

# ***DELMARVA 2000™***

## **Ultrasonic Scaler**

- \* Warranty Sheet
- \* Machine Instructions
- \* Quick connect diagram
- \* Scaler troubleshooting page

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**DELMARVA 2000, Ltd.**  
**21 SHAY LANE - MILTON, DE 19968**

**ULTRASONIC SCALER WARRANTY**

**DELMARVA 2000, Ltd.** (hereinafter referred to as **DELMARVA**), subject to the terms/conditions herein below expressly set forth in Paragraphs (1) through (4), **HEREBY WARRANTS** that it will repair any part of the enclosed **DELMARVA ULTRASONIC SCALER** which proves defective by reason of improper workmanship and/or material for a period of **SIX YEARS** from the date of **ORIGINAL** purchase without charge for parts or labor.

- (1) **SIX YEAR** parts and labor coverage on the entire unit excluding the following components:
  - a. Scaler Hand Piece coverage, excluding dropping, pulling/stretching cord, or misuse, two (2) year.
  - b. Foot switch is covered for two (2) years parts and labor. Foot switch is not warranted by failure due to operation or storage in a wet environment.
  - c. Scaler inserts, are not covered under Delmarva Warranty. Contact individual manufacture or distributor for warranty details.
  - d. **Water System** is not warranted by failure due to debris, and/or chemical deposits from water supplies. We strongly urge the use and maintenance of the inline water filter. It is your responsibility to manage and maintain water supplies.
- (2) **ORIGINAL PURCHASER:** This warranty is limited to the original purchaser of the unit. The warranty card must be postmarked and returned to Delmarva within 30 days to validate warranty.
- (3) **UNAUTHORIZED REPAIR, ABUSE, ETC.:** The unit must not have been previously altered, repaired or serviced by anyone other than a service facility authorized by **DELMARVA**. To render such service, the serial number on the unit must not have been altered or removed. The unit must not have been subject to accident, misuse, abuse or perated contrary to the operating instructions. **Handpiece assembly** not warranted if subjected to abuse from excessive pulling/stretching, debris and/or chemical accumulations from water supplies. **Water system** is not warranted by failure due to debris, and/or chemical deposits from water supplies. **Foot switch** is not warranted by failure due to operation or storage in a wet environment.

**EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, NO OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL APPLY TO THIS UNIT. UNDER NO CIRCUMSTANCES SHALL DELMARVA BE LIABLE FOR CONSEQUENTIAL DAMAGES SUSTAINED IN CONNECTION WITH THE SAID UNIT, AND DELMARVA NEITHER ASSUMES NOR AUTHORIZES ANY REPRESENTATIVE OR OTHER PERSON TO ASSUME FOR IT ANY OBLIGATION FOR LIABILITY OTHER THAN SUCH IS EXPRESSLY SET FORTH HEREIN.**

*Shipping Policy*

**Warranty Work** – To render the services provided hereunder, the unit must be shipped in either its original package or a similar package affording equal degree of protection. It is the customer's responsibility to ship equipment in need of repair to Delmarva. It is also the customer's responsibility to **return** loaner equipment to Delmarva, when repairs are completed. Shipping charges to return repaired equipment will be applied to the final bill.

**UPS Ground Service is used for all shipping. Requests for special shipping will be paid for by customer.**

**Non-Warranty Work** - It is the customer's responsibility to ship equipment in need of repair to Delmarva, in the same manor as above. It is also the customer's responsibility to **return** rental equipment to Delmarva, when repairs are completed. Shipping charges to return repaired equipment will be applied to the final bill.

INQUIRIES ♦ SERVICE ♦ TECHNICAL ASSISTANCE

PLEASE CALL:

(302) 645-2226/voice      (302) 645-0954/fax

## **DELMARVA 2000**

### **VETERINARY ULTRASONIC SCALER**

The DELMARVA 2000 Veterinary Ultrasonic Scaler is a finely engineered instrument, designed to provide years of trouble free service. The following instructions will help you maintain the unit at its best performance.

Avoid placing the unit on, or near a source of heat.

When in use, the console should have a nominal amount of air circulating around it.

Handle with care when moving from one place to another.

The water supply should be free of contaminants, such as silt or sand; also, if the water is extremely hard, a DELMARVA Portable Water Supply should be considered.

### ***ELECTRICAL REQUIREMENTS***

A grounded wall receptacle is required, which supplies 120 volts @ (20 Amps)50/60 hertz AC. If you use a grounded adapter plug (converting 3 prongs to 2 prongs) make sure that the ground wire is firmly attached to the faceplate holding screw. Have an electrician check the circuit if there are any questions concerning the safety of the hookup.

### ***DESCRIPTION***

The DELMARVA 2000 SCALER consists of the following controls:

- ON/OFF SWITCH - *is located on the right side of the panel.*
- INDICATOR LAMP (Green)- *located above the on/off switch, lights when the power is on.*
- WATER CONTROL - *the control knob on the right side. Turning this control in a clockwise direction increases the flow of water, and counter-clockwise reduces the flow.*
- WATER PRESSURE LIGHT (RED)-*located above the Scaler Hand piece receptacle. The red light comes on when the water/pressure drops below the 20 psi safety point. IMPORTANT Do not operate the Scaler until you have corrected, and an adequate supply of water is again available.*
- POWER CONTROL KNOB-*located on the left side of the panel- Adjusting the control from left to right will vary the power output from low (left) to high (right). The Specialty insert area, identifies the power setting used by the Feline Urethral Catheters and Cavitron® SLIMLINE™, FSI™ or Modified Periodontal inserts. NOTE! When using special inserts do not increase power beyond this area. These inserts are fragile*

and will sustain damage at higher power settings. The *Normal* area is the power setting routinely used with the # 3 and #10 inserts and will provide adequate power for the average procedure. The *25% Power Increase* setting should only be used for short periods of time for those “hard to remove” pieces of calculus. Prolonged use in this power mode can damage inserts.

- HANDPIECE PANEL RECEPTICLE-*located on the left* accepts the MALE side of the Handpiece connector with locking ring.
- HANDPIECE ASSEMBLY-is connected to the DELMARVA Scaler Console by a quick connecting plug with locking ring. The handpiece will accept all Cavitron® “P” or “TFI™” “SLIMLINE™” or “FSI™” style 25,000Hz (25K) inserts.

## INSTALLATION/OPERATION

**Note!** Please save the carton and special packing. It is important that the unit is packed properly, if it becomes necessary to return it.

Unpack the DELMARVA Scaler, and make certain that the on/off switch is in the off position.

Hook up the water supply. We suggest that you attach the unit to the hospital’s cold water source. The system should have an adequate water pressure of at least 20-PSI and no more than 50-PSI. Connect the female portion of the quick release to the cold water pipe by means of a “T” fitting. A plumber might best do this. The male quick release is connected to the flexible tubing, which goes to the back of the Scaler console.

**PLASTIC LUER LOCK: Note! It is prudent to flush the water line after the plumbing work has been done, this will help prevent debris from entering the machine. We have installed a high efficiency luer lock style inline water filter in the water line to prevent debris FROM DAMAGING THE UNIT’S WATER CONTROL VALVES. The Inline Water Filter can be easily monitored and replaced. Replacement filters can be purchased through your distributor. (Item# DE-16B, package of 10). The quick release should be disconnected when not in use for a period of time. This is particularly important at nights and weekends when a leak in the line would not be detected. Due to the filters high efficiency the filter assemblies MUST be changed once every 30 days. If not, the water flow may decrease and damage your hand piece and/or inserts.**

**CHROME CYLINDER: (DE-16A sleeve style, package of three (3) filter elements and two (2) rubber o’rings.) The Inline Water filter can be taken apart and the filter element removed and cleaned several times before a replacement element is needed. Note! It is prudent to flush the line after the plumbing work has been done; since small particles of debris can cause damage to the unit’s water control system. The quick release should be disconnected when not in use for an extended period. This is important at nights and weekends when a leak in the line would not be detected.**

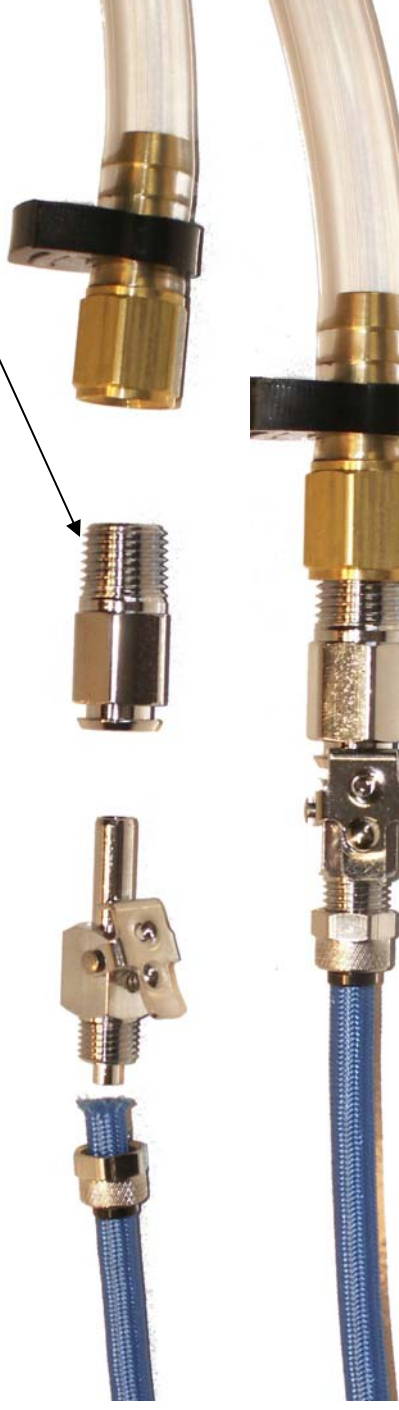
Install the handpiece by aligning electrical contacts of the male connector with the same on the female panel connector. Gently insert the connector. It should slide with very little effort. If the connector does not align, do not force it, but turn the connector body in either direction until it correctly aligns and goes in. Once the connector has been completely inserted, tighten the lock ring to the right with light pressure until it stops. Do not over tighten the lock ring.

Be sure the water supply is in the high position. (Note: It is normal for the knob to turn past the high position several turns and increase the water flow substantially). With the power switch in the off position, plug the power cord into the wall socket. Now turn the water knob counter-clockwise as far as it will go. Now turn the power on (the power indicator lamp should light). Hold the scaler handpiece in a vertical upright position and depress the foot pedal. Within 10 - 15 seconds water should come out of the end of the handpiece (If Not, quickly turn the Water Knob clockwise 1-2 rotations to get water flow). Some air will escape at the same time. This step is important because trapped air will cause HOT SPOTS (usually note by a loud screeching sound) which can affect the performance of the Delmarva Scaler or permanently damage the handpiece assembly. Take the number 3 tip/insert and slide it into the handpiece, but do not press it in all the way. With the insert resting on top of the opening, again depress the foot pedal to allow any residual air to escape. Then, with your foot off of the pedal, seat the insert by applying pressure and, at the same time, gently twisting it in a clock-wise direction. Now, depress the foot pedal again and continue to hold the handpiece in a vertical position. Reduce the water flow (counterclockwise) until the low water pressure light just

comes on. Release the foot switch, and rotate the water knob approximately ½ turn to the right (clockwise). The water flow should now be within the acceptable 18cc to 30cc per minute's range. (NOTE: Inserts and handpieces can BURN OUT in 45 to 60 seconds in the absence of water). Too much water will have a tendency to push the insert out of the handpiece, and though not destructive, the Scaler will not provide optimum performance. With the water flow properly adjusted depress the foot pedal again, and rotate the power knob to the right until it reaches the Normal setting. The tip of the insert should now be cavitating and producing a fine mist as the water flows onto the tip. Routine scaling is usually done with No. 3 and No. 10 inserts in the Normal power mode. The 25% Power Increase setting will provide extra insert tip power to remove the "hard to remove" calculus presented to the practitioner (this power setting should be used for short periods of time). The Specialty Insert area of the power control knob provides the proper power for the Cavitron® Slimline™, FSI™ or modified Periodontal Inserts. This setting is required when using the very thin tips to do scaling under the gums. Note! It is not necessary for these fine tips to produce a mist while they are scaling. The Feline Urethral Catheter must also be used with the power knob in the Specialty Insert position. Failure to do so, can cause injury to the patient, and shorten the life of the insert.

**NOTE!** Remember the importance of having an adequate (20psi minimum but no more than 50psi maximum) clean water supply. There is a large amount of heat released when the insert is activated. Without the proper flow of water, the temperature could rise to a level where the insert and/or the handpiece could be irreversibly damaged.

*Apply Teflon tape here*



- Slide the compression nut over blue water line with threaded side toward connection to water tank.
- Slide the blue water line over the nipple on the back side of the quick release
- Thread the compression nut over the water line and nipple to secure line in place.
- Looking at the water tank. There is a clear thick hose that narrows down to a brass female (inside thread) fitting.
- This piece threads to the female end of the quick release.
- You **MUST** use Teflon tape on the threads to prevent leakage.
- Once the tape is in place, thread the quick release on to brass. A wrench will be necessary to ensure it is secure.
- Fill tank with water to fill line.
- Connect the quick release valve-male and female together.
- Check that it is properly connected by gently pulling the male end away from the female. Making sure clamp is secure.
- Pump tank until it is difficult to continue pumping
- On the front of the machine. Turn the water pressure knob all the way up. It will turn continuously clockwise until it hits the machine.
- Take the insert out of the handle.
- Step on the pedal. The low pressure light may flicker. There is air in the water lines, this will cause it to make some noise and bubble the water out.
- Once the water is flowing over the handle. Seat insert into handle. Step on pedal and hold. Turn water pressure knob down by turning to the left until the low pressure light comes on. Once the light comes on—turn the knob up by turning to the right just enough to turn the low pressure light off. Then turn one-half (1/2) turn to the right. This should be optimum water pressure.

# Ultrasonic Scaler Troubleshooting

Delmarva 2000, Ltd.  
Service and Repair Department  
302.645.2226/voice  
302.645.0954/fax  
info@delmarva2000.com

**Scaler** - Scaling inserts should be replaced every 6-12 months for optimal performance. This varies with usage. Over time these items wear down, you will see a difference in the performance of your machine.

⇒ **Water flow or scaling hand piece gets hot**

Check or replace insert

Replace inline water filter (Item# DE-16B, Package 10)

Check for proper water pressure (20psi)

Adjust water knob or tuning knob

(note: water knob will spin continuously in both directions.)

Refer to installation/operation in instructions

⇒ **Not scaling properly**

Check or replace insert

Adjust water knob or tuning knob

*We highly recommend disconnecting your water source when unit will go unused for any length of time. (nights, weekends, etc.) This will prevent pressure build up in the line. Over time pressure could cause stress on the water line and/or filter.*

***Ship all equipment to:***

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It is recommended you talk to a technician. Sending equipment for repairs can be costly and time consuming. Call 1st and make sure you need service. The most common problems are with maintenance.

***In the event of a repair:***

It is the customers responsibility to:

- Ship the unit in need of repair
- Return ship the rented/loaned equipment

For your convenience, we offer UPS return service. The charges will be applied to your bill.