



**Summit Hill Laboratories**  
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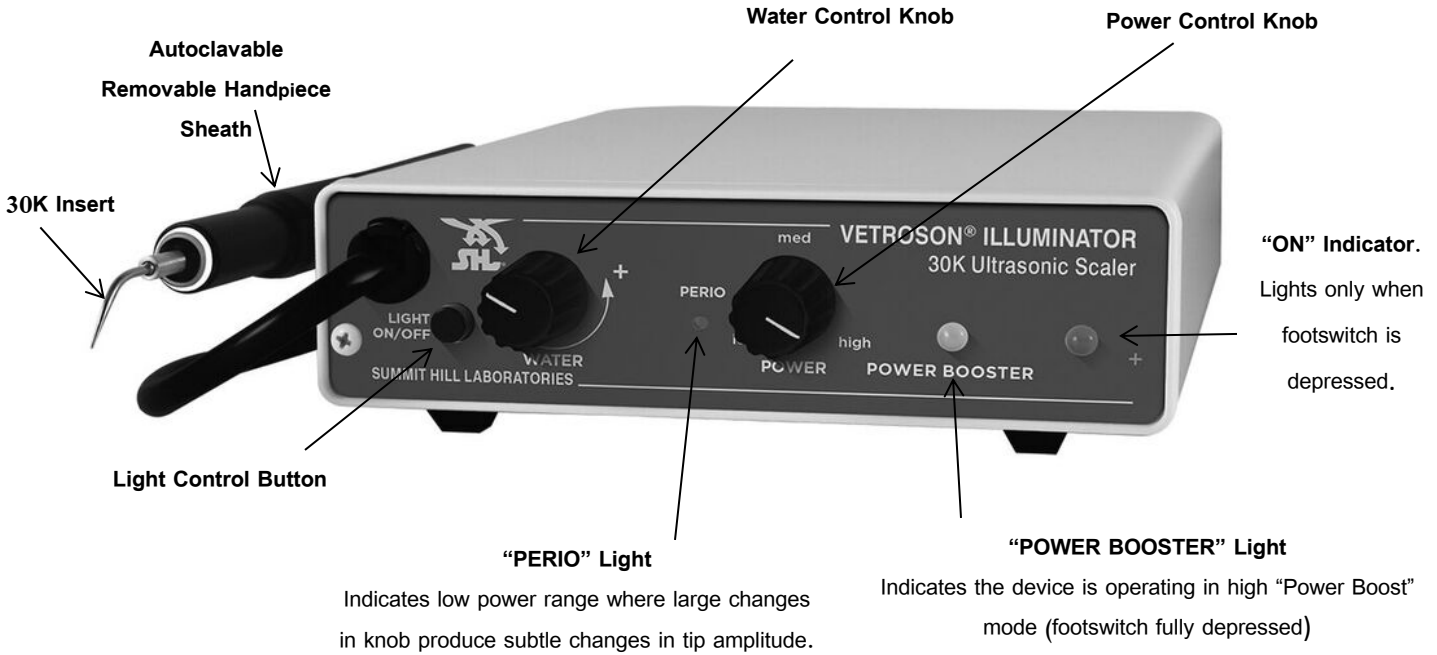
# Operating Instructions

## VETROSON® ILLUMINATOR 30K ULTRASONIC SCALER

*This manual, in whole or in part, should not be considered a substitute for formal training in Ultrasonic Scaling.  
 Appropriate professional education is STRONGLY RECOMMENDED prior to using this device clinically.*

### DEVICE DESCRIPTION

The VETROSON® ILLUMINATOR is a 30KHz magnetostrictive, ultrasonic tooth scaler that provides a bright, white light directly to the intraoral operating field when used in conjunction with VETROSON® 30 KHz light-transmitting inserts. The unit also functions with compatible non-light transmitting VETROSON® SS 30KHz inserts manufactured by Summit Hill Laboratories, but without lighting up the operating field. The VETROSON® ILLUMINATOR features auto-tuning technology, a dramatically expanded low-power range that improves comfort during debridement, and a power-booster feature for an increase in scaling power when needed. The VETROSON® ILLUMINATOR will not operate with 25KHz ultrasonic inserts.



## **INDICATIONS/INTENDED USE**

For removal of calculus, plaque and oral debris during dental prophylaxis.

## **CONTRAINDICATIONS TO USE**

Because of the potential for electromagnetic interference, this device should not be used on patients or by clinicians with cardiac pacemakers, internal defibrillators, intracorporeal fluid pumps or any other implantable electronic devices, or in close proximity to sensitive patient monitoring devices such as pulse oximeters.

## **WARNINGS**

- The water supply line to the scaler should always be turned off whenever the device is being connected, disconnected, or when not in use.
- The power supply line cord is the AC power disconnect device for the scaler.
- Locate the transformer above and away from any sources of water that may enter the unit.
- As with all electrical devices, the unit should not be immersed in water or other liquids. Do not reach for the device if it has fallen into liquid until power is disconnected, and do not use the device after it has fallen into liquid. Return it to Summit Hill Laboratories for servicing.
- Modifying this device violates safety codes, endangers patients and operators, and will void the warranty.
- This equipment produces electromagnetic energy and may cause interference with other electronic devices. Should this occur, changing the position or location of the device may be necessary.
- VETROSON® light-transmitting inserts use a high-quality, high-strength glass sleeve to project a bright light onto the operative field. These tips may be ultrasonically cleaned, disinfected and autoclaved using standard techniques. However, take care to avoid dropping or impacting the insert, as this may result in glass breakage. Inspect the inserts prior to each use for integrity and safety.

## **CLINICAL PRECAUTIONS**

- Water flow through tip during use must be sufficient to cool handpiece and insert.
- Do not allow prolonged contact of tip with lips, cheek, tongue or other soft tissues.
- Keep the long axis of the insert tip parallel to the long axis of the tooth to wipe deposits from the tooth.
- Do not gouge the tooth with the point of the tip

## **WHAT'S INCLUDED:**

(1) Scaler control unit with attached handpiece, foot controller and water line (with male quick-connect coupler).

(2) Autoclavable sheaths (one attached to handpiece - Item# VIS1050).

(2) Inline water filters (one attached to water line - Item # VU02040).

(1) Transformer with cable (Item# VU02150).

(1) Operating Instructions Manual

(2) VETROSON® ILLUMINATOR Light Transmitting inserts. (#10, & Perio)

## **VETROSON® ILLUMINATOR Light-Transmitting INSERTS**

- #10 30K Insert - Item# VIS1020 (Green Identification Ring) - For scaling above the gum line.
- Perio 30K Insert - Item# VIS1030 (Orange Identification Ring) - For subgingival scaling.
- Peter Emily 30K Insert - Item# VIS1040 (Grey Identification Ring)- For use above and below the gum line).

## CONFORMANCE TO STANDARDS

The VETROSON® ILLUMINATOR is TUV listed and conforms to IEC 60601-1, 60601-1-2 and CAN/CSA C22.2 No. 601.1. Summit Hill Laboratories' quality system is certified to ISO 9001/ISO13485. The device is CE marked and is certified to European Medical Device Directive (93/42/EEC).

## SPECIFICATIONS

- Power: 120 VAC at 50/60 Hz or 230 VAC at 50/60 Hz or 100 VAC at 50/60 Hz
- Operating temperature between 50°F and 100°F (10°C - 38°C)
- Weight - 35 oz.; Size – 1 1/2" H x 5 1/2" W x 7" D
- Handpiece operating frequency - 30 KHz
- Protection Against Electric Shock – Class 1, Type B applied part
- Equipment not suitable for use in the presence of a flammable anesthetic mixture (when used with air or oxygen)
- Protection against Ingress of Liquids – Foot Switch & Scaler: IPX1 (drip proof)
- Power Supply - IPX0 (Ordinary)
- Mode of Operation of Equipment: Intermittent – 10 minutes on, 5 minutes off
- Operating conditions: 15-30°C, 10-80% RH (non-condensing)
- Transport and storage conditions: 10-40°C, 10-80% RH (non-condensing)

## INSTALLING THE SCALER

Locate the device where the control panel will be easy to reach during scaling procedures, and where the water filter at the rear of the unit may be periodically changed without difficulty. The scaler requires access to a grounded electrical outlet and a source of drinking-quality water. The device and its separate transformer generate a minimal amount of heat. Avoid covering them, to allow normal cooling.

## WATER CONNECTION

Before plugging in the device, connect the scaler's water line to a drinking-quality water supply at 20-50 psi (optimal). Water should be clean and free of sediment. We suggest that an external, office-wide water filter be used to minimize frequent changes of the device's in-line water filter. The male quick-connect that comes on the end of the water hose is the standard one presently used in the dental industry. If the old scaler used a different connector ("A-dec" or other), remove the fitting from the old hose and attach it to the new water line on your VETROSON® ILLUMINATOR. Check for leaks at all hose and filter connections before use, and tighten if necessary.



## CONTROLLING THE WATER FLOW

While observing the arrow printed on the control panel, turn the water control counter-clockwise to increase the flow, or clockwise to decrease water flow.

## ELECTRICAL CONNECTION

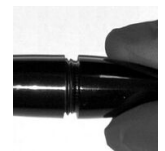
The scaler must only be powered via the Transformer Assembly that is supplied with the device by Summit Hill Laboratories.

- Insert the round metal plug from the transformer into the back of the scaler, with the arrow on the plug on top.
- Insert the plug from the transformer power cord into any grounded electrical outlet.



## USE OF AUTOCLAVABLE SHEATHS AND ULTRASONIC INSERTS

- Gently thread an autoclaved handpiece sheath clockwise onto the handpiece, until there is no gap between the two at the base. Do not overtighten.
- When removing the autoclavable handpiece sheath, hold the handpiece at the base with one hand and turn the sheath counter-clockwise with the other, taking care not to twist the hose. The sheath will unscrew and slip off.
- Avoid dropping or impacting the insert's grip, which contains the glass sleeve. Such abuse may cause the glass to crack, and is not covered by the insert's warranty.
- This scaler will function with many 30K magnetostrictive (Cavitron-compatible) scaler inserts. The scaler will only provide illumination when used with VETROSON® ILLUMINATOR light-transmitting, glass-sleeve 30K inserts.
- This scaler does not accept and will not function with 25K scaler inserts.
- Brand new inserts fit very tightly in the handpiece. For ease of placement, lubricate the O-ring with water and use a slight twisting motion to seat or remove the insert from the handpiece.
- Old, worn or blunt instruments will provide poor scaling action and should be replaced when needed.



## TURNING ON THE SCALER AND CONTROLLING THE POWER OUTPUT

The unit does not have a traditional on/off switch. The foot pedal turns the unit on when depressed, and off when released. **⚠️ The pedal should be placed where it will not accidentally be pressed when the device is not in use.**

The VETROSON® ILLUMINATOR gives you two ways to adjust the scaling power, either by using the Power Control Knob for normal operation, or by using the Foot Pedal to enter the "Power Booster Mode".

Use the Power Control Knob to set the initial power for the scaling procedure at hand. With the foot pedal depressed, turn the knob in a clockwise direction to increase the power, or counterclockwise to decrease the

power. A tip powered by the VETROSON® ILLUMINATOR will begin oscillating at much lower amplitude (power) than a tip in a traditional scaler, allowing more comfortable debridement. When the “Perio” light is illuminated, the knob permits very subtle adjustments in tip amplitude (relatively large movements of the knob produce small increases in amplitude). When the “Perio” light is not illuminated, tip amplitude reacts more dramatically to knob adjustment for high power calculus removal.

For short-term increases in power during scaling, use the “Power Booster”. Increase foot-pressure on the pedal and the yellow “Power Booster” light will illuminate. This will instantly boost scaling power to a point midway between the current setting and the scaler’s maximum power. Engaging the Power Booster feature when the scaler is operating at a low setting causes a significant boost in power, while engaging the Power Booster feature when the scaler is already operating at high power will produce very little change. Since water flow is not affected by “Power Booster Mode”, extended procedures may require a water adjustment. Partially lifting your foot off of the pedal will return the scaler to normal scaling power.

Note that whenever you fully release the foot pedal, the green “on” light on the front panel will turn off along with the yellow “Power Booster” light. This change may take several seconds.

## **CONTROLLING THE HANDPIECE LIGHT**

The handpiece light is cycled between on and off by pushing the light control button on the front of the scaler, while the foot pedal is depressed. Note: The light will ONLY come on when the foot pedal is depressed.



To prevent leakage of light at the junction of the handpiece and the insert, be sure to fully press the insert into the handpiece before use, and make sure that the autoclavable sheath is fully threaded onto the handpiece.

There is a built-in, 4-second delay between release of the foot pedal and the shut off of the handpiece light. This time delay allows the clinician to inspect the operating site using the light after scaling has ceased.

## **CLINICAL SUGGESTIONS ON TOOTH SCALING**



- Ultrasonic scalers should be used by trained, licensed professionals only.
- Inserts and handpiece sheaths must be sterilized before each use.
- Use of face mask and high-volume intraoral suction is strongly recommended when operating this device, to avoid inhalation of contaminated aerosols.
- The scaler water should be flushed for several minutes at the beginning of each treatment day.

**⚠ DO NOT OPERATE UNIT WITHOUT WATER FLOWING.**

- Use the lowest effective scaling power for the case at hand. This keeps heat generation to a minimum.
- Before using the insert in the oral cavity, adjust the water spray mist over a sink using the water control on the faceplate of the scaler. For patient comfort, use a good flow of water as a coolant, lubricant and debris flush.

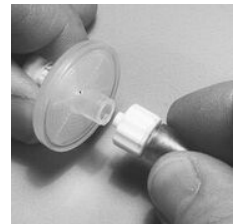
- When done properly, the patient should not experience any uncomfortable heat. If patient experiences heat, adjust power and water controls accordingly.
- Do not test a scaler tip on your fingers while operating, as this is not a valid test of how scaling feels to the patient. If you touch the tip, it will feel uncomfortably hot to your fingers.
- Hold the handpiece in a comfortable pen-grasp. Elevated heat may be felt if the lighted handpiece is gripped where the insert meets the sheath. To remove deposits from teeth, always use a light brushing stroke with the side of the insert tip, in contact with and parallel to the root surface. Excess pressure will not improve scaling action, but may cause heating and pain to the patient. Keep the scaler insert in motion at all times, using repeated gentle strokes to remove all tenacious deposits. Occasionally pause during scaling by removing foot from pedal to evaluate deposit removal.

## CLEANING AND INFECTION CONTROL

- Consult [www.CDC.gov](http://www.CDC.gov) for the document “Guidelines for Infection Control in Dental Health-Care Settings”.
- Autoclaving does not remove debris that has accumulated on the sheath or the insert. Failure to adequately remove debris will result in inadequate sterilization.
-  **DO NOT AUTOCLAVE THE VETROSON® ILLUMINATOR CONTROL UNIT**, as high heat will destroy it. The control unit should be cleaned of debris with a water-damp paper towel, disinfected by wiping with a paper towel that has been saturated with an EPA-registered low-level (HIV/HBV claim) to intermediate-level (tuberculocidal claim) hospital disinfectant, wiped of chemical residue with a water-damp paper towel, and dried. Utilize the surface disinfecting protocol of the disinfectant manufacturer.
- The sheath and ultrasonic insert must be washed in soap and water and rinsed in running water prior to bagging them for processing in a steam autoclave. They may be sterilized in any conventional steam autoclave following manufacturer’s instructions. A typical steam cycle is 250°F-268°F / 121°C-131°C for 30 minutes at 15 psi, followed by a 15 minute cool-down period. After cooling, inspect the device in the autoclave bag for integrity. If suspicion about the item exists, discard it and order a replacement from Summit Hill Laboratories or your veterinary distributor.
-  **DO NOT USE DRY HEAT OR CHEMCLAVE** on the sheath or the insert.

## HOW TO REPLACE THE FILTER DISK

Summit Hill Laboratories urges all scaler users to monitor the condition of the water filter periodically and change the filter every 3-4 months, or whenever noticeable darkening of the disk occurs, or when water flow decreases. The most common reason for service for ultrasonic scalers is failure by the user to periodically change the water filter. This will result in contamination and clogging of the internal water components. Replacement filters are available from Summit Hill Laboratories or your veterinary distributor.



- To change the filter, close any water valves, and bleed all water lines of residual water pressure.
- Disconnect the scaler water supply hose from the water supply at the quick-connect.
- Remove the old filter disk by holding it in one hand and twisting off the Luer-lock hose connectors on either side. They rotate in opposite directions.
- Install the new filter disk in the same position as the old one, and tighten the connectors with hand pressure.
- Reconnect the scaler water supply hose to the water supply via the quick-connect and check for leaks.
- Depress foot pedal while water flows freely out the end of the handpiece and drains into a sink.
- Lubricate the scaler insert O-ring with water and use a slight twisting motion to seat the insert in the handpiece.
- If filter becomes clogged and you do not have a replacement, hose connectors may be locked together TEMPORARILY without the filter to allow emergency operation. Never run this way for an extended period.

### **COMMON OPERATOR ERRORS THAT MAY RESULT IN POOR PERFORMANCE OR CLINICAL PROBLEMS**

- Failure to keep insert tip parallel to the long axis of the tooth.
- Excessive use of hand pressure.
- Failure to use the lowest effective power setting for the case at hand.
- Insufficient water flow.
- Scaling with the point of the insert instead of the side.

### **TROUBLESHOOTING THE VETROSON® ILLUMINATOR Scaler**

#### **Unit does not operate (“power on” indicator does not light):**

- Transformer cable disconnected from wall outlet or scaler. Reconnect properly.
- Wall outlet not live.
- Unit fuse has failed. Contact Summit Hill Laboratories.

#### **Insert does not vibrate properly:**

- Faulty, damaged or worn insert.
- Insert not correctly seated in handpiece.
- Power control not correctly adjusted.

#### **Excess heat at handle or tip of insert:**

- Faulty, damaged or worn insert.

- Too little water flow. Insert may be blocked.
- Power too high for the amount of water.
- Excessive hand pressure applied.

**No water spray when foot pedal is depressed:**

- Water line blocked or kinked.
- Water passage in the scaling insert clogged.
- Water filter clogged.
- No water supply connected.

**Insert does not go into handpiece:**

- Insert stack is bent. Straighten plates carefully by hand and reinsert.
- O-ring is too tight. Lubricate O-ring with water and use twisting motion to seat insert.
- Insert is a 25K device, which is too long to fit in the VETROSON® ILLUMINATOR.

**Insert comes out of handpiece when pedal is depressed:**

- Water pressure is too high. Adjust water pressure to 15-35 psi at dental unit connection, or replace insert.

**USER MAINTENANCE AND AUTHORIZED SERVICE**

This scaler requires very little maintenance for years of trouble-free operation. The ultrasonic inserts, handpiece sheathes, power supply, water filter and water hose are all detachable and may be replaced by the user. Contact Summit Hill Laboratories for a list of authorized inserts and available replacement parts.

There are no user-serviceable parts inside the control unit or the foot pedal. Opening the cases will void all warranties. All repairs must be made by authorized Summit Hill Laboratories personnel, or in a Summit Hill-authorized service facility.

Equipment needing service should be returned to our facility, freight pre-paid, via approved common carrier (e.g. USPS, UPS, FedEx), and adequately insured. Return all accessories with the unit, and include an explanation of the problem. Pack in the original box, add plenty of cushioning material, and overbox the unit during shipping. Transit should maintain a dry temperature of 50°F-110°F. You will be contacted for your approval of the repair, along with any associated costs, prior to any work. Upon your approval, the unit will be repaired and returned to you.

If you have any questions or problems with the installation or use of your VETROSON® ILLUMINATOR, call our Technical Support Service at 1-800-922-0722, or email us at: [sales@summithilllaboratories.com](mailto:sales@summithilllaboratories.com).



## **WARRANTY**

Please consult our website, [www.summithilllaboratories.com](http://www.summithilllaboratories.com), for complete details on the product warranty for this scaler. This warranty is in lieu of all warranties of merchantability, fitness for purpose or other warranties, express or implied. Summit Hill Laboratories warrants the VETROSON® ILLUMINATOR power unit and transformer for three (3) years. The handpiece, handpiece cable, foot pedal and water hoses are warranted for one (1) year. The ultrasonic inserts and autoclavable sheaths are not covered by this warranty, and are not returnable. No repairs or parts replacements made during a warranty period extend the warranty beyond the original expiration date. Summit Hill Laboratories does not accept liability for any loss or damage, direct, consequential or otherwise, arising out of the use of or the inability to use the product herein described. Before using, the user shall determine the suitability of the product for its intended use and the user assumes all risk and liability whatsoever in connection herewith.

If you purchased this product directly from Summit Hill Laboratories, your unit is automatically registered. Your invoice is your "Warranty Registration" receipt. If you purchased this product from a veterinary distributor, please fill out the Warranty sheet included with your unit and return to Summit Hill Laboratories, 1 Sheila Drive, Tinton Falls, NJ 07724.

This precision dental device was designed, manufactured and is serviced in the United States of America  
FOR:

Summit Hill Laboratories

3 Sheila Drive, Tinton Falls, NJ 07724

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[www.summithilllaboratories.com](http://www.summithilllaboratories.com)





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