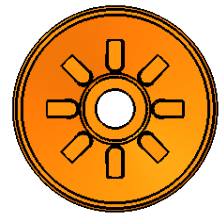


## Flat Vacuum Cups

	Cup Size	Cup Material <sup>1</sup>	Cup Fitting	Filter
XP-F	20	A	-14M	-FS
15	Ø 15 mm	A Ameriflex <sup>3</sup>	(Blank) None	(Blank) None
20	Ø 20 mm	D Duramax <sup>3</sup>	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		

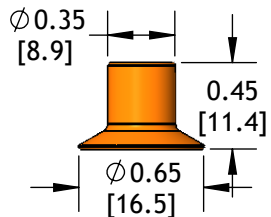


Bottom View  
All Flat Cups have cleats.

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

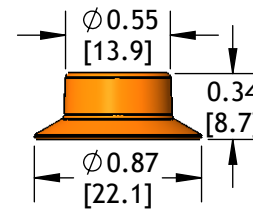
<sup>2</sup>All figures for shear load are 18"Hg. using a 0.5 coefficient of friction. Adjust coefficient of friction to suit your conditions, then apply a generous factor of safety (3:1 or greater) to shear loads.

<sup>3</sup>Not available on XP-F15.



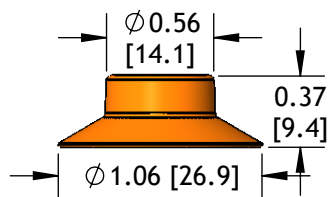
XP-F15

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 <sup>2</sup> : lb [n]	0.90 [4.0]



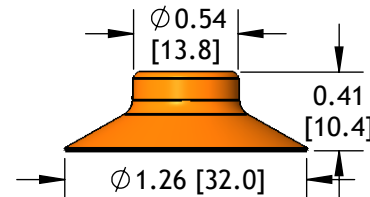
XP-F20

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 <sup>2</sup> : 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 <sup>2</sup> : lb [n]	2.10 [9.3]

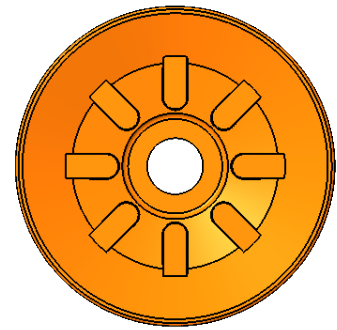


XP-F30

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 <sup>2</sup> : lb [n]	2.80 [12.5]

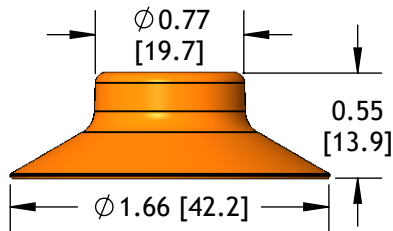
# Flat Vacuum Cups

	Cup Size	Cup Material <sup>1</sup>	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 <sup>3</sup>		See cup fittings for availability.
		V Viton <sup>3</sup>		



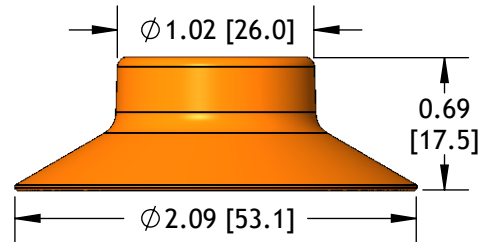
Bottom View  
All Flat Cups have cleats.

<sup>1</sup>All cups are available in Nitrile and Silicone. Check availability for other materials before ordering.  
<sup>2</sup>All 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.  
<sup>3</sup>Not available on XP-F65.



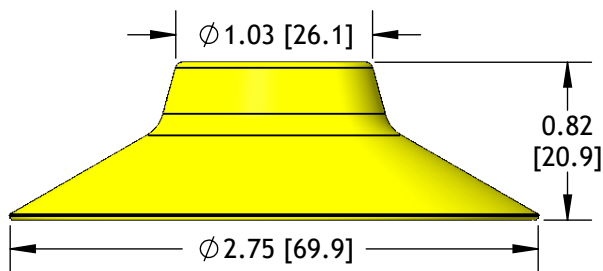
XP-F40

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 <sup>2</sup> : 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 <sup>2</sup> : lb [n]	8.30 [36.9]



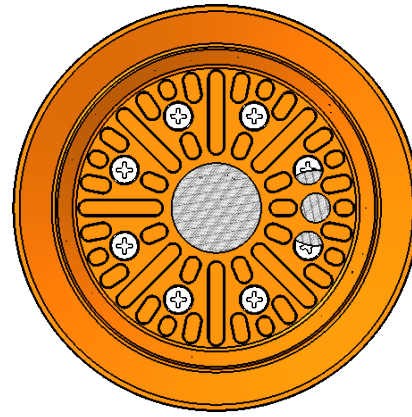
XP-F65

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 <sup>2</sup> : lb [n]	11.00 [49.0]

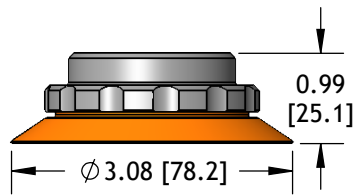
## Flat Vacuum Cups

	Cup Size	Cup Material	Cup Fitting
XP-F	110	S	-38F
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	

<sup>2</sup>All 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.

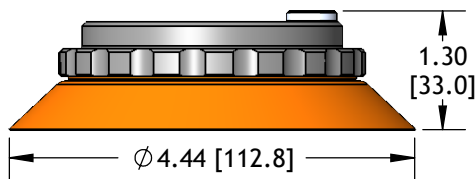


Bottom View  
All Flat Cups have cleats.



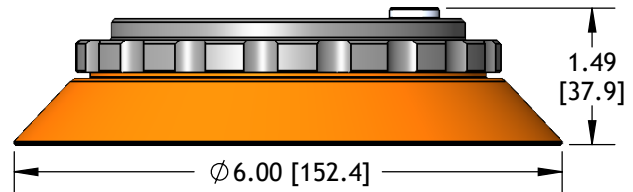
XP-F75

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 <sup>2</sup> : 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 <sup>2</sup> : lb [n]	47.00 [209.0]



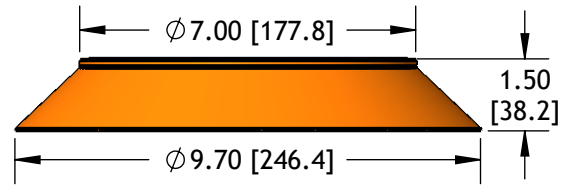
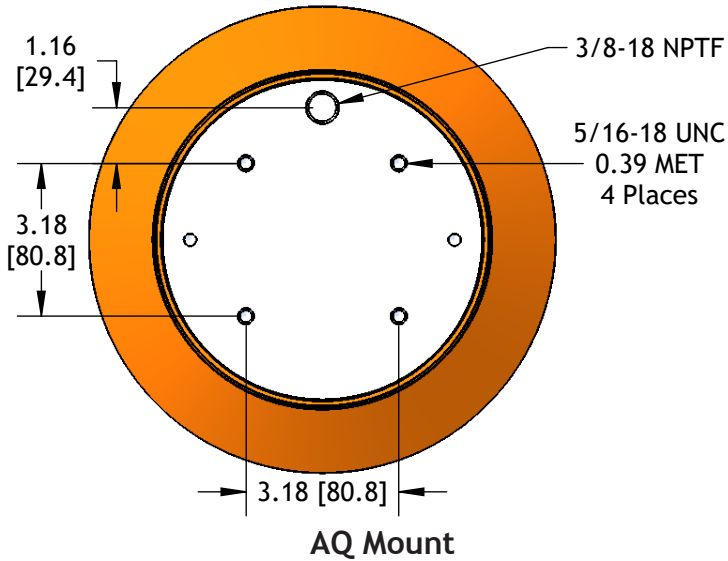
XP-F150

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 <sup>2</sup> : lb [n]	95.00 [422.0]

# Flat Vacuum Cups

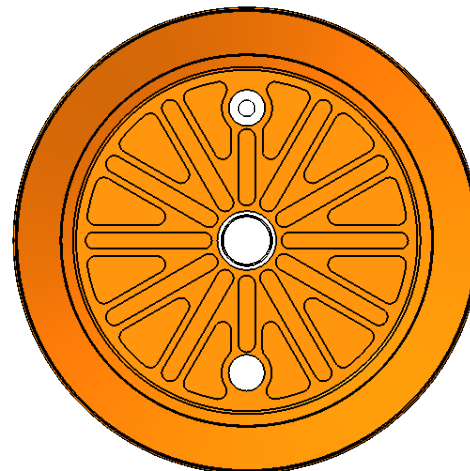
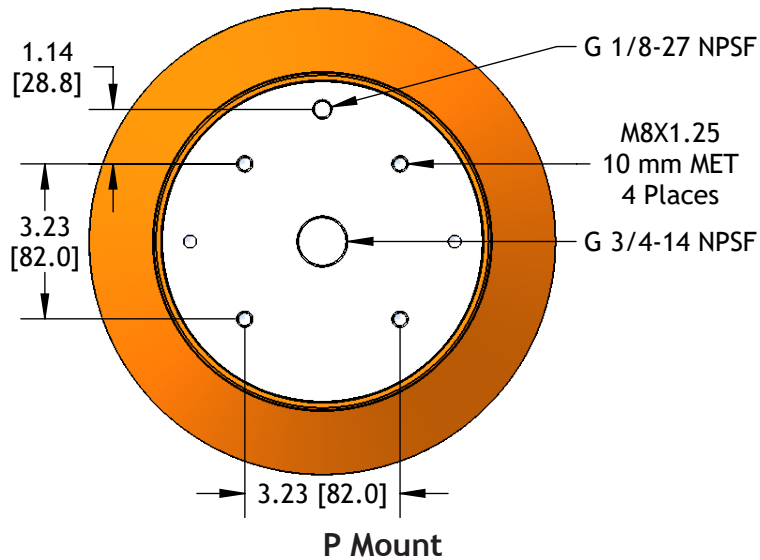
Cup Material		Mount	
XP-F240	S	-	P
NP	Neoprene	AQ	Quad Mount, Side Port
S	Silicone	P	Quad Mount, Centered Port

<sup>2</sup>All 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 <sup>2</sup> : lb [n]	225.00 [1001.0]



Bottom View  
All Flat Cups have cleats.