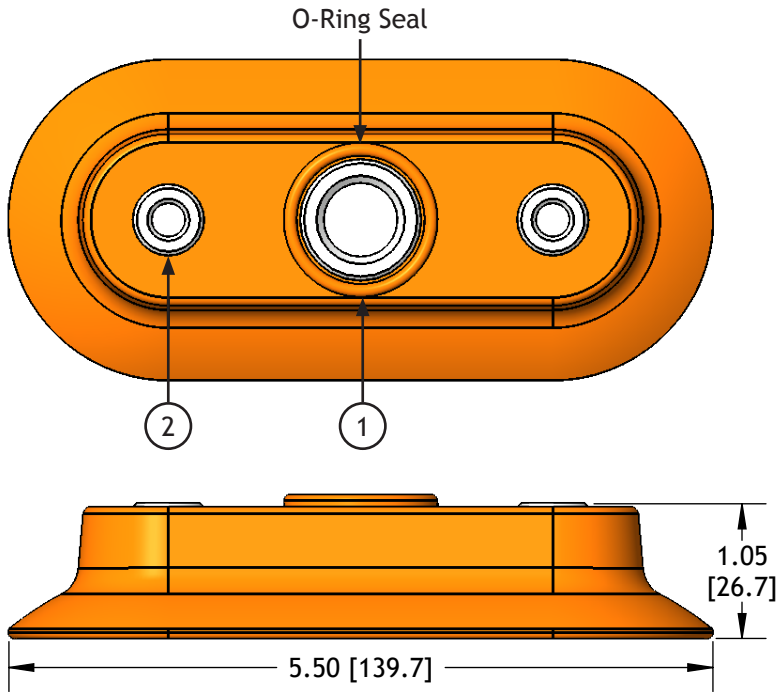


Bottom View
Concave cleats on bottom.

Oval Vacuum Cups

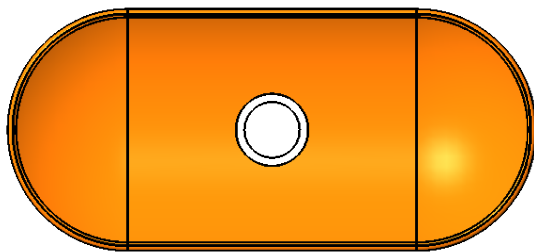
Cup Style		Cup Material	Threads
OC		-60X140-	S
OC	Concave	N Nitrile	(Blank) NPTF Threads
OF	Flat	S Silicone	-G G Threads

²All figures for shear load are 18”Hg. using a 0.5 coefficient of friction. Adjust coefficient of friction to suit your conditions, then apply a generous factor of safety (3:1 or greater) to shear loads.

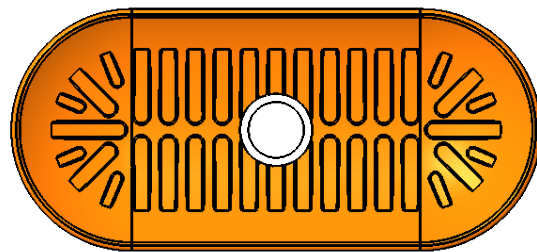


	OC	OF
Cup Dimensions: in [mm]	60 mm X 140 mm	
Stroke: in [mm]	0.29 [7.4]	0.18 [4.6]
Cup Weight: oz [g]	4.10 [116.0]	4.20 [119.0]
Internal Volume: cu in [cc]	3.20 [52.4]	3.00 [49.2]
Force @ 6 inHG: lb [n]	29.00 [129.0]	
Force @ 18 inHG: lb [n]	83.00 [369.0]	
Minimum Radius: in [mm]	1.50 [38.1]	3.00 [76.2]
Shear Load ² : lb [n]	41.00 [182.0]	

Code	Function	NPTF	G
1	Vacuum Port	3/8-18 NPTF	G 3/8-19
2	Mounting Holes	5/16-18 UNC	M8X1.25



OC-60X140



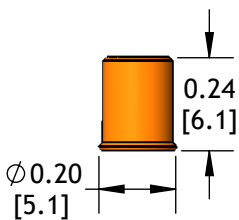
OF-60X140

Universal Vacuum Cups

	Cup Size	Cup Material ¹	Cup Fitting	Filter
XP-U	8	S	-10M	
4	Ø 4 mm	N Nitrile	(Blank) None	(Blank) None
6	Ø 6 mm	S Silicone	See cup fittings for available threads.	-FD PE Filter Disc
8	Ø 8 mm	V Viton ²		-FS SS Filter Screen
10	Ø 10 mm			See cup fittings for availability.
15	Ø 15 mm			

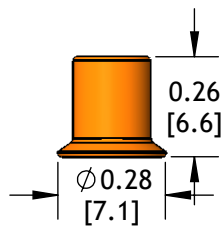
¹All cups are available in Nitrile and Silicone. Check availability for other materials before ordering.

²Not available for XP-U15.



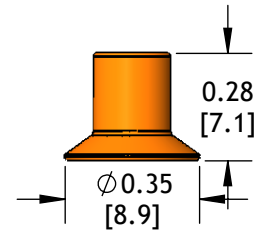
XP-U4

Cup Diameter: in [mm]	4 mm
Thru Hole: in [mm]	0.08 [2.0]
Stroke: in [mm]	0.008 [0.2]
Cup Weight: oz [g]	0.003 [0.09]
Internal Volume: cu in [cc]	0.002 [0.03]
Force @ 6 inHG: lb [n]	0.04 [0.2]
Force @ 18 inHG: lb [n]	0.20 [0.9]
Minimum Radius: in [mm]	0.12 [3.0]



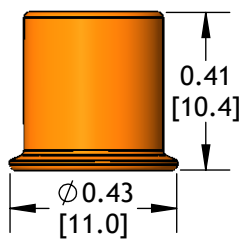
XP-U6

Cup Diameter: in [mm]	6 mm
Thru Hole: in [mm]	0.08 [2.0]
Stroke: in [mm]	0.012 [0.3]
Cup Weight: oz [g]	0.005 [0.14]
Internal Volume: cu in [cc]	0.003 [0.5]
Force @ 6 inHG: lb [n]	0.11 [0.5]
Force @ 18 inHG: lb [n]	0.38 [1.7]
Minimum Radius: in [mm]	0.20 [5.1]



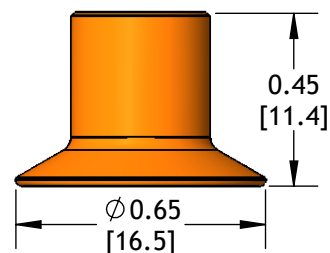
XP-U8

Cup Diameter: in [mm]	8 mm
Thru Hole: in [mm]	0.8 [2.0]
Stroke: in [mm]	0.02 [0.5]
Cup Weight: oz [g]	0.005 [0.14]
Internal Volume: cu in [cc]	0.006 [0.1]
Force @ 6 inHG: lb [n]	0.22 [1.0]
Force @ 18 inHG: lb [n]	0.65 [2.9]
Minimum Radius: in [mm]	0.24 [6.1]



XP-U10

Cup Diameter: in [mm]	10 mm
Thru Hole: in [mm]	0.14 [3.6]
Stroke: in [mm]	0.02 [0.5]
Cup Weight: oz [g]	0.03 [10.9]
Internal Volume: cu in [cc]	0.01 [0.2]
Force @ 6 inHG: lb [n]	0.34 [0.5]
Force @ 18 inHG: lb [n]	1.00 [4.5]
Minimum Radius: in [mm]	0.31 [7.9]



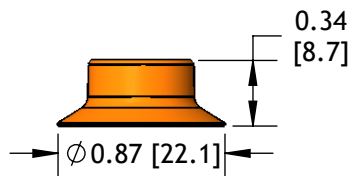
XP-U15

Cup Diameter: in [mm]	15 mm
Thru Hole: in [mm]	0.14 [3.6]
Stroke: in [mm]	0.06 [1.5]
Cup Weight: oz [g]	0.03 [0.9]
Internal Volume: cu in [cc]	0.03 [0.5]
Force @ 6 inHG: lb [n]	0.80 [3.6]
Force @ 18 inHG: lb [n]	1.90 [8.5]
Minimum Radius: in [mm]	0.31 [7.9]

Universal Vacuum Cups

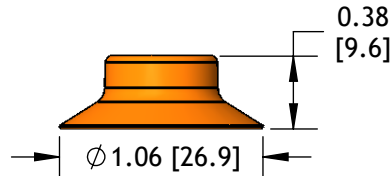
	Cup Size	Cup Material ¹	Cup Fitting	Filter
XP-U	25	N	-14M	-FS
20	Ø 20 mm	N	Nitrile	(Blank) None
25	Ø 25 mm	S	Silicone	(Blank) -FD PE Filter Disc
30	Ø 30 mm		See cup fittings for available threads.	-FS SS Filter Screen
40	Ø 40 mm			
50	Ø 50 mm			See cup fittings for availability.

¹All cups are available in Nitrile and Silicone. Check availability for other materials before ordering.



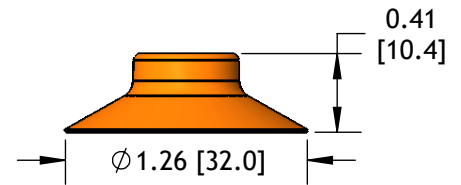
XP-U20

Cup Diameter: in [mm]	20 mm
Thru Hole: in [mm]	0.20 [5.1]
Stroke: in [mm]	0.10 [2.5]
Cup Weight: oz [g]	0.04 [1.1]
Internal Volume: cu in [cc]	0.06 [1.0]
Force @ 6 inHG: lb [n]	1.30 [5.8]
Force @ 18 inHG: lb [n]	2.70 [12.0]
Minimum Radius: in [mm]	0.51 [13.0]



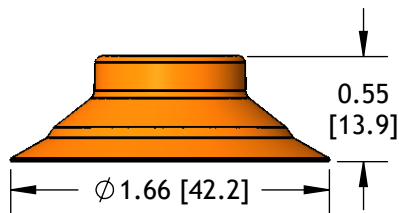
XP-U25

Cup Diameter: in [mm]	25 mm
Thru Hole: in [mm]	0.20 [5.1]
Stroke: in [mm]	0.10 [2.5]
Cup Weight: oz [g]	0.06 [1.7]
Internal Volume: cu in [cc]	0.07 [1.1]
Force @ 6 inHG: lb [n]	2.00 [8.9]
Force @ 18 inHG: lb [n]	4.40 [19.6]
Minimum Radius: in [mm]	0.65 [16.5]



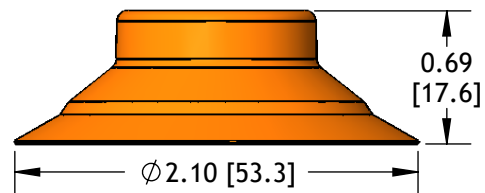
XP-U30

Cup Diameter: in [mm]	30 mm
Thru Hole: in [mm]	0.20 [5.1]
Stroke: in [mm]	0.14 [3.6]
Cup Weight: oz [g]	0.07 [2.0]
Internal Volume: cu in [cc]	0.12 [2.0]
Force @ 6 inHG: lb [n]	2.70 [12.0]
Force @ 18 inHG: lb [n]	5.60 [24.9]
Minimum Radius: in [mm]	0.79 [20.1]



XP-U40

Cup Diameter: in [mm]	40 mm
Thru Hole: in [mm]	0.29 [7.4]
Stroke: in [mm]	0.18 [4.6]
Cup Weight: oz [g]	0.17 [4.8]
Internal Volume: cu in [cc]	0.34 [5.6]
Force @ 6 inHG: lb [n]	4.50 [20.0]
Force @ 18 inHG: lb [n]	8.80 [39.1]
Minimum Radius: in [mm]	1.18 [30.0]



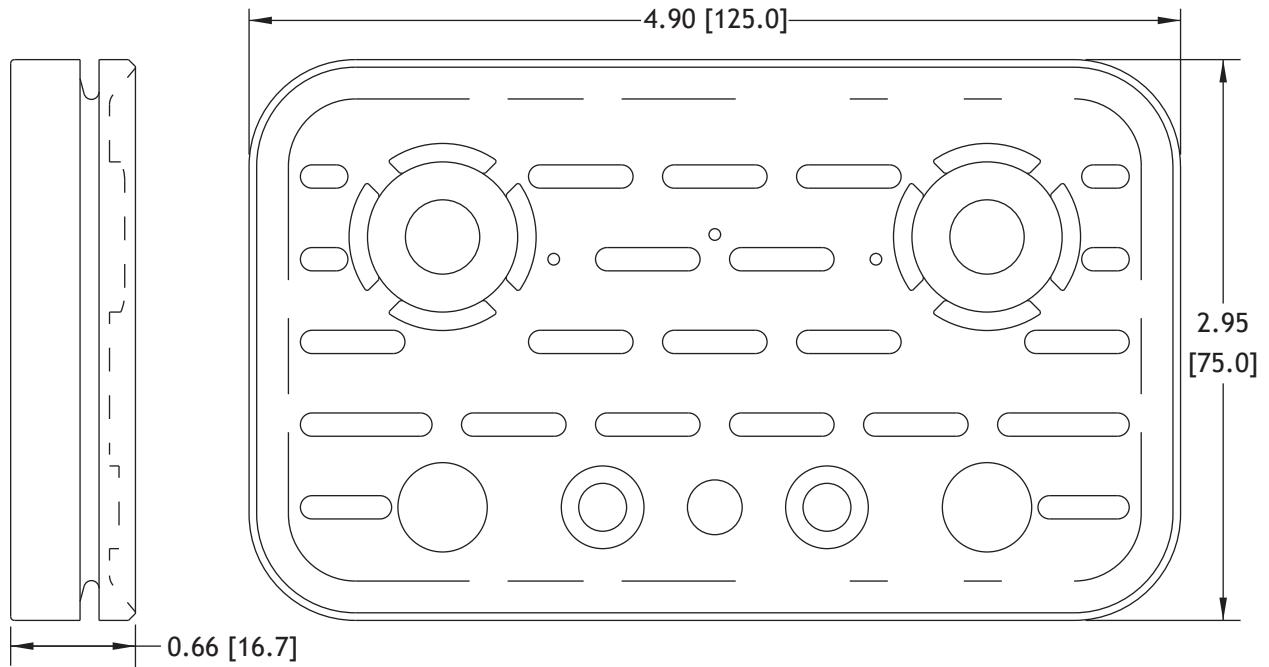
XP-U50

Cup Diameter: in [mm]	50 mm
Thru Hole: in [mm]	0.36 [9.1]
Stroke: in [mm]	0.24 [6.1]
Cup Weight: oz [g]	0.35 [9.9]
Internal Volume: cu in [cc]	0.73 [12.0]
Force @ 6 inHG: lb [n]	7.90 [35.1]
Force @ 18 inHG: lb [n]	16.40 [73.0]
Minimum Radius: in [mm]	1.38 [35.1]

Specialty Vacuum Cups

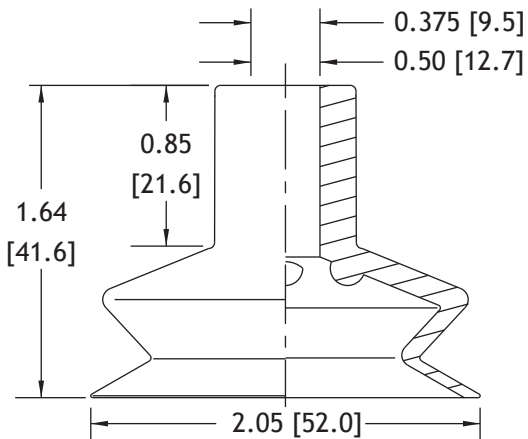
11-0079N

Nitrile Wood Working Clamp Pad
Replaces # 4-011-11-0079



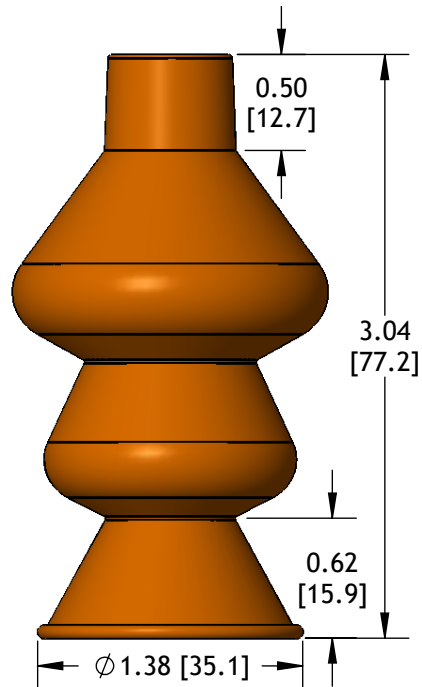
V32-38B

Blue PVC Bellows Cup, 3/8 Stem
Replaces VC-32



EC34S-30R

Egg Cup



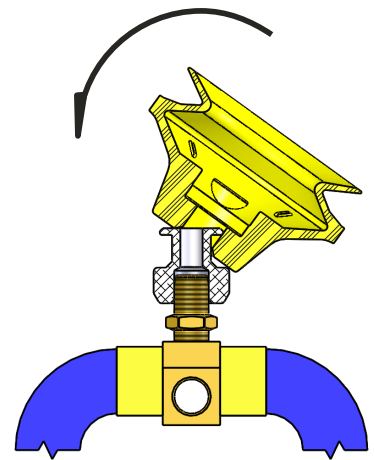
Vacuum Cup Fitting Assembly

Secure a block tee or other suitable pipe fitting in a vise to make a simple fixture as shown in the illustration.

Screw the cup fitting onto the fixture about 2 thread turns, by hand.

Dip your finger into a small container of water and wipe a few drops onto the fitting flange and into the top chamfer and bore of the vacuum cup. Use only water. Do not use any soap or oil. Water will quickly evaporate and leave no residue which could later affect performance.

Invert the vacuum cup and place it onto the flange as shown. Grasp the far side of the cup and pull it over the flange while apply downward pressure. After the cup snaps over the flange, rotate the cup on the fitting about 1/2 turn to make sure it is properly seated.



Elastomer Properties

Code	Elastomer	Wear Resistance	Working Temperature ²	Weight Ratio ³	Color	Durometer Shore-A
A	Ameriflex	Excellent	-4° to 230° F -20° to 110° C	0.85	Yellow	50
D	Duramax	Excellent	-4° to 230° F -20° to 110° C	0.85	White	45
N	Nitrile	Excellent	-4° to 230° F -20° to 110° C	1.0	Black	50
S	Silicone	Good	-100° to 400° F -70° to 205° C	1.06	Orange	50
CS	Conductive Silicone	Good	-100° to 400° F -70° to 205° C	1.06	Black	50
V	Fluorocarbon (Viton ¹)	Excellent	40° to 450° F 4° to 230° C	1.78	Gray	60

Elastomer Selection

Ameriflex (A)

For general-purpose, normal ambient temperature applications as a replacement for competitors' PVC vinyl cups.

Duramax (D)⁴

Softer, non-staining, non-marking, general-purpose material for high visibility surfaces at normal ambient temperatures.

Nitrile (N)

For general-purpose, normal ambient temperature applications.

Silicone (S)

For either cold or high-temperature applications or where greater flexibility will improve conformance to a part.

Conductive Silicone (CS)

For grounding parts such as electronic chips to eliminate static electricity.

Viton (V)¹

For extremely high-temperature applications in automotive, appliance, or other applications where silicone is not allowed.

¹Viton is a registered trademark of DuPont Dow.

²Continuous service temperature. Intermittent service may possibly be higher. Determine via testing under actual conditions.

³Weight of Nitrile cup without fitting is tabulated. Use the ratio multiplier for other materials.

⁴The terms non-staining and non-marking refer only to the cup material. Airborne aerosols that attach to the cup surface or direct cup contact with dirty surfaces can result in residue transfer marks. Proper maintenance is important. Use denatured alcohol to wipe cups clean after installation and periodically afterward to remove airborne contaminants.

This page intentionally left blank.