



Sonus II

Veterinary Ultrasonic Dental Scaler

Instruction Manual

Engler Engineering Corporation

1099 East 47th Street, Hialeah, Florida 33013

800-445-8581 – 305-688-8581 – FAX 305-685-7671

Web site: www.englerusa.com Support site: www.engler411.com

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READ BEFORE YOU START

The handpiece and ultrasonic transducer (stack) are water cooled devices and must always have adequate water flow to function properly. The amount of water sent to the handpiece must be regulated according to the power level. If the power level is increased, the amount of water must also be increased. Not having enough water flow throughout the scaling handpiece will cause the handpiece to get hot, degrade transducer (stack) life and void the warranty. Turn scaler power down to minimum and press the footswitch until water flows out, then turn the scaler power up as needed.

When active, the ultrasonic transducer (stack) vibrates at over a million cycles per minute, if it touches soft tissue or skin it will cause burns due to vibrational friction. The tip is not hot but the ultrasonic vibration will cause burns if touched, this is due to the friction between the skin and the vibrating tip. This is normal for all ultrasonic scalers. Never let the scaling tip touch soft tissue or skin, Engler Engineering Corporation is not responsible for any damage caused by improper use of this device and / or its accessories.

Never twist or bend your transducer (stack). Be careful not to twist or bend the stack when inserting or removing it from the handpiece. Pull the stack straight out to remove it. Bending it or inserting it incorrectly into the handpiece may irreparably damage the stack and degrade it's ability to vibrate. Improper insertion of the stack may also damage the handpiece as well as cause it to get hot. Damage caused by bending the stack is not covered by the warranty.

Do not alter the scaling tip. The tip is shaped to deliver the optimum vibrating power level and keep its optimum frequency. Deforming (sharpening, bending) the tip will cause the handpiece to get hot, degrade vibration power and void the warranty.

Dropping the scaler handpiece with the stack / tip may alter or damage the stack / tip causing the handpiece to get hot, degrade vibration power and void your warranty.

Remove the stack / tip and clean / disinfect after every use.

Ultrasonic transducer (stack), tips, and water filter, are normal wear and tear items. In order to achieve optimum performance they should be replaced regularly.

The water regulator has multiple turns. Turn the water regulator knob counterclockwise to open and clockwise to close.

Suggestions when using the portable pump up water bottle; make sure the bottle is filled at least half way, pump the bottle completely **BEFORE** each procedure, and be sure plenty of water is flowing out of the tip during procedures.

The typical life of a transducer (stack) is six months to a year. To achieve optimum performance replace it every six months to a year or as needed. Do not leave the stack inside the handpiece for long periods of time. The O-rings may dry out and make it difficult to remove. Lubricate the O-rings on the stack with mineral oil or petroleum jelly.

Do not coil tightly, kink or pull the hoses. Kinking the hoses will restrict or cut off water flow which may cause overheating / damage to the handpiece.

As a safety precaution, all water is purged from the water lines prior to shipping. When installing the unit, no water will come out of the handpiece until the water lines are filled. Over a sink, remove the stack, rotate POWER control knob to **minimum**, the display will read 1, (counter clockwise) turn the WATER control knob counterclockwise 3 to 4 turns. Press on the footswitch until water flows, then reduce water to proper water level. Reinstall the stack. The power level should be adjusted low to medium, so that a fine mist sprays from the tip.

Turn off the unit, remove the stack from the handpiece and disconnect the waterline when the unit will not be in use for extended periods.

The power switch is on the left side of the unit.

COMPANY PROFILE

Engler Engineering Corporation has been in business since 1964 and occupies an 8000 square foot facility in Hialeah, Florida (USA). We manufacture ultrasonic dental scalers, polishers and combination units including electro surgery equipment and ultrasonic instruments for the veterinary market as well as a microprocessor controlled anesthesia delivery system and a respiratory monitor for veterinary use only.

We also manufacture dental equipment for the human market. Please visit our website, www.englerusa.com for more detailed information or call us at the numbers shown below.

Engler Engineering Corp. acquired the exclusive manufacturing and marketing rights of Dynax products, including stretchers, animal restraint devices, comfort cots, and other products. We also acquired the Alpha-Sonic, Ora-Sonic, and Pro-Sonic line of piezo scalers.

Engler Engineering Corporation's brand name products proudly include: Son-Mate II ultrasonic scaler / polisher, Sonus II dental ultrasonic scaler, Poli-X variable speed polisher, Scale-Aire Mini high speed veterinary dental air unit with ultrasonic scaler / low speed / high speed / air / water syringe, Excelsior high speed veterinary dental air unit with vacuum / electrosurgery / ultrasonic scaler / low speed / high speed / air / water syringe, Tri- Mate scaler / polisher / electro surge (for veterinary use only), A.D.S. 2000 Anesthesia Delivery System / ventilator, and the Sentinel V.R.M. veterinary respiratory monitor, (both for veterinary use only)

We manufacture all of the inserts and tips used in the Engler products as well as many others on the market today in the 18K, 25K, and 30K frequency range.

Our repair department has the technical knowledge to repair and maintain a number of dental devices manufactured by other companies including Shorline.

Engler Engineering Corporation's foreign sales are handled through a large and growing network of dental and veterinary distributors. At the present time we are represented throughout the Middle East, Europe, Central and South America, Canada, Asia, New Zealand, Australia, and most other countries.

If you have any questions or comments, please contact:

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INTRODUCTION

Thank you for purchasing the Engler Sonus II Scaler.

The Sonus II uses state-of-the-art integrated computer technology together with time tested technology. This combination produces a powerful and potent tool against periodontal disease.

The dental scaler utilizes an ultrasonic principle of operation. Our state of the art circuitry converts line voltage to an operating frequency of approximately 18,000, 25,000, or 30 Hz. (depending on the type of unit) This frequency is then amplified and delivered to the scaling tip. As a result, the tip vibrates at this ultrasonic frequency with amplitude of 0.001 to 0.004 in. (25.4 um. to 102 um.).

In designing our unique Sonus tips, water flows through the tip as it vibrates. As the bubbles in the lavage are bactericidal, the energy released collapses and destroys the bacterial cell walls. The water flowing through the tip effectively cools the area and assists in removing any debris from the operative site.

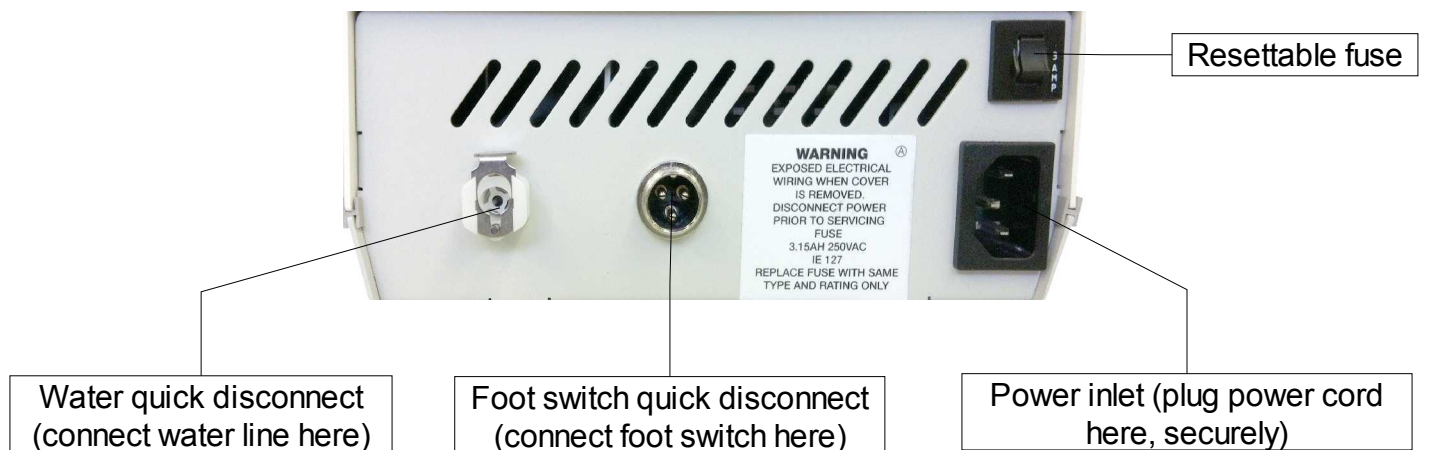
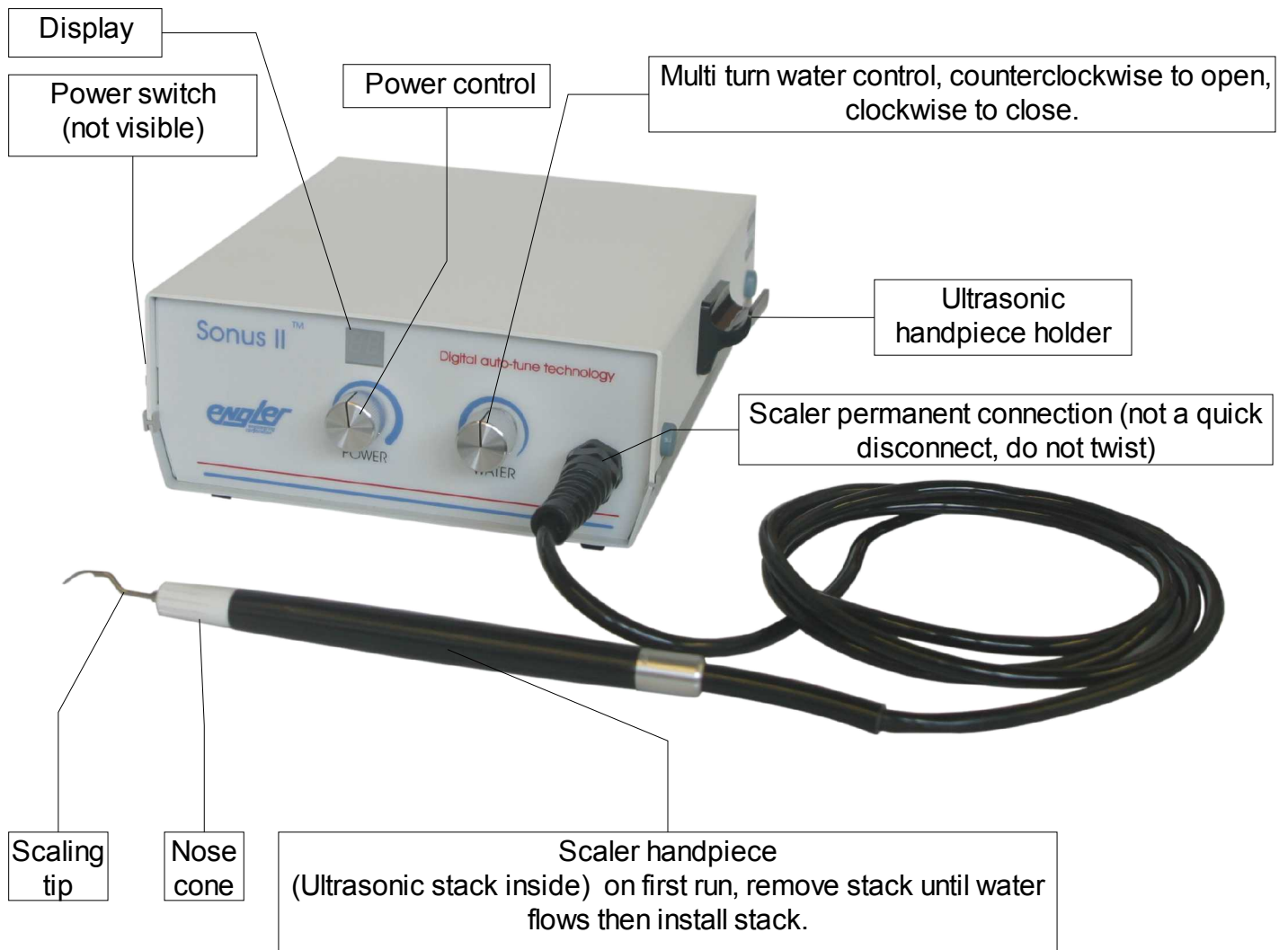
PLEASE READ VERY CAREFULLY

Engler Engineering Corporation makes every effort to verify that all parts for the device along with any optional accessories ordered were shipped from our facility in Hialeah, Florida. It is imperative that you inspect the contents and if you find any parts missing or damaged, you must notify us immediately. All claims submitted after fifteen days of receipt will not be valid.

All devices manufactured and / or sold by Engler Engineering Corporation are built and tested to approved standards. Any modification to the device, cables or hoses, alterations or repairs initiated by others nullifies all warranty statements. Engler Engineering Corporation will not be held liable for any loss, damage, injury or death due to unauthorized service and or improper installation and or improper use of the device.

This manual is not intended to teach dentistry. The information contained herein is intended only as a guide. Individuals not properly trained in dentistry should not use this equipment. It is intended for professional use only.

If you have any questions or comments, please contact us at 305-688-8581



INSTALLATION INSTRUCTIONS

Before installing or operating your new Sonus II, carefully read and follow all of the instructions.

IMPORTANT: This device must be connected to a clean, filtered, water supply, capable of delivering 30 to 60 PSI., 0 to 4.2 kg/cm²) of water input pressure. This unit comes with an In Line Water Filter (part # A52030). When kept clean and free of foreign matter, it will assist in proper water flow to the unit. If the water pressure in your office is above 60 psi, we recommend you install a water pressure regulator on the supply line to your scaler.

CONNECTING WATER SUPPLY:

We strongly recommend that a manual shut off valve be placed ahead of the Female Quick Disconnect, so that the water can be completely shut-off, and line pressure relieved, when the unit is not in use.

This device comes equipped with an 8 foot (244 cm) water line, a Male Quick Disconnect fitting, a Water Filter and a coupling body (which connects the water line to the back of the unit).

The water line must be connected to the white fitting located on the back of the unit before a connection is made to the water source. To connect the water line, slide the white (male) insert into the coupling body (at the back of the unit) until the metal latch locks it in place making a clicking sound. The water line can now be connected to your water source.

We suggest that you use one of the four methods as shown on the next two pages.



44301 Male quick disconnect

**** Please note, male quick disconnect is supplied as a standard item with all Engler scalers.**

PLEASE REMEMBER -

It is recommended that you disconnect the device from the water supply when it is not in operation. Engler Engineering Corporation will assume no liability for damage due to not following recommendations in the Engler manuals.

CONNECTING WATER SUPPLY cont.

1. Female Quick Disconnect (part #44300) - This is the female mating connector to the Male Quick Disconnect supplied with the Sonus II . Use this to create a custom water installation utilizing $\frac{1}{4}$ " I.D. water tubing.



44300 Female quick disconnect

2. Saddle Valve Assembly (part # A44303) - This kit contains all the parts necessary to quickly and easily connect your unit to an existing existing $\frac{3}{8}$ " to $1\frac{3}{8}$ " copper cold water supply line.



A44303 Saddle valve assembly with female quick disconnect & tubing

3. Faucet Adapter Assembly (part # A22303) - This screws onto an existing faucet and includes a Female Quick Disconnect.



A22303 Faucet attachment with female quick disconnect & tubing

4. Portable Water Tank (part # PT-1) - This self-contained water source, is ideally suited for portable operation. We suggest using distilled water and fill the tank to the water fill line (approximately $\frac{2}{3}$). Tighten the cap, insert the Male Quick Disconnect on the water line into the Female Quick Disconnect on top of the tank. Pressurize the tank by pumping the handle until the pressure relief (on the bottle) valve's yellow indicator begins to show. Lock the handle in place.



PT-1 Portable Water Tank

IMPORTANT: We recommend the services of a professional plumber. Engler Engineering Corporation will not be held liable for any damage including, but not limited to leakage caused by improper installation of water lines.

CONNECTING WATER SUPPLY cont.

WHY DO WE INCLUDE A WATER FILTER WITH EVERY SCALER?

Depending on the water supply in your area, there may be minerals or other foreign particles present. These minerals may cause a build up or blockage of the dental tip, internal parts, or hoses.

The water filter supplied with this device must be opened and inspected quarterly and we suggest that the filter disc and O-ring be replaced at least once a year. See WATER FILTER CLEANING INSTRUCTIONS.

CONNECTING THE FOOT SWITCH:

To connect the footswitch to the unit, insert the male quick disconnect on the cable into the female quick disconnect at the rear of the unit and tighten the securing nut by turning clockwise.

CONNECTING POWER SUPPLY:

First plug the power cord into the rear of the unit, then plug the other end of the into a grounded power outlet. DO NOT remove or bypass the ground pin from the power cord. Doing so will void the warranty.

IMPORTANT: Your Sonus II has been equipped with a universal switching power supply and will not require adjustments in this regard. See technical data for specifications.

SCALER OPERATING INSTRUCTIONS

Initial procedures at the start of every day:

1. Make sure the power switch is ON, it is located on the left side of the unit.
2. Adjust the power control knob to the **minimum** power setting fully counter-clockwise. The digital display will read 1.
3. With no transducer (stack) in the handpiece (no tip installed), set the water control to its maximum setting by rotating it counterclockwise, (knob will rotate up to 3 and a half turns for maximum water) hold the handpiece over a sink and depress the footswitch until water comes out in a stream. This should take no more than 30 seconds. This step is done to insure proper operation of the delay cavitation feature by removing air that may be trapped in the water lines.

Warning: DO NOT run the ultrasonic handpiece for more than 30 seconds without water flow. Doing so will permanently damage the handpiece and void the warranty.

NOTE : The O-rings on the stack should be lubricated once per week with a small amount of petroleum jelly to keep the O-rings from sticking in the handpiece.

4. Place the transducer (stack) into the handpiece, push the white nosecone onto the handpiece and then install a sterile tip into the nosecone. Rotate the nosecone in a clockwise direction to tighten the tip. Tighten firmly by hand.

IMPORTANT: It is important that you DO NOT over-tighten the tips, as this may damage the handpiece, stack, and / or tip and void your warranty.

5. Always keep the power control at the lowest setting and the water control to a level where you have a fine mist at the tip. Higher power settings will result in hotter water.

NOTE: Tips sent from our facility are not sterilized.

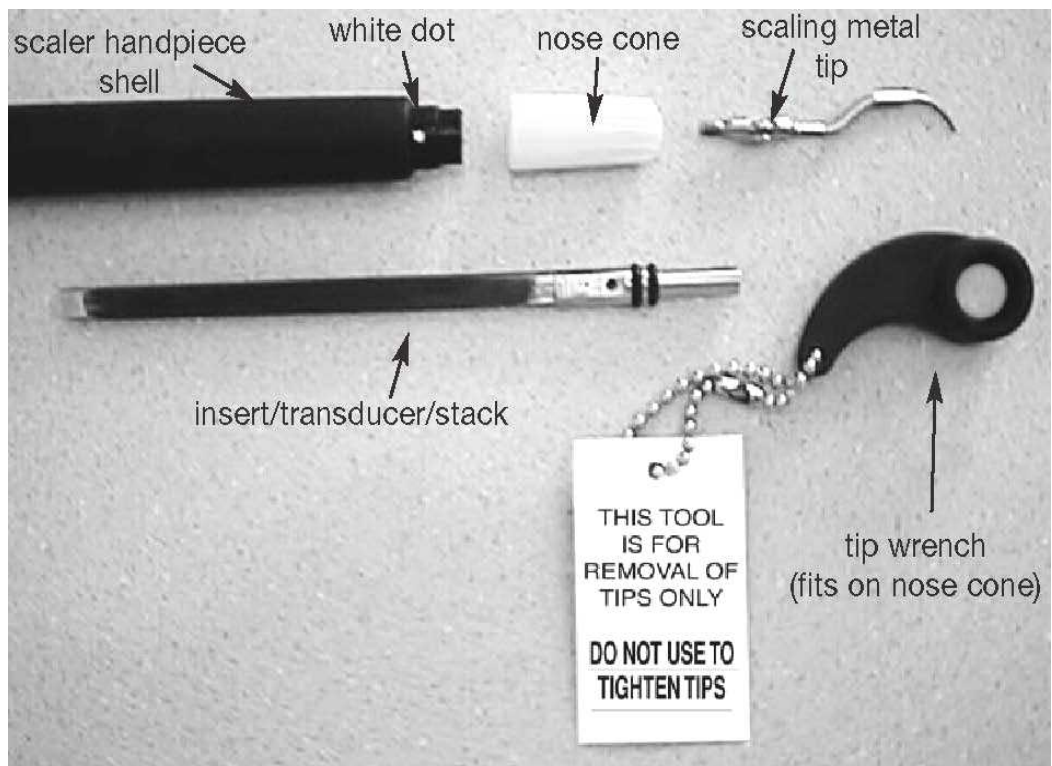
6. **IMPORTANT:** If you find that tightening the nosecone by hand is not successful, you may **lightly** tighten the nosecone with the tip wrench. Since the tip wrench is designed to remove the tips, it is important that you DO NOT over-tighten the tips with the tip wrench, as this may damage the stack, tip, and / or the handpiece and void your warranty.

IMPORTANT: Keep in mind that higher power levels tend to heat the out-flowing water. Temperature control can be achieved by balancing the power with water flow volume. Thus, higher power settings require high water flow rates and conversely lower power requires low water flow rates.

7. The scaler is now ready for use.

IMPORTANT: Operating this device with hot water may cause damage to gums, lips and tongue. If the handpiece begins to get warm, stop and check water temperature. If it is hot, make sure that the power is at the lowest setting and the water is set at a high enough setting to provide a lukewarm mist. Do not use this device if the water temperature is too hot.

Engler Engineering Corporation will not be liable for damage due to improper use of this device.



ULTRASONIC SCALING PROCEDURES

1. Before placing tip into patient's mouth, activate the scaler handpiece over a sink by depressing the footswitch. A fine mist, with the temperature between cool to lukewarm to the touch is recommended. This should be accomplished with minimal power and proper water flow.
2. It is recommended that when a tip is placed into a patient's mouth, the lips, cheek and tongue be retracted to prevent contact.
3. Place the tip into the patient's mouth and depress the footswitch to activate the scaler.
4. Bring the tip lightly up to the tooth and gently move it over the surface of the tooth with an erasing motion.
5. A saliva ejector or HVE is recommended.

IMPORTANT: Do not leave the vibrating tip in one place as it can cause serious damage to the tooth or surrounding tissues. Engler Engineering Corporation will not be liable for damage due to improper use of this device.

Note: We have designed the this device with a feature called Delayed Cavitation. This function purges the tip of water after releasing the footswitch to prevent bacteria from entering the tip.

IMPORTANT: Excessive pressure on the tip is not necessary to remove calculus or tartar. Enamel on the teeth may be damaged or removed when using excessive pressure. The enamel may be damaged if the scaling tip is left to rest in one spot for even a few seconds. Using the tip, as a pry to remove calculus or tartar is strongly discouraged as it may damage the teeth and incidentally change the shape of the tip, altering it's performance. The normal power setting for most procedures should be near mid-range. Since every operator has a different technique, the power may be adjusted to satisfy specific requirements. Ultrasonic scaling procedures are not intended for soft tissue.

CAUTION: Contact with Soft Tissue Will Cause Burns. Engler Engineering Corporation will not be liable for damage due to improper use of this device.

SCALER MAINTENANCE

FINAL PROCEDURES AT THE END OF EACH DAY:

1. Make sure the unit is turned off.
2. Remove the tip and nose cone and sterilize.
3. Disconnect the unit from its water source or turn off the water supply.
4. Clean and disinfect all surfaces.

Scaling Tips:

IMPORTANT: The scaling tips should be thoroughly cleaned and free of blood, tissue, or any other debris before sterilization.

The scaling tips, nosecone and stack may be sterilized by autoclave or chemiclave, always following the manufacturer's instructions and recommendations. Do not autoclave over 270 degrees F or more than twenty (20) minutes.

It is recommended that you do not leave tips screwed into the handpiece indefinitely as water and sediment may make it difficult to remove, causing possible damage to the insert and handpiece.

Transducer / stack / insert:

The stack may be sterilized using the same methods as listed above. **Do not sterilize the entire stack, tip and nosecone assembly as one piece. Separate the tip from the stack before sterilization.**

To re-install the stack into the handpiece, follow procedures on the next page.

Note: To achieve optimum performance of your equipment, we recommend that the stack, tip and nosecone be replaced every 6 months or as needed.

Chassis:

The chassis of your unit should be cleaned at the end of every operating day with a chemical sterilization solution. This procedure could be done by spraying a fine mist of sterilization solution on the unit, allowing it to remain on the chassis for the length of time recommended by the manufacturer. The surface should be wiped with a clean damp cloth or as suggested by the chemiclave manufacturer. Dry completely.

IMPORTANT: In using any chemical sterilization solution please follow the manufacturer's suggested procedures.

HANDPIECE, FOOTSWITCH AND POWER CABLES:

After each procedure, or at least once a day, it is suggested that the handpiece and its cable be thoroughly cleaned and sterilized. The recommended procedure is as follows:

Note: If any chemicals are allowed to get into the handpiece, it must be flushed out with clean water.

1. Remove tip, and nosecone - sterilize these items as listed above.
2. Clean the outer surface of the handpiece and its cable with an antiseptic soap, rinse with water and sterilize with a chemical sterilization solution.
3. Place cleaned tip and nosecone into handpiece for next patient.
4. The footswitch and power cables should be cleaned periodically by spraying a fine mist of sterilization / cleaning solution on the cables. It should remain on the cables for the length of time recommended by the manufacturer. Wipe the surface with a damp cloth and dry the cables completely.

TRANSDUCER (stack) INSTALLATION / REMOVAL INSTRUCTIONS

You have purchased a precision instrument. Please handle gently - It is easily damaged

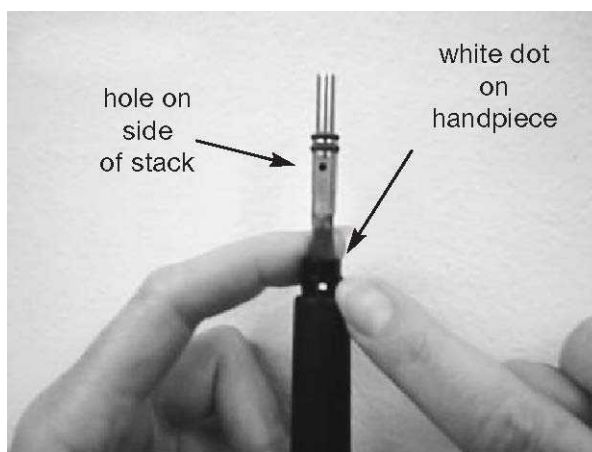
TO REMOVE THE TRANSDUCER (STACK):

1. Unscrew and remove the scaling tip by turning the plastic nosecone counterclockwise using the tip wrench.
2. Pull off plastic nosecone. Pull stack straight up. **DO NOT USE PLIERS!** If you have difficulty pulling the stack out, screw the tip back in (without the nosecone) and pull the stack straight out with the tip.

IF YOU STILL CANNOT REMOVE IT, PLEASE CALL US AT **800-445-8581**.

Do not twist or rotate stack while it is in the handpiece, as it will damage the stack and / or handpiece and void your warranty.

TO INSTALL THE STACK:



Carefully remove the new stack from the clear shipping tube.

1. Locate the hole (see photo above) on the side of the stack. Align it with the white dot on the top of the handpiece and let the stack slide down into the handpiece.
2. Gently push the stack down until it stops. There should be approximately ½ inch showing above the handpiece.
DO NOT force the stack into the handpiece.
3. Push plastic nosecone onto scaler handpiece.
4. Place scaling tip into nosecone and turn nose-cone clockwise.

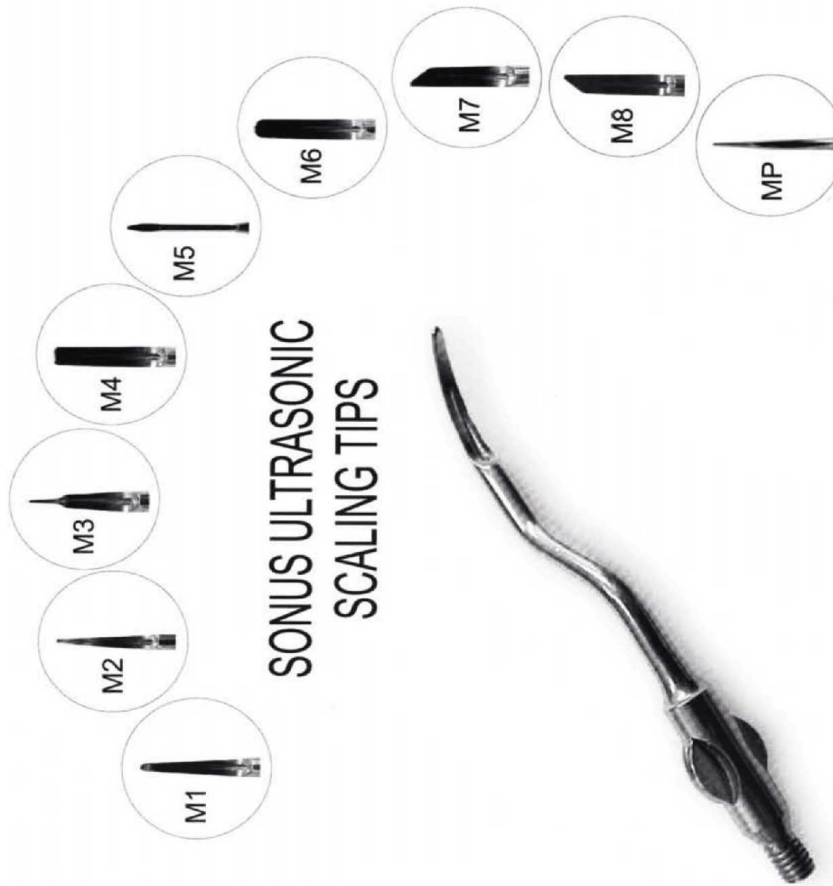
NOTE 1: Tighten nosecone / tip securely by hand. **DO NOT USE TIP WRENCH.**

NOTE 2: The O-rings on the stack should be lubricated every week with a small amount of petroleum jelly (Vaseline) to keep the stack from sticking in the handpiece.

NOTE: Twisting the nosecone or tip with excessive force will damage the stack and void your warranty.
FOR FURTHER ASSISTANCE CALL CUSTOMER SERVICE 800-445-8581 OR 305-688-8581

SONUS TIP SHAPES

- M1 (133-1201) - UNIVERSAL POINTED
- M2 (133-1202) - EXTRA FINE
- M3 (133-1203) - INTERPROXIMAL SICKLE TYPE
- M4 (133-1204) - BROAD FLAT SPATULA
- M5 (133-1205) - HYPODERMIC NEEDLE TIP
- M6 (133-1206) - BROAD ROUNDED SPATULA
- M7 (133-1207) - GOLDMAN LEFT
- M8 (133-1208) - GOLDMAN RIGHT
- MP (133-120P) - PERIO SUBGINGIVAL



Some tips may no longer be available. Contact Engler Engineering for more information

SCALER TROUBLESHOOTING

DISPLAY DOES NOT ILLUMINATE:

1. Verify that unit is switched ON. The ON / OFF switch is located on the left hand side (facing the unit).
2. Verify that the unit is **plugged** into an **active** wall outlet.
3. Verify that the power cord is fully inserted into the **power socket** on the back of the unit
4. Contact Engler Engineering Corporation.

DISPLAY ILLUMINATES, NO WATER FLOW:

1. Verify water line is connected and water is flowing to unit.
2. Verify that the waterline is correctly connected to the coupling insert at the back of the unit.
3. Check if water line is kinked or twisted.
4. Check Water Filter / Filter Disk: clean disk with plain water and a toothbrush. If clogged, replace O-ring and disc. Call Engler Engineering Corp. for replacement parts.
5. If using Portable Water Tank, verify you have the correct water level and sufficient pressure.
6. Water blockage in tip: replace the tip. (Clean with # 3 (0.012") piano wire)
7. Contact Engler Engineering Corporation.

DISPLAY ILLUMINATES, LITTLE OR NO VIBRATION / CAVITATION ON TIP:

1. Tip loose: tighten the tip.
2. Tip damaged: replace the tip.
3. Old or damaged transducer (stack): replace the stack.
4. Contact Engler Engineering Corporation.

HOT WATER COMING OUT OF SCALING HANDPIECE:

The Stack requires a constant cool water flow in order to maintain tip water temperature below 100 degrees F. You may correct the problem by:

1. Adjusting water flow knob higher (counter clockwise).
2. Tip clogged. Replace tip.
3. Check and / or replace O-ring and Filter Disc in the Inline Filter.
4. Water restriction in unit: contact Engler Engineering Corporation repair department.
5. If using a Portable Water Bottle, check water level then pump to pressurize the bottle.

INTERMITTENT OPERATION:

Tip vibrates then stops:

1. Tip loose: tighten tip.
2. Foot switch damaged: contact Engler Engineering Corporation.
3. Handpiece / cable damaged: contact Engler Engineering Corporation.

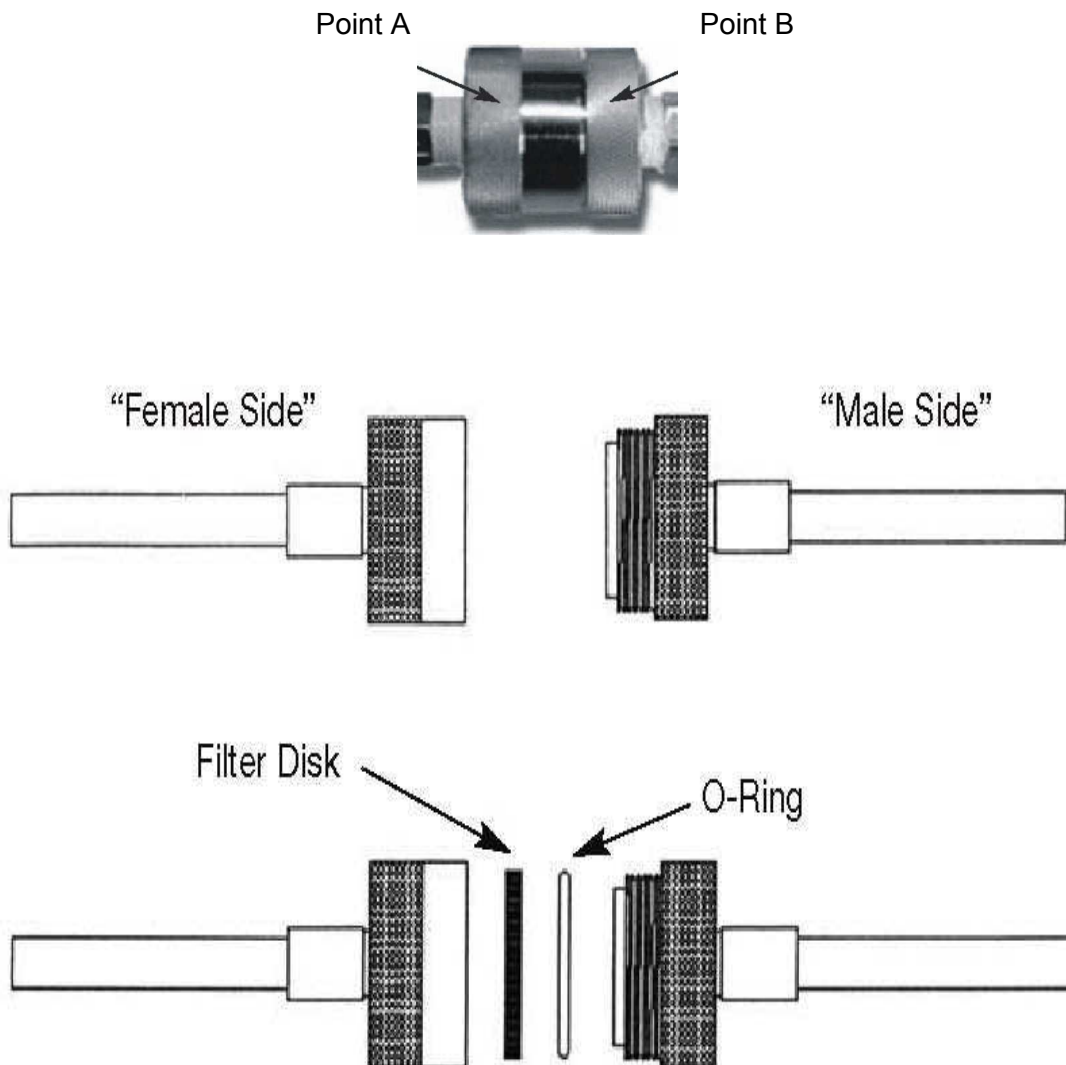
Tip action ceases abruptly during operating procedure.

1. Tip not tightened: tighten tip.
2. Transducer (stack) damaged / broken: replace.
3. Handpiece / cable damaged, contact Engler Engineering Corporation.

WATER FILTER CLEANING INSTRUCTIONS

SHOULD BE PERFORMED AT LEAST QUARTERLY

1. Turn off water supply to unit or disconnect the male from the female water connector
2. Unscrew filter by firmly holding Point "A" in your left hand and Point "B" in your right hand. (Refer to Figure) Next, unscrew by simultaneously rotating your left hand away from you and rotating your right hand toward you. Continue this process until the filter unscrews into two separate pieces.
3. The filter body consists of two sides, one with an outer male thread and another with an inner female thread.
4. Remove the O-ring.
5. Next, remove the filter disc by turning the female side over and tapping it gently into the palm of your hand.
6. Replace with new disc and O-ring, part # A52034.
7. Reassemble the filter in the reverse order as you disassembled it.
8. Turn on the main water supply and check for leaks.



SADDLE VALVE ASSEMBLY

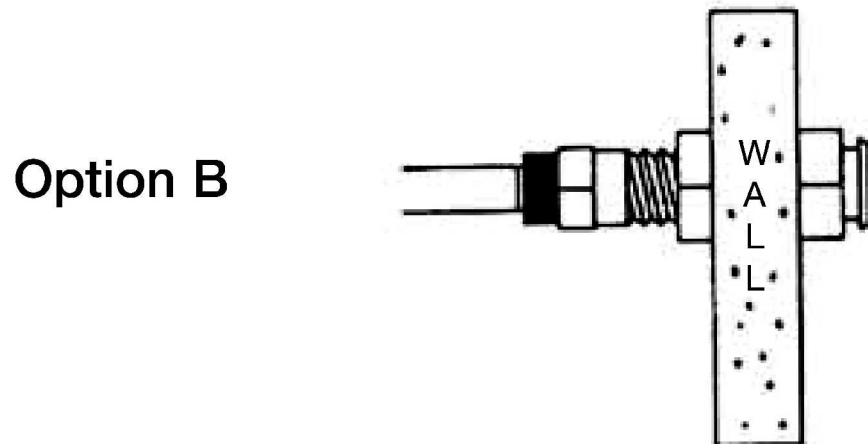
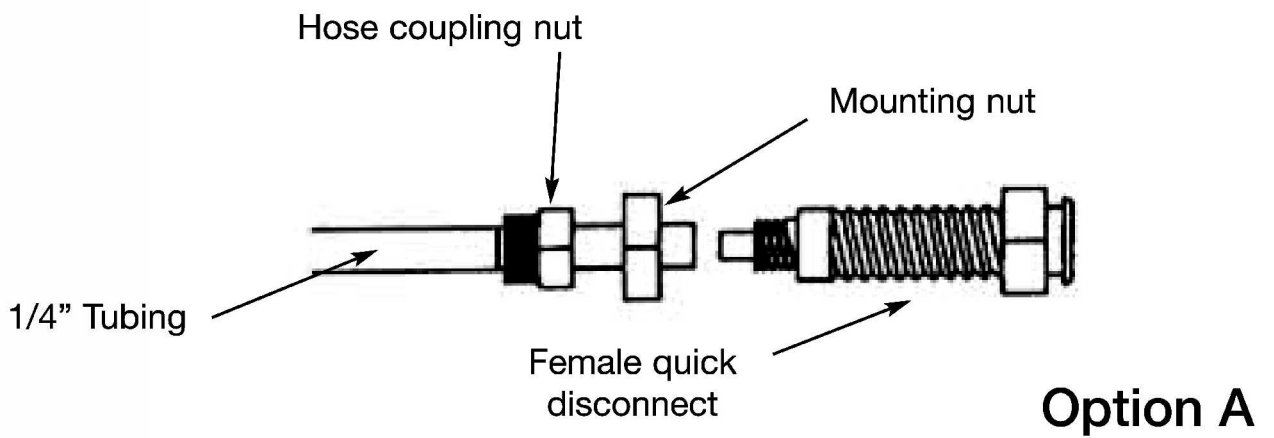
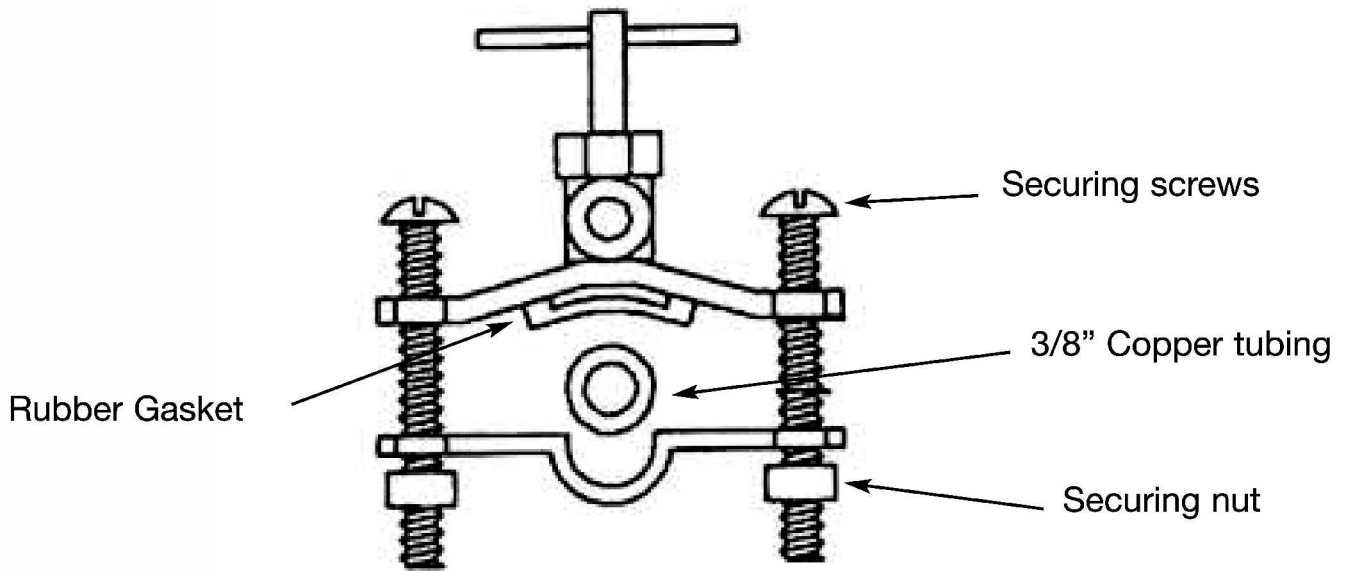
Installation Instructions



Connect the saddle valve to an existing water source.
Be sure the tubing is copper and be sure to attach it to the cold water supply.
The copper tube should be between 3/8" and 1-3/8".
Tighten the saddle valve's securing screws evenly.

DO NOT ATTEMPT TO CONNECT THE SADDLE VALVE TO (plastic) PVC TUBING. THE PVC WILL CRACK.

DO NOT OVERTIGHTEN, THIS MAY CAUSE THE COPPER TUBING TO CRIMP AND REDUCE FLOW.



2.To mount the female quick disconnect, there are two options.

Option “A” (Unmounted Assy.)

Take the free end of the 1/4” water tubing that comes from the Saddle Valve and connect it to the Female Quick Disconnect. This is done by placing the hose coupling nut over the water tubing and placing the hose into the back of the Female Quick Disconnect, then tightening the coupling nut. Part # A44303 Saddle Valve Assembly w / Female Quick Disconnect and tubing.

Option “B” (Mounted Assy.)

If you wish, the Female Quick Disconnect may be mounted directly in the sink top or vanity counter. If you choose this way, you must first drill a 1/2” diameter hole through the surface in the space desired. (see above) Then install the Female Quick Disconnect and tighten the mounting nut to securely hold it in place. Then proceed to place the hose coupling nut over the 1/4” water tubing. Place this tubing into the back of the Female Quick Disconnect and tighten the hose coupling nut securely.

The copper tube is ready to be pierced.

Confirm that the Saddle Valve assembly is tightened snugly to the copper tube and the Female Quick Disconnect is properly connected to the water line.

Turn the “T” handle of the saddle valve in a CLOCKWISE direction until it will go no further. Next, turn the “T” handle in a COUNTERCLOCKWISE direction until resistance is felt. Water will now flow to your dental unit. Check for leaks.

You may now connect the water line to the back of the dental unit.

NOTE: The “T” handle on the saddle valve does not shut water to the dental unit. It is only used to pierce the copper tube. It is very important that you mount the saddle valve after a shut off valve.

Engler Engineering Corporation will not be held liable for any damage including, but not limited to leakage caused by improper installation of our products. It is suggested that a professional plumber make any necessary installations or connections.

WATER TANK INSTRUCTIONS



PT-1 Water Tank

DIRECTIONS:

1. Release Air Pressure by PULLING and TURNING pressure relief valve, (black knob) located on the side of the bottle.
2. Remove pump and cap assembly.
3. Fill tank with distilled water or medicated solution up to the "FILL LINE" mark (approx. 2/3) . Do NOT fill beyond this line.
4. Replace pump and cap assembly and tighten securely.
5. Pressurize tank by pumping it approximately 20-40 times (depending on the amount of liquid used). If a hissing sound is detected, tank is over-pressurized. Stop pumping. Leave tank on a level surface until hissing stops. Insert the Male Quick Disconnect on the end of the waterline from scaler into Female Quick Disconnect provided on tank.

WATER TANK CARE & MAINTENANCE

1. Release air pressure by pulling and turning the black pressure relief valve knob. Pull out fully and allow air to escape.
2. Loosen cap slowly. Remove pump & cap assembly. Pour out any remaining liquid & rinse all parts thoroughly with clean water.
3. Always store tank empty and with tank cap loose.

TROUBLESHOOTING WATER TANK:

PROBLEM: TANK FAILS TO PRESSURIZE.

1. Be sure cap is tight.
2. Check to see if pressure relief valve is closed.
3. Remove the pump from the tank. Turn pump handle counterclockwise and lift handle to unlock. On top of the pump cap there is an opening that says "oil here". Place 3-5 drops of mineral oil into the opening. Pump several times to work the oil into the walls of the pump until it moves freely. Repeat if necessary. Screw the pump back into the tank and resume normal operations. This process should be repeated often as necessary and depending on usage, or when pump become difficult to pressurize.
4. Black particles found in water bottle indicates that the pump assembly is deteriorating. Order new pump assembly from Engler Engineering.

Pump assembly is pre-lubricated when new.

WARNING:

READ AND FOLLOW ALL INSTRUCTIONS.

ALWAYS INSPECT your pump before each use.

ALWAYS RELEASE AIR pressure before removing pump or servicing tank, by pulling black pressure relief valve knob out fully.

DO NOT use mechanical devices to pressurize the tank .They can create excessive and dangerous pressure which could cause the tank to explode.

DO NOT STAND over pressurized tank while using it or pumping it

DO NOT USE solutions warmer than 105F.

DO NOT damage or alter the functions of the pressure relief valve or plug the pressure relief valve hole, as this could cause the tank to explode

DO NOT pressurize the tank until ready for use.

DO NOT lift or carry the tank by waterline, extension rod or pump handle unless it is securely locked in place.

CARE AND MAINTENANCE OF YOUR PORTABLE WATER TANK

TO KEEP SLIME FROM FORMING INSIDE THE TANK AND EVENTUALLY GETTING INTO THE DENTAL UNIT CAUSING IRREVERSIBLE DAMAGE:

1. Every two weeks dispose of water in tank. Pour ½ gallon of hot water and 1 ounce of bleach into tank and swirl the liquid thoroughly inside the tank.
2. Dispose of bleach mixture and rinse tank with clean water thoroughly and completely.
3. Clean the outside of the pump / tank according to your facilities normal cleaning procedures.
4. The pump assembly has been pre-lubricated. DO NOT TAKE THIS ASSEMBLY APART.

To help troubleshoot problems, download manuals and see our products, visit us at:

www.engler411.com

TECHNICAL DATA

SCALER:

Input Voltage: 100-250VAC (UNIVERSAL POWER SUPPLY)
Input Frequency: 50/60 Hz.
Current (Amperes) 2.3 Amps

Transducer Style: Magnetostrictive
Operating frequency: 17,500 -19,000 Hz

Ultrasonic Generator Data: Advanced Auto-Tuned Technology.
Variable Power Control

Water:

Input Pressure: 30 PSI (min) 60 PSI (max)

DIMENSIONS

NET WEIGHT: 3 Lbs. (1.36 Kg.)

CHASSIS DIMMESION:
Length: 9 in. (23 cm)
Width: 8 in. (20 cm)
Height: 3.3 in. (8.4 cm)

CABLE LENGTH:
Handpiece: 96 in. (244 cm)
Foot switch: 96 in. (244 cm)
Power Cord: 72 in. (183 cm)
Water Line: 96 in. (244 cm)

WEIGHT:
Net: 3 Lbs. (1.36 Kg.)
Shipping: 7 Lbs. (3.17 Kg.)