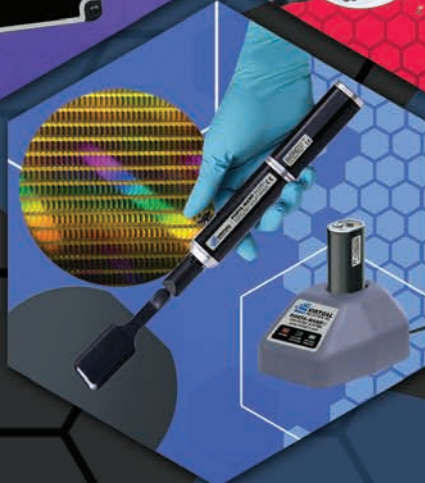
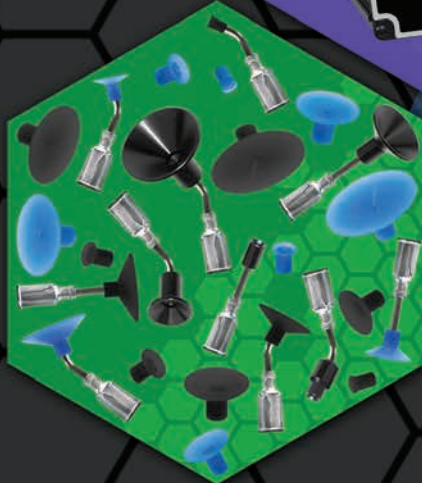




# VIRTUAL INDUSTRIES, INC.



## VACUUM TWEEZERS AND KITS



This vacuum tweezer uses an integrated ten segment bar-graph-display that visibly shows the vacuum level present during operation. The bar graph will show minimum vacuum pressure until a part is grasped and then when a part is grasped the bar graph displays the vacuum level presented to the part being handled. Additionally, the vacuum port integrates a user replaceable inlet filter that protects operation of the tool from dust particles. This Vacuum Tweezer is available in various kits depending on your handling application. Kits are available in 110 or 220 volt operation.

**These ESD-SAFE kits feature:**

- Five vacuum tip holders on top of tool.
- Bar graph power-on and vacuum-level indicator.
- Rubber no-skid feet.
- ESD ground connection is by three wire power cord.
- Produces vacuum of up to ten inches of mercury.
- Long life pump.
- Side mounted handle holder.
- Replaceable inlet filter (additional spare intake filter included).
- Dimensions 8" X 3" X 3.5" (203mm X 76mm X 89mm).
- Class 100 Cleanroom Safe



**TWEEZER VAC® Elite ESD-SAFE Kit With Buna-N Static Dissipative Non-Marking Vacuum Cups With Probes**

**This kit includes:**

- COILED-VACUUM-HOSE-5 (VCH-2.5MM-5 BLACK)
- PUSH-BUTTON-VACUUM-PEN (VVP-200-2.5MM)
- VACUUM-CUP-KIT-9 (VCS-9-B)
- 3 WIRE POWER CORD
- NO FOOT SWITCH OPTION AVAILABLE

TV-1500-ELITE-110

TV-1500-ELITE-220



**TWEEZER VAC® Elite ESD-SAFE Kit With ESD-SAFE Delrin Small Parts Tips And Buna-N Static Dissipative Non-Marking Vacuum Cups With Probes**

**This kit includes:**

- COILED-VACUUM-HOSE-5 (VCH-2.5MM-5 BLACK)
- PUSH-BUTTON-VACUUM-PEN (VVP-200-2.5MM)
- VACUUM-CUP-KIT-9 (VCS-9-B)
- ESD-SAFE DELRIN SMALL PARTS TIPS (VSPT-TIPS-8-BD)
- 16 POSITION TIP ORGANIZER/HOLDER (VTH-16).
- 3 WIRE POWER CORD
- NO FOOT SWITCH OPTION AVAILABLE

TV-1500-ELITE-SP8-BD-110

TV-1500-ELITE-SP8-BD-220



**TWEEZER VAC® Elite ESD-SAFE Kit With Foot Switch, Buna-N Static Dissipative Non-Marking Vacuum Cups With Probes**

**This kit includes:**

- COILED-VACUUM-HOSE-5 (VCH-2.5MM-5 BLACK)
- PUSH-BUTTON-VACUUM-PEN (VVP-200-2.5MM)
- FOOT SWITCH (VFS-X) WITH INTERNAL SOLENOID
- VACUUM-CUP-KIT-9 (VCS-9-B)
- 3 WIRE POWER CORD

TV-1500-ELITE-FS-110

TV-1500-ELITE-FS-220



**TWEEZER VAC® Elite ESD-SAFE Kit With Foot Switch, ESD-SAFE Delrin Small Parts Tips And Buna-N Static Dissipative Non-Marking Vacuum Cups With Probes**

**This kit includes:**

- COILED-VACUUM-HOSE-5 (VCH-2.5MM-5 BLACK)
- PUSH-BUTTON-VACUUM-PEN (VVP-200-2.5MM)
- FOOT SWITCH (VFS-X) WITH INTERNAL SOLENOID
- VACUUM-CUP-KIT-9 (VCS-9-B)
- ESD-SAFE DELRIN SMALL PARTS TIPS (VSPT-TIPS-8-BD)
- 16 POSITION TIP ORGANIZER/HOLDER (VTH-16).
- 3 WIRE POWER CORD

TV-1500-ELITE-FS-SP8-BD-110

TV-1500-ELITE-FS-SP8-BD-220



**Intake Replacement Filters**

Replacement filter for TV-1500 and Adjust-A-Vac units. Includes a set of five 40 micron replaceable filters.

VF-40M-5



This vacuum-tweezer allows the operator to adjust the vacuum level from just below atmospheric pressure to up to ten inches of mercury depending on the fragility of the part being handled. An integrated ten segment bar-graph-display visibly shows the vacuum level present during handling operations. The bar graph will show minimum vacuum pressure until a part is grasped and then the bar graph displays the vacuum level presented to the part being handled. Additionally, the vacuum port integrates a user replaceable inlet filter that protects operation of the tool from dust particles. Kits are available in 110 or 220 volt operation.

**These ESD-SAFE kits feature:**

- Five vacuum tip holders on top of tool.
- Bar graph power-on and vacuum-level indicator.
- Adjustment knob for vacuum level.
- Rubber no-skid feet.
- ESD ground connection is by three wire power cord.
- Produces vacuum of up to ten inches of mercury.
- Long life pump.
- Side mounted handle holder.
- Replaceable inlet filter (additional spare intake filter included).
- Optional: Foot switch systems (FS models only).
- Dimensions 8" X 3" X 3.5" (203mm X 76mm X 89mm).
- Class 100 Cleanroom Safe



**ADJUST-A-VAC® ESD-SAFE Kit With Buna-N Static Dissipative Non-Marking Vacuum Cups With Probes**

**This kit includes:**

- COILED-VACUUM-HOSE-5 (VCH-2.5MM-5 BLACK)
- PUSH-BUTTON-VACUUM-PEN (VVP-200-2.5MM)
- VACUUM-CUP-KIT-9 (VCS-9-B)
- 3 WIRE POWER CORD
- NO FOOT SWITCH OPTION AVAILABLE

AV-6000-110

AV-6000-220



**ADJUST-A-VAC® Elite ESD-SAFE Kit With ESD-SAFE Delrin Small Parts Tips And Buna-N Static Dissipative Non-Marking Vacuum Cups With Probes**

**This kit includes:**

- COILED-VACUUM-HOSE-5 (VCH-2.5MM-5 BLACK)
- PUSH-BUTTON-VACUUM-PEN (VVP-200-2.5MM)
- VACUUM-CUP-KIT-9 (VCS-9-B)
- ESD-SAFE DELRIN SMALL PARTS TIPS (VSPT-TIPS-8-BD)
- 16 POSITION TIP ORGANIZER/HOLDER (VTH-16).
- 3 WIRE POWER CORD
- NO FOOT SWITCH OPTION AVAILABLE

AV-6000-SP8-BD-110

AV-6000-SP8-BD-220



**ADJUST-A-VAC® ESD-SAFE Kit With Foot Switch, Buna-N Static Dissipative Non-Marking Vacuum Cups With Probes**

**This kit includes:**

- COILED-VACUUM-HOSE-5 (VCH-2.5MM-5 BLACK)
- PUSH-BUTTON-VACUUM-PEN (VVP-200-2.5MM)
- FOOT SWITCH (VFS-X) WITH INTERNAL SOLENOID
- VACUUM-CUP-KIT-9 (VCS-9-B)
- 3 WIRE POWER CORD

AV-6000-FS-110

AV-6000-FS-220



**ADJUST-A-VAC® Elite ESD-SAFE Kit With Foot Switch, ESD-SAFE Delrin Small Parts Tips And Buna-N Static Dissipative Non-Marking Vacuum Cups With Probes**

**This kit includes:**

- COILED-VACUUM-HOSE-5 (VCH-2.5MM-5 BLACK)
- PUSH-BUTTON-VACUUM-PEN (VVP-200-2.5MM)
- FOOT SWITCH (VFS-X) WITH INTERNAL SOLENOID
- VACUUM-CUP-KIT-9 (VCS-9-B)
- ESD-SAFE DELRIN SMALL PARTS TIPS (VSPT-TIPS-8-BD)
- 16 POSITION TIP ORGANIZER/HOLDER (VTH-16).
- 3 WIRE POWER CORD

AV-6000-FS-SP8-BD-110

AV-6000-FS-SP8-BD-220



**Optional Vacuum Pen With No Control Hole**

Vacuum pen with no push button or control hole to get in the way, for use with foot switch.

V3021-2.5mm



**TV-1000 TWEEZER-VAC® Vacuum Tweezer Kits**

A general purpose vacuum handling tool that plugs directly into your line voltage, Volt 50/60 Hz. This compact unit will handle a wide variety of parts used in industry today. The long-life diaphragm vacuum pump generates up to 10 inches of mercury with an open air flow of 2.3 lpm. The unit connects to ground automatically with a three-wire power cord. Optional tips that can be used include our small part tips, rigid delrin tips and our multiple cup tips. Kits are available in 110 or 220 volt operation.

**This ESD-SAFE kit features:**

- Dimensions 7-1/4" X 3" X 2-1/2"  
(185mm X 76mm X 64mm).
- Long-life pump.
- Lighted On/Off switch.
- Side mounted handle holder.
- Whisper-quiet operation.
- Rubber no-skid feet.
- Class 100 Cleanroom Safe



**TV-1000 TWEEZER-VAC® ESD-SAFE Kit With Buna-N Static Dissipative Non-Marking Vacuum Cups With Probes**

**This kit includes:**

- COILED-VACUUM-HOSE-5 (VCH-1/16-5)
- PUSH-BUTTON-VACUUM-PEN (VVP-200-1/16)
- VACUUM-CUP-KIT-9 (VCS-9-B)
- 3 WIRE POWER CORD

**TV-1000-110**

**TV-1000-220**



**TV-1000 TWEEZER-VAC® Kit With ESD-SAFE Delrin Small Parts Tips**

**This kit includes:**

- COILED-VACUUM-HOSE-5 (VCH-1/16-5)
- PUSH-BUTTON-VACUUM-PEN (VVP-200-1/16)
- VACUUM-CUP-KIT-9 (VCS-9-B)
- ESD-SAFE DELRIN SMALL PARTS TIPS (VSPT-TIPS-8-BD)
- 16 POSITION TIP ORGANIZER/HOLDER (VTH-16)
- 3 WIRE POWER CORD

**TV-1000-SP8-BD-110**

**TV-1000-SP8-BD-220**



**POPULAR Accessories**

**Deluxe Small Parts Kit 8 Bent Delrin Tips For Handling Micro Parts - With Tips Holder**

This kit contains eight bent ESD-SAFE delrin small parts tips in sizes 0.010" (0.25mm), 0.020" (0.51mm), 0.025" (0.64mm), 0.030" (0.76mm), 0.040" (1.02mm), 0.060" (1.52mm), 0.070" (1.78mm) and 0.080" (2.00mm).

**NOTE:** Must be used with a continuous vacuum source. **NOTE:** See page 8 for other small part tips material.

**VSPT-KIT-8-BD**



**Deluxe Small Parts Kit 8 Bent And 8 Straight Delrin Tips For Handling Micro Parts - With Tips Holder**

This kit contains eight bent and eight straight ESD-SAFE delrin small parts tips in sizes 0.010" (0.25mm), 0.020" (0.51mm), 0.025" (0.64mm), 0.030" (0.76mm), 0.040" (1.02mm), 0.060" (1.52mm), 0.070" (1.78mm) and 0.080" (2.00mm).

**NOTE:** Must be used with a continuous vacuum source. **NOTE:** See page 8 for other small part tips material.

**VSPT-KIT-16-D**



Photos are not to scale. Prices subject to change without notice.

## PAC-VAC® 9 Volt Battery Operated ESD-SAFE Vacuum Tweezer Kit

PAC-VAC® vacuum tool kit, battery operated. The PAC-VAC is battery operated and self-contained, runs up to eight hours continuously on one 9 volt alkaline battery. This versatile unit can be clipped to your belt or pocket for one-handed portable operation. The PAC-VAC is constructed with ESD-SAFE materials. Optional tips that can be used include our small part tips, rigid delrin tips and our multiple cup tips.

### This ESD-SAFE kit features:

- Power on LED indicator.
- A belt/pocket clip on the housing.
- Lightweight - only 6 oz. (156 grams).
- Produces vacuum up to 16 inches of mercury.
- Dimensions 4.6" X 2.4" X 1.1" (130mm X 61mm X 27mm).

### This kit includes:

- COILED-VACUUM-HOSE-5 (VCH-1/16-5)
- PUSH-BUTTON-VACUUM-PEN (VVP-200-1/16)
- VACUUM-CUP-KIT-9 (VCS-9-B)
- 9 VOLT DISPOSABLE ALKALINE BATTERY



V3200

V3200-CLN (Class 1 Cleanroom Safe)



## IN-HOUSE Vacuum Kits

### Push Button Vacuum Pen Kit With Buna-N Static Dissipative Non-Marking Vacuum Cups With Probes

This kit can be used with any of our luer slip tips. This kit is for the users who have an in-house vacuum system. This kit includes 5 feet of coiled vacuum hose (VCH-1/16-5), a push button vacuum pick-up handle (VVP-200-1/16), adapter (V3015-1/8NPT), bent and straight probes with Buna-N Static Dissipative Non-Marking black vacuum cups (VCS-9-B). Optional tips that can be used include our small part tips, rigid delrin tips and our multiple cup tips. **NOTE:** Must be used with a continuous vacuum source.

VV-PEN-KIT-PB



## POPULAR Accessories

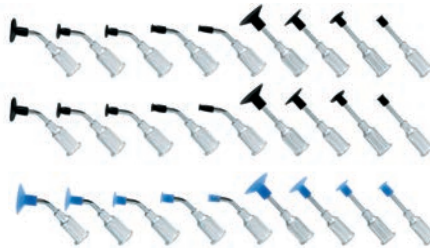
### Replacement Vacuum Tip Kit - Includes 9 Probes With Vacuum Cups

This kit contains five bent probes with 3/32" (2.38mm), 1/8" (3.18mm), 3/16" (4.76mm), 1/4" (6.35mm), and 3/8" (9.53mm), as well as four straight probes with 1/8" (3.18mm), 1/4" (6.35mm), 3/8" (9.53mm) and 1/2" (12.70mm).

VCS-9-B (Buna-N Static Dissipative Non-Marking Vacuum Cups With Probes)

VCS-9-ESD (High-Temp Conductive Silicone Vacuum Cups With Probes)

VCS-9-PUR (Blue, Non ESD-SAFE, Non-Marking Vacuum Cups With Probes)



### Vacuum Tips Holder With 16 or 8 Locations

Table top luer slip vacuum tips holder with non-slip rubber feet. Posts will accommodate 16 or 8 of our luer slip vacuum tips. Vacuum tips not included.

VTH-16



VTH-8



**ESD-SAFE**  
**NO BATTERIES OR HOSES REQUIRED**

## PEN-VAC® Vacuum Tweezer Kits

### PEN-VAC® ESD-SAFE Kit With 6 Buna-N Static Dissipative Non-Marking Vacuum Cups With Probes

PEN-VAC®, ESD-SAFE, 5 3/4" (146mm) anodized aluminum body kit with three bent probes mounted with Non-marking Static Dissipative Buna-N Cup sizes 1/8" (3.18mm), 1/4" (6.35mm), 3/8" (9.53mm) diameter. Three straight probes mounted with Non-marking Static Dissipative Buna-N Cup sizes 1/8" (3.18mm), 1/4" (6.35mm), 3/8" (9.53mm) diameter. These vacuum pens are ideal for SMT assembly or for handling any parts that have a non-porous surface. No batteries or hoses to get in your way. Features a rear storage compartment for cups or probe. The vacuum cups are Static Dissipative and non-marking. The PEN-VAC® is totally self-contained.



#### V8901-LMS-B



### PEN-VAC® ESD-SAFE Kit With 6 Buna-N Static Dissipative Non-Marking Vacuum Cups With Probes

PEN-VAC®, ESD-SAFE, 5 3/4" (146mm) black anodized aluminum laser marked body kit with three bent probes mounted with Non-marking Static Dissipative Buna-N Cup sizes 1/8" (3.18mm), 1/4" (6.35mm), 3/8" (9.53mm) diameter. Three straight probes mounted with Non-marking Static Dissipative Buna-N Cup sizes 1/8" (3.18mm), 1/4" (6.35mm), 3/8" (9.53mm) diameter. These vacuum pens are ideal for SMT assembly or for handling any parts that have a non-porous surface. No batteries or hoses to get in your way. Features a rear storage compartment for cups or probe. The vacuum cups are Static Dissipative and non-marking. The PEN-VAC® is totally self-contained.

#### V8902-LMS-B



### PEN-VAC® JUNIOR ESD-SAFE Kit With 4 Buna-N Static Dissipative Non-Marking Vacuum Cups With Probes

PEN-VAC® Junior, ESD-SAFE, 5" (127mm) anodized aluminum body kit with three bent probes mounted with Non-marking Static Dissipative Buna-N Cup sizes 1/8" (3.18mm), 1/4" (6.35mm), 3/8" (9.53mm) diameter, one straight probe mounted with Non-marking Static Dissipative Buna-N Cup size 1/4" (6.35mm) diameter. These vacuum pens are ideal for SMT assembly or for handling any parts that have a non-porous surface. No batteries or hoses to get in your way. The PEN-VAC® is totally self-contained.

#### V8920E-A-ESD



### PRO-SERIES PEN-VAC® ESD-SAFE Kit With 4 Buna-N Static Dissipative Non-Marking Vacuum Cups With Probes

PEN-VAC® PRO SERIES ESD-SAFE, 5" (127mm) black or gray plastic body kit with three bent probes mounted with Non-marking Static Dissipative Buna-N Cup sizes 1/8" (3.18mm), 1/4" (6.35mm), 3/8" (9.53mm) diameter, one straight probe mounted with Non-marking Static Dissipative Buna-N Cup size 1/4" (6.35mm) diameter. These vacuum pens are ideal for SMT assembly or for handling any parts that have a non-porous surface. No batteries or hoses to get in your way. The PEN-VAC® is totally self-contained.

#### V8910-9GR-B



#### V8910-9BK-B



Applications for PEN-VAC®, BULB-VAC and HANDI-VAC include SMT parts, metal parts, plastic parts or any item having a smooth-nonporous-surface that the rubber vacuum tweezer tip can seal against. This tool can be used with any of our rubber vacuum cups ranging in size from 3/32" (2.38mm) to 1" (25.4mm) in diameter. Use the larger cups to pick up larger and heavier parts. **NOTE:** These self contained tools work only with the rubber vacuum tips.

### Holder For PEN-VAC® And Up To 8 Vacuum Tip Probes with Cups

Bench mount holder with luer slip stainless steel posts to accommodate up to eight of our luer slip vacuum tips. Can be used with any of our vacuum handles or vacuum pens. Helps protect the vacuum tips when not in use.

#### VBM-3



Photos are not to scale. Prices subject to change without notice.

## LOW COST BULB-VAC™ Vacuum Tweezers

### **BULB-VAC™ ESD-SAFE Squeeze Bulb With Anti-Wobble Cone And One 3/4" (19mm) Or 1" (25.4mm) Buna-N Static Dissipative Non-Marking Vacuum Cup**

The anti-wobble tool is designed for enhanced functionality when handling INTEL LGA CPU products. This tool improves placement accuracy when picking processor chips from a shipping tray and placing into precision sockets. The BULB-VAC features an anti-wobble stiffener cone and a 3/4" (19mm) or 1" (25.4mm) diameter Non-marking Static Dissipative Buna-N vacuum cup. This anti-wobble tip is designed to work only with a 3/4" (19mm) or 1" (25.4mm) diameter vacuum cup. The rubber vacuum cup is required for proper operation. These tools operate very similar to a tweezer. Simply squeeze the vacuum bulb, place the soft suction cup to the part to be handled, then relax your squeeze and the part is firmly gripped. A second squeeze releases the part.

**BVJ-075-AW-B**



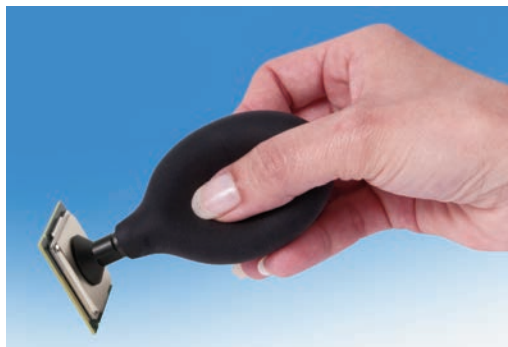
**BVJ-1.00-AW-B**



### **BULB-VAC™ ESD-SAFE Squeeze Bulb Kit With 3 Buna-N Static Dissipative Non-Marking Vacuum Cups**

BULB-VAC™ Kit with 3/8" (9.53mm), 1/2" (12.7mm) and 5/8" (15.88mm) diameter Non-marking Static Dissipative Buna-N vacuum cups. Our vacuum-bulb type tools are the lowest cost pick-and-place tools available.

**BVJ-CUP-3-B**



## HANDI-VAC-2® AND HANDI-VAC® Vacuum Tweezers And Kits

### **HANDI-VAC-2® ESD-SAFE Squeeze Bulb With Anti-Wobble Cone And One 3/4" (19mm) Or 1" (25.4mm) Buna-N Static Dissipative Non-Marking Vacuum Cup**

HANDI-VAC-2® with Anti-Wobble Tip and 3/4" (19mm) or 1" (25.4mm) diameter Non-marking Static Dissipative Buna-N vacuum cup. This anti-wobble tip is designed to work only with a 3/4" (19mm) or 1" (25.4mm) diameter vacuum cup. This improved HANDI-VAC®-2 has a new and improved tip designed for better lifting capacity utilizing larger vacuum cups. The entire tool is constructed with ESD-safe materials. These tools operate very similar to a tweezer. Simply squeeze the vacuum bulb, place the soft suction cup to the part to be handled, then relax your squeeze and the part is firmly gripped. A second squeeze releases the part.

**HV2-075-AW-B**



**HV2-1.00-AW-B**



### **HANDI-VAC-2® ESD-SAFE Squeeze Bulb With Barbed Head With 4 Buna-N Static Dissipative Non-Marking Vacuum Cups With Probes**

HANDI-VAC-2® KIT, with four Buna-N Static Dissipative Non-Marking vacuum cup sizes 1/4" (6.35mm), 3/8" (9.53mm), 1/2" (12.7mm) and 5/8" (15.88mm).

**HV2-KIT-4-B**



### **HANDI-VAC® ESD-SAFE Squeeze Bulb Kit With 5 Buna-N Static Dissipative Non-Marking Vacuum Cups With Probes**

HANDI-VAC® KIT, Static dissipative, with three bent probes mounted with Non-marking Static Dissipative Buna-N Cup sizes 1/8" (3.18mm), 3/16" (4.76mm), 1/4" (6.35mm) diameter, two straight probes mounted with Non-marking Static Dissipative Buna-N Cup sizes 3/8" (9.53mm), 1/2" (12.7mm) diameter.

**HV-KIT-II-B**



ESD-SAFE  
SQUEEZE BULB TOOLS

## STEALTH-VAC™ Vacuum Tweezer Kit

### STEALTH-VAC™ ESD-SAFE Kit - Normally Open Vacuum Pen - Operates On Compressed Air Or Nitrogen

The STEALTH-VAC™ operates directly on 30 to 70 psi FILTERED compressed air or nitrogen. The vacuum is normally ON. The compressed-air-powered tools are our most powerful vacuum tweezer tools. The vacuum level can be controlled by adjusting the input pressure. At 10 psi input the vacuum level is 2 InHg with 1 lpm of free air flow, at 30 psi input the vacuum level is 10 InHg with 3 lpm of free air flow and at 70 psi input the vacuum level is 20 InHg with 4 lpm of free air flow. Includes five bent probes mounted with Non-marking Static Dissipative Buna-N Cup sizes 3/32" (2.38mm), 1/8" (3.18mm), 3/16" (4.76mm), 1/4" (6.35mm), and 3/8" (9.53mm), as well as four straight probes mounted with Non-marking Static Dissipative Buna-N Cup sizes 1/8" (3.18mm), 1/4" (6.35mm), 3/8" (9.53mm) and 1/2" (12.70mm).

**The normally opened STEALTH-VAC Kit includes:**

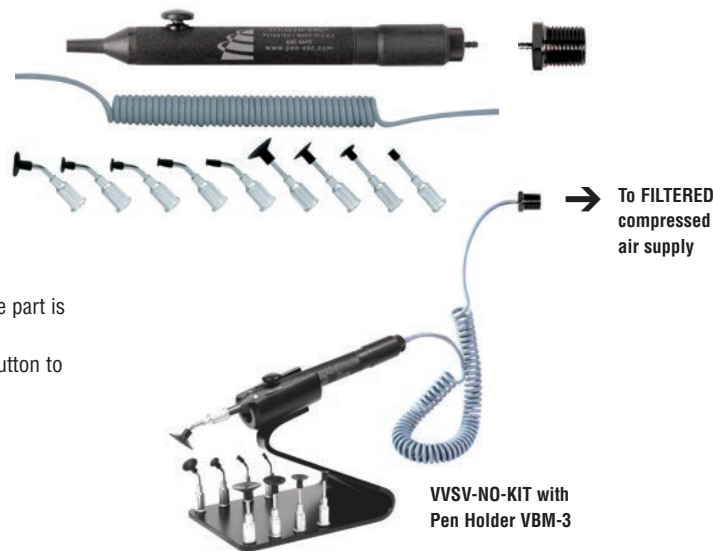
- STEALTH VAC NORMALLY OPEN VACUUM PEN
- COILED-VACUUM-HOSE-6 (VCH-1/16-6)
- SET OF NINE VACUUM TIPS (VCS-9-B)
- 1/8" NPT TO 1/16" BARB THREADED ADAPTER FOR SUPPLY LINE (V3014-1/8NPT)

**STEALTH-VAC™ is ready for use as follows:**

1. Attach a vacuum tweezer tip slightly smaller than the part you need to handle.
2. Merely touch the vacuum tip squarely to the part. The part is now grasped.
3. Move the part to where you want it. Tap the control button to release the part.

**VVSV-NO**

**VVSV-NO-KIT** (with Pen Holder VBM-3)



## STEALTH-VAC™ ELITE Vacuum Tweezer Kit

### STEALTH-VAC™ ELITE ESD-SAFE Kit - Normally Closed Vacuum Pen - Operates On Compressed Air Or Nitrogen

The STEALTH-VAC™ ELITE operates directly on 30 to 50 psi FILTERED compressed air or nitrogen. The normally closed Stealth-Vac Elite vacuum pen contains a whisper quiet venturi vacuum generator that is activated only when the control button is depressed. This helps conserve factory compressed air when the tool is not in use. The vacuum level can be controlled by adjusting the input pressure. At 10 psi input the vacuum level is 2 InHg with 1 lpm of free air flow, at 30 psi input the vacuum level is 10 InHg with 3 lpm of free air flow and at 70 psi input the vacuum level is 20 InHg with 4 lpm of free air flow. Includes five bent probes mounted with Non-marking Static Dissipative Buna-N Cup sizes 3/32" (2.38mm), 1/8" (3.18mm), 3/16" (4.76mm), 1/4" (6.35mm), and 3/8" (9.53mm), as well as four straight probes mounted with Non-marking Static Dissipative Buna-N Cup sizes 1/8" (3.18mm), 1/4" (6.35mm), 3/8" (9.53mm) and 1/2" (12.70mm).

**The normally closed STEALTH-VAC ELITE Kit includes:**

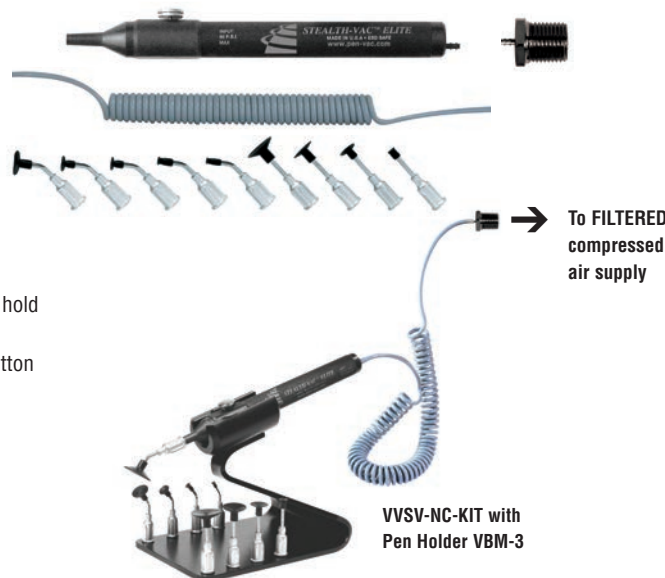
- STEALTH VAC ELITE NORMALLY CLOSED VACUUM PEN
- COILED-VACUUM-HOSE-6 (VCH-1/16-6)
- SET OF NINE VACUUM TIPS (VCS-9-B).
- 1/8" NPT TO 1/16" BARB THREADED ADAPTER FOR SUPPLY LINE (V3014-1/8NPT)

**STEALTH-VAC™ ELITE is ready for use as follows:**

1. Attach a vacuum tweezer tip slightly smaller than the part you need to handle.
2. Touch the vacuum tip squarely to the part and depress and hold the button. The part is now grasped.
3. Move the part to where you want it. Release the control button to release the part.

**VVSV-NC**

**VVSV-NC-KIT** (with Pen Holder VBM-3)



### In-Line Hose Filters ESD Safe Nickel Plated Brass

Barbed hose filter – Inlet connection 1/16" (1.59mm) – Outlet connection 1/16" (1.59mm) ID hose. Recommended option to filter compressed air supply. These filters come with a replaceable 40 micron mesh o-ring filter. **NOTE:** See page 1 for replacement filter VF-40M-5.

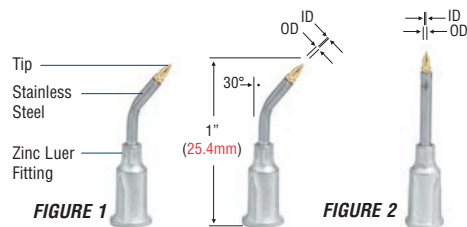
**VFP-1616**





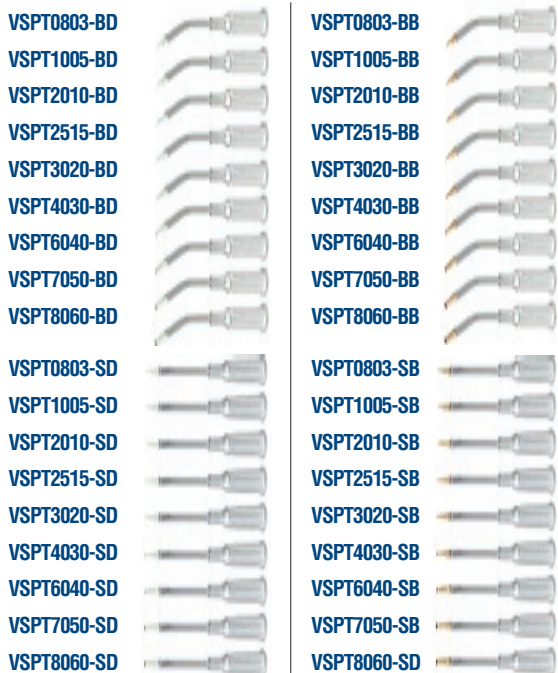
## Probes With Static Dissipative Non-Marking ESD-SAFE Delrin Or Gold Plated Brass Small Parts Tips

These tips are designed for handling very tiny parts. Tips are available in ESD-SAFE Delrin plastic so there is no chance of static or mechanical damage, temperature up to 212°F (100°C). Or Gold Plated Brass for general handling applications, temperatures up to 500°F (260°C). **NOTE:** This product requires a continuous vacuum source.



### ESD-SAFE Delrin

### Gold Plated Brass



Bent	0.008" (0.203mm) OD x 0.003" (0.076mm) ID
Bent	0.010" (0.254mm) OD x 0.005" (0.127mm) ID
Bent	0.020" (0.508mm) OD x 0.010" (0.254mm) ID
Bent	0.025" (0.635mm) OD x 0.015" (0.381mm) ID
Bent	0.030" (0.762mm) OD x 0.020" (0.508mm) ID
Bent	0.040" (1.016mm) OD x 0.030" (0.762mm) ID
Bent	0.060" (1.524mm) OD x 0.040" (1.016mm) ID
Bent	0.070" (1.778mm) OD x 0.050" (1.27mm) ID
Bent	0.080" (2.032mm) OD x 0.060" (1.524mm) ID
Straight	0.008" (0.203mm) OD x 0.003" (0.076mm) ID
Straight	0.010" (0.254mm) OD x 0.005" (0.127mm) ID
Straight	0.020" (0.508mm) OD x 0.010" (0.254mm) ID
Straight	0.025" (0.635mm) OD x 0.015" (0.381mm) ID
Straight	0.030" (0.762mm) OD x 0.020" (0.508mm) ID
Straight	0.040" (1.016mm) OD x 0.030" (0.762mm) ID
Straight	0.060" (1.524mm) OD x 0.040" (1.016mm) ID
Straight	0.070" (1.778mm) OD x 0.050" (1.27mm) ID
Straight	0.080" (2.032mm) OD x 0.060" (1.524mm) ID

## Vacuum Tips Holder With 16 or 8 Locations

Table top luer slip vacuum tips holder with non-slip rubber feet. Posts will accommodate 16 or 8 of our luer slip vacuum tips. Vacuum tips not included.

VTH-16



VTH-8



## Small Parts Tips Specifications

Material	Static Dissipative Delrin		Gold Plated Brass		Recommended for handling parts larger than the tip ID size up to size of:
ESD Properties	10 <sup>9</sup> - 10 <sup>11</sup> ohms		Less than 1ohm		
Operating Temp	212 <sup>o</sup> F (100 <sup>o</sup> C)		500 <sup>o</sup> F (260 <sup>o</sup> C)		
PART #	OD	ID	OD	ID	INCHES (MM)
VSPT0803 -*#	0.008" (0.203mm)	0.003" (0.076mm)	N/A	N/A	0.015" X 0.015" X 0.015" (0.38mm X 0.38mm X 0.38mm)
VSPT1005 -*#	0.010" (0.254mm)	0.005" (0.127mm)	0.010" (0.254mm)	0.005" (0.127mm)	0.03" X 0.03" X 0.03" (0.76mm X 0.76mm X 0.76mm)
VSPT2010 -*#	0.020" (0.508mm)	0.010" (0.254mm)	0.020" (0.508mm)	0.010" (0.254mm)	0.06" X 0.06" X 0.06" (1.52mm X 1.52mm X 1.52mm)
VSPT2515 -*#	0.025" (0.635mm)	0.015" (0.381mm)	0.025" (0.635mm)	0.015" (0.381mm)	0.07" X 0.07" X 0.07" (1.78mm X 1.78mm X 1.78mm)
VSPT3020 -*#	0.030" (0.762mm)	0.020" (0.508mm)	0.030" (0.762mm)	0.020" (0.508mm)	0.90" X 0.90" X 0.90" (2.29mm X 2.29mm X 2.29mm)
VSPT4030 -*#	0.040" (1.016mm)	0.030" (0.762mm)	0.040" (1.016mm)	0.030" (0.762mm)	0.12" X 0.12" X 0.12" (3.05mm X 3.05mm X 3.05mm)
VSPT6040 -*#	0.060" (1.524mm)	0.040" (1.016mm)	0.060" (1.524mm)	0.040" (1.016mm)	0.18" X 0.18" X 0.18" (4.57mm X 4.57mm X 4.57mm)
VSPT7050 -*#	0.070" (1.778mm)	0.050" (1.27mm)	0.070" (1.778mm)	0.050" (1.27mm)	0.21" X 0.21" X 0.21" (5.33mm X 5.33mm X 5.33mm)
VSPT8060 -*#	0.080" (2.032mm)	0.060" (1.524mm)	0.080" (2.032mm)	0.060" (1.524mm)	0.24" X 0.24" X 0.24" (6.10mm X 6.10mm X 6.10mm)

\* = dash "B" specifies an angled probe, FIGURE 1 (at top).  
dash "S" specifies a straight probe, FIGURE 2 (at top).

# = dash "D" selects the delrin plastic material.  
dash "B" selects the gold plated brass material.

**ORDERING EXAMPLE:** Part number "VSPT2010-B-D" selects a small part angled tip as in FIGURE 1 with an OD of 0.020" (0.508mm), an ID of 0.010" (0.254mm) and the Static Dissipative Delrin material.

**NOTE:** These tips are to be used with continuous source vacuum handling tools. These tips will not work with self-contained tools such as the PEN-VAC® tool.

### Buna-N Static Dissipative Non-Marking Black Vacuum Cups

Black, static dissipative Buna-N. Operating temperature limits -5°F + 250°F (-20°C + 120°C).

<b>V9009-B</b>	3/32" (2.38mm) diameter vacuum cup
<b>V9013-B</b>	1/8" (3.18mm) diameter vacuum cup
<b>V9018-B</b>	3/16" (4.76mm) diameter vacuum cup
<b>V9025-B</b>	1/4" (6.35mm) diameter vacuum cup
<b>V9038-B</b>	3/8" (9.53mm) diameter vacuum cup
<b>V9050-B</b>	1/2" (12.70mm) diameter vacuum cup
<b>V9062-B</b>	5/8" (15.88mm) diameter vacuum cup
<b>V9075-B</b>	3/4" (19.05mm) diameter vacuum cup
<b>V9100-B</b>	1" (25.4mm) diameter vacuum cup

### Kit of 8 Buna-N Static Dissipative Non-Marking Black Vacuum Cups

Kit of (8) vacuum cups (1) 3/32" (2.38mm), (1) 1/8" (3.18mm), (1) 3/16" (4.76mm), (1) 1/4" (6.35mm), (1) 3/8" (9.53mm), (1) 1/2" (12.70mm), (1) 5/8" (15.88mm) and (1) 3/4" (19.05mm), black, static dissipative Buna-N.

**V9000K8-B** \$ 16.90 price for set



### 25 Pack of Replacement Buna-N Static Dissipative Non-Marking Black Vacuum Cups

<b>V9009-B-25PK</b>	3/32" (2.38mm) diameter vacuum cups
<b>V9013-B-25PK</b>	1/8" (3.18mm) diameter vacuum cups
<b>V9018-B-25PK</b>	3/16" (4.76mm) diameter vacuum cups
<b>V9050-B-25PK</b>	1/4" (6.35mm) diameter vacuum cups
<b>V9038-B-25PK</b>	3/8" (9.53mm) diameter vacuum cups
<b>V9050-B-25PK</b>	1/2" (12.70mm) diameter vacuum cups
<b>V9062-B-25PK</b>	5/8" (15.88mm) diameter vacuum cups
<b>V9075-B-25PK</b>	3/4" (19.05mm) diameter vacuum cups
<b>V9100-B-25PK</b>	1" (25.4mm) diameter vacuum cups



## ESD-SAFE HIGH-TEMP CONDUCTIVE SILICONE Vacuum Cups

### ESD-SAFE High-Temp Conductive Silicone Black Vacuum Cups

ESD-SAFE High-Temp conductive silicone. Operating temperature limits (-65°F + 445°F) (-55°C + 230°C) 10<sup>4</sup> to 10<sup>6</sup> OHMS.

<b>V9009-ESD</b>	3/32" (2.38mm) diameter vacuum cup
<b>V9013-ESD</b>	1/8" (3.18mm) diameter vacuum cup
<b>V9018-ESD</b>	3/16" (4.76mm) diameter vacuum cup
<b>V9025-ESD</b>	1/4" (6.35mm) diameter vacuum cup
<b>V9038-ESD</b>	3/8" (9.53mm) diameter vacuum cup
<b>V9050-ESD</b>	1/2" (12.70mm) diameter vacuum cup
<b>V9062-ESD</b>	5/8" (15.88mm) diameter vacuum cup
<b>V9075-ESD</b>	3/4" (19.05mm) diameter vacuum cup
<b>V9100-ESD</b>	1" (25.4mm) diameter vacuum cup

### Kit of 8 ESD-SAFE High-Temp Conductive Silicone Black Vacuum Cups

Kit of (8) vacuum cups (1) 3/32" (2.38mm), (1) 1/8" (3.18mm), (1) 3/16" (4.76mm), (1) 1/4" (6.35mm), (1) 3/8" (9.53mm), (1) 1/2" (12.70mm), (1) 5/8" (15.88mm) and (1) 3/4" (19.05mm), black, static dissipative Buna-N.

**V9000K8-ESD** \$ 16.90 price for set



### 25 Pack of Replacement ESD-SAFE High-Temp Conductive Silicone Black Vacuum Cups

<b>V9009-ESD-25PK</b>	3/32" (2.38mm) diameter vacuum cups
<b>V9013-ESD-25PK</b>	1/8" (3.18mm) diameter vacuum cups
<b>V9018-ESD-25PK</b>	3/16" (4.76mm) diameter vacuum cups
<b>V9025-ESD-25PK</b>	1/4" (6.35mm) diameter vacuum cups
<b>V9038-ESD-25PK</b>	3/8" (9.53mm) diameter vacuum cups
<b>V9050-ESD-25PK</b>	1/2" (12.70mm) diameter vacuum cups
<b>V9062-ESD-25PK</b>	5/8" (15.88mm) diameter vacuum cups
<b>V9075-ESD-25PK</b>	3/4" (19.05mm) diameter vacuum cups
<b>V9100-ESD-25PK</b>	1" (25.4mm) diameter vacuum cups



## Ultra-non-marking Non-ESD-SAFE PUREACLEAN™ Vacuum Cups

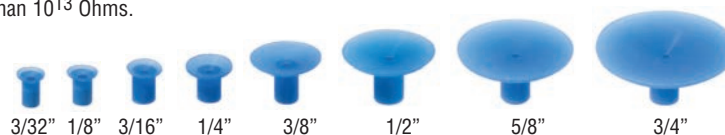
The vacuum cup material is PUREACLEAN™, a catalytically cured proprietary rubber compound. This cup material is ideally suited for handling residue sensitive items such as lenses or optical filters. Operating temperature limits (-65°F - 480°F) (-55°C - 250°C). Electrical properties: Greater than 10<sup>13</sup> Ohms.

- V9009-PUR** 3/32" (2.38mm) diameter vacuum cup
- V9013-PUR** 1/8" (3.18mm) diameter vacuum cup
- V9018-PUR** 3/16" (4.76mm) diameter vacuum cup
- V9025-PUR** 1/4" (6.35mm) diameter vacuum cup
- V9038-PUR** 3/8" (9.53mm) diameter vacuum cup
- V9050-PUR** 1/2" (12.70mm) diameter vacuum cup
- V9062-PUR** 5/8" (15.88mm) diameter vacuum cup
- V9075-PUR** 3/4" (19.05mm) diameter vacuum cup
- V9100-PUR** 1" (25.4mm) diameter vacuum cup

## Kit of 8 Ultra-non-marking Non-ESD-SAFE PUREACLEAN™ Vacuum Cups

Kit of eight vacuum cups 3/32" (2.38mm), 1/8" (3.18mm), 3/16" (4.76mm), 1/4" (6.35mm), 3/8" (9.53mm), 1/2" (12.70mm), 5/8" (15.88mm), and 3/4" (19.05mm). The vacuum cup material is PUREACLEAN™, a catalytically cured proprietary rubber compound. This cup material is ideally suited for handling residue sensitive items such as lenses or optical filters. Operating temperature limits (-65°F - 480°F) (-55°C - 250°C). Electrical properties: Greater than 10<sup>13</sup> Ohms.

**V9000K8-PUR** \$ 34.00 price for set



## 25 Pack of Replacement Ultra-non-marking Non-ESD-SAFE PUREACLEAN™ Vacuum Cups

- V9009-PUR-25PK** 3/32" (2.38mm) diameter vacuum cups
- V9013-PUR-25PK** 1/8" (3.18mm) diameter vacuum cups
- V9018-PUR-25PK** 3/16" (4.76mm) diameter vacuum cups
- V9025-PUR-25PK** 1/4" (6.35mm) diameter vacuum cups
- V9038-PUR-25PK** 3/8" (9.53mm) diameter vacuum cups
- V9050-PUR-25PK** 1/2" (12.70mm) diameter vacuum cups
- V9062-PUR-25PK** 5/8" (15.88mm) diameter vacuum cups
- V9075-PUR-25PK** 3/4" (19.05mm) diameter vacuum cups
- V9100-PUR-25PK** 1" (25.4mm) diameter vacuum cups



### Here's a tip...

Cups can be cleaned easily with clean water or Isopropyl Alcohol.

## VACUUM CUPS Specifications

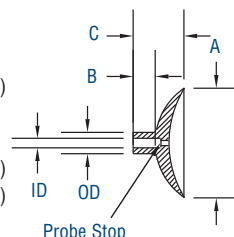
Part #	Cup Size						Cup Lifting Capacity	
		A Inch (mm)	B Inch (mm)	C Inch (mm)	OD Inch (mm)	ID Inch (mm)	@ 10" Hg	@ 5" Hg
V9009-*	3/32" (2.38mm)	0.094 (2.38)	0.140 (3.56)	0.160 (4.06)	0.078 (1.98)	0.040 (1.02)	0.07 oz (2 grams)	0.03 oz (1 grams)
V9013-*	1/8" (3.18mm)	0.125 (3.18)	0.160 (4.06)	0.180 (4.57)	0.100 (2.54)	0.060 (1.52)	0.35 oz (10 grams)	0.17 oz (5 grams)
V9018-*	3/16" (4.76mm)	0.188 (4.76)	0.175 (4.45)	0.200 (5.08)	0.130 (3.30)	0.060 (1.52)	0.88 oz (25 grams)	0.42 oz (12 grams)
V9025-*	1/4" (6.35mm)	0.250 (6.35)	0.160 (4.06)	0.200 (5.08)	0.120 (3.04)	0.060 (1.52)	1.76 oz (50 grams)	0.88 oz (25 grams)
V9038-*	3/8" (9.53mm)	0.375 (9.53)	0.190 (4.83)	0.250 (6.35)	0.125 (3.18)	0.060 (1.52)	3.52 oz (100 grams)	1.76 oz (50 grams)
V9050-*	1/2" (12.70mm)	0.500 (12.7)	0.190 (4.83)	0.300 (7.62)	0.160 (4.06)	0.060 (1.52)	6.34 oz (180 grams)	3.17 oz (90 grams)
V9062-*	5/8" (15.88mm)	0.625 (15.88)	0.175 (4.45)	0.315 (8.00)	0.160 (4.06)	0.060 (1.52)	8.81 oz (250 grams)	4.40 oz (125 grams)
V9075-*	3/4" (19.05mm)	0.750 (19.05)	0.140 (3.56)	0.320 (8.13)	0.160 (4.06)	0.060 (1.52)	17.63 oz (500 grams)	8.81 oz (250 grams)
V9100-*	1" (25.4mm)	1.000 (25.4)	0.140 (3.56)	0.160 (4.06)	0.160 (4.06)	0.060 (1.52)	26.45 oz (750 grams)	13.22 oz (375 grams)

### ESD-SAFE

- \*=B Buna-N Rubber 10<sup>8</sup> to 10<sup>11</sup> ohms Cup temperature range -5°F + 250°F (-20°C + 120°C)
- \*=ESD Conductive Silicone 10<sup>2</sup> to 10<sup>5</sup> ohms Cup temperature range -67°F + 446°F (-55°C + 230°C)

### NON ESD-SAFE

- \*=PUR Blue Ultra Non Marking Greater than 10<sup>13</sup> ohms Cup temperature range -67°F + 482°F (-55°C + 250°C)
- \*=C Clear Silicone Rubber Greater than 10<sup>13</sup> ohms Cup temperature range -67°F + 482°F (-55°C + 250°C)



### Bent & Straight Probes With Vacuum Cups

The vacuum cup material is black, Buna-N, static dissipative rubber compound. Our vacuum cups can handle electronic components. Operating temperature limits -5°F + 250°F (-20°C + 120°C).

#### Bent Probes with Vacuum Cups

V8903-D-B	Bent 1/2" (12.7mm) probe with 3/32" (2.38mm) vacuum cup
V8903-S-B	Bent 1/2" (12.7mm) probe with 1/8" (3.18mm) vacuum cup
V8903-P-B	Bent 1/2" (12.7mm) probe with 3/16" (4.76mm) vacuum cup
V8903-M-B	Bent 1/2" (12.7mm) probe with 1/4" (6.35mm) vacuum cup
V8903-L-B	Bent 1/2" (12.7mm) probe with 3/8" (9.53mm) vacuum cup
V8903-H-B	Bent 1/2" (12.7mm) probe with 1/2" (12.7mm) vacuum cup
V8903-J-B	Bent 1/2" (12.7mm) probe with 5/8" (15.88mm) vacuum cup
V8903-K-B	Bent 1/2" (12.7mm) probe with 3/4" (19.05mm) vacuum cup
V8903-O-B	Bent 1/2" (12.7mm) probe with 1" (25.4mm) vacuum cup

#### Straight Probes with Vacuum Cups

V8903-D-S	Straight 1/2" (12.7mm) probe with 3/32" (2.38mm) vacuum cup
V8903-S-S	Straight 1/2" (12.7mm) probe with 1/8" (3.18mm) vacuum cup
V8903-P-S	Straight 1/2" (12.7mm) probe with 3/16" (4.76mm) vacuum cup
V8903-M-S	Straight 1/2" (12.7mm) probe with 1/4" (6.35mm) vacuum cup
V8903-L-S	Straight 1/2" (12.7mm) probe with 3/8" (9.53mm) vacuum cup
V8903-H-S	Straight 1/2" (12.7mm) probe with 1/2" (12.7mm) vacuum cup
V8903-J-S	Straight 1/2" (12.7mm) probe with 5/8" (15.88mm) vacuum cup
V8903-K-S	Straight 1/2" (12.7mm) probe with 3/4" (19.05mm) vacuum cup
V8903-O-S	Straight 1/2" (12.7mm) probe with 1" (25.4mm) vacuum cup



## PROBES WITH ESD-SAFE HIGH-TEMP CONDUCTIVE SILICONE Vacuum Cups

### Bent & Straight Probes With Vacuum Cups

The vacuum cup material ESD-SAFE High-Temp conductive silicone. Operating temperature limits -65°F + 445°F (-55°C + 230°C) 10<sup>4</sup> to 10<sup>6</sup> OHMS.

#### Bent Probes with Vacuum Cups

V8904-D-B	Bent 1/2" (12.7mm) probe with 3/32" (2.38mm) vacuum cup
V8904-S-B	Bent 1/2" (12.7mm) probe with 1/8" (3.18mm) vacuum cup
V8904-P-B	Bent 1/2" (12.7mm) probe with 3/16" (4.76mm) vacuum cup
V8904-M-B	Bent 1/2" (12.7mm) probe with 1/4" (6.35mm) vacuum cup
V8904-L-B	Bent 1/2" (12.7mm) probe with 3/8" (9.53mm) vacuum cup
V8904-H-B	Bent 1/2" (12.7mm) probe with 1/2" (12.7mm) vacuum cup
V8904-J-B	Bent 1/2" (12.7mm) probe with 5/8" (15.88mm) vacuum cup
V8904-K-B	Bent 1/2" (12.7mm) probe with 3/4" (19.05mm) vacuum cup
V8904-O-B	Bent 1/2" (12.7mm) probe with 1" (25.4mm) vacuum cup

#### Straight Probes with Vacuum Cups

V8904-D-S	Straight 1/2" (12.7mm) probe with 3/32" (2.38mm) vacuum cup
V8904-S-S	Straight 1/2" (12.7mm) probe with 1/8" (3.18mm) vacuum cup
V8904-P-S	Straight 1/2" (12.7mm) probe with 3/16" (4.76mm) vacuum cup
V8904-M-S	Straight 1/2" (12.7mm) probe with 1/4" (6.35mm) vacuum cup
V8904-L-S	Straight 1/2" (12.7mm) probe with 3/8" (9.53mm) vacuum cup
V8904-H-S	Straight 1/2" (12.7mm) probe with 1/2" (12.7mm) vacuum cup
V8904-J-S	Straight 1/2" (12.7mm) probe with 5/8" (15.88mm) vacuum cup
V8904-K-S	Straight 1/2" (12.7mm) probe with 3/4" (19.05mm) vacuum cup
V8904-O-S	Straight 1/2" (12.7mm) probe with 1" (25.4mm) vacuum cup



Photos are not to scale. Prices subject to change without notice.

# PROBES WITH ULTRA NON-MARKING BLUE PUREACLEAN™ Vacuum Cups

# PROBES WITH CUPS AND ACCESSORIES

## Ultra-non-marking Non-ESD-SAFE PUREACLEAN™ Bent & Straight Probes With Vacuum Cups

The vacuum cup material is PUREACLEAN™, a catalytically cured proprietary rubber compound. This Non-ESD-SAFE cup material is ideally suited for handling residue sensitive items such as lenses or optical filters. Operating temperature limits (-65°F - 480°F) (-55°C - 250°C). Electrical properties: Greater than 10<sup>13</sup> Ohms.

### Bent Probes with Vacuum Cups

<b>V8908-D-B</b>	Bent 1/2" (12.7mm) probe with 3/32" (2.38mm) vacuum cup
<b>V8908-S-B</b>	Bent 1/2" (12.7mm) probe with 1/8" (3.18mm) vacuum cup
<b>V8908-P-B</b>	Bent 1/2" (12.7mm) probe with 3/16" (4.76mm) vacuum cup
<b>V8908-M-B</b>	Bent 1/2" (12.7mm) probe with 1/4" (6.35mm) vacuum cup
<b>V8908-L-B</b>	Bent 1/2" (12.7mm) probe with 3/8" (9.53mm) vacuum cup
<b>V8908-H-B</b>	Bent 1/2" (12.7mm) probe with 1/2" (12.7mm) vacuum cup
<b>V8908-J-B</b>	Bent 1/2" (12.7mm) probe with 5/8" (15.88mm) vacuum cup
<b>V8908-K-B</b>	Bent 1/2" (12.7mm) probe with 3/4" (19.05mm) vacuum cup
<b>V8908-O-B</b>	Bent 1/2" (12.7mm) probe with 1" (25.4mm) vacuum cup

### Straight Probes with Vacuum Cups

<b>V8908-D-S</b>	Straight 1/2" (12.7mm) probe with 3/32" (2.38mm) vacuum cup
<b>V8908-S-S</b>	Straight 1/2" (12.7mm) probe with 1/8" (3.18mm) vacuum cup
<b>V8908-P-S</b>	Straight 1/2" (12.7mm) probe with 3/16" (4.76mm) vacuum cup
<b>V8908-M-S</b>	Straight 1/2" (12.7mm) probe with 1/4" (6.35mm) vacuum cup
<b>V8908-L-S</b>	Straight 1/2" (12.7mm) probe with 3/8" (9.53mm) vacuum cup
<b>V8908-H-S</b>	Straight 1/2" (12.7mm) probe with 1/2" (12.7mm) vacuum cup
<b>V8908-J-S</b>	Straight 1/2" (12.7mm) probe with 5/8" (15.88mm) vacuum cup
<b>V8908-K-S</b>	Straight 1/2" (12.7mm) probe with 3/4" (19.05mm) vacuum cup
<b>V8908-O-S</b>	Straight 1/2" (12.7mm) probe with 1" (25.4mm) vacuum cup



## VACUUM TIP Kits

### Replacement Vacuum Tip Kit - Includes 9 Probes With Vacuum Cups

This kit contains five bent probes with 3/32" (2.38mm), 1/8" (3.18mm), 3/16" (4.76mm), 1/4" (6.35mm), and 3/8" (9.53mm), as well as four straight probes with 1/8" (3.18mm), 1/4" (6.35mm), 3/8" (9.53mm) and 1/2" (12.70mm).

**VCS-9-B** (Buna-N Static Dissipative Non-Marking Vacuum Cups With Probes)



**VCS-9-ESD** (High-Temp Conductive Silicone ESD-SAFE, Vacuum Cups With Probes)



**VCS-9-PUR** (Blue, Ultra-non-marking Non ESD-SAFE, Vacuum Cups With Probes)



## POPULAR Accessories

### Vacuum Tips Holder With 16 or 8 Locations

Table top luer slip vacuum tips holder with non-slip rubber feet. Posts will accommodate 16 or 8 of our luer slip vacuum tips. Vacuum tips not included.

**VTH-16**



**VTH-8**



## RIGID DELRIN AND TEFLON Tips

### Bent And Straight Rigid Handling Tips

These tips are designed for easy handling of optic lenses of all shapes and sizes. The deep cupped circular design will accommodate concave, convex and flat surfaces. Precision machined from Delrin or Teflon insures contamination free lens handling. *For objects that are smaller than 1/8" (3.18mm) see our small parts tips on page 8.* The following tips are mounted on a straight or bent 30° 1" (25.4mm) stainless steel probe with a luer slip hub. **NOTE:** This product requires a continuous vacuum source.

#### Delrin Bent

VRT-125-B



VRT-188-B



VRT-250-B



VRT-375-B



VRT-500-B



VRT-750-B



VRT-1000-B



#### Delrin Straight

VRT-125-S 1/8" (3.18mm)



VRT-188-S 3/16" (4.76mm)



VRT-250-S 1/4" (6.35mm)



VRT-375-S 3/8" (9.53mm)



VRT-500-S 1/2" (12.7mm)



VRT-750-S 3/4" (19.05mm)



VRT-1000-S 1" (25.4mm)



#### Teflon Bent

VTT-125-B



VTT-188-B



VTT-250-B



VTT-375-B



VTT-500-B



VTT-750-B



VTT-1000-B



#### Teflon Straight

VTT-125-S 1/8" (3.18mm)



VTT-188-S 3/16" (4.76mm)



VTT-250-S 1/4" (6.35mm)



VTT-375-S 3/8" (9.53mm)



VTT-500-S 1/2" (12.7mm)



VTT-750-S 3/4" (19.05mm)



VTT-1000-S 1" (25.4mm)



## RIGID DELRIN AND TEFLON TIP Kits

### Set Of Eight Non-Marking Rigid Delrin Vacuum Tips Kit

These tips are designed for easy handling of optic lenses of all shapes and sizes. The deep cupped circular design will accommodate concave, convex and flat surfaces. Precision machined from Delrin insures contamination free handling. Kit includes four bent 30° 1" (25.4mm) stainless steel probes with luer slip hub and four straight 1" (25.4mm) stainless steel probes with a luer slip hub with Non-marking Rigid Teflon tips sizes 1/4" (6.35mm), 3/8" (9.53mm), 1/2" (12.7mm) and 3/4" (19.05mm) diameter, and 8 position Tip Organizer/Holder (VTH-8).

**NOTE:** This product requires a continuous vacuum source.

**VRT-8**

**VRT-8-KIT** (with Vacuum Tips Holder VTH-8)



### Set Of Eight Non-Marking High-Temp Rigid Teflon Vacuum Tips Kit

These tips are designed for easy handling of optic lenses of all shapes and sizes. The deep cupped circular design will accommodate concave, convex and flat surfaces. Precision machined from Teflon insures contamination free handling. Kit includes four bent 30° 1" (25.4mm) stainless steel probes with luer slip hub and four straight 1" (25.4mm) stainless steel probes with a luer slip hub with Non-marking Rigid Teflon tips sizes 1/4" (6.35mm), 3/8" (9.53mm), 1/2" (12.7mm) and 3/4" (19.05mm) diameter, and 8 position Tip Organizer/Holder (VTH-8).

**NOTE:** This product requires a continuous vacuum source.

**VTT-8**

**VTT-8-KIT** (with Vacuum Tips Holder VTH-8)



### Vacuum Tips Holder With 16 or 8 Locations

Table top luer slip vacuum tips holder with non-slip rubber feet. Posts will accommodate 16 or 8 of our luer slip vacuum tips. Vacuum tips not included.

**VTH-16**



**VTH-8**



## WAFER-VAC® ELITE ESD-SAFE Kit With 8 Inch Molded PEEK Wafer Tip

The WAFER-VAC® ELITE was developed as a result of customer concerns about firmly grasping critical components and not dropping them due to a vacuum leak. This vacuum tweezer uses an integrated ten segment bar-graph-display visibly shows the vacuum level present during operation. The bar graph will show minimum vacuum pressure until a part is grasped and then when a part is grasped the bar graph displays the vacuum level presented to the part being handled. Additionally, the vacuum port integrates a user replaceable inlet filter that protects operation of the tool from dust particles. This Vacuum Tweezer is available in various kits depending on your handling application.

**NOTE:** This item will not function properly without filter, see below for replacement intake filters (VF-40M-5). **NOTE:** Other Molded PEEK Wafer Tip sizes available, please see page 17, and our website.

### This ESD-SAFE kit features:

- Dimensions 8" X 3" X 3.5" (203mm X 76mm X 89mm).
- Bar graph power-on and vacuum-level indicator.
- Class 100 Cleanroom Safe.
- Whisper-quiet operation.
- Long-life pump.
- Side mounted handle holder.
- Rubber no-skid feet.
- ESD ground connection is by three wire power cord.
- Produces vacuum of up to ten inches of mercury.
- Replaceable inlet filter (additional filter included).

VVE-9000-MW8-110

VVE-9000-MW8-220



### This kit includes:

- COILED-VACUUM-HOSE-6 (VCH-2.5MM-6-BLK)
- PUSH-BUTTON-WAFER-PEN (VWP-500-2.5MM)
- MOLDED PEEK WAFER TIP (VMWT-C)
- 3 WIRE POWER CORD

## WAFER ADJUST-A-VAC® Vacuum Tweezer Kits

### WAFER ADJUST-A-VAC® ESD-SAFE Kit With 8 Inch Molded PEEK Wafer Tip

The WAFER ADJUST-A-VAC® was developed as a result of customer concerns about manual handling of very thin/delicate substrates, wafers, MEMS devices and other very fragile components. This vacuum-tweezer allows the operator to adjust the vacuum level from just below atmospheric pressure to up to ten inches of mercury depending on the fragility of the part being handled. An integrated ten segment bar-graph-display visibly shows the vacuum level present during handling operations. The bar graph will show minimum vacuum pressure until a part is grasped and then the bar graph displays the vacuum level presented to the part being handled. Additionally, the vacuum port integrates a user replaceable inlet filter that protects operation of the tool from dust particles. This Vacuum Tweezer is available in various kits depending on your handling application. Kits are available in 110 or 220 volt operation. **NOTE:** This item will not function properly without filter, see below for replacement intake filters (VF-40M-5). **NOTE:** Other Molded PEEK Wafer Tip sizes available, please see page 17, and our website.

### This ESD-SAFE kit features:

- Dimensions 8" X 3" X 3.5" (203mm X 76mm X 89mm).
- Bar graph power-on and vacuum-level indicator.
- Adjustment knob for vacuum level.
- Class 100 Cleanroom Safe.
- Rubber no-skid feet.
- ESD ground connection is by three wire power cord.
- Produces vacuum of up to ten inches of mercury.
- Replaceable inlet filter (additional filter included).
- Side mounted handle holder.

### This kit includes:

- COILED-VACUUM-HOSE-6 (VCH-2.5MM-6-BLK)
- PUSH-BUTTON-WAFER-PEN (VWP-500-2.5MM)
- MOLDED PEEK WAFER TIP (VMWT-C)
- 3 WIRE POWER CORD

AV-5000-MW8-110

AV-5000-MW8-220



## Intake Replacement Filters

Replacement filter for TV-1500 and Adjust-A-Vac units. Includes a set of five 40 micron replaceable filters.

VF-40M-5



Photos are not to scale. Prices subject to change without notice.

## WAFER PAC-VAC® Kits

### WAFER PAC-VAC® 9 Volt Battery Operated ESD-SAFE Cleanroom Safe Vacuum Tweezer Kit

WAFER PAC-VAC® vacuum tool kit, battery operated. The PAC-VAC is battery operated and self-contained, runs up to eight hours continuously on one 9 volt alkaline battery. This versatile unit can be clipped to your belt or pocket for one-handed portable operation. The PAC-VAC is constructed with ESD-SAFE materials.

#### This ESD-SAFE kit features:

- \* Power on LED indicator.
- \* A belt/pocket clip on the housing.
- \* Lightweight - only 156 grams.
- \* Produces vacuum up to 16 inches of mercury.

#### This kit includes:

- COILED-VACUUM-HOSE-6 (VCH-2.5MM-6-BLK)
- PUSH-BUTTON-WAFER-PEN (VWP-500-2.5MM)
- MOLDED PEEK WAFER TIP
- 9 VOLT BATTERY



**V3200-CLN-MW4-2.5mm** Handling up to 4" (100mm) wafer

**V3200-CLN-MW6-2.5mm** Handling up to 6" (150mm) wafer

**V3200-CLN-MW8-2.5mm** Handling up to 8" (200mm) wafer



## PUSH-BUTTON WAFER WAND® Kits

### PUSH-BUTTON WAFER WAND® Kits

The lightweight push-button WAFER WAND® is designed for connection to continuous vacuum systems. Operation is controlled by pushing the button. This tool can be used with an in-house vacuum system or with one of Virtual Industries high performance continuous vacuum systems. Can be used with all of our press-fit tips, adapters and vacuum hoses. Vacuum normally on – Push button to shut off vacuum and to release the wafer. Handling tool constructed from Static Dissipative Delrin. The source vacuum is shut off when the handle is placed in the holder. Kits includes a wafer wand, 6' of coiled vacuum hose, barb threaded adapter, a VBM-2 holder for the wafer wand and a wafer tip. **NOTE:** Requires continuous vacuum source.

**VWWB-2A-MW4-1/16** With 1/16" (1.6mm) ID gray vacuum hose - Wafer Tip (VMWT-A) handles wafers up to 4"

**VWWB-2A-MW4-2.5mm** With 2.5mm ID black vacuum hose - Wafer Tip (VMWT-A) handles wafers up to 4"

**VWWB-2A-MW6-1/16** With 1/16" (1.6mm) ID gray vacuum hose - Wafer Tip (VMWT-B) handles wafers up to 6"

**VWWB-2A-MW6-2.5mm** With 2.5mm ID black vacuum hose - Wafer Tip (VMWT-B) handles wafers up to 6"

**VWWB-2A-MW8-1/16** With 1/16" (1.6mm) ID gray vacuum hose - Wafer Tip (VMWT-C) handles wafers up to 8"

**VWWB-2A-MW8-2.5mm** With 2.5mm ID black vacuum hose - Wafer Tip (VMWT-C) handles wafers up to 8"

**VWWB-2A-MW12-1/16** With 1/16" (1.6mm) ID gray vacuum hose - Wafer Tip (VMWT-D) handles wafers up to 12"

**VWWB-2A-MW12-2.5mm** With 2.5mm ID black vacuum hose - Wafer Tip (VMWT-D) handles wafers up to 12"



## SLIDE SWITCH WAFER WAND® Kits

### SLIDE SWITCH WAFER WAND® Kits

The lightweight, slide switch wafer wand is designed for connection to continuous vacuum systems. Operation is controlled by sliding the switch forward to pick up a wafer and sliding the switch back which turns off the vacuum and releases the wafer. With the switch in the back position, vacuum is also blocked so that excess demand is not placed on the vacuum line system. This tool can be used with an in-house vacuum system or with one of Virtual Industries high performance continuous vacuum systems. Can also be used with all of our press-fit tips, adapters and vacuum hoses. Handling tool constructed from Static Dissipative Delrin. Kits includes a wafer wand, 6' of coiled vacuum hose, barb threaded adapter, a VBM-5 holder for the wafer wand and a wafer tip. **NOTE:** Requires continuous vacuum source.

**VWW-2-SD-MW4-1/16** With 1/16" (1.6mm) ID gray vacuum hose - Wafer Tip (VMWT-A) handles wafers up to 4"

**VWW-2-SD-MW4-2.5mm** With 2.5mm ID black vacuum hose - Wafer Tip (VMWT-A) handles wafers up to 4"

**VWW-2-SD-MW6-1/16** With 1/16" (1.6mm) ID gray vacuum hose - Wafer Tip (VMWT-B) handles wafers up to 6"

**VWW-2-SD-MW6-2.5mm** With 2.5mm ID black vacuum hose - Wafer Tip (VMWT-B) handles wafers up to 6"

**VWW-2-SD-MW8-1/16** With 1/16" (1.6mm) ID gray vacuum hose - Wafer Tip (VMWT-C) handles wafers up to 8"

**VWW-2-SD-MW8-2.5mm** With 2.5mm ID black vacuum hose - Wafer Tip (VMWT-C) handles wafers up to 8"

**VWW-2-SD-MW12-1/16** With 1/16" (1.6mm) ID gray vacuum hose - Wafer Tip (VMWT-D) handles wafers up to 12"

**VWW-2-SD-MW12-2.5mm** With 2.5mm ID black vacuum hose - Wafer Tip (VMWT-D) handles wafers up to 12"





## PORTA-WAND® ELITE ESD-SAFE Kit With 8 Inch Molded PEEK Wafer Tip

The PORTA-WAND® ELITE kit comes with a detachable 9.6V NiMH rechargeable battery pack, an in-stand charger and one wafer tip. The detachable battery pack (VPWE-150) contains the rear exhaust filter for the entire tool to ensure better than Class 1 performance. Produces vacuum up to 16 inches of mercury. The battery pack can be recharged when attached to the tool or when separated from the tool. Ideal for handling wafers, solar cells, disk media, flat panels, or any item that has a flat hard surface. A power on indicator flashes when the battery pack needs to be recharged or interchanged with a fully charged battery pack. A PUSH-BUTTON provides easy on/off control with a lock to on position. An internal air filter (VF-40M-5) is replaceable from the front of the tool. Tool measurement 8" X 1" (203.2mm X 25.4mm). **NOTE:** Other Molded PEEK Wafer Tip sizes available, please see page 17 and our website.

### This kit includes:

- IN-STAND CHARGER
- MOLDED PEEK WAFER TIP (VMWT-C)
- DETACHABLE 9.6V NiMH RECHARGEABLE BATTERY PACK (VPWE-150)
- INTERNAL AIR FILTER (VF-40M-5) IS REPLACEABLE
- 110/220 AUTO SWITCHABLE POWER SUPPLY



**VPWE7000AR-MW8**

## SERIES 3 PORTA-WAND® ELITE ESD-SAFE Kit With 8 Inch Molded PEEK Wafer Tip

The SERIES 3 PORTA-WAND® ELITE kit comes with a detachable 9.6V NiMH rechargeable battery pack, an in-stand charger and one MOLDED PEEK Wafer Tip. The detachable battery pack (VPWE-150) contains the rear exhaust filter for the entire tool to ensure better than Class I performance. Produces vacuum up to 16 inches of mercury. The battery pack can be recharged when attached to the tool or when separated from the tool. Ideal for handling wafers, disk media, flat panels, or any item that has a flat hard surface. The OPERATION INDICATOR turns on only when proper vacuum has been established to firmly grip the wafer. The same light flashes when the battery pack needs to be recharged or interchanged with a fully charged battery pack. A PUSH-BUTTON provides easy on/off control with a lock to on position. An internal air filter (VF-40M-5) is replaceable from the front of the tool. Tool measurement 9" X 1" (228.6mm X 25.4mm). **NOTE:** Other Molded PEEK Wafer Tip sizes available, please see page 17 and our website.

### This kit includes:

- IN-STAND CHARGER
- MOLDED PEEK WAFER TIP (VMWT-C)
- DETACHABLE 9.6V NiMH RECHARGEABLE BATTERY PACK (VPWE-150)
- INTERNAL AIR FILTER (VF-40M-5) IS REPLACEABLE
- 110/220 AUTO SWITCHABLE POWER SUPPLY



Operation indicator light



**VPWE7300AR-MW8**

## Spare Battery Pack

Purchase a spare battery pack for your PORTA-WAND® ELITE hand tool so you can charge one while using another. This 9.6V NiMH rechargeable battery pack (VPWE-150) also contains the rear exhaust filter for the entire tool to ensure Class I performance. The battery pack can be recharged either separately or attached to the tool.



**VPWE-150**

## PORTA-WAND® ESD-SAFE Kit With 8 Inch Molded PEEK Wafer Tip

PORTA-WAND with wafer tip and charger stand, push button control. The PORTA-WAND kit comes with a fixed internal 9.6V NiMH (factory replaceable) rechargeable battery, in-stand charger (VPW-CHARGER-110-220) and one wafer tip. Ideal for handling wafers, disk media or any item that has a flat, hard surface. Rear exhaust of the pump air is standard on these units. The battery low indicator flashes red when the battery needs to be recharged. A PUSH-BUTTON provides easy on/off control. An internal air filter (VF-40M-5) is replaceable from the front of the tool. Tool measurement 7" X 1" (177.8mm X 25.4mm). **NOTE:** Other Molded PEEK Wafer Tip sizes available, please see page 17 and our website.

### This kit includes:

- IN-STAND CHARGER
- MOLDED PEEK WAFER TIP (VMWT-C)
- INTERNAL AIR FILTER (VF-40M-5) IS REPLACEABLE
- 110/220 AUTO SWITCHABLE POWER SUPPLY



**VPW6000AR-MW8**

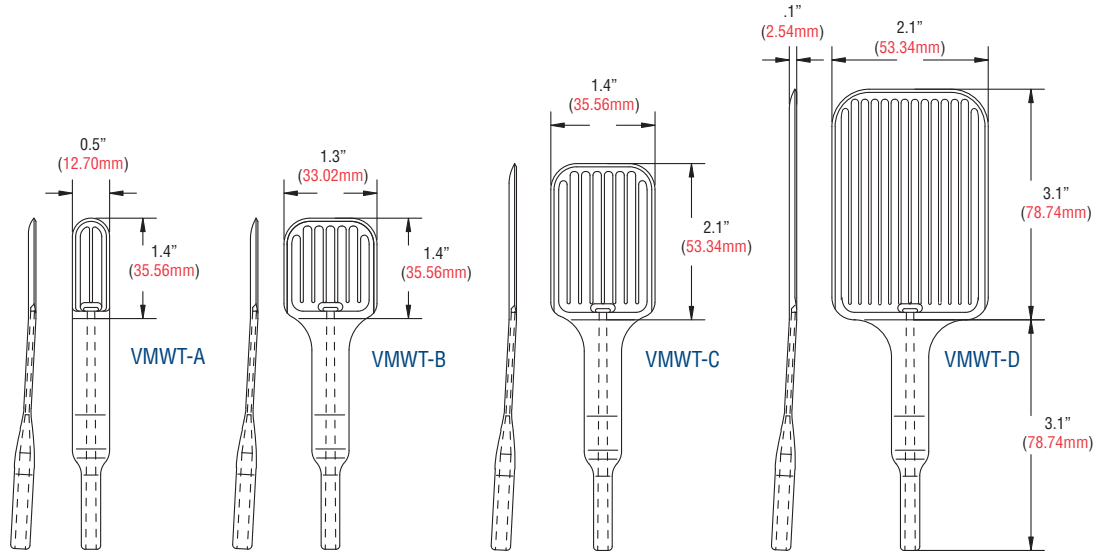
## PORTA-VAC® II 9 Volt Battery Operated Vacuum Tweezer Kit

### PORTA-VAC® II Kit With 8 Inch Molded PEEK Wafer Tip

This wafer handling tool kit comes with one MOLDED wafer tip (VMWT-C). Ideal for handling wafers, disk media or any item that has a flat, hard surface. A disposable 9V battery is included. Rear exhaust of the pump air is standard on these units. The battery low indicator flashes red when the battery needs to be changed or recharged. A switch setting on the bottom of the tool allows selection of alkaline battery or NiMH battery discharge characteristics for the battery low indicator. A large on/off switch provides easy on/off control. An internal air filter (VF-40M-5) is replaceable from the front of the tool. Tool measurement 7 1/2" X 1" (190.5mm X 25.4mm). **NOTE:** Other Molded PEEK Wafer Tip sizes available, please see page 17 and our website. **NOTE:** Optional battery pack and charger system available.

**PV4000A-MW8**





**MOLDED PEEK® Wafer Tips**

These Wafer Tips are molded from ESD-SAFE PEEK plastic to handle wafers up to 100°C. The low profile of the wafer tip head provides easy access to wafers in industry standard boats. These tips attach to all of our wafer handling tools as well as competitive systems.

**NOTE:** For High-Temperature Hard Anodized Wafer Tips (VHT series), visit our online store at [www.virtual-ii.com](http://www.virtual-ii.com)

**VMWT-A**

Recommended for handling up to 4" (100mm) wafers

**VMWT-B**

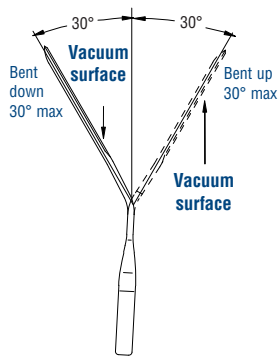
Recommended for handling up to 6" (150mm) wafers

**VMWT-C**

Recommended for handling up to 8" (200mm) wafers

**VMWT-D**

Recommended for handling larger sized wafers (no angles available)

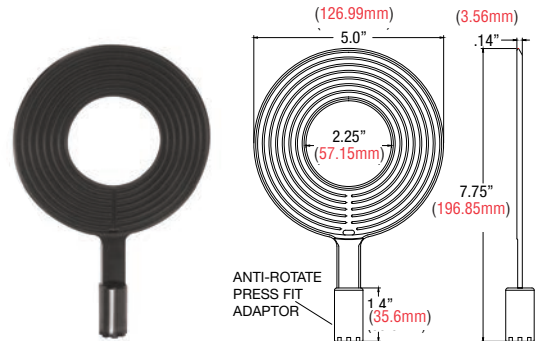


Molded Wafer Tips VMWT-A, VMWT-B and VMWT-C are available with a 10°, 20° or 30° bend in the up or down direction as shown in the left drawing. To order a tip with the up or down bend, add the angle plus a "U" for up or a "D" for down to the part number. **EXAMPLE:** Part number VMWT-A20D is a VMWT-A Wafer Tip with a 20 degree bend in the down direction. Custom angles are available upon request. Pricing is as above.

**300mm Wafer Handling Tip**

Designed for safely handling 300mm wafers. The large hard anodized aluminum five inch (127mm) outside diameter provides the support required to securely hold the large wafer. The center hole helps reduce the wafer tip weight and minimizes contact area. The dual press fit adaptor provides both inner and outer o-ring gripping areas for added handling security. Now with anti-rotate tip. **NOTE:** Straight direction only, no bends available.

**VWT-5R-AR**



**Intake Replacement Filters**

This is a replacement for the hose-barb feed-thru filter. Just unscrew the hose-barb feed-thru on the front of the unit and replace the filter. Includes a set of five 40 micron replaceable filters.

**VF-40M-5**



# CUSTOM VACUUM TIPS For Multiple Applications

## Custom And Semi-Custom Vacuum Handling Tips

Many of our customers' special handling needs can be solved with our semi-custom or custom handling tip. Some of the custom tips developed in the past are shown on the right side bar.

### Dual Cup Handling Tips

These tips are application specific. You specify the end to end spacing, as well as the size and material of the vacuum cups to be used. Typical applications are for items that are elongated or where an opening needs to be bridged. These tips can typically be used with all of our vacuum handling tools.

### Three Cup Tips

These tips are application specific. You specify the triangular area to be formed, as well as the size and material of the vacuum cups used. Typical applications are for items that are large odd shaped or where an opening needs to be bridged. These tips can typically be used with all of our vacuum handling tools.

### Extended Reach Tips

We can make vacuum tips with extended reaches up to 18 inches in length.

### Right Angle Tips

We can form the metal probe section to any angle up to 90 degrees.

### Custom Handling tips

Custom handling tips typically require drawing or parts from the customer describing the exact dimensions of the part to be handled or the vacuum tip to be manufactured. Our manufacturing department will then work with your engineers to determine the feasibility and cost of the vacuum tip.

### Conditions

There are no returns or refunds on custom orders.



# CUSTOM VACUUM TIPS



**MADE IN USA**

**CRTM**

CleanRoomProducts GmbH

**CRTM CleanRoomProducts GmbH**  
Behringstrasse 10  
D-82152 Planegg

Tel .: +49. (0) 89.856 998 23

Fax: +49. (0) 89.856 998 24

E-Mail: [info@crtm.de](mailto:info@crtm.de)

Internet: <http://www.crtm.de>