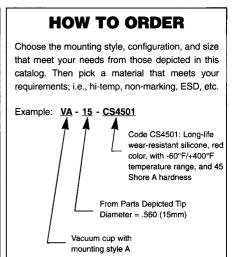


STANDARD, CUSTOM AND RETROFIT DESIGNS

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*				
CODE	DESCRIPTION	HARDNESS	TEMPERATURE RANGE	COLOR
CS4501	Long-Life Wear-Resistant Silicone	45A	-60°F to +400°F	Red
CS4502	Long-Life Wear-Resistant Silicone	45A	-60°F to +400°F	Opaque
CS6014	Long-Life Wear-Resistant Silicone	60A	-60°F to +400°F	Burnt Orange
CS5014	High-Temperature Silicone	50A	-60°F to +450°F	Red
CS5500	Conductive Silicone	55A	-80°F to +400°F	Black
CS3007	Long-Life Wear Resistant Silicone	30A	-60°F to +400°F	Opaque
CS6016	Long-Life Wear Resistant Silicone	60A	-60°F to +400°F	Clear
CC5006	Tack-Free Long-Wear Chloroprene	50A	-40°F to +225°F	Black
CP4502	ESD Limiting Plastic Blend	45A	-40°F to +250°F	Gray
CS5024	Long-Life Wear-Resistant Silicone	50A	-50°F to +392°F	Clear
CPI7001	Polyurethane Blend	70A	-20°F to +180°F	Purple
CVI6001	Vinyl	60A	0°F to +150°F	Purple



- 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.

O-RINGS AND SEALS FOR VACUUM SERVICE

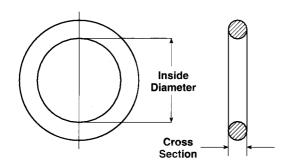
High vacuum causes elastomeric materials to lose weight and therefore volume by extracting certain absorbed gasses and other volatile components. This weight/volume loss coupled with air permeability of certain elastomer compounds suggests that fluorocarbon materials should be considered for most vacuum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

	Section Section	X	Inside Diameter	Number
Inch STD size	.070	Х	.239	-010
Metric size (mm)	1.78	Х	6.07	1.78 x 6.07
JIS size (mm)	1.90	X	2.80	P3

West Coast Office:

Visit our website at www.sealscience.com

East Coast Office:

1-800-261-SEAL

TABLE OF CONTENTS

Description	Page #
Vacuum Cup Style VA-Barb Type drawings	2
Vacuum Cup Style VA-Barb Type drawings (con't)	3
Vacuum Cup Bellows Style VAB-Barb Type drawings	4
Vacuum Cup Style VXF/VXB-Flange Type drawings	5
Vacuum Cup Style VX/VXS-Flange Type drawings	6
Vacuum Cup Style VX/LX/LXB-Flange Type drawings	7
Vacuum Cup Style Large VXF-HR Type drawings	8
Vacuum Cup Style Large VXB-HR Type drawings	9
Vacuum Cup Style VS/VSB-Star Robot Type drawings	10
Vacuum Cup Style VAB/VIB/VT-Ilsemann Type drawings	11
Vacuum Cup Style MHD - Metal Reinforced Type Drawings	11
Vacuum Handling and Take Out Rings	12
Printer & Bonder Pads	13
Vacuum Cup New Disc Handling Styles	14 & 15
Printing Press & Collator Suction Cups	16
Seal Science Product Review	Inside back cover

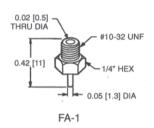
The items illustrated in this brochure are just a few examples of the styles of VACUUM CUPS, RINGS AND PADS we manufacture. Please consult SEAL SCIENCE with your requirements for availability.

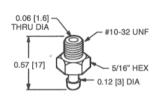
SEE INSIDE BACK COVER FOR OTHER SEAL SCIENCE PRODUCTS.

STYLE VA – BARB TYPE

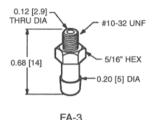
PART NUMBER / DASH NUMBER INDICATES APPROXIMATE LIP DIAMETER IN MILLIMETERS

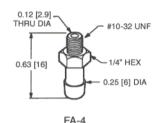
BARB TYPES

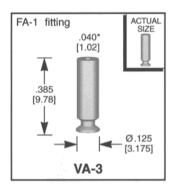


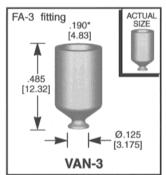


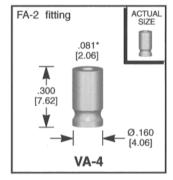
FA-2

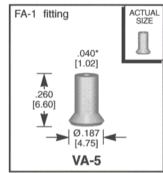


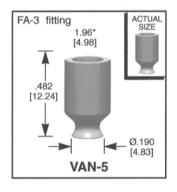


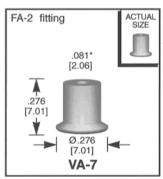


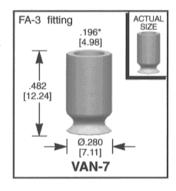


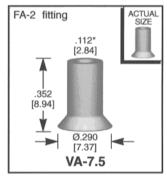


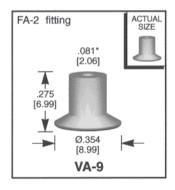


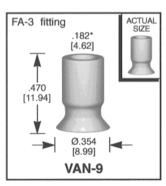


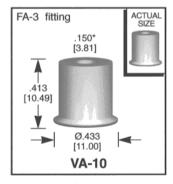










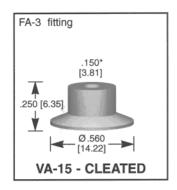




* INDICATES HOLE SIZE AT TOP OF VACUUM CUP

STYLE VA - BARB TYPE

PART NUMBER / DASH NUMBER INDICATES APPROXIMATE LIP DIAMETER IN MILLIMETERS















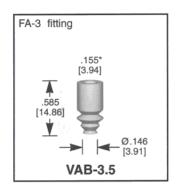


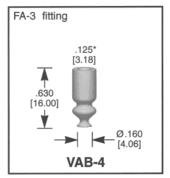
* INDICATES HOLE SIZE AT TOP OF VACUUM CUP

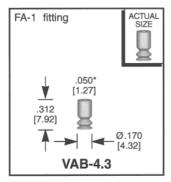
NOTES:

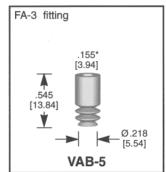
BELLOWS STYLE VAB - BARB TYPE

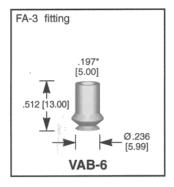
PART NUMBER / DASH NUMBER INDICATES APPROXIMATE LIP DIAMETER IN MILLIMETERS

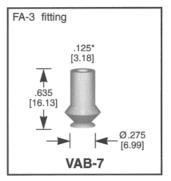


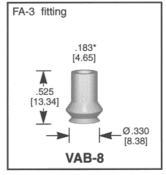


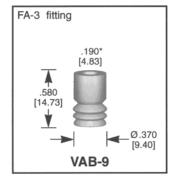


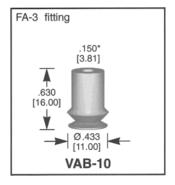


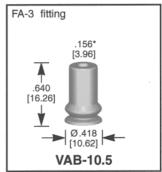


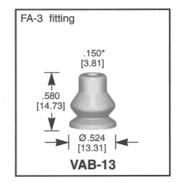


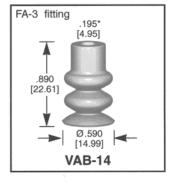


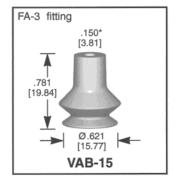


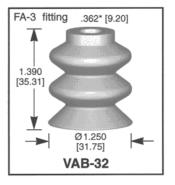












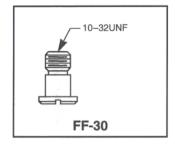
* INDICATES HOLE SIZE AT TOP OF VACUUM CUP

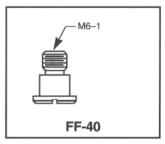
1-800-576-SEAL

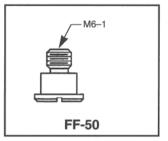
STYLE "X" MOUNT - FLANGE TYPE

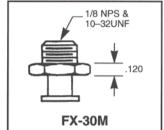
PART NUMBER / DASH NUMBER INDICATES APPROXIMATE LIP DIAMETER IN MILLIMETERS

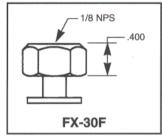
FITTINGS

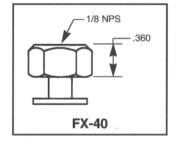


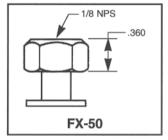




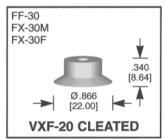


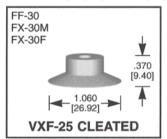


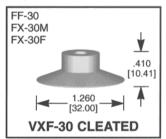


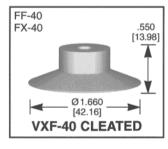


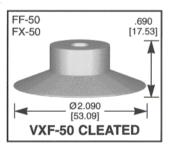
FLAT VACUUM CUPS



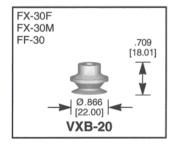


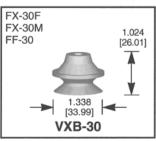


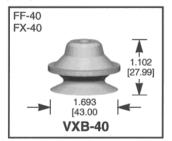


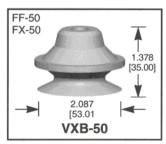


BELLOWS STYLE









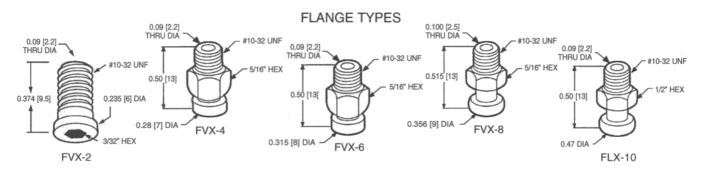
West Coast Office:

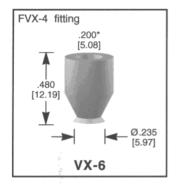
1-800-576-SEAL E-mail: info@sealscience.com Visit our website at www.sealscience.com

East Coast Office:

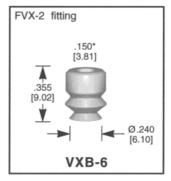
STYLE VX - FLANGE TYPE

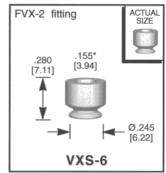
PART NUMBER / DASH NUMBER INDICATES APPROXIMATE LIP DIAMETER IN MILLIMETERS

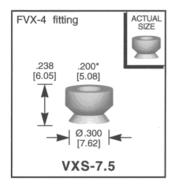


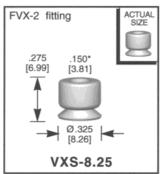


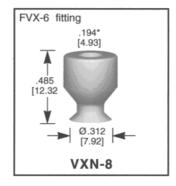


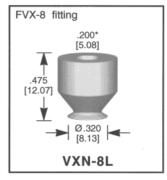


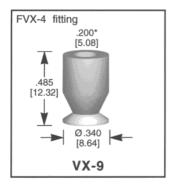


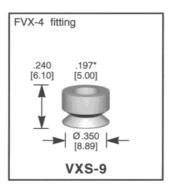


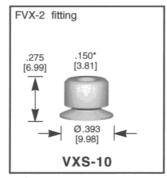


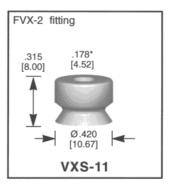










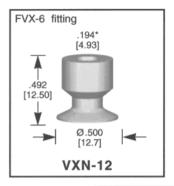


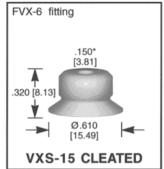
* INDICATES HOLE SIZE AT TOP OF VACUUM CUP

Page 6

STYLE VX - FLANGE TYPE (con't)

PART NUMBER / DASH NUMBER INDICATES APPROXIMATE LIP DIAMETER IN MILLIMETERS

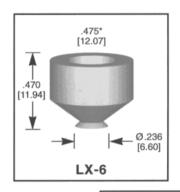


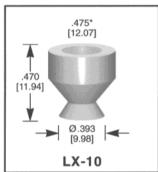


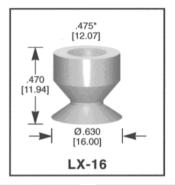


STYLE LX/LXB - FLANGE TYPE

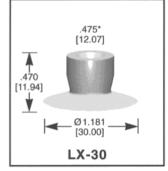
ALL LX & LXB STYLES USE THE FLX-10 FITTINGS



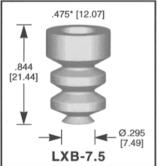


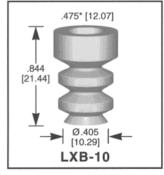


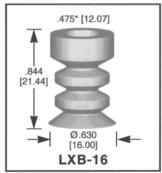


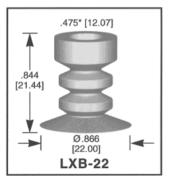










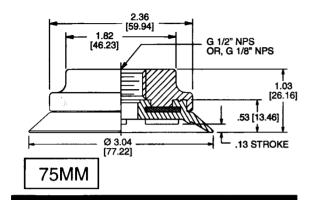


* INDICATES HOLE SIZE AT TOP OF VACUUM CUP

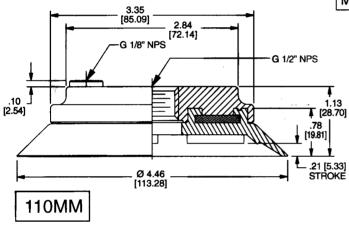
West Coast Office: 1-800-576-SEAL Visit our website at www.sealscience.com

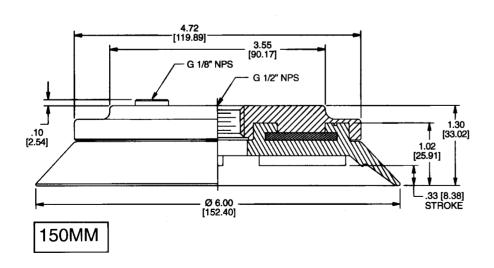
East Coast Office: 1-800-261-SEAL

STYLE "X" MOUNT - LARGE FLAT **FLANGE TYPES**



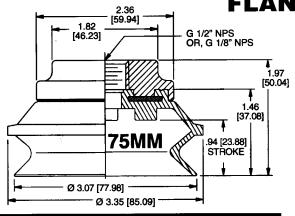
CUP DIAMETER	75MM	110MM	150MM
NITRILE CUP	VXF 75N	VXF 110N	VXF 150N
CUP + 1/8" FITTING	FF-7518	N/A	N/A
CUP + 1/2" FITTING	FF-7512	FF-110	FF-150
CUP WEIGHT	1.2 oz	3.4 oz	8.3 oz
CUP + FITTING WT	3.8 oz	8.2 oz	16.5 oz
INTERNAL VOLUME	1.2 cu in	4.3 cu in	9.8 cu in
FORCE @ 6" Hg	18 lb	32 lb	67 lb
FORCE @ 18" Hg	45 lb	94 lb	191 lb
MINIMUM RADIUS	5.9"	9.8"	19.7"



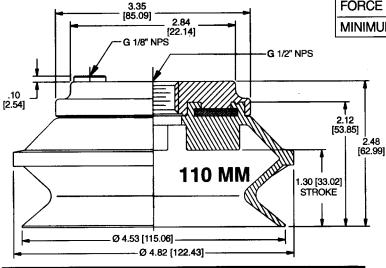


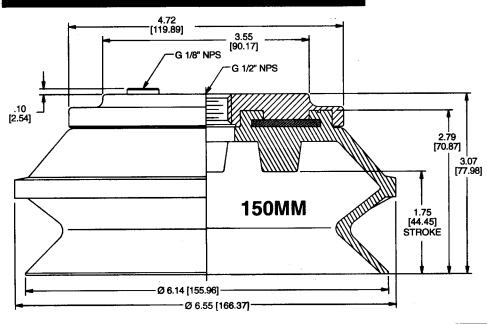
E-mail: info@sealscience.com

STYLE "X" MOUNT - LARGE BELLOWS FLANGE TYPES



CUP DIAMETER	75MM	110MM	150MM
NITRILE CUP	VXB 75N	VXB 110N	VXB 150N
CUP + 1/8" FITTING	FF-7518	N/A	N/A
CUP + 1/2" FITTING	FF-7512	FF-110	FF-150
CUP WEIGHT	1.9 oz	4.8 oz	12 oz
CUP + FITTING WT	4.6 oz	11.0 oz	19.7 oz
INTERNAL VOLUME	6.7 cu in	19 cu in	40 cu in
FORCE @ 6" Hg	16 lb	30 lb	66 lb
FORCE @ 18" Hg	37 lb	77 lb	154 lb
MINIMUM RADIUS	1.6"	2.4"	3.0"





West Coast Office:

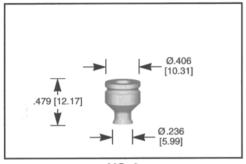
Visit our website at www.sealscience.com

East Coast Office:

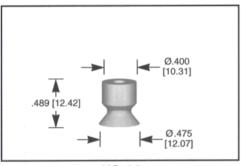
1-800-576-SEAL

STAR ROBOT TYPE

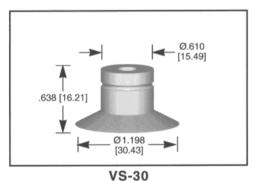
PART NUMBER / DASH NUMBER INDICATES APPROXIMATE LIP DIAMETER IN MILLIMETERS



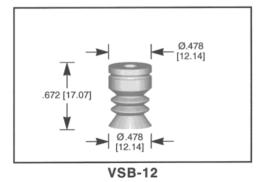
VS-6



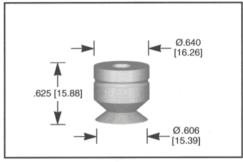
VS-12



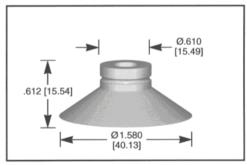
.



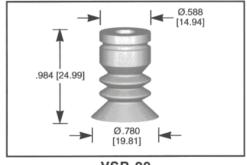
VS-8



VS-15



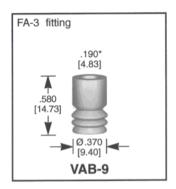
VS-40

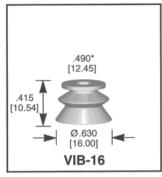


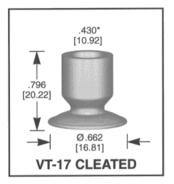
VSB-20

ILSEMANN TYPE

PART NUMBER / DASH NUMBER INDICATES APPROXIMATE LIP DIAMETER IN MILLIMETERS





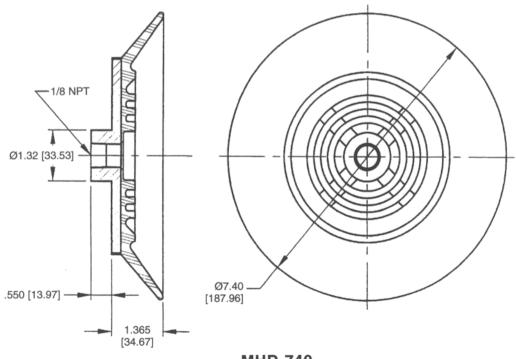




* INDICATES HOLE SIZE AT TOP OF VACUUM CUP

METAL REINFORCED HEAVY DUTY VACUUM CUP

PART NUMBER / DASH NUMBER INDICATES APPROXIMATE LIP DIAMETER IN MILLIMETERS



MHD-740

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

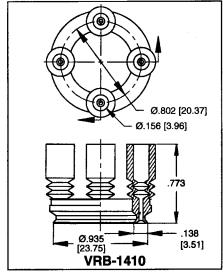
Visit our website at www.sealscience.com

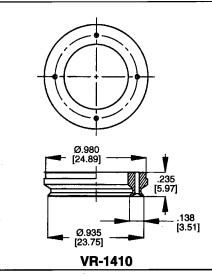
East Coast Office:

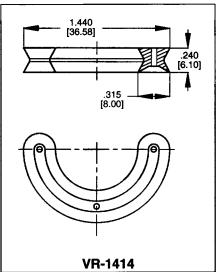
E-mail: info@sseast.com

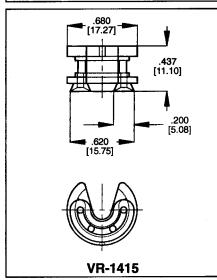
SEAL SCIENCE VACUUM RINGS

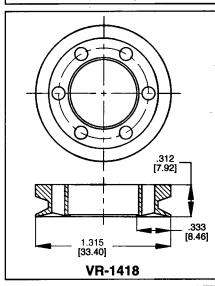
EXCEPTIONAL QUALITY • CLOSE TOLERANCE MOLDED • MANY POSSIBLE COMPOUNDS

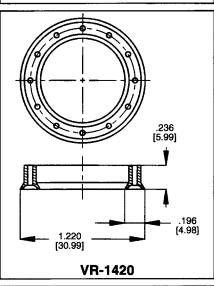


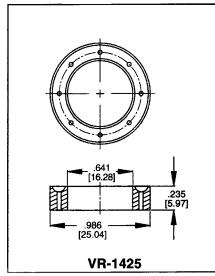


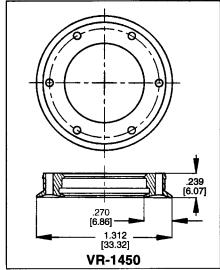


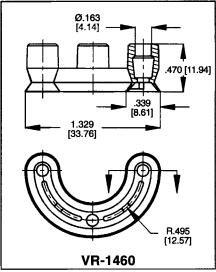












West Coast Office:

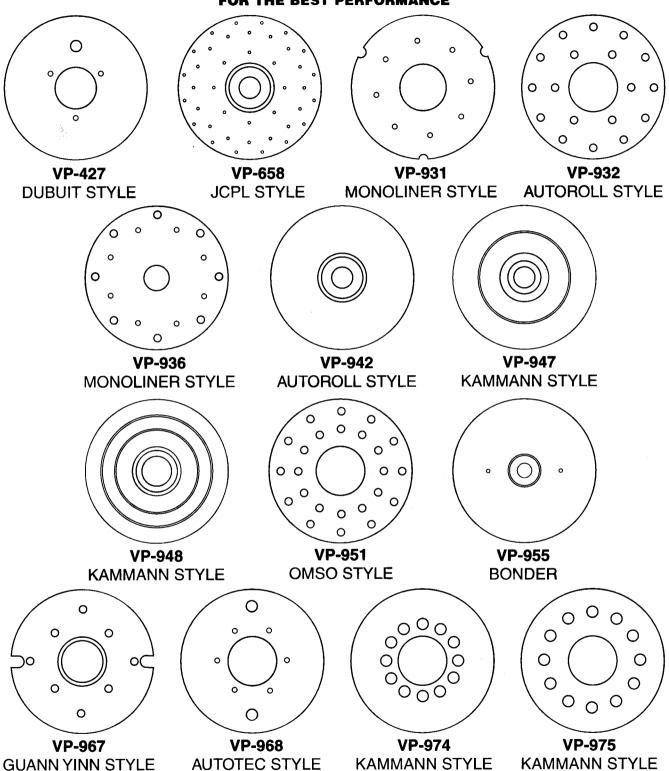
1-800-576-SEAL

Visit our website at www.sealscience.com

East Coast Office:

SEAL SCIENCE PRINTER PADS

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



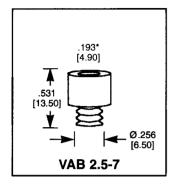
Available in the following UV Resistant materials with revolutionary Seal Science "E-Z Peel" adhesive:

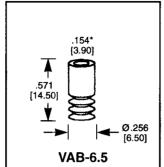
• SR 6065 - Reinforced Silicone • NW3060 - Non-Marking White Polymer • Bet 190 - Black Polymer

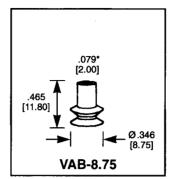
Note: Availability may vary by pad thickness

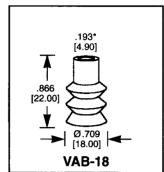
NEW DISC HANDLING STYLES

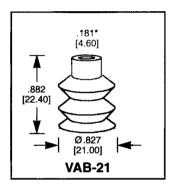
PART NUMBER / DASH NUMBER INDICATES APPROXIMATE LIP DIAMETER IN MILLIMETERS

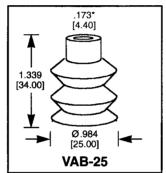


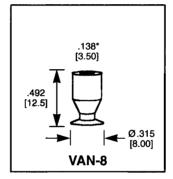


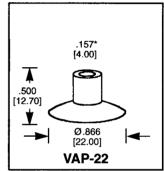


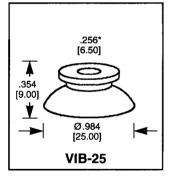


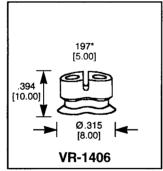


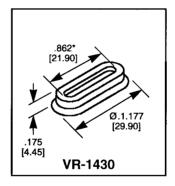


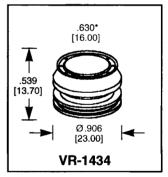


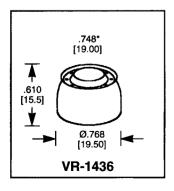


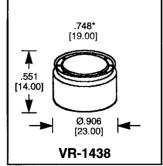


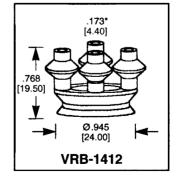


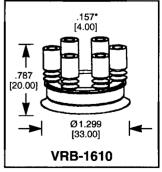








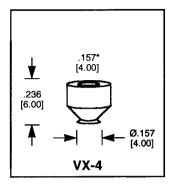


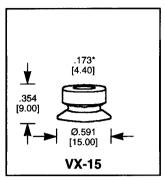


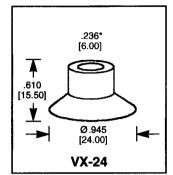
* INDICATES HOLE SIZE AT TOP OF VACUUM CUP

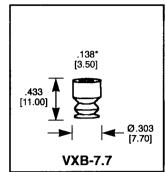
NEW DISC HANDLING STYLES

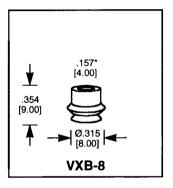
PART NUMBER / DASH NUMBER INDICATES APPROXIMATE LIP DIAMETER IN MILLIMETERS

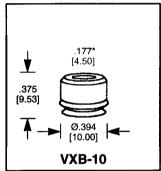


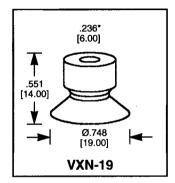


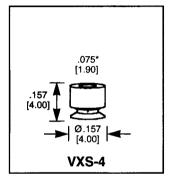












NOTES:

PRINTING PRESS & COLLATOR SUCTION CUPS

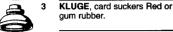


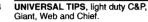
KLUGE, Paper suckers, Red or aum rubber

1P - PLASTIC SUCKER



- KLUGE, Narrow Margin Sucker, very handy in tight places
- KLUGE, card suckers Red or







UNIVERSAL TIPS, heavy duty C&P. Giant, Web and Chief.

MACEY COLLATOR,



HARRIS pickup sucker for cardboard. HARRIS old style, Giant, Web, Chief, Harris, for cardboard. Gum rubber,



think, regular or heavy, or black poly HARRIS old style, Giant, Web, Chief,



Harris, for paper



MILLER Simplex, Major, South worth envelope press suction feed. Fits 1/4" tube. For paper.



MILLER Simplex, Major, for cardboard. Gum rubber or black.



HARRIS 90 ELB fits most presses. Mann, Macey Collator & Stitcher, 6E7 - paper.





12 HARRIS 1361 LTN fits most presses, for paper Gum rubber or silicone.



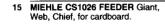
a - MIEHLE CS 3122 FEEDER, Superchief light for warder, Miller, Didde Glaser Collator, for paper.



b - MIEHLE CS3124 FEEDER. Superchief heavy forwarder, Dexter, Giant, for cardboard. Both fit Ebco



MIEHLE CS427 FEEDER, Farrington Collator, Giant, Web, Chief, for paper





15a MACEY COLLATOR Harris pickup sucker, for paper.



C&P, RICE, Kluge "D" delivery for paper and light cardboard.



19 FLAT RUBBER SUCTION DISCS. Over 50 different sizes available up to 2". Submit sample. More information on back page.



HEIDELBERG SUCKER, KLUGE, new style, 7/8" across. Delivery gripper will not tear this.



RUBBER SUCTION TIP, 5/8" across fits inserting and gathering machines. Sheridan McCain. Philipsburg. Various compounds available. Submit sample.



23a DEXTER RGA 717, raised inside pattern for light stock. Submit sample



55 MF MIEHLE FEEDERS. MF 3968 and ATF Superchief pickup suckers.



MF MIEHLE FEEDERS. MF 3336 and packaging machines. Fits 1/2" tube. For light stock. Gum rubber or Neo.



HARRIS 1108, fits 5/8" tube, for heavy stock.



MIEHLE STREAM FEEDER, CS 11398, packaging machines. Occasionally replaces 3122, 3123, 3124, Fits 1/2" tube - 1/3/8" across. Gum rubber or poly.



HARRIS 956-ELB, fits 5/16" tube 1-3/8" across. For light stock.



MF MIEHLE FEEDERS. MF 3558 package machines, Superchief tissue suckers. Fits 1/2" tube - 1" across. For light stock. Gum rubber or Neo.



HARRIS 391-ELB, fits 5/16" tube -1-3/8" across. For heavy stock.



CS MIEHLE FEEDERS. CS-357, 1-1/4" across

MIEHLE FEEDERS,



SHERIDAN & other collators with 1/8" tube



K-1196. A.B. DICK, BIG FOOT molded sucker.



For all presses with 1/4" bottom tube. Regular & Heavy. HARRIS polyurethane, 3361-LTY.



Occasionally replaces 59 & 61. Fits 5/16" tube. 1-3/4" across. For heavy



HEIDELBERG Cylinders. Cup shape prevents snap-back. 1-1/8" across.



MULLER collating and gathering machines. Red or Black.



MIIILER collating & gathering machines. Green.



HAMADASTAR printing press.



ASTRO AND SANDMAR envelope & sheet feeders. Specify medium or



60

ATF - Commander 29 Speiss feeders. 80 Heidelberg. For thin stock.



KLOCKNER 18092-1 packaging machines. 1-1/8" across. 1/2" high. Black, Red, Blue or Tan.



RYOBI Ryobi-Itek



HEIDELBERG GTO Offset presses. Gum rubber or poly.



KLOCKNER 18092 packaging machines. 1-1/2" across. 3/4" high. Black, Red, Blue or Tan.



HAMADA CK 02-77 printing presses



HARRIS 398-0026 7/8" across bottom.



90 **TOKO DVY-9-R1** MULTI 1218-CJ-11 IMPERIAL CJ-11 Bourg Modulen Collator



HAMADA H05-49-01-3 Black plastic tube. 92 HEIDELBERG 22.016.008

For T-Press TOK-TOM



920 HEIDEL BERG QUICKMASTER



MULLER 020.1913 Collating and gathering machines.



PHILLIPSBURG Inserters, bellows type, Black, McCain, bellows type.



McCAIN bellows type.

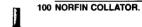


HARRIS/AURELIA bellows type. 1-1/4" across, 1" high.



RYOBI, 5640-35-531. HEIDELBERG 42.016.073.





101 UHLMANN PACKAGING



102 HORIZON COLLATOR, 3013. Small dark grey sucker.



103 HORIZON COLLATOR 3015, Large blue sucker.



Bellows type sucker.



105 HAMADA bellows cup, 6901-05057. 106 BOURG MODULEN COLLATOR.



107 A.B. DICK CENTURY 3000. Bellows type sucker.



125 CUMMINGTON collator. Miehle Vertical for cardboard



124L CHIEF 24 Light. For Light stock

124HCHIEF 24 Heavy. For Heavy Stock.



MIEHLE CS and other feeders. For heavy stock or sheet metal. 1-7/8" high. 1-1/4" across. Fits 1/2" OD tube or 1/2" pipe.



MIEHLE CS and other feeders. For cardboard 1" high. 1-1/4" across. Fits 1/2" OD tube.



RTF 1648

MIEHLE TE and other feeders. For cardboard or sheet metal. 1-7/16 high, 1-9/16" across. Fits. 3/4" OD tube or 1/2" pipe.

MIEHLE TF and other feeders. For cardboard or sheet metal. 2-1/8" high. 2-1/2" across. Fits 3/4" OD tube or 1/2" pipe. Gum rubber or Neo.

West Coast Office:

1-800-576-SEAL

E-mail: info@sealscience.com

Visit our website at www.sealscience.com

Page 16

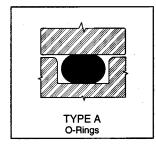
East Coast Office: 1-800-261-SEAL

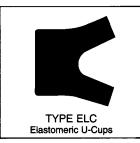
E-mail: info@sseast.com

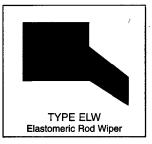
ABOUT SEAL SCIENCE

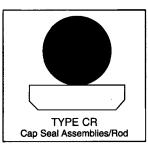
Seal Science's success is based on our design and manufacturing expertise in rubber and plastics, with special emphasis on materials, seals and seal systems. Seal Science's engineering, molding, stamping, machining, and specialty fabrication operations can provide you with quality products on a timely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

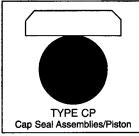
SEAL SCIENCE PRODUCTS VIEW

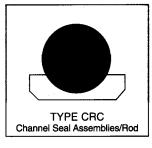


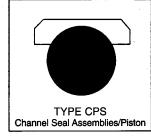


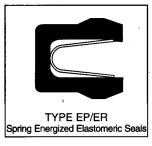


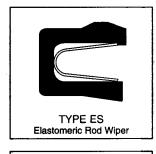


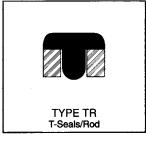


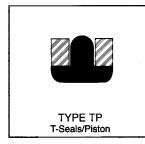


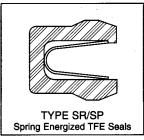




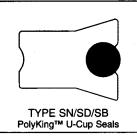


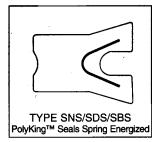


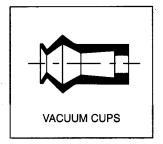


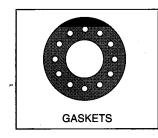




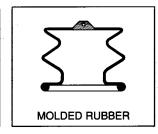


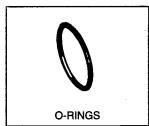














Here at Seal Science we proudly manufacture a wide range of products from a large variety of materials. Including but not limited to:

- Vacuum cups
- · Molded and machined engineered plastics
- · Tight tolerance rubber grinding
- · Custom compounding of PTFE and rubber
- Conductive elastomers
- · O-rings and Back-up rings (inch, metric and JIS)
- · Custom seals of rubber, PTFE, plastic and metal
- · Rubber bonding to metal and plastic
- Custom Diaphragms
- Gaskets
- Engineered plastic bearings



SEAL SCIENCE, INC.

West Coast Office:

Seal Science, Incorporated

17131 Daimler

Irvine, CA 92614-5508

TEL: (949) 253-3130

FAX: (949) 253-3141

E-MAIL: info@sealscience.com

East Coast Office:

Seal Science, Incorporated

6343 Winside Drive

Bethlehem, PA 18017-9350

TEL: (610) 837-8787

FAX: (610) 837-8789

E-MAIL: info@sseast.com

Visit our website at www.sealscience.com

The information contained in this catalog is based on reliable sources, test data and our experience. We believe it to be accurate. However, it is intended only as a guide for use at your discretion. The performance of seals depends on many factors not necessarily in Seal Science Incorporated's control. Seal Science Incorporated is not responsible for design suitability. Therefore, it is strongly recommended that you have the part(s) tested in your assembly, using your equipment, material and manpower. There are no warranties which extend beyond the description in this catalog. Seal Science Incorporated assumes no liability for special or consequential damages.

