SERVICE MANUAL & PARTS LIST

AEU-6000/AEU-6000-70V
Implant/Endodontic Dental Systems

AEU-6000-70V System

Aseptico

TABLE OF CONTENTS

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.

WARNING - RISK OF ELECTRIC SHOCK

REQUIRED QUALIFICATIONS OF SERVICE TECHNICIANS:
Persons performing repairs to active electronic circuitry or operating High Voltage (e.g. HiPot) test equipment must have training or experience performing similar servicing activities.

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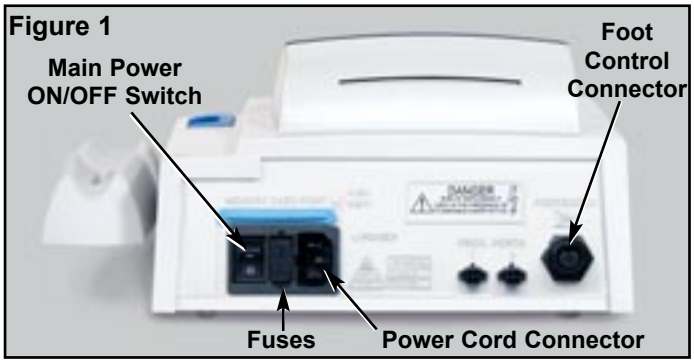
GENERAL SERVICE INFORMATION

This service and parts manual offers technicians information and parts lists not available in the AEU-6000 or AEU-6000-70V Operation and Maintenance Instruction Manuals. This manual will help you better understand how the dental units work, thereby reducing service time. Parts are listed and referenced to callouts in the Parts Lists, pages 24-26. Use the information in the Parts List when ordering replacement parts.

Inspection & Operation Verification

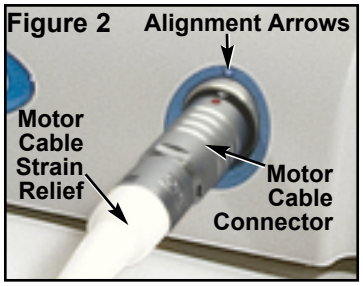
To verify that the 6000 units are set up and functioning properly, refer to the setup instructions below and in their respective Operation & Maintenance manuals. First, attach the power cord to the back of the console and plug into a grounded electrical outlet (see Fig. 1). **NOTE:** Both 6000 series units are compatible with 115VAC, 60Hz and 230VAC, 50Hz voltages and frequencies.

Figure 1



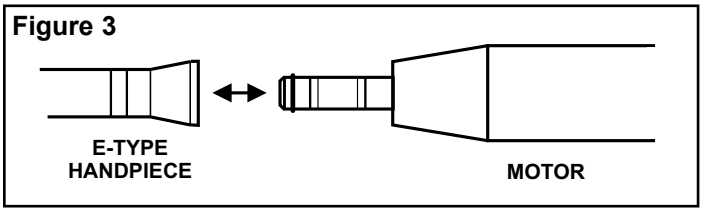
Connect the motor/cable to the receptacle on the lower right front of the console (see Fig. 2). When attaching the cable to unit, align the red dot on cable connector with the arrows located at top center of receptacle and bezel, and gently push the connector straight in to lock into place. Remove cord by pushing inward slightly on the strain relief, then grasping connector body near the red dot and pulling the connector straight out of receptacle.

Figure 2



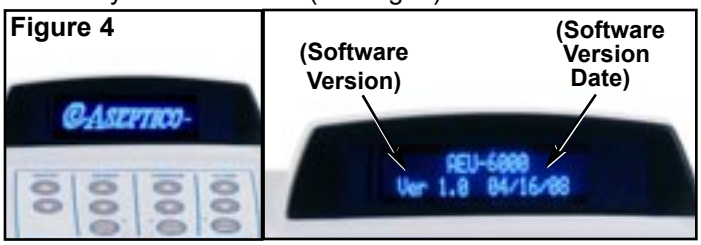
Attach an 'E' Type 20:1 handpiece to the motor, and install a bur or drill into the handpiece (see Fig. 3).

Figure 3



Attach the supplied AE-70V2 variable-speed foot control to the connector located on the rear of the unit (see Fig. 1). The AE-23 Irrigation Tubing Set does not need to be installed during routine maintenance and troubleshooting of the console and/or motor. For troubleshooting irrigation problems relative to the pump and/or irrigation tubing, refer to General Troubleshooting on page 10. Turn the power switch on the rear panel of the console to the 'On' (-) position. The vacuum fluorescent display should show the startup screen for a few seconds, then default to the operating parameters of the last-used preset (or preset #1 if the factory setup was recalled). The startup screen will display the Aseptico logo and then the software version onboard your 6000/E unit (see Fig. 4).

Figure 4

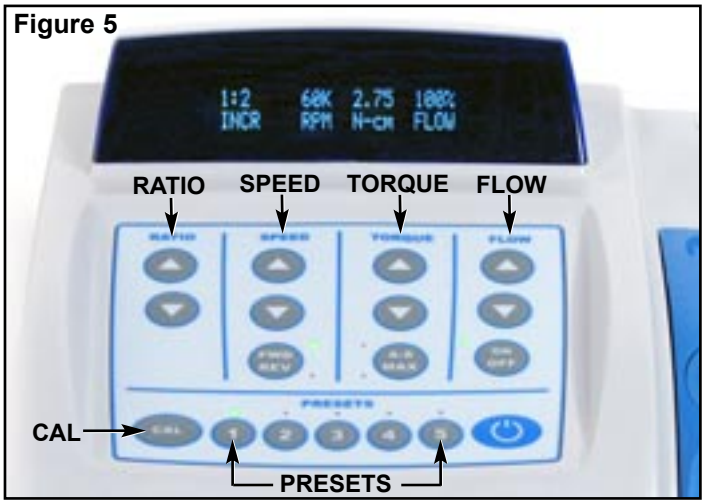


Press the "RATIO" Up or Down buttons to select "20:1" on the display (see Fig. 5). Depress the foot control pedal to verify that the motor and pump operates. Press the "CAL" button to calibrate the 6000/-70V handpiece/motor - follow the menu prompts displayed on the screen (*refer to "OPERATION" section in the Operation Manual for complete calibration instructions)*.

Press and hold the "CAL" button for one second to restore the System's factory defaults settings (see Fig. 5). Follow the menu prompts on the screen to recall the factory setup (*refer to "OPERATION/System Setup" section in the Operation Manual for complete factory recall instructions)*.

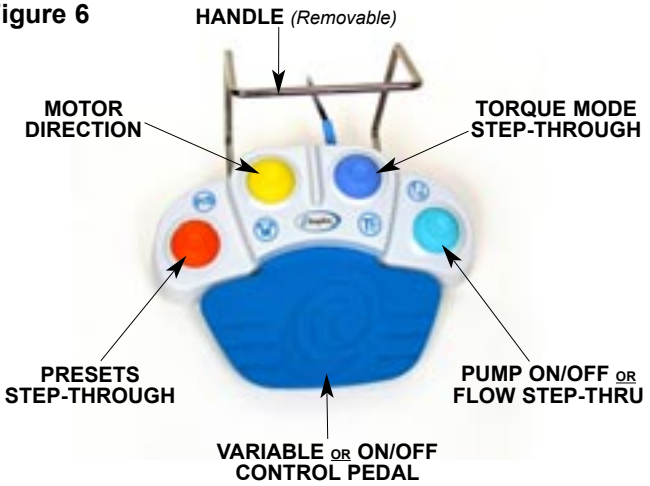
Verify that the "RATIO", "SPEED", "TORQUE", "FLOW", and "PRESETS" buttons are functioning properly (see Fig. 5). Press each button to verify that its displayed values and/or LEDs change accordingly (*refer to "CONTROL PANEL FUNCTIONS" section in the Operation Manual for complete descriptions of all key pad buttons)*.

Figure 5



Depress each of the buttons on the AE-70V2 foot control to verify that they control motor direction, turn the pump On/Off, and step through the torque settings and presets correctly (see Fig. 6) (*refer to "VARIABLE-SPEED FOOT CONTROL OPERATION" section in the Operation Manual for complete instructions on setting up and operating the foot control).*

Figure 6



The above procedures describe basic inspection and verification of the AEU-6000/-70V. If the unit performs normally during calibration and setup, and all the key pad buttons function properly, no further testing of the console is needed. If the unit does not perform as required, further diagnosis and service of system components is required. Use the Troubleshooting sections in this manual as a guide to diagnose problems and perform repairs.

Cleaning and Lubrication

When servicing the AEU-6000/-70V unit, the parts of any component disassembled should be thoroughly cleaned and inspected before reassembly. A mild detergent solution is an effective cleaner on all non-electrical parts. Abrasive cleaners have the potential to damage surface finishes and should be avoided. Any wiping should be done with a soft lint-free cloth.

Electrical parts should be cleaned with an appropriate electrical parts cleaner or air.

Refer to "STERILIZATION & MAINTENANCE" Sections, pages 20 & 21, in this manual for additional cleaning instructions.

ESD PRECAUTIONS

The following electrostatic controls must be used when working on this unit:

ESD Training and Standards:
Employees handling electronic sub-assemblies and ESD sensitive components are expected to be trained. Training should be based on IPC-A-610 or equivalent ESD standard ANSI/ESD-S-20-20 – Protection of Electrical and Electronic Parts, Assemblies and Equipment.

ESD Static Controlled Area:
Areas that are designated for handling and working on electronic sub-assemblies or their components should be marked off with signs indicating the area where ESD controls are to be enforced. These areas are to be kept clear from persons that are not trained to prevent ESD damage from occurring.

ESD Environment:
The work area is to be free of all static generating materials, such as plastic containers, water bottles, plastic bags, plastic objects, such as plastic pens, heat guns (unless made for the ESD environment).

ESD Jackets:
Clothing should be non-static generating (cotton).

Static generating clothing (e.g. wool, acrylic, nylon) must be covered with an ESD jacket that is buttoned closed.

Optional gloves:
Nitrile gloves may be used to cover the hands when working, but are not required.

Seating:
ESD Chairs should be used in place of static generating chairs (e.g. modern office seating use static generating materials).

Storage and packaging:
All circuit boards and components are to be stored on or in static dissipative or static shielding material, throughout shipping and storage.

ESD Wrist Strap and Mat Routine Checks:
The wrist strap should be checked daily using an ESD wrist strap testing station. See chart below.

ESD mats should be checked at least quarterly.

Reading from Operator Through	Maximum Tolerable Resistance	Maximum Acceptable Discharge Time
Wrist strap to ground	100 megohms	Less than 0.1 sec.
Table mat to ground	1000 megaohms	Less than 1 sec.

DISASSEMBLY

1. Turn the main power switch OFF. Unplug Power Cord, PNs: 840079 (US) or 840078 (EURO), from AC Inlet Connector. (NOTE: Grasp connector plug at end of Power Cord when removing cord from Unit – do not pull on cable.)

2. Remove irrigation bag and irrigation tubing sets (PN: AE-23) from Unit. Remove Bag Holder Rod (PN: 461541) from Unit by pulling straight up and out of socket (see Fig. 7). Note alignment of rod pin with keyway in socket.

3. Disconnect Motor/Cord Assembly (PN: AE-230M-40) and Foot Control Assembly (PN: AE-70V2) from Unit (see Fig. 7). **NOTE:** The Motor/Cord Assembly and Foot Control Assembly should be returned to Aseptico if repair services are necessary -- consult Aseptico Repair Department for more information.

TOP COVER DISASSEMBLY:

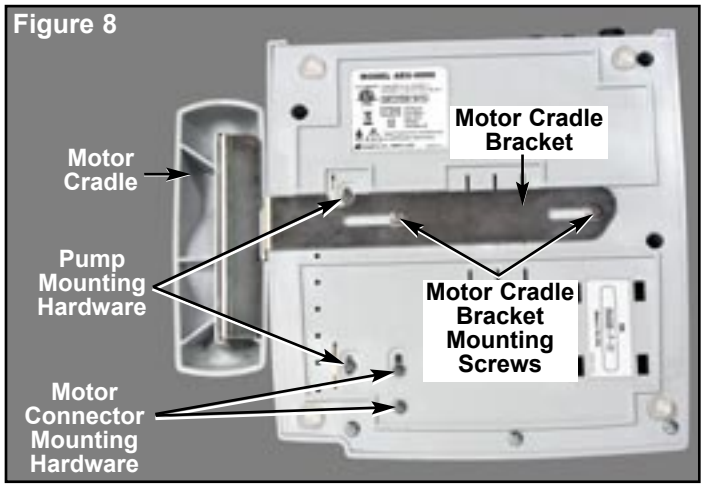
Figure 7

4. Remove Motor Cradle (PN: 461561-01) (see Fig. 7). Turn Unit over and gently lay face down onto padded surface to prevent scuffing.

5. Using a #2 Phillips screwdriver, remove two screws (PN: 510663) that attach Motor Cradle Bracket to Chassis (see Fig. 8). Remove Bracket and set aside for reassembly later.

6. Locate two screws (PN: 510406) and lock washers (PN: 510419) that attach Motor Connector Bracket to Chassis (see Fig. 8). Remove only the front screw and washer with a #2 Phillips screwdriver. Loosen, but do not remove, second screw and washer located in slotted hole.

Figure 8



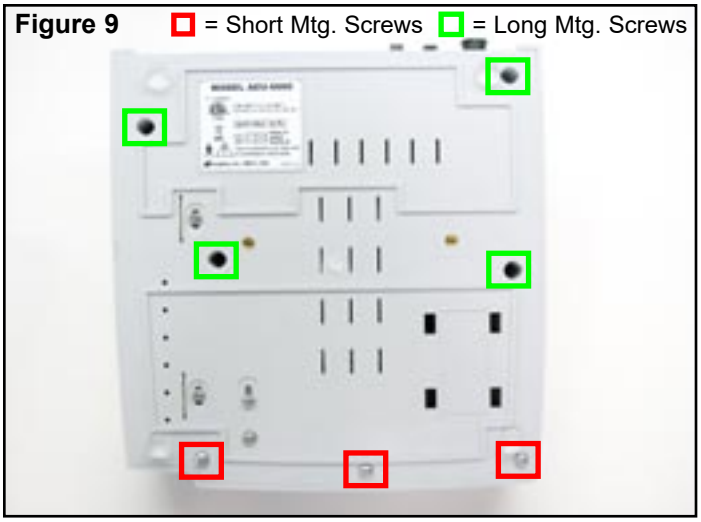
7. Slide Motor Harness Assembly (PN: 875103) and Bracket (PN: 461814) backwards in slotted hole so that Motor Connector disengages from blue bezel in cover. Lightly tighten mounting screw to secure Harness/Bracket in place.

8. Locate two screws (PN: 510406), lock washers (PN: 510432), and flat washers (PN: 510431) that mount Peristaltic Pump Assembly (PN: 330471) to Chassis (see Fig. 8). Using a #2 Phillips screwdriver, loosen but do not remove, both screws and washers. Slide Pump Assembly forward in slotted mounting holes provided.

9. Using a #2 Phillips screwdriver, remove three short Plastite® screws (PN: 510650) and lock washers (PN: 510419) located along forward edge of Unit (see Fig. 9). Remove four longer Plastite® screws (PN: 510697) and lock washers (PN: 510419) that attach Top Cover subassembly to Chassis.

10. Turn Unit over and position upright on workbench. Carefully work Top Cover subassembly off Chassis. (**NOTE:** To help clear the Cover past the Pump door, follow these steps: a) Slide Pump forward in slotted

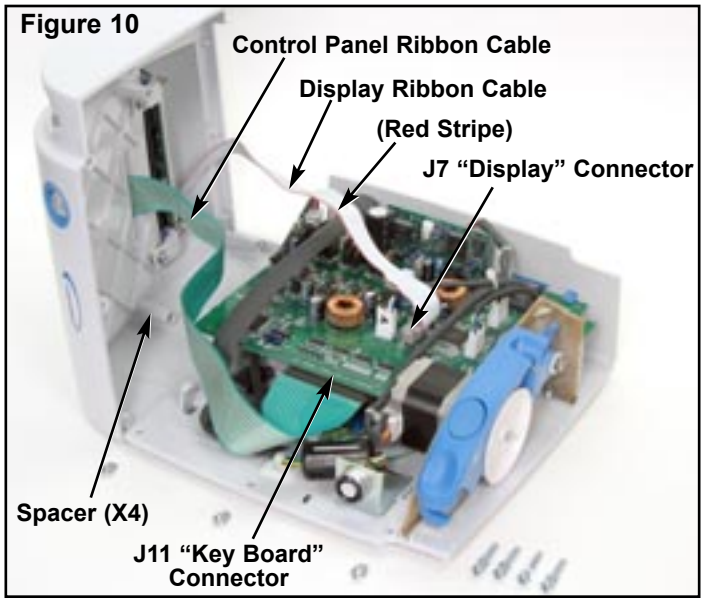
Figure 9 = Short Mtg. Screws = Long Mtg. Screws



mounting holes; b) Carefully lift Cover straight upwards, until it disengages from Chassis base; c) Push Pump door release button and hold Door ajar approximately 1/4 inch - do not allow door to fully open; d) With door ajar, manipulate Cover up and over the rear edge of door; e) Allow Door to fully open; then, f) Lift Cover up and off Chassis.) Rest Top Cover on its side, next to Chassis as shown in Figure 10, taking care not to kink or sharply twist the flex cables from the Cover's Control Panel and Display.

11. Note orientation of red stripe on Display Ribbon Cable (PN: 870300) with Pin #1 on "Display" connector 'J7', located on PCB Assembly (see Fig. 10). Detach Ribbon Cable from connector 'J7'.

Figure 10



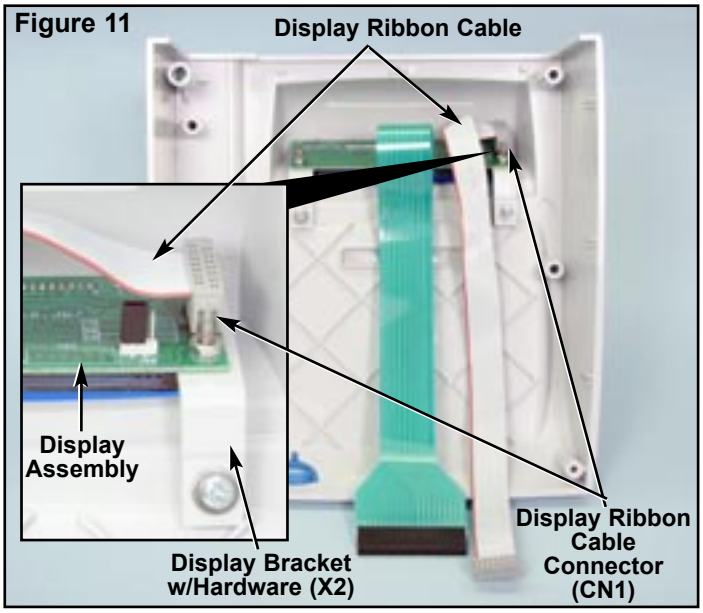
12. Note orientation of Control Panel flex cable with "Key Board" connector 'J11' on PCB Assembly (see Fig. 10). Detach flex cable from connector 'J11'.

13. Turn Top Cover subassembly over and lay face down on protective pad. Remove four plastic spacers (PN: 461727) from Cover if necessary (see Fig. 10). Note orientation of red stripe on Display Ribbon Cable with connector 'CN1' on Display PCB (see Fig. 11). Detach Display Ribbon Cable and set aside for reuse later.

14. Use a #2 Phillips screwdriver to remove the two mounting screws (PN: 510650), split washers (PN: 510010), and flat washers (PN: 510431) from the Display Support Bracket (PN: 461728). Remove Bracket and Display subassembly from Cover. Note that the top edge of the display circuit board is positioned in the three alignment notches on the inside top of the display recess.

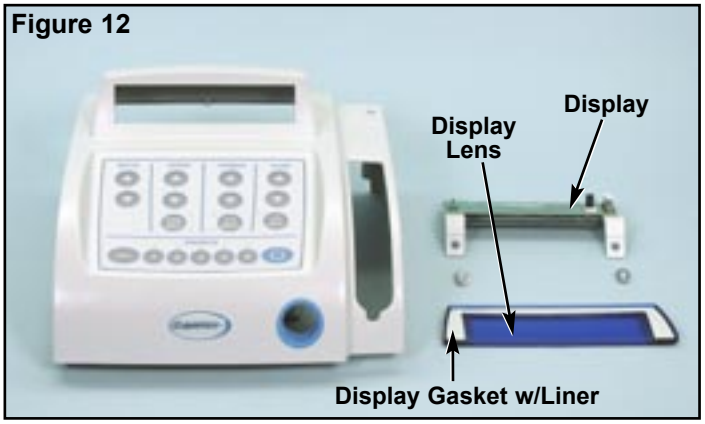
If disassembly of the Display and Bracket subassembly is necessary, use a #1 Phillips screwdriver and 3/16" wrench to remove two mounting screws (PN: 510191), split washers (PN: 510433), flat washers (PN: 510127), and nuts (PN: 510434) from Vacuum Fluorescent Display Assembly (PN: 330558) (see Fig. 11). Carefully place Display Assembly aside for reuse later. (**NOTE:** The Display Assembly is a non serviceable component of the AEU-6000/-70V System. If not functioning properly, either replace Display with a new Assembly or return Display to Aseptico for repairs. When installing a new Assembly, ensure that the Display header is properly oriented to Cover cutout (see Fig. 11).

Figure 11



15. The Display Gasket (PN: 461729), which is mounted under the Display Lens (PN: 461726), uses double-sided adhesive backing to adhere the Lens to the Top Cover (see Fig 12). Remove Display Lens from Cover by pushing outwards on Lens from inside the Cover. Push firmly with fingers until Lens pops out (take care not to scratch Lens). Place Lens aside for reassembly later. Peel old Gasket from face of Display housing and discard. (**NOTE:** A new Gasket must be installed each time the Lens is removed from Cover - **do not reuse an old Gasket**.) To reassemble Lens and new Gasket, remove paper backing from the Gasket and carefully apply Gasket to back side of Lens, aligning its outer periphery to the raised edges (see Fig. 12).

Figure 12



Then, remove the other plastic liner backing from the face of the Gasket and press Display Lens onto the front of the display opening on the top cover. (**NOTE:** Ensure that the inside face of Lens is clean and free of dust before applying to top cover.)

16. Removal of the Control Panel Overlay Assembly (PN: 420769) is not recommended unless absolutely necessary. If removal is required, carefully peel the Overlay out of recess in Cover (see Fig. 13a) and permanently discard entire Overlay Assembly. (**NOTE: Do not reuse an old Overlay Assembly** - a detached Overlay should always be replaced with a brand new Assembly.) To reinstall new Overlay: 1) Insert flex cable pigtail through the slotted hole in the Top Cover (see Fig. 13b); 2) Remove liner from adhesive backing on new Assembly; 3) Carefully center new Assembly in recess in Top Cover; and, 4) Press down evenly on Assembly until firmly adhered to Cover. On the underside of the Cover, wrap a layer of ESD-safe tape around the flex cable pigtail, roughly halfway between the keypad and the connector. This tape holds the two pigtail layers together.

Figure 13a

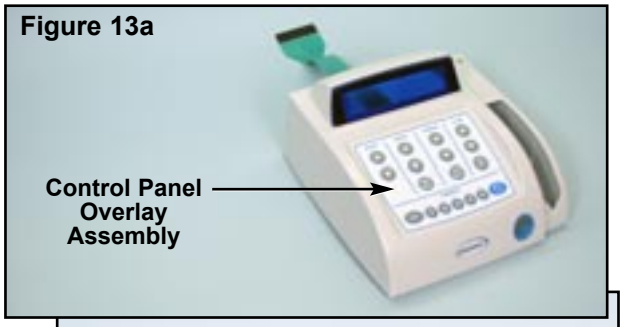
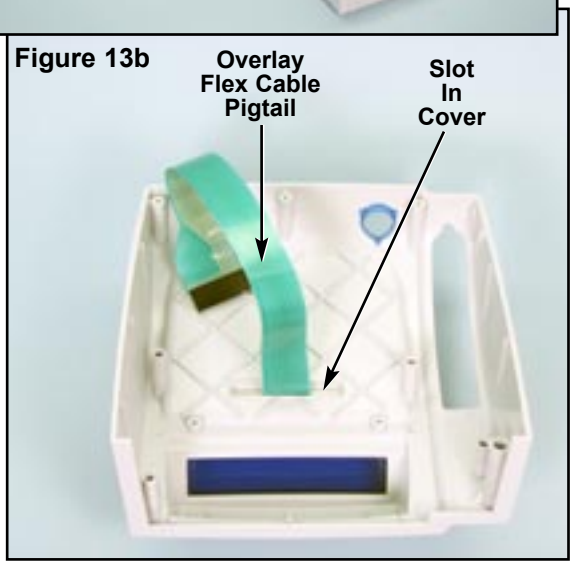
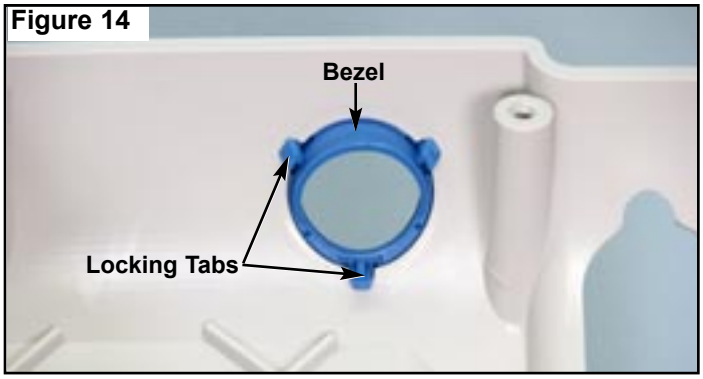


Figure 13b



17. From the inboard side of Cover, use fingers (or pliers) to pinch together the locking tabs of the Motor Connector Bezel (PN: 461545) (see Fig. 14). Push the Bezel outward through its hole in Cover. Set Bezel aside for reuse later. (**NOTE:** When remounting Bezel, ensure that the locking tabs fully snap over the edge of the hole, into the grooves provided on inside of Cover.)

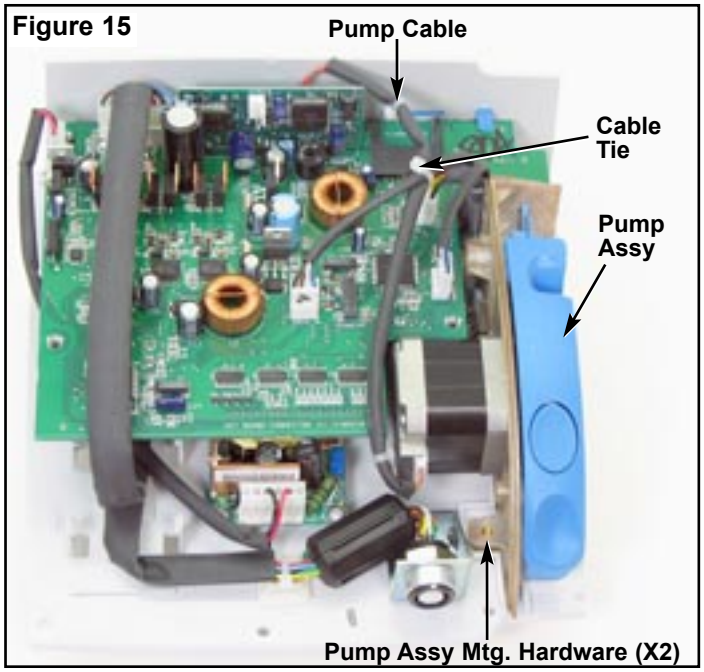
Figure 14



CHASSIS DISASSEMBLY:

18. Cut and remove the cable tie surrounding the cable bundle on right-hand side of PCB Assembly (see Fig. 15). Detach Pump Assembly cable connector at 'J1' ("Pump") location on PCB Assembly. Make note of pin/wire alignments of all connectors before disconnecting from PCB. Use a #2 Phillips screwdriver to remove two Pump Assembly mounting screws (PN: 510406), lockwashers (PN: 510432), and flat washers (PN: 510431) from bottom of Chassis (see Fig. 8). Remove Pump Assembly (PN: 330471). Remove the two Isolation Pads (PN: 461995) underneath the Pump. (**NOTE:** The Pump Assembly is a non-serviceable component of AEU-6000/-70V System. If not functioning properly, either replace with new Assembly or return Pump to Aseptico for repairs.)

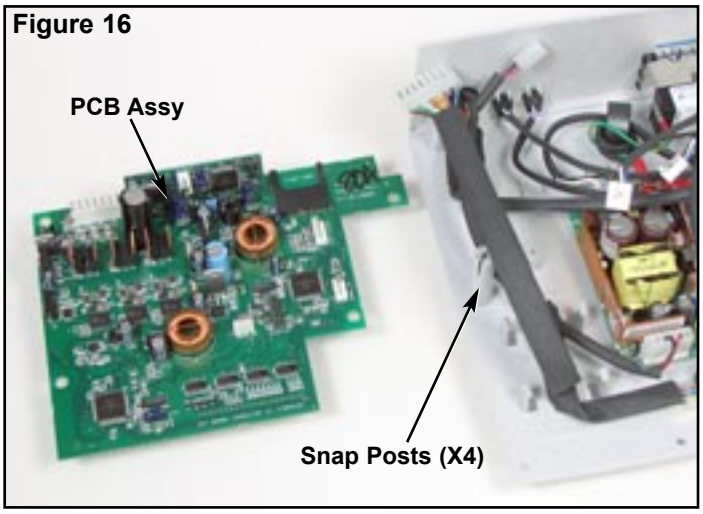
Figure 15



19. Disconnect all cable and wire connectors from PCB Assembly (PN: 330559). Make note of each cable's routing and connector/pin orientation before disconnecting from PCB (see Fig. 15). Cut and remove cable ties as necessary. Pinch the snaps

together at the tops of the four snap posts that the attach PCB Assembly. Lift the PCB Assembly off the posts and set aside for reuse later (see Fig 16) Note the position of the mylar insulator strip (PN: 461869) on the bottom of the PCB. Replace strip if torn or damaged. (**NOTE:** The PCB Assembly is a non-serviceable component of the AEU-6000/-70V System. If not functioning properly, replace with a new Assembly.)

Figure 16

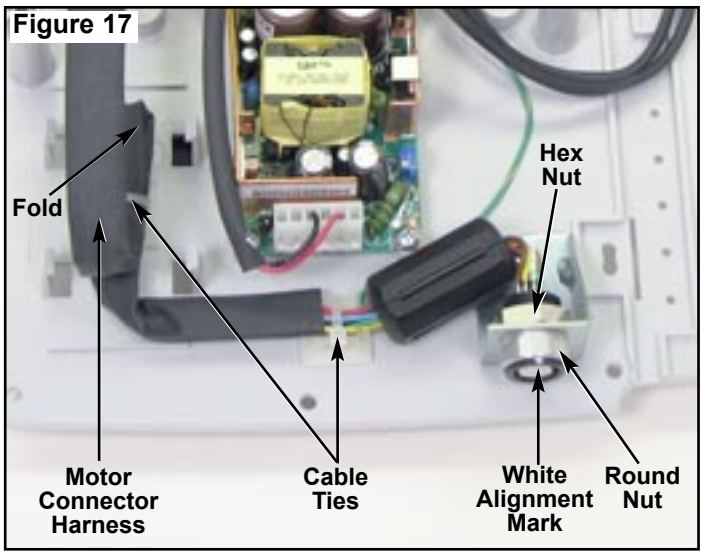


20. Locate and cut three Cable Ties (PN: 510137) that attach the Motor Connector Harness to the Chassis (see Fig. 17). Note the fold in the Harness under the left front corner of the PCB, which allows the Harness to "float" over the top of the circuit board.

21. Remove screw (PN: 510406) and lock washer (PN: 510432) from slotted hole in bottom of Chassis that connect the Motor Connector Harness subassembly to Chassis (see Fig. 8). Use a ¾" open-ended wrench to loosen hex nut on the inboard side of Motor Connector Bracket (PN: 461814) (see Fig. 17). Remove round connector nut (PN: 461539-08) from outboard side of Bracket. Remove Motor Harness Assembly (PN: 875103) from Bracket. Set Motor Harness and Connector Bracket aside for reassembly later. (**NOTE:** When reassembling Motor Connector subassembly, insert Motor Connector from inboard side of Bracket, outwards through Bracket cutout. Align the flats on Connector barrel with flats on cutout and ensure white alignment mark on Connector is positioned at the top. Apply a drop of white glue (PN: 490142) to the Connector threads before installing round and hex nuts. From outboard side of Bracket, thread round nut up the barrel of Connector by hand until the white alignment mark becomes visible, with approximately one thread showing on face of Connector. Tighten hex nut on the other side of the Bracket to snug Harness Assembly up against Bracket.)

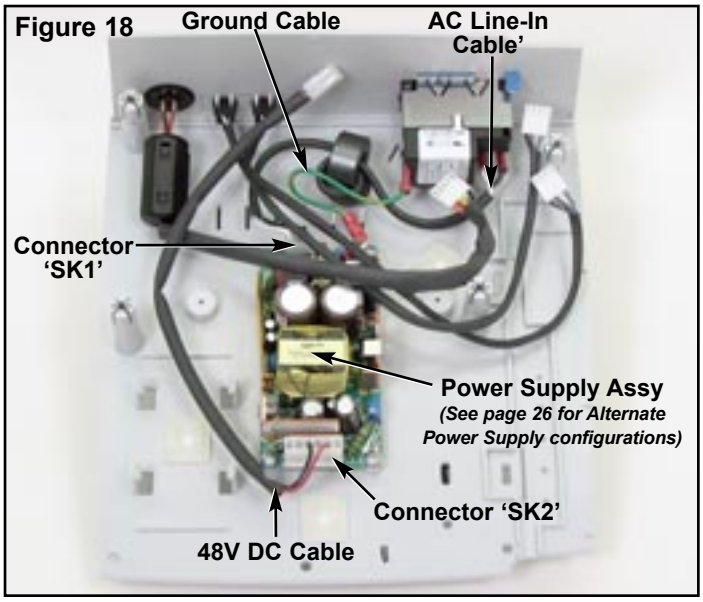
22. On the 48VDC Power Supply Assembly (PN: 840087), detach AC Line-In Cable Assembly (PN: 875106) from

Figure 17



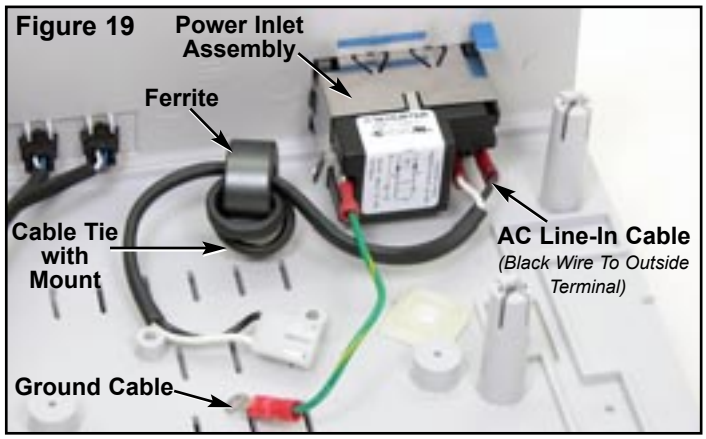
connector 'SK1', and 48V DC Cable Assembly (PN: 875105) from connector 'SK2' (see Fig. 18). Make note of pin/wire orientation before disconnecting Cables. Use a #2 Phillips screwdriver to remove three screws (PN: 510650), lock washers (PN: 510010), and flat washers (PN: 510587) that attach Power Supply to Chassis. Remove fourth screw (PN: 510696) and lockwasher (PN: 510010) from right rear mounting hole with grounding tab. Remove all ground wire lugs. (**NOTE:** When reassembling ground stack, the order from bottom to top should be circuit board, inlet earth ground, motor wiring harness ground, split washer, and screw.) Remove Power Supply and set aside for reuse later. (**NOTE:** Refer to page 26 for Alternate Power Supply configurations and parts.) (**NOTE:** The Power Supply Assemblies are non-serviceable components of AEU-6000/-70V System. If not functioning properly, replace with new Assembly.)

Figure 18



23. Locate and cut the Cable Tie (PN: 510137) that attaches the AC Line-In Cable (PN: 875106) to the Chassis. Detach AC Line-In Cable and Ground Cable Wire (PN: 875085) connectors from wire terminals on Power Inlet Assembly (PN: 840086) (see Fig. 19). Make note of wire/terminal orientation and cable loops through ferrite before removing Cables. (**NOTE:** During reassembly, ensure that the black wire of AC Line-In Cable is attached to the outside terminal on Power Inlet Assembly.)

Figure 19



24. Use a small screwdriver to detach and remove Fuse Drawer from Power Inlet Assembly (see Fig. 20a). Remove two Fuses (PN: 830040) from Fuse Drawer if necessary. Press in the five locking tabs on inboard side of Power Inlet Assembly and push Assembly outward through cutout in Rear Panel (PN: 461725) of Chassis (see Fig. 20b). Set Power Inlet Assembly aside for reuse later.

Figure 20a

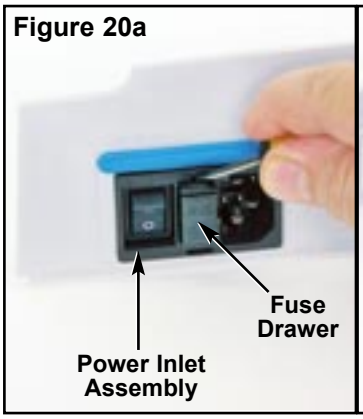
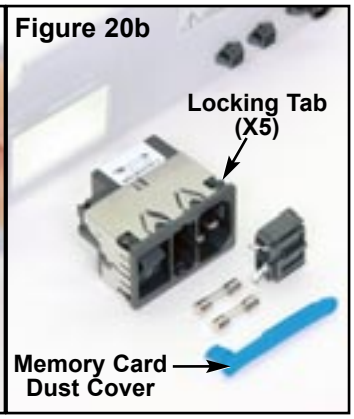
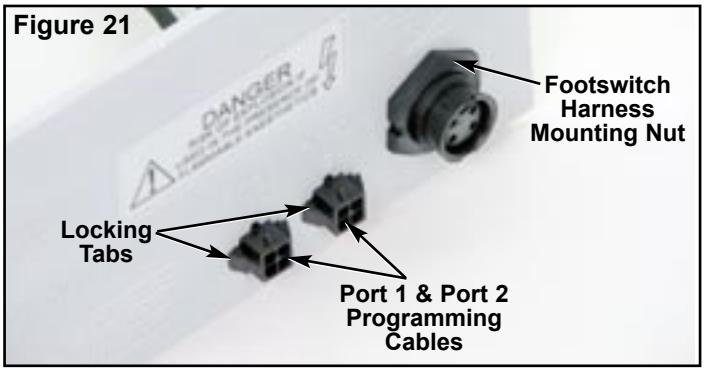


Figure 20b



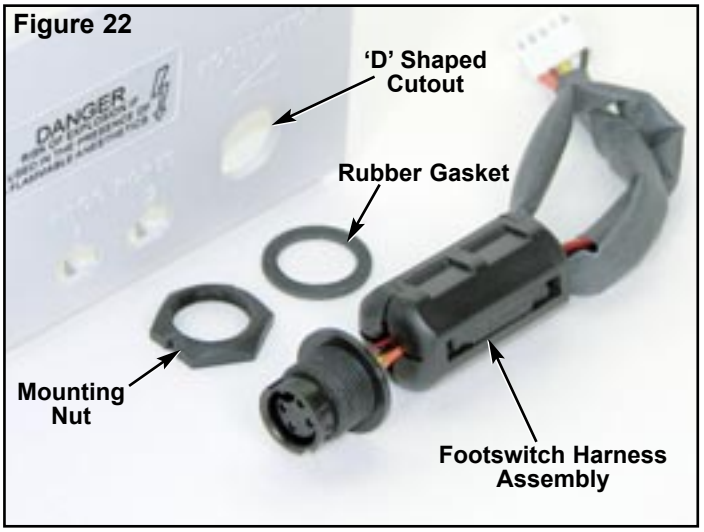
25. On outboard side of Chassis Rear Panel, use pliers to pinch together the two locking tabs on the sides of the two Programming Cables (PN: 875057-01) (see Fig. 21). Push cable connectors inward through port cutouts in Chassis, noting alignment of keyway on bottom of connectors. Remove Cables and set aside for reuse later.

Figure 21



26. Use a 13/16" wrench to remove mounting nut on outboard side of Footswitch Harness Assembly, PN: 875074 (see Fig. 21). (**NOTE:** Take care to protect the back panel against scratches when removing nut.) Push Harness Assembly inward through 'D' shaped cutout in Chassis. Note top center position of keyway on threaded connector. Remove Harness Assembly and set aside for reuse later. (**NOTE:** If installing a new Footswitch Harness Assembly, the rubber gasket that is supplied with the new Assembly is positioned on the inboard side of Rear Panel. If this gasket is lost, Flat Washer [PN: 510648] may be substituted.) Apply a drop of white glue (PN: 490142) to the connector threads before installing nut. See Fig. 22.

Figure 22

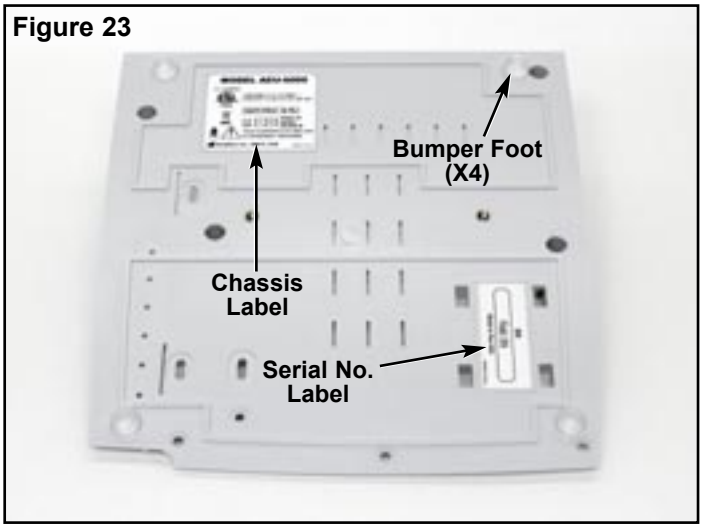


27. Remove Memory Card Dust Cover (PN: 461606) from Rear Panel of Chassis (see Fig. 20), if necessary.

28. Note location and orientation of the four Cable Tie Mounts (PN:510206) on the Chassie base. Replace as necessary, in the same position.

DISASSEMBLY - *Cont'd*

Figure 23



29. Turn Chassis base (PN: 461728) over to expose four rubber Bumper Feet (PN: 850069) on bottom side (see Fig. 23). Replace as necessary.

30. If necessary, replace Serial Number Label (PN: 420295-01) and/or Chassis Label (PN: 420596-07) on the bottom side of Chassis base. See Fig. 23.

THIS COMPLETES THE DISASSEMBLY OF THE AEU-6000/-70V SYSTEM.

REASSEMBLY

31. To reassemble the AEU-6000/-70V System, perform the Disassembly steps 1-30 in the reverse order.

NOTE: Follow these recommended Steps to reassemble the Top Cover to the Chassis:

a. Prior to attaching Top Cover, loosen the two Peristaltic Pump Assembly mounting screws.

b. Loosen only the rear mounting screw on the Motor Connector bracket, then remove the front mounting screw. Slide the Motor Connector backwards in the mounting slot and lightly secure it with the rear screw.

c. Carefully work the Top Cover down over the Chassis and position in place but do not attach to Chassis bottom. Ensure the flex cable from the Control Panel is not sharply bent. Partially open the pump door to allow the Top Cover to work past the rear of the pump door. Work the Top Cover all the way down until it's properly seated against the Chassis bottom.

d. Use a #2 Phillips screwdriver to install three 3/8" screws (PN 510650) with three lock washers (PN 510419), and four longer 1" screws (PN 510697) and lock washers (PN: 510010), through the Chassis bottom into the Top Cover, as shown on Figure 8, page 3.

f. Reposition the Peristaltic Pump frontwards or backwards until it just clears the Cover at the front when opened. Tighten the two Pump mounting screws.

g. Slide the Motor Harness Connector forward until it protrudes out through the blue bezel in the front of the Unit. Reinstall the front 3/8" mounting screw (PN 510406) with lock washer (PN 510432) and tighten both mounting screws.

h. Open and close the Pump door several times and verify that the door opens, closes, and latches smoothly. Readjust Pump position if necessary.

i. Connect Foot Pedal and Motor to the unit. Insert a length of Pump tubing into the peristaltic pump (refer to Operator's Manual for instructions on setting up Pump/tubing). Verify that the Pump latches securely.

j. Power AEU-6000/-70V Unit 'On'.

k. With the "Flow" 'On/Off' button set to 'On' and the Pump flow rate set to 100%, depress the Foot Control and verify the Pump runs.

FINAL TEST VERIFICATION

1. Verify fuse values. Fuses (PN 830040) should be 1.6A 250V SLO-BLO.
2. Check the console for physical imperfections. Verify that the Foot Switch and Motor connectors are tight by connecting the relevant cable and attempting to twist the connector to the left and right by hand.
3. Perform Electrical Safety Tests: **Refer to page 16 for complete instructions on performing the Electrical Safety Tests on the AEU-6000/-70V units.**
4. Connect field programmer AFP-01 to Programming Port 1 at the rear of the console. Insert memory card containing Master Code Firmware PN 890041 into the AFP-01. Turn on the AFP-01 and wait for the programming process to complete. (**Refer to page 18 for complete Master Code Firmware programming instructions.)**
5. Connect field programmer AFP-01 to Programming Port 2 at the rear of the console. Insert memory card containing Slave Code Firmware PN 890042 into the AFP-01. Turn on the AFP-01 and wait for the programming process to complete. (**Refer to page 19 for complete Slave Code Firmware programming instructions.)**
6. Insert System Software memory card PN MC-6000, containing software PN 890037, into the Memory Card Port at the rear of the console. Apply power to the console. Turn the console power switch on and follow the on-screen prompts to program the console. Verify that the programming process completed successfully and that the software version displayed at startup is correct. (**Refer to page 17 for complete System Software programming instructions.)**
7. Verify that the motor drive and calibration systems are functional:
   - **7.1** Connect motor AE-230M-40 to the console.
   - **7.2** Select the 20:1 handpiece ratio. Press the CAL button and follow the on-screen prompts to complete the calibration. Verify that the calibration completed successfully.
   - **7.3** Select the 8:1 handpiece ratio. Repeat the calibration process, and verify that the calibration completes successfully.
8. Connect foot control AE-70V2. Set the motor direction to forward. Press the foot switch and verify that the motor runs when the footswitch is depressed and stops with the footswitch is released. Separately press each of the four foot control buttons, verifying that the console beeps when each button is pressed. (**Refer to Operator's Manual for complete instructions on installing and using the AE-70V2 foot control.)**
9. Change the motor direction to reverse. Press and hold the foot switch for several seconds, and verify that the motor runs and that the console audible indicator beeps consistently.
10. Open and close the pump door several times and verify that the door opens, closes, and latches smoothly. Insert a length of pump tubing in the peristaltic pump and verify that the pump latches securely. With the Flow ON/OFF button set to ON and the flow set to 100% depress the footswitch and verify that the pump runs smoothly.
11. Verify operation and tactile feedback of the keypad buttons: (**Refer to Operator's Manual for complete instructions on using the unit's control panel)**
    - **11.1** Press the SPEED UP and SPEED DOWN buttons, verifying that the display changes with each press.
    - **11.2** Press the TORQUE UP and TORQUE DOWN buttons, verifying that the display changes with each press.
    - **11.3** Press each of the preset buttons and verify that the display changes and that the LED associated with each preset button illuminates.
    - **11.4** Press the FWD/REV button repeatedly and verify that the FWD and REV LEDs illuminate.
    - **11.5** Press the RATIO UP and RATIO DOWN buttons and verify that the display changes with each press.
    - **11.6** Set Ratio to 20:1. Press the A-S/MAX button repeatedly and verify that the A-S and MAX LEDs illuminate.
    - **11.7** Press the FLOW ON/OFF button repeatedly and verify that the LED turns on and off. With the FLOW LED lit, press the FLOW UP and FLOW DOWN buttons and verify that the flow rate indication on the display changes.
    - **11.8** Press the blue standby button and verify that the display goes blank. Press the standby button again to reactivate the display.
    - **11.9** Turn the console off. Wait five seconds. Press and hold the CAL button and turn the console on, holding the CAL button until the scrolling startup screen passes by and the "Recall Factory Setup" screen appears. Follow the on-screen prompts to recall the factory default settings.
    - **11.10** Turn off the console and unplug.
12. Apply Danger Label, PN 420748-01, to the Rear Panel of the console in the provided recess.
13. Scuff oval recess on front surface of housing with Scotch-Brite pad to remove gloss from plastic. Wipe clean with alcohol and soft cloth. When dry, place oval dome label in recess and press down firmly.
14. Apply Serial Number Label PN 420295-01 and Chassis Label PN 420596-07 to the recesses on the underside of the console.

GENERAL TROUBLESHOOTING:

Problem:	Correction:
Console does not light when turned on:	• Check console to power connection. • If Preset LEDs are blinking, press standby button on control panel to exiit Sleep Mode. • Check fuse. If blown, replace with 1.6A/250V slo-blow fuse.
Console lights when turned on, but handpiece does not turn:	• Check motor plug connection. • Check foot pedal connection. • Depress foot pedal. • Increase RPM. • Increase Torque setting • Check that bur/file/drill is properly seated in the handpiece and the collet is closed.
No water flow from pump to handpiece:	• Check that pump is on and flow level is sufficient. • Check that water container seal is completely punctured. • Make sure the irrigation tubing is properly installed in pump door and flow is in the correct direction.
Irrigation tube leaks:	• Replace worn tube section located under the pump door with a new section from the extra tube set provided with the system.
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.
System functions display incorrectly:	• Verify that ratio setting matches handpiece ratio. • Turn power switch Off, wait 5 seconds, then turn back On to reset.
Cannot remove motor/cord from unit:	• Grasp the strain relief directly behind the cord connector and gently push inward. Then, grasp the connector body near the red dot and pull the connector straight out of the receptacle.

MOTOR FIELD TESTING

NOTE: AEU-6000/-70V motor testing in the field is limited to simple manual and visual tests that help to determine the source of the problem.

1. **Motor Rotation Test:** This test can be performed manually using a simple motor-rotation tool that can be improvised in the field or procured from Aseptico (PN: AE-43). The tool needs to be able to grasp the motor's internal rotor/magnet assembly and rotate it to determine if the assembly is damaged. Insert tool into motor tip and engage rotor shaft as shown in Figs. 24A & 24B. Turn tool back and forth to determine if rotor assembly moves freely (Fig. 24C). If resistance is felt, return motor/cord assembly to Aseptico for repair.

Figure 24A - Motor Rotation Tool

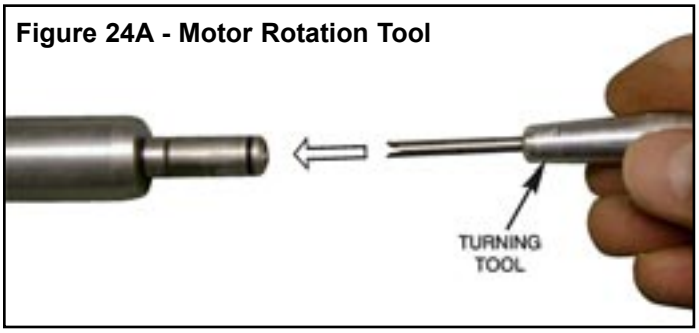


Figure 24B - Motor Internals

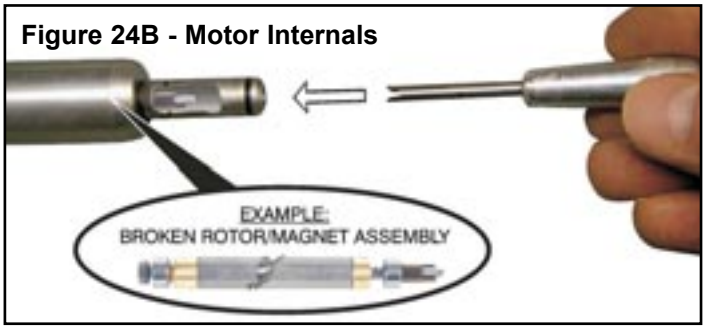
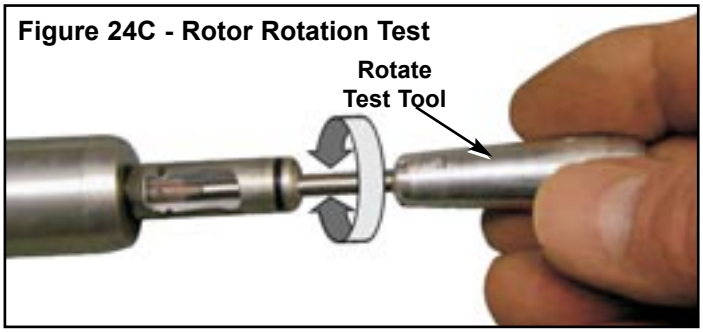


Figure 24C - Rotor Rotation Test



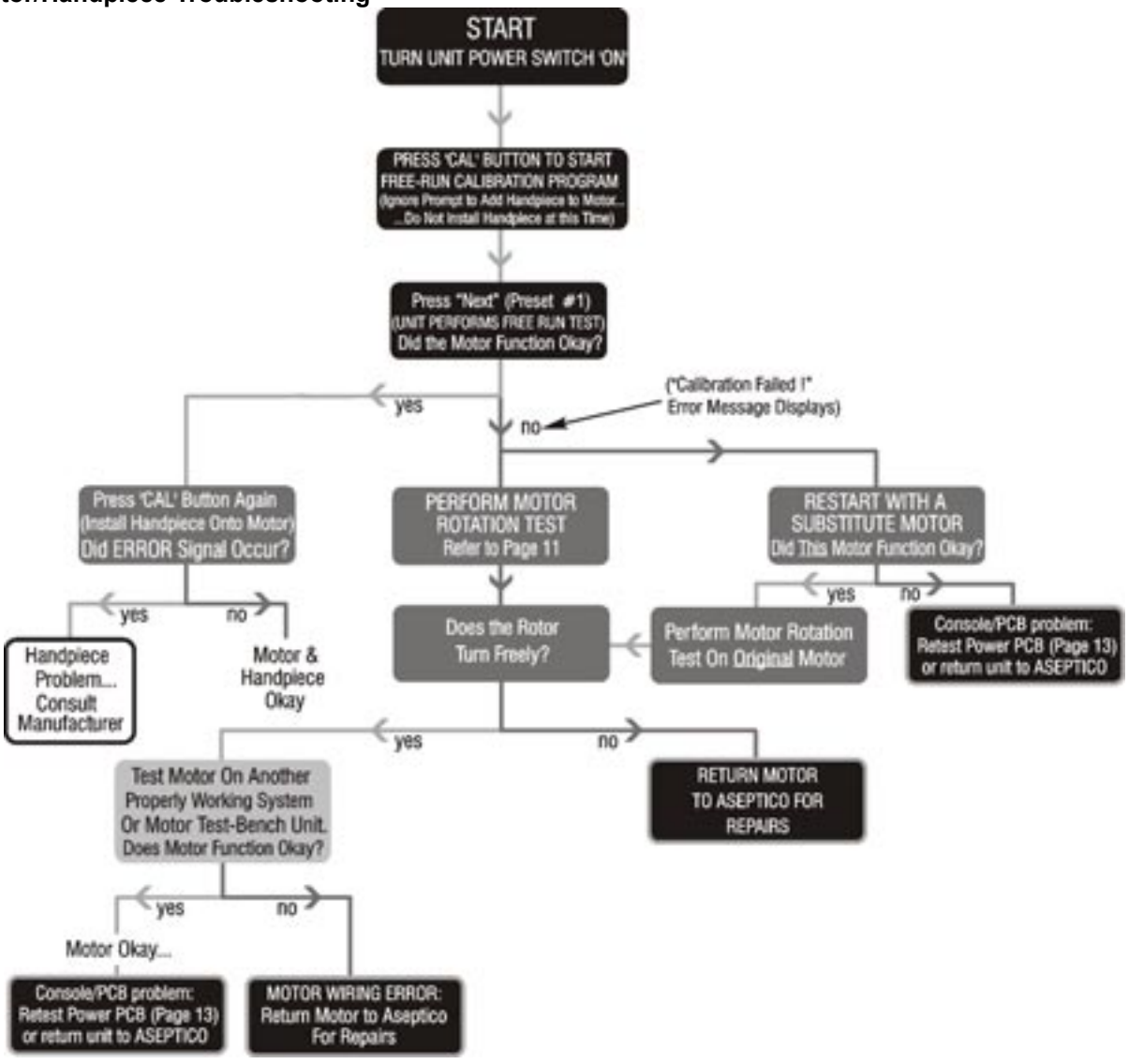
HANDPIECE CALIBRATION ERROR TESTING

NOTE: This section provides troubleshooting procedures for the “Calibration Failed !” error message which displays if the AEU-6000/-70V motor fails during the handpiece “Free Run” calibration test (refer to Operation Manual for complete handpiece calibration instructions). This information will help determine if the source of the problem is in the motor, handpiece, or the unit console.

1. Turn AEU-6000/-70V unit ‘On’. The Startup screen will appear.
2. Preselect ratio of the handpiece using the Ratio Up/Down buttons on the console keypad.
3. Press ‘CAL’ button to enter the calibration test. A prompt will instruct the user to install the handpiece onto the motor. Insert a file, bur, or drill into the handpiece. Press “Next”. The System will automatically run the handpiece through the “Free Run” test on either increaser or reduction type handpieces. The message “Free Run In Progress / Please Wait...” will display
4. If the motor or handpiece is malfunctioning, jammed or disconnected, the “Calibration Failed !” message will display. Consult the troubleshooting chart below to pinpoint the problem.

   NOTE: The AEU-6000/-70V power PCB board may be the source of the problem. For troubleshooting procedures specific to the PCB board, refer to the PCB testing chart on page 13. Before replacing PCB board, try calibrating unit with a new, fully operational motor, to help isolate the board as the problem.
6. If the motor, handpiece, and console are functioning properly, the message “Calibration Successful !” will display.

Figure 25 - Motor/Handpiece Troubleshooting

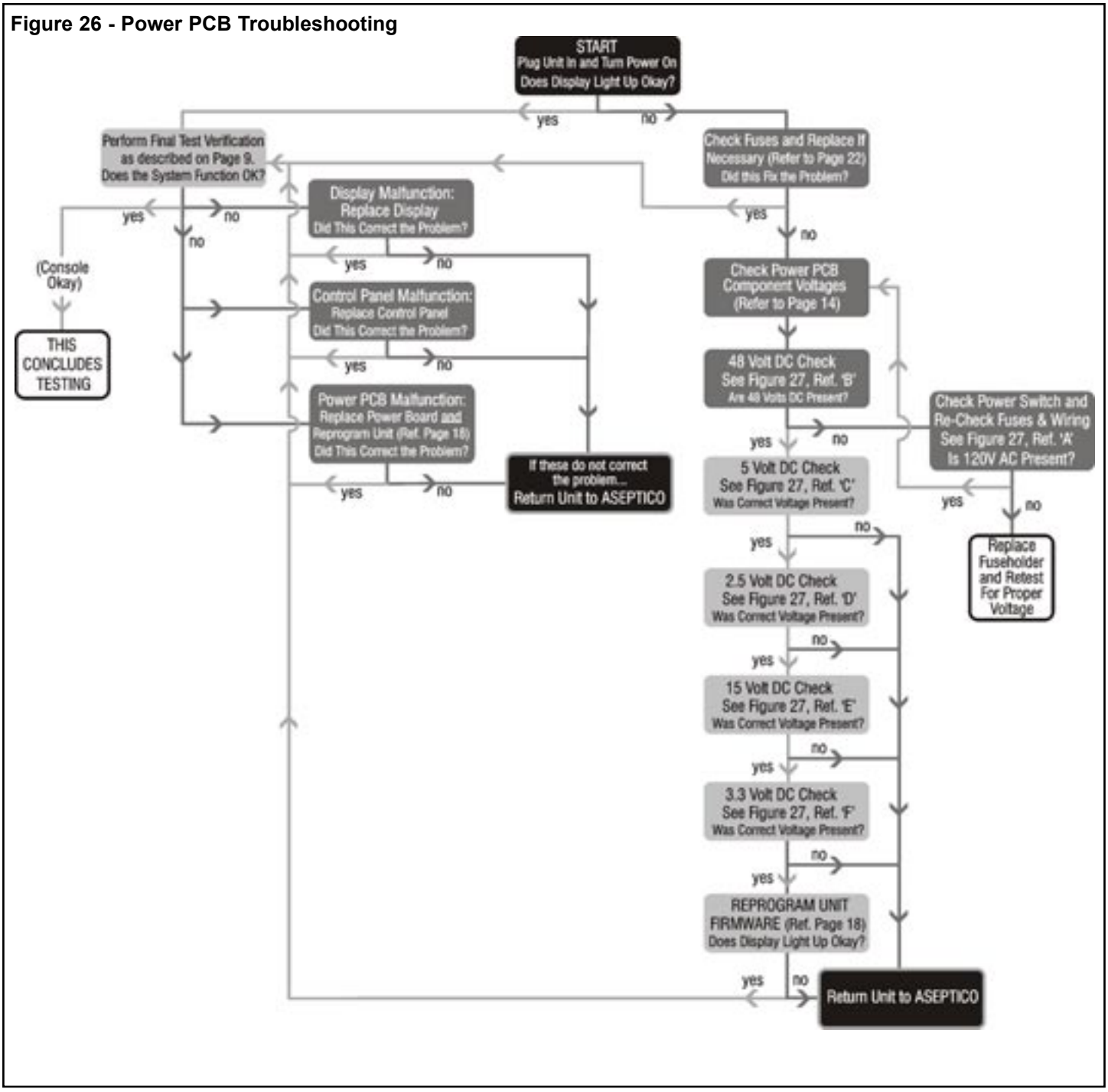


POWER PCB TESTING

If the AEU-6000/-70V fails to start properly, use this flowchart to pinpoint the problem. This flowchart provides additional troubleshooting procedures for the unit's main power printed circuit board (PCB).

NOTE: If the power PCB is replaced, the unit's firmware must be reprogrammed (refer to page 18). For troubleshooting procedures specific to the motor, refer to the motor testing chart on page 12.

Figure 26 - Power PCB Troubleshooting



POWER PCB TESTING POINTS

WARNING

Dangerous voltages are present during the following board testing. Severe electric shock can result and could prove fatal. Only qualified technicians should perform these tests.

1. Turn AEU-6000/-70V power switch 'Off'. Remove irrigation bag, tubing, and rod. Disconnect motor/cable and foot control. Disassemble top cover from chassis (refer to page 3). Place unit upright on work bench to expose internal Power PCB.
2. **120V (US) or 230V (International) AC Check:** This test verifies that the fuses are good and the proper AC voltage is being provided to the power PCB circuit. Connect voltmeter test leads to contacts as indicated in AC Voltage Ref. 'A', Fig. 27. Turn AEU-6000/-70V power switch 'On' .

   CAUTION: High voltages present - only qualified technicians should perform this test. Use extreme caution to avoid severe electric shock.

   If 120V(+/-10V) (US) or 230V(+/-15V) (Internatonal) AC is not present, check power switch and fuses first, then if proper voltage still not present, replace Power Inlet/Fuse Holder assembly.

   Turn AEU-6000/-70V power switch 'Off' after 120V or 230V AC test is completed.
3. **48V DC Check:** This test verifies that proper DC voltage is being provided to the power PCB circuit. Connect voltmeter test leads to contacts as indicated in DC Voltage Reference 'B', Fig. 27. Turn AEU-6000/-70V power switch 'On'.

   CAUTION: High voltages present - only qualified technicians should perform this test. Use extreme caution to avoid severe electric shock.

   If 48V(+/-1.0V) DC is not present:
   - **a.** Disconnect 48VDC Cable from Power PCB connector 'J2'.
   - **b.** Check 48VDC Cable output from DC Power Supply for 48VDC(+/-1.0V).
   - **c.** If 48VDC(+/-1.0V) Supply output is not present, replace Power Supply. If 48VDC output is present from Supply, replace PCB board.

   Turn AEU-6000/-70V power switch 'Off' after 48VDC test is completed.
4. **5V DC Check:** This test verifies that proper DC voltage is being provided to the key pad, foot pedal, flash card, programming ports, and other PCB components. Connect voltmeter test leads to contacts as indicated in DC Voltage Reference 'C', Fig. 27. Turn AEU-6000/-70V power switch 'On'.

   CAUTION: High voltages present - only qualified technicians should perform this test. Use extreme caution to avoid severe electric shock.

   Replace PCB board if 5V(+/-0.2V) DC is not present.

   Turn AEU-6000/-70V power switch 'Off' after 5VDC test is completed.
5. **2.5V DC Check:** This test verifies that proper DC voltage is being provided to the motor and other PCB components. Connect voltmeter test leads to contacts as indicated in DC Voltage Reference 'D', Fig. 27. Turn AEU-6000/-70V power switch 'On'.

   CAUTION: High voltages present - only qualified technicians should perform this test. Use extreme caution to avoid severe electric shock.

   Replace PCB board if 2.5V(+/-0.2V) DC is not present.

   Turn AEU-6000/-70V power switch 'Off' after 2.5VDC test is completed.
6. **15V DC Check:** This test verifies that proper DC voltage is being provided to the motor and other PCB components. Connect voltmeter test leads to contacts as indicated in DC Voltage Reference 'E', Fig. 27. Turn AEU-6000/-70V power switch 'On'.

   CAUTION: High voltages present - only qualified technicians should perform this test. Use extreme caution to avoid severe electric shock.

   Replace PCB board if 15V(+/-1.0V) DC is not present.

   Turn AEU-6000/-70V power switch 'Off' after 15VDC test is completed.
7. **3.3V DC Check:** This test verifies that proper DC voltage is being provided to the Memory Card Interface Ciruit. Connect voltmeter test leads to contacts as indicated in DC Voltage Reference 'F', Fig. 27. Turn AEU-6000/-70V power switch 'On'.

   CAUTION: High voltages present - only qualified technicians should perform this test. Use extreme caution to avoid severe electric shock.

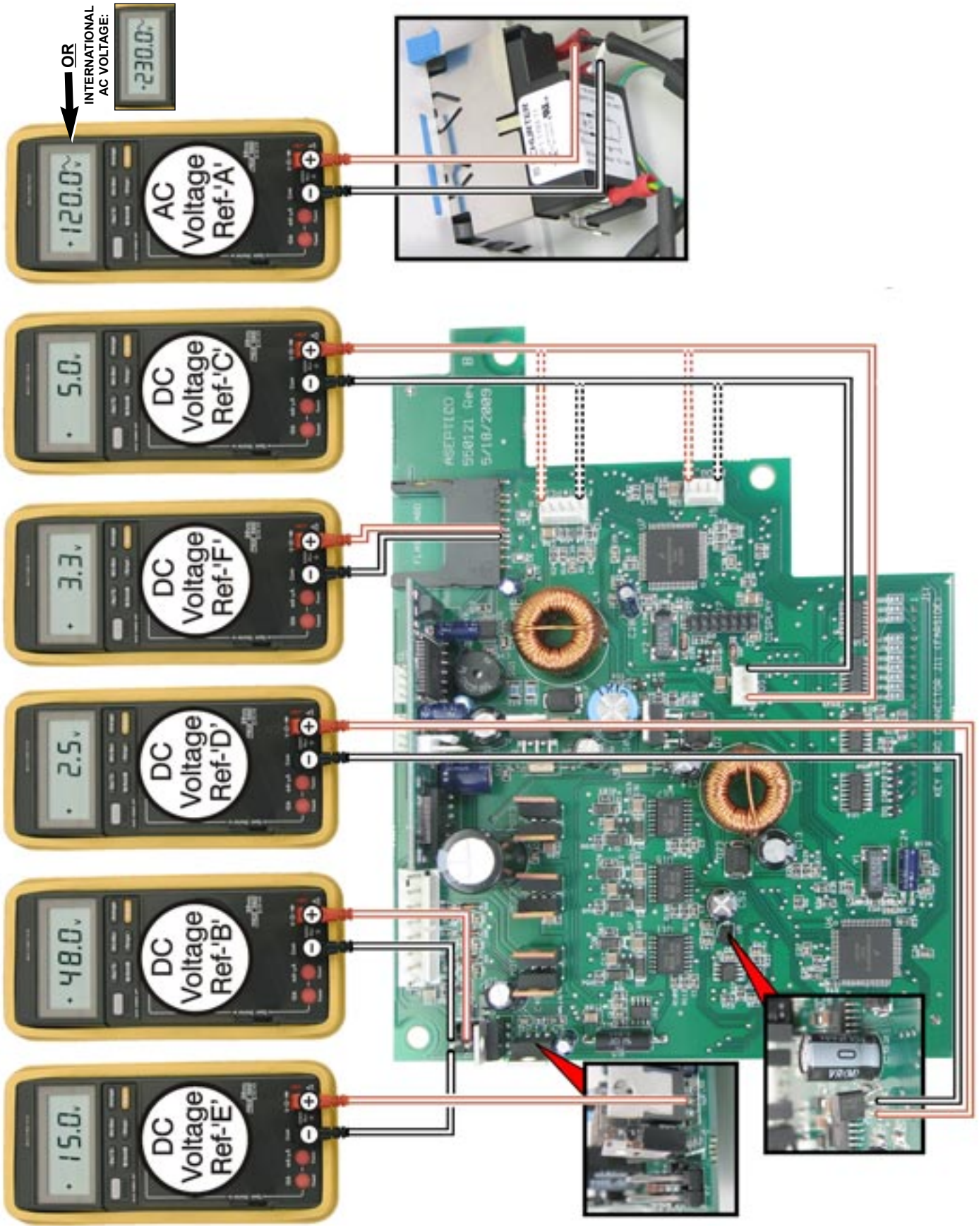
   Replace PCB board if 3.3V(+/-0.2V) DC is not present.

   Turn AEU-6000/-70V power switch 'Off' after 3.3VDC test is completed.

IMPORTANT

The Power PCB is a non-serviceable component of the AEU-6000/-70V Systems. If not functioning properly the PCB should either be replaced with a new Assembly or returned to Aseptico for repairs.

Figure 27 - AEU-6000/-70V Power PCB Test Points



ELECTRICAL SAFETY TESTS

WARNING

Dangerous voltages are present during the following Hi-Pot testing. Severe electric shock can result and could prove fatal. Only qualified technicians should perform these tests.

Whenever repairs on any AEU-6000/-70V unit involves safety issues, such as electrical malfunctions or changeout of critical components in the electrical circuit, i.e., main power board or transformer, it is recommended that the Hi-Pot and Ground Bond Safety Tests below be performed after repairs are completed. If the technician determines that Safety Tests are required, the tests should consist of three separate tests, typically performed in tandem via a multimeter and a single Hi-Pot test/measurement device:

1. Perform Electrical Safety Tests:

1.1 Attach an AE-230M-40 motor to the console.

1.2 Using a multimeter, conduct a ground continuity test by measuring the resistance between the Earth Ground Terminal of the Power Inlet and the E-coupling of the motor (see Fig. 28). Resistance between the Earth Ground Terminal and the motor must be less than 2 Ohms.

1.3 Conduct a dielectric withstand test between mains at the power inlet and the motor housing. Test is to be performed with the power inlet switch in the “ON” position and the return lead of the test equipment connected to the E-coupling of the motor body (see Fig. 29). Test parameters are 4250 VDC for one second with an allowed leakage current of 1.0mA.

IMPORTANT: Any system that fails any of the above tests must be removed from service and thoroughly examined, repaired and retested by a qualified technician.

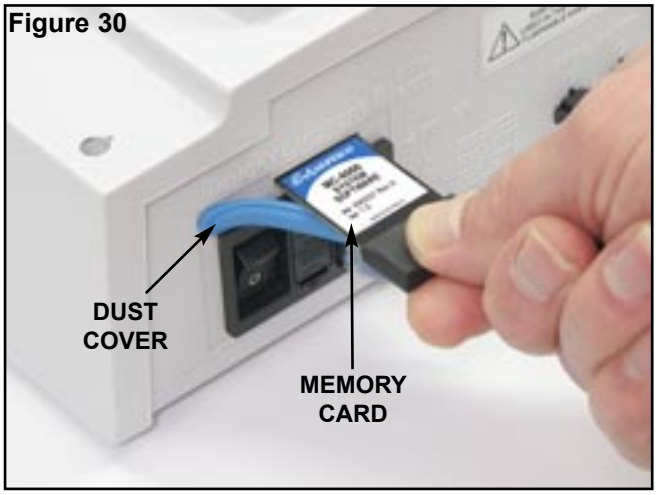
NOTE: Although Aseptico uses the Associated Research, Inc. Model 7564SA Tester for the Hipot tests, alternative equipment with equivalent setup and testing specifications may be used. Ensure that the above test parameters are set up correctly before conducting the tests.

Figure 28

Figure 29

REPROGRAMMING SYSTEM SOFTWARE

Figure 30



Each System has the ability to load software updates and enhance its functionality, should this be desired. A card slot, labeled “Memory Card Port”, is provided on the back of each unit (see Fig. 30). This Port accepts memory card, PN MC-6000, which is very similar to those used in common consumer devices. These cards, available from Aseptico, enable a user to update software or replace existing software that might have been accidentally erased or corrupted. Contact Aseptico for more information on card usage and availability. To reprogram a unit, follow the Steps below:

Programming Steps:

1. Turn ‘Off’ the Main Power Switch on the back panel.
2. Grasp the right-hand end of the rubber dust cover for the Memory Card Port and pry open the cover to expose the card slot.
3. Insert the new MC-6000 memory card into the slot with label facing upward (card terminals should face downward). Carefully and slowly press card inward until a ‘click’ is felt, then release the card.
4. Turn the Main Power Switch (on the back panel) ‘On’.
5. The Display will show the following message:

   Memory Card Detected.
   Re-program? (Yes / No)

   • Press the ‘Yes’ key on the Control Panel.
6. The Display will then show the following message:

   Presets will be erased!
   Continue? (Yes / No)

   • Press the ‘Yes’ key on the Control Panel.
7. The Display will show the following message:

   Programming...

   • A status bar will indicate the progress of the programming.
8. When the programming is complete, the Display will show the following message:

   Programming successful.
   Eject card.

   • Press the card inward slightly, then release it to eject it. When the card is ejected, the System will reset with normal power-up screen displayed.
9. Remove the memory card and store it in a safe place. Close the rubber dust cover on the Memory Card Port.

   In the event that the programming procedure is interrupted, the unit will display the following message:

   Programming Failed Then:

   Console Software Error.
   Re-program unit.

   Re-start the programming procedure from Step #1 (Remember to turn main power ‘Off’ before reprogramming).

REPROGRAMMING SYSTEM FIRMWARE

The AEU-6000/-70V Units' internal components are controlled by three software microchips. The software in these chips can be updated or replaced by using the AFP-01 Field Programmer (see Fig. 31) to upload the new firmware directly into the microcontrollers. Refer to the firmware below and its respective programming port when uploading:

A. Master Code Firmware (Port 1):
6000/-70V: PN 890041
B. Slave Code Firmware (Port 2):
6000/-70V: PN 890042
C. Motor Driver Firmware (J1 Connector):
6000/-70V: PN 890021

Contact Aseptico for availability on the latest firmware. Follow the appropriate steps below to reprogram the microcontrollers:

A. Master Code Firmware

1. Turn Off all power to the AEU-6000/-70V Units.
2. Turn Off the programming switch within the AFP-01 Field Programmer (see Fig. 32).
3. Install battery into AFP-01 Field Programmer, as shown in Figure 32.
4. Install **Master Card, PN: 890041** into the card holder located on Programmer PCB (see Fig. 32).
5. Insert the 4-pin square connector (for an HC08 Microcontroller) into the programming **Port-1** on the back of the Unit, making sure that the connector latch is properly oriented with the mating connector.
6. Turn On the programming switch within the AFP-01 Programmer.
7. The Green & Red LED's on the Programmer will operate in the following sequence when programming is successful: **IMPORTANT:** The Red LED will remain On in the event of improper programming.
- Green & Red LED's turn On for approx. one second.
- Green & Red LED's turn Off for approx. one second.
- Green & Red LED's again turn On for approx. one second.
- Green & Red LED's again turn Off for approx. one second.
- Green LED remains On for about two seconds.
- Green LED flashes On and off during programming.
- Green LED remains On at the completion of programming.

8. Turn Off the programming switch within the AFP-01 Programmer and remove the connector from Unit. Master Code Programming is completed.

Figure 31

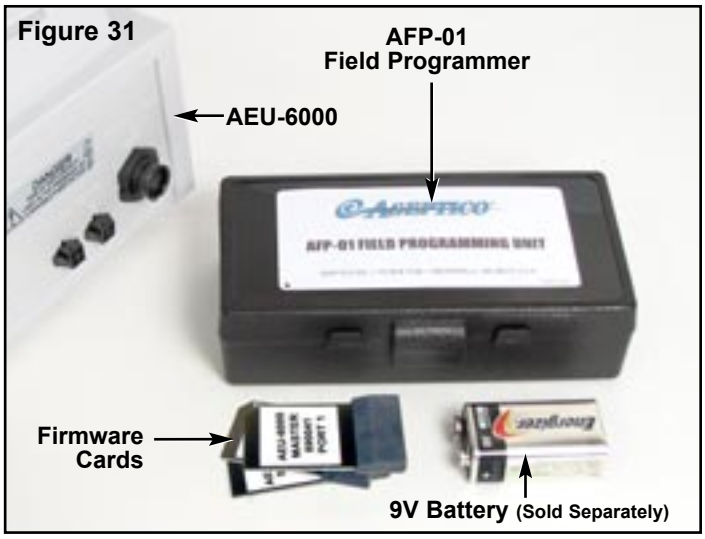


Figure 32

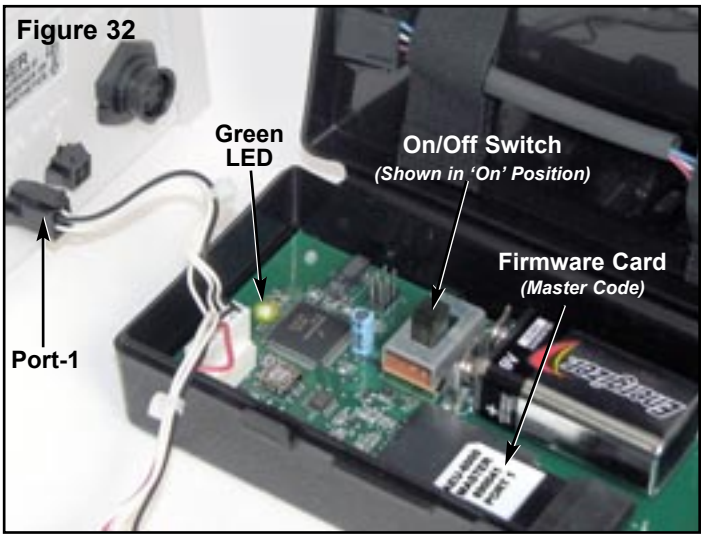
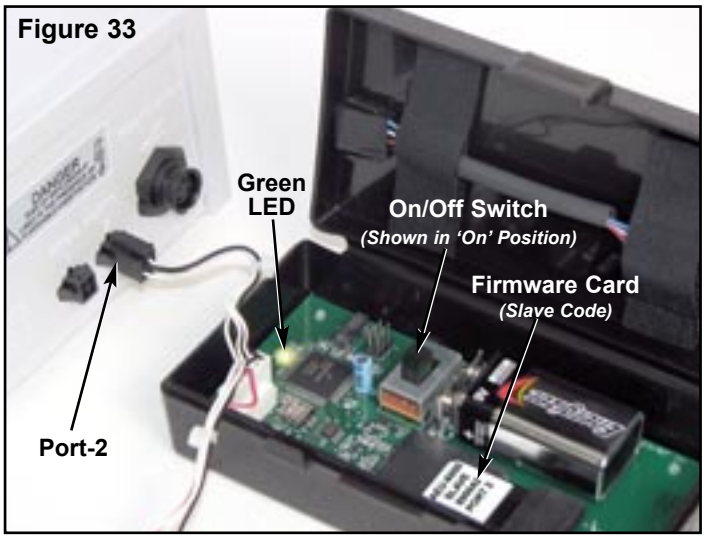


Figure 33

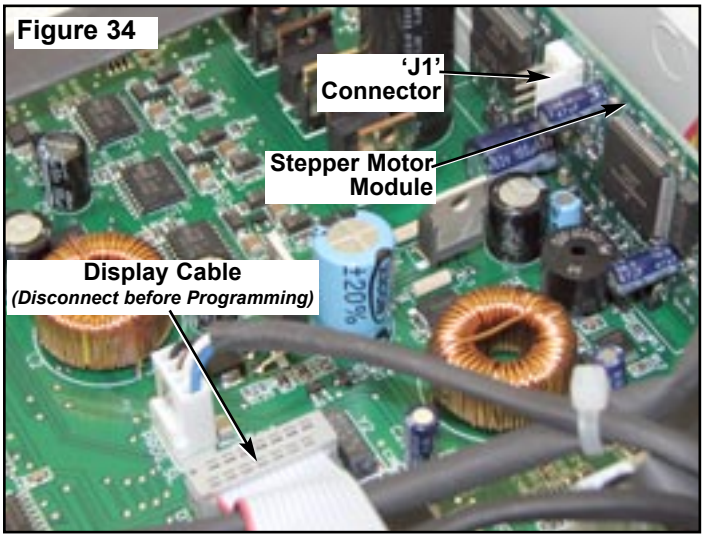


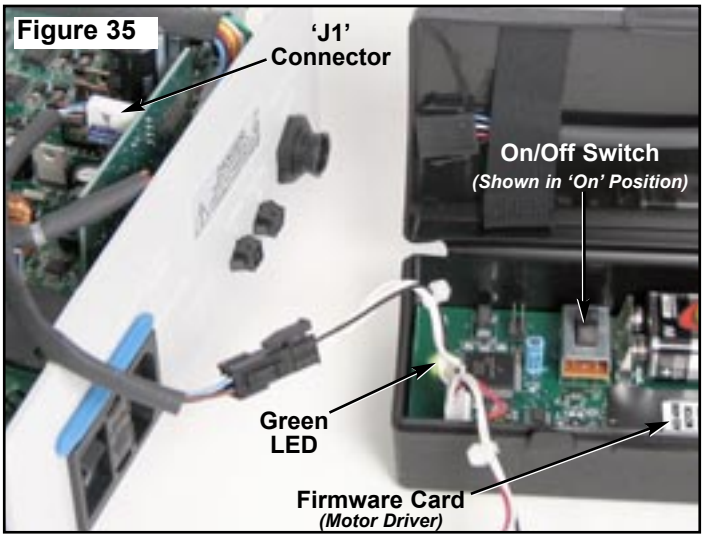
B. Slave Code Firmware

1. Turn Off all power to the AEU-6000/E Units.
2. Turn Off the programming switch within the AFP-01 Field Programmer (see Fig. 33).
3. Install battery into AFP-01 Field Programmer, as shown in Figure 33.
4. Install **Slave Card, PN: 890042** into the card holder located on Programmer PCB (see Fig. 33).
5. Insert the 4-pin square connector (for an HC08 Microcontroller) into the programming **Port-2** on the back of the Unit, making sure that the connector latch is properly oriented with the mating connector.
6. Turn On the programming switch within the AFP-01 Programmer.
7. The Green & Red LED's on the Programmer will operate in the following sequence when programming is successful: **IMPORTANT:** The Red LED will remain On in the event of improper programming.
   - Green & Red LED's turn On for approx. one second.
   - Green & Red LED's turn Off for approx. one second.
   - Green & Red LED's again turn On for approx. one second.
   - Green & Red LED's again turn Off for approx. one second.
   - Green LED remains On for about two seconds.
   - Green LED flashes On and off during programming.
   - Green LED remains On at the completion of programming.
8. Turn Off the programming switch within the AFP-01 Programmer and remove the connector from Unit. Slave Code Programming is completed.

C. Stepper Motor Driver Firmware

1. Turn Off all power to the AEU-6000/-70V Units.
2. Remove top cover from Unit (refer to page 3).
3. Disconnect Display ribbon cable from power PCB board (see Fig. 34).
4. Turn Off the programming switch within the AFP-01 Field Programmer (see Fig. 35).
5. Install battery into AFP-01 Field Programmer, as shown in Figure 35.
6. Install **Motor Driver Card, PN: 890021**, into the card holder located on Programmer PCB (see Fig. 35).
7. Insert the white 4-pin in-line connector into the programming **connector 'J1'** on the motor module (see Figs. 34 & 35), making sure that the connector latch is properly oriented with the mating connector.
8. Turn On the programming switch within the AFP-01 Programmer.





9. The Green & Red LED's on the Programmer will operate in the following sequence when programming is successful: **IMPORTANT:** The Red LED will remain On in the event of improper programming.
   - Green & Red LED's turn On for approx. one second.
   - Green & Red LED's turn Off for approx. one second.
   - Green & Red LED's again turn On for approx. one second.
   - Green & Red LED's again turn Off for approx. one second.
   - Green LED remains On for about two seconds.
   - Green LED flashes On and off during programming.
   - Green LED remains On at the completion of programming.
10. Turn Off the programming switch within the Programmer and remove the connector from Unit.
11. Reconnect Display ribbon Cable. Reattach Cover. Motor Driver Programming is completed.

STERILIZATION PROCEDURES:

WARNING - Sterilize the motor between each patient use.

WARNING - Use of a sterilization method or temperatures other than what are prescribed may damage the motor or present a risk of cross-contamination between patients.

CAUTION - Do not soak or submerge the motor in any liquid.

STERILIZATION:

Pre-clean

1) Brush off any visible signs of debris from the motor and cord.

2) Thoroughly clean the device with a moist cloth or towel to remove any remaining signs of debris.

Sterilize

3) Select one of the three following sterilization methods (A. B. or C.):

Wrapped Sterilization – Place in an appropriately sized sterilization pouch and seal it.

A. Standard autoclaving (Gravity displacement method)

Time: 15 min

Temperature: 132° C (270° F)

Dry time: 30 minutes

B. Pre-vacuum (dynamic-air-removal)

Time: 4 minutes

Temperature: 132° C (270° F)

Dry time: 40 minutes

Flash Sterilization – For immediate use only.

C. Unwrapped standard autoclaving (Gravity displacement method)

Time: 10 minutes

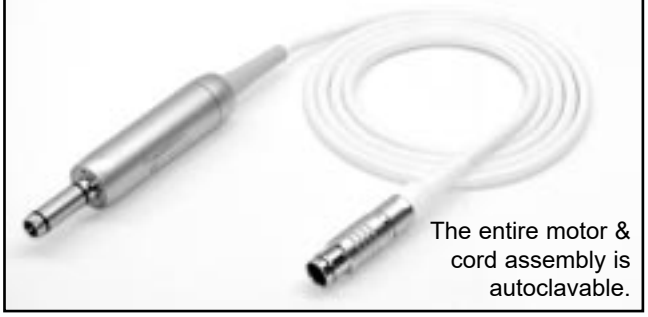
Temperature: 132° C (270° F)

No dry time is required for flash sterilization.

Motor & Cord Assembly:

The entire motor and cord assembly is fully autoclavable. Loosely coil the motor cord when autoclaving. Avoid sharply bending the cord when autoclaving.

Fig.36 MOTOR & CORD STERILIZATION



The entire motor & cord assembly is autoclavable.

NOTE: Call Aseptico Inc. at 1-800-426-5913 for any questions or clarifications on this sterilization procedure.

MAINTENANCE & CLEANING:

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.

MOTOR - **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 (see Figure 37).

Fig.37

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

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

CONSOLE - The exterior of the console may be cleaned by wiping with a soft cloth moistened with a mild detergent or a 1:10 bleach solution (1 part household bleach to 10 parts water). **IMPORTANT:** Use of other cleaning or disinfecting solutions may damage the console and may void the warranty.

SILICONE WATER LINES - The silicone water lines used for the pump are fully autoclavable:

Pre-Cleaning: Before sterilization, run clean water through the tubing for 30 seconds to expel any stagnant water. **NOTE:** Do not use disinfectants on the tubing set. Bacteria and viruses will be neutralized during sterilization.

Sterilization: Sterilize tubing at 132º C (270º F) for 10 minutes.

FOOT CONTROL - The exterior of the foot control may be cleaned by wiping with a soft cloth moistened with mild detergent or disinfecting solution. When cleaning the AE-70V2 Foot Control, remove handle and wipe clean with disinfectant, then reinstall handle.

CHANGING THE FUSE:

⚠ WARNING

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

1. Remove the Fuse Holder from the Power Inlet connector (see Fig. 38).
2. Replace the fuses in the Fuse holder.

   Replacement Fuses:
   1.6A, 250V slo-blow fuse
   (Fuse size: 5 x 20mm)
3. Reinstall the Fuse Holder.

NOTE: The AEU-6000/-70V features auto-sensing, global voltage compatibility. The fuse indicated is correct for 100V-240V 50/60 Hz line voltage.

Figure 38

TOOLS LIST

The following tools are required to perform maintenance on the AEU-6000/-70V unit:

1. #1 Phillips Screwdriver
2. #2 Phillips Screwdriver
3. Flat-head Screwdriver (small)
4. 1/4” (7 mm) Wrench
5. 3/4” (20 mm) Open-Ended Wrench
6. 13/16” (21 mm) Open-Ended Wrench
7. Long Nose Pliers with Cutter
8. Motor Rotation Tool (Consult Aseptico for availability - PN: AE-43)
9. Standard Voltmeter/Multimeter
10. Hi-Pot Tester (For Dielectric Withstand Test.)
11. Firmware Programming Tool (PN: AFP-01) with latest Software: PNs 890021, 890041, 890042
12. Reprogramming Memory Card with latest Software: MC-6000 Card: Software PN 890037

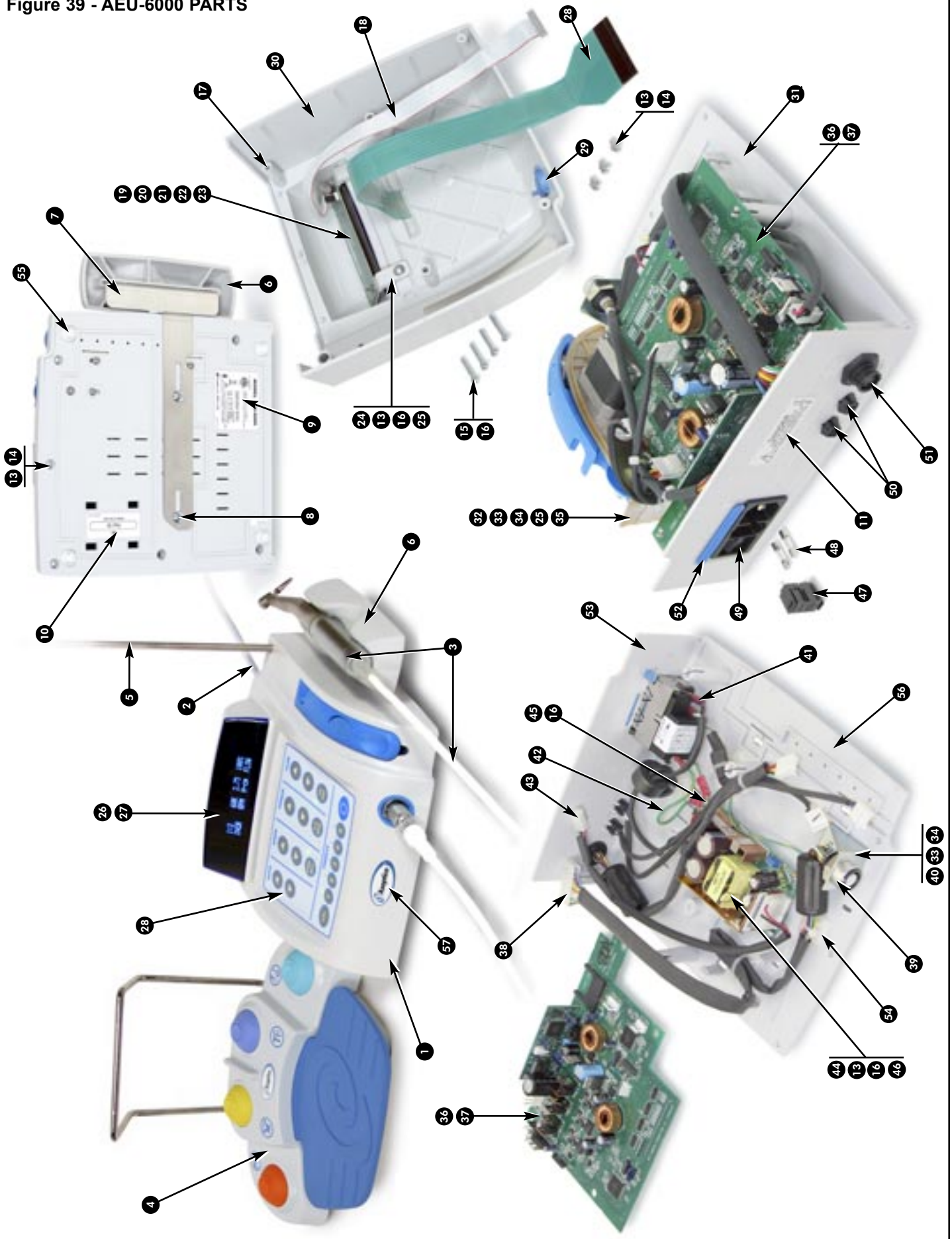
NOTE: The above hand tools are US standard (non-metric) and can be procured locally. The Hi-Pot Tester used is the Associated Research 7564SA. Alternative testers should have specifications equivalent to the Associated Research Model 7564SA Dielectric Tester/Analyzer. To procure the Reprogramming Memory Card with latest Software, contact Aseptico.

AEU-6000/-70V PARTS LIST (See Fig. 39)

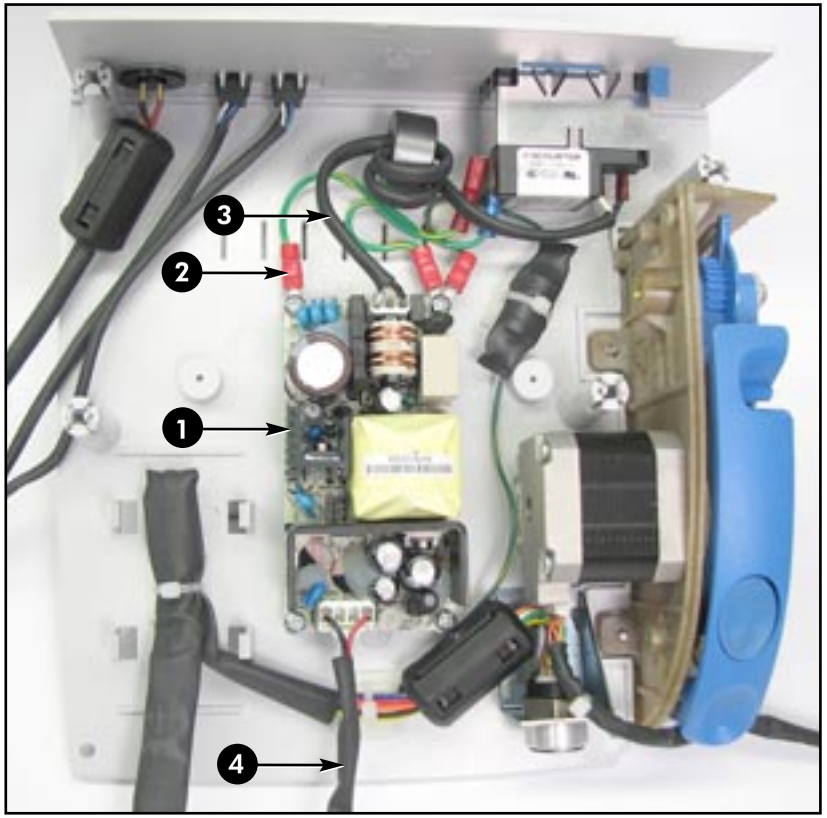
ITEM	DESCRIPTION	PART NO.	Qty
1	FINAL ASSY AEU-6000	120351	1
2	LINECORD REMOTE N AMER HOSP	840079	1
3	MOTOR/CABLE ASSY AE-230M-40	AE-230M-40	1
4	FINAL ASSY AE-70V2 FOOT CONTROL VARIABLE	120391-01	1
5	HOLDER IRRIGANT BAG	461541	1
6	HANDPIECE CRADLE GREY	461561-01	1
7	BRACKET HANDPIECE CRADLE AEU-6000	461816	1
8	M/S ZINC PLATED PHDPHL 10-32 X .25	510663	2
9	LABEL CHASSIS AEU-6000	420596-07	1
10	LABEL NON-ASEPTICO SERIAL NUMBER	420295-01	1
11	LABEL DANGER AEU-26	420748-01	1
12	HOUSING ASSY TOP AEU-6000	330518	1
13	M/S PHPHIL 6 X 3/8 PLASTITE 48-2 HARDND STL	510650	15
14	WASHER INT STAR S/S #6	510419	4
15	M/S PHDPHL #6 X 1 PLASTITE 48-2 HARDND STL	510697	4
16	WASHER SPLIT PLTD #6	510010	4
17	SPACER TOP HOUSING AEU-6000	461727	4
18	CABLE RIBBON SOCKET TO SOCKET 14 POS	870300	1
19	PCB ASSY VACUUM FLUORESCENT DISPLAY	330558	1
20	M/S STNLS PHDPHL 4-40 X 1/2	510191	2
21	WASHER FLAT NYLON .120 ID X .250 OD X .032 T	510127	2
22	WASHER SPLIT STNLS #4	510433	2
23	NUT HEX 4-40 STNLS	510434	2
24	BRACKET DISPLAY SUPPORT AEU-6000	461728	2
25	WASHER FLAT STNLS #6	510431	2
26	LENS DISPLAY AEU-6000	461726	1
27	GASKET LENS DISPLAY AEU-6000	461729	1
28	MEMBRANE OVERLAY CONTROL PANEL	420769	1
29	BEZEL MOTOR CONNECTOR AEU-7000	461545	1
30	UPPER HOUSING AEU-6000	461724	1
31	CHASSIS ASSY AEU-6000	330517	1
32	PUMP ASSY PERISTALTIC AEU-6000	330471	1

ITEM	DESCRIPTION	PART NO.	Qty
33	M/S STNLS PHDPHL 6-32 X 3/8	510406	3
34	WASHER SPLIT STNLS #6	510432	3
35	ISOLATION PAD PUMP BRACKET	461995	2
36	INSULATION SHEET ADHESIVE BACKED	461869	1
37	CIRCUIT/STEPPER CONTROL BOARD ASSY	330559	1
38	MOTOR HARNESS ASSY AEU-6000	875103	1
39	NUT MOTOR CONNECTOR CMPL	461539-08	1
40	BRACKET CONNECTOR AEU-6000	461814	1
41	CABLE ASSY AC LINE IN AEU-6000	875106	1
42	CABLE ASSY AC EARTH AEU-26	875085	1
43	CABLE ASSY DC 48 VOLT AEU-6000	875105	1
44	POWER SUPPLY 48VDC 1.25A MED GRADE	840087	1
45	M/S PHDPHL #6 X 7/16 PLASTITE 48-2 HRDND STL	510696	1
46	WSHR STNLS 620-C6 .143ID X .267OD X .029THK	510587	3
47	FUSE DRAWER 2 POLE	840060	1
48	FUSE 5X20MM SLO-BLO 1.60A	830040	2
49	POWER INLET FUSED 10 AMP W/LINE FILTER	840086	1
50	CABLE ASSY PROGRAMMING	875057-01	2
51	FOOTSWITCH HARNESS ASSY	875074	1
52	DUST COVER FLASH CARD AEU-6000	461606	1
53	PANEL REAR AEU-6000	461725	1
54	TIE WRAP MOUNT 3/4 X 3/4 W/ADH BACK	510206	4
55	FOOT BUMPER .50 DIA X .25 TALL	850069	4
56	HOUSING LOWER AEU-6000	461723	1
57	OVERLAY ASEPTICO SMALL OVAL DOME	420652	1
NOT SHOWN	TUBING SET AEU-6000 BAG	AE-23	1
NOT SHOWN	TUBING SET PUMP SECTION	AE-23-PUMP	1
NOT SHOWN	SOFTWARE 6000 MOTOR DRIVER	890021	1
NOT SHOWN	SOFTWARE MC-6000 CARD	890037	1
NOT SHOWN	SOFTWARE MASTER BOOTLOADER 6000	890041	1
NOT SHOWN	SOFTWARE SLAVE BOOTLOADER 6000	890042	1
NOT SHOWN	FOOTSWITCH ON/OFF 4 PIN MALE	AE-7PM	1

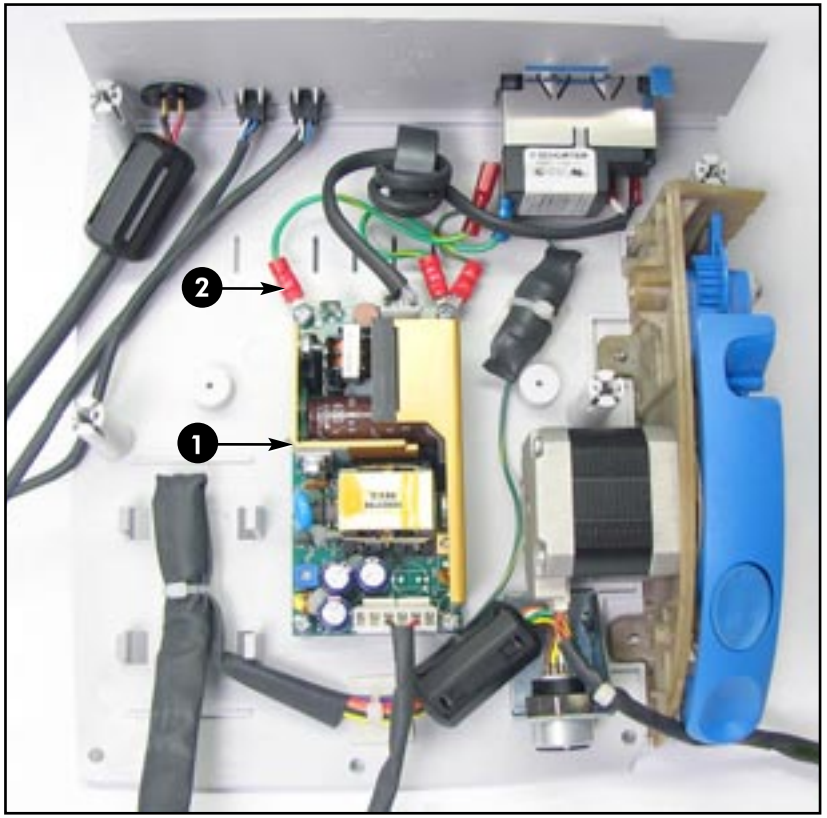
Figure 39 - AEU-6000 PARTS



AEU-6000/-70V ALTERNATE 48VDC POWER SUPPLIES - Figure 40



ITEM	DESCRIPTION	PART NO.	Qty
1	ALTERNATE 48VDC POWER SUPPLY MW RPS60	840087-01	1
2	CABLE ASSY AC EARTH (Place Ring Under PwrSply)	875085-01	1
3	CABLE ASSY AC LINE IN	875106-01	1
4	CABLE ASSY DC 48 VOLT	875105-01	1



ITEM	DESCRIPTION	PART NO.	Qty
1	ALTERNATE 48VDC POWER SUPPLY XP ECM60	840087-02	1
2	CABLE ASSY AC EARTH	875085-01	1

SPECIFICATIONS::

Console Dimensions:
8.6"W x 9.2"L x 4.8"H
(22 cm x 23 cm x 12 cm)

Console Weight:
3.9 lbs (1.8 kg)

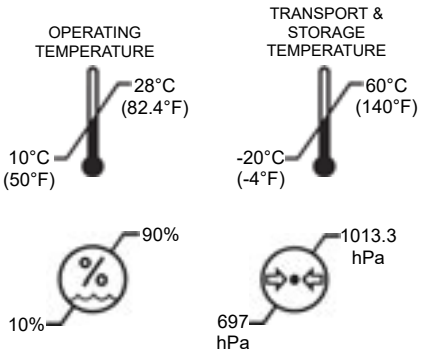
Power:
100-240V ∿
1.0 - 0.6 A
50-60 Hz

Fuses:
1.6A, 250V, Slo-Blo® Type

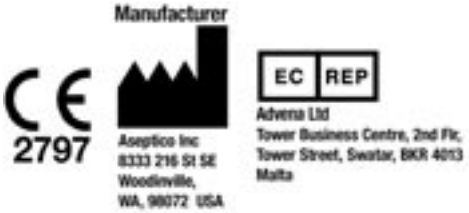
Duty Cycle:
16.7%

NOTE:
The appliance inlet is the mains disconnect means.

Environmental Conditions:
- Operating Temperature: 10° to 28°C (50° to 82.4°F)
- Transportation & Storage Temperature:
- -20° to 60°C (-4° to 140°F)
- Relative Humidity: 10% to 90% noncondensing
- Altitude: 0 to 3,048 meters (0 to 10,000 feet)



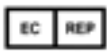
WARNING: This device has been tested and found to comply with the emissions requirements of IEC 60601-1-2:2001-09. These requirements provide reasonable protection against harmful electromagnetic interference in a typical medical installation. However, high levels of radio-frequency (RF) emissions from 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.



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

SYMBOL DEFINITIONS:

	Consult Instructions For Use
	Type B Equipment
	Footswitch
	Do Not Throw Into Trash
	Manufacturer
	Fuse Rating
	Motor Direction
	Torque Step Through
	Temperature Limitation
	Humidity Limitation
	Part Number
	Serial Number

	Authorized European Representative
	Standby Switch
	Dangerous Voltage
	Alternating current
	Protection Against Dripping Water
	Protective Earth (Ground)
	Preset Step Through
	Pump On/Off
	Atmospheric Pressure Limitation
	Caution, consult accompanying documents
	Sterilize At 132°C (270°F)

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.

For Further Service And/Or Technical Assistance Contact:

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Woodinville, WA 98072-1548
1-800-426-5913 • 425-487-3157 • Fax: 425-487-2608
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