

# OPERATION and MAINTENANCE INSTRUCTION MANUAL

AEU-425CF  
AEU-425CFH



**TRANSPORT** MDS  
MILITARY DENTAL SYSTEM



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To prevent injury to people and damage to property, please heed relevant warnings and remarks. They are marked as follows:

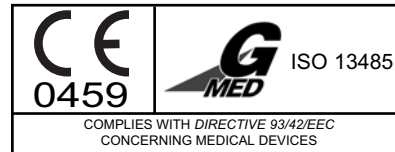
**WARNING:** Serious injury or death may result if ignored.

**CAUTION:** Damage to property or the environment may result if ignored.

**NOTE:** Important additional information and hints.



MEDICAL EQUIPMENT WITH RESPECT TO ELECTRIC SHOCK, FIRE AND MECHANICAL HAZARDS ONLY IN ACCORDANCE WITH UL 2601-1 CAN/CSA C22.2 No. 601.1



EU Authorized Representative:  
Advena Ltd., Hereford, HR4 9DQ, UK

## SYMBOL DEFINITIONS:

	Type B Equipment
	Attention, consult accompanying documents
	Dangerous Voltage
	Alternating current
	Protective earth (ground)
<b>IPX1</b>	Protect Against Dripping Water
<b>SN</b>	Serial Number

NOTE: The appliance inlet is the mains disconnect means.

Environmental Conditions:

Operating Temperature: 1° to 45° C (33.8° to 113° F)

Transport/Storage Temperature: -20° to 60° C (-4° to 140° F)

Relative Humidity: 5 to 95% non-condensing

Altitude: 0 to 3048 meters (0 to 10,000 feet)

Equipment not suitable for use in the presence of a flammable anaesthetic mixture with air or with oxygen or nitrous oxide.

**WARNING:** This device has been tested and found to comply with the emissions requirements of IEC 60601-1-2:2001-09. These requirements provide reasonable protection against harmful electromagnetic interference in a typical medical installation. However, high levels of radio-frequency (RF) emissions from electrical devices, such as cellular phones, may disrupt the performance of this device. To mitigate disruptive electromagnetic interference, position this device away from RF transmitters and other sources of electromagnetic energy.



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Your new Aseptico Transport MDS Portable Dental System is the finest portable electric military field dental system available. The AEU-425CF/CFH features a high-torque brushless micro motor with digital speed control, a 3-way air/water syringe, HVE and saliva ejector vacuum systems, a self contained water system, oilless air compressor, and vacuum pump. The entire dual voltage system comes in a Mil. Spec. Case for maximum portability.

## *Congratulations*

This system is engineered to provide many years of reliable service. Please read the instructions provided in this manual to receive the best and longest service from your Aseptico equipment.

Separate manuals may be provided to cover the operation and maintenance of handpieces or other accessories for your unit.

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### **PACKAGE CONTENTS:**

- Portable Console Case with Electronic Control, Compressor, and Vacuum Pump.
- AE-200-30 Autoclavable 30K Brushless Micro Motor
- HVE and Saliva Ejector Vacuum Hoses with Valves and Tips
- TA-90D Autoclavable 3-Way Air/Water Syringe with Tips
- Water Supply and Air Reserve Bottles
- Power Cord
- AE-7P Foot Switch (971-S)
- Ultrasonic Scaler and 3 Instrument Tips
- Military Specification Case
- Replacement Fuse Set
- Operation & Maintenance Manual
- Service Manual & Parts List
- AE-42INV Power Inverter w/NATO Connector (**Optional**)

#### **• AEU-425CFH ONLY:**

- Two AHP-72MBFO Handpieces
- Two AHP-63 Handpieces
- One AHP-64 Handpiece

*(AEU-425CF Handpieces sold separately)*



## SPECIFICATIONS:

<i>Size:</i>	10.5" x 14.5" x 24" (27 cm x 36 cm x 61 cm)
<i>Volume:</i>	1.81 cu. ft. (0.05 m <sup>3</sup> )
<i>Weight:</i>	52.5 lbs (23.8 kg)
<i>Power Source:</i>	AC Dual Voltage Auto-Switching 120 V @ 60 Hz or 230 V @ 50 Hz /60 Hz
<i>Power Inverter:</i>	24 V DC to 120 V AC
<i>Power Rating:</i>	800 W
<i>Operating Pressure:</i>	45 - 50 PSI (344 kPa)
<i>Constant Air Flow Pressure:</i>	40 PSI, 0.4 SCFM (275 kPa, 11.2 liters/min)
<i>High Volume Vacuum:</i>	3.3 SCFM @ -4" Hg (93.4 liters/min)
<i>Low Volume Vacuum:</i>	1.3 SCFM @ -1.5" Hg (36.8 liters/min)
<i>Air Reserve Capacity, Standard:</i>	61.0 cu. in. (1000 cc)
<i>Water Reservoir Capacity:</i>	33.9 fl. oz. (1.0 liter)
<i>Water Flow:</i>	6.5 fl. oz./min (0.192 liters/min)
<i>High Volume Waste Tank Capacity:</i>	0.2 gal. (0.75 L)
<i>Low Volume Waste Tank Capacity:</i>	0.11 gal. (0.4 L)
<i>Duty cycle for AE-200-30 motor:</i>	Water coolant/irrigant on: Continuous use (100%) Water coolant/irrigant off: Intermittent use - 2 minutes on and 3 minutes off (40%)
<i>Noise Levels</i>	72 ± dB @ 3'4" (1 m)
<i>Environmental Conditions:</i>	Operating Temperature 0 to 45 C (32 to 113 F) Transport/Storage Temperature: -20 to 60 C (-4 to 140 F) Relative Humidity 5 to 95% non-condensing Altitude 0 to 3048 meters (0 to 10,000 feet)

### **AEU-425CF/CFH Transport MDS with Optional Inverter and NATO Connector in Mil. Spec. Case**

<i>Size:</i>	25.5" x 24" x 12" (65 cm x 61 cm x 30.5 cm)
<i>Volume:</i>	4.25 cu. ft. (0.12 m <sup>3</sup> )
<i>Weight (Total):</i>	80.1 lbs (36 kg)

NSN: 6520-01-508-9583

### **Compatible 1:5 Increaser Fiber Optic Handpieces:**

Kavo Intramatic Lux 3 - Part Number: 553-5350

NSK Ti-Max E95L - Order Number: C347

Bien-Air - Reference Number 133.41.01

All E-style fiber optic handpieces from the above vendors are compatible with the motor.

## SAFETY PRECAUTIONS:

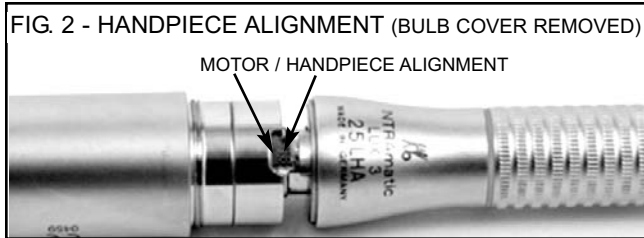
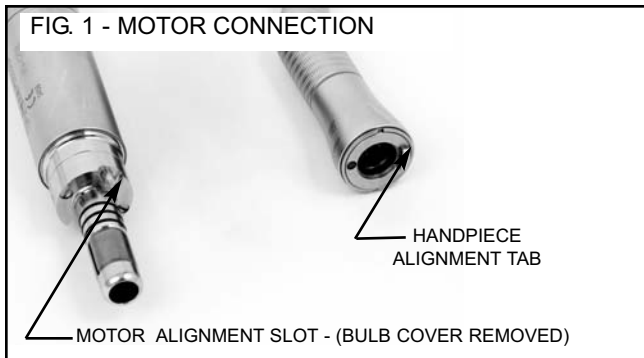
Aseptico accepts no liability for direct or consequential injury or damage resulting from improper use, arising in particular through the non-observance of the operating instructions, or improper preparation and maintenance.

- WARNING:** Sterilize before first and all uses.  
Clean, disinfect, and sterilize new or repaired handpieces and instruments before first use. Only use sterilized handpieces and instruments during treatment. Non-sterile handpieces and instruments may cause bacterial or viral infections. Always sterilize handpieces and instruments after operation.
- CAUTION:** Always examine unit components for damage before commencing treatment. Damaged components must not be used and must be replaced.
- WARNING:** Use for intended purposes only. Failure to observe the operating instructions may result in the patient or user suffering serious injury or the the product being damaged, possibly beyond repair. Before using this product, make sure that you have studied and understood the operating instructions.
- WARNING:** For use by qualified and trained personnel only.
- WARNING:** Do not install where there is a risk of an explosion. The Transport MDS is not intended for operation in the presence of flammable anesthetics or gases.
- WARNING:** CONTRAINDICATIONS  
Ultrasonic oscillations emitted by the Ultrasonic Scaler may prevent the proper function of cardiac pacemakers. Therefore, Aseptico recommends that patients with a cardiac pacemaker should not be treated with the Ultrasonic Scaler component of the Transport MDS.
- WARNING:** Instruments may fracture. The Ultrasonic Scaler instruments oscillate at high frequency during operation. In rare cases, these oscillations may cause the instrument to fracture during treatment. The Motor/Handpiece burs rotate at high speed during operation. In rare cases, this rotation, combined with drilling into surfaces, may cause the bur to fracture during treatment. To prevent the patient swallowing or inhaling the fractured instrument, use a rubber dam, and/or instruct the patient to breathe through the nose during treatment.
- WARNING:** Do not use the Ultrasonic Scaler dry. If used dry, the Instrument Tip will heat immediately. This may cause thermal injury to the tooth. Ensure that adequate liquid coolant is always available.
- CAUTION:** Never use the Ultrasonic Scaler on metal or porcelain restorations. The high frequency ultrasonic oscillations may loosen the restoration.

## SETTING UP THE UNIT:

**NOTE:** The AEU-425CF/CFH is manufactured with 250V (6.3A rated) fuses installed, if operating with a 230V power source, change to the 3.15A rated fuses before operation.

1. Unpack the Console Case and attach the power cord to the lower front of the Electric Control Console and plug into a grounded electrical receptacle or the Power Inverter (See Page 7). The AEU-425CF/CFH has dual voltage auto-detection circuitry that allows the unit to operate while using a power source that is either 120V or 250V and either 50Hz or 60Hz.  
**NOTE:** Be sure the correct fuse and power cord is used for each voltage. (See pg. 12)
2. Connect the motor to the receptacle on the lower front panel of the Electric Control Console.
3. Attach the appropriate "E" Type handpiece to the motor. Align handpiece tab with motor alignment slot. See Figs. 1 & 2 .



4. Attach the supplied AE-7P On/Off Foot Switch to the connector on the front of the Electric Control Console marked "Foot Switch".
5. Move the 3-Way Air/Water Syringe from the travel clip and place it in the left holder on the front of the unit.
6. Remove the Ultrasonic Scaler from its travel pouch and connect an Instrument Tip.
7. Connect the Air Reserve Bottle above "Air" marking (the right rear connection on the right side of the unit.)
8. Fill the Water Supply Bottle with clean water and connect to the cap with the pressure gauge.
9. Place the large Waste Tank in the unit with the large white connection to the rear left of the instrument and attach the white connection coming from the vacuum motor. Connect the high volume vacuum (HVE) to the large gray connector towards the front of the instrument. Connect the black electrical connector to one of the black electrical waste container connections (Figs. 4 & 6). Secure tank by running bungee cord from hooks on bottom panel over Waste Tank lid.
10. Place the small Waste Tank in the unit with the small gray connector towards the front. Attach the gray hose coming from above to the white connector. Connect the Low Volume Vacuum (saliva ejector) line to the gray connector towards the front of the instrument. Connect the black electrical waste container connections (Figs. 4 & 6). Secure the tank by running the bungee cord from the hooks on the bottom panel over the small waste tank lid. (Fig. 6)

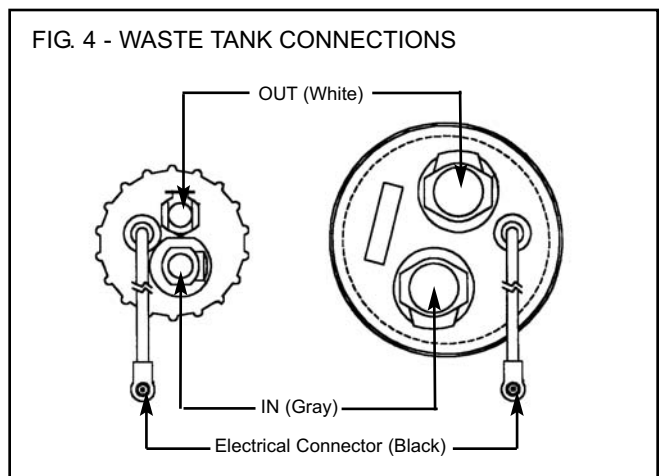


FIG. 5 - AEU-425CF/CFH LEFT PANEL CONTROLS

ELECTRIC CONTROL CONSOLE

POWER SWITCH

POWER CORD RECEPTACLE

FUSE PANEL

FUSE HOLDERS

SCALER ON/OFF SWITCH

SCALER COOLANT FLOW ADJUSTMENT

SCALER INTENSITY SETTING ADJUSTMENT

SCALER/HANDPIECE TOGGLE SWITCH

FOOT SWITCH RECEPTACLE

HANDPIECE COOLANT ON/OFF SWITCH

HANDPIECE COOLANT FLOW ADJUSTMENT

HANDPIECE COOLANT AIR ON/OFF SWITCH

MOTOR RECEPTACLE

MOTOR LIGHT ON/OFF & INTENSITY



FIG. 6 - AEU-425CF/CFH RIGHT SIDE

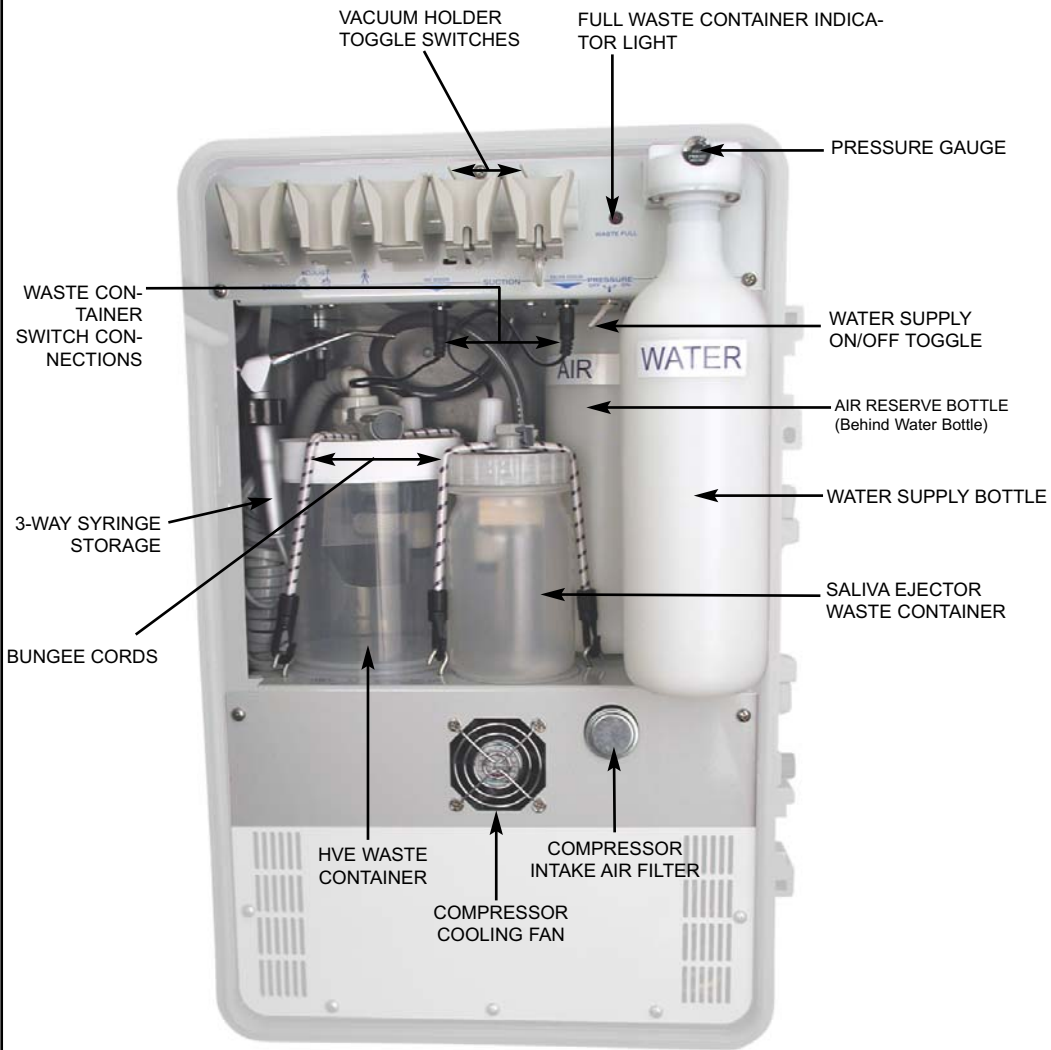
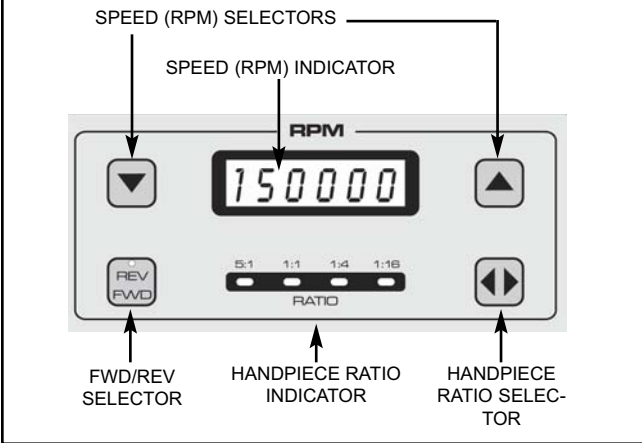


FIG. 7 - ELECTRIC CONTROL CONSOLE



**Power Inverter** - The AEU-425CF/CFH can be operated using the optional 24V DC to 110V AC Power Inverter and NATO connector. See Fig. 9.

1. Attach the NATO Connector to a Vehicle or Generator that supplies 24V DC power.
2. Plug the AEU-425CF/CFH into the Power Inverter and begin operation.

FIG. 8 - INSTRUMENT HOLDER DETAIL

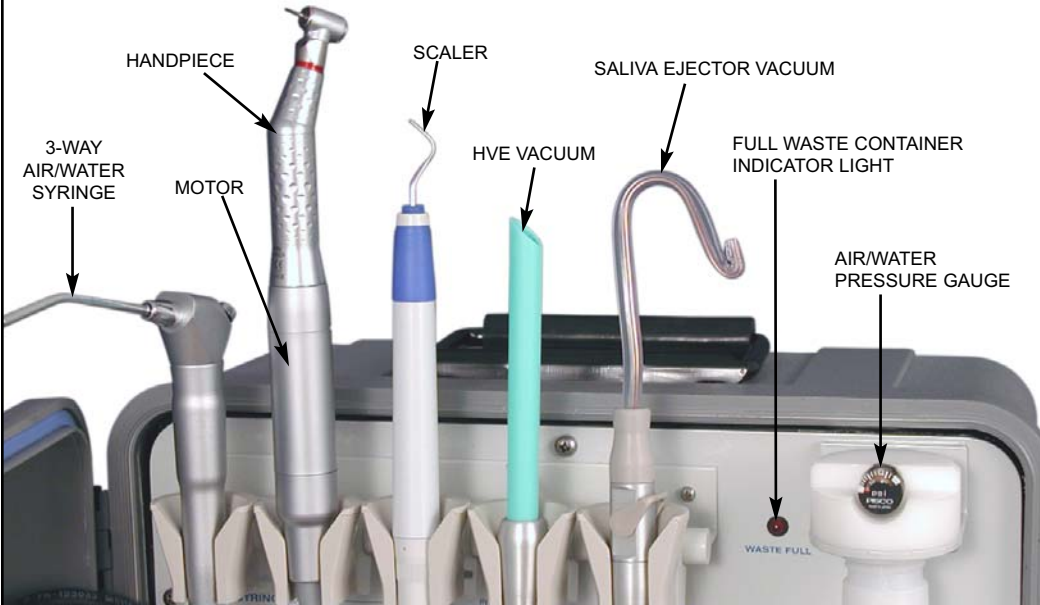


FIG. 9 - OPTIONAL POWER INVERTER AND NATO CONNECTOR



## OPERATION FUNCTIONS:

- 1. Power Switch** - Controls power on/off to console. When the AEU-425CF/CFH is turned on, the Electric Control Console will light.
- 2. Handpiece Ratio Selector** - Calibrates the Handpiece Ratio Indicator to read accurately for four different handpiece ratios. Push the Handpiece Ratio Selector until the Handpiece Ratio Indicator matches the handpiece ratio you are using. Different handpiece ratios are required to obtain different speed ranges for dental procedures. Ratio settings are held in memory even after unit is turned off.
- 3. Speed (RPM) Selector** - Controls speed of motor and handpiece. Push the up arrow to increase speed and the down arrow to decrease speed. The Speed (RPM) Indicator shows actual RPM. For complete display accuracy, the Handpiece Ratio Indicator must exactly match the ratio of the handpiece being used. Speed settings are held in memory even after unit is turned off.

Handpiece Ratio	Speed Range (RPM)
1:5 Increaser	25,000 - 150,000
1:1	4,000 - 30,000
4:1 Reduction	1,000 - 7,500
16:1 Reduction	300 - 1,800


- 4. Forward/Reverse Selector** - Determines the rotation of the motor and handpiece. A red L.E.D. light and audible beeper indicate the reverse rotation.
- 5. Handpiece Water Coolant** - Switches the water coolant to the handpiece on and off. When switched to the on position, coolant water will flow when the handpiece is in operation. Rotate the Handpiece Coolant Flow Adjustment Knob clockwise to decrease water flow and counterclockwise to increase water flow.
- 6. Handpiece Coolant Air** - Switches the air coolant to the handpiece on and off. When switched to the on position, coolant air will mix with the water flow to create a spray when the handpiece is in operation.
- 7. Three-Way Air/Water Syringe** - Pressing the left button dispenses water. Pressing the right button dispenses air. Pressing both buttons simultaneously dispenses an air/water mist.

- 8. Ultrasonic Scaler** - *See accompanying documents.* The Ultrasonic Scaler has adjustable ultrasonic levels and a water coolant system.

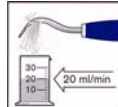
The scaler includes 3 instruments. The two #39 "Power" instruments are universal for lingual, buccal, interdental and subgingival scaling. The one #37 L "Thin" instrument is specially developed for deeper subgingival scaling, furcations, supragingival fine scaling and spot removal.

The scaler is controlled by the Scaler Ultrasonic Setting Adjustment Knob. Turn clockwise to set the ultrasonics to max. Turn counterclockwise to set the ultrasonics to min.

- 9. Coolant for Ultrasonic Scaler** - The coolant level is controlled by the Scaler Coolant Flow Adjustment Knob. Turn clockwise to increase coolant flow. Turn counterclockwise to decrease coolant flow.
- 10. Motor Handpiece Light** - To operate the handpiece light, turn on the light switch and press the foot pedal. After the foot pedal is released, the light will turn off after approximately 10 seconds. The light switch also acts a dimmer. Rotating the light knob changes the intensity of the light. If the user flips the Scaler/Handpiece Toggle Switch to the scaler position, the fiber optic light will automatically turn off.



**Verify that scaler coolant flow of no less than 20ml/min is available at the tip.**



**SEE ACCOMPANYING SCALER DOCUMENTS**

**9. Foot Switch** - The Foot Switch provides on/off operation to the motor, water coolant, to the handpiece, and the handpiece light when the Scaler/Motor Toggle Switch is on the right (Motor) side.

The Foot Switch provides on/off operation to the Ultrasonic Scaler and water coolant to the Scaler Instrument when the Scaler/Motor Toggle Switch is on the left (Scaler) side.

**10. Water Supply Bottle** - The Aseptico AEU-425CF/CFH incorporates a self contained pressurized water system. This consists of a 1-liter clear bottle dispensing water through the 3-Way Air/Water Syringe, for Handpiece Coolant, and the Ultrasonic Scaler Coolant. The Water Supply Bottle attaches to the threaded reservoir connector, located below the pressure gauge in the AEU-425CF/CFH case.

Do not store water in the Water Supply Bottle while transporting the AEU-425CF/CFH.

**To refill the Water Supply Bottle:**

**WARNING:**

Before unscrewing the Water Supply Bottle, vent reserve pressure. Turn the Water Supply On/Off Toggle into the "Off" position, allowing pressure to release.

1. Before removing the bottle for refilling, it must be depressurized. Turn the Water Supply On/Off Toggle into the "Off" position, allowing pressure to release.
2. Unscrew bottle
3. Fill with water.
4. Screw bottle onto reservoir connector
5. Turn the Water Supply On/Off Toggle to the "On" position.

**11. Air Reserve Tank** - The air reserve tank is located behind the water supply tank and stores pressurized air for the 3-Way Air/Water Syringe. The Air Reserve tank is easily removed to drain condensation.

**WARNING:**

Before unscrewing the Air Reserve Tank, vent reserve air pressure in the tank. Press the right (Air) button on the 3-way Air/ Water Syringe or open the low vacuum, with unit power off, to depressurize the air reserve tank.

**12. HVE and Saliva Ejector Vacuums** - The Transport MDS is equipped with a High Volume (HVE) and a Low Volume (Saliva Ejector) Vacuum System. Both vacuum systems operate from separate vacuum sources with automatic controls.

When the Vacuum Holder Toggle Switch is off (to the left), the vacuum system will stay off even when the vacuum valves are removed from the holder, until the toggle switch is turned on.

**IMPORTANT NOTE:**

To prevent the HVE and Low Volume (Saliva Ejector) compressor system from running excessively, ensure that the vacuum heads are firmly cradled in their holders after each use and that their spring-loaded control levers are toggled 'Off'.

When the Vacuum Holder Toggle Switch is in the on position (to the right), the vacuum will start automatically when the vacuum valves are removed from the holder. The vacuum pump will start and waste from the vacuum system will collect in the plastic waste containers. The waste container should be emptied when it is  $\frac{3}{4}$  full or when the red LED full waste container light is lit.

The High Volume (HVE) Vacuum System contains a screen inside the Waste Tank Container. This is used for collecting large debris upon vacuum intake.

**To empty the Waste Container:**

1. Turn off the unit.
2. Disconnect hoses.
3. Disconnect electrical level connection. (Pull on connector, not wire)
4. Empty container.
5. Reconnect hoses and connector.

## OPERATION:

After the unit has been set up and you have made yourself familiar with the operation functions, you are ready for operation as follows:

1. Turn the power switch on the front of the console to the 'ON' position. The Electric Control Console will light and the unit will pressurize.

2a. Using the Motor:

Flip the Scaler/Motor Toggle Switch to the right (Motor) side.

- 2b. Attach a sterile handpiece to the motor and set the Ratio Selector to match the gear ratio of the handpiece being used (i.e. 1:5 for a 1:5 increaser handpiece, or 4:1 for a 4:1 reduction handpiece).

- 2c. Adjust the up/down arrows on the RPM display to the desired operating speed on the RPM readout.

NOTE: The RPM display indicates true bur speed when the Ratio Selector is in the appropriate position. Make sure the Ratio Selector matches the handpiece ratio for display accuracy.

2d. Motor Coolant/Irrigation:

Turn the Handpiece Coolant Water Switch on. Adjust the Handpiece Coolant Water Flow Knob to the desired setting.

2c. Motor Coolant Air/Irrigation:

Turn the Handpiece Coolant Air Switch on to create spray. Adjust the Handpiece Coolant Water Flow Knob to the desired spray setting.

3a. Using the Ultrasonic Scaler:

**See accompanying documents.**

Flip the Scaler/Motor Toggle Switch to the left (Scaler) side. Rinse the water line before attaching tip by pressing the foot switch and allowing the water to flow for 30 seconds.

3b. Screw on a sterile Instrument Tip to the Scaler

Handpiece and tighten it firmly. Turn carefully backwards approx. 1mm. This will put the tip in a neutral position so it can move freely.

### WARNING:

Ensure proper coolant flow before using Scaler on a patient. Heat emitted by the Scaler may damage teeth if coolant water is not atomized at the Scaler tip.

- 3c. Adjust the Scaler Coolant Flow Control Knob to the desired setting. The coolant should create a mist around the Scaler tip.

- 3d. Adjust the Scaler Ultrasonic Setting Knob to the desired setting.

4. Use the 3-Way Air/Water Syringe as necessary for irrigation or drying. A plastic dental barrier sheath made for the 3-way syringe must be used on syringes that have not been autoclaved.

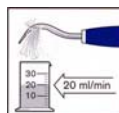
5. Adjust the vacuum pressure by moving the valves on both the HVE and saliva ejector vacuum heads.

6. Press the foot control to activate Motor or Scaler and begin operation.

7. Empty the Vacuum Waste Tank when it is 75% full. If the red 'Full waste container indicator light' turns on, the vacuum system is full. When this occurs, shut down vacuum system, and empty the waste tank.



**Verify that scaler coolant flow of no less than 20ml/min is available at the tip.**



**SEE ACCOMPANYING SCALER DOCUMENTS**

## STERILIZATION AND MAINTENANCE:

**HANDPIECES** - Thorough cleaning and lubrication of handpieces after each use and before sterilization is very important to ensure proper operation and service life of the handpiece. Follow the instructions provided with the handpiece for complete maintenance instructions.

**IMPORTANT!** Protect motor from excess oil draining from handpiece. After lubricating and before autoclaving, stand handpiece by its base on a paper towel and allow excess oil to drain.

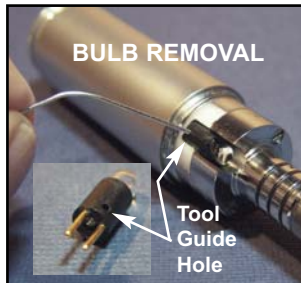


**MOTORS** - The AE-200-30 motor is fully autoclavable. To autoclave motor only, **detach the motor from motor cord** by unscrewing the metal motor-to-cable connector counterclockwise (see photo below). Steam autoclave the motor at 132° C (275° F) for ten minutes. Wipe down the motor cable with disinfecting solution. We recommend also sleeving the cable between each patient.

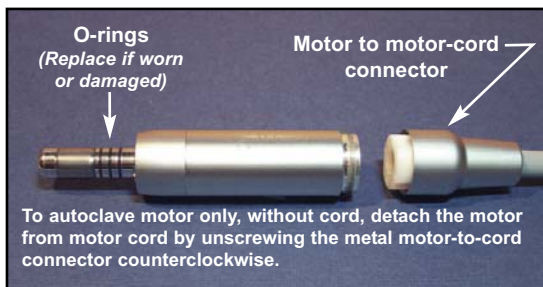
**WHEN THE MOTOR CORD MUST BE AUTOCLAVED, AUTOCLAVE CORD AND MOTOR JOINED - DO NOT SEPARATE THE CORD FROM MOTOR.**

Note: Extensive autoclaving will shorten the life of the motor cord.

**MOTOR BULB** - The motor light bulb may become dirty in the autoclave and require cleaning or replacement. To remove bulb, unscrew bulb cover from end of motor housing and insert dental pick or other small pointed instrument into guide hole at base of bulb (see photograph). Slide bulb forward until disconnected from socket in motor housing. Wipe bulb with clean soft cloth - do not handle bulb with bare fingers. Reinstall bulb with guide hole facing outward. Carefully guide the bulb's contact pins back into their respective socket holes.



**MOTOR O-RINGS** - Replace motor O-rings when worn or damaged (see photo below). Gently peel old O-ring out of groove and replace with new ring (PN 520069). Occasionally apply rubber compatible lubricant to O-rings to maintain flexibility.



### WARNING :

- Do not attempt to disassemble the motor.
- Do not oil or lubricate the motor.
- Do not attach a handpiece to the motor while the motor is running.
- Do not bend motor cord sharply.

Failure to comply with any of the above instructions may void your warranty

### AUTOCLAVABLE MOTOR CORD



- When autoclaving, loosely coil the motor cord.
- Avoid sharply bending the cord when autoclaving.

### CAUTION FOR ALL STERILIZATION:

- Do not submerge in any solutions.
- Do not use ultrasonic cleaners.

**VACUUM SYSTEM** - The HVE and Saliva Ejector Valves are fully autoclavable. Remove the valves from the hoses before autoclaving.

The vacuum hoses should not be autoclaved. Clean with a disinfectant solution.

**ULTRASONIC SCALER** - See accompanying documents. The Scaler Handpiece Cover and Instrument Tips are fully autoclavable.

Always twist the Scaler Handpiece Cover off of the Scaler Handpiece and Hose after completing treatment. Shake the water out of both parts to prevent short circuit.

Disinfect and clean the Scaler Handpiece Cover and Instrument Tips before autoclaving. Autoclave at a maximum temperature of 135° C (275° F) for 10 minutes or 120° C (248° F) for 20 minutes.

Wipe off the Scaler Handpiece and its silicone hose with a soft cloth. Use a 45% isopropyl alcohol or detergent solution. **DO NOT IMMERSE** the handpiece in any fluid or spray any fluid directly on the handpiece.

Before remounting the Scaler Handpiece, check the O-ring of the plug. If the O-ring is damaged or worn, water may leak from the coupling. This could lead to short circuit in the Scaler Handpiece Hose Plug. Therefore, replace the O-ring if it is damaged or worn.

## STERILIZATION AND MAINTENANCE (continued):

**CONSOLE** - The exterior of the console may be cleaned by wiping with a soft cloth moistened with mild detergent or disinfecting solution.

**SYRINGE TIPS** - The AEU-425CF/CFH unit features a three-way air/water syringe with quick change auto-clavable tips.

**WATER LINES** - Disinfect the water lines weekly. Prepare a 1:10 bleach solution (1 part household bleach to 9 part water). Remove water reservoir and discard residual water. Replace empty water reservoir and air purge all waterlines. Fill water reservoir with bleach solution. Run bleach through all lines. Allow bleach solution to stand in lines for 10 minutes. Remove water reservoir and discard bleach. Flush all lines thoroughly with clean water. Air purge and leave lines dry until next clinical use.

### TA-90D 3-WAY AIR/WATER SYRINGE-

The Three-Way Air/Water 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 (see Fig. 11). 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.



## CHANGING THE FUSE:

### WARNING:

Turn the power off and unplug the unit before following the steps below.

### MAIN FUSES

**NOTE: The AEU-425CF/CFH is manufactured with 250V (6.3A rated) fuses installed, if operating with a 230V power source, change to the 3.15A rated fuses before operation.**

1. Remove the Fuse holder from the Power Inlet connector.
2. Changing the fuse:  
Replace the fuse in the Fuse holder.

#### Replacement Fuses:

120V: 6.3A, 250V slo-blo fuse  
230V: 3.15A, 250V slo-blo fuse  
(Fuse size: 5 x 20mm)

3. Replace the Fuse holder.

### SECONDARY FUSES

1. Unscrew each fuse holder from below the Inlet connector.
2. Changing the fuse:

#### Replacement Fuses:

0.63A, 250V slo-blo fuses  
(Fuse size: 5 x 20mm)

3. Replace the Fuse holders.

## EXTENSION CORD RECOMMENDATIONS:

Use only a 3-wire extension cord that has a 3-blade grounding plug. Connect extension cord plug to a matching 3-slot receptacle. Ensure that the extension cord is in good condition and that its gage wire is the correct size wire to carry the current this product will draw. An undersized cord is a potential fire hazard and will cause a drop in line voltage, resulting in loss of power and causing the product to overheat. Figure 12 indicates the correct size cord for the length required and the ampere rating listed on the product nameplate. **If in doubt, use the next heavier gage cord. The smaller the gage number, the heavier the wire gage.**

FIG. 12

Recommended Wire Gage for Extension Cords										
Amps	Minimum Gage									
	18	18	18	16	16	14	14	12	12	10
0-2	18	18	18	16	16	14	14	12	12	10
2-3	18	18	16	14	14	12	12	10	10	8
3-4	18	18	16	14	12	12	10	10	8	8
4-5	18	18	14	12	12	10	10	8	8	8
5-6	18	16	14	12	10	10	8	8	8	6
6-8	18	16	12	10	10	8	6	6	6	4
8-10	18	14	12	10	8	8	6	6	4	4
10-12	16	14	10	8	8	6	6	4	4	2
12-14	16	12	10	8	6	6	4	4	2	2
14-16	16	12	10	8	6	4	4	2	2	2
16-18	14	12	8	8	6	4	4	2	2	2
18-20	14	12	8	6	6	4	4	2	2	2
Volts	120V	25	50	100	150	200	250	300	400	500
	240V	50	100	200	300	400	500	600	800	1000
Length of Cord in Feet										

## TROUBLESHOOTING:

Problem:	Correction:
Console does not light when turned on:	<p>Check console to power connection.            Check that voltage is proper voltage.            Check fuse. If blown, replace with 6.3A/250V slo-blo fuse for 120V operation, &amp; 3.15A/250V slo-blo fuse for 230V operation.            Check secondary fuses. If blown, replace with 0.63A/250V slo-blo fuses.</p>
Console lights when turned on, but hand-piece does not turn:	<p>Check motor plug connection.            Check foot switch connection.            Depress foot switch.            Increase RPM.            Check that an instrument is properly seated in the handpiece and the collet is closed.</p>
Improper display:	<p>Turn power switch off, wait 5 seconds, then turn back on to reset.            Change ratio setting to match handpiece.</p>
Motor slowing down or sluggish:	<p>Dirty, under-lubricated handpiece.            Handpiece lubricant is running into motor.            After lubricating, set handpiece with head down to let excess lubricant drain out.</p>
Handpiece motor light does not turn on:	Check bulb. Note: Do Not Handle Bulb With Fingers
Vacuum doesn't turn off when hoses are in their holders:	<p>Ensure that HVE and Low Volume (Saliva Ejector) vacuum heads are firmly placed in their holders.            Check spring-loaded lever in holders.</p>
Pressure fails to stabilize:	Check that air and water bottles are tight. Check line and fittings for air leaks.
Pressure fails to turn off at approx. 50 PSI:	Check for broken cable to pressure switch.
Unit fails to build pressure:	Check that bottles are tight. Check wires for breaks to solenoid switch.
Red LED on the plumbing chassis is lit:	<p>Empty full waste container.            Check waste level connections.            Check that float in waste container moves freely.</p>
Compressor is on, but gauge shows no increase in pressure:	<p>Check three-way valve to see if the valve is switched. If the valve failed to switch, the air will continue to come out of the filter.            Check the line from the compressor to the valve for a rupture.            Check the electrical connections to the three-way valve.</p>
HVE vacuum switch (yellow dot) is in the On position, but vacuum doesn't activate when hose is removed:	<p>Inspect the toggle lever on the vacuum holder to see if it is stuck. Loosen the setscrew under the switch and adjust the switch for proper operation.            Check the electrical connections on the switch.            Check the relay.</p>
HVE vacuum pressure seems lower:	<p>Check to see if the container is tight.            Check the trap to see if it is clogged.            Check to see if line to motor is crimped.</p>
Saliva ejector switch (red dot) is in the On position, but vacuum doesn't activate when hose is removed:	<p>Inspect the toggle lever on the vacuum holder to see if it is stuck. Loosen the setscrew under the switch and adjust the switch for proper operation.            Check the toggling connections to the air pilot valve and pump.            Check to see if the air pilot is functioning by removing the line to the pump and seeing if air is present.</p>

## WARRANTY

Aseptico warrants its products against defects in material or workmanship for a period of one (1) year, from date of original invoice. Some handpieces are warranted for one year under the same conditions. Other handpieces and expendable components, such as air turbines and light bulbs, are covered by shorter warranty periods, or have no warranty. Aseptico's sole obligation under product warranty is (at its sole option and discretion) to repair or replace any defective component or product in part or whole. Aseptico shall be the sole arbiter of such action.

In the event of alleged defect under warranty, the purchaser is to notify Aseptico's Customer Service Department promptly. Customer Service will provide instructions, usually directing that the product be returned for service. Shipment to Aseptico and the cost thereof is always the responsibility of the purchaser.

Accidental misuse, inappropriate installation, or failure to perform directed maintenance voids the warranty.

Aseptico does not assume, under this warranty, any risks or liabilities arising from the clinical use of its products, whether or not such use involves coincidental utilization of products manufactured by others.

NOTE: In the interest of serving our customers more efficiently, customers receiving service on non-warranted repairs are expected to accept charges that are less than \$250.00 without further notification.

