



*Committed To Innovation*

**Operator's Manual for the  
Alternative 4140 Cart System**

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## *Control Unit and Cart Frame*

### *Operation and Features*

The **handpiece selector toggle** is in the center of the control panel. Handpiece number two is the high speed, water cooled handpiece.

The **drive air pressure gauge** is on the left side of the panel.

The **water coolant on-off toggle** is on the far right side of the control panel.

The **water coolant flow control knob** is on the underside of the control unit, just below the on-off toggle.

**Adjustment screws for drive air pressure** are on the underside of the unit, just below the handpiece selector toggle.

### **Syringe**

Tubing connections for the standard syringe have been made inside the control unit. The syringe is packed in a shipping envelope, with instructions and a repair kit attached. Place the syringe in the far left holder on the tool bar.

### **Foot Control**

Pressure to any part of the foot control disc provides drive air to the selected handpiece. Air coolant is also activated by stepping on the foot control disc.

### **Vacuum Valves**

The saliva ejector and the two HVE's will be in holders to the right of the two handpiece holders. See the instructions for the vacuum package below.

## *Cleaning and Maintenance*

### **Note**

**Do not use powdered cleansers, scouring pads, or abrasive scrubbers on any of the finished metal surfaces in this unit (for example, the syringe, the foot control disc, or the cart frame). Sodium Hypochlorite will also damage these surfaces.**

## Control Unit and Cart Frame

The control panel, cart top and other control unit surfaces can be cleaned with most commonly available surface disinfectants. Do not use Sodium Hypochlorite, or any cleansers containing large concentrations of alcohol. These may cause discoloration on the painted and finished metal surfaces of the control head and cart frame. Do not use abrasives on the cart frame. They may damage the metal finish.

## System Flush

The Center for Disease Control and the American Dental Association can provide recommendations on when to flush your system, and for how long.

### *Adjustments*

## Handpiece Holders

Each handpiece holder is attached to the tool bar with two set screws, located on the back of the holder. Tighten the two screws located under the holder to tighten the holder to the holder bar. To reposition the holder, loosen the set screws, move the holder to the desired location, and retighten the set screws. You will need a 3/32" hex key.

## Cart

The height of the control unit can be adjusted. Loosen the knob on the upright post of the cart frame. Raise or lower the control unit as desired, and retighten the knob firmly. **Make sure the weight of the control unit is supported when you loosen the knob on the post.**

### **Note**

**All of the following adjustments should be made with a burr in the handpiece. Running a handpiece without a burr installed can damage the handpiece.**

## Drive Air Pressure

You will need the 3/32" ball driver provided with the syringe kit to make this adjustment. To locate the drive air adjustment screws, trace the handpiece tubings from the handpiece to their connection at the control head. The adjustment screws are directly in front of the tubing connections.

Install a burr in the number two handpiece. Turn the water coolant toggle to the off position, and the handpiece selector to the number two position.

Press on the foot control disc until the handpiece is running at maximum speed.

Using the 3/32" ball driver, turn the adjustment screw for the number two handpiece counterclockwise until the pressure gauge reads a little more than the recommended pressure. Then turn the screw clockwise until the gauge indicates the recommended pressure.

Repeat this procedure for the number one handpiece.

## **Water Coolant**

Turn the handpiece selector toggle to the number two position. Turn the water coolant toggle to the on position (toward the blue dot).

Install a burr in the number two handpiece.

Press on the foot control until the handpiece is running at half speed. Turn the water coolant flow control knob to provide a fine mist of water around the burr. Very little water coolant is required.

## **Deluxe Vacuum Package**

### ***Operation and Features***

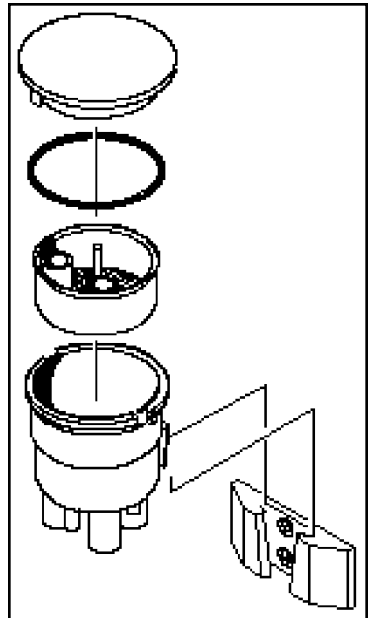
Vacuum is supplied to the two universal valves and the saliva ejector by turning on the central vacuum system.

## **Solids Collector**

The solids collector is located inside the control unit. It contains a removable screen, which should be emptied, cleaned and disinfected at least once a week (see *Figure 1*).

To remove the lid from the solids collector, shut off the central vacuum, or open one of the universal valves if you leave the central vacuum on. The screen can be cleaned and reused or replaced with a new one.

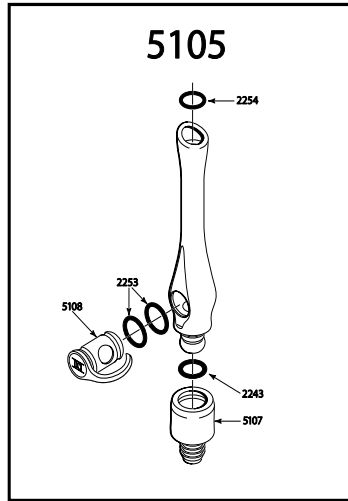
External surfaces of the solids collector can be cleaned with a solution of warm water and a mild detergent.



***Figure 1***

The solids collector is equipped with a fitting for a Hydrocolloid Drain. To use, drill a through hole from the fitting into the solids collector. You will need a 7/64" or a number 35 drill bit.

### Autoclavable Vacuum Valves



*Figure 2*

**These instructions apply to all types of Autoclavable Vacuum Valves; SE or HVE (long and short body).**

**The Autoclavable valves are equipped with a quick-disconnect swivel** for easy removal from tubing. To separate the valve from the swivel, gently pull them apart. To reassemble, gently press the two pieces together. There will be a soft click as the O-ring in the swivel slips into place on the body.

**The valve is on** when the metal lever is positioned toward the swivel. It is off when the lever faces the tip.

## *Cleaning and Maintenance of Valves*

### **Note**

**Ultrasonic cleaning is not recommended for any of the autoclavable valves. Many of the solutions used in ultrasonic cleaners will permanently damage the finish on these instruments.**

**Do not use powdered cleansers, scouring pads or abrasive scrubbers on any of the autoclavable vacuum valves. These products will also damage the finish on the instruments. Remove stubborn debris by soaking in warm water.**

**After each patient**, draw clean water through the valve, while opening and closing it several times. Then, remove the valve from the water source and leave it open until all of the water has cleared the hoses. Clean external surfaces with a solution of mild detergent and warm water and dry with a clean, soft cloth.

**At the end of each day**, draw clean water through the valve, while opening and closing it. Then scrub the internal surfaces with a stiff brush. Clean external surfaces as above. Eco Vac (*Part Numbers 5835 and 5837 in the DCI catalog*) is an effective vacuum system cleaner that is also non-toxic and environmentally safe.

**Periodically** clean and lubricate the internal parts of the valve, when operation becomes stiff or sticky. First, draw water through the valve, as above. Then separate the valve body from the swivel, push spool & lever assembly out of the body. The O-rings can be left in place. Clean the inner surfaces and apply a small amount of silicone lube to all of the O-rings shown in *Figure 2*.

Any O-rings showing signs of wear should be replaced. The O-rings on the spool can be removed and replaced using fingers only. To remove an O-ring from the inside of the body or swivel, use a dental pick or other pointed instrument to hook the O-ring. Gently pull it out, being careful not to scratch the sealing surfaces.

Apply a small amount of silicone grease to the new O-ring. Press it flat between your fingers. Tuck one end of the flattened O-ring into the groove in the body or the swivel, then feed the rest of it in.

### *Disinfecting and Sterilizing of Valves*

The following disinfectants are safe to use on Autoclavable Vacuum Valve; Birex SE®, Sporidicin®, Coldspor, Procide-D® Spray, Sterall Plus Spray, Asepticide, Biocide, Promedyn Iodo-Five, Wescodyne and Cavicide.

#### **Note**

**Do not use Sodium Hypochlorite to disinfect any Autoclavable Vacuum Valve. It will cause permanent damage to the instrument.**

When autoclaving, place the instrument well away from the heating elements, and do not allow the valve to contact the walls of the sterilizer.

Steam autoclave, Dry Heat, Ethylene Oxide, and Gas or Chemical Vapor process are all safe to use, as long as temperatures do not exceed 280° Fahrenheit (138° Celsius).

#### **Note**

**If you use the chemical vapor process, the valve must first be thoroughly rinsed of all cleaning agents. Cleaning agents left on the valve may react with the chemical vapor solutions to form a crystalline residue which can clog the valve or cause it to stick.**