

SCALE-AIRE
ENGLER HIGH SPEED
VETERINARY DENTAL AIR UNIT

INSTRUCTION MANUAL

REV. A 10/17/2011

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:

Engler Engineering Corporation
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800-445-8581 – 305-688-8581 – FAX 305-685-7671
Web site: www.englerusa.com Help site: www.engler411.com

INTRODUCTION

Thank you for selecting the Scale-Aire High Speed Veterinary Dental Air Unit. We believe you have selected the best product available for performing basic and advanced dentistry for your veterinary patients.

The design of the Scale-Aire 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 nominal line voltage to an operating frequency of approximately 18,000 or 25,000 Hz. (depending on the unit selected) 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 Engler tips, water flows internally 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 internally through the tip effectively cools the area and assists in removing any debris from the operative site.

The high speed drilling handpiece allows the operator to quickly and efficiently perform the same advanced dental techniques, drilling shaping and cutting to name a few, being taught in the largest teaching hospitals and clinics around the world. The low speed handpiece is used for smoothing and polishing the tooth surface after scaling.

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 and are included in this shipment. It is imperative that you inspect the contents and if you find any pieces 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, initiated by others nullifies all warranty statements. Engler Engineering Corporation will not be held liable for any injury, death or damage of any type, due to non-authorized 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.

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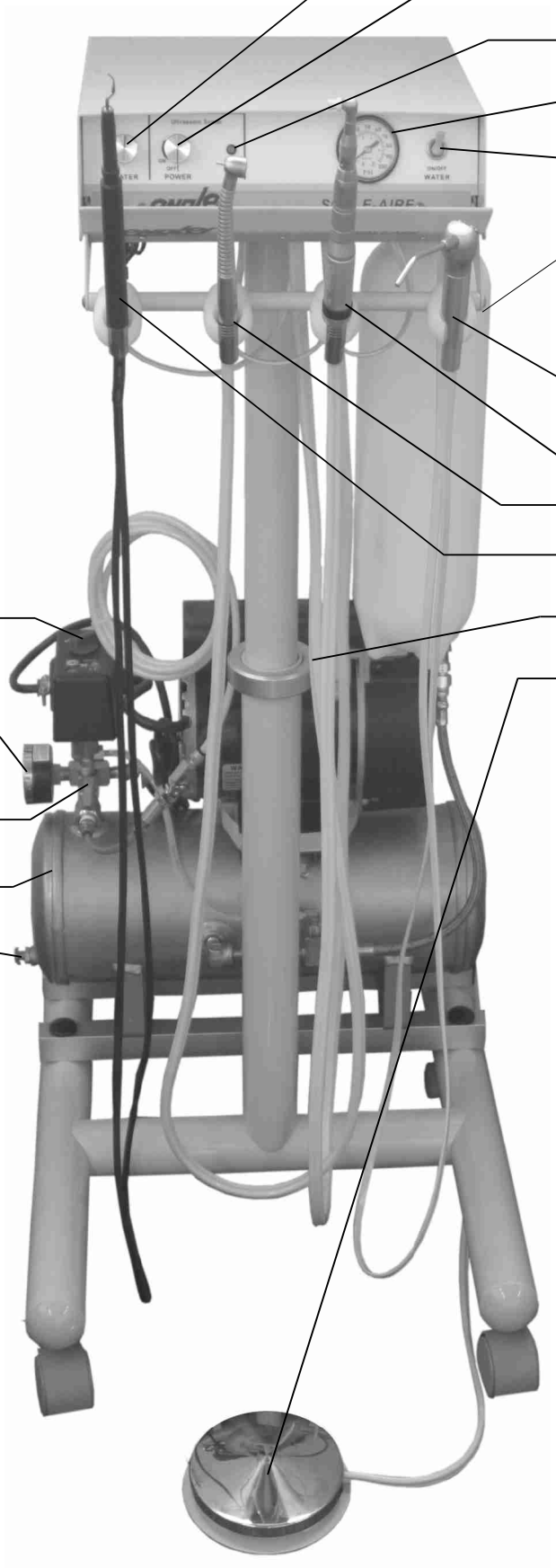
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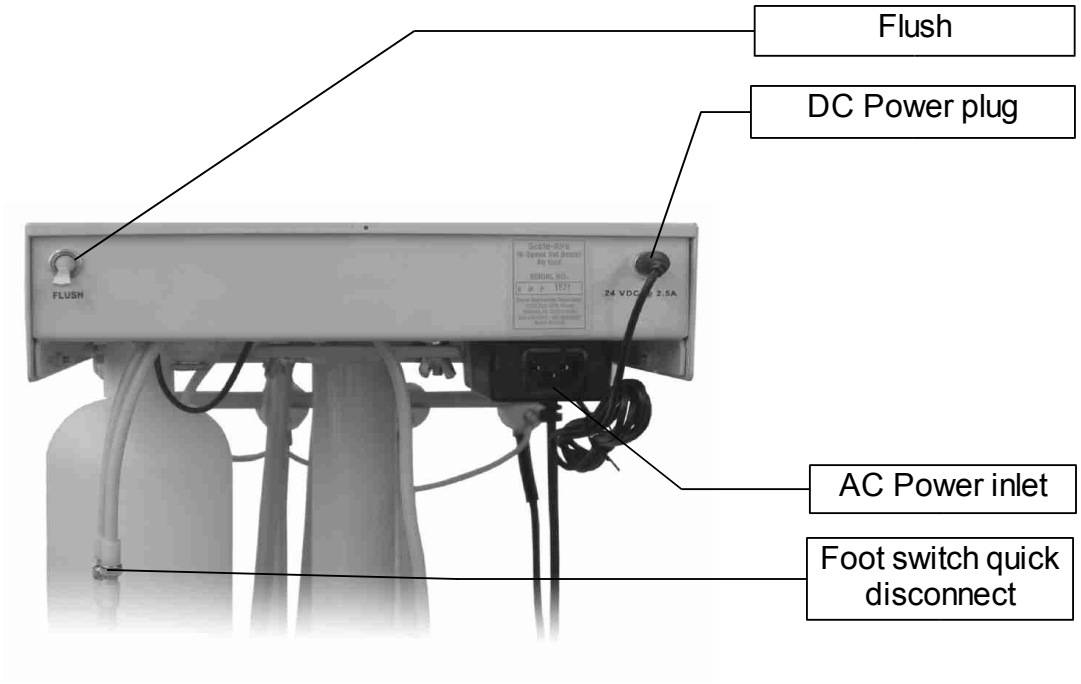
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Water control
Scaler ON / OFF & power control
Scaler ON LED
Air handpiece gauge
Water ON / OFF
Water bottle
Air / water syringe
Low speed
High speed
Scaler
H frame height adjust
Foot switch
Compressor ON / AUTO switch
Compressor tank gauge
Compressor tank valve
Compressor tank
Compressor tank drain valve



Note: All Images in this document are for reference only. Style and / or colors may change without notice.

Quick Start Guide

step 1



The Scale-Aire is shipped partially assembled.
Remove the packing materials;
Locate the components that make up the Scale-Aire unit. Remove the box containing the control unit and cut the tie wrap fasteners holding the frame.
Locate and install the casters (wheels).
Adjust H frame height.
Unpack control unit.
Position control unit on mounting bracket and fasten wing nuts.
Note: Compressor is located at the rear of the control unit.





step 2



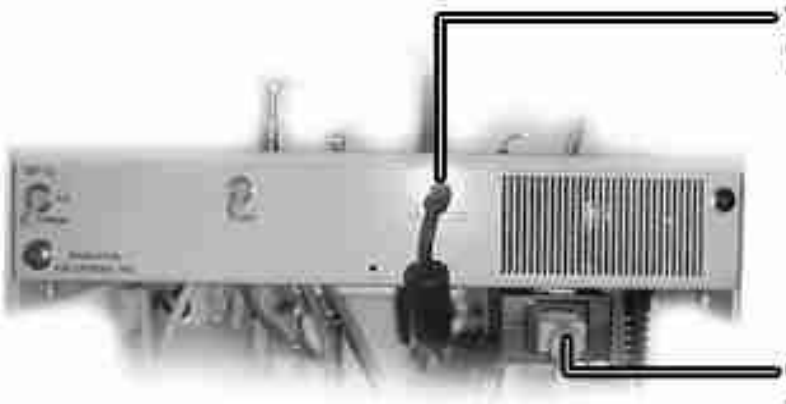
Locate the water bottle that is packaged with the unit, fill it with distilled water. Carefully screw the bottle into the connector under the control unit.

step 3

Connect air quick disconnect to compressor.



step 4



Verify the power plug is connected to the unit.

Connect the power cord to the unit and then to the wall outlet.

step 5

Plug the compressor into an electric outlet (110 volt – 20 amp) The compressor will begin pressurizing the tank and will shut off when maximum pressure is reached.

step 6



Open as shown.

In normal operation, please follow these steps to safely add water to the water bottle:

Close yellow compressor valve by turning it clockwise until it is perpendicular to the air line.

Slowly unscrew water bottle until air pressure is released then fill bottle with distilled water.

Carefully screw the bottle to the connector under the control unit, do not over tighten.

Open yellow tank valve as shown on the picture.

step 9

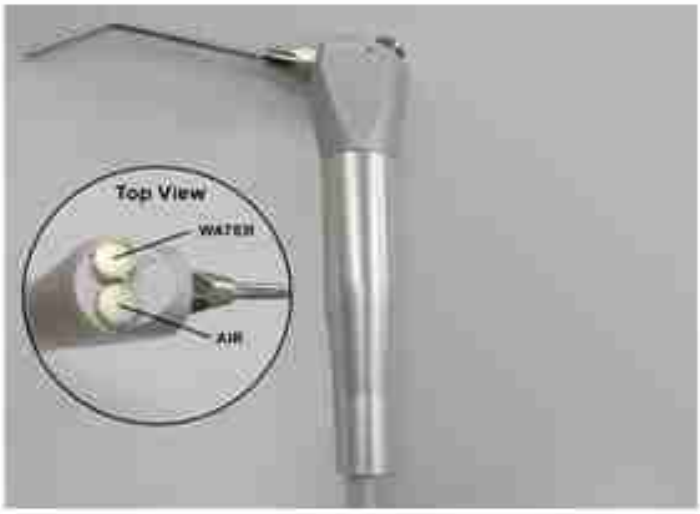


The Scale-Aire has automatic handpiece activators. Each handpiece must go into its corresponding activator. The order from left to right is; the ultrasonic scaler handpiece, high speed handpiece, and low speed handpiece. Select the desired handpiece by lifting it out of its holder, the Scale-Aire will automatically select THAT handpiece for operation.

-For scaler: Press the foot control for on/off operation.

- For high speed or low speed handpieces, the speed or RPM can be varied by depressing the foot control. More pressure placed on the foot control will result in higher handpiece RPM.

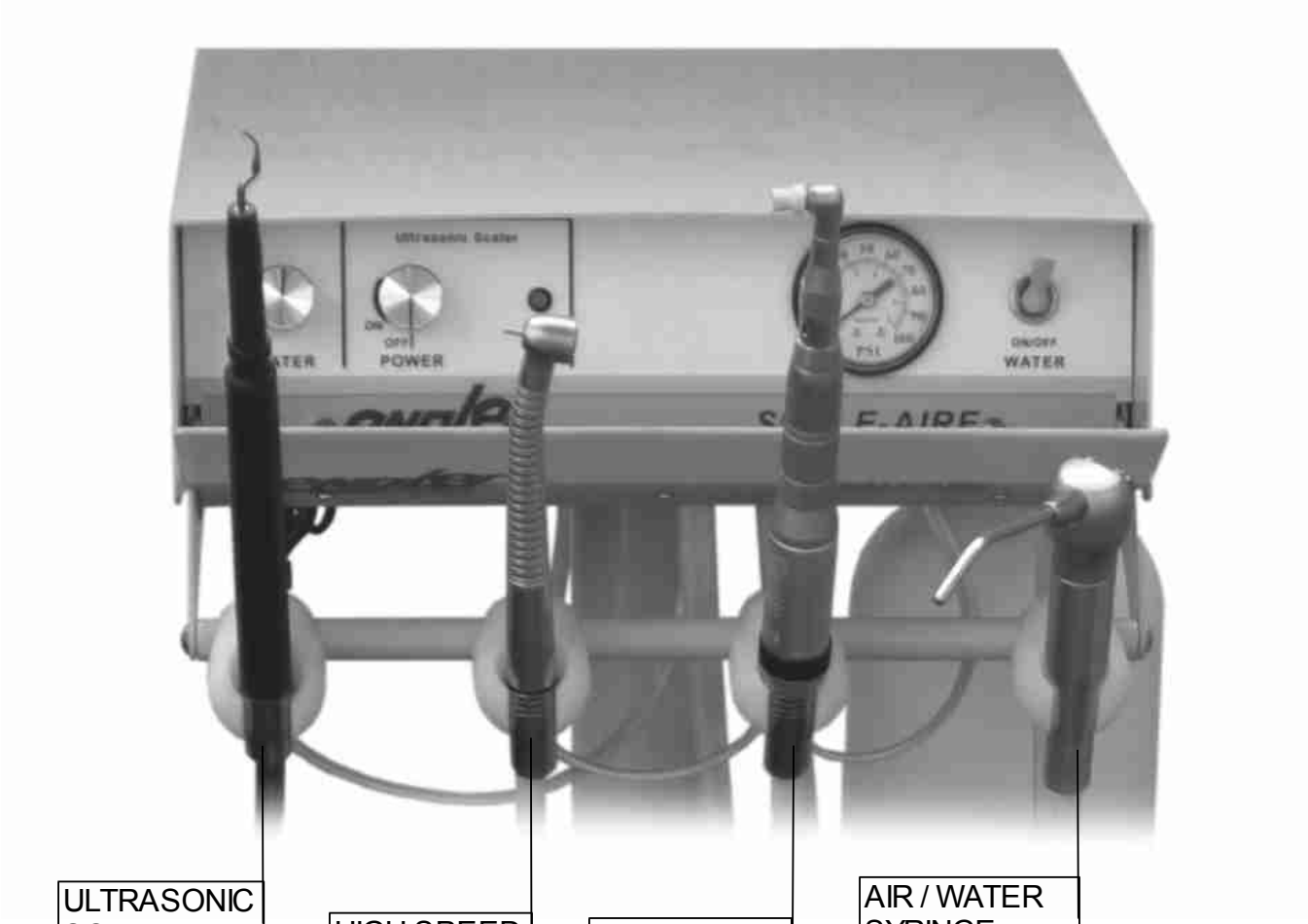
step 10



The air/water syringe works independently of the other handpieces and can be used alone or in conjunction with the other handpieces. To use the air/water syringe, press either the air button for air only, the water button for water only or both for a spray mist.

Locate the handpieces on the front of your Scale-Aire . From left to right they are:

- Ultrasonic Scaler Handpiece
- High Speed Handpiece
- Slow Speed Handpiece
- Air / Water Syringe



GETTING TO KNOW YOUR HANDPIECES

ULTRASONIC SCALER HANDPIECE



The ultrasonic scaler portion of the device utilizes an ultrasonic principle of operation. The internal circuitry converts nominal line voltage to an operating frequency of approximately 25,000 Hz. 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).
Note 1 : The first time the scaler handpiece is activated, the scaler water line will be empty. With the scaler power turned OFF, open the water regulator two rotations counterclockwise, lift the handpiece from the handpiece activator and press the footswitch for about two or three minutes until water comes out. Then turn the power ON by turning the power knob to start operation.
Note 2 : The ultrasonic scaler is not designed to run with power and without water. Activating the handpiece with power and without water will void the warrantee and damage the handpiece.

THE POWER KNOB AND THE WATER KNOB

The power knob controls the AMPLITUDE of the scaler vibration, from low (slight action) to high (vigorous action). The water control knob controls the amount of water flowing through the scaling tip**. Water should ALWAYS be used when operating the scaler.**

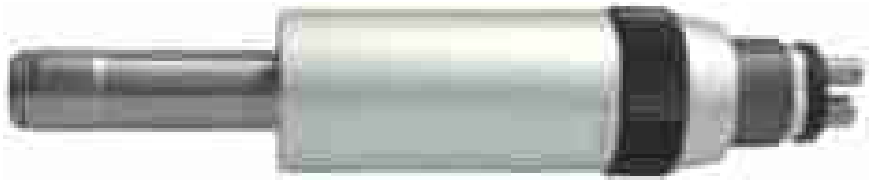
NOTE: WHEN ULTRASONIC SCALER IS ON, THE HIGH SPEED AND LOW SPEED HANDPIECES WILL NOT OPERATE. AIR / WATER SYRINGE WILL ALWAYS WORK.

HIGH SPEED HANDPIECE



This handpiece is used for advanced dentistry, including but not limited to; cutting, sectioning, and shaping cracked or broken teeth, repairing, preparing cavities etc.

LOW SPEED HANDPIECE



This handpiece will accept all ISO, E-Type attachments. It is used with a straight handpiece and prophy angle to polish the teeth after a scaling procedure. Use only approved polishing compounds**.** Follow all manufacturers recommendations.
Note1: The high and low speed handpieces are not interchangeable.
Note2: The water should be turned OFF when using the low speed handpiece (polisher).

AIR / WATER SYRINGE



The three-way air / water syringe features

- Well balanced design, and smooth styling for comfortable use.
- Easy release for a speedy exchange of tips.
- Fully autoclavable tips.

This handpiece allows the operator the ability to rinse the operative site with a stream of water or mist or dry / blow debris with a stream of air.

GETTING TO KNOW YOUR CONTROLS

WATER ON/OFF

The control is equipped with a Wet/Dry Toggle to activate the water flow. Move the toggle up to turn water on. The water should be turned OFF when using the low speed handpiece (polisher). The water should always be ON when using the scaler handpiece.

AIR HANDPIECE TOGGLE SWITCH

This switch allows you to select between low speed and hi speed handpieces when the scaler is not activated.

WATER FLOW CONTROL

This control adjusts the water flow to the handpieces. A water control knob is provided for all handpiece. Turn clockwise to decrease flow, and counter-clockwise to increase flow.

ULTRASONIC SCALER ON/OFF AND POWER CONTROL

Behind the scaler handpiece on the control box are the controls for the scaler. The POWER knob and the WATER knob. The power knob controls the AMPLITUDE of the scaler vibration, from low (slight action) to high (vigorous action). The water control knob controls the amount of water flowing through the scaling tip. Water should ALWAYS be used when operating the scaler.

AIR HANDPIECE PRESSURE GAUGE

Gives a visual indication of the air pressure delivered to the handpieces. The pressure gauge will not work when for the scaler handpiece.

FOOTSWITCH CONTROL

The foot control applies air pressure to the selected handpiece. The footswitch is a responsive, high volume, variable flow that can be actuated by pressing any point on the durable, chrome-plated cover. By pressing harder on the footswitch control more power will be delivered to the air handpieces.

COMPRESSOR

The compressor supplies air under pressure to operate the various handpieces and the air / water syringe. Please use extreme care when setting up and operating the compressor. For your safety and the safety of others, obey all warnings. YOU WILL BE KILLED OR SERIOUSLY INJURED IF YOU DON'T FOLLOW INSTRUCTIONS AND WARNINGS!

This compressor is manufactured to the highest standards. Please follow all compressor manufacturer recommended maintenance, operational and safety instructions for many years of trouble free service.

INSTRUCTIONS FOR OPERATION AND MAINTENANCE

SCALER HANDPIECE

Note 1 : The scale-aire is scale handpiece provided might be different as several options are available. If you ordered a different scaler handpiece your instructions might be different.
Note 2 : The first time the scaler handpiece is activated, the scaler water line will be empty. With the scaler power turned OFF, open the water regulator two rotations counterclockwise, lift the handpiece from the handpiece activator and press the footswitch for about two or three minutes until water comes out. Then turn the power ON by turning the power knob to start operation.
Note 3 : The ultrasonic scaler is not designed to run without water. Running the handpiece without water will void the warrantee and damage the handpiece.

The MARATHON 25K scaler insert is a one-piece design. This means the tip is not removable from the insert. There is no nosecone to replace.

To place an insert into the handpiece, there is no alignment necessary; the operator need only drop the insert straight into the handpiece. When the plastic from the insert meets the handpiece, push the two together to create a good seal. To change inserts, the operator need only pull the insert straight out of the handpiece and exchange it for a different one.

With the insert in the handpiece rotate the power control knob to the right, the knob will click “on” and the green LED will illuminate. This indicates that the scaler has power and is ready to be used. Adjust the power control knob to the **minimum** power setting, (counter-clockwise rotation), 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 flow) hold the handpiece over a cuspidor or sink and depress the footswitch until water comes out in a stream. This should take a few seconds. This step is done to insure proper operation of the delayed cavitation feature by removing air that may be trapped in the water lines. Set the power control and the water control to a level where you develop a fine mist at the tip.
NOTE: Inserts sent from our facility are not sterilized.

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, high power settings require higher water flow rates and conversely low power requires lower water flow rates. The scaler is now ready for use.

IMPORTANT: Operating this device with insufficient water flow will cause the water to get hot and may cause burns to gums, lips and tongue. If the handpiece begins to get warm, stop and check water temperature. If it is hot, set the power to the lowest setting and the water at a high enough setting to provide a lukewarm mist.

Before placing tip into patient’s mouth, activate the scaler 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.
It is recommended that when a tip is placed into a patient’s mouth, the lips, cheek and tongue be retracted to prevent contact.

Place the tip into the patient’s mouth and depress the footswitch in order to activate the scaler. Bring the tip lightly to the tooth and gently move it over the surface of the tooth with an erasing motion. **DO NOT allow the tip to stay in one spot for an extended period of time.**
A saliva ejector or H.V.E. is recommended.

Note: This device features delayed cavitation. To avoid internal contamination by back flow this device forces clean water through the lines causing droplets to form and fall from the tip when unit is disengaged.
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, which in-turn, changes the frequency. 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 (Tip Application) is not intended for contact with Soft Tissue.

DENTAL PROCEDURES SHOULD BE PERFORMED ONLY BY QUALIFIED PERSONNEL. THIS EQUIPMENT IS FOR PROFESSIONAL USE ONLY.
CAUTION: Contact with Soft Tissue May Cause Burns.
As with any precision instrument, inserts should be handled carefully. To avoid damage to the insert, please familiarize yourself with the installation. Bent or damaged insert due to excessive force or by being dropped, should be replaced.
The use of a facemask is recommended when operating the scaler, to avoid inhalation of bacterially contaminated aerosol (water mist) generated during the scaling procedure.

SCALER MAINTENANCE

SCALER FINAL PROCEDURES AT THE END OF EACH DAY
Switch the unit to the off position.
Remove insert, clean and sterilize.
Disconnect the unit from its water source or turn off the water supply.
Clean and disinfect all surfaces.

Always follow the manufacturer's instructions and recommendations for proper sterilization and autoclave techniques and procedures.

The insert should be thoroughly cleaned and free of blood, tissue, or any other debris before sterilization by rinsing with running water.
The insert may be sterilized by Autoclave or Chemiclave, do not autoclave over 270 degrees F or more than twenty (20) minutes.
It is recommended that you do not leave inserts in the handpiece for extended periods, as water and sediment may make it difficult to remove, and cause possible damage to the insert and handpiece.

ULTRASONIC INSERT

The insert may be sterilized using the methods as listed above. To re-install insert into handpiece, follow correct procedures. **Note:** To achieve optimum performance of your equipment, we recommend that the insert be replaced every 6-12 months or as needed, the original ultrasonic insert has a 90 day warrantee.

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 onto 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 manufacturer. Dry completely.
IMPORTANT: When using any chemical sterilization solution please follow the manufacturer's suggested procedures.

CLEANING HANDPIECES, FOOTSWITCH AND POWER CABLES

After each procedure, or at least once a day, it is suggested that the handpieces and cables be thoroughly cleaned and sterilized. The recommended procedure is as follows:
Remove Marathon 25K insert - Sterilize these items as listed above. Clean the outer surface of the handpiece and its cable with an antiseptic soap, rinse with water and sterilize with a chemical sterilization solution.
Note: If any chemicals are allowed to get into the handpiece you must flush it out with clean water.
Place Marathon 25K insert into handpiece for next patient.
The footswitch and power cables should be cleaned regularly by spraying a fine mist of sterilization or 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.
If you are not sure about any of the procedures listed above or you have any questions, please do not hesitate to call us at 800-445-8581.

SCALER TROUBLESHOOTING

I. "ON" L.E.D. INDICATOR DOES NOT ILLUMINATE:

1. The unit is not plugged into a power outlet: verify that the unit is plugged in.
2. Power outlet not active: try another outlet.
3. The power supply is not connected to the device.

II "ON" L.E.D. INDICATOR LIGHTS UP, NO WATER FLOW:

1. Verify that water source is connected.
2. Check that handpiece hose / cable not is kinked or twisted.
3. Water regulator not open, turn water regulator counter clockwise to open. Water regulator has multiple rotations.

III "ON" L.E.D. INDICATOR LIGHTS UP, LITTLE OR NO VIBRATION / CAVITATION AT THE TIP:

1. Old or damaged insert: replace the insert.

IV WATER FROM SCALER TOO HOT:

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

1. Adjusting water flow knob higher (counter clockwise). Water regulator has multiple rotations.
2. Lower the power by adjusting the power knob counterclockwise.
3. Tip clogged. Replace or unclog insert.
4. Water restriction in unit.
5. Clogged water filter. Clean filter or replace filter media.

INTERMITTENT OPERATION:

I. Tip vibrates / cavitates and then stops:

1. Foot switch damaged: Contact Engler Engineering Corporation.
2. Scaler handpiece / cable damaged
3. Damaged or worn out insert tip.

II Tip action ceases abruptly during operating procedure.

1. Insert broken / damaged: replace.
2. Scaler handpiece / cable damaged

HIGH SPEED HANDPIECE



In order to always provide the handpiece with clean air, drain water that has accumulated in the air compressor must be drained DAILY.
DAILY HANDPIECE LUBRICATION IS ABSOLUTELY ESSENTIAL.
Operate the handpiece at pressures of 25 to 32 PSI. The handpiece is engineered to attain speeds of 360,000 RPM at 32 pounds.
Use the brush to remove foreign particles. A fine wire is provided for cleaning the water spray hole and to prevent clogging. Blowing air backward from the contra angle head can dislodge particles.
NOTE: DO NOT attempt to blow particles from the rear end of the handpiece, as larger particles will block the water tube.

Sterilization Procedures: (Autoclave and Chemiclave Only)
Clean External Surface: Remove bur from handpiece and scrub with a toothbrush or 2” x 2” gauze using warm tap water. DO NOT IMMERSE HANDPIECE.
Dry: Thoroughly dry handpiece using gauze, paper towel or air syringe.
Clean/Lubricate Internal Surface: Using a combination cleaner/lubricant or DCL 90, spray handpiece in drive air hole and in chuck.
Expel Cleaner/Lubricant: Reinsert bur into handpiece head, connect handpiece to tubing and run for 5 seconds to thoroughly expel debris and excess lubricant.
THE HANDPIECE MUST BE OPERATED ONLY WITH A BUR OR BUR BLANK. DO NOT OPERATE EMPTY.
Clean Fiber optic Bundle: Using a cotton swab with isopropyl alcohol, wipe the surface on both ends of handpiece.
Bag and Cycle in Autoclave: Place handpiece into autoclave bag or pouch. Cycle as per autoclave/ chemiclave manufacturer’s instructions. DO NOT EXCEED 275° F (135° C).
Cool Down and Lubricate: Allow handpiece to return to room temperature. Lubricate handpiece as per instructions listed above. Expel excess lubricant as per previous instructions.

DO

_ Use warm tap water to scrub the exterior of handpiece.
_ Expel excess lubricant from handpiece by running it for 5 seconds after cleaning and lubricating.
_ Use separate cans of lubricant before and after sterilization to prevent contamination.
_ Clean both ends of fiber optic bundle with a cotton swab dipped in isopropyl alcohol.
_ Use autoclave bags and pouches with indicators to protect handpiece.

DON’T

_ DON’T immerse handpiece in water or chemical disinfectants/sterilants.
_ DON’T use any type of disinfectant on handpiece.
_ DON’T sterilize handpiece with bur inserted.
_ DON’T exceed 275° F (135° C) in autoclave or chemiclave.
_ DON’T dry heat or heat transfer sterilize.
_ DON’T operate handpiece without bur inserted in chuck.

DO-IT-YOURSELF HIGH HANDPIECE REPAIR

A. Handpiece has low torque or power (could be lack of lubrication or too much debris)
    1. Try heavily spraying “correct” drive air tube with a combination cleaner/lubricant like DCL-90 and run handpiece for a minute.
    2. Remove turbine and clean out head, lubricate turbine directly, and spin bearings with fingers. Blow compressed air in head of handpiece to clear air tube. Return turbine to handpiece and run.
    3. Check air pressure on dental unit.
B. Burs are sticking inside of turbine or falling out
    1. Flush the spindle with a handpiece cleaner where the bur would normally be inserted.
    2. Ensure that burs are not less than .0625” or greater than .0630” in diameter or are worn, which can damage spindle.
C. Water spray is weak or completely stopped
    1. Insert small wire into water tube from head of handpiece to remove debris.
    2. Use our Smart Cleaner to clear clogged tube.

If these simple solutions fail, more serious problems are likely affecting the handpiece, which should be sent to the manufacturer if under warranty or Engler Engineering Corporation if warranty has expired.

LOW SPEED HANDPIECE



DAILY HANDPIECE LUBRICATION IS ABSOLUTELY ESSENTIAL.

What is a Low (Slow) Speed Handpiece?

• A hand held motor, usually air-driven, that spins a cutting bur or prophy cup at 20,000 RPM or less.
• Used for removal of caries, refining a cavity preparation, performing prophylaxis, and other endodontic and implant procedures.

How Does a Low Speed Handpiece Work?

• An air-line is attached to the back end of the handpiece, similar to a high speed handpiece.
• When air is introduced into the handpiece (via the foot pedal), air is forced over the vanes of the rotor (consisting of vanes or blades), which causes it to spin.
• After the air moves around the rotor, it is forced out through the handpiece’s back end exhaust port.

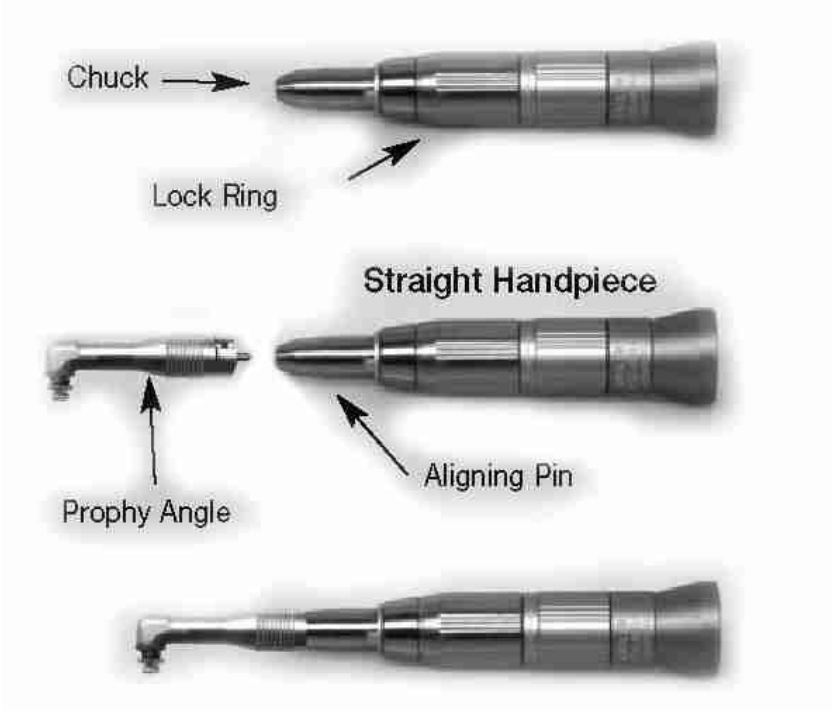
E-TYPE LOW SPEED HANDPIECES

• Multi-piece handpieces consisting of a motor and various attachments (the motor cannot be used without an attachment).
• E-Type is an international standard for how attachments are placed on a motor; most E-Type motors and attachments are interchangeable, like KaVo, NSK, W&H, and Bien Air. However, Midwest and Star brands have proprietary designs.
• 2 primary types of attachments:

NOSE CONE/STRAIGHT ATTACHMENT INSTALLATION



DAILY STRAIGHT HANDPIECE LUBRICATION IS ABSOLUTELY ESSENTIAL.
• Can accept straight handpiece burs, mandrels, prophy angles, and doriot / U-Type contra angles.
• Come either as a 1:1 transmission, which maintains the motor speed, or as a 4:1 gear reduction, primarily used with prophies to reduce the handpiece speed to a rate that reduces the splatter of paste and the potential to burn a patient.



1. Slide the Straight Handpiece down over the top of the low speed.
2. Line up the notch of the Prophy Angle with the Aligning Pin on the Straight Handpiece, and then push the shaft of the Prophy Angle into the chuck of the Straight Handpiece.
3. Rotate the Lock Ring clockwise, until it clicks and locks the prophy angle in place.
4. Place a disposable rubber-polishing cup on the end of the prophy angle by snapping it on. The Prophy Angle is now secured and ready for operation.

POLISHER OPERATION

1. Dampen the rubber cup and place a small amount of polishing paste on it.
2. Depress the footswitch and the rubber cup will begin to rotate. The speed of rotation may be adjusted to your desired level depending on how hard you press on the footswitch.
3. To keep the paste from flying off the cup, gently bring the cup up to the tooth and then maintain low footswitch pressure to keep a low speed.

IMPORTANT: The prophy angle is only rated to rotational speeds of 5,000 RPM - therefore, in order to prevent premature failure of the angle keep the unit set in the prophy range whenever the prophy angle is attached to the straight handpiece.

4. High-speed settings may throw the polishing paste off of the rubber cup. Always start with a low speed and then adjust to a higher speed as required.
5. Place the end of the angle into the patients' mouth and gently apply the rubber cup to the surface of the tooth with a circular motion. Do not allow the rubber cup to remain stationary on one area for an extended period of time as friction may cause burns.

THREE-WAY AIR / WATER SYRINGE



This handpiece allows the operator the ability to rinse the operative site with a stream of water or mist or dry / blow debris with a stream of air. The button on the left controls water flow. The button on the right controls airflow. Pressing both buttons at the same time provides mist. The air / water syringe works independently of the other handpieces and can be used alone or with the other handpieces.

The syringe features quick-change autoclavable tips: To remove a tip, press on the locking collar surrounding the tip socket and pull the used tip straight out of the socket. To insert a new tip, press locking collar and push tip into socket as far as it will go. Release collar and gently tug on tip before using to ensure that tip is securely locked into socket.

SYRINGE TIP STERILIZATION

1) Remove contaminated syringe tip.
2) Remove all visible signs of contamination before autoclaving.
3) Autoclave tip at 132° C (270° F) for ten minutes.
4) Sterilize between each patient use.
NOTE: Since only the tips can be autoclaved, it is recommended that the air/water syringe be bagged with a disposable, single-use plastic sleeve between each patient use.

SEAL-TIGHT PROPHY ANGLE



The Seal-Tight prophy angle comes standard with every unit.
This prophy angle is a precision-engineered dental device. All of the gears and shaft assemblies are made of high-grade stainless steel, which when kept clean and properly lubricated, will provide long, trouble-free service.

General Cautions;
When operating the prophy head always consider the safety of the patient.
Should the prophy head function abnormally, cease operation immediately. See below for maintenance instructions. If you need further assistance contact Engler Engineering Corporation for instructions.
Do not drop the prophy head.
Before use, always confirm that the brush or rubber cup is correctly seated in place.
If end cap unscrews by itself during a procedure; Switch the direction of the motor
Check that head and end cap are screwed together firmly. A poor fit between the head and end cap requires replacement of the entire prophy angle.
IMPORTANT: The prophy angle is rated for no more 3,000 R.P.M. –High speeds will result in the polished surface heating up, spattered polish, and shorter prophy angle life. Keep the unit set in the prophy range whenever using the prophy angle. Always start with a low speed and then adjust to a higher speed as required.

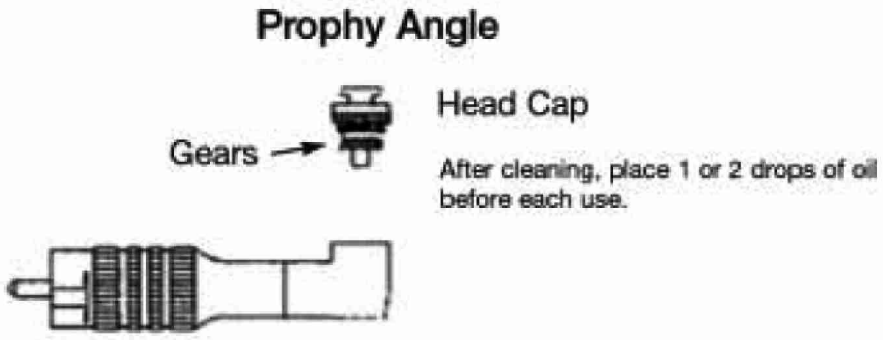
PROPHY ANGLE INSTRUCTIONS FOR USE

Dampen rubber cup.
Dab a small amount of polishing paste onto the rubber cup.
Place the prophy angle into the patients' mouth and gently apply the rubber cup to the surface of the tooth with a circular motion.
Always begin the procedure using the lowest possible R.P.M., increase speed as necessary.
Do not allow the rubber cup to remain stationary on one area for an extended period of time. Keep rotating the direction of the prophy cup, so as not to overheat one area.
Add polish as needed. Move over all tooth surfaces.
When finished, rinse the patient's mouth thoroughly with plenty of water.

The Prophy Angle is a precision engineered dental device. All of the gears and shaft assemblies are made of high grade stainless steel, which if cleaned and lubricate correctly will provide long, trouble-free service.

Daily Cleaning and Lubrication:

1. Remove prophy angle from straight handpiece.
2. Remove used rubber cup.
3. Follow the cleaning and lubricating instructions that were supplied with the Prophy angle.
4. Place a new rubber cup onto the angle.
5. Slide the prophy angle down over the straight handpiece and lock it in place



IMPORTANT: For a long dependable life, the prophy angle should be lubricated daily, if possible after each use. Keep hair away from prophy cup and head cap.

SUGGESTION: To keep hair from getting tangled in the angle, we recommend using a gentle adhesive tape around the lips, keeping hair in place away from treatment area.

PROPHY ANGLE CLEANING AND MAINTENANCE

ENGLER ENGINEERING CORPORATION STRONGLY RECOMMENDS PERFORMING THIS STEP AFTER EACH PATIENT OR A MINIMUM OF ONCE PER DAY.

Remove prophy angle from straight handpiece.
Rinse under running water to remove any loose debris.
Unscrew the “end cap” by turning counterclockwise either by hand or with end cap wrench provided with each prophy angle.
Using a mild soap and a toothbrush, gently scrub any debris and foreign matter from the gear of the end cap. Use the toothbrush to clean the orifice inside the “head” of the prophy angle specifically the inside gear. Rinse thoroughly.
Allow head and end cap to dry completely. Flushing with alcohol will hasten drying.

Place 2-3 drops of oil on the gear of the end cap and inside the prophy head on the crown gear inside the head. Use the oil that is supplied with your unit. Sewing machine oil or 3-in-one oil is also acceptable.
Wipe away any excess oil once assembled.

DO NOT use cotton swabs, tissue paper, paper towels or cloth to wipe out the prophy head as fibers may get stuck in the gear. Should the crown gear become jammed with fibers, replacement of the entire prophy angle will be necessary as there are no replacement parts for the prophy angle.

STRAIGHT HANDPIECE

LUBRICATION

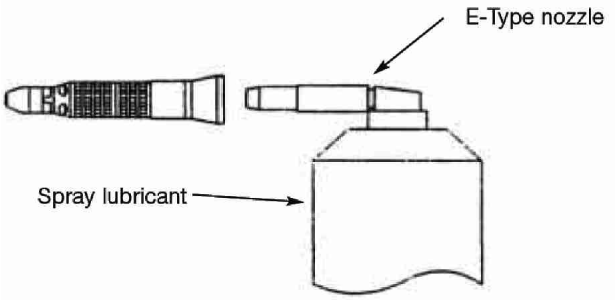
The spray nozzle oiling method is optional but highly recommended because it cleans as well as lubricates. The alternate method is to place 1 drop of approved oil in the chuck hole.
Lubrication of the straight handpiece is required at least once a week.

LUBRICATION BY SPRAY LUBRICANT

1. Make sure that the straight handpiece is in the unlocked position prior to lubricating.
2. Install the E-Type nozzle by pushing it onto the top of the spray can. To lubricate, insert the E-Type nozzle into the bottom of the handpiece. Holding the two together tightly, with can in the upright position, push spray button for 2 to 3 seconds.

NOTE: If spray time is too short oil may not be propelled into all areas of the handpiece.

CLEANING and STERILIZATION



Cleaning:

1. Wipe the handpiece clean with an alcohol-soaked soft tissue.
2. Never clean the handpiece in boiling water, chemical solutions, in an ultrasonic cleaner, or with wire brushes.

Sterilization:

1. Autoclaving is recommended for the Engler Straight Handpiece.
2. Clean the Handpiece as described above.
3. Lubricate the Handpiece as described in the lubrication section of this manual.
4. Place the Handpiece in an autoclaving pouch and seal it in
5. accordance with the instructions on the pouch.
6. Autoclave for no more than 20 min. at 132° C (270° F).

Keep the straight Handpiece away from water vapor or mist that may settle and cause premature damage to the bearings.

IMPORTANT: If you experience problems during operation, call our repair department. DO NOT attempt to repair the straight Handpiece by removing any screws. Doing so will shift the internal springs and may cause permanent damage to the unit and will void your warranty.

OPTIONAL ACCESORIES

MAINTENANCE FREE PROPHY ANGLE



P-MF Maintenance free prophy angle



P-106 screw on rubber cups 144/pkt

CARE and STERILIZATION PROCEDURES

After each prophy:
Rinse abrasive paste from head and cup area with water. Then remove cup.
Thoroughly clean the outside of angle with disinfectant.
Place angle into a sterilization bag
Follow sterilizer manufacturer's recommendations.
Do not exceed 275 º F(135 ºC).
Keep angle in bag until ready for use.
You are now ready for your next prophy.

CAUTIONS AND WARNINGS:
Sterilize prior to disposing properly
Do not attempt to disassemble.
DO NOT submerge in liquids, including ultrasonic solutions.
Operate handpiece in the forward direction (counterclockwise when facing you) to prevent screw-in cups from unscrewing during the procedure.
Not recommended for use above 3000 R.P.M.
If the head of the angle becomes hot during use, lubricate the rim of the cup / screw hole with oil.
Do not heat over 275 ºF (135 ºC).
Use only Engler Care Free Prophy Rubber Cups. Other brands will not properly seal the angle, causing premature wear and voiding the warranty.
Use 1 year, sterilize, then dispose of properly.

YOUR CAREFREE ANGLE IS WARRANTED AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP FOR 6 MONTHS. A COPY OF OUR INVOICE OR PICKING TICKET WILL BE REQUIRED AS PROOF OF PURCHASE.

CAREFREE ANGLE WARRANTY IS VOID IF
Engler Care-Free rubber cups are not used exclusively.
Sterilization procedure is not followed properly.
The angle has been submerged in any liquid.
The angle has been damaged or abused.
Damaged due to use at high speed.

EXTENSION ARM

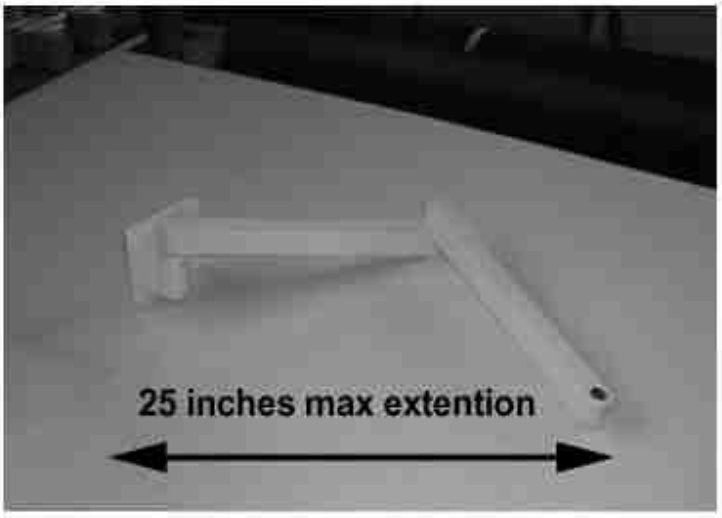
The Scale-Aire can be optionally mounted on a extension arm. The following are the mounting instructions:



Arm connects to bottom of control unit



Attatch arm to flat surface with wall plate with 4 screws



Arm can extend out a maximum of 25 inches

FREQUENTLY ASKED QUESTIONS

How long would the scaling insert last?

The ultrasonic inserts will last six months to a year and has a warrantee for ninety days.

How Fast Does a Low Speed Handpiece Run?

- The speed depends upon the pressure (PSI) of the air supply, the configuration of the rotor components, and the gears inside the motor.
- Low speed handpieces are designed to handle much more air pressure than high speed handpieces.
- Typical low speed motors, without gear reductions, running at 40 PSI should spin at approximately 20,000 rpm.
- Speed reducing gears allow the handpiece to generate significantly more torque.
- Hygienist handpieces and low speeds used for prophylaxis generally operate between 3,000 and 5,000 RPM.
- Endodontic and implant procedures use attachments to reduce the speed to 1,500 rpm or less and generate very high levels of torque for optimal control.

How Long Will a Low Speed Handpiece Last?

- Slow speed handpieces can have long life spans due to the low operating speeds and design differences (compared with high speed handpieces.)
- The handpieces can be repeatedly overhauled but should have professional maintenance conducted every 6-12 months.

What Type of Handpiece Connections and Tubing Compatibility Does a Low Speed Handpiece Have?

- Similar to high speed handpieces, low speed handpieces can be either fixed back or quick disconnect style, with 2 different tubing configurations: 2 hole and 4 hole.
- Because low speed handpieces operate at significantly lower speeds than high speed handpieces, there is less need for cooling the tooth with air and water spray.
- Therefore, most low speed motors are configured so that no water is transferred through the water tubes; however, low speed handpieces still maintain the international standard backends that high speed handpieces have, for the sake of compatibility with tubing.

TECHNICAL SPECIFICATIONS:

Low speed handpiece:	0-20,000 rpm
High speed handpiece:	0-360,000 rpm
Scaling handpiece:	
Piezo handpiece:	30 KHz
Marathon handpiece:	25 KHz
Sonus handpiece:	18 KHz

Note: Your unit will be equipped with one of these scalers handpieces

Power supply: Input:	100-240 v~, 1.5A, 50-60Hz
Output:	24 Vdc, 2.5 Amps
Compressor:	115 V~, 0.3 HP, 60 Hz.
	100% oil less operation
	2-gallon capacity
Control box dimensions:	11-1/2” W x 14” L (front to back) x 5-1/2” H
Shipping box dimensions:	24”X24”x24"
Height (telescopic):	27”- 39”.
Net weight:	70 lbs.
Shipping weight:	87 lbs.

LOANER REQUEST FORM - SCALE-AIRE

Please review and complete this form and FAX it back to us at 305-688-0018 so we can ship a unit out to you.

CONDITIONS of the Engler Engineering Corporation loaner program:

1. **We must receive this completed and signed form before a loaner is shipped out.**
2. **A Credit Card is required – the information must be clearly printed below.**
3. **It is understood that if Engler Engineering does not receive our unit for repair within five (5) business days of receiving the loaner, our credit card will automatically be charged $50.00 per week for rental of the loaner.**
4. **We have five (5) business days after we receive your estimate of repairs to send our reply; otherwise a weekly rental charge of $50.00 will be applied to our credit card.**
5. **The loaner must be shipped back to Engler Engineering by Federal Express or UPS (NOT GROUND), to be received within five (5) days of the date we receive our unit. We need to insure it and keep record of the tracking number for reference if needed. If the loaner is not received, Engler Engineering will automatically charge our card for the full value of the loaner.**
6. **We are responsible for all shipping charges.**
7. **All parts are double checked at shipping to verify that they are included with the loaner. It is our responsibility to notify Engler Engineering at 800-445-8581 on the day the loaner is received if any items are damaged or missing.**
8. **All loaner items must be returned in good working condition. A copy of our check-list is sent with the loaner to verify all parts are being returned. Missing and/or damaged items will be charged to our credit card.**

NOTE: Loaner requests received after 11:00 AM Eastern time will be shipped out the next day. Unless specified, all loaners will be shipped Federal Express - Express Saver with a 3 to 4 business day delivery time.

Mark box with X if Next Day ☐ or Second Day ☐ service is requested at additional cost.

Please fill in the information below authorizing the transaction to accommodate your request.

Clinic Name: _____ Phone _____

Address: _____

City: _____ State:_____ Zip _____

The serial number(s) of the device being sent in is _____

Credit card number (Amex) (Visa) (MC) _____

Expiration:_____ Code: _____ Zip Code of billing address: _____

I understand and agree to the terms and conditions stated above. Date: _____

_____ _____

Signature **Print Name**

E03-08-D16

RETURN FOR EVALUATION / REPAIR FORM

PLEASE PHOTOCOPY AND INCLUDE A COMPLETED COPY WHENEVER SENDING UNITS IN TO US FOR EVALUATION AND / OR REPAIR.

CONTACT PERSON _____

CLINIC PHONE NUMBER: _____FAX #_____

CLINIC NAME: _____

SHIPPING ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

ITEM BEING SENT: _____ SERIAL # _____

Please describe what is happening or why you are sending in this unit:

_____

_____

_____

_____

_____

_____

PLEASE NOTE:

Whenever returning any products for evaluation and / or repair, we strongly suggest you send in the complete unit with all attachments so that a correct evaluation can be made.

It is suggested that you ship all returns to us by Federal Express or UPS . If using US Mail, it is suggested that you track and insure all packages sent to us.

Address all returns as follows:

ENGLER ENGINEERING CORP. REPAIR DEPARTMENT
1099 EAST 47 STREET HIALEAH, FL 33013