
AEU-14CF

Emergency Field Dental Unit

Expedition



OPERATION MANUAL



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E208087

MEDICAL EQUIPMENT WITH RESPECT
TO ELECTRIC SHOCK, FIRE AND
MECHANICAL HAZARDS ONLY IN
ACCORDANCE WITH UL 60601-1:2003

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

This device has been tested and found to comply with the emissions requirements of IEC 60601-1-2:2014. 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.

SPECIFICATIONS:

Case Dimensions: 17.5 in x 11.6 in x 7.0 in
(44.5 cm x 29.5 cm x
17.8 cm)

Weight: 27 lbs. (12.25 kg.)

Volume: 0.82 ft³ (0.23 m³)

Power Source: AC dual voltage
120V/230V at 50Hz/60Hz
12V/24V vehicle battery
28.0V battery pack (x 2)
36V solar panel to charge
battery packs

Water Reservoir: 16 fl. oz. (0.473 liter)

Air Reservoir: 28.8 in³. (473 cc)

Noise Level: 66dBa @ 1 meter

Fuses: 120V: 1.25A, 250V slo-blo fuse
(Installed at Factory)
230V: 0.6A, 250V slo-blo fuse

Fuse size: 5 x 20mm

Mains Current Ratings: 120V: 1.25A, 230V: 0.6A

NOTE: The appliance inlet is the mains disconnect means.

Environmental Conditions:

Operating Temperature: 5° to 45° C (41° to 113° F)

Transport/Storage Temperature:

-20° to 55° C (-4° to 131° F)

Relative Humidity: 5 to 95% non-condensing

Altitude: 0 to 2591 meters (0 to 8,500 feet)

If the integrity of the protective earth ground is in doubt, only use battery pack or vehicle battery power for operation.

- Type of Protection Against Electric Shock:
 - Class I when system is powered by mains power source.
 - Class II when system is powered by Vehicle Battery power source.
 - Internally Powered Equipment for Battery Pack power source.
- Degree of Protection Against Electric Shock:
 - Type B Applied Part
- Degree of Protection Against Ingress of Water:
 - Ordinary Equipment
- Model of Operation: - Continuous

Duty Cycle for AE-200-30 Motor:

Intermittent use:

1 minute On / 3 minutes Off

Your new Aseptico Expedition Emergency Field Dental Unit is the most compact, full-featured portable electric dental system available. The AEU-14CF Expedition features an "E" type autoclavable 30,000 RPM brushless micromotor, a 3-way air/water syringe, a self contained water system, and oil-less air compressor. The light weight dual voltage system comes in a sturdy 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.

PACKAGE CONTENTS:

- AE-200-30 Autoclavable 30K brushless micromotor
- TA-90D Three-way air/water syringe with tips
- Air supply bottle
- Water supply bottle with filter
- AE-7P On/Off foot switch
- Power cord
- 36V Solar panel
- Vehicle battery cable
- Two 28V battery packs
- Operation & Maintenance Manual
- Service Manual / Parts List
- Schematic Drawing Set



AEU-14CF VERSION:

Handpieces sold separately.

AEU-14CFH VERSION:

- AEU-14CFH Transport Case
- Multicam Tactical Backpack
- AHP-64 1:1 Ratio 40K Straight Handpiece
- Two AHP-72MK-FO Highspeed 1:5 Increaser Contra-Angle Handpiece with Fiber Optic
- AHP-88MNP 8:1 Ratio Reducer Handpiece

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.

To prevent injury to people and damage to property, please heed relevant warning 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.

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.

WARNING: Clean and disinfect the console user interface, motor, and air/water syringe before and between uses.

CAUTION: Always examine unit components for damage before commencing treatment. Damaged components must not be used and must be replaced.

WARNING: When operating with power from vehicle battery:

1. Patient must be six feet minimum from vehicle chassis.
2. All other devices on the system should be unpowered or disconnected from battery to prevent electronic interference.

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 dental professionals only.

WARNING: Do not install where there is a risk of an explosion. The AEU-14CF is not intended for operation in the presence of flammable anesthetics or gases

CAUTION: Use clean water only in water supply bottle. Do not use saline or other liquid as water supply.

CAUTION: Repack the unit carefully to avoid damage during transport.

NOTE: This device does not include a saliva or irrigation water evacuator. For longer procedures, use a supplementary product to evacuate the saliva and irrigation water.

WARNING: If using other electrical equipment with this product, assure that it meets appropriate safety standards for electrical dental equipment.

WARNING: Do not stare into the fiber optic light or shine it in the eyes of the patient.

WARNING: If the integrity of the protective earth ground is in doubt, only use battery pack or vehicle battery power for operation.

SETTING UP THE UNIT:

(REFER TO FIGURES 1, 2, AND 3)

1. Unpack the chassis case.

Note: Be sure the correct fuse is used for each voltage.

120V: 1.25A, 250V slo-blo fuse
(Installed at factory)

230V: 0.6A, 250V slo-blo fuse

Fuse size: 5 x 20mm

NOTE: This system is designed to operate with all power systems attached, and to draw power from the highest source. It is not advised to operate off all sources at one time. The AEU-14CF Expedition circuitry allows the unit to operate while using an AC power source that is either 120V or 230V, and either 50Hz or 60 Hz.

2. For AC power, attach the power cord to the right side of the chassis (*Fig. 3*) and plug into a grounded electrical receptacle.
3. For vehicle battery power, place vehicle battery cable into the appropriate connector (*Fig. 3*). Securely connect the red positive (+) clamp to the corresponding positive (+) terminal of the vehicle's battery. Securely connect the black negative (-) clamp to the corresponding negative (-) terminal of your vehicle's battery.
4. For battery pack power, attach one end of the battery pack cable assembly to the chassis, and the other end to the desired pack (*Fig. 2*). Ensure correct pin alignment when connecting cable to chassis socket. It is recommended that the battery packs be charged before each use (Refer to Page 10).
5. Connect the motor to the connector on the lower front panel of the chassis (*Fig. 3*). Align connector to socket pins and screw

FIG. 1a - MOTOR CONNECTION (Bulb Cover Removed)

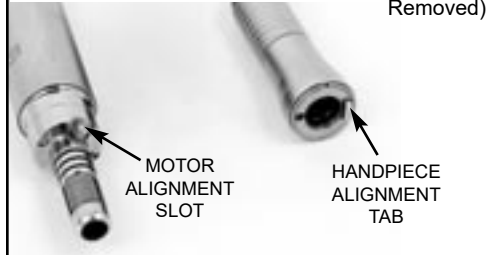


FIG. 1b - HANDPIECE ALIGNMENT (Bulb Cover Removed)



FIG. 1c - MOTOR BULB COVER



collar into place. Attach the appropriate "E" type handpiece to the motor (*Figs. 1a, 1b, & 1c*).

(*Fig. 2*). Place motor in holder on the right of the motor/syringe holder.

6. Remove syringe (*Fig. 2*). Place a sterilized tip into syringe and place back into motor/syringe holder.
7. Attach the supplied AE-7P On/Off Foot Switch to the connector on the right side of the unit marked "Foot Switch" (*Fig. 3*).
8. Fill the clear Water Supply Bottle with clean water and connect to unit (*Fig. 2*).

FIG. 2 - Setup



- Motor
- 3-Way Air/Water Syringe
- Motor Connector
- Water Supply
- Battery Pack Cable
- Battery Pack 1
- Battery Pack 2
- Foot Control



- AC Power Receptacle
- Motor Receptacle
- Vehicle Battery Cable In
- Battery Pack In
- Foot Switch Receptacle

FIG. 3 -Chassis Inputs

OPERATION FUNCTIONS - REFER TO FIGURE 4

1. **Power On/Off Switch** – Controls power on/off to chassis from 120V/230V AC source. NOTE: If both AC and DC power are supplied, power will be drawn from the AC source.
2. **Battery On/Off Switch** – Controls power on/off to chassis from the battery pack or vehicle battery DC sources. NOTE: AC power switch does not have to be on to run from DC power sources.
3. **Motor Speed** - Controls the motor/handpiece speed. Press the up(+) or down(-) button until the desired speed is obtained.

- **1:1 Ratio Handpiece (REF: AHP-64):**
 Each push of up/down button will increase/decrease speed by 2,600 RPM. The LED speed display indicates relative speed from 4,000 RPM minimum to 30,000 RPM maximum. Each LED indicates a 5,200 RPM increment.

- **8:1 Ratio Reduction Handpiece (REF: AHP-88MNP):**

Each push of up/down button will increase/decrease speed by 325 RPM. The LED speed display indicates relative speed from 500 RPM minimum to 3750 RPM maximum. Each LED indicates a 650 RPM increment.

- **1:5 Ratio Inserter Handpiece (REF: AHP-72-MK-FO):**

Each push of up/down button will increase/decrease speed by 13,000 RPM. The LED speed display indicates relative speed from 20,000 RPM minimum to 150,000 RPM maximum. Each LED indicates a 26,000 RPM increment.

4. **Fiber Optic Light** – Controls light On/Off to the handpiece and enables adjustment of light intensity. When fiber optic light 'On' button is pressed, the LED lights up and the handpiece light turns on for thirteen seconds to allow adjustment of the light intensity. Press the positive(+) or negative (-) button several times to increase or decrease intensity to desired level (five different levels to choose from). The new

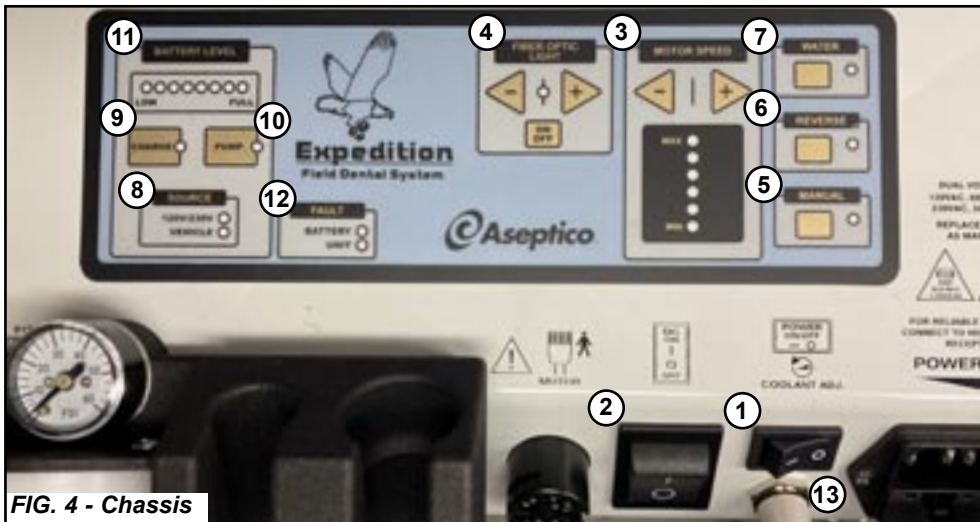


FIG. 4 - Chassis

intensity setting is retained in memory until readjusted/changed. When the dental motor/handpiece is activated, either manually or via the foot switch, the handpiece light will automatically turn on at the previously used intensity level (fiber optic light switch must be 'On'). When the dental motor/handpiece is turned off, the handpiece light will stay on for thirteen seconds before timing out.

5. **Manual** – Manually activates the dental motor, bypassing the need to use the foot switch. When the LED is lit, the motor is activated. When the LED is off, motor can be activated via the foot switch.
6. **Reverse** – Selects clockwise or counterclockwise rotation of the motor handpiece bur. When the LED light is on, the direction of the bur is counterclockwise. When the LED is off, the bur is turning clockwise.
7. **Water** – Controls the delivery of water to the handpieces. When LED is lit, water is delivered to the handpiece when the motor is activated.
8. **Source** – Indicates power source. If 120V or 230V is powering the system, the LED will light up. If vehicle 12V/24V is powering the system, the vehicle LED will light up. If only battery pack power is applied to the unit, neither light will be on.
9. **Charge** – Allows the system to charge the battery pack from a 120V/230V AC source or vehicle battery when the LED is on. A drained battery pack takes less than 4 hours to fully charge. The unit is designed to charge the battery pack while operating off 120V/230V AC power or vehicle 12V/24V power. NOTE: Charging via solar panel (included) takes between 13-16 hours. Solar panel may be used during operation. Charge button does not need to be on to charge from solar panel.

10. **Pump** – When LED is on, power is applied to the pump to allow for air and water pressure. When LED is off, power is disengaged from the pump to allow for water bottle removal without shutting power off to the chassis or battery charger.

11. **Battery Level** – Indicates level of charge for the battery pack that is connected to the chassis.

12. **Fault** – Battery light indicates problem with connected battery pack. Unit light indicates problem with the system. (Refer to Troubleshooting Section)

13. **Coolant Adj.** – Controls the amount of water flow to the handpiece - turn counterclockwise to increase flow.

14. **Foot Switch** – The foot switch (*see Fig. 6*) provides on/off operation of the dental motor and water coolant (when water LED is on) to the handpiece .

15. **Three-way Air/Water Syringe (Fig. 6)** - Pressing the left button dispenses water. Pressing the right button dispenses air. Pressing both buttons simultaneously dispenses an air/water mist.

16. **Water Supply Bottle (Fig. 6)** - The AEU-14CF Expedition incorporates a self-contained pressurized water system. This consists of a 16 ounce clear bottle dispensing water through the 3-way Air/Water Syringe and Handpiece Coolant. The Water Supply Bottle attaches to the threaded reservoir connector, located below the pressure gauge.

To refill the Water Supply Bottle:

1. Disengage pump.
2. Unscrew bottle.
3. Fill with water.
4. Screw bottle onto reservoir connector.
5. Re-engage pump

OPERATION:

REFER TO FIGURES 5 & 6

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. Attach a sterile handpiece to the motor.
2. Turn the appropriate power switch to the "ON" position. The Front panel display will light and the compressor will charge the system with air if the pump LED is on.
3. Set the Manual or Foot Control Selector and Motor Direction Selector as desired.
4. When Manual LED is on, dental motor will begin operation. When Manual LED is off, press down on the Foot Control to begin handpiece operation.
5. Press the Motor Speed Increase or Decrease until the desired operating speed is shown on the Speed Display.
6. When the fiber optic light LED is on, the light on the motor will turn on when either the manual mode selector switch or foot control is depressed. The motor light will remain on for 13 seconds after the manual switch or foot control is turned off.
7. Set "WATER" switch to "ON" (indicated with lit LED) for irrigation flow to the handpiece. Adjust the Handpiece Coolant Flow knob to desired setting.
8. Use the 3-Way Air/Water Syringe as necessary for irrigation or drying. Use a sterile syringe tip for each operation.

WARNING

When operating from a vehicle battery as a power source, the patient and the operator must be at least 6 feet away from the vehicle with no electrical contact with the chassis of the vehicle. If the patient and/or the operator must be in contact with the vehicle, the AEU-14CF Expedition can be safely powered by way of an inverter through the AC power connection of the system with no connection to the DC power input.

Fig. 5 - Chassis Control Console

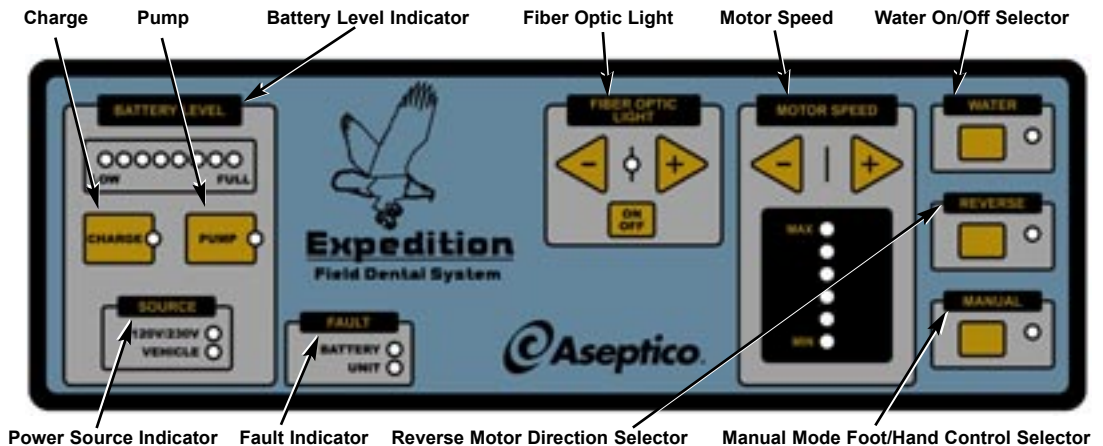


Fig. 6 - System Components



BATTERY PACK REMOVAL & INSTALLATION:

1. Release velcro strap and unbuckle it from the loop at the bottom of the battery bay.
2. Pull forward on the back right corner of the battery to remove it from the battery bay.
3. Reassemble in reverse order.

SOLAR PANEL INSTALLATION & DEPLOYMENT:

1. Attach solar panel to receptacle marked "Solar Panel" on battery that requires charging. Refer to "Charging the Battery Packs".
2. Unfold solar panel with panels exposed to the sunlight.

STERILIZATION AND MAINTENANCE:

- 1. CHASSIS** - The exterior of the chassis, including air/water syringes and tubing, may be cleaned by wiping with a soft cloth moistened with mild detergent or disinfecting solution.
- 2. 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 and sterilization procedures.
- 3. MOTORS** - The AE-200-30 motor is fully autoclavable. Detach the motor from motor cord by unscrewing the metal motor to cable connector by turning 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.

AUTOCLAVABLE MOTOR CORD



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



WARNING

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

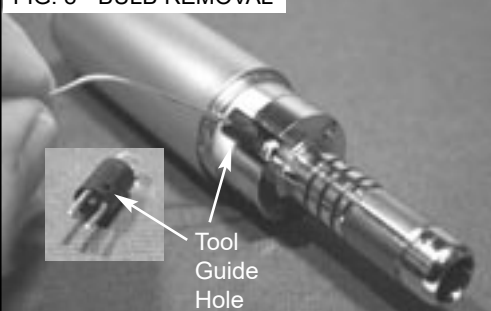
- Do not attempt to disassemble the motor.
- Do not oil or lubricate the motor.
- Do not attach a handpiece to the motor while the motor is running.
- Do not bend motor cord sharply.
- Do not submerge in any solutions.
- Do not use ultrasonic cleaners.

FIG. 7 - CORD REMOVAL



To autoclave motor only, without cord, detach the motor from motor cord by unscrewing the metal motor-to-cord connector counter-clockwise.

FIG. 8 - BULB REMOVAL



4. **MOTOR BULB** - The motor light bulb may become dirty in the autoclave and require cleaning or replacement. NOTE: Do not handle bulb with bare fingers. To remove bulb, unscrew bulb cover from end of motor housing. Insert dental pick or other small pointed instrument into guide hole at base of bulb (Fig. 8). Slide bulb forward until disconnected from socket in motor housing. Wipe bulb with clean soft cloth. Reinstall bulb with guide hole facing outward. Carefully guide the bulb's contact pins back into their respective socket holes.
5. **MOTOR O-RINGS** - Replace motor O-rings when worn or damaged (Fig. 7). 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.
6. **WATER LINES** - Disinfect the water lines weekly. Prepare a 1:10 bleach solution (1 part household bleach to 10 parts water). Remove water reservoir and discard residual water. Replace empty water supply tank and air purge all waterlines. Fill water supply tank with bleach solution. Run bleach solution through all lines. Allow bleach solution to stand in lines for 10 minutes. Remove water supply tank and discard bleach. Flush water supply tank and all lines thoroughly with clean water. Air purge and leave lines dry until next clinical use.
7. **SYRINGE TIPS** - 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. 9). 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.



CHARGING THE BATTERY PACKS:

1. There are three methods for charging the battery packs: The first method is through an AC source, the second method is through a vehicle battery (DC source) and the third method is through the solar panel. The system is designed to charge while the instrument is in use.
2. **Charging the Pack From an AC Source**– Attach the appropriate cable for the AC source to the AC power receptacle on the chassis. Attach the battery pack cable assembly to the battery pack receptacle on the chassis and to the desired battery pack (We recommend connecting the battery pack cable to the chassis first and then to the battery pack and disconnecting in this reverse order to avoid the possibility of shorting the pins). Turn on both the power switch and the DC switch. If the battery is less than 28 VDC, the system will automatically start charging the battery (the charge button LED will come on), otherwise a continuous trickle charge will take place as long as AC power is available. The battery charging process can be manually stopped or restarted by pressing the charge button. The system will automatically stop charging when the pack is charged (the charge button LED will go out). See IMPORTANT Note on the next Page.
3. **Charging From Vehicle Battery (DC source)** - Attach the vehicle battery cable to the vehicle battery DC power receptacle on the chassis. Attach the battery pack cable assembly to the battery pack receptacle on the chassis and to the desired battery pack (We recommend connecting the battery pack cable to the chassis first and then to the battery pack and disconnecting in this reverse order to avoid the possibility of shorting the pins).

Turn on the DC switch. If the battery is less than 28 VDC, the system will automatically start charging the battery (the charge button LED will come on), otherwise a continuous trickle charge will take place as long as DC power is available. The battery charging process can be manually stopped or restarted by pressing the charge button. The system will automatically stop charging when the pack is charged (the charge button LED will go out). See IMPORTANT Note on the next Page.

NOTE: When operating the system from a vehicle battery, only the DC switch needs to be turned on. It is not necessary to turn on the chassis power switch.

4. **Solar Panel Charging** – Solar panel charging is independent of the chassis. The solar panel is attached directly to the battery pack at the receptacle marked “Solar Panel” (see below). Charging a pack with the solar panel takes between 13-16 hours.

NOTE: The charge button and LED are not used when charging from the Solar Panel.

Solar Panel Input



NOTE: When not powering the system from a battery pack or charging a battery pack, it is recommended that the operator disconnect the battery pack cable assembly from the pack. This prevents battery drain.

NOTE: A battery fault indication can occur due to temperature, voltage, or charging errors. A brief battery fault indication will also occur when a battery is connected or disconnected. If the fault light comes on, wait a moment to confirm indication before troubleshooting (see troubleshooting guide).

IMPORTANT: The Battery Packs include a built-in thermal cutoff to protect the Packs from overheating when charging. If the battery charger shuts Off before a Pack is fully charged, allow 15 minutes for the Pack to cool down, prior to recharging. When charging both Packs, allow 30 minutes of instrument cooling time between Packs.

CHANGING THE FUSE:



WARNING

To avoid risk of electrical shock, turn the power off and unplug the unit before following the steps below.

1. Remove the Fuse Holder from the Power Inlet connector.



2. Changing the fuse:
Replace the fuse in the Fuse holder.

Replacement Fuses:

120V: 1.25A, 250V slo-blo fuse

230V: 0.6A, 250V slo-blo fuse

(Fuse size: 5 x 20mm)

3. Reinstall the Fuse Holder.

NOTE:

The AEU-14CF is manufactured with 1.25A rated fuses installed, for a 120V power source. If operating with a 230V power source, change to the 0.6A rated fuses before operation.

RE-PACKING UNIT:

1. Remove all accessories from the unit.
2. Remove water bottle and attach cap provided with unit when transporting with water.
3. Position syringe under neck of the air bottle below the console. Lay tube along the back wall of the unit.
4. Place the water bottle next to the battery pack, cap end facing toward the front of the unit.
5. Bundle power cable and place it between the air and water bottles.
6. Roll foot pedal cable around foot pedal. Place above battery packs.
7. Place motor and accessories in small pouch. Place on top of power cord and water bottle.
8. Place vehicle battery cable and battery pack cable in large pouch. Place on top of motor accessories bag.
9. Place schematic drawing set and operation/service manuals on top of battery packs and battery cables pouch.
10. Fold solar panel and place on top of manuals.









AEU-14CFH RE-PACKING UNIT:

1. Once the AEU-14CF is packed, place inside of AEU-14CFH transport case in the front slot.
2. Place backpack in slot directly behind the AEU-14CF.
3. Place individual handpieces back into boxes. Insert them into slots in the top casing of transport case. Velcro into place.



SYMBOL DEFINITIONS:

	Type B Equipment		Alternating current
	Attention, consult accompanying documents		Protective earth (ground)
	Dangerous Voltage	IPX1	Protected Against Dripping Water
	Do Not Throw Into Trash		

TROUBLESHOOTING:

Problem:	Correction:
Chassis does not light when turned on:	<ul style="list-style-type: none"> • Check chassis to power connection. • Check that voltage is proper voltage. • Check fuse. If blown, replace with 1.25A/250V slo-blo fuse for 120V operation, & 0.6A/250V slo-blo fuse for 230V operation.
Chassis lights when turned on, but handpiece does not turn:	<ul style="list-style-type: none"> • 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.
Chassis does not light when 12V/24V power is applied:	<ul style="list-style-type: none"> • Check connections at DC source, chassis, and cable. • Check voltage of DC source.
Chassis does not light when battery pack is applied:	<ul style="list-style-type: none"> • Check connections at the battery pack, chassis, and cable. • Check voltage of the battery pack.
Motor slowing down or sluggish:	<ul style="list-style-type: none"> • Clean dirty, under-lubricated handpiece. • Handpiece lubricant is running into motor. • After lubricating, set handpiece with head down to let excess lubricant drain out.
Unit fails to build pressure:	<ul style="list-style-type: none"> • Check that bottles are tight. • Check for air leaks.
Battery fault light on:	<ul style="list-style-type: none"> • Battery is too cold (<0°C). Disconnect battery and allow it to warm to room temperature. • Battery is too hot (>55°C). Disconnect battery and allow it to cool to room temperature. • Battery voltage is too low (<23V). Disconnect battery and confirm voltage is low (pins A to D). An under-voltage battery may be able to be brought above 23V by trickle charging the battery with the console or the solar panel. • Battery voltage is too high (>34V). Disconnect battery and confirm voltage is high (pins A to D). An over-voltage battery should be replaced. • Charging timeout at 4 hours. Reset the charger. If two consecutive charging attempts fail, replace the battery pack.
Unit fault light on:	<ul style="list-style-type: none"> • Unit operational error observed. Remove all power from unit for 30 minutes before attempting to use the system again. If unit fault light is on during two consecutive attempts to operate the system, return system for repair.

Refer to Service Manual for additional troubleshooting that may require dismantling of the unit.

WARRANTY

Aseptico Inc. warrants its new products against defects in material and workmanship under normal and proper use, care, and maintenance for a period of two (2) years from date of original invoice. This two (2) year warranty does NOT apply nor is it extended to products that are not manufactured by Aseptico. These products may be covered by a separate limited warranty provided by the particular manufacturer, and all claims and questions regarding the same are to be directed to the particular manufacturer.

Expendable components, such as batteries, fuses, light bulbs, and tubing sets installed on Aseptico products are specifically excluded and have no warranty. Consumable goods are warranted for the stated expiration date of such goods.

Repair or replacement of any product(s) or part(s) under this warranty does not extend the term of this warranty, and such product(s) or part(s) shall remain covered by the unexpired portion of the warranty period, or for ninety (90) days from the date of return to Aseptico, whichever is later. This limited warranty applies only to the initial or first installation of the product or part.

During the specific warranty periods set forth above, Aseptico will, at its option, repair or replace the product(s) or particular part(s) that are found to be defective in either material or workmanship 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 Return Material Authorization (RMA) instructions, usually directing that the product be returned for service, shipping prepaid by the buyer or end user, to Aseptico or its designated and authorized warranty service center.

This warranty shall not apply to products (1) that have been subjected to neglect, abuse, misuse, improper installation, inadequate maintenance, or damage due to improper use of cleaning materials or chemicals, or non-compliance with Aseptico's storage, installation, operation, maintenance or environmental requirements; (2) that have undergone any modification or repair not previously authorized by Aseptico in writing, or service, repair or modification by or from any facility other than an authorized Aseptico service center or technician, or that use non-authorized software or spare or replacement parts; or (3) that fail due to reasonable and normal use or wear and tear, or materials made, furnished or specified by the buyer or end user.

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. Under no circumstances will Aseptico be liable or responsible for special, compensatory, incidental, consequential or punitive damages, lost profits, lost sales, or loss of use or loss of business opportunity by or through the use of the product. Aseptico's sole and maximum liability with respect to the product, other than its obligations set forth above, shall be the total purchase price paid for the product.

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