
AMC-25CF

AMC-25CF-USA

Mobile Dental System



SERVICE MANUAL



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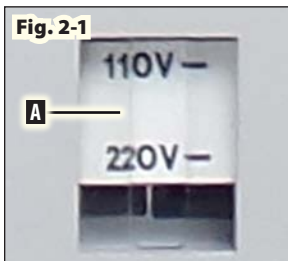
GENERAL SERVICE INFORMATION

1. This service and parts manual offers information and parts lists not available in the AMC-25CF / AMC-25CF-USAF operation and maintenance instruction manual. It will help you better understand the operation of the unit, thereby reducing service time. See the schematic diagram set for assembly drawings with individual part numbers, plumbing diagrams, and electrical schematics. The plumbing and electrical diagrams show all air, water, and wiring components as installed in the unit. A Replacement Parts list (page 25) is also included. Both the AMC-25CF and AMC-25CF-USAF are referred to generically throughout this manual as the AMC-25CF.

NOTE: Shaded text indicates features not included in the AMC-25CF-USAF version of the unit.

INSPECTION & OPERATION VERIFICATION

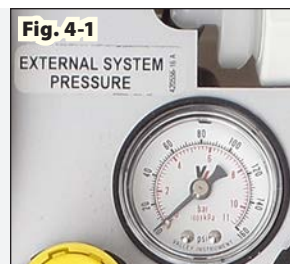
2. To verify that the unit is functioning properly, first follow the setup procedure in the operation and maintenance manual. The system is designed to operate from 110V or 220V 50/60Hz power. A manually operated switch (Fig. 2-1 **A**), located above the power inlet, allows the user to select the proper voltage. The system is protected by two 5A circuit breakers and one 15A circuit breaker incorporated into the main power switch.



3. Toggle the Bottle Pressure switch (Fig. 3-3 **F**), to the ON position. Toggle the Air Tank Pressure switch, located on the bottom-left rear of the unit, to the ON position. Turn the main power switch, located on the bottom-right rear of the unit, to the ON position, along with the pressure and vacuum switches. The electric-motor control panel should light up and the compressor pump should fill the air reservoir and water bottles. With the compressor pump engaged, the air reservoir should pressurize to a factory preset of approximately 100 psi (6.9 bar) and the system should pressurize to a preset of 80 psi (5.5 bar). The 80 psi (5.5 bar) system pressure is regulated by the regulator/filter (Fig. 3-2), which is located under the top lid. The system pressure is indicated on the circular pressure gauge, which is also located under the top lid and labeled "System Pressure" (Fig. 3-1).

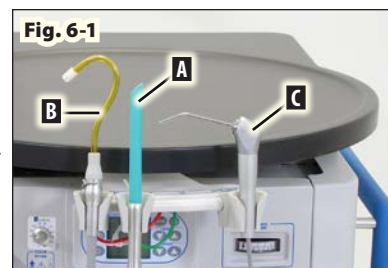


4. The hospital connections provide the ability to operate the unit solely from external vacuum, air and water sources, or in combination with the internal vacuum, air and water sources. With the power cord detached, it is safe to use the AMC-25CF in operating rooms (in the presence of anesthetics and flammable gases). Connect external vacuum, air and water lines (not supplied) to the vacuum, air and water connectors on the rear of the AMC-25CF cart, using the mating connectors provided. The external operating air pressure is shown on the gauge labeled "External System Pressure" (Fig. 4-1) located under the top lid. Pressure is factory set so there is no need to adjust the regulator knob labeled "External System Regulator" (Fig. 4-2).



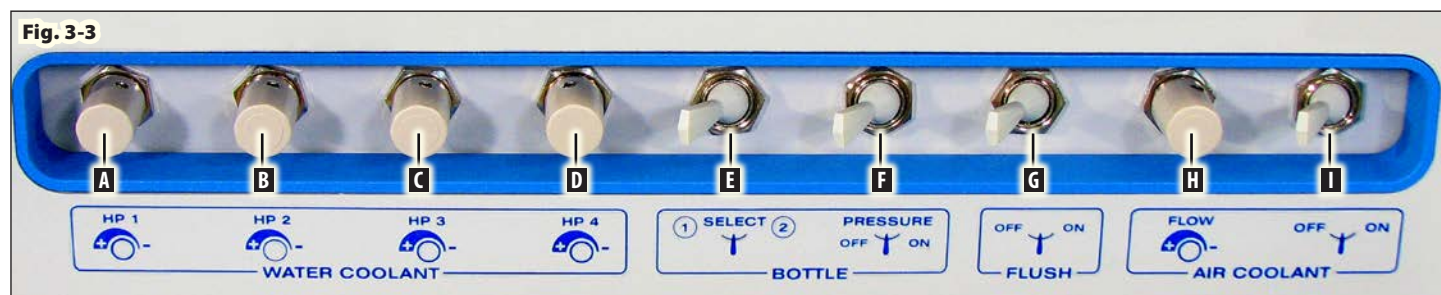
5. The system uses a pressure pump and vacuum pump. The vacuum pump uses venturi boosters to increase the vacuum. The pressure pump is controlled by a pressure sensor located on the tank. The sensor activates the pump air pressure whenever the air reservoir needs to be recharged. The recharge starts when the pressure in the air reservoir drops to approximately 90 psi (6.2 bar), and it stops when the reservoir becomes fully charged at a factory preset of approximately 100 psi (6.9 bar).

6. All the handpiece, scaler, and vacuum instrument holders are air-activated holders. If the high volume ejector (HVE) (Fig. 6-1 **A**) or low volume saliva ejector instruments (Fig. 6-1 **B**) are removed from their holders (or if they aren't properly seated in their holders), the vacuum pump will run continuously.



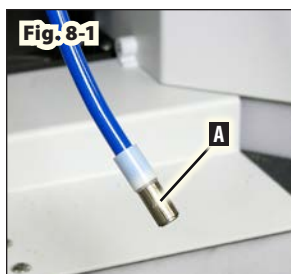
AIR/WATER SYRINGE

7. Check the 3-way air/water syringe (Fig. 6-1 **C**) by depressing the air and water syringe buttons individually then both simultaneously for spray. A syringe air/water flow adjustment block is located under the top lid, behind the divider wall, beside the scaler module.



WATER FILTERS

8. Inspect the water filters (Fig. 8-1 **A**) on the ends of the water pick-up tubes that protrude into the two water bottles. If the water filters become clogged and restrict the water flow, they need to be replaced. CAUTION: Do not run saline solutions through the water system—saline will corrode the water filters.



AIR FILTERS

9. The two air filters (Fig. 9-1 **A**) are located behind the louvered cover on the rear of the cart, near the base. If the air filters become clogged, they need to be replaced. To replace the air filters, remove the four screws holding the louvered input air filter cover. Use a 11/16" open ended wrench to hold the fitting at the base of each air filter, then unscrew each air filter by hand. Install new air filters (PN 730494) in the reverse order.



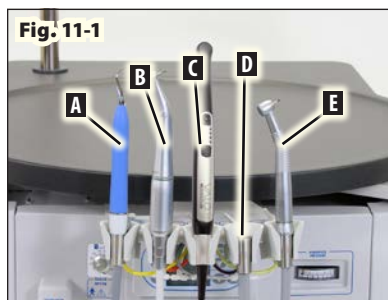
VACUUM SYSTEM

10. To check the function of the vacuum system, first allow the system to reach full pressure. Check the solids trap screen (inside waste container, on bottom of the lid) to ensure that it is clear of debris. Check that the large tube to the waste tank is fully seated in the grommet and all the other tubes are properly connected to the tank. Ensure that the waste sensor (Fig. 10-1 **A**) is plugged into the connector on the unit. The system will not activate the compressor if this connection is disconnected. Fill a container with one liter of water. Turn the valve on the low vacuum saliva ejector instrument to the OFF position and submerge the HVE instrument into the container. It should take approximately 6 seconds to extract the liter of water from the container using the HVE. Refill the liter of water and turn the HVE instrument OFF and the saliva ejector to ON, then submerge the saliva ejector instrument into the container. It should take approximately 42 seconds to remove one liter of water using the saliva ejector.



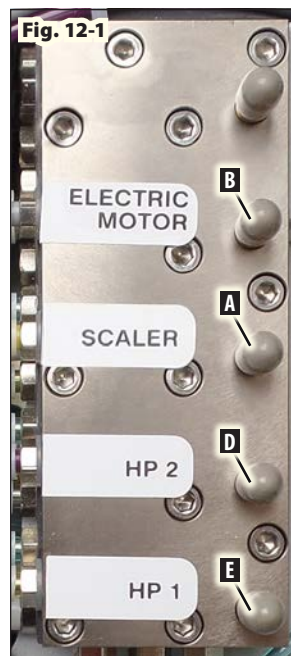
INSTRUMENTS

11. To check the functions of the high-speed handpieces, curing light, scaler, and electric motor, remove each instrument from their respective holders one at a time, starting with handpiece #1 (Fig. 11-1 **E**) on the left arm. All handpieces and scaler are activated by the air-driven foot control.



Pneumatic Handpieces:

12. With handpiece #1 removed from its holder, activate the foot control and check the handpiece pressure on the gauge located on the front panel labeled "Handpiece Pressure." Adjust the handpiece pressure to the proper setting by adjusting the knob labeled "HP 1" (Fig. 12-1 **E**) on the control block located under the top lid. IMPORTANT: Adjust to the pressure recommended by the handpiece manufacturer. NOTE: The handpiece pressure gauge on the front panel will be approximately 3 psi (0.2 bar) higher than a gauge installed at the end of the line, between the fitting and the handpiece. Toggle the coolant air toggle switch located on the right side of the unit to the ON position. Adjust the coolant air control valve (Fig. 3-3 **H**) and feel for air coming out of the handpiece. The water toggle switch located on the foot control activates the water through the control module. Toggle the water switch (Fig. 12-2 **A**) to ON and adjust the HP 1 water coolant valve (Fig. 3-3 **A**), for proper spray. Ensure that the light in the handpiece turns ON when the foot control is depressed and turns OFF approximately 10 seconds after the foot control is released. Place the #1 handpiece back into its holder and remove the second high-speed handpiece from its holder. Repeat the previous procedures for this second handpiece, but adjust the knob labeled "HP 2" (Fig. 12-1 **D**) on the control block for proper pressure and adjust the HP 2 water coolant valve (Fig. 3-3 **B**). When set up properly, replace the second high-speed handpiece into its holder.



Curing Light:

13. Remove the curing light (Fig. 11-1 **C**) from its holder. Refer to the VALO Grand Curing light manual provided in your packing case for Inspection & Verification instructions.

Scaler:

14. Remove the scaler (Fig. 11-1 **A**) from its holder. Toggle the water switch on the foot control to the ON position. Depress the foot pedal and adjust the knob labeled "SCALER" (Fig. 12-1 **A**) on the control block to a minimum of 20 psi (1.38 bar). Adjust the HP 4 water coolant valve (Fig. 3-3 **D**) until the scaler flow is no less than 0.68 fl oz/min (20 ml/min) at the tip. Check the intensity of the scaler by turning the ultrasonic intensity adjustment knob located on the upper left side of the front cover. Replace the scaler into its holder and lock the holder out when not in use.

Electric Handpiece:

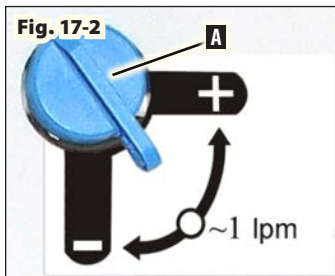
15. Remove the electric handpiece (Fig. 11-1 **B**) from its holder. Depress the foot control pedal and adjust the knob labeled "ELECTRIC MOTOR" (Fig. 12-1 **B**) on the control block to read 30 to 45 psi (2.1-3.1 bar) max. on the gauge. Adjust the HP 3 water coolant valve (Fig. 3-3 **G**) to control water flow to the electric handpiece. Return the electric handpiece to its holder.

Handpiece Flush Toggle:

16. To check the handpiece flush toggle switch (Fig. 3-3 **G**) remove a high-speed handpiece and toggle the switch to the ON position. Ensure that water flows through the line.

Waste System:

17. To check the waste pump, use the HVE instrument to vacuum a liter of warm water to the waste container. Place the HVE back into its holder. Connect the waste hose elbow (Fig. 17-1 **D**) to the waste discharge (Fig. 17-1 **B**) on the back of the unit by inserting the waste hose elbow until it locks into place. Switch ON the waste purge pump (Fig. 17-1 **C**) to empty the waste system. While emptying, check that the blue waste control valve (Fig. 17-2 **A**) located in the waste compartment works properly by manually turning the valve clockwise to decrease flow of the liquid and counterclockwise to increase flow. Ensure that the waste tank empties, then switch OFF the waste purge pump. To disconnect the waste hose, depress the button (Fig. 17-1 **A**) on top of the waste discharge and pull out the waste hose elbow. **NOTE:** The waste hose must be connected to the waste discharge to enable the pump to remove fluid from the waste tank.



and should be avoided. Any wiping should be done with a soft lint-free cloth.

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

21. Use a silicone base lubricating grease, such as Parker Super O-Lube, PN 490006, to lubricate O-rings and seals in the system. Before performing any reassembly of parts that contain O-rings or seals, apply a light coat of silicone grease. This will make installation easier and prevent the O-rings or seals from being damaged.

ADHESIVES

22. Refer to included schematic drawing set (PN 421177), for proper identification and application of all adhesives.

Electrical System:

18. The power outlet receptacles and waste sensor, and motor switching ON/OFF are tied to an isolation transformer with two 1A circuit breakers and the 15A input circuit breaker. The scaler is tied to the 15A circuit breaker to a dedicated transformer for the scaler. The waste pump is tied to the 15A input to a dedicated transformer with two 1/2A circuit breakers. The two pressure/vacuum pump motors are protected by the two 5A circuit breakers. The ELECTRIC MOTOR is tied to the 15A input circuit breaker to a medical grade power supply.

CLEANING AND LUBRICATION

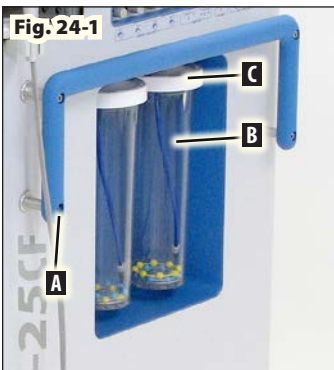
19. When servicing the unit, the parts of any component disassembled should be thoroughly cleaned and inspected before reassembly. A hot detergent solution is an effective cleaner on all non-electrical parts. Flush all non-electrical parts with clean, hot water. Abrasive cleaners have the potential to damage surface finishes

DISASSEMBLY

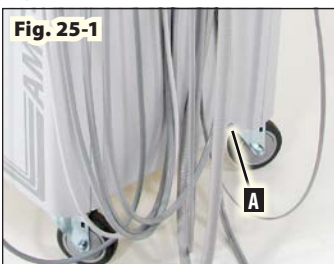
23. NOTE: Most of the plumbing for the unit is accessible by lifting the top lid and latching it in the upright position. The power supplies, vacuum/pressure pumps, waste pump and miscellaneous items are accessible by removing the front and side panels. Power inlets and most of the power outlets are accessible by removing the panels in the rear of the unit.

FRONT & SIDE PANELS REMOVAL

24. Remove accessory tray, arm, and post from the top lid. Lift the top lid and lock it open. Remove the single screws (PN 510477) located on the bottoms of the left-hand and right-hand side panels with a 3/32" Allen wrench. Remove the four bolts (PN 510693) (Fig. 24-1 **A**) attaching the large blue handles (PN 330540) to each side panel with a 3/16" Allen wrench. Remove both handles. Remove the water bottles (PN 730631-01) (Fig. 24-1 **B**) and their caps (Fig. 24-1 **C**) from the right-side panel. Remove both side panel assemblies.

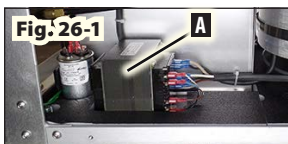


25. Swing the instrument arms away from the front panel. Remove the two screws (PN 510404) from the top of the front panel, and the four screws (PN 510506) (Fig. 25-1 **A**) from the bottom front and sides of the panel with a 3/32" Allen wrench. Carefully pull the front panel straight out approximately 1" (25 mm). Reach behind the panel and disconnect the 4-pin white connector from the electric motor display assembly and then continue to pull the panel out until detached. Take care not to break the connections to the scaler knob. The front panel can be removed, if necessary, by running all of the tubing through the manifold access slot, but typically this isn't necessary to gain access inside the front of the unit. Alternatively, the front panel can be pivoted out of the way, to the left side of the unit, without detaching any additional wiring or tubing: while carefully looping the instrument hoses through the bulkhead access opening, swing the right edge of the panel away from the chassis approximately 90°. This will open up the front of the chassis, providing adequate working access to the front of the unit. NOTE: Both side panels must be removed to remove front panel.



ISOLATION TRANSFORMER

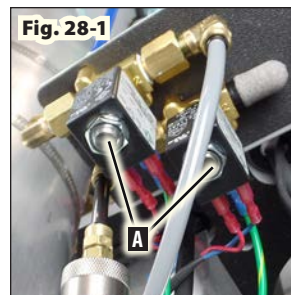
26. The isolation transformer (PN 800118) (Fig. 26-1 **A**) is on the chassis base. Disconnect the wires at the transformer. Remove the four mounting screws (PN 510312) and lock washers (PN 510421) on the transformer with a 1/8" Allen wrench.



27. Reassemble the transformer in the reverse order. Refer to electrical schematic for proper termination.

TWO-WAY SOLENOIDS

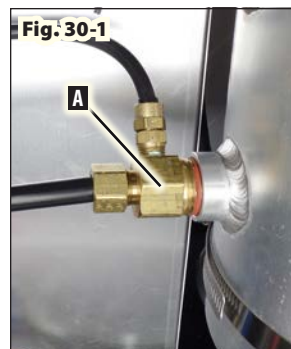
28. Two two-way solenoids (PN 730698) (Fig. 28-1 **A**) are located on the underside of the middle shelf, behind the air tank. Disconnect all 3 wires from the blade connectors on each solenoid. Note that the green/yellow ground wire leads to the same ground post as the pump on the vertical support. Remove the two mounting screws (PN 510717) for each solenoid from the top side of the middle shelf using a 2 mm Allen wrench. Remove the tubes (PN 730130) to the solenoids with a 7/16" open-end wrench.



29. If replacing solenoids, remove the fittings from the old valves and mount onto the new solenoids. Install solenoids in reverse order of step above. Refer to plumbing schematic and electrical schematic for proper termination.

AIR TANK CHECK VALVE

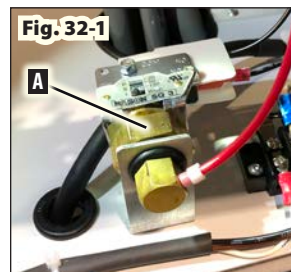
30. The air tank check valve (PN 730099) (Fig. 30-1 **A**) is the large fitting on the side of the tank at the bottom. Remove the smaller tube (PN 730130) to the side fitting (PN 730117) with a 7/16" open-end wrench. Remove the larger tube (PN 730131) from the check valve with a 5/8" open-end wrench. Remove the side fitting from the check valve with a 7/16" open-end wrench. Remove the check valve with a 7/8" open-end wrench.



31. Replace components in the reverse order. Ensure that the larger tube still has the internal sleeve clamp (PN 730262) attached to the inside-diameter of the tube.

PRESSURE SWITCH

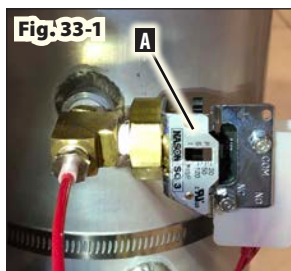
32. The pressure switch (PN 830142) (Fig. 32-1 **A**) is located on the middle platform. Disconnect the 2 wires from the blade connectors on the switch. Remove the pressure switch from the brass nipple (PN 730177) with a 9/16" open-end wrench on the nipple and a 1" open-end wrench on the switch. Install the new pressure switch in the reverse order. Make sure the wire with the yellow sleeve is attached to the blade connector furthest away from the air tank. Open the top lid on the unit, raise the knob on the system pressure regulator (PN 730598), and then rotate the knob clockwise to full open. This will allow you to observe the system pressure gauge on the top shelf while setting the pressure. Power up the unit. CAUTION: The terminal blocks and connecting wires are live when the unit is powered up. Adjust the cut-out pressure to 100 psi (6.9 bar) according to the gauge on the side of the pressure switch by turning the large black dial on the pressure switch. Readjust the pressure regulator back to approximately 80 psi (5.5 bar).



DISASSEMBLY (Continued)

VACUUM VENTURI SWITCH

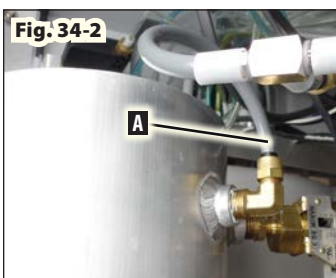
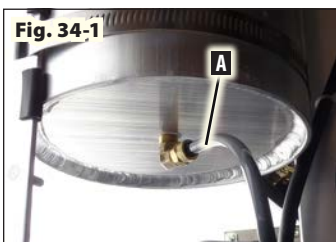
33. This pressure switch (PN 830142) (Fig. 33-1 **A**) is located on the side of the air tank, at the top and is mounted at 90 degrees to the stem. Disconnect the 2 wires from the blade connectors on the switch. Remove the pressure switch from the brass nipple (PN 730177) with a 9/16" open-end wrench on the nipple and a 1" open-end wrench on the switch.



Install the new pressure switch in the reverse order. Make sure the wire with the yellow sleeve is attached to the blade connector furthest away from the air tank. Open the top lid on the unit, raise the knob on the system pressure regulator (PN 730598), and then rotate the knob clockwise to full open. This will allow you to observe the system pressure gauge on the top shelf while setting the pressure. Power up the unit. CAUTION: The terminal blocks and connecting wires are live when the unit is powered up. Adjust the cut-in pressure to 65 psi (4.48 bar) according to the system pressure gauge with the pressure switch by turning the large black dial.

AIR TANK

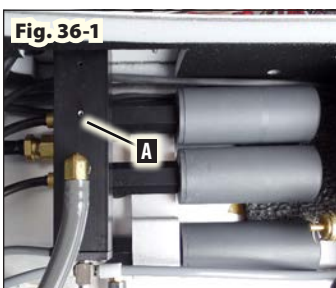
34. Remove the drain line (PN AA-95G) (Fig. 34-1 **A**) from the bottom of the tank with a 7/16" open-end wrench. Remove the air check valve (paragraph 30) and the pressure switch (paragraph 32) from the air tank. Loosen the caster under the tank with two 3/4" wrenches until the nut is held onto the caster with minimal threading. Open the top lid on the unit and lock in the raised position. Swing the instrument arms to the left side of the unit. Remove the two screws (PN 510404) attaching the right-hand vertical angle (PN 461665) to the top shelf with a 3/32" Allen wrench. Undo the three clamps (PN 510514) around the tank with a 5/16" socket or a standard screwdriver. Use a 5/32" Allen wrench to remove the two screws (PN 510477) on both sides of the angle that attach the upright bracket (PN 461665) to the chassis base. Lift slightly on the top shelf to tilt the upright away from the unit. Remove the tank. Remove all of the components from the old tank and replace onto the new tank.



35. Reassemble the air tank in the reverse order

VACUUM VALVE

36. The vacuum valve (Fig. 36-1 **A**) is located on the underside of the middle shelf in the left front of the unit. Remove the gray tubing (PN 730373) from the valve and the gray tubes (PN AA-95G) from

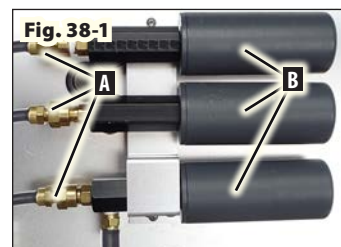


the bottom fittings. Remove the mounting screw (PN 510404). Remove the tube coming through the wall to the tube.

37. Reassemble in the reverse order referring to the plumbing schematic for proper installation.

VENTURI GROUP ASSEMBLY

38. If a venturi is plugged, it is possible to repair it by removing the tube and fitting (PN 730195) (Fig. 38-1 **A**) from the top two venturi nozzles (PN 461852) and bottom nozzle (PN 462608 with a 7/16" and a 9/16" open-end wrench. Then remove the nozzle from the venturi body with a 7/16" wrench for the nozzle and a 3/4" wrench for the body. Clean out the orifice in the nozzle using a drill with a 0.062" (1.58 mm) diameter bit for the top two venturis and a 0.037" (0.94 mm) drill bit for the bottom venturi. Ensure that the orifice is clear with no chips or burs, which will affect performance. If you need to remove the venturi assemblies, continue by removing the mounting bracket (PN 462434) by removing the two screws (PN 510160) using a 5/64" Allen wrench. Remove the vacuum tube (PN 730373) from the vacuum valve assembly. To remove the venturi from the bracket (PN 462434), remove the two screws (PN 510309) from the bracket with a 3/32" Allen wrench. NOTE: The bottom venturi is different than the upper two.



Remove the nozzle from the venturi body with a 7/16" wrench for the nozzle and a 3/4" wrench for the body. Clean out the orifice in the nozzle using a drill with a 0.062" (1.58 mm) diameter bit for the top two venturis and a 0.037" (0.94 mm) drill bit for the bottom venturi. Ensure that the orifice is clear with no chips or burs, which will affect performance. If you need to remove the venturi assemblies, continue by removing the mounting bracket (PN 462434) by removing the two screws (PN 510160) using a 5/64" Allen wrench. Remove the vacuum tube (PN 730373) from the vacuum valve assembly. To remove the venturi from the bracket (PN 462434), remove the two screws (PN 510309) from the bracket with a 3/32" Allen wrench. NOTE: The bottom venturi is different than the upper two.

39. Reassemble the venturis in the reverse order.

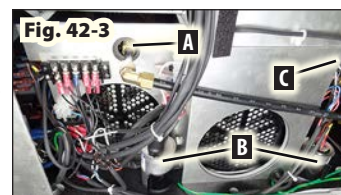
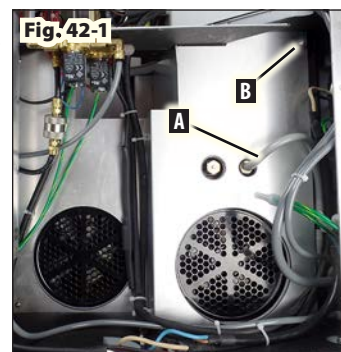
VENTURI MUFFLERS

40. Grasp the venturi assembly and unscrew muffler (PN 330564) (Fig. 38-1 **B**) from venturi body, either by hand or with a pair of channel locks.

41. Replace by screwing muffler on, hand tight.

PUMP MOTOR ASSEMBLIES

42. To access the vacuum and pressure pumps for service or replacement, remove the right motor wall (PN 462435) by disconnecting the air inlet hose (PN AA-86G) (Fig. 42-1 **A**) from the pressure pump, then removing the four screws (PN 510160) (Fig. 42-1 **B**) from the corners of the right motor wall using a 5/64" Allen wrench. Next disconnect the horizontal panel (PN 462431) from the left upper motor wall by removing the two screws (PN 510160) (Fig. 42-2 **A**) using a 5/64" Allen wrench, then tilt the panel up at an angle to improve access to the left bottom motor wall. To gain access to the left sides of the pumps you will need to partially remove the left bottom motor wall (PN 462429) so that you can pull it back far enough to reach

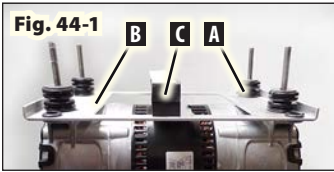


the pumps. Disconnect the black hose (PN 730131) (Fig. 42-3 **A**) from the pressure pump using a 9/16" wrench. Remove the capacitors (Fig. 42-3 **B**) from their clips. Remove the four screws (PN 510160) (Fig. 42-3 **C**) that attach the left bottom motor wall at the corners using a 5/64" Allen wrench. Pull the left bottom motor wall out far enough to gain access to the pump mounting hardware. Remove the four mount bumper nuts (PN 510296 & 510468) from the top of the motor mount of each pump using a 7/16" wrench, then remove the eight motor mount nuts (PN 510098) from each pump from the underside of the cart using a pair of 7/16" wrenches. Follow the wire looms and ground wires from each pump and disconnect them from the terminal blocks and posts where they are attached. Lift the pumps out of the cart.

43. Reinstall the pumps in the reverse order. Refer to the electrical schematic for proper installation.

MOTOR MOUNTS

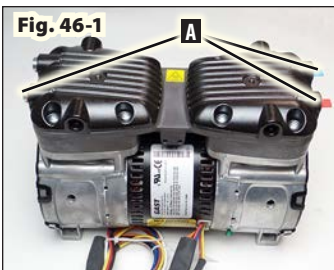
44. Remove the pumps as described previously. Remove the four washers (PN 520837) and eight grommets (PN 870236) (Fig. 44-1 **A**) from the rubber mounts (PN 730752). Using a channel locks to remove the rubber mounts, grip the rubber mount as close to the motor mount plate as possible to avoid tearing the rubber. Remove the motor mount plate (PN 462408) (Fig. 44-1 **B**) with the two anti-vibration pads (PN 490070) (Fig. 44-1 **C**) which are stacked together and attached to the motor mount plate with an adhesive strip on one side and a Teflon strip (PN 490172) on the opposite side. NOTE: Mount alignment is critical for proper installation.



45. Replace motor mounts in the reverse order.

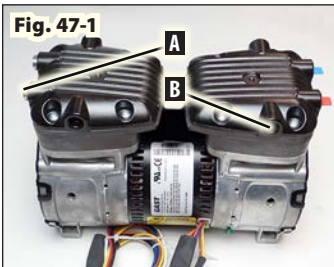
PRESSURE PUMP REPLACEMENT

46. Remove the pressure pump (PN 730725) from the unit and remove the motor mount as described previously. On the old pump remove the three fittings (PN 730735, 330633, 730372) (Fig. 46-1 **A**) on the outboard ports of the two heads using 9/16" & 5/8" wrenches and attach to the new pump with the same orientation.



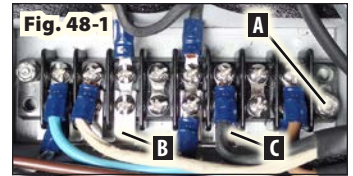
VACUUM PUMP REPLACEMENT

47. Remove the vacuum pump (PN 730726) from the unit and remove the motor mount as described previously. On the new pump remove the four plugs from the sides of the heads using a 1/4" Allen wrench and install them into the ends of the heads (Fig. 47-1 **A**). On the old pump, remove the four fittings (PN 730329, 730484) on the side ports (Fig. 47-1 **B**) of the two heads using 3/8" & 5/8" wrenches and attach to the new pump with the same orientation.



ISOLATED HIGH-VOLTAGE TERMINAL BLOCK

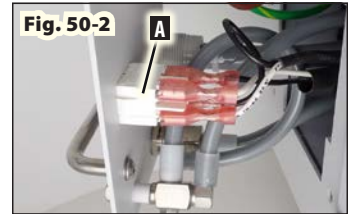
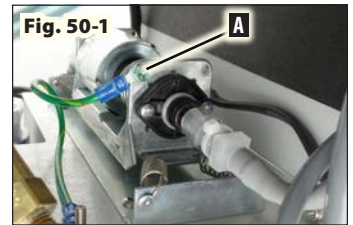
48. This terminal block (PN 860256) is located on the left side of the chassis base. Remove all the wires going to the terminal block with a #2 Phillips screwdriver. Remove the two mounting nuts (PN 510395) (Fig. 48-1 **A**) with a 5/16" open-end wrench, then remove block and insulator (PN 461971). Note the positions of the 3-position jumper (PN 860253) (Fig. 48-1 **B**) and 2-position jumper (PN 860254) (Fig. 48-1 **C**), then remove jumpers from the old terminal block and attach to the new block.



49. Reassemble the terminal block in the reverse order, referring to the electrical schematic for proper installation.

WASTE PUMP

50. Remove the green/yellow ground wire (Fig. 50-1 **A**) from the chassis using a 11/32" wrench. On the back side of the cart, remove the eight screws (PN 510160) that attach the power outlet assembly with a 5/64" Allen wrench. Follow the white and black wires from the pump to the white rocker switch (PN 830108) (Fig. 50-2 **A**) on the power outlet assembly and disconnect. Cut the cable ties that secure the tubing to the pump ends and remove both gray tubes (PN AA-82G & 730312) from the pump. Remove the four mounting screws (PN 510404) from the pump with a 3/32" Allen wrench. Feed the pump wires through the grommet in the middle shelf and remove the pump.



51. Reassemble the waste pump in the reverse order, referring to the electrical schematic for the proper installation.

WASTE PUMP TRANSFORMER

52. The waste pump transformer (PN 800060) (Fig. 52-1 **A**) is located on the right side of the middle shelf. Remove the three female wire terminals from the transformer. Remove the two screws (PN 510160) with a 5/64" Allen wrench.

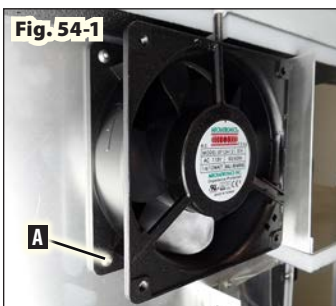


53. Reassemble in the reverse order, referring to the electrical schematic for proper installation.

DISASSEMBLY (Continued)

PRESSURE PUMP COOLING FAN

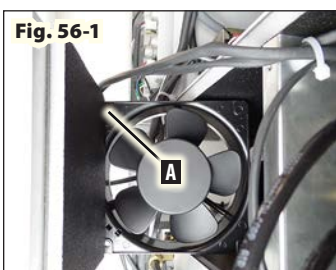
54. The pressure pump cooling fan (PN 540012) is located on the rear motor wall. Remove the rear electrical panel (PN 462443) by removing the four screws (PN 510691) at the corners using a #2 Phillips screwdriver. Leaving all the wires and hoses connected, pull the electrical panel back far enough to access the fan. Remove the four screws (PN 510160) (Fig. 54-1 **A**) holding the fan to the wall using a 5/64" Allen wrench. Trace the wires to the terminal block on the left bottom motor wall and remove with a #1 flat-blade screwdriver.



55. Reassemble fan in the reverse order with the air flow indicator on the fan pointing toward the rear of the unit. Refer to the electrical schematic for proper installation.

VACUUM PUMP COOLING FAN

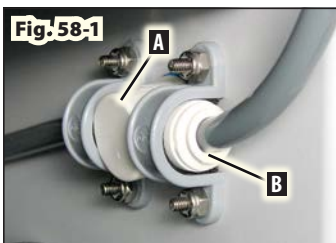
56. The vacuum pump cooling fan (PN 540012) is located on the left upper motor wall (PN 462430). First, disconnect the horizontal panel (PN 462431) from the left upper motor wall by removing the two screws (PN 510160) (Fig. 42-2 **A**) using a 5/64" Allen wrench, then tilt the panel up at an angle to allow movement of the left upper motor wall. Remove the four screws (PN 510160) at the corners of the left upper motor wall using a 5/64" Allen wrench. Pull the left upper motor wall out far enough to access the fan. Remove the four screws (PN 510160) (Fig. 56-1 **A**) holding the fan to the wall using a 5/64" Allen wrench. Trace the wires to the terminal block on the left bottom motor wall and remove with a #1 flat-blade screwdriver.



57. Reassemble fan in the reverse order with the air flow indicator on the fan pointing toward the rear of the unit. Refer to the electrical schematic for proper installation.

WASTE PUMP CONTROL VALVE

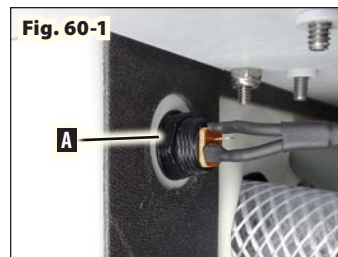
58. This pump control valve (PN 730609) (Fig. 58-1 **A**) is located on the inboard wall of the waste container shield (PN 462495). Remove the two tubes (PN 730312) going to the valve by pushing in on the white rings (Fig. 58-1 **B**) and pulling the tubes out of the valve. Remove the two retaining clamps (PN 510686) with an 11/32" wrench.



59. Replace control valve in the reverse order.

WASTE SENSOR CONNECTOR

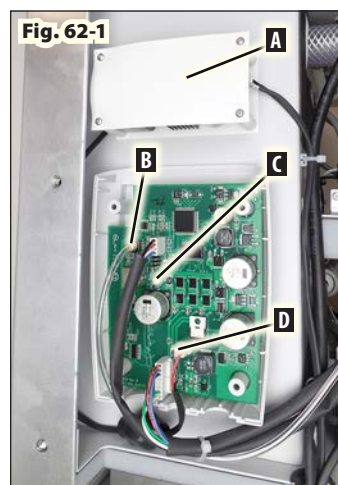
60. The waste sensor connector (PN 875139) is located on the inboard side of the waste shield, above the large vacuum tube. Follow the wires to the terminal block (PN 860241) under the upper shelf and remove wires with a #2 Phillips screwdriver. Remove the sensor nut (Fig. 60-1 **A**) on the inboard side of the connector with a 9/16" wrench and then pull the connector out through the outboard side of the waste shield, from the waste compartment.



61. Reassemble the waste sensor connector in the reverse order. Refer to electrical schematic for proper installation.

AEU-5000 POWER BOARD

62. The AEU-5000 power PCB board (PN 330565-C) is located on the left inboard side of the waste shield. Disconnect the cables going to the board. Remove the sleeve clamp (PN 461607) and tube (PN 730227) (Fig. 62-1 **B**) going to the board with a pair of needle-nose pliers. Remove the board mounting screw (Fig. 62-1 **C**) with a #2 Phillips screwdriver.



63. Reassemble power board in the reverse order, referring to electrical and plumbing schematics for proper installation. **IMPORTANT:** The AEU-5000 power PCB board is not a user-serviceable component and should be returned to Aseptico if repairs are necessary.

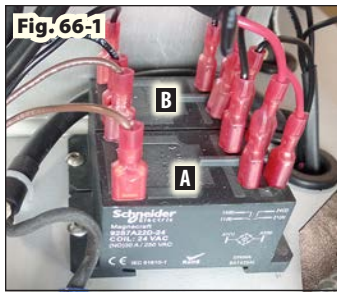
AEU-5000 POWER SUPPLY

64. The AEU-5000 power supply (PN 330570) (Fig. 62-1 **A**) is located directly above the AEU-5000 power board. Disconnect the three-pin connector (Fig. 62-1 **D**) with the red and black wire at the power board. Cut the cable ties along the length of the power input cable (PN 875148), then disconnect the wires from the terminal blocks using a #2 Phillips screwdriver. Remove the four screws (PN 510016) that attach the power supply to the waste shield using a 0.05" Allen wrench.

65. Reassemble in the reverse order, referring to the electrical schematic for proper installation.

VACUUM AND WASTE RELAYS

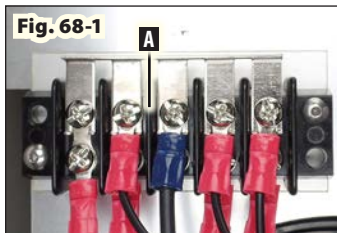
66. Located side-by-side on the middle shelf, the vacuum relay (PN 800116) (Fig. 66-1 **A**) is closest to the front of the cart, and the waste relay (PN 800116) (Fig. 66-1 **B**) is closest to the rear. Remove the female wire connectors to the relays. Remove one of the mounting screws (PN 510404) on each relay using a 3/32" Allen wrench and only loosen the other. Slide the relays from under the loose screws.



67. Reassemble the relays in the reverse order. Refer to the electrical schematic for proper installation.

110V TERMINAL BLOCK

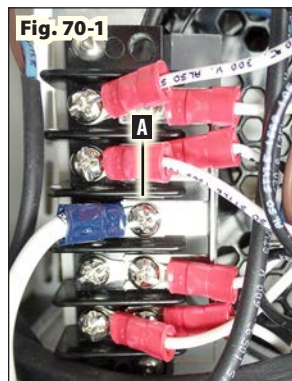
68. The 110V terminal block (PN 860241) (Fig. 68-1 **A**) is the five-position block with the black wires mounted horizontally on the left lower motor wall. Disconnect all wires and the 5-position jumper (PN 860245) with a #2 Phillips screwdriver. Remove the two mounting screws (PN 510720) with a 5/64" Allen wrench and remove block.



69. Reassemble the terminal block in the reverse order. Refer to the electrical schematic for proper installation.

NEUTRAL TERMINAL BLOCK

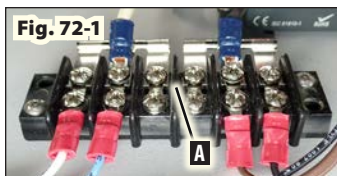
70. The neutral terminal block (PN 860241) (Fig. 70-1 **A**) is the five-position block with the white wires mounted vertically on the left lower motor wall. Disconnect all wires and the 5-position jumper (PN 860245) with a #2 Phillips screwdriver. Remove the two mounting screws (PN 510720) with a 5/64" Allen wrench and remove block.



71. Reassemble the terminal block in the reverse order. Refer to the electrical schematic for proper installation.

24V ISOLATION TERMINAL BLOCK

72. The 24V isolation terminal block (PN 860243) (Fig. 72-1 **A**) is the six-position block located at the center front of the middle shelf. Remove all wires and the two 3-position jumpers (PN 860253) with a #2 Phillips screwdriver. Remove the two mounting screws (PN 510720) with a 5/64" Allen wrench and remove block.



73. Reassemble the terminal block in the reverse order. Refer to the electrical schematic for proper installation.

AIR INPUT FILTERS

74. The two air input filters (PN 730494) (Fig. 74-1 **A**) are located behind the louvered rear filter panel (PN 462437) on the rear of the cart, near the base. To replace the air filters, remove the four screws (PN 510715) holding the louvered panel using a #2 Phillips screwdriver. Use a 11/16" open ended wrench to hold the fitting at the base of each air filter, then unscrew each air filter by hand.



75. Reassemble air input filters in the reverse order.

POWER INPUT CONNECTOR

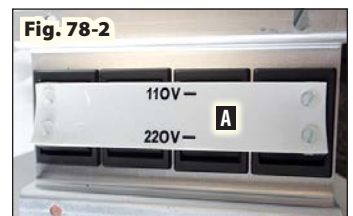
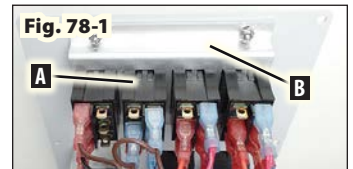
76. The power input connector (PN 840137) (Fig. 76-1 **A**) is located on the rear electric input plate (PN 462436), on the rear panel. Remove the six screws (PN 510160) holding the plate with a 5/64" Allen wrench. Pull the assembly plate away from the rear panel and remove the three female wire terminals that connect the black, white, and green/yellow wires to the inlet. Remove the two mounting screws (PN 510016) with a 1/16" Allen wrench, and then remove connector.



77. Reassemble the power input connector in the reverse order, referring to the electrical schematic for proper installation.

VOLTAGE SELECTOR SWITCHES

78. The voltage selector switches (PN 830136) (Fig. 78-1 **A**) are located on the rear electric input plate. Remove the six screws (PN 510160) holding the plate with a 5/64" Allen wrench. Pull the assembly plate away from the rear panel and remove all 18 female wire terminals at the switches. Remove the four nuts (PN 510620) holding the retaining bracket (PN 462438) (Fig. 78-1 **B**) with a 1/4" open-end wrench. Remove the voltage selector plate (PN 462480) (Fig. 78-2 **A**) by removing the four screws (PN 510620) in the corners using a #1 flat-blade screwdriver. Remove the switches from the bracket by depressing the retaining clips on the switches. Remove the clear plastic voltage selector shield (PN 462461) from the rear electric input plate.

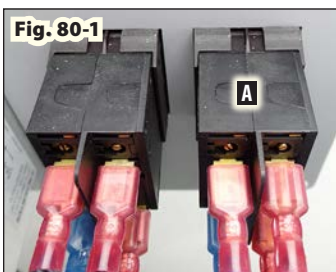


DISASSEMBLY (Continued)

79. Reassemble in the reverse order. Refer to the electrical schematic for proper installation.

CIRCUIT BREAKERS

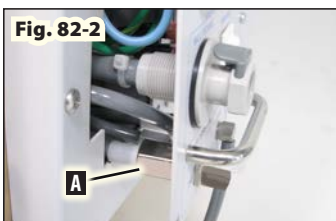
80. The circuit breakers (PN 830151) (Fig. 80-1 **A**) are located on the rear electric input plate. Remove the six screws (PN 510160) holding the plate with a 5/64" Allen wrench. Pull the assembly plate away from the rear panel assembly. Remove the four female wire terminals at each breaker. Depress the retaining clips on the inboard side of the circuit breaker and push the breaker out through the front of the plate.



81. Reassemble in the reverse order. Refer to the electrical schematic for proper installation.

AIR TANK DRAIN VALVE

82. The air tank drain valve (PN 730066) (Fig. 82-1 **B**) is the needle valve located on the bottom of the power outlet assembly plate, on the rear panel. Remove the eight screws (PN 510160) holding the power outlet assembly plate with a 5/64" Allen wrench. Pull the assembly plate away from the rear panel. Remove the sleeve clamps (PN 730095) and tubing (PN AA-95G) from their fittings. Use two 9/16" open-end wrenches to remove the needle valve from the assembly plate.



83. To reassemble the drain valve, remove the fittings from the old valve with a 1/4" open-end wrench and attach to the new valve. Take care not to over-tighten the plastic fittings. Remove the outboard nut from the drain valve and turn the other nut inward until it is close to the body of the valve. Insert the valve through the plate from the inboard side with the lock washer resting against the back side of the plate. Reattach the front nut onto the valve from the front side of the plate and run it up the threads until just slightly beyond the end of the valve. Use a thin 9/16" open-end wrench to turn the nut snugly against the back side of the plate while holding the valve body (Fig. 82-2 **A**) with a 9/16" wrench. Ensure that the drain valve is closed (clockwise).

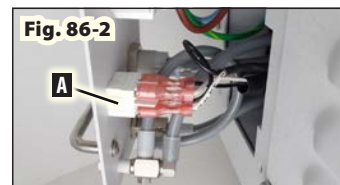
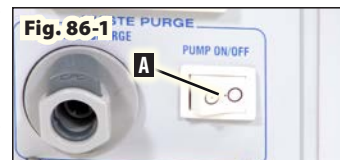
WASTE OUTLET QUICK DISCONNECT FITTING

84. The waste outlet quick disconnect (PN 730352) (Fig. 82-1 **A**) is located directly above the air tank release valve on the rear power outlet assembly plate. Remove the eight screws (PN 510160) holding the power outlet assembly plate with a 5/64" Allen wrench. Pull the assembly plate away from the rear panel. Remove the tube (PN 730312) from the rear of the fitting, then remove the quick-disconnect with a 13/16" wrench.

85. Reassemble the quick disconnect in the reverse order with the release button positioned on the top side. Ensure that the notch on the gasket and quick-disconnect are in alignment with the notch in the power outlet assembly plate.

WASTE PUMP POWER SWITCH

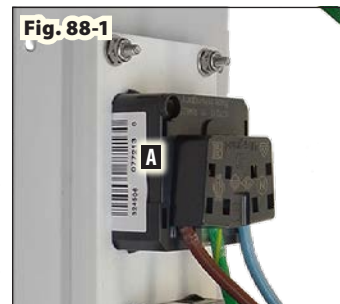
86. The waste pump power switch (PN 830108) (Fig. 86-1 **A**) is the rocker switch located next to the waste quick-disconnect fitting on the power outlet assembly plate. Remove the eight screws (PN 510160) holding the power outlet assembly plate with a 5/64" Allen wrench and pull the power outlet assembly plate away from the rear panel. Remove the four female wire terminals from the rear of the switch. Depress the retaining tabs (Fig. 86-2 **A**) on the inboard sides of the switch and push the switch out through the front of the plate. Place the new switch into the rectangular opening in the plate from the front side of the assembly plate. Ensure that the OFF side of the switch (marked with a dot outside the circle) is properly oriented with the "Pump On/Off" label on the plate.



87. Reassemble the pump power switch in the reverse order and refer to the electrical schematic for proper installation.

220 VOLT ACCESSORY OUTLETS

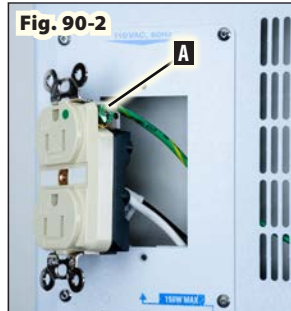
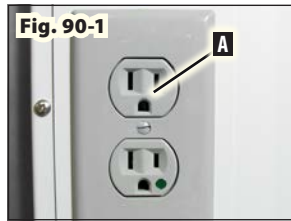
88. The 220 volt outlets (PN 840143) (Fig. 88-1 **A**) are the two European style outlets located in the center of the power outlet assembly plate. Remove the eight screws (PN 510160) holding the power outlet assembly plate with a 5/64" Allen wrench and pull the assembly away from the rear panel. Remove the four nuts (PN 510394) with a 1/4" wrench along with the washers (PN 510192). Remove the outlet holder (PN 462535) from the studs. Use a small standard screwdriver to remove the front cover of the socket by releasing the snap clips on the two sides where the slots are to access the screws for the wires. Remove the wiring (PN 875142 & 875147) with a #2 Phillips screwdriver. Remove the socket base from the holder by releasing the clips on the sides.



89. Reassemble the outlets in the reverse order, referring to the electrical schematic for the proper installation.

110V ACCESSORY OUTLET

90. The 110V accessory outlet and wire assembly (PN 840214) (Fig. 90-1 **A**) is located in the rear of the unit, on the power outlet assembly. Remove the front cover (PN 850097) to the outlet with a standard flat-head screw-driver. Remove the two screws (PN 510160) holding the outlet with a 5/64" Allen wrench. Remove the right side panel by removing the single screw (PN 510477) located on the bottom of the right-hand side panel with a 3/32" Allen wrench. Remove the water bottles (PN 730631-01) (Fig.24-1 **B**) and their caps (Fig.24-1 **C**) from the right-side panel. Remove the four bolts (PN 510693) (Fig.24-1 **A**) attaching the large blue handle (PN 330540) to the right side panel with a 3/16" Allen wrench. This also releases the right side panel from the cart. Remove blue handle. Remove right side panel. Remove the screws holding crimp terminals on the terminal strip on the bottom panel which are second from the left (white wire) and sixth from the left (black wire). The 875214 wire assembly with duplex outlet can now be moved far enough to remove the green wire from the ground screw (Fig. 90-2 **A**) with a #2 Phillips screwdriver.



91. Reassemble in the reverse order.

WASTE COMPARTMENT LATCH

92. The waste compartment latch (PN 510678) (Fig. 92-1 **A**) is mounted onto the waste compartment door, which is located on the upper rear of the unit. Open the door and remove the large nut (Fig. 92-2 **A**) on the rear of the latch with a 1-1/16" open-end wrench. Slip the large nut and lock-washer off the end of the latch, then from the front side, carefully remove the remaining latch mechanism through the hole in the door.



93. Reassemble the latch in the reverse order.

WASTE TUBE HANGER

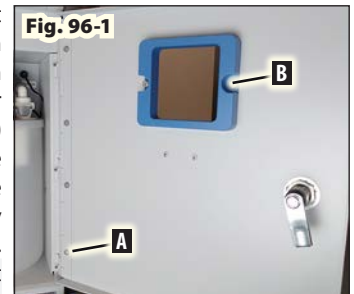
94. The waste tube hanger (PN 500326) (Fig. 94-1 **A**) is mounted onto the waste compartment door, which is located on the upper rear of the unit. Remove the two screws (PN 510160) with a 5/64" Allen wrench and remove hanger.



95. Reassemble the hanger in the reverse order.

WASTE COMPARTMENT DOOR

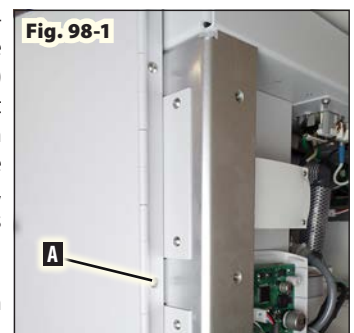
96. The waste compartment door (PN 461776) is located on the upper rear of the unit. Open the door and remove the four nuts (PN 510395) (Fig. 96-1 **A**) with a 5/16" wrench. Remove the door latch and waste tube hanger as described previously and place onto the new door. Remove the blue hospital insert (PN 462502) by removing the two nuts (PN 510411) (Fig. 96-1 **B**) using a 11/32" wrench and place onto the new door.



97. Reassemble the door in the reverse order.

WASTE COMPARTMENT DOOR HINGE

98. Open the waste compartment door and remove the three screws (PN 510404) (Fig. 98-1 **A**) from the right side of door with a 3/32" Allen wrench (Fig. 70). Remove hinge (PN 461791). If necessary, remove other door components as described previously.



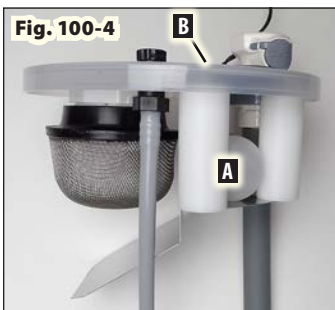
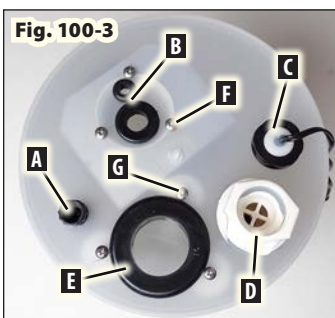
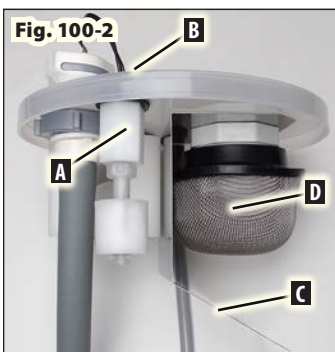
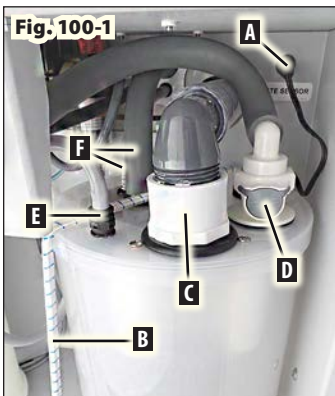
99. Reassemble the hinge in the reverse order.

DISASSEMBLY (Continued)

WASTE TANK SENSOR

100. Open the waste compartment door in the rear of the unit to access the waste tank. Disconnect the sensor (PN 330555) wire connector (Fig. 100-1 **A**) from the jack (PN 860080) located on the waste compartment wall. Disconnect the waste tank bungee cord (Fig. 100-1 **B**). Pull the large vacuum return fitting (PN 730728-01) (Fig. 100-1 **C**) out of the grommet on the waste tank lid, then pull the waste tank towards you to gain better access to disconnect all the connections on the lid. Disconnect the hospital vacuum tube from the quick-disconnect (PN 730486) (Fig. 100-1 **D**) by pressing on the large gray button. Disconnect the waste pump tubing (Fig. 100-1 **E**) from the small black quick-disconnect by rotating the tube connector counterclockwise and pulling it out. Disconnect the high and low vacuum tubes (Fig. 100-1 **F**) by pulling them out of their grommets. Remove the waste tank assembly from the unit. Remove the lid from the waste container (PN 330672). Use a 3/4" open-end wrench on the sensor spacer (Fig. 100-2 **A**) under the lid and a 27 mm wrench to remove the nut (PN 840115) (Fig. 100-3 **G**) on top of the lid. Carefully pull sensor assembly (PN 330555) through the hole in lid, from the underside.

101. Reassemble the sensor in the reverse order, ensuring that the gasket (PN 461011) is on the underside of the lid.



WASTE PUMP CONNECTOR

102. The waste pump connector (PN 730491) (Fig. 100-3 **A**) is the small black fitting in the top of the waste tank. Remove with a 1/2" box-end wrench.

103. Reassemble with some RTV on the threads and wipe clean.

HOSPITAL QUICK DISCONNECT

104. The hospital quick-disconnect (PN 730486) (Fig. 100-3 **D**) is the white fitting with the gray plastic locking ring. Remove the nut on the underside of the waste tank lid by hand. Pull the fitting out through the top of the lid. Remove the waste tube (PN AA-259) and gasket.

105. Reassemble the quick disconnect, gasket, and tube in the reverse order.

HIGH AND LOW VACUUM GROMMETS

106. The high and low vacuum grommets (PN 870340 & 870339) (Fig. 100-3 **B**) are next to each other directly over the solids trap.

107. Apply lubricant (490143) to the inside lips of the grommets to aid in the insertion back into the lid.

VACUUM RETURN GROMMET

108. The vacuum return grommet (PN 870337) (Fig. 100-3 **E**) is the large rubber grommet on the tank lid.

109. Apply lubricant (490143) to the inside lip of the vacuum return grommet to aid in the insertion of the vacuum return fitting.

AMALGAM SOLIDS TRAP AND WASTE SHIELD

110. The amalgam solids trap (PN 730745) (Fig. 100-2 **D**) and the waste shield (PN 462509) (Fig. 100-2 **E**) are both attached to the waste lid together. Remove the three screws (PN 510605) (Fig. 100-3 **F**) using a #2 Phillips screwdriver, then remove the amalgam solids trap and waste shield.

111. Reassemble in the reverse order, ensuring that the waste shield is positioned towards the center of the waste tank.

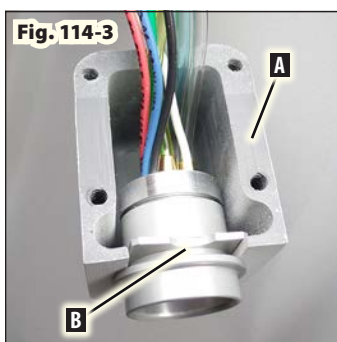
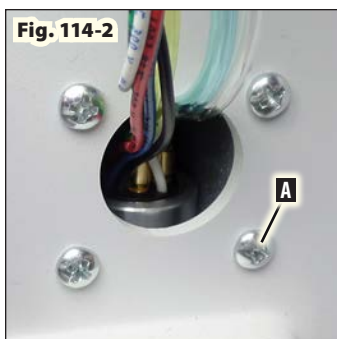
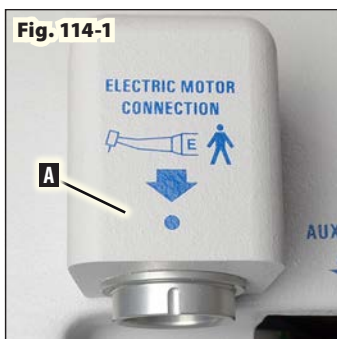
VACUUM RETURN FLOAT

112. The vacuum return float assembly (Fig. 100-4 **A**) sits below the large vacuum return grommet on the waste tank lid. Remove the three screws (PN 510604) (Fig. 100-4 **B**) around the large grommet from the top of the lid. Remove the float assembly.

113. Reassemble the float in the reverse order, ensuring that the ball (PN 730749) moves freely between the three posts (PN 462519).

AEU-5000 ELECTRIC MOTOR RECEPTACLE

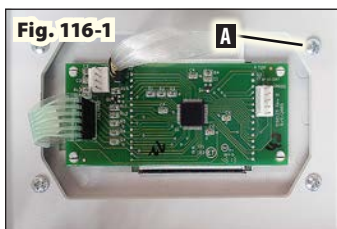
114. The electric motor receptacle (PN 330557) (Fig. 114-1 **A**) is on the upper left side of the front panel, beneath the small protruding housing (PN 461886). Remove the cart's left, right and front panels as previously described. Follow the wiring from the motor receptacle to the 8-pin connector on the electric motor power board and remove the 8-pin connector. Cut the cable ties holding the receptacle wire bundle to the other wires. Remove the four screws (PN 510650) (Fig. 114-2 **A**) holding the receptacle housing to the front panel with a #2 Phillips screwdriver. Pull the housing (Fig. 114-3 **A**) from the front panel and slide out the motor receptacle from the rear of the housing. Remove the sleeve clamps and tubing going to the receptacle. Pull the wire harness and connector through the hole in the front panel.



115. Reassemble the motor receptacle in the reverse order, ensuring that the dimple marker (Fig. 114-3 **B**) on the receptacle is positioned toward the front of the housing. Reattach the 8-pin connector to the electric motor power board and bundle the receptacle wiring with the other wires using a cable tie. Ensure that the electric motor interface cable is attached to the electric motor display board before attaching the front panel.

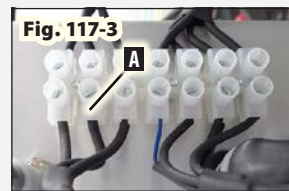
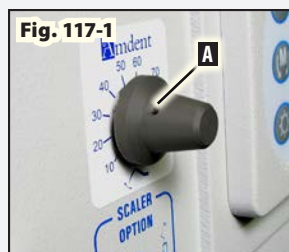
AEU-5000 ELECTRIC MOTOR DISPLAY PANEL

116. Remove both side panels, then the front panel from the unit as previously described. Remove the four screws (PN 510650) (Fig. 116-1 **A**) from the inboard side of the electric motor display panel with a #2 Phillips screwdriver and remove panel subassembly. **IMPORTANT:** The electric motor display subassembly is not a user-serviceable component and should be returned to Aseptico if repairs are necessary.



SCALER ADJUSTMENT POTENTIOMETER

117. The scaler potentiometer (part of PN 730691) (Fig. 117-2 **A**) is located on the front panel, between the electric motor receptacle and the electric motor control panel. Loosen the small setscrew (Fig. 117-1 **A**) on the side of the potentiometer knob with a 1/32" Allen wrench and remove knob. Remove the front panel as previously described. Remove the three wires going from the potentiometer to the white 7-position connector (PN 860283) located on top of the bulkhead (Fig. 117-3 **A**). Remove the nut on the outboard side of the front panel with a 1/2" socket. From the inboard side, remove potentiometer through the hole in the panel.

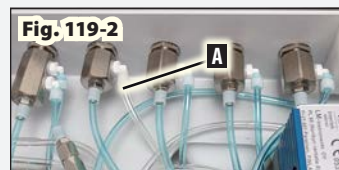
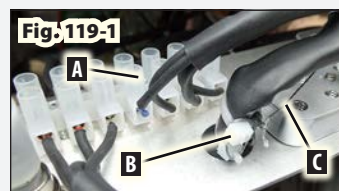


118. Reassemble the scaler potentiometer in the reverse order with the lock washer positioned against the inboard side of the front panel and the alignment pin on the potentiometer keyed into the hole in the cover.

Space the potentiometer 1/16" from the nut. At the white connector on the bulkhead, color-match the three potentiometer wires to the brown, red, and orange wires in the connector. Ensure that the electric motor interface cable is attached to the electric motor display board before attaching the front panel.

SCALER WAND

119. The scaler wand (part of PN 730695) is attached through the bulkhead, behind the front panel. Remove both side panels, then the front panel as previously described and pull cover forward to access the top of the bulkhead. Remove the four wires from the white 7-position connector (PN 860283) (Fig. 119-1 **A**) located on top of the bulkhead. Cut the cable ties (Fig. 119-1 **B**) around the scaler cord, located just above the grommet and remove the scaler tube anchor line (Fig. 119-1 **C**). On the upper shelf, disconnect the clear tube going from the scaler wand tube to the scaler coolant valve, at the valve (Fig. 119-2 **A**) (the fourth valve from the right when viewed from the inboard side). From the bottom of the bulkhead, remove the scaler wand cord down through the grommet. Remove scaler wand.

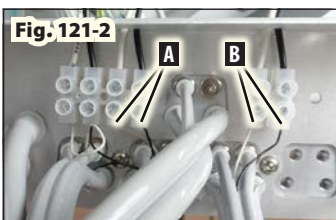
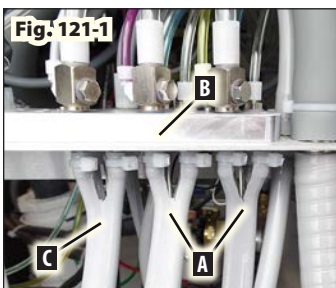


120. Reassemble the scaler wand in the reverse order, adjusting the length of the wand cord to hang suspended off the floor and then trimming the excess cord sleeve clamp and/or water line. Wrap the cable tie around the scaler cord, just above the bulkhead grommet. Before tightening the cable ties, wrap the anchor line through the cable ties and tie in a knot. Cinch the cable ties but ensure that they are not over-tightened and do not restrict the flow of water. Check to ensure that scaler water flow is appropriate before reattaching the front panel.

DISASSEMBLY (Continued)

PNEUMATIC HANDPIECE FIBER-OPTIC TUBING

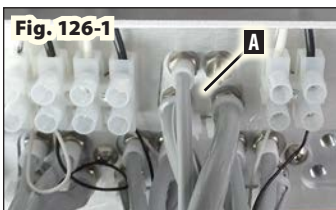
121. The two sets of gray tubing (PN AA-19A-04T6) (Fig. 121-1 **A**) carrying the fiber-optic wires for the two pneumatic handpiece adapters are located on the bulkhead, behind the front panel. When viewed from the front of the unit, the two tubing sets are positioned under the right-hand side of the pedal/handpiece manifold (Fig. 121-1 **B**). Cut the four cable ties holding the front tubing splices to their fittings and disconnect splices. Remove the four sleeve clamps (PN 730015) from the other four tubing splices and disconnect the splices from their fittings. At the 4-position white connector (PN 860250) located on the bottom side of the manifold, remove the black and white fiber-optic wires (Fig. 121-2 **A**) from the connector.



122. To reassemble the pneumatic handpiece tubing, place the two handpiece adapters in their holders on the left-hand arm assembly and trim the supply hoses to their proper length so they are suspended off the floor. Splice the ends of the two tubes as before and attach the spliced ends to their appropriate fittings on the pedal/handpiece manifold with cable ties and/or sleeve clamps. Strip and tin the ends of the black and white fiber-optic wires before reattaching them to the white connector on the bottom side of the bulkhead. Refer to electrical schematic for proper installation.

FOOT PEDAL AND TUBING

123. The foot pedal tubing (PN AA-43W) (Fig. 126-1 **A**) is attached to the rear center of the bulkhead behind the front panel. When viewed from the front of the unit, the tubing connects under-neath the pedal/handpiece manifold, behind the handpiece tubing. Remove the two sleeve clamps (PN 730095) from the large tubes and the sleeve clamp (PN 730015) from the small tube and disconnect the foot-pedal tubing from the fittings on the pedal/handpiece manifold. Remove foot pedal.



124. Reassemble foot pedal and tubing in the reverse order.

SYRINGE AND SYRINGE TUBING

125. To replace the syringe (PN TA-90D), remove it from its holder and unscrew the bottom handle (Fig. 128-1 **A**) from the head assembly to access the tubing connections. Remove the two sleeve clamps (PN 730015) (Fig. 128-1 **B**) and disconnect the tube (PN AA-85G) from the head. The other end of the tube (Fig. 128-2 **A**) is attached to the syringe block (Fig. 128-2 **B**) under the right side of the bulkhead. Remove the two sleeve clamps (PN 730015) from the tube splices and remove syringe.

Fig. 128-1

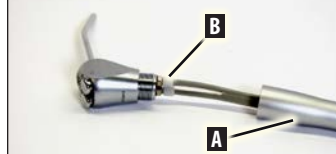
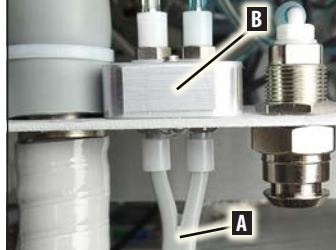


Fig. 128-2



126. To reassemble, cut approximately 66" of the syringe tubing and attach to the syringe with sleeve clamps. Place the syringe in its holder on the right-hand arm assembly and adjust the length of the tubing so that it suspends off the floor. Splice the end of the tube as before and attach to the syringe block with two sleeve clamps. Verify that air comes out the syringe when the air button is depressed and that water sprays out when the water button is depressed.

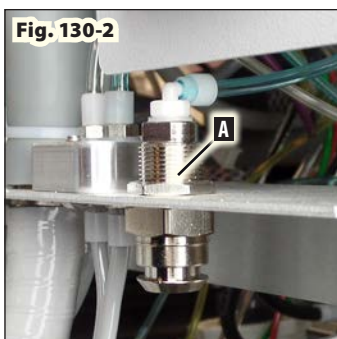
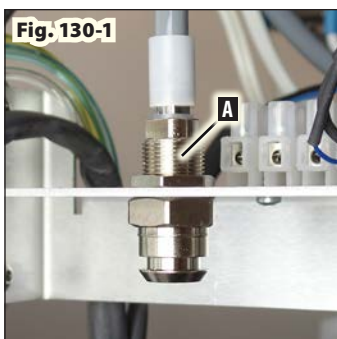
CURING LIGHT CONNECTION

127. The curing light connection is located behind the front cover of the unit. When viewed from the front of the unit, it is between the auxiliary air connection and the bulkhead connectors. The curing light connection can be removed by opening the top lid and loosening the grommet holding the connection in place on the interior wall of the front cover. Carefully pull the cord out of the assembly. Unplug the other end of the cord from the interior outlet.

128. Reassemble in reverse order.

AUXILIARY WATER & AIR QUICK DISCONNECTS

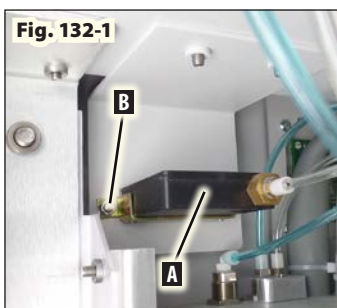
129. The air quick disconnect (PN 730033) (Fig. 130-1 **A**) and water quick disconnect (PN 730033) (Fig. 130-2 **A**) are located behind the front cover, on the far left and right ends, respectively, of the bulkhead. Remove both side panels, then front panel and pull toward the front to access the retaining nuts to the quick disconnect fittings. Disconnect the tube (PN AA-94B) to the water fitting (PN 730011) and the tube (PN AA-95G) to the air fitting (PN 730073). Remove the quick disconnects with two 9/16" wrenches.



130. Reassemble the quick disconnects in the reverse order. When reinstalling the front panel, ensure that the electrical connection to the display board and scaler potentiometer are still intact.

HANDPIECE PRESSURE GAUGE

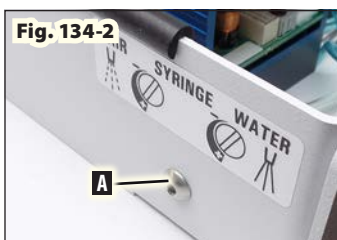
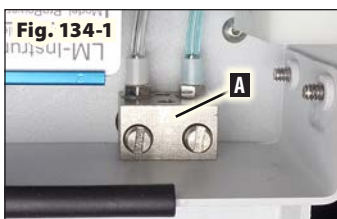
131. The handpiece pressure gauge (PN 730132) (Fig. 132-1 **A**) is located behind the front panel on the right side, above the air tank. Remove both side panels, then front panel. Remove the sleeve (PN 730015), tube (PN AA-94C), fitting (PN 730062), and washer (PN 510420) going to the back of the gauge. Remove the lock-nuts (PN 510394) holding the gauge to the bracket (PN 461741) (Fig. 132-1 **B**) with a 1/4" open-end wrench.



132. Reassemble handpiece pressure gauge in the reverse order.

SYRINGE FLOW ADJUSTMENT BLOCK

133. The syringe flow adjustment block (PN 730022) (Fig. 134-1 **A**) is located on the upper shelf, on the right side, behind the divider wall. Move the instrument arms to the left side of the unit. Remove the sleeve clamps (PN 730015) holding the blue (PN AA-94B) and clear (PN AA-94C) tubes to the fittings, then remove the tubes. Remove the flow adjustment block mounting screw (PN 510404) (Fig. 134-2 **A**) on the

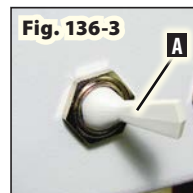
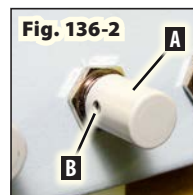
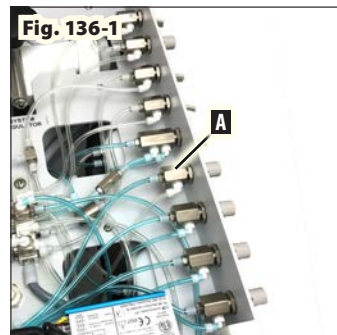


outboard side of the divider wall with a 3/32" Allen wrench. Pull the adjustment block up and remove the two blue and clear tubes to the block. Replace label (PN 420748-07) if necessary.

134. Reassemble the syringe flow adjustment block in the reverse order.

SYSTEM CONTROL VALVES

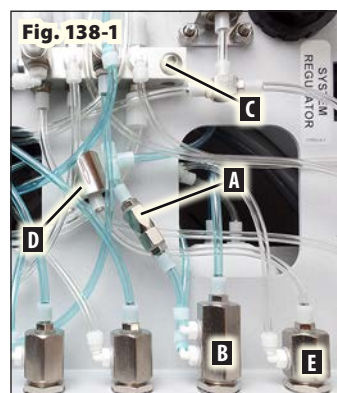
135. The system control valves (Fig. 136-1 **A**) are on the upper shelf, on the right side of the unit. They consist of two types of valves: needle-type adjustment valves (Fig. 136-2 **A**) and toggle-type on/off valves (Fig. 136-3 **A**). Remove the tubing to all valves being replaced. Remove all elbow fittings (PN 730011), straight fittings (PN 730062), and nylon gaskets (PN 730074) from valve bodies if necessary. To replace a needle valve, first loosen the setscrew (Fig. 136-2 **B**) on the adjustment knob (PN 850012) with a 1/16" Allen wrench, then remove knob. For all valves and toggles, use a 9/16" open-end wrench to remove outboard nut from the chassis wall. Pull needle and toggle valve bodies through the holes in the chassis wall, from the inboard side.



136. To reassemble a needle or toggle valve, first remove the mounting nut from the outboard end of the valve and turn the inboard nut toward the body of the valve slightly. Then, place the valve through the chassis hole from the inboard side with the lock washer placed against the inboard side of the chassis wall. Install the mounting nut onto the outboard end of the valve and run the nut up just a couple threads from the outboard end. Tighten the valve in place by holding the body and tightening the inboard nut against the chassis wall with a thin 9/16" open-end wrench. On toggle valves, ensure that the toggle is in its proper orientation with the nomenclature on the side panel. On needle valves, adjust the needle to fully closed and attach the knob with the setscrew, allowing some clearance between the knob and body. Ensure that the knob does not bottom out against the valve.

CHECK VALVE

137. The check valve (PN 730012) (Fig. 138-1 **A**) is located on the upper shelf, in line between the bottle-select toggle (Fig. 138-1 **B**) and the 4-port manifold (Fig. 138-1 **C**). Remove the sleeve clamps (PN 730015) and tubes (PN AA-94B) and remove the valve.



138. Reinstall check valve in the reverse order. Ensure that the flow direction is toward the manifold.

DISASSEMBLY (Continued)

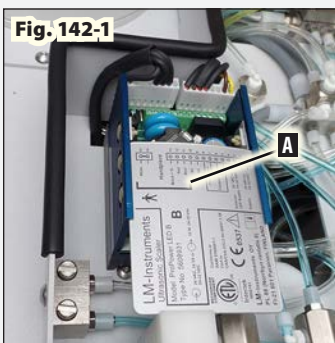
35 PSI (2.41 BAR) FIXED REGULATOR

139. This regulator (PN 730521) (Fig. 138-1 **D**) is located on the upper shelf, in line between the manifold and bottle-pressure on/off toggle (Fig. 138-1 **E**). Remove the sleeve clamps (PN 730015) and tubing (PN AA-94C).

140. Replace regulator, ensuring that the air direction arrow is pointing towards the toggle valve.

SCALER CONTROL MODULE

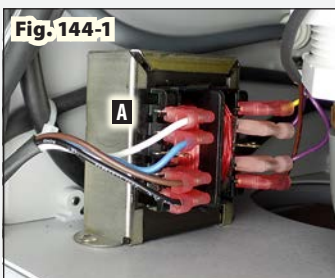
141. The scaler control module (PN 730691) (Fig. 142-1 **A**) is located on the right side of the upper shelf, behind the divider wall. Slide back the top cover on the module to remove the electrical connectors to the module. Remove the two screws (PN 510530) from under the chassis with a #1 Phillips screwdriver. Lift the module and



142. Reassemble the control module in the reverse order.

SCALER TRANSFORMER

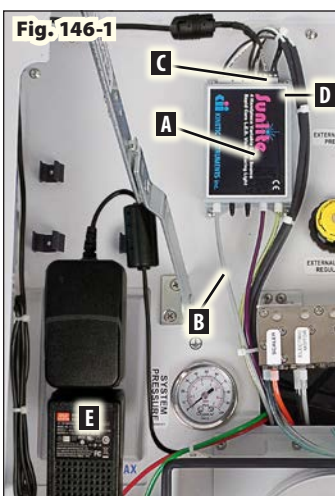
143. The scaler transformer (PN 800130) (Fig. 144-1 **A**) is located on the left side of the middle shelf. Remove the eight female wire terminals from the transformer. Remove the two screws (PN 510160) with a 5/64" Allen wrench.



144. Reassemble in the reverse order, referring to the electrical schematic for proper installation.

FIBER OPTICS MODULE

145. The fiber optics module (PN 730762) (Fig. 146-1 **A**) is located on the rear left side of the upper shelf. Disconnect the sleeve clamps (PN 730015) and the gray (PN AA-94LG), purple (PN AA-94P), and yellow (PN AA-94TY) tubes (Fig. 146-1 **B**) to the module. Disconnect the six wires (Fig. 146-1 **C**) with a standard jeweler's screwdriver. Remove the four mounting screws (PN 510160) with a 5/64" Allen wrench. Remove module. NOTE: To adjust the brightness of each fiber optic device, turn the screws in the 4 holes (Fig. 146-1 **D**) on top of the fiber optics module to the voltage specified by device manufacturer.

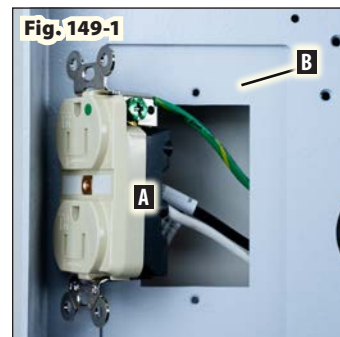


146. The fiber optic transformer (part of module, PN 840144) (Fig. 146-1 **E**) is located on the left side of the upper shelf, behind the divider wall. Remove the transformer from the receptacle. Remove the two wires going to the optics module with a jeweler's screwdriver.

147. Reassemble fiber optics module and transformer in the reverse order, referring to the plumbing and electrical schematics for proper installation.

FIBER OPTIC TRANSFORMER RECEPTACLE

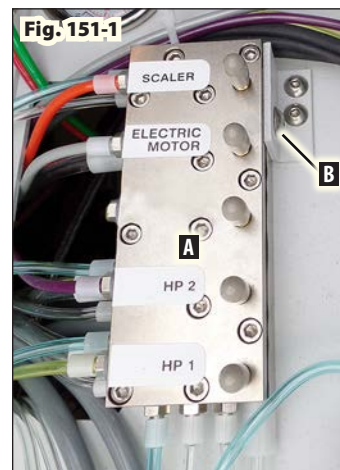
148. The fiber optic transformer receptacle wire assembly (PN 875213) (Fig. 149-1 **A**) is located on the left side of the upper shelf, behind the divider wall. Remove the fiber-optics transformer from the socket. Remove the receptacle cover screw and plate (PN 850097) with a standard screwdriver. Remove the receptacle mounting screws (PN 510160) with a 5/64" Allen wrench. Remove the right side panel (See "110V ACCESSORY OUTLET"). Remove crimp terminal on terminal strip on bottom panel which is third from the left (white wire) and which is fifth from the left (black wire). Remove the green/yellow ground wire from the outlet with a #2 Phillips screwdriver. From the top side, pull the wire assembly through the hole. Remove mounting plate (PN 461771-01) and four nuts (PN 510395) (Fig. 149-1 **B**) if necessary.



149. Reassemble the receptacle wire assembly in the reverse order, referring to the electrical schematic for proper installation.

QUIN HANDPIECE BLOCK

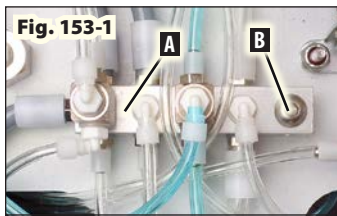
150. The quin block (PN 730621) (Fig. 151-1 **A**) is located directly behind the instrument arms on the upper shelf. Remove the screw (PN 510256) (Fig. 151-1 **B**) from the bracket (PN 461865) to the block with a 1/8" Allen wrench. Remove all the sleeve clamps (PNs 730015 & 730095) and tubes from the block. Remove bracket and mounting screws (PN 510404) with a 3/32" Allen wrench if necessary.



151. Reassemble the quin handpiece block in the reverse order, referring to the plumbing schematic for proper installation. Adjust the handpieces to their proper pressures.

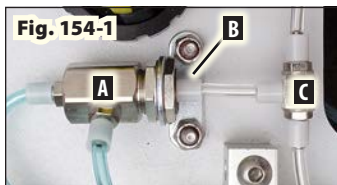
MANIFOLD 4-PORT ASSEMBLY

152. The manifold 4-port assembly (Fig. 153-1 **A**) is located on the upper shelf, near the right side of the quin block. Remove all sleeve clamps and tubes from the assembly block. Remove mounting screw (PN 510423) (Fig. 153-1 **B**). Replace assembly if necessary.



AIR PILOT VALVE

153. The air pilot valve (PN 730019) (Fig. 154-1 **A**) is located on the upper shelf, near the right rear corner of the quin block. Disconnect the sleeve clamps (PN 730015), the blue tubes (PN AA-94B) and the clear tube (PN AA-94C) going to the valve. Use two 9/16" wrenches to remove the mounting nut from the valve then remove the valve from the bracket (PN 730245) (Fig. 154-1 **B**). Remove the three fittings (PN 730062) and nylon gaskets (PN 730074) from the valve.



154. Reassemble the pilot valve in the reverse order, attaching the fittings to the new valve. Refer to plumbing schematic for the proper installation.

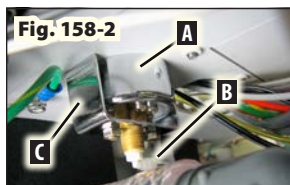
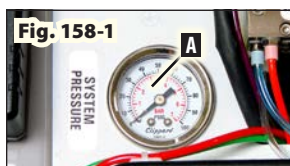
SHUTTLE VALVE

155. The shuttle tee valve (PN 730016) (Fig. 154-1 **C**) is located on the upper shelf, attached to the clear line from the air pilot and the flush toggle valve. Remove the sleeve clamps (PN 730015) and tubes (PN AA-94C) at the valve.

156. Reassemble the shuttle valve in the reverse order, referring to the plumbing schematic for the proper installation.

SYSTEM PRESSURE GAUGE

157. The system pressure gauge (PN 730101) (Fig. 158-1 **A**) & (Fig. 158-2 **A**) is located on the top shelf, to the left of the quin block. From the underside of the shelf, remove the sleeve clamp (PN 730015) and tube (PN AA-94C) (Fig. 158-2 **B**) going to the gauge. Remove the nuts and bracket (part of 730101) (Fig. 158-2 **C**) with a 5/32" wrench. Remove the gauge from the top side.



158. Reassemble the pressure gauge in the reverse order.

EXTERNAL PRESSURE GAUGE

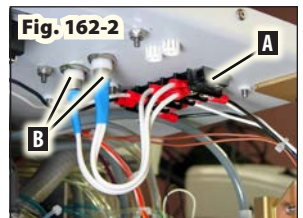
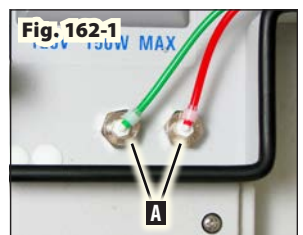
159. The external pressure gauge (PN 730088) (Fig. 160-1 **A**) & (Fig. 160-2 **A**) is located on the top shelf, next to the amalgam manifold. Open the waste compartment door and remove the amalgam separator (or bypass filter). Remove the hose (PN AA-95G) (Fig. 160-2 **B**) using a 7/16" wrench. Remove the nuts and bracket (part of 730088) (Fig. 160-2 **C**) with a 5/32" wrench. Remove the gauge from the top side. Remove the fitting (PN 730195) from the gauge using a 9/16" wrench and install on the new gauge.



160. Reassemble the pressure gauge in the reverse order.

VACUUM SWITCHES

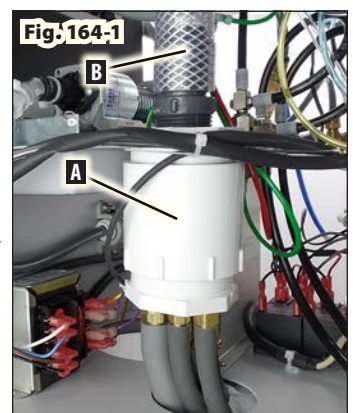
161. The two vacuum switches (PN 830137) (Fig. 162-1 **A**) (Fig. 162-2 **B**) are located on the left side of the top shelf, directly behind the divider wall. Remove side panel. On the underside of the top shelf, use a #2 Phillips screw-driver to remove the two white switch wires at the terminal block (Fig. 162-2 **A**), which is mounted under the front left side. On the top of the shelf, remove the sleeve clamp (PN 730096) and the green (PN AA-94G) or red (PN AA-94R) tubing to the switch being replaced. Then, remove the switch with two 9/16" wrenches. Remove the fitting (PN 730011) and replace onto the new switch.



162. Reassemble the vacuum switches in the reverse order, referring to the electrical schematic for proper installation.

VACUUM SPLITTER

163. The vacuum splitter is located in the center of the cart above the middle shelf and consists of four connected PVC fittings (PN 730737-01, 730738, 730739, 730740) (Fig. 164-1 **A**). Remove the large vacuum return tube (PN 730608) (Fig. 164-1 **B**) from the top of the vacuum splitter. Remove the four hoses (PN AA-259, 730373) from the bottom of the vacuum splitter. Remove the five barbed fittings (PN 730652, 730366-08) from the vacuum splitter using 7/16" & 11/16" wrenches.



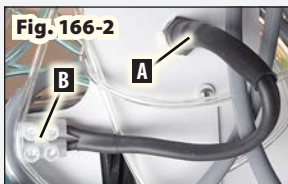
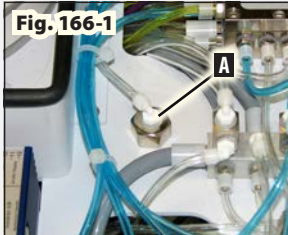
164. Reassemble the vacuum splitter in the reverse order, referring to the plumbing schematic for proper installation. NOTE: If either

DISASSEMBLY (Continued)

730738 or 730739 need to be replaced, they need to be replaced together since they are welded together using PVC cement. If 730737-01 needs to be replaced, holes need to be tapped to accommodate the five threaded fittings. For all threaded connections, use Teflon tape during installation.

SCALER SWITCH

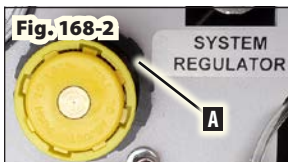
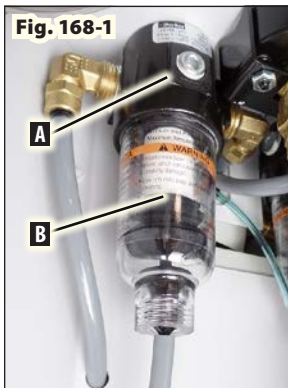
165. The scaler switch (PN 730031) (Fig. 166-1 **A**) & (Fig. 166-2 **A**) is located on the right side of the upper shelf, between the quin block and the scaler module. On the underside of the top shelf, disconnect the two white wires at the white 2-position connector (PN 860244) (Fig. 166-2 **A**) coming from the switch. On the top side of the upper shelf, remove the sleeve clamp (PN 730015) and tube (PN AA-94C) to the switch. Remove the switch with two 9/16" wrenches. Remove wiring connector and mounting screw (PN 510723) on underside of shelf, if necessary.



166. Reassemble the scaler switch in the reverse order.

SYSTEM FILTER/REGULATOR

167. The system filter/regulator (PN 730598) (Fig. 168-1 **A**) is located behind the amalgam separator (PN 730595-01), or amalgam bypass filter (PN 730615), in the waste compartment. Open the waste compartment door and remove the amalgam separator (or bypass filter). Remove the drain tube (PN AA-95G) from the bottom of the filter/regulator. Remove the other two tubes going to the regulator with a 7/16" open-end wrench. Remove the filter/regulator by removing the retaining nut (Fig. 168-2 **A**) on the top side of the upper shelf and then pulling the filter/regulator down through the waste compartment. If necessary, remove pipe elbows (PN 730329) from filter/regulator.



168. Reassemble the filter/regulator in the reverse order. Readjust the system pressure to 80 psi (5.5 bar) on the system gauge.

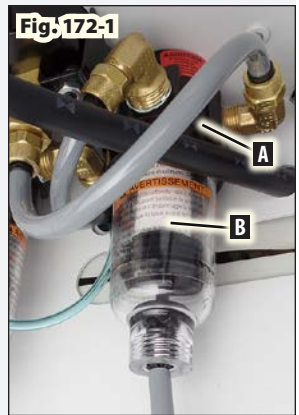
FILTER/REGULATOR FILTER

169. Open the waste compartment door and remove the amalgam separator (PN 730595-01) or bypass filter (PN 730615). Remove the drain tube (PN AA-95G) from the bottom of the filter/regulator bowl (Fig. 168-1 **B**). Unscrew the bowl and remove. Unscrew the filter (part of filter/regulator) and remove and replace if clogged.

170. Reassemble the filter in the reverse order.

EXTERNAL SYSTEM FILTER/REGULATOR

171. The external filter/regulator (PN 730598) (Fig. 172-1 **A**) is located behind the amalgam separator (PN 730595-01), or amalgam bypass filter (PN 730615), in the waste compartment. Open the waste compartment door and remove the amalgam separator (or bypass filter) and the waste tank. Remove the drain tube (PN AA-95G) from the bottom of the filter/regulator. Remove the other two tubes going to the regulator with a 7/16" open-end wrench. From the other side of the waste shield in the main compartment of the cart there are two more tubes that must be removed from the fittings attached to the filter/regulator using 7/16" and 9/16" wrenches. Remove the filter/regulator by removing the retaining nut (Fig. 172-2 **A**) on the top side of the upper shelf and then pulling the filter/regulator out through the waste compartment. If necessary, remove fittings (PN 730329, 730120 & 730233) from filter/regulator.



172. Reassemble the filter/regulator in the reverse order. Readjust the external system pressure to 100 psi (6.9 bar) on the external system gauge.

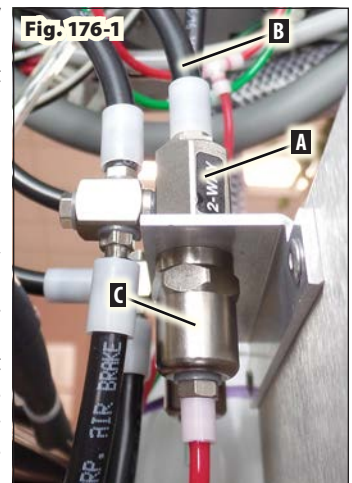
EXTERNAL SYSTEM FILTER/REGULATOR FILTER

173. Open the waste compartment door and remove the amalgam separator (PN 730595-01) or bypass filter (PN 730615). Remove the drain tube (PN AA-95G) from the bottom of the filter/regulator bowl (Fig. 172-1 **B**). Unscrew the bowl and remove. Unscrew the filter (part of filter/regulator) and remove and replace if clogged.

174. Reassemble the filter in the reverse order.

LV AND HV AIR PILOT VALVES

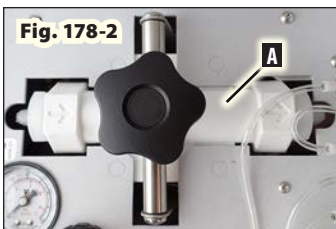
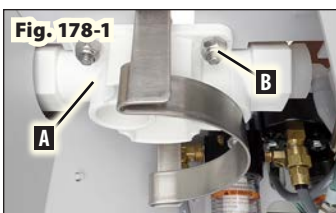
175. The optional LV and HV air pilot valves (PN 730264) (Fig. 176-1 **A**) are located next to each other on the front wall of the waste pump bracket (PN 462504). Slide the nine sleeve clamps (PN 730095, 730015) back from the fittings and remove all tubing (PN 730130, AA-94R, AA-94G) (Fig. 176-1 **B**) from the pilot valve fittings. Remove the cap (PN 730264) (Fig. 176-1 **C**) from each pilot valve to remove the pilot valves from the bracket. Remove fittings attached to pilot valves and install on new pilot valves.



176. Reassemble the pilot valves in the reverse order, referring to the plumbing schematic for proper orientation.

AMALGAM MANIFOLD

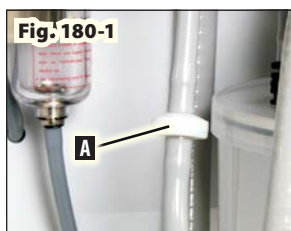
177. Open the waste compartment door. Remove the amalgam separator (PN 730595-01) or bypass filter (PN 730615). Remove the two tubes (PN AA-86G) going to the amalgam manifold (PN 730596-01) (Fig. 178-1 **A**): one from the waste container and the other to the waste pump. Remove the four nuts (PN 510296) (Fig. 178-1 **B**) on the underside of the top shelf with a 7/16" socket. To remove the manifold (Fig. 178-2 **A**) from the upper shelf, tilt the manifold slightly and pull it down through the waste compartment. If necessary, remove fittings (PN 730613) on ends of manifold.



178. Reassemble the amalgam manifold in the reverse order.

WASTE LINE CHECK VALVE

179. The waste line check valve (PN 730634) (Fig. 180-1 **A**) is located in the waste compartment, in line between the waste container and the amalgam separator. Disconnect the two tubes (PN AA-86G) to the check valve.



180. Reassemble the check valve in the reverse order, referring to the plumbing schematic for proper orientation.

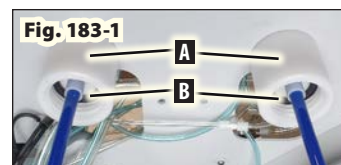
WATER FILTERS

181. The water filters (PN 730326) (Fig. 182-1 **A**) are located at the ends of the blue tubes (PN AA-95B) in the two water bottles (PN 730631-01). Depressurize the water bottles and remove them and the water bottle caps. Loosen the four sleeve clamps (PN 730095) from tops and bottoms of the blue tubes (PN AA-95B). Unscrew the filters and gaskets (PN 730074) from the fittings (PN 730073) on the ends of the tubes. Use compressed air from the top end of the filter to unplug the screen, or replace the filters with new ones.



WATER BOTTLE CAP COUPLING GASKETS

182. The water bottle cap coupling gaskets (PN 730473) (Fig. 183-1 **B**) are located inside the rims of the two white cap couplings (PN 730472-01) (Fig. 183-1 **A**). Depressurize the water bottles using the bottle pressure release toggle switch. Unscrew the water bottles, complete with their caps, from the cap couplings on the unit. Slip the water bottles off their water tubes and set aside. Reach up into the cap couplings and pull the black gasket from each cap coupling.



183. Reassemble in the reverse order with new gaskets.

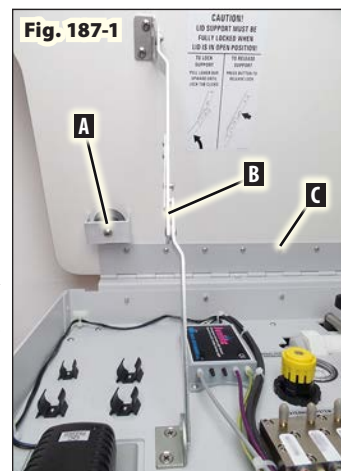
WATER BOTTLE CAP COUPLINGS

184. The water bottle cap couplings (PN 730472-01) (Fig. 183-1 **A**) are attached to top panel by four screws (PN 510312). Remove the two sleeve clamps (PN 730095) from the top of the two blue tubes (PN AA-95B), then remove the tubes. Remove the fittings (PN 730062), gaskets (PN 730074), and tubes (PN AA-95B) and replace onto the new cap couplings.

185. Reassemble the cap couplings with new gaskets in the reverse order. Refer to the plumbing schematic for the proper installation.

TOP LID LOCKING HINGE

186. The locking support (PN 510687) (Fig. 187-1 **B**) is located on the upper shelf and connects to the underside of the top lid (PN 461718). Open the top lid. Remove the two screws (PN 510545) on the upper lid angle bracket with a 3/32" Allen wrench. Gently lower the lid backwards, against the back side of the unit. Remove the screws (PN 510533) on the upper shelf and remove the hinge assembly.



187. Reassemble the hinge in the reverse order, ensuring that the washer (PN 510019) is positioned between the bracket (PN 461875) on the lid and the hinge. Reattach a new label (PN 420556-10) onto the new hinge.

TOP LID

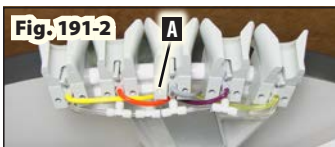
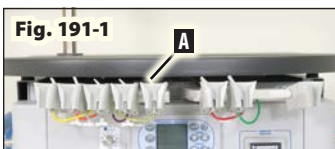
188. Open the top lid (PN 461718) and remove the locking support as previously described. Pivot the lid to a vertical position and support it while removing the seven mounting screws (PN 510506) (Fig. 187-1 **C**) with a 3/32" Allen wrench.

189. Remove the accessory tray components (Fig. 187-1 **A**) and reinstall them onto the new lid. Reassemble the new lid in the reverse order. Attach a new label (PN 420715-02) to the underside.

DISASSEMBLY (Continued)

INSTRUMENT HOLDERS

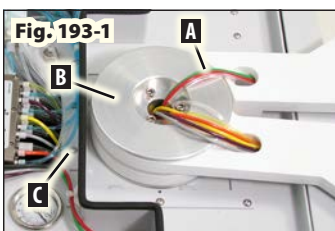
190. Seven instrument holders (PN AA-59G) with on/off toggle controls (Fig. 191-1 **A**) are located at the ends of the two rotating arms. An eighth holder (PN AA-68G), without an on/off toggle, is located on the right-hand end of the right arm. Disconnect the tubing going to the specific holder that needs to be replaced. Back out the setscrews (Fig. 191-2 **A**) on the bottom of the holders with a 3/32" Allen wrench. Remove the holders from the arms.



191. Reassemble the holders in the reverse order. Refer to plumbing schematic for proper installation.

ARM ASSEMBLY

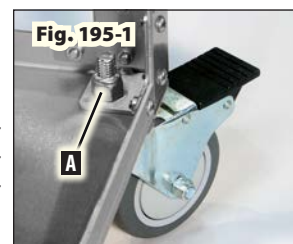
192. The arm assembly is located on the upper shelf. Disconnect the tubing (Fig. 193-1 **A**) from the arm assembly to the quin block, manifold, and vacuum switches by following the plumbing schematic. Remove the two fasteners (PN 510404) (Fig. 193-1 **C**) near the center of the divider wall (PN 461735) that connect the wall to the arm assembly mounting plate (PN 461736) with a 3/32" Allen wrench. Remove the four fasteners (PN 510160) (Fig. 193-2 **A**) holding the sides of the divider wall with a 5/64" Allen wrench. Remove the remainder of the fasteners to the arm assembly mounting plate with a 3/32" Allen wrench. Lift the divider wall and remove the arm assembly from the upper shelf. To remove any component of the arm assembly, remove the three fasteners (PN 510692) and nuts (PN 510296) at the center of the rotating spindle with a 3/16" Allen wrench and a 7/16" wrench. To remove the left and right tubing arm covers (PNs 461863 & 461862, respectively) (Fig. 193-3 **A**) on the bottoms of the arms, loosen all eight screws (PN 510650), then remove only the two front screws with a #2 Phillips screwdriver. Slide the covers forward and lift them away to access the tubes beneath.



193. Reassemble the arm assembly in the reverse order, referring to the plumbing schematic for proper installation. If necessary, replace the instrument ID labels (PN's 420888 & 420889) on the left and right arms, respectively.

CASTERS

194. Support the corner of the chassis where the caster is to be removed. Use two 3/4" wrenches and remove the caster nut (PN 510676) (Fig. 195-1 **A**) from the inside corner of the chassis base. Lift the corner to remove the caster (PNs 730607 or 730606 locking) and flat washers (PN 510675).



195. Reassemble in the reverse order. Ensure that there are two flat washers between the caster and the base.

TUBING

196. Refer to the plumbing diagram for the approximate length and part number of the tube to be replaced.

WIRING

197. Refer to the electrical schematic for the proper size and length of the wire to be replaced.

198. THIS COMPLETES THE DISASSEMBLY PROCEDURE FOR THE AMC-25CF/AMC-25CF-USAF DENTAL SYSTEM.

STERILIZATION AND MAINTENANCE

199. Because of its simple design, the unit requires very little maintenance. Any maintenance that is needed can be performed in minutes.

Purging Water From The System

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

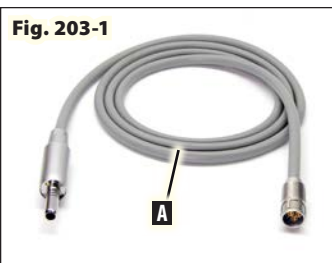
Handpieces

201. Flush the handpiece (Fig. 202-1 **A**) for about 5 seconds after every patient and about 20 seconds at the beginning of each day. NOTE: The flush valve is located on the control panel, on the right side of the unit. When sterilizing handpieces, follow the instructions provided by the handpiece manufacturer. 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.



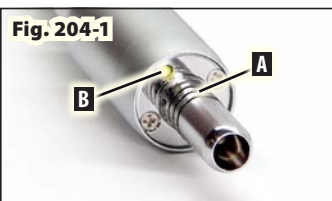
Motor & Cord Assembly

202. The entire AE-240 motor and cord assembly (Fig. 203-1 **A**) is fully autoclavable. Steam autoclave motor/cord assembly at 270° F (132° C) for 10 minutes. Loosely coil the motor cord when autoclaving. Avoid sharply bending the cord when autoclaving. Alternatively, wipe down the motor cord with disinfecting solution, and/or sleeve the cord between each patient.



Electric Motor O-Rings

203. Replace electric motor O-rings (Fig. 204-1 **A**) when worn or damaged. Gently peel old O-rings out of grooves and replace with new rings (PN 520069). Occasionally apply non-toxic (preferably containing PTFE) lubricant to O-rings to maintain flexibility.



Motor Led Lens Cleaning

204. The lens of the LED light (Fig. 204-1 **B**) on the motor should not be exposed to dust and debris. Excessive dust and debris may cause a drastic decrease in optical output. In the event that the light requires cleaning, first try a gentle swabbing, using a lint-free swab. If needed, use a lint-free swab and isopropyl alcohol to gently remove dirt from the lens. Do not use other solvents as they may adversely react with the LED assembly.

General Cleaning

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

Water Lines

206. Disinfect the water lines weekly. Prepare a 1:10 bleach solution (1 part household bleach to 9 parts warm water). Purge all water lines (see above, Purging Water From the System). Fill water bottles with bleach solution. Run bleach solution through all lines. Allow bleach solution to stand in lines for 10 minutes but no longer; Immediately remove water bottles and discard the bleach, then flush water bottles and all lines thoroughly with clean, warm water. Purge all water lines with air and leave dry until next clinical use. CAUTION: Do not run saline solutions through the water system—saline will corrode the water filters.

Vacuum System

207. The HVE and saliva ejector valves are fully autoclavable. Remove the valves from the hoses before autoclaving. The vacuum hoses should not be autoclaved. Clean hoses with a disinfectant solution using standard vacuum tube cleaning procedures.

Air Tank Purge

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

Waste Removal

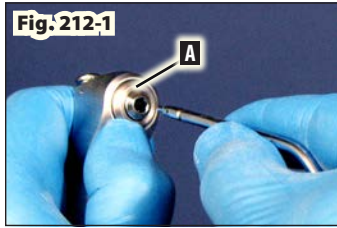
209. Routinely drain the waste container once a day (see Waste System on page 6 for step-by-step instructions). Since the unit uses a filtered amalgam separator, no settlement time is required before draining the waste tank.

Unit Air Intake Filter

210. Check the filters (Fig. 9-1 **A**) located in the rear of the unit (behind the louvered panel) periodically to see if the filter elements are collecting dust. Clean both filters with compressed air. Ensure that the filters are completely dry before replacing.

3-Way Air/Water Syringe

211. Depress the right button for air operation, and the left button for water operation. Depressing both buttons will create a mist. The syringe features quick-change auto-clavable tips: To remove a tip, press on the locking collar (Fig. 212-1 **A**) surrounding the tip socket and pull the used tip straight out of the socket. To insert a new tip, press locking collar and push tip into socket as far as it will go. Release ring and gently tug on tip before using to ensure that tip is securely locked into socket. Sterilize the syringe tips as follows:



- 212.** Remove contaminated syringe tip.
- 213.** Remove all visible signs of contamination before autoclaving.
- 214.** Autoclave tip at 270° F (132° C) for ten minutes.
- 215.** Sterilize between each patient use.
- 216.** 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.

Ultrasonic Scaler

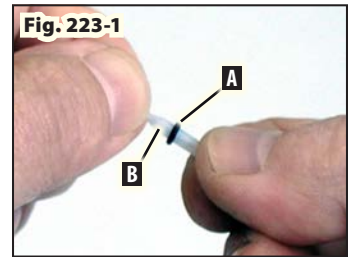
- 217.** (Refer to ultrasonic scaler instructions for use, supplied separately.)
- 218.** The Scaler Handpiece Cover and Instrument Tips are fully autoclavable. Disinfect and clean the Cover and Tips before autoclaving. Autoclave at a maximum temperature of 275° F (135° C) for 10 minutes or 248° F (120° C) for 20 minutes.
- 219.** Wipe off the Scaler Handpiece and it's silicone hose with a soft cloth. Use a 45% isopropyl and detergent solution. DO NOT IMMERSE the handpiece in any fluid or spray any fluid directly on the handpiece.

Curing Light

- 220.** Refer to the VALO Grand Curing Light Operations Manual included in your packaging for Sterilization and Maintenance instructions.

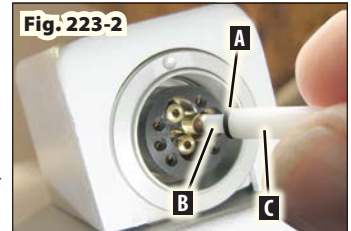
Motor/Cord Receptacle O-Rings

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



222. Remove old O-ring from water or air port fitting.

223. Slide new O-ring (Fig. 223-1 **A**) over pointed end of installer pin (Fig. 223-1 **B**), onto the pin's shank.



224. Insert pointed end of installer pin (Fig. 223-2 **B**) into open end of installer sleeve (Fig. 223-2 **C**) until O-ring (Fig. 223-2 **A**) stops against end of tool.



225. Position concave end of installer pin against end of water/air port fitting.

226. Push installer sleeve inward, until new O-ring seats into groove on fitting (Fig. 223-3 **A**).

NOTE: Shaded text indicates features for the AMC-25CF only and not included in the AMC-25CF-USAF version of the unit.

TROUBLESHOOTING GUIDE

Unit will not start:

- Check system power connection.
- Check voltage selector switch for proper voltage.
- Check circuit breakers.
- Check if waste tank sensor is connected.
- Check if waste tank is full.

Unit starts but trips circuit breakers

- Check source circuit to see if it is a minimum of 15A.
- NOTE: Operating the unit off an extension cord is not recommended.

No water pressure

- Check water bottle for water level and verify that cap is tight.
- Check that water bottle pressure toggle is in the ON position.

Insufficient vacuum

- Check vacuum hose assemblies for blockage.
- Check amalgam collector for blockage.
- Check that the waste container lid is properly seated and tightly secured.

Insufficient handpiece operation

- Check the pressure gauge on the front of the cabinet and ensure that sufficient air is being delivered to the handpiece.
- Check that handpiece tubing is untangled and not crimped.
- Check handpiece connection for missing gasket.

No water to handpiece

- Check that the toggle on the foot control is to the ON position.
- Check that the control valve to the selected handpiece is open.

No coolant air to handpiece

- Check that the toggle is in the ON position.
- Check that the flow control valve is open.

Waste pump is not working

- Check to see if the amalgam separator is clogged by replacing it with the by-pass filter.
- Check to see if check valve is open by blowing syringe air through it.

Unit is turning On and Off

- Waste tank is full.

Electric motor control panel does not light up when ON:

- Press Standby button on electric motor console front panel.

Electric motor control panel lights up when turned ON, but handpiece does not turn:

- Check motor plug connection.
- Depress foot switch.
- Increase Speed.
- Increase Torque setting
- Check that a file is properly seated in the handpiece and the latch is closed.

Electric motor slowing down or sluggish

- Check for dirty, under-lubricated handpiece.

- Check if handpiece lubricant is draining into motor.
- After lubricating and before autoclaving, stand handpiece on its base to let excess lubricant drain out.

Amalgam by-pass filter leaks:

- Check that the O-rings are properly installed onto the ends of fittings.

Electric handpiece motor light does not turn ON:

- Press illumination button to turn ON.
- Increase light intensity setting on control panel

REPLACEMENT PARTS LIST

PART NO.	ITEM	QTY
330673	WASTE HOSE ASSEMBLY	1
520103	O-RING	1
730229-06	CANISTER VACUUM WASTE 4 QUART MODIFIED	1
730595-01	AMALGAM SEPARATOR MOD	1
730615	CONTAINER BYPASS AMALGAM SEPARATOR	1
ALU-25CLK-VALO	CORDED BROADBAND LED CURING LIGHT	1
730631-01	BOTTLE 1000ml ZIRC KIT	2
840101	LINECORD US HOSPITAL GREY 15A/125V 10 FT	1
840102	LINECORD EURO BLACK 15A/250V 2.5 M	1
AA-20A	AUXILIARY ARM MOBILE DENTAL CART AMC-20	1
AA-35LAD	VALVE DELUXE UNIVERSL AUTOCLAVBLE QD HVE	1
AA-37LAD	VALVE SAL/EJECT AUTOCLAVABLE LEVER	1
AA-50	TRAY STAINLESS RITTER 13-11/16 X 9-13/16 X 3/4	1
AE-240SC-40	MOTOR ASSEMBLY W/ SHORT CABLE	1
ASC-10-PE37	SCALER TIP THIN SUBGINGIVAL	1
ASC-10-PE38	SCALER TIP SLIM UNIVERSAL	1
ASC-10-PE39	SCALER TIP POWER UNIVERSAL	1
TA-1	SYRINGE TIP AUTOCLAVABLE	1
TA-90D	SYRINGE 3-WAY AIR/WATER QUICK CHANGE TIP	1

REQUIRED TOOLS LIST

Allen Wrenches:

0.05", 1/16", 5/64", 3/32", 1/8", 5/32", 3/16", 1/4", 2 mm

Socket Wrenches:

5/16", 7/16", 1/2"

Combination Wrenches:

1/4", 5/16", 11/32", 7/16", 1/2", 9/16" (Qty: 2), 5/8", 3/4" (Qty: 2), 13/16", 22 mm, 7/8", 27 mm, 1-1/16"

Screwdrivers:

3/64" Standard, #1 Phillips, #2 Phillips

Electrical Tools:

Wire Stripper, Crimp Tool, Molex EDP#11-01-0203E

FINAL INSPECTION AND TESTING

Testing procedure for the Aseptico AMC-25CF subject to change. Refer to latest Schematic Drawing Set for updates.

EXAMINATION FOR DEFECTS:

- Unit design, construction, operation, and performance not as specified.
- Hardware components such as pins, screws and fasteners missing, broken or otherwise damaged.
- Finish not as specified.
- Damage or defects on exterior or interior surfaces present.
- Plating missing which effects function. Plating not free from blisters, peeling, visible porosity, or other defects.
- Any component fractured, broken punctured, torn, bowed, deteriorated, or malformed. Any component misplaced or not in proper alignment.
- Fastening device requiring loosening or removal is swaged, peened, staked, or otherwise permanently fastened, components missing.
- Components do not fit or mate properly.
- Interface fits between components not proper (too loose; too tight/bind-ing).
- Components not free from defects.
- Removable components cannot be removed or replaced without difficulty.
- Components not properly assembled or aligned.
- Components do not store or remove from case without difficulty.
- Handpieces and air hoses when stored coming in contact with sharp metal edges or surfaces.
- Coarse machine, tool or die marks present.
- Surface not clean, not free of foreign matter, flux or other defects.
- Damage or defects on exterior or interior surface present.
- Operating instructions not provided.
- Service data not provided.
- Identification markings not present, not complete, not permanent, not correct.
- Total unit weight not specified

SETTING UP THE UNIT:

Fill water bottles with tap water. Set the voltage selector switch to 110V. Attach the 110VAC cable to the unit and 110VAC, 60Hz power supply.

A. Operation Test:

Attach a dental high speed, and low speed handpiece to the hose connectors. Provide necessary utilities to attach the saliva ejector mouthpiece and high volume evacuator tip. Provide 80-100 psi (5.5-6.9 bar) compressed air and necessary water utilities to the unit input. The handpiece control, fiber optic lighting system(opt.), oral evacuation, the three-way syringe, self contained water systems, and scaler shall be tested by operating each for two minutes and then turning them OFF for one minute. Repeat this procedure several times, the unit shall be disassembled and stored in the carrying case without any difficulty.

B. Foot Control Accuracy Test:

Operate a handpiece at a medium speed by means of the foot control. Increase and decrease the speed by 5 psi (0.35 kgs/cm) increments by varying the pressure on the foot control.

C. Water Coolant Test:

Attach a dental highspeed handpiece to the highspeed hose connector(s). Turn the water coolant switch ON. Operate handpiece until such time that coolant water sprays from handpiece outlet in a uniform spray. Adjust water coolant flow valve from minimum to maximum flow to verify proper

function. Turn the water coolant switch OFF. Operate handpiece and verify that water coolant shuts OFF. Repeat this procedure for all highspeed(wet) handpiece controls. To test the anti- retraction feature of the water coolant, connect a 6.0" (15.2 cm) long tube, .063" (0.159 cm) inside diameter to the fitting where the water tube to the handpiece coupling is normally attached. With the test hose in vertical position and the opening facing upward, operate the foot control with the coolant water ON, then shut OFF the water flow by releasing the foot control. The meniscus of the water in the test hose must not recede more than 0.8" (2 cm) below the opening of the hose.

D. Performance Test (Drive Air):

Attach a dental high speed, and low speed handpiece to the hose connectors. Run the highspeed handpiece until such time that the pump turns ON to replenish the air storage tank. At this time before the tank is replenished, adjust the running pressure to 32 psi (2.2 bar) required. Run the lowspeed handpiece until such time that the pump turns ON to replenish the air storage tank. At this time before the tank is replenished, adjust the running pressure to 45 psi (3.1 bar) required.

E. Performance Test (Suction):

Attach both the high vacuum and saliva ejector hoses to the test fixtures. With the vacuum assist ON verify that the high vacuum is at least 4.6 SCFM (130 l/min) at 4 in Hg (102 mm Hg) and the saliva is 1.0 SCFM (28 l/min) at 1.5 in Hg (38 mm Hg) simultaneous.

F. Auxiliary Outlet:

With the unit ON verify that 110V is present at the outlet in the rear of the instrument. No more than 150W load.

G. Waste Tank Shutoff and Removal:

Vacuum in water until the unit shuts OFF the pump. Attach the waste hose to the rear of the unit and turn ON the waste pump switch. Adjust the waste flow valve and verify that the flow rate changes accordingly. See Waste System on page 3 for step-by-step instructions.

H. Water Selector Toggle:

Empty one of the water bottles. Place the toggle valve to the water bottle that is full and verify that water comes out. Toggle the valve to the empty water bottle and allow enough time to purge the line to verify that the system is drawing from the empty water bottle.

I. Test the 220V Operation:

Set the voltage switch to 220V and attach appropriate cable. Attach the unit to the 220V outlet and run the instrument. Verify that 220V is present at the European outlets.

J. AEU-5000 Remote Mount Test:

Refer to Schematic Drawing Set, PN 420872, page 33 for test instructions on the AEU-5000 electric motor assembly.

K. High Pot Tests:





























Refer to Schematic Drawing Set, PN 420872, page 34 for setup instructions and testing parameters for ground bond and dielectric withstand tests.




L. Serial Number:

Ensure that the instrument has one serial number label attached under the top cover in the rear left side.

NOTE: Refer to schematic drawings (PN 421177) for additional assembly details.

SYMBOL DEFINITIONS

	Caution – Consult Accompanying Documents
	Consult Instructions For Use
	Do Not Use If Damaged
	Use By Date
	Ethylene Oxide Sterilization
	Do Not Reuse
	Part Number
	Follow instructions for use
	Type B Applied Part
	Type BF Applied Part
	Warning—Potential danger to patient or user (consult accompanying documents)
	Dangerous Voltage
	Alternating Current
	This symbol indicates that the waste of electrical and electronic equipment must not be disposed as unsorted municipal waste and must be collected separately.
	Air Coolant Control
	Water Coolant Control
	Air Coolant Toggle -OR- Flush Toggle
	Motor Direction
	Light Controls
	Protective earth (ground)
IPX1	Protect Against Dripping Water
	Serial Number
	Footswitch
	On/Off Switch - Auxiliary
	On/Off Switch - Mains
	Bottle Pressure Release Toggle
	Bottle Select Toggle
	Manufacturer
	Atmospheric Pressure Limitation

	Temperature Limitation
	Humidity Limitation
	Sterilizable up to the temperature indicated

SPECIFICATIONS

Cart Size 23.5" W x 30.0" L x 36.5" H (56.7 cm x 76.2 cm x 92.7 cm)

Cart Weight (with all optional equipment) 167 lb (75.8 kg)

Shipping Crate Size 30.0" W x 37.0" L x 50.0" H (76.2 cm x 93.9 cm x 127 cm)

Shipping Crate Weight 72 lb (32.7 kg)

Transport Case Size 36.0" W x 34.0" L x 52.0" H (91.4 cm x 86.4 cm x 132.1 cm)

Transport Case Weight 210 lb (95.25 kg)

Power Source AC Dual Voltage, Manual-Switching, 110V / 220V at 60Hz / 50Hz

Power Rating 9.8/10.9A @ 50/60Hz, 110VAC; 4.7/5.7A @ 50/60Hz, 220VAC

Circuit Breakers Input: 15A, Pressure: 5A, Vacuum: 5A

Operating Pressure 80 psi (5.5 bar)

High Volume Vacuum 8.5 SCFM @ 0 in Hg (240.7 liters/min @ 0 cm Hg)

. 6.8 SCFM @ 4 in Hg (144.4 liters/min @ 10.2 cm Hg)

High Volume Vacuum (Recommended Min., External Air Only)

. 4.6 SCFM @ 0 in Hg (130.3 liters/min @ 0 cm Hg)

. 3.7 SCFM @ 4 in Hg (104.8 liters/min @ 10.2 cm Hg)

Low Volume Vacuum 2.2 SCFM @ 1.5 in Hg (62.3 liters/min @ 5.6 cm Hg)

Pressure Pump 1.8 SCFM @ 100 psi (51.0 liters/min @ 6.9 bar)

Air Storage Capacity 1.93 gal. (7.3 liters) nominal

Air Storage Pressure 100 psi (6.9 bar)

Water Bottle Capacity 67.8 fl. oz. (2.0 liters)

Water Flow 5.07 fl. oz./min (0.15 liter/min)

Waste Tank Capacity 1.08 gal. (4.08 liters)

Noise Level 65 dBA or less @ 3'4" (1 meter)

AMC-25 Cart Duty Cycle Continuous

Electric Motor Duty Cycle 17% (1 minute ON / 5 minutes OFF)

Environmental Conditions

Operating Temperature: 50° to 104° F (10° to 40° C)

Transport/Storage Temperature: -40° to 160° F (-40° to 71° C)

Relative Humidity: 10 to 95% non-condensing

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

IMPORTANT

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

NOTE

With regard to setting the handpieces pressure, 'kgcm2' and 'bar' are equivalent.

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.



Medical electrical equipment with respect to electric shock, fire and mechanical hazards only in accordance with ANSI/AAMI ES60601-1:2005/(R)2012 (Medical Electrical Equipment - Part 1: General Requirements for Basic Safety and Essential Performance) CSA CAN/CSA-C22.2 NO. 60601-1:14 (Medical Electrical Equipment - Part 1: General Requirements for Basic Safety and Essential Performance). Particular requirements for basic safety and essential performance of dental equipment: IEC 80601-2-60(First Edition): 2012

Manufacturer



Aseptico Inc
8333 216 St SE
Woodinville,
WA, 98072 USA

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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P.O. Box 1548 • Woodinville, WA 98072-1548
8333 216th St SE • Woodinville, WA 98072-8060
(800) 426-5913 • (425) 487-3157 • Fax: 425-487-2608
www.aseptico.com • info@aseptico.com

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