SEAL SCIENCE VACUUM CUPS

STANDARD, CUSTOM AND RETROFIT DESIGNS

The designing of vacuum system suction cups to perform specific lifting and moving functions can be deceptively complex. Considerations must include the weight and surface texture of the items to be picked up, acceleration rates, space limitations, magnitude of the vacuum, and process temperatures.

Seal Science has expertise in the design, manufacture and testing of vacuum cups for all purposes. Plus, we can do this on a quick-turnaround basis.

VACUUM CUP MATERIAL LIST*

<table>
<thead>
<tr>
<th>CODE</th>
<th>DESCRIPTION</th>
<th>HARDNESS</th>
<th>TEMPERATURE RANGE</th>
<th>COLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS4501</td>
<td>Long-Life Wear-Resistant Silicone</td>
<td>45A</td>
<td>-60°F to +400°F</td>
<td>Red</td>
</tr>
<tr>
<td>CS4502</td>
<td>Long-Life Wear-Resistant Silicone</td>
<td>45A</td>
<td>-60°F to +400°F</td>
<td>Opaque</td>
</tr>
<tr>
<td>CS6014</td>
<td>Long-Life Wear-Resistant Silicone</td>
<td>60A</td>
<td>-60°F to +400°F</td>
<td>Burnt Orange</td>
</tr>
<tr>
<td>CS5014</td>
<td>High-Temperature Silicone</td>
<td>50A</td>
<td>-60°F to +450°F</td>
<td>Red</td>
</tr>
<tr>
<td>CS5500</td>
<td>Conductive Silicone</td>
<td>55A</td>
<td>-80°F to +400°F</td>
<td>Black</td>
</tr>
<tr>
<td>CS5007</td>
<td>Long-Life Wear Resistant Silicone</td>
<td>30A</td>
<td>-60°F to +400°F</td>
<td>Opaque</td>
</tr>
<tr>
<td>CS6006</td>
<td>Long-Life Wear-Resistant Silicone</td>
<td>60A</td>
<td>-60°F to +400°F</td>
<td>Clear</td>
</tr>
<tr>
<td>CC5006</td>
<td>Tack-Free Long-Wear Chloroprene</td>
<td>50A</td>
<td>-40°F to +255°F</td>
<td>Black</td>
</tr>
<tr>
<td>CF4502</td>
<td>ESD Limiting Plastic Blend</td>
<td>45A</td>
<td>-40°F to +250°F</td>
<td>Gray</td>
</tr>
<tr>
<td>CS5004</td>
<td>Long-Life Wear-Resistant Silicone</td>
<td>50A</td>
<td>-50°F to +352°F</td>
<td>Clear</td>
</tr>
<tr>
<td>CPI7001</td>
<td>Polyurethane Blend</td>
<td>70A</td>
<td>-20°F to +180°F</td>
<td>Purple</td>
</tr>
<tr>
<td>CV6001</td>
<td>Vinyl</td>
<td>60A</td>
<td>0°F to +150°F</td>
<td>Purple</td>
</tr>
</tbody>
</table>

NOTES:
1. The performance of vacuum cups depends on many subtle factors not in Seal Science's control. A logical test program is always recommended as we can assume no liability for use of these products.
2. Many materials with unique properties are available. Check with the factory regarding your specific needs.

HOW TO ORDER

Choose the mounting style, configuration, and size that meet your needs from those depicted in this catalog. Then pick a material that meets your requirements; i.e., h-temp, non-marking, ESD, etc.

Example: VA - 15 - CS4501

O-RINGS AND SEALS FOR VACUUM SERVICE

High vacuum causes elastomeric materials to lose weight and therefore volume by extracting certain absorbed gasses and other volatile components. This weight/volume loss coupled with air permeability of certain elastomer compounds suggests that fluorocarbon materials should be considered for most vacuum service.

Seal Science's fluorocarbon compounds have been compounded to assure maximum resistance to outgassing, extraction and compression set. Seal Science also offers all other o-ring and seal compounds conforming to most industrial, military and electrical specifications.

O-RING ORDERING INFORMATION

Seal Science offers all Inch (AS568), Metric and JIS STD o-ring sizes. Please provide the standard size for the o-ring you need and remember to state the compound and hardness you want. Seal Science engineering can help you select the proper size and materials for you to test in your application. Please call us with dimensions or send us a sample of your items.

Sizes are generally stated as cross section x inside diameter.

Example:

<table>
<thead>
<tr>
<th>Cross Section (Inch)</th>
<th>Inside Diameter (Inch)</th>
<th>STD Size Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>.070</td>
<td>.239</td>
<td>-010</td>
</tr>
<tr>
<td>1.78</td>
<td>6.07</td>
<td>1.78 x 6.07</td>
</tr>
<tr>
<td>1.90</td>
<td>2.80</td>
<td>P3</td>
</tr>
</tbody>
</table>

Visit our website at www.sealscience.com

West Coast Office: 1-800-576-SEAL  E-mail: info@sealscience.com

East Coast Office: 1-800-261-SEAL  E-mail: info@seesest.com
# SEAL SCIENCE VACUUM CUPS

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<th>Page #</th>
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<td>Vacuum Cup Bellows Style VAB-Barb Type drawings</td>
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</tr>
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<tr>
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<td>Printing Press &amp; Collator Suction Cups</td>
<td>16</td>
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<td>Seal Science Product Review</td>
<td>Inside back cover</td>
</tr>
</tbody>
</table>

The items illustrated in this brochure are just a few examples of the styles of VACUUM CUPS, RINGS AND PADS we manufacture. Please consult SEAL SCIENCE with your requirements for availability.

SEE INSIDE BACK COVER FOR OTHER SEAL SCIENCE PRODUCTS.
STYLE VA – BARB TYPE

PART NUMBER / DASH NUMBER INDICATES APPROXIMATE LIP DIAMETER IN MILLIMETERS

BARB TYPES

FA-1 fitting

FA-2 fitting

FA-3 fitting

FA-4 fitting

FA-5 fitting

VA-3

VA-5

VA-7

VA-7.5

VA-9

VA-10

VA-12

FA-3 fitting

FA-2 fitting

FA-3 fitting

 FA-3 fitting

* INDICATES HOLE SIZE AT TOP OF VACUUM CUP
SEAL SCIENCE VACUUM CUPS

STYLE VA - BARB TYPE

PART NUMBER / DASH NUMBER INDICATES APPROXIMATE LIP DIAMETER IN MILLIMETERS

FA-3 fitting
VA-15 - CLEATED
Ø .560 [14.22] 
.250 [6.35]
VA-17 - CLEATED
Ø .650 [16.51] 
.453 [11.51]
VA-18 - CLEATED
Ø .700 [17.78] 
.365 [10.00]

VAP-18
Ø .714 [18.14] 
.471 [11.96]

FA-3 fitting
VA-20
Ø .795 [20.19] 
.596 [15.11]
VAP-20
Ø .800 [20.32] 
.465 [16.18]
VA-27
Ø 1.060 [26.92] 
.563 [14.30]

VAP-30
Ø 1.218 [30.94] 
.458 [11.63]

* INDICATES HOLE SIZE AT TOP OF VACUUM CUP

NOTES:
SEAL SCIENCE VACUUM CUPS

BELLOWS STYLE VAB – BARB TYPE

PART NUMBER / DASH NUMBER INDICATES APPROXIMATE LIP DIAMETER IN MILLIMETERS

FA-3 fitting           FA-3 fitting           FA-1 fitting           FA-3 fitting
5.85                  6.50                  3.12                  5.85
[14.86]               [16.00]               [7.62]                 [14.86]
VAB-3.5               VAB-4               VAB-4.3               VAB-5
Ø 0.146 [3.91]        Ø 0.160 [4.00]        Ø 0.170 [4.32]        Ø 0.218 [5.54]

FA-3 fitting           FA-3 fitting           FA-3 fitting           FA-3 fitting
0.52                  0.635                 0.525                 0.580
[13.00]               [16.13]               [13.44]               [14.83]
VAB-6                 VAB-7               VAB-8                 VAB-9
Ø 0.236 [5.99]        Ø 0.275 [6.99]        Ø 0.330 [8.38]        Ø 0.370 [9.40]

FA-3 fitting           FA-3 fitting           FA-3 fitting           FA-3 fitting
0.52                  0.640                 0.580                 0.890
[16.00]               [16.26]               [14.79]               [22.61]
VAB-10                VAB-10.5             VAB-13                VAB-14
Ø 0.433 [11.00]       Ø 0.418 [10.62]       Ø 0.524 [13.31]       Ø 0.590 [14.96]

FA-3 fitting           FA-3 fitting
0.781                 1.390
[19.84]               [35.31]
VAB-15                VAB-32
Ø 0.621 [15.77]       Ø 1.250 [31.78]

* INDICATES HOLE SIZE AT TOP OF VACUUM CUP
SEAL SCIENCE VACUUM CUPS

STYLE "X" MOUNT - FLANGE TYPE

PART NUMBER / DASH NUMBER INDICATES APPROXIMATE LIP DIAMETER IN MILLIMETERS

FITTINGS

FF-30
FF-40
FF-50
FX-30M

FLAT VACUUM CUPS

FF-30
FX-30M
FX-30F

VXF-20 CLEATED
VXF-25 CLEATED
VXF-30 CLEATED

FF-40
FX-40

VXF-40 CLEATED
VXF-50 CLEATED

BELLOWS STYLE

FX-30F
FX-30M
FF-30

VXB-20
VXB-30
VXB-40
SEAL SCIENCE VACUUM CUPS

STYLE VX - FLANGE TYPE

PART NUMBER / DASH NUMBER INDICATES APPROXIMATE LIP DIAMETER IN MILLIMETERS

FLANGE TYPES

**FVX-4 fitting**

- 200° [5.08]
- Ø 235 [5.97]
- 0.235 [6.0] DIA
- 3/32" HEX

**FVX-6 fitting**

- 198° [4.95]
- Ø 238 [5.99]
- 0.238 [6.06] DIA
- 5/16" HEX

**FVX-2 fitting**

- 150° [3.81]
- Ø 240 [6.06]
- 0.240 [6.10] DIA
- 3/16" HEX

**FVX-8 fitting**

- 155° [3.94]
- Ø 245 [6.22]
- 0.245 [6.22] DIA
- 1/8" HEX

**FVX-4 fitting**

- 238 [6.05]
- Ø 300 [7.62]
- 0.300 [7.62] DIA

**FVX-6 fitting**

- 275 [6.99]
- Ø 325 [8.26]
- 0.325 [8.26] DIA

**FVX-2 fitting**

- 275 [6.99]
- Ø 350 [8.89]
- 0.350 [8.89] DIA

**FVX-8 fitting**

- 315 [8.00]
- Ø 420 [10.67]
- 0.420 [10.67] DIA

* INDICATES HOLE SIZE AT TOP OF VACUUM CUP
SEAL SCIENCE VACUUM CUPS

STYLE VX - FLANGE TYPE (con't)

PART NUMBER / DASH NUMBER INDICATES APPROXIMATE LIP DIAMETER IN MILLIMETERS

<table>
<thead>
<tr>
<th>Fitting</th>
<th>VXN-12</th>
<th>VXS-15 CLEATED</th>
<th>VX-30</th>
</tr>
</thead>
<tbody>
<tr>
<td>FX-6</td>
<td>.492</td>
<td>.320</td>
<td>.511</td>
</tr>
<tr>
<td></td>
<td>[12.50]</td>
<td>[8.13]</td>
<td>[12.58]</td>
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</table>
# Seal Science Vacuum Cups

## Style “X” Mount - Large Flat Flange Types

### 75MM

<table>
<thead>
<tr>
<th>Dimension</th>
<th>75MM</th>
<th>110MM</th>
<th>150MM</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUP DIAMETER</td>
<td>75mm</td>
<td>110mm</td>
<td>150mm</td>
</tr>
<tr>
<td>NITRILE CUP</td>
<td>VXF 75N</td>
<td>VXF 110N</td>
<td>VXF 150N</td>
</tr>
<tr>
<td>CUP + 1/8&quot; FITTING</td>
<td>FF-7518</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>CUP + 1/2&quot; FITTING</td>
<td>FF-7512</td>
<td>FF-110</td>
<td>FF-150</td>
</tr>
<tr>
<td>CUP WEIGHT</td>
<td>1.2 oz</td>
<td>3.4 oz</td>
<td>8.3 oz</td>
</tr>
<tr>
<td>CUP + FITTING WT</td>
<td>3.8 oz</td>
<td>8.2 oz</td>
<td>16.5 oz</td>
</tr>
<tr>
<td>INTERNAL VOLUME</td>
<td>1.2 cu in</td>
<td>4.3 cu in</td>
<td>9.8 cu in</td>
</tr>
<tr>
<td>FORCE @ 6&quot; Hg</td>
<td>18 lb</td>
<td>32 lb</td>
<td>67 lb</td>
</tr>
<tr>
<td>FORCE @ 18&quot; Hg</td>
<td>45 lb</td>
<td>94 lb</td>
<td>191 lb</td>
</tr>
<tr>
<td>MINIMUM RADIUS</td>
<td>5.9&quot;</td>
<td>9.8&quot;</td>
<td>19.7&quot;</td>
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STYLE "X" MOUNT – LARGE BELLOWS FLANGE TYPES

<table>
<thead>
<tr>
<th>CUP DIAMETER</th>
<th>75MM</th>
<th>110MM</th>
<th>150MM</th>
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<tbody>
<tr>
<td>NITRILE CUP</td>
<td>VXB 75N</td>
<td>VXB 110N</td>
<td>VXB 150N</td>
</tr>
<tr>
<td>CUP + 1/8 FITTING</td>
<td>FF-7518</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>CUP + 1/2 FITTING</td>
<td>FF-7512</td>
<td>FF-110</td>
<td>FF-150</td>
</tr>
<tr>
<td>CUP WEIGHT</td>
<td>1.9 oz</td>
<td>4.8 oz</td>
<td>12 oz</td>
</tr>
<tr>
<td>CUP + FITTING WT</td>
<td>4.6 oz</td>
<td>11.0 oz</td>
<td>19.7 oz</td>
</tr>
<tr>
<td>INTERNAL VOLUME</td>
<td>6.7 cu in</td>
<td>19 cu in</td>
<td>40 cu in</td>
</tr>
<tr>
<td>FORCE @ 6&quot; Hg</td>
<td>16 lb</td>
<td>30 lb</td>
<td>66 lb</td>
</tr>
<tr>
<td>FORCE @ 18&quot; Hg</td>
<td>37 lb</td>
<td>77 lb</td>
<td>154 lb</td>
</tr>
<tr>
<td>MINIMUM RADIUS</td>
<td>1.6&quot;</td>
<td>2.4&quot;</td>
<td>3.0&quot;</td>
</tr>
</tbody>
</table>
SEAL SCIENCE VACUUM CUPS

STAR ROBOT TYPE

PART NUMBER / DASH NUMBER INDICATES APPROXIMATE LIP DIAMETER IN MILLIMETERS

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS-6</td>
<td>Ø 0.406 [10.31]</td>
</tr>
<tr>
<td></td>
<td>Ø 0.236 [5.96]</td>
</tr>
<tr>
<td>VS-8</td>
<td>Ø 0.406 [10.31]</td>
</tr>
<tr>
<td></td>
<td>Ø 0.325 [8.26]</td>
</tr>
<tr>
<td>VS-12</td>
<td>Ø 0.400 [10.31]</td>
</tr>
<tr>
<td></td>
<td>Ø 0.475 [12.07]</td>
</tr>
<tr>
<td>VS-15</td>
<td>Ø 0.640 [16.26]</td>
</tr>
<tr>
<td></td>
<td>Ø 0.806 [20.00]</td>
</tr>
<tr>
<td>VS-30</td>
<td>Ø 0.610 [15.49]</td>
</tr>
<tr>
<td></td>
<td>Ø 1.198 [30.43]</td>
</tr>
<tr>
<td>VS-40</td>
<td>Ø 0.610 [15.49]</td>
</tr>
<tr>
<td></td>
<td>Ø 1.590 [40.43]</td>
</tr>
<tr>
<td>VSB-12</td>
<td>Ø 0.478 [12.14]</td>
</tr>
<tr>
<td></td>
<td>Ø 0.72 [18.30]</td>
</tr>
<tr>
<td>VSB-20</td>
<td>Ø 0.588 [14.94]</td>
</tr>
<tr>
<td></td>
<td>Ø 0.780 [19.81]</td>
</tr>
</tbody>
</table>
SEAL SCIENCE VACUUM CUPS

ILSEMANN TYPE

PART NUMBER / DASH NUMBER INDICATES APPROXIMATE LIP DIAMETER IN MILLIMETERS

FA-3 fitting

VAB-9

VIB-16

VT-17 CLEATED

VT-24.5 CLEATED

* INDICATES HOLE SIZE AT TOP OF VACUUM CUP

METAL REINFORCED HEAVY DUTY VACUUM CUP

PART NUMBER / DASH NUMBER INDICATES APPROXIMATE LIP DIAMETER IN MILLIMETERS

MHD-740

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E-mail: info@sseast.com

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SEAL SCIENCE PRINTER PADS

WE CAN LAMINATE, MOLD, ADHESIVE BACK AND CLOSE TOLERANCE GRIND FOR THE BEST PERFORMANCE

VP-427 DUBUIT STYLE
VP-658 JCPL STYLE
VP-931 MONOLINER STYLE
VP-932 AUTOROLL STYLE
VP-936 MONOLINER STYLE
VP-942 AUTOROLL STYLE
VP-947 KAMMANN STYLE
VP-948 KAMMANN STYLE
VP-951 OMSO STYLE
VP-955 BONDER
VP-967 GUANN YINN STYLE
VP-968 AUTOTEC STYLE
VP-974 KAMMANN STYLE
VP-975 KAMMANN STYLE

Available in the following UV Resistant materials with revolutionary Seal Science "E-Z Peel" adhesive:
- SR 6065 - Reinforced Silicone
- NW3060 - Non-Marking White Polymer
- Bet 190 - Black Polymer
Note: Availability may vary by pad thickness

West Coast Office: 1-800-576-SEAL
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E-mail: info@ssseast.com

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NEW DISC HANDLING STYLES

PART NUMBER / DASH NUMBER INDICATES APPROXIMATE LIP DIAMETER IN MILLIMETERS

VAB 2.5-7
VAB 6.5
VAB 8.75
VAB 18

VAB 21
VAB 25
VAN 8
VAP 22

VIB 25
VR 1406
VR 1430
VR 1434

VR 1436
VR 1438
VRB 1412
VRB 1610

* INDICATES HOLE SIZE AT TOP OF VACUUM CUP
SEAL SCIENCE VACUUM CUPS

NEW DISC HANDLING STYLES

PART NUMBER / DASH NUMBER INDICATES APPROXIMATE LIP DIAMETER IN MILLIMETERS

**NOTES:**

* INDICATES HOLE SIZE AT TOP OF VACUUM CUP
ABOUT SEAL SCIENCE

Seal Science's success is based on our design and manufacturing expertise in rubber and plastics, with special emphasis on materials, seals and seal systems. Seal Science's engineering, molding, stamping, machining, and specialty fabrication operations can provide you with quality products on a timely basis. We've got your solutions. Call Seal Science at 1-800-576-SEAL. YOUR VACUUM CUP AND SEAL SPECIALISTS.

SEAL SCIENCE PRODUCTS VIEW

- **TYPE A**
  - O-Rings

- **TYPE ELC**
  - Elastomeric U-Cups

- **TYPE ELW**
  - Elastomeric Rod Wiper

- **TYPE CR**
  - Cap Seal Assemblies/Rod

- **TYPE CP**
  - Cap Seal Assemblies/Piston

- **TYPE CRC**
  - Channel Seal Assemblies/Rod

- **TYPE CPS**
  - Channel Seal Assemblies/Piston

- **TYPE EP/ER**
  - Spring Energized Elastomeric Seals

- **TYPE ES**
  - Elastomeric Rod Wiper

- **TYPE TR**
  - T-Seals/Rod

- **TYPE TP**
  - T-Seals/Piston

- **TYPE SR/SP**
  - Spring Energized TFE Seals

- **TYPE SRS**
  - Spring Energized TFE Rod Wipers

- **TYPE SN/SD/SB**
  - PolyKing™ U-Cup Seals

- **TYPE SNS/SDS/SBS**
  - PolyKing™ Seals Spring Energized

- **VACUUM CUPS**

- **GASKETS**

- **EXTRUSIONS**

- **MOLDED RUBBER**

- **O-RINGS**

Visit our website at www.sealscience.com