

DELMARVA 2000™

Ultrasonic Scaler w/Motor Pack

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DELMARVA 2000, LTD.
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MILTON, DE 19968

ULTRASONIC SCALER/MOTOR PACK
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/MOTOR PACK** 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.

SIX YEAR parts and labor coverage on the entire unit excluding the following components:

- * Micro Motor Hand Piece coverage, excluding dropping or excessive oil or liquid damage, one (1) year. Use of plastic prophy angles will void warranty.
- * Foot switch is are covered for two (2) years parts and labor.
- * Scaler inserts, prophy Angle, and contra Angle are not covered under Delmarva Warranty. Contact individual manufacture or distributor for warranty details.
- * SCALER hand piece warranty two (2) years.

1. **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.
2. **PROPER DELIVERY:** To render the services provided hereunder, the unit must be shipped Freight Prepaid or delivered to **DELMARVA** in either its original package or a similar package affording equal degree of protection. Warranty does not include shipping and handling back to the customer. In the event a loaner is needed, it is the users responsibly to return the unit, prepaid.
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 operated contrary to the operating instructions. **Micro Motor Hand piece 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.

FOR SERVICE OR WARRANTY REPAIRS, PLEASE CALL: (302) 645-2226

DELMARVA 2000-PLUS ULTRASONIC SCALER with MOTOR PACK

OPERATING INSTRUCTIONS

The DELMARVA Dual Veterinary Ultrasonic Scaler with Motor Pack 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 round 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 Amp circuit, 50/60 hertz AC. If you use a grounded plug adapter (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 basic unit is broken down into two major components; the Scaler and the Motor Pack:

The Scaler is activated by moving the on/off selector switch to the up position. When the foot peddle is depressed the insert tip starts cavitating, and water is converted into a fine mist.

The Motor Pack is activated by moving the on/off selector switch to the down position. When the foot peddle is depressed the micro-motor hand piece starts, and the RPM are determined by the Speed Control Knob.

The front panel of the DELMARVA Scaler with Motor Pack consists of the following controls:

ON/OFF SELECTOR SWITCH - *located right side of the panel* - The switch has three positions, off when centered, and on when it is moved up or down. When the switch is moved to the up position, the Scaler is activated and a green indicator lamp above the power selector comes on. When the

switch is moved to the down position, the Motor Pack is activated and a green indicator lamp above the power selector comes on.

POWER CONTROL KNOB - *this is the large control 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 Catheter and Cavitron® Slim-line™ , FSI™ or Modified Periodontal inserts. Note! When using these 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 dental 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.

WATER CONTROL - *the large control on the right side* - Turning this knob in a clockwise direction increases the flow of water and, conversely, the opposite direction produces a lessening in water flow.

LOW PRESSURE LAMP - *this indicator is directly above the scaler hand piece receptacle* - The red light comes on when the water flow/pressure drops below the safety point. IMPORTANT Do not operate the Scaler until you have corrected the condition, and an adequate supply water is again available.

SPEED (RPM) CONTROL - *is located in the center of the panel* - This knob controls the speed of the Micro-Motor hand piece. Turning the knob to the right increases the RPM.

HANDPIECE RECEPTACLE - located on left side of front panel accepts the male side of the hand piece connector with locking ring.

SCALER

1. Hook up the water supply. We suggest that you attach the unit to the hospital's cold water system. The system should have an adequate water pressure of at least 20 PSI and no more than 50 PSI. Connect the male portion of the quick release to a cold water pipe by the means of a "T" fitting. This might best be done by a plumber. The female coupling is connected to the flexible tubing, which is connected to the back of the Scaler/Motor Pack console.

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 an inline water filter (DE-16B w/ lure lock style connectors) in the water line to prevent debris from damaging the unit's water control valves. **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 lure 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.

2. Be sure the water supply is turned on. With the power switch in the off position, plug the power cord into a grounded 120V@20A wall socket. Now turn the Power Control knob counterclockwise as far as it will go. Turn the power switch on for the scaler side (switch the power selector to the up position). The green operating light above the power selector should be on. Hold the scaler hand piece upright in your hand and depress the foot peddle. The water system is now filling. You will notice water, and air bubbles coming out of the end of the hand piece....and the water pressure light acting erratic. Note!. It might be necessary to rotate the water control knob to the right to increase water flow. Remove your foot from the peddle when a steady flow of water comes through the hand piece. It is important that trapped air is removed, because it can produce HOT SPOTS (usually accompanied by a loud screeching sound) which can affect the performance of the Scaler or permanently damage the hand piece assembly. Take the scaling insert (a TFI-3 came with the machine) and slide it into the hand piece, but do not press it in all the way. With the insert resting on top of the opening, again depress the peddle to allow any residual air to escape. Now, with your foot off the peddle, seat the insert into the hand piece by applying pressure and simultaneously twisting the insert in a clockwise direction.

3. Depress the foot peddle again and continue to hold the hand piece in vertical position. Slowly reduce the water flow (water control knob - counterclockwise) until the low 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 range and the low pressure light should now be out. **Note!** Inserts and hand pieces 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 hand piece, and the Scaler will not perform to its optimum. Now that the water flow is properly adjusted, depress and release the foot peddle several times. (Hold the foot peddle down again and re-check your water flow and low pressure light.) The tip of the insert should now be cavitating and producing a fine mist as the water flows onto the tip.....The scaler is now ready to use.

5. Routine scaling is usually done in the *Normal* power mode. The *25% Power Increase* setting will provide extra insert tip power to remove the “hard to remove” calculus.(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 the scaling under the gums.

The Feline Urethral Catheter must also be used with power knob in the ***Specialty Insert*** position. Failure to do so, can cause injury to the patient, and shorten the life of the insert.

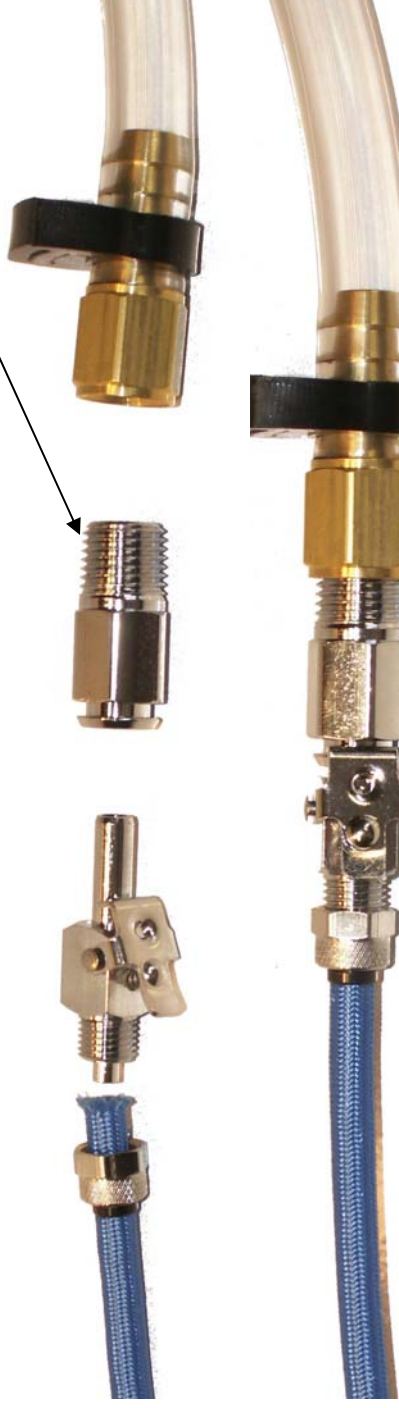
MOTOR PACK

1. The power selector switch should be centered in the Off position.
2. Place the plug from the Micro-Motor hand piece into the socket located on the right rear side of the console. Slip the Snap-On Prophyl Angle onto the sleeve connector of the motor hand piece. This is easily done by aligning the slot on the Prophyl Angle with the pin on the connector and applying pressure to sleeve together. Applying straight pressure is all that is needed, do not twist while connecting.
3. Attach the Snap-On Polishing cup to the Prophyl Angle head cap. Move the power selector switch to the down position and the green indicator lamp above the power selector switch will come on. Rotate the speed control knob (located center of console) to the left until it stops. Now depress the foot peddle and become familiar with the way the Micro-Motor hand piece operates. Slowly rotate the variable speed control from the left stop to the extreme right stop. This provides a smooth progression of speeds from a low of approximately 1000 RPM to a high approaching 8,000 RPM. Not only does the unit furnish a wide range of speeds, but it delivers a high degree of torque throughout the speed range. Note! The actual speed and power the Hand piece produces will vary with the type of attachment. For example: the Prophyl Angle is geared to provide low RPM (1,000 to 8,000), while a Contra Angle will provide speeds from a low of 4,000 to a high of approximately 20,000 RPM.
4. The Micro-Motor Hand piece requires no Maintenance; however, the following suggestions will help to provide optimum performance for a long time.
 - * Prevent fluids (cleaning solutions, lubricants etc.) from gaining access to the motor within the hand piece casing.
 - * Keep oils and other lubricants away from the coupling; otherwise slippage will occur and the angle wont perform.
 - * The hand piece does not require lubricating.
 - * The hand piece is not to be autoclaved.
 - * And of course, dropping the Micro-Motor assembly should be avoided.
 - * Never spray lubricants or oil into sleeve.

PROPHY ANGLE

Because the angle operates in such a critical environment (water, saliva & polishing paste) it wears out rapidly. You can extend it's life by taking it apart, * SEE Care & Maintenance - cleaning the gears with a small brush. A lubricant (DE-11) should be applied to the gears before the angle is reassembled. Remove the Prophyl Angle from the Micro-Motor hand piece prior to cleaning. The Delmarva Cleaner/Lubricant (DE-11) is recommended for use with the Prophyl Angles.

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 minimum to 50psi maximum)

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:

Delmarva 2000, Ltd.
21 Shay Lane
Milton, DE 19968

302.645.2226/voice
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info@delmarva2000.com

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.

Motor Pack

Troubleshooting

Delmarva 2000, Ltd.

21 Shay Lane

Milton, DE 19968

302-645-2226

302-645-0954/fax

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Troubleshooting/Service

Polisher

⇒ **NEVER** DROP

⇒ **NEVER** LUBRICATE or get any fluids in or on the handle

⇒ **DO NOT USE** plastic prophy angles

⇒ Intermittent power trouble
Check or replace angle

Ship all equipment to:

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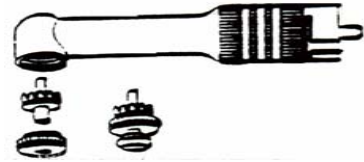
FOR MAXIMUM PERFORMANCE
PERIODIC REPLACEMENT OF
THE PROPHY ANGLE
AND CONTRA ANGLE
ARE NECESSARY.

REPLACEMENT SCHEDULE
WILL VARY WITH USAGE.

Autoclavable Prophy Angles

LUBRICATION:

1. Remove cup or brush.
2. Thoroughly clean the outside of angle with disinfectant moistened 2x2 gauze.
3. Unscrew the knurled head cap by turning clockwise and remove the cap and screw stem holders. The snap-on style angles have a single unit cap, ball, and gear assembly.
4. Lubricate all gears with handpiece lubricant (DE-11) and reassemble, making sure that the knurled cap is tightened firmly counterclockwise.
5. Rotate the shaft several times to circulate the oil and to make certain that the gears have intermeshed properly.
6. Wipe off any excess oil expelled.
7. Sterilize by autoclaving before putting back into service.
8. Delmarva Cleaner/Lubricant (DE-11) is recommended for cleaning the prophy angle.



AUTOCLAVING PROCEDURE:

1. Thoroughly clean the outside of the angle with a disinfectant moistened 2x2 gauze sponge.
2. Autoclave angle per manufacturer's instructions. (Maximum temperature for autoclaving is 250-270)

WARNING:

1. The prophy angle must be lubricated before every autoclaving procedure.
2. Damage due to lack of lubrication is mis-use and is not covered by the warranty.
3. Maximum autoclave temperature 270 degrees F. Do not use dry heat of cold sterilization.

NOTICE:

Prophy Angles must be cared for per manufactures instructions after each days use. Failure to so will jam gears and ruin prophy angle,

voiding the warranty!

TFI 3 & 10 (Scaler Inserts), as well as, prophy angles must be replaced periodically for top efficiency.

Replacemnt time will vary with usage.