
AMC-20CF

Mobile Dental System



**OPERATION &
MAINTENANCE MANUAL**



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Classifications in accordance with
UL-60601-1:

- Class II
- Type B Applied Parts
- Type BF Equipment
- Ordinary Protection
- Not suitable for use in the presence of a flammable anesthetic mixture with air, oxygen, or nitrous oxide.

Note: For reliable grounding, connect to receptacle marked "Hospital Grade".

INDICATIONS FOR USE:

The AMC-20CF is a mobile self-contained dental system that is used for endodontic and general dentistry applications.

RX: FEDERAL LAW RESTRICTS THIS DEVICE TO SALE BY OR ON THE ORDER OF A DENTIST



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CONFORMS TO UL STD 60601-1;
CERTIFIED TO CSA STD C22.2 NO. 601.1

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.

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.

Your new Aseptico AMC-20CF Dual Voltage Mobile Dental System is the finest mobile dental system available. The System provides an array of dental equipment features and functions designed to serve a wide range of dental applications -- all conveniently and neatly packaged into a single, self-contained transportable cart:

- Automatic handpiece controls for two pneumatic handpieces w/fiber optic lights.
- Integrated electric motor with control panel.
- Ultrasonic scaler.
- Curing light.
- Each pneumatic and electric handpiece provides individually controlled water with coolant air.
- 3-way air/water syringe with a self contained water system.
- High Volume (HVE) and low volume vacuum lines with adjustable suction valves and a solids trap.
- Amalgam separator.
- 2 HP compressor with Aseptico pioneered split head compression and vacuum.
- Aluminum tank for rust-free air supply.
- Rotating arms for positioning of the tubing in the front of the unit.

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 other accessories for your unit.

PACKAGE CONTENTS:

- Self Contained Mobile Cart
- AEU-5000 Remote Mount Assembly
- HVE and Saliva Ejector Hoses with Valves
- TA-90D 3-Way Air/Water Syringe with Tip
- Two 1-Liter Water Bottles, PN 730631-01
- AA-43W Wet/Dry Foot Control
- AA-19LED-20CK5 Fiber-Optic 5-Hole Handpiece Illumination Kit
- Ultrasonic Scaler with 3 Tips, PN 730500
- Rapid Cure L.E.D. Visible Curing Light, 730624
- Amalgam Separator (PN 730595) and By-Pass Filter (PN 730615)
- Waste Hose Assembly (PN 330673)
- Power Cords – 120V Hospital Grade (PN 840101) and 220V Euro (PN 840102)
- Portable Case for Transporting Mobile Cart, PN 410195

PURCHASED SEPARATELY:

- AHP-72MBFO-XL 1:5 Increaser E-Type Handpiece w/Fiber Optics
- AHP-77C 1:2 Increaser E-Type Surgical Handpiece
- AHP-63MBFO-XL 1:1 E-Type Handpiece w/Fiber Optics
- AHP-56MBFO-XL 5:1 Reduction E-Type Handpiece w/Fiber Optics
- AHP-88MNP 8:1 Reduction E-Type Endodontics Handpiece

NOTE: A List of Replacement Parts is Provided on Page 23.



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: Clean, disinfect, and sterilize new or repaired handpieces and instruments before first use and between each patient use. Only use sterilized handpieces and instruments during treatment. Non-sterilized 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 product being damaged, possibly beyond repair. Before using this product, make sure that you have studied and understood the operating instructions.

WARNING: Do not install where there is a risk of an explosion. The Mobile Dental System 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 AMC-20CF Cart.

WARNING: The Ultrasonic Scaler instrument tips oscillate at high frequency and can fracture during operation. To help prevent the tips from fracturing and possibly injuring the patient, always follow the scaler manufacturer's operating instructions and recommended ultrasonic power settings.

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.

WARNING: Always operate a high-speed handpiece with water coolant. Operating a high-speed handpiece without water coolant can cause thermal injury to the patient.

CAUTION: Observe local regulations concerning disposal of amalgam waste.

WARNING: Avoid looking directly into the Curing Light. Protect patient's eyes with darkened eyewear when using the Curing Light Probe.

CAUTION: The lens for the electric motor LED is soft and can be damaged. If lens needs to be cleaned, use a lint-free swab and isopropyl alcohol - do not use other solvents as they might adversely react with the LED assembly.

WARNING: Never operate unit or work on patients when the top cover is open.

CAUTION: The AEU-5000 Electric Motor is not recommended for use with endodontic files that have torque limit requirements less than 100 g-cm.

WARNING: Do not use this device for dental implant procedures.

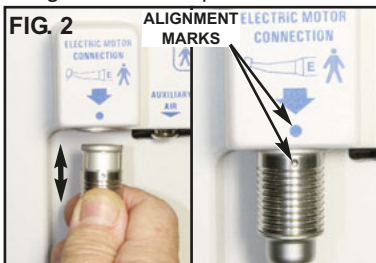
2. **CAUTION:** Do not run saline solutions through the water system -- saline will corrode the water filters.

SETTING UP THE UNIT:

1. Unpack the AMC-20CF Dental System from its shipping case (Fig. 1) per the instructions provided in the Aseptico "Packing Guide", included in case.

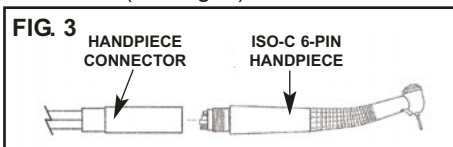


2. Attach the electric motor/cord to the receptacle on the front panel. Align the round dimple on the motor cord connector with the mark on the receptacle (see Fig. 2) and push cord straight into receptacle until it snaps into position. To remove motor/cord, pull motor cord connector straight out of receptacle.

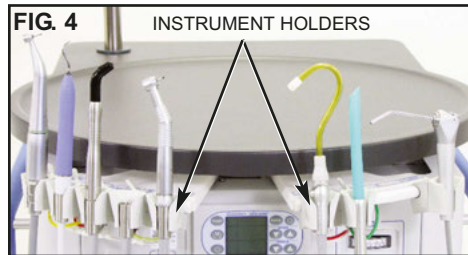


Attach the appropriate E-Type handpiece (sold separately) to the electric motor.

3. Attach the appropriate ISO Type-C (6-Pin) fiber optic handpiece(s) to their respective connectors (see Fig. 3).

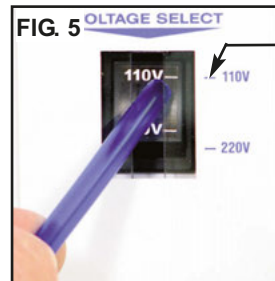


Place all handpiece and accessories tubes in their appropriate holders (Figs. 4 & 17).

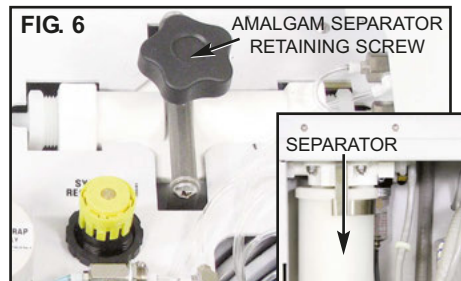


4. Verify that the voltage-selector switch is set to the proper voltage. To select the desired voltage, use a long slender tool to toggle the switch (see Fig. 5).

IMPORTANT: When selecting voltage, align 110V/220V horizontal markers on switch to the corresponding markers on faceplate.



IMPORTANT
WHEN SELECTING VOLTAGES, ALIGN HORIZONTAL MARKERS ON SWITCH WITH MARKERS ON FACEPLATE



5. Open the waste compartment door on the back side of the unit and place the amalgam separator into the

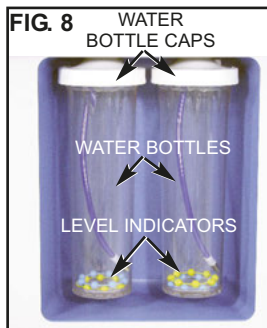
SETTING UP THE UNIT - *Cont'd*

amalgam manifold. Tighten the retaining screw located under the top cover (see Fig. 6, page 3). **NOTE:** Before installing the separator into the manifold, remove the two caps from the inlet and outlet ports of the separator. Ensure that the two O-rings that seal the separator against the manifold remain in place on the ends of the port fittings and are not lodged inside the caps.

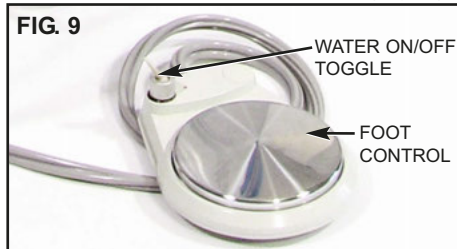
6. Attach the 'Waste-Full' sensor to the connector on the top of the waste compartment (see Fig. 7). Ensure that all tubes and the bungee tie-down cord are in place on the waste container.



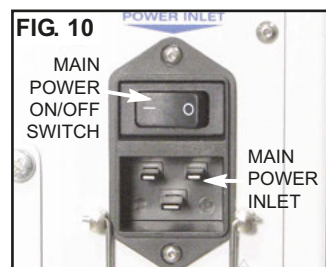
7. Fill the water bottles with clean water or other suitable irrigation fluid and attach to the water bottle caps (Fig. 8). The water bottles include floating level indicators, color coded to identify different fluids, e.g., sterile water vs. distilled water.



8. Place the foot control on the floor (Fig. 9).



9. Attach power cord to the back of the unit (Fig. 10) and plug into a grounded electrical outlet. Confirm that the power cord is correct for the voltage source in the country of use. Turn main power 'On' (—).



10. Check system operating pressure on the pressure gauge located under top cover (Fig. 11). Use the system regulator to set system operating pressure to optimum 80 PSI (5.51 bar). To adjust pressure, raise knob on regulator, then turn clockwise to increase pressure or counterclockwise to decrease.

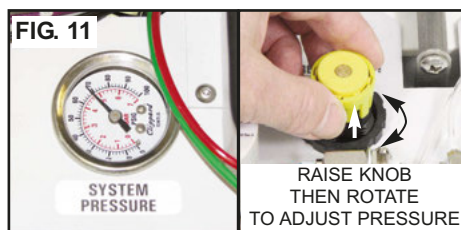
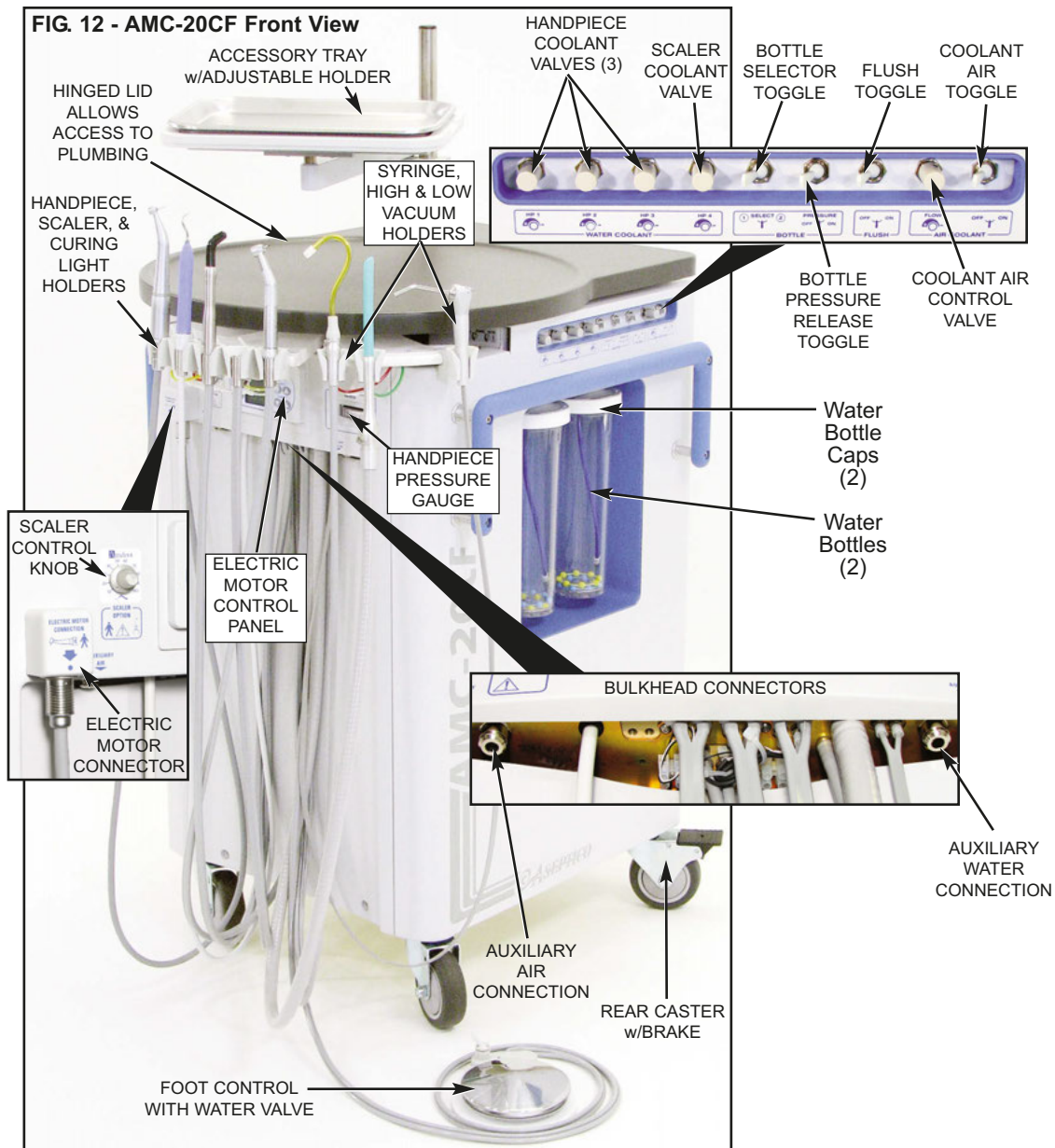


FIG. 12 - AMC-20CF Front View



SETTING UP THE UNIT- *Cont'd*

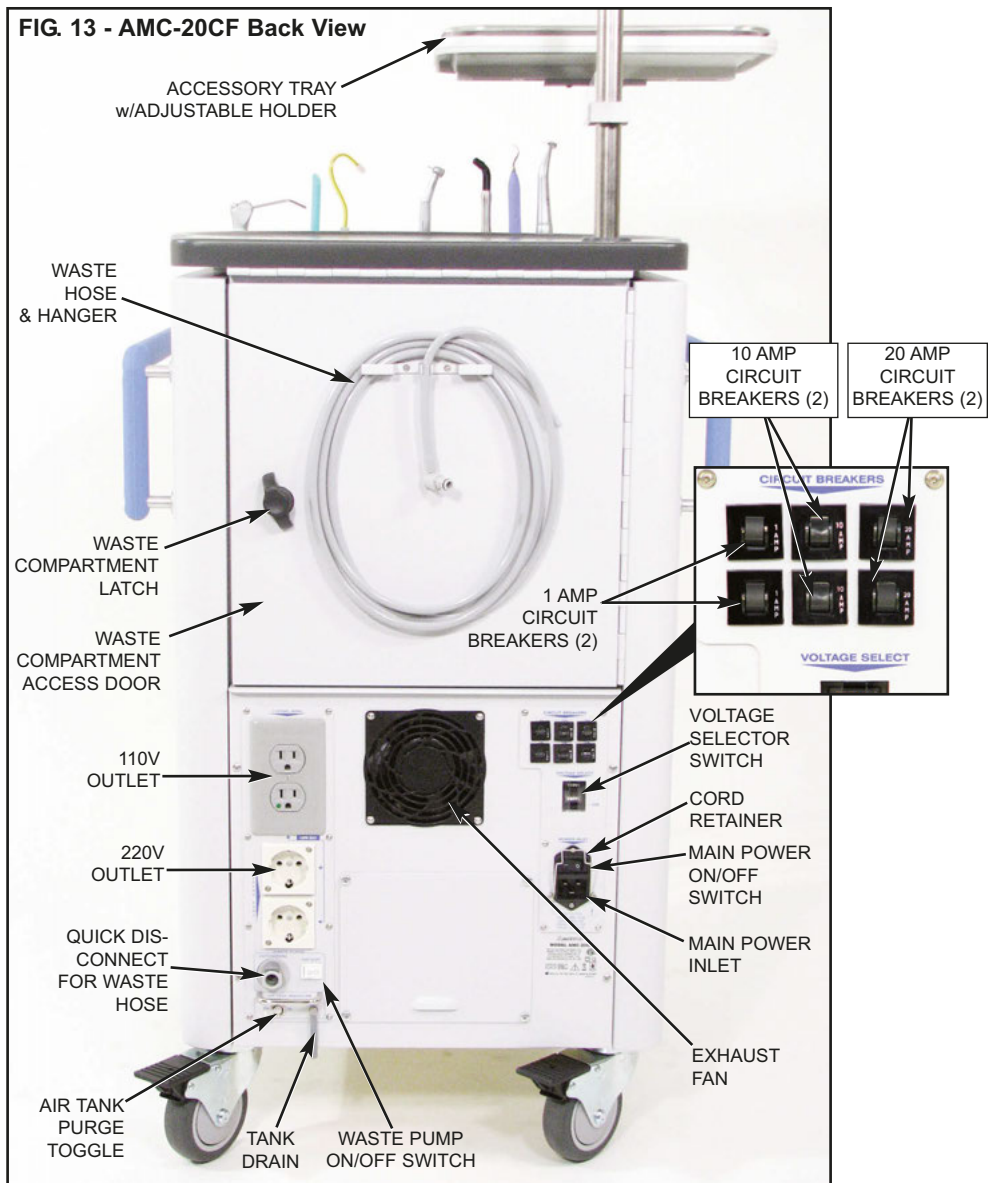
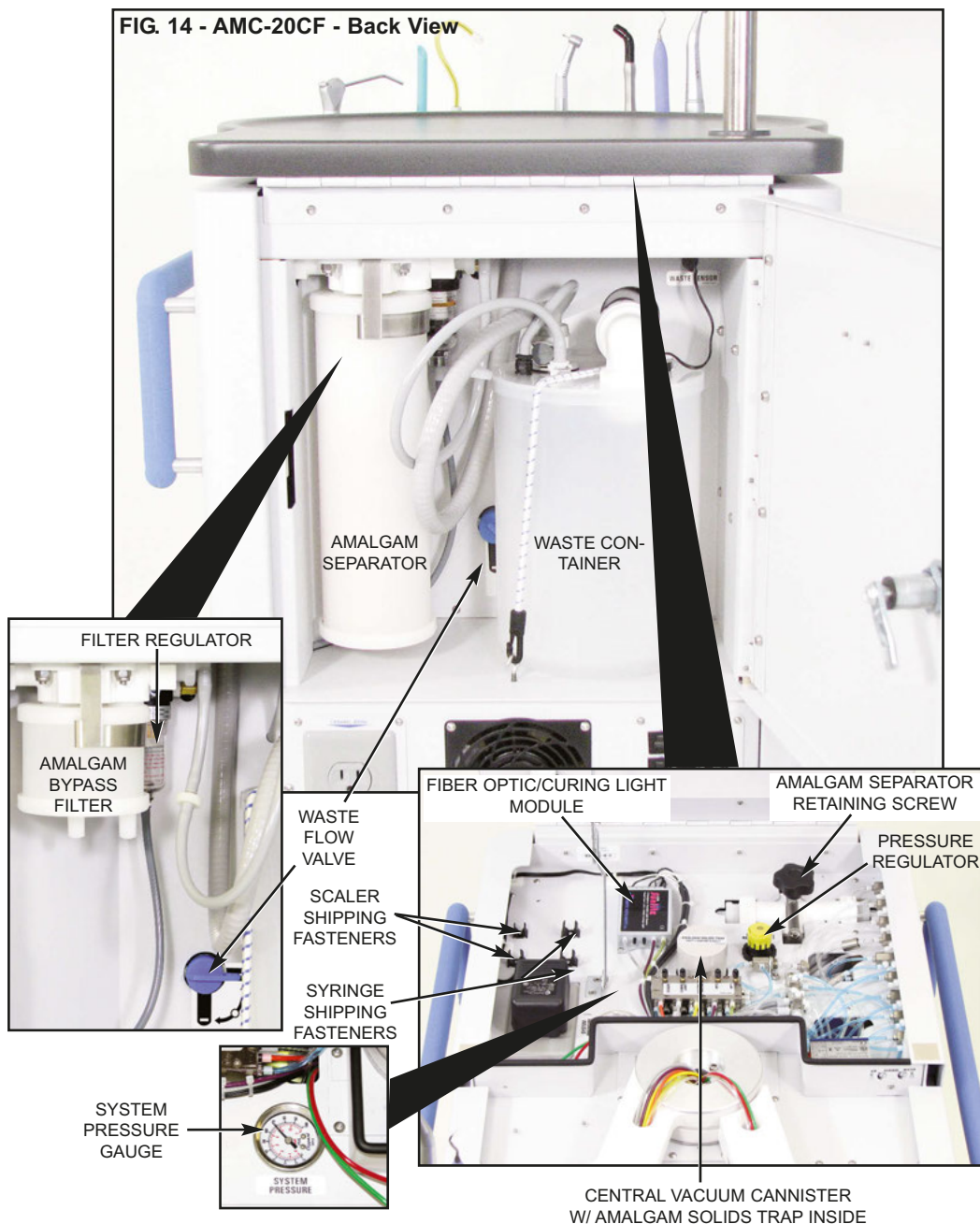
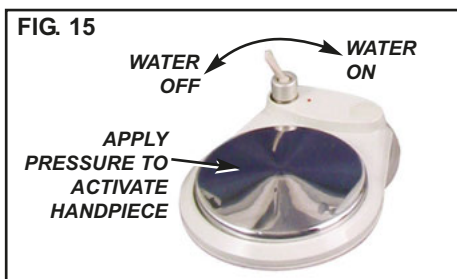


FIG. 14 - AMC-20CF - Back View

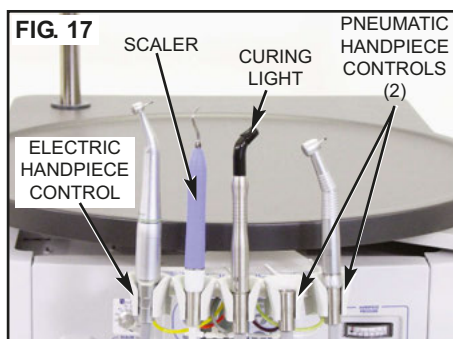
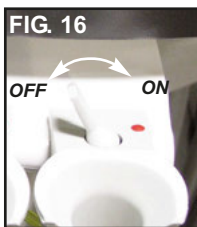


OPERATION FUNCTIONS:

1. **WET/DRY FOOT CONTROL** (Fig. 15) – The variable-speed foot control activates the handpieces, scaler, curing light, and water coolant on/off spray. Position the foot control on the floor. For handpiece operation, apply foot pressure to any part of the center disk. The electric motor or pneumatic turbine speed is proportional to how far the pedal is depressed. Depress gradually to increase speed; release to decrease speed. The handpiece holder toggle must be 'On' and the handpiece removed from its holder before operation can begin. To activate the water coolant, move the wet/dry toggle switch on the foot control to the right. Move switch to the left to disable water.



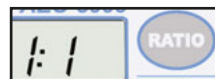
2. **INSTRUMENT CONTROLS** (Figs. 16 & 17) – The Aseptico AMC-20CF includes controls for all handpiece and instrument holders. Each holder includes an On/Off toggle switch (see Fig. 16) which when turned 'Off' (toggle to the left), keeps the instrument off, even when removed from its holder. When the toggle switch is turned 'On' (toggle toward the red dot), the instrument will automatically start when removed from its holder and the foot control is pressed. The amount of air pressure supplied to the pneumatic handpieces may be adjusted by turning the flow control screws on the control block under the upper cover (see Fig. 28, page 14). The pressure to the handpiece can be read on the pressure gauge located on the front panel of the unit.



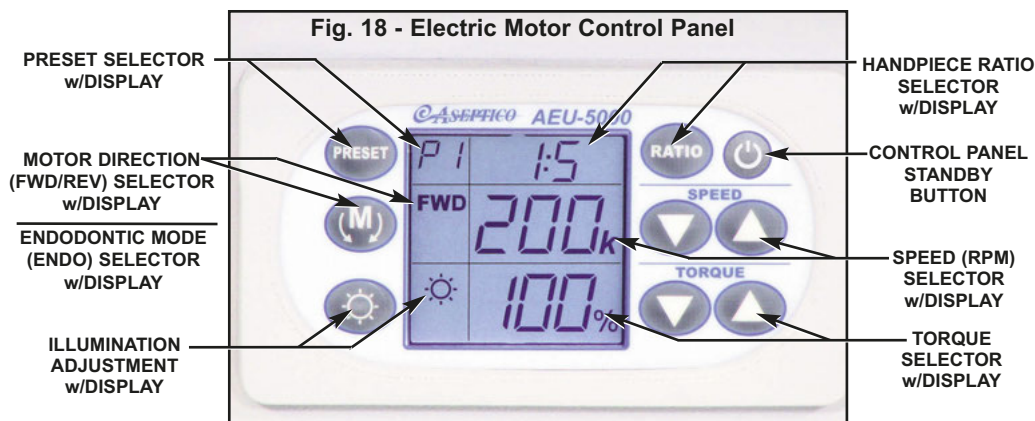
3. **AEU-5000 ELECTRIC MOTOR AND CONTROL PANEL** (Fig. 18) - There are two different control modes that can be used to operate the Electric Motor: Manual Mode using the console buttons, or Preset Mode using the preprogrammed Presets:
A. MANUAL OPERATION - At any time, the user can adjust the ratio, speed, torque, motor direction, and electric handpiece LED settings using the control panel keypad (The Preset indicator in upper left of LCD will blink on and off, indicating the change):
 1) Depress the Standby button to turn electric motor control panel on or off. If the console was turned off using the Standby button, the Display will darken and all the buttons, except the Standby button, will become inoperative. Press the Standby button again to turn on the control panel and return the motor to its last used settings.



- 2) Press the **RATIO** button repeatedly to select the ratio that matches the handpiece being used. Available ratios are: 1:5, 1:2, 1:1, 5:1, and 8:1.



NOTE: The user can reprogram the unit to display only a preferred set of ratio(s) from the five available options. Refer to page 10 for complete instructions on Customizing Ratios.



3) Press the **SPEED** Up/Down buttons to select the desired operating speed for the handpiece being used. See Figure 19 for handpiece speed ranges.

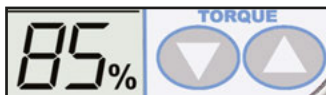


Fig. 19 - AMC-20CF Speed Ranges

1:5	10,000 - 200,000	RPM
1:2	4,000 - 80,000	RPM
1:1	2,000 - 40,000	RPM
5:1	400 - 8,000	RPM
8:1*	280 - 5,000	RPM

**280 - 1250 RPM in ENDO Mode*

3) Press the **TORQUE** Up/Down buttons to select the desired operating torque percentage.



4) Press **MOTOR DIRECTION** button repeatedly to cycle through and select the Forward (FWD) or Reverse (REV) settings. An audible tone indicates reverse direction.



5) To switch the electric motor to Endodontic operating mode, first select the 8:1 handpiece ratio, then press the **MOTOR DIRECTION** button repeatedly until the word "**ENDO**" appears in the Motor Direction window. Next, select the desired Torque level using the UP/Down Torque buttons. The unit is then ready to operate in ENDO mode - the rotation of the handpiece will automatically alternate between forward and reverse when the selected torque is reached (in order to free the instrument).



6) Press and release the **ILLUMINATION** button to turn the handpiece LED On/Off. To activate the handpiece and LED, remove the handpiece from its holder, turn the Illumination button 'On', and press the foot pedal to operate the motor. When the foot pedal is released and the motor has stopped, the light will turn off after approximately 20 seconds.



Press and hold the Illumination button for three seconds to enter the LED intensity adjustment mode. When in this mode, press

OPERATION FUNCTIONS - *Cont'd*:

the Torque Up/Down buttons to select the desired illumination in 10% increments, from 10% to 100%. The handpiece LED will automatically turn on and change intensity as the adjustments are made. The display icon will also blink as the adjustments are made. To exit the adjustment mode, press and release the Illumination button.

B. PRESET OPERATION - The Integrated Electric Motor module is shipped with five preprogrammed factory Presets for each ratio (see Fig. 21). This allows the user to instantly access a wide range of settings. After the handpiece ratio has been selected, press the Preset Button repeatedly to cycle through five different Presets (P1 - P5). When the desired Preset is displayed, its operating parameters are automatically activated. Each Preset can store the following parameters:

- Bur/Drill Speed
- Motor Direction
- Torque Setting
- LED Light 'On' or 'Off'
- Endo Mode Activation (8:1 handpiece ratio only)

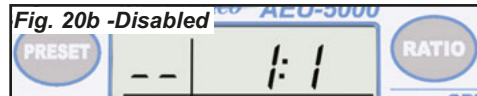
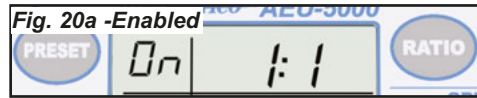
NOTE: The Electric Motor is programmed at the factory to initially start up with Ratio 1:5 and Preset No.1 active. Subsequently, when the System power is turned on, the last settings used will be activated.

CUSTOMIZING RATIOS:

The user can enable or disable individual handpiece ratio options, so that only preferred or commonly used ratios are displayed during the ratio selection process. Follow these steps to reprogram the unit with customized ratio options:

1. Press and hold the Ratio button to enter the Ratio Customization Mode.
2. Press the Ratio button repeatedly to switch between the available ratio options. Each Ratio displays in the Ratio window as the user cycles through the five options.

3. When the desired ratio is displayed, press the Preset button to toggle the ratio to either enabled or disabled status. The word "On" will appear in the Preset display window when enabled, and two dashes "--" will appear when disabled (see Figs. 20a & 20b).



4. Repeat Step 3 above for the remaining four ratio options until the desired ratios are enabled.
5. Press and hold the Ratio button to exit the Ratio Customization Mode. Only the enabled ratios will be displayed when selecting Ratio options; any ratio that has been disabled will not be displayed (unless you re-enable it).

NOTE: The system must always have at least one ratio option enabled. If the user attempts to disable the last operational ratio, the system will emit a beep sound and ignore the user's command to disable this remaining option.

NOTE: If the factory defaults are restored, all customized Ratio option settings will be overwritten.

CUSTOMIZING PRESETS:

Each Preset can be customized by the user with its own unique set of operating parameters:

- 1) First select the Ratio, then select the Preset number of the Preset you wish to customize.
- 2) Adjust the Preset's speed, torque, handpiece illumination, and motor direction as desired. **NOTE:** The ENDO Mode feature can only be enabled when an 8:1 ratio is selected. The Preset indicator will blink on and off, indicating a change is in process.

Figure 21 - Factory Default Presets

RATIO	PRESET NO.	SPEED (RPM)	DIRECTION	TORQUE	ENDO MODE (8:1 Ratio Only)	HANDPC LED
1:5	1	200,000	FWD	100 %	—	On
	2	150,000	FWD	100 %	—	On
	3	150,000	FWD	50 % Torque Limit	—	On
	4	100,000	FWD	100 %	—	On
	5	100,000	FWD	50 % Torque Limit	—	On
1:2	1	80,000	FWD	100 %	—	Off
	2	60,000	FWD	100 %	—	Off
	3	60,000	FWD	50 % Torque Limit	—	Off
	4	40,000	FWD	100 %	—	Off
	5	40,000	FWD	50 % Torque Limit	—	Off
1:1	1	40,000	FWD	100 %	—	On
	2	40,000	FWD	50 % Torque Limit	—	On
	3	20,000	FWD	100 %	—	On
	4	10,000	FWD	100 %	—	On
	5	8,000	FWD	100 %	—	On
5:1	1	2,000	FWD	100 %	—	On
	2	1,500	FWD	100 %	—	On
	3	1,200	FWD	100 %	—	On
	4	800	FWD	100 %	—	On
	5	400	FWD	100 %	—	On
8:1 (ENDO MODE)	1	300	FWD	100%	YES	Off
	2	300	FWD	70%	YES	Off
	3	300	FWD	50%	YES	Off
	4	300	FWD	30%	YES	Off
	5	300	FWD	10%	YES	Off

OPERATION FUNCTIONS - *Cont'd*:

3) Press and hold the Preset button to save its new settings (a beep will sound).

4) Press the foot pedal to activate the motor and begin operation.

FACTORY DEFAULTS: The Electric Motor Module will retain the factory default settings (Fig. 21) in memory until changed by the user. To recall the original factory defaults, press and hold the PRESET and RATIO buttons simultaneously for approximately 3 seconds. **IMPORTANT:** When factory defaults are recalled, all user-customized Ratio and Preset settings will be overwritten.

SLEEP MODE:

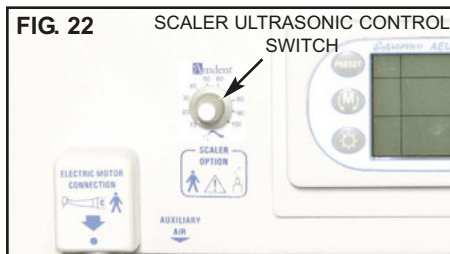
After 20 minutes of motor inactivity, the Electric Motor Module automatically enables an energy-saving Sleep Mode which turns off the Display. When in this mode, three square symbols will blink consecutively across the darkened LCD.

To turn the unit on again and light up the Display, the user can either press the Standby button on the Control Panel or remove the handpiece from its holder and then press on the foot pedal. The last used settings will be restored.

4. **SCALER** (Fig. 17) – The AMC-20CF includes a piezoelectric scaler system that provides adjustable ultrasonic levels and a water coolant system. The scaler includes 3 instrument tips: The #37 instrument is specially developed for subgingival scaling, furcations, supragingival fine scaling and spot removal. The #38 tip is used for lingual and buccal subgingival scaling and furcations. The #39 tip is used for universal lingual and buccal supragingival scaling.

The scaler is controlled by the scaler ultrasonic setting adjustment knob which is located on the left side of the front panel

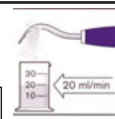
(see Fig. 22). The ultrasonic intensity can be adjusted by turning the control knob clockwise to maximum or counterclockwise to minimum. When scaling, follow the tip manufacturer's recommended ultrasonic settings for each tip.



The coolant level is controlled by the scaler coolant flow adjustment knob (see Fig. 24, page 13). Turn knob counterclockwise to increase coolant flow; turn clockwise to decrease coolant flow.

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

SEE ACCOMPANYING SCALER DOCUMENTS

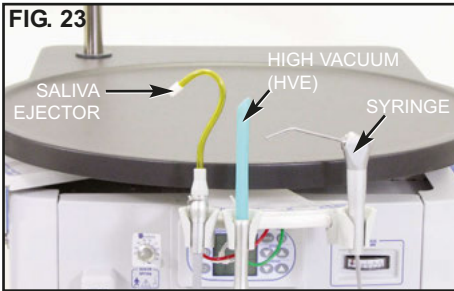


5. **CURING LIGHT** (Fig. 17) - The AMC-20CF provides an LED curing light. When the light is removed from the holder and the foot pedal is depressed, the light turns On. Releasing the foot pedal will turn the light Off. The light is cooled with drive air from the AMC-20CF manifold at 20 psi. An audible tone will sound every 10 seconds while the light is active.



WARNING:

Avoid looking directly into curing light. Protect patient with darkened eyewear when using light probe near patient's eyes.



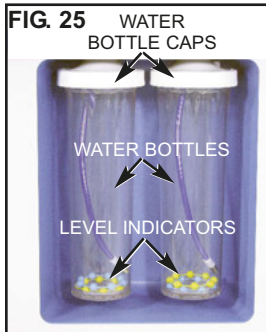
- 6. 3-WAY AIR/WATER SYRINGE (Fig. 23)**
- Pressing the left button dispenses water.
 - Pressing the right button dispenses air.
 - Pressing both buttons simultaneously dispenses an air/water mist. This mist can be adjusted with the syringe control block located under the top cover (see Fig. 28, page 15).

7. WATER BOTTLES (Figs. 24 & 25) - The AMC-20CF incorporates a

self-contained pressurized water system. The system consists of two 1-liter clear water bottles with a toggle switch to direct the flow from either one of the two bottles, providing the ability to use different solutions (**NOTE:**

Flush lines before changing solutions). A pressure relief valve allows both bottles to be replaced without draining the air tank. (**NOTE:** This valve releases pressure from both bottles; you cannot remove one bottle while using the other). To refill the water bottles:

- Toggle the bottle pressure relief valve to 'Off' (see Fig. 24) to remove pressure from both bottles.
- Unscrew bottles and remove from their

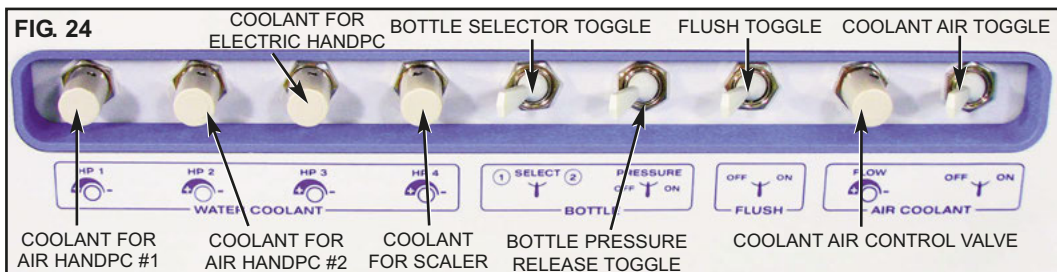


caps.

- Fill bottles with water or other solution.
- Screw bottles back into their caps.
- Toggle the pressure relief valve to 'On' to pressurize both bottles.
- Select bottle to be used via the Bottle Selector Toggle Switch (Fig. 24).

NOTE: The yellow and blue floating level indicators can be used to identify bottle contents when two different types of fluids are used.

- COOLANT AIR TOGGLE VALVE (Fig. 24)**
When turned on, this valve allows coolant air to flow to the working handpiece or motor when the foot pedal is depressed.
- COOLANT AIR CONTROL VALVE (Fig. 24)**
Adjusts the volume of coolant air to the working handpiece or motor.
- FLUSH TOGGLE (Fig. 24)** – Allows user to flush the handpiece or motor with water, washing away contaminants which may have accumulated in the handpiece and tubing. User should flush the handpiece for about 5 seconds after every patient, and about 20 seconds at the beginning of each day. To flush a handpiece, remove it from its holder and point the spray nozzle away from you, i.e., into a basin. Flip the flush toggle and hold the desired number of seconds. Release the toggle when done.
NOTE: If water bottles drain empty when flushing, air will be flushed through the lines.
- BOTTLE PRESSURE RELEASE TOGGLE (Fig. 24, page 13)** – Allows pressure to be released from both bottles while maintaining system pressure.
- WATER BOTTLE TOGGLE VALVE (Fig. 24, page 13)** – Allows user to direct the water flow from either one of the two bottles (toggle points to the bottle in use).



OPERATION FUNCTIONS - *Cont'd*:

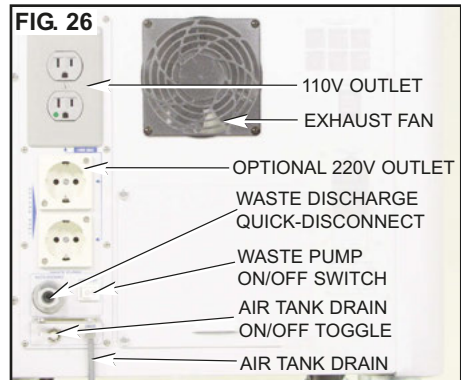
13. HIGH AND LOW VOLUME VACUUMS (Fig. 23, page 13) – The unit is equipped with a 5-liter waste tank, a high volume evacuator (HVE) hose, and a low volume saliva ejector hose. Both high and low volume systems operate simultaneously from the same vacuum source. To gain vacuum on the HVE, fully open the HVE valve and close the low volume valve. To gain vacuum on the low volume valve, close the HVE and open the low volume to full open.

14. CENTRAL VACUUM KIT – Used with the vacuum system and contains a disposable solids collector. The system is located under the top cover (see Fig. 14, page 7).

15. AMALGAM SEPARATOR (Fig. 14, page 7) – The amalgam separator is located in the rear waste compartment. The separator allows for particulate from the waste compartment to be trapped prior to being pumped out of the unit. The separator can be replaced by unscrewing the knob located under the top cover, and removing the filter from the waste compartment. **CAUTION:** Observe local regulations concerning disposal of amalgam waste.

16. WASTE FLOW CONTROL (Figs. 14 & 30, pages 7 & 15) The waste flow control is located in the rear waste compartment. This valve allows for the adjustment of the waste pump flow rate, to meet a State's or Country's regulatory requirements for wastewater filtering and collection (refer to para. 5, page 15).

17. WASTE PUMP SWITCH & WASTE DISCHARGE QUICK DISCONNECT (Fig. 26) – A waste pump switch is provided on the back of the unit to purge the waste system. A quick disconnect is provided next to the switch, to attach the drain hose. **NOTE:** The hose must be attached before waste will discharge.

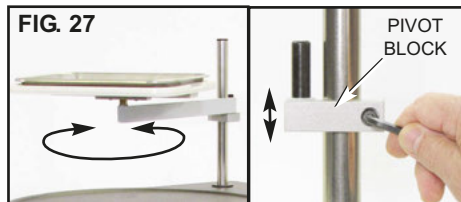


18. AIR TANK DRAIN VALVE (Fig. 26) – Allows air pressure and any condensation to be drained from air tank. Turn "On" to open drain or "Off" to close drain.

19. EXTERIOR OUTLETS (Fig. 26) – 110V and 220V (Euro style) outlets are provided on the back of the unit for powering accessories.

NOTE: The system uses a step down transformer to apply the proper voltage to the unit when plugged into 220V. When 110V is used for the primary voltage entering the unit, the 220V socket will provide 220V output.

20. ACCESSORY TRAY (Fig. 27) - The height of the accessory tray can be adjusted: remove the tray and arm from the pivot block, then use the 3/16" Allen wrench (supplied) to loosen the hex screw and reposition the block to the desired height. The tray and arm also pivot horizontally.



ROUTINE ADJUSTMENTS:

1. WATER COOLANT FLOW

ADJUSTMENT (Fig. 24, page 13)



Each handpiece has an individual water control valve that regulates the water coolant flow to the handpiece and motor. Install and run a handpiece at a midrange speed. Make sure the wet/dry toggle is in the "ON" position on the foot control. Turn the appropriate water coolant flow control (see Fig. 24, page 13) clockwise, until it seats softly. Begin turning counterclockwise until a fine mist is visible. This will provide excellent cooling while the bur is cutting. (Note that each water coolant control valve on the control panel controls its respective handpiece located on the rotating arm.)

2. COOLANT AIR CONTROL ADJUSTMENT

(Fig. 24, page 13)

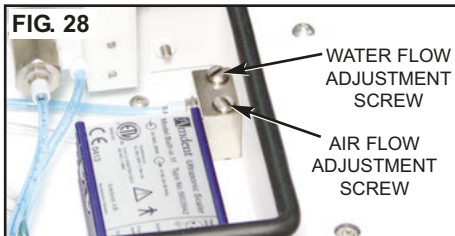


A coolant air toggle valve and control valve are provided to turn coolant to the handpiece and motor On and Off, and to control the flow. Turn the coolant air control valve clockwise until it seats softly. Begin turning counterclockwise until the desired amount of air is achieved.

3. SYRINGE AIR/WATER FLOW

ADJUSTMENT (Fig. 28) – The syringe flow adjustment block is located under the top cover, behind the arm barrier wall. There are two slotted adjustment screws: the left screw adjusts the air flow and the right screw adjusts the water flow. Turning the adjustment screws clockwise will decrease the pressure, while turning them counterclockwise will increase the pressure.

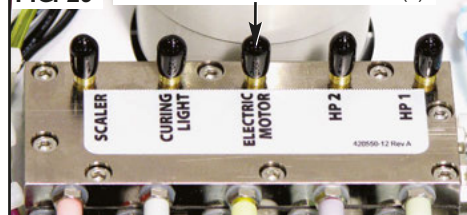
FIG. 28



4. HANDPIECE PRESSURE ADJUSTMENT

The amount of air pressure supplied to the HP1 & HP2 pneumatic handpieces may be controlled by turning the flow adjustment screws on the control block and monitoring the pressure gauge on the front of the system cabinet. The control block is located under the top cover, behind the barrier wall (Fig. 29). Turn screws clockwise to decrease pressure or counterclockwise to increase pressure. **IMPORTANT:** Always adjust the HP1 and HP2 handpieces' pressures to the manufacturer's recommended settings. The pressure settings for the scaler, curing light and electric motor are preset at the factory and do not require any further adjustments.

FIG. 29 FLOW ADJUSTMENT SCREWS (5)



5. WASTE FLOW ADJUSTMENT (Fig. 30)

The waste flow valve controls the wastewater flow rate. The valve is located in the rear waste compartment. Turn the lever as shown to adjust the flow rate as specified by your State or Country laws regarding disposal of dental wastewater. The small circle on the flow indicator represents a 1-liter per minute flow setting for the specific amalgam separator provided with this AMC-20CF Cart. A bypass filter has been provided for areas where amalgam separators are not required.

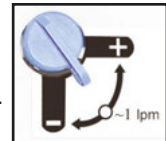
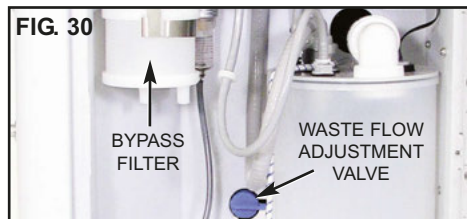


FIG. 30



STERILIZATION AND MAINTENANCE:

CAUTION FOR ALL STERILIZATION:

- Do not exceed 135° C or 275° F
- Do not submerge in any solutions
- Do not use ultrasonic cleaners

HANDPIECES:

Flush the pneumatic handpiece for about 5 seconds after every patient and about 20 seconds at the beginning of each day. **NOTE:** The flush valve is located on the control panel, on the right side of the unit (see Fig. 24, page 13). When sterilizing E-type handpieces, follow the instructions provided by the handpiece manufacturer.

IMPORTANT! Protect motor from excess oil draining from E-type handpiece. After lubricating and before autoclaving, stand handpiece by its base on a paper towel and allow excess oil to drain (see Fig. 31).



ELECTRIC MOTOR & CORD ASSEMBLY:

The entire AEU-5000 Electric Motor and Cord Assembly is fully autoclavable (Fig. 32). Steam autoclave motor/cord assembly at 132° C (270° F) for ten minutes. Loosely coil the motor cord when autoclaving. Avoid sharply bending the cord when autoclaving. Alternatively, wipe down the motor cord with disinfecting solution, and/or sleeve the cord between each patient.

Fig. 32 - MOTOR & CORD STERILIZATION



The entire motor & cord assembly is steam autoclavable.

CAUTION:

The Electric Motor is sensitive to shock. Do not drop or impact motor against a hard surface.

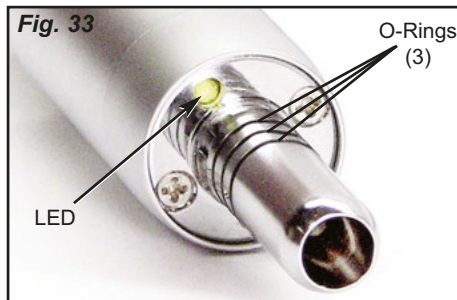
WARNING

- Do not attempt to disassemble the motor or motor connector.
- 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.

ELECTRIC MOTOR O-RINGS:

Replace electric motor O-rings when worn or damaged (Fig. 33). Gently peel old O-rings out of grooves and replace with new rings (PN 520069). Occasionally apply non-toxic lubricant (preferably containing PTFE) to O-rings to maintain flexibility.



MOTOR LED LENS CLEANING:

The lens of the LED light on the motor (see Fig. 33) is soft and can be damaged. It should not be exposed to dust and debris. Excessive dust and debris may cause a drastic decrease in optical output. In the event that the light requires cleaning, first try a gentle swabbing, using a lint-free swab. If needed, use a lint-free swab and isopropyl alcohol to gently remove dirt from the lens. **Do not use other solvents** as they may adversely react with the LED assembly.

WATER LINES:

Disinfect the water lines weekly. Prepare a 1:10 bleach solution (1 part household bleach to 9 parts water). Purge all water lines (see page 19, *Purging Water From the System*). Fill water bottles with bleach solution. Run bleach solution through all lines. Allow bleach solution to stand in lines for 10 minutes but no longer:

Immediately remove water bottles and discard the bleach, then flush water bottles and all lines thoroughly with clean water. Purge all water lines with air and leave dry until next clinical use.

CAUTION:

Do not run saline solutions through the water system -- saline will corrode the water filters.

VACUUM SYSTEM:

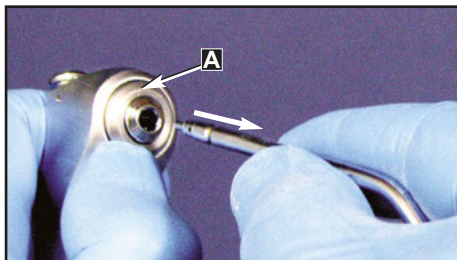
The HVE and low volume saliva ejector valves are fully autoclavable. Remove the valves from their hoses before autoclaving. The vacuum hoses should not be autoclaved. Clean hoses with a disinfectant solution using standard vacuum hose cleaning procedures. **CAUTION:** Use only NON-foaming cleansers in the vacuum lines.

AIR TANK PURGE:

Routinely purge the air tank once a day to remove condensation from the air storage tank.

3-WAY AIR/WATER SYRINGE:

The syringe features quick-change autoclavable tips: To remove a tip, press on the locking collar **A** 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 ring and gently tug on tip before using to ensure that tip is securely locked into socket.

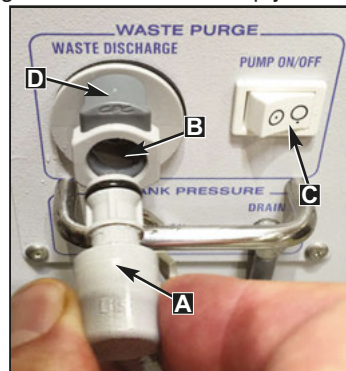
Syringe Tip Sterilization:

- 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.

WASTE REMOVAL:

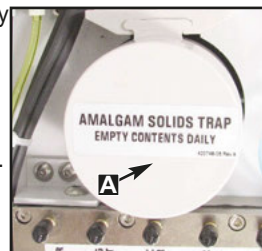
Routinely empty the waste container once a day. Since the unit uses a filtered amalgam separator, no settlement time is required before draining the waste tank. To empty the waste system, connect the waste hose elbow **A** to the waste discharge **B** on the back of the unit by inserting the elbow until it locks into place. Switch on the waste



purge pump **C** to empty the waste system. To disconnect the waste hose, depress the button **D** on top of the waste discharge. **NOTE:** The waste hose must be connected to the waste discharge to enable pump operation.

AMALGAM SOLIDS TRAP:

Replace the disposable amalgam solids trap routinely. The performance of the vacuum system will decrease significantly as the trap fills up with solids. The trap sits inside the central vacuum canister **A** located under the top lid. Keep spare traps in stock. The AMC-20CF uses standard 1 7/8" traps (open or closed type):



OPEN TYPE



CLOSED TYPE

PART NO. QUANTITY

AA-29 1
AA-29-100 100

PART NO. QUANTITY

AA-290VS 1
AA-290VS-100 100

Check with state laws regarding the recycling of amalgam solids waste.

STERILIZATION AND MAINTENANCE - Cont'd:

ULTRASONIC SCALER:

(Refer to *ultrasonic scaler instructions for use*, supplied separately.)

The scaler handpiece cover and scaler tips are fully autoclavable. Disinfect and clean the cover and 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 and detergent solution. **DO NOT IMMERSE** the handpiece in any fluid or spray any fluid directly on the handpiece.

CURING LIGHT:

(Refer to *curing light instructions for use*, *Sunlite Lazer model*, supplied separately. *Sunlite Lazer* is a product of Kinetic Instruments, Inc.)

The curing probe is fully autoclavable. Detach probe by pressing quick disconnect button on side of handle. Clean probe with disinfectant then autoclave at 135°C (275°F) for 20 minutes minimum. Clean and sterilize probe between each patient use. **NOTE:** The lamp module (the section that seats into the tubing connector) is NOT autoclavable.



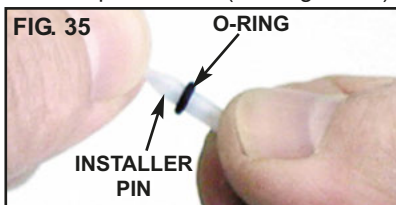
WARNING:

Avoid looking directly into curing light. Protect patient with darkened eyewear when using light probe near patient's eyes.

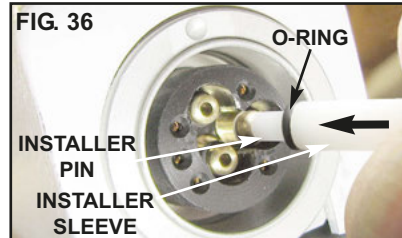
MOTOR/CORD RECEPTACLE O-RINGS

The O-rings for the three water/air ports in the motor/cord receptacle should be replaced if damaged or worn. Use the provided O-ring installer pin and sleeve to replace the O-rings:

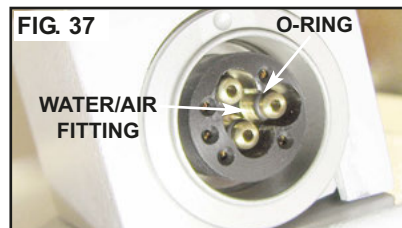
1. Remove old O-ring from water or air port fitting.
2. Slide new O-ring over pointed end of installer pin, onto the pin's shank (see Figure 35).



3. Insert pointed end of installer pin into open end of installer sleeve until O-ring stops against end of tool.
4. Position concave end of installer pin against end of water/air port fitting (see Figure 36).



5. Push installer sleeve inward, until new O-ring seats into groove on fitting (see Figure 37).



PURGING WATER FROM THE SYSTEM:

Purge all water from the system if the unit will be unused for more than a week or exposed to freezing temperatures. Empty both water bottles, then reinstall them into their caps. Rotate open (counter-clockwise) all water coolant knobs (open knobs fully for fastest purging). Toggle on all instrument holder switches. Switch on the main power. Toggle on the bottle pressure switch. Purge all water lines simultaneously or one at a time: Hold handpieces and scaler over a basin while holding the flush toggle switch in the on position until all water is purged from the lines with air. Finally, hold the water syringe over the basin and hold down the water button until all water is purged from the line with air.

GENERAL CLEANING:

The external surfaces of the chassis should be cleaned using a soft cloth moistened with a mild detergent solution. Any external surfaces of the unit that are contacted during use should be wiped down with a soft cloth moistened with a disinfectant at the beginning of each day and between each patient use.

REPACKING INSTRUCTIONS:

When repacking the Dental System into its case, follow the instructions found in the Asepticco "Packing Guide" included in case.

Following are key points to remember when repacking the System:

1. Remove all accessories from the Cart.
2. Remove all liquid wastes and water from water bottles, amalgam separator, and bypass filter.
3. Purge air pressure from air tank.
4. Detach syringe and scaler instruments from their hoses and install into their shipping fasteners located under the Cart's top lid.
5. Open shipping case and deploy built-in loading ramp.
6. Carefully roll the AMC-20CF unit, back side first, up the ramp and into the case. Use the two side handles when pushing/rolling the unit. More than one person might be required to push the unit into the case. **CAUTION: When moving and lifting the Cart, always provide adequate support, to prevent tipping.**
7. Position the scissors jack into the jacking dock which is mounted onto the loading ramp. Push the jack all the way in so it fully seats into the dock. Ensure that the cutouts on the jack platform are properly aligned with the bolts on the bottom of the Cart. Raise the Cart until the bottoms of the casters are approximately 3/4-inch above the ramp floor. Insert the two foam supporting blocks under the cart. Lower the jack until the Cart rests on the blocks, then gently snug the jack back up against the bottom of the Cart.
8. Install the protective foam packing blocks on the front and top of the Cart. Ensure the Cart's dental instrument holders are aligned with the cutouts on the top packing block (carefully rotate the Cart's pivoting arms until the holders are aligned with cutouts). Ensure that the dental instrument hoses are looped correctly through the cutouts on the front and back of the packing block.
9. Stow the amalgam separator block, foot pedal, and jack crank handle into their respective foam compartments and secure with velcro strips.
10. Secure and tighten the holding straps on the sides of Cart. Wrap the straps once around the side

FIG. 38



handles.

11. Fold the loading ramp up against the front packing block and secure it tightly with the buckled strap provided.
12. Slide the Accessories Case into the top shelf.
13. Carefully lower the case and Cart down onto its back side, until the case lays flat on the floor. This task will require two or more people.
14. Carefully attach the top half of the case to the bottom half (for the best fit, match the same top-to-bottom orientation that the case originally shipped with). Close the clasps tightly on all four sides. Raise entire case to a vertical position, resting on its skids.

CAUTION:

BEFORE REPACKING THE UNIT INTO ITS CASE, ALWAYS REMOVE ALL LIQUID WASTES AND WATER FROM WATER BOTTLES, AMALGAM SEPARATOR, AND BYPASS FILTER

DO NOT LIFT UNIT AT THE CENTER OF THE SIDE HANDLES. ALWAYS LIFT UNIT USING A 4-POINT LIFT (AT THE ENDS OF HANDLES WHERE THEY ATTACH TO THE FRAME).

WHEN TRANSPORTING UNIT, DO NOT PLACE HEAVY OBJECTS ON TOP OF CASE.

TROUBLESHOOTING:

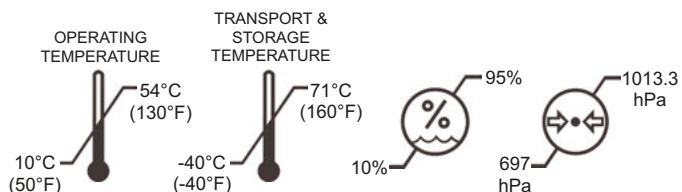
Problem:	Correction:
Unit will not start:	• Check system power connection. • Check voltage selector switch for proper voltage. • Check circuit breakers. • Check if waste tank sensor is connected. • Check if waste tank is full.
Unit starts but trips circuit breakers:	• Check source circuit to see if it is a minimum of 15A. NOTE: Operating the unit off an extension cord is not recommended.
No water pressure:	• Check water bottles for water level and verify that cap is tight. • Check that water bottle pressure toggle is in the 'On' position.
Insufficient vacuum:	• Check vacuum hose assemblies for blockage. • Check amalgam collector for blockage. Empty/replace amalgam solids trap. • Check that the waste container lid is properly seated and tightly secured.
Insufficient handpiece operation:	• Check the pressure gauge on the front of the cabinet and ensure that sufficient air is being delivered to the handpiece. • Check that handpiece tubing is untangled and not crimped. • Check handpiece connection for missing gasket.
No water to handpiece:	• Check that the toggle on the foot control is to the 'On' position. • Check that the control valve to the selected handpiece is open.
No coolant air to handpiece:	• Check that the toggle is in the 'On' position. • Check that the flow control valve is open.
Waste pump is not working:	• Check to see if the amalgam separator is clogged by replacing it with the by-pass filter.
Unit is turning On and Off:	• Waste tank is full.
Electric motor control panel does not light up when on:	• Press Standby Button on front panel.
Electric motor control panel lights up when turned on, but handpiece does not turn:	• Check motor plug connection. • Depress foot switch. • Increase Speed. • Increase Torque setting • Check that a file is properly seated in the handpiece and the latch is closed.
Electric motor slowing down or sluggish:	• Check for dirty, under-lubricated handpiece. • Check if handpiece lubricant is draining into motor. • After lubricating and before autoclaving, stand handpiece on its base to let excess lubricant drain out.
Amalgam by-pass filter leaks:	• Check that the O-rings are properly installed onto ends of fittings.
Electric motor handpiece light does not turn on:	• Press Illumination button to turn On. • Increase light intensity setting on control panel.

SPECIFICATIONS:

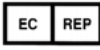
Cart Size:	23.5" W x 30.0" L x 36.5" H (56.69 cm x 76.2 cm x 92.71 cm)
Shipping Case Size:	36.0" W x 34.0" L x 52.0" H (91.44 cm x 86.36 cm x 132.08 cm)
Cart Weight:	158 lbs (71.66 kg)
Shipping Case Weight:	210 lbs (95.25 kg)
Power Source:	AC Dual Voltage Manual-Switching 110V / 220V at 60Hz / 50Hz
Power Rating:	1,620 W at 60 Hz, or 1,920 W at 50 Hz @110V 1,725 W at 60 Hz, or 1,437.5 W at 50 Hz @220V
Circuit Breakers:	20 Amps for 110V 10 Amps for 220V 1 Amps for isolated 110V & 220V
Operating Pressure:	80 PSI (5.51 bar)
High Volume Vacuum:	6.6 SCFM @ 0" Hg (186.9 liters/min @ 0 cm Hg) 5.9 SCFM @ 0" Hg with Low Vol. open (167.1 liters/min @ 0 cm Hg) 6.0 SCFM @ 4" Hg (169.9 liters/min @ 10.2 cm Hg) 4.8 SCFM @ 4" Hg with Low Vol. open (135.9 liters/min @ 10.2 cm Hg)
Low Volume Vacuum:	2.3 SCFM @ 1.5" Hg (65.1 liters/min @ 3.8 cm Hg) 1.5 SCFM @ 1.5" Hg with High Vol. open (42.5 liters/min @ 3.8 cm Hg)
Simultaneous Vacuum:	High @ 4" Hg = 5.1 SCFM (144.4 liters/min @ 10.2 cm Hg) Low @ 1.5" Hg = 1.4 SCFM (39.6 liters/min @ 3.8 cm Hg)
Vacuum/Compressor Pump:	115 PSI (7.92 bar), 2 HP Oilless Compressor 1.6 SCFM @ 100 PSI (45.3 liters/min @ 6.89 bar)
Water Bottle Capacity:	67.8 fl. oz. (2.0 liters)
Air Storage Capacity:	1.93 gal.(7.3 liters) nominal
Air Storage Pressure:	110 PSI (7.58 bar)
Water Flow:	5.07 fl. oz./min (0.15 liter/min)
Waste Tank Capacity:	1.08 gal. (4.08 liters)
Noise Level:	59 dBA @ 3'4" (1 meter)
20CF Cart Duty Cycle:	Continuous
Compressor Duty Cycle:	33% (5 minutes ON / 10 minutes OFF) when operating at 50 Hz
Electric Motor Duty Cycle:	17% (1 minute ON / 5 minutes OFF)
Environmental Conditions:	Operating Temperature: 10° to 54° C (50° to 130° F) Transport/Storage Temperature: -40° to 71° C (-40° to 160° F) Relative Humidity: 10 to 95% non-condensing Altitude: 0 to 3048 meters (0 to 10,000 feet)

IMPORTANT

When running the AMC-20CF unit at 50Hz, expect approximately 17% less vacuum and pressure volume due to slower turning of the compressor.



SYMBOL DEFINITIONS:

	Type B Equipment		Protective earth (ground)
	Type BF Equipment	IPX1	Protect Against Dripping Water
	Attention, consult accompanying documents	SN	Serial Number
	Dangerous Voltage		Footswitch
	Alternating current		On/Off Switch - Auxillary
	Do Not Throw In Trash		On/Off Switch - Mains
	Air Coolant Control	PRESSURE OFF  ON	Bottle Pressure Release Toggle
	Handpiece Water Coolant Control		Bottle Select Toggle
	Air Coolant ON/OFF Toggle OR Flush Toggle		Manufacturer
	Authorized European Representative		Atmospheric Pressure Limitation
	Motor Direction		Temperature Limitation
	Light Controls		Humidity Limitation

REPLACEMENT PARTS LIST

ITEM	PART NO	QTY
CANISTER VACUUM WASTE 4 QUART MODIFIED	730229-06	1
WASTE HOSE ASSEMBLY	330673	1
AMALGAM SEPARATOR MOD	730595	1
CONTAINER BYPASS AMALGAM SEPARATOR	730615	1
HANDPIECE CURING LIGHT	730624	1
BOTTLE 1000ml ZIRC KIT	730631-01	2
LINECORD US HOSPITAL GREY 15A/125V 10 FT	840101	1
LINECORD EURO BLACK 15A/250V 2.5 M	840102	1
AUXILIARY ARM MOBILE DENTAL CART AMC-20	AA-20A	1
CANISTER CENTRAL VACUUM GRAY	AA-290	1
AMALGAM SOLIDS TRAP - OPEN TYPE	AA-29	1
AMALGAM SOLIDS TRAP - OPEN TYPE	AA-29-100	100
AMALGAM SOLIDS TRAP - CLOSED TYPE	AA-290VS	1
AMALGAM SOLIDS TRAP - CLOSED TYPE	AA-290VS-100	100
VALVE DELUXE UNIVERSL AUTOCLAVBLE QD HVE	AA-35LAPW	1
VALVE SAL/EJECT AUTOCLAVABLE LEVER	AA-37LAPW	1
TRAY STAINLESS RITTER 13-11/16 X 9-13/16 X 3/4	AA-50	1
FS TUBING SALIVA EJECT 3/8OD GRY	AA-86G	1
MOTOR ASSEMBLY W/ SHORT CABLE	AE-240SC-40	1
SCALER TIP THIN SUBGINGIVAL	ASC-10-PE37	1
SCALER TIP SLIM UNIVERSAL	ASC-10-PE38	1
SCALER TIP POWER UNIVERSAL	ASC-10-PE39	1
SYRINGE TIP AUTOCLAVABLE	TA-1	1
SYRINGE 3-WAY AIR/WATER QUICK CHANGE TIP	TA-90D	1

WARRANTY

Aseptico warrants its products against defects in material or workmanship for a period of two (2) years, 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. Deliberately defacing, modifying, or removing the serial number 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.

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