

# OPERATION AND MAINTENANCE INSTRUCTION MANUAL



**AEU-27A Electronic Endodontic System**



TABLE OF CONTENTS:

Introduction .....1

Package Contents .....1

Indications for Use .....2

Contraindications .....2

Adverse Reactions .....2

Warnings & Safety Precautions .....2

Step-By-Step Instructions .....4

    Setting Up the Unit .....4

    Quick Start Operation .....6

    Chart-1 Default Series .....8

    Control Panel Functions .....9

    Chart-3 File Library .....13

    General Operation .....14

        • Manual Mode .....14

        • Series Mode .....15

    Advanced Operation & Functions .....16

        • System Setup Options Menu .....16

            RECALL FACTORY SETUP .....16

            AUTO-STOP MODE .....16

            REVERSE BEEPER .....17

            TORQUE WARNING .....17

            ACCESSORY WARNING .....17

            SLEEP MODE .....18

            KEYPRESS BEEP .....18

            SYSTEM VOLUME .....18

            SAVE SETTINGS .....19

        • Editing and Creating Series .....20

Reprogramming the Unit .....25

Maintenance & Sterilization .....26

Troubleshooting .....28

Specifications .....29

Changing the Fuse .....30

Symbol Definitions .....31

Notes .....32

Warranty .....33

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



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MEDICAL -- GENERAL MEDICAL EQUIPMENT  
AS TO ELECTRICAL SHOCK, FIRE AND MECHANICAL  
HAZARDS ONLY, IN ACCORDANCE WITH:  
UL 60601-1: First Edition - Medical Electrical  
Equipment, Part 1: General Requirements for Safety,  
ANSI/AAMI ES60601-1:2005/(R)2012 and A1:2012,  
C1:2009/(R)2012 and A2:2010/(R)2012 - Medical  
electrical equipment—Part 1: General requirements  
for basic safety and essential performance.  
CAN/CSA C22.2 NO. 60601-1-08 (2013) - Medical  
Electrical Equipment - Part 1: General Requirements  
for Basic Safety and Essential Performance (Adopted  
IEC 60601-1:2005, third edition, 2005-12), Includes  
Corrigendum 1:2011.

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.

INFORMATION CONCERNING THE ACCURACY AND PRECISION OF THIS PRODUCT MAY BE OBTAINED UPON REQUEST BY CONTACTING ASEPTICO AT THE ADDRESS SHOWN ON THIS PAGE.

CLASSIFICATIONS:

- Class I Equipment
- Type B Equipment
- Ordinary Equipment - degree of protection against ingress of water
- Not suitable for use in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide.

Your new Aseptico AEU-27A Endodontic System is one of the finest units available to the dental profession. The system features a high torque brushless motor, intuitive user interface, and an easy to read digital display. These features combine to make the AEU-27A an exceptionally powerful and convenient system for Endodontic procedures.

## *Congratulations!*

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

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

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### **PACKAGE CONTENTS:**

- AEU-27A Electronic Control Console
- Autoclavable Brushless Micromotor, P/N AE-250-30
- Autoclavable Motor Holder, P/N 461561
- Motor Holder Attaching Bracket, P/N 461653
- On/Off Foot Control, P/N AE-7PM
- Power Cord
- Operation and Maintenance Instruction Manual, P/N 421029

### **PURCHASED SEPARATELY:**

- AHP-71TI 1:5 Increaser Contra Angle Handpiece
- AHP-63 1:1 Contra-Angle Handpiece
- AHP-88MN 8:1 Reduction Latch-Head Contra Angle Handpiece
- AHP-88MNP 8:1 Reduction Push-Button Head Contra Angle Handpiece
- AHP-62MN 16:1 Reduction Latch-Head Contra Angle Handpiece
- AHP-62MNP 16:1 Reduction Push-Button Head Contra Angle Handpiece
- Memory Card, P/N MC-27A

## INDICATIONS FOR USE:

For use in a wide range of dental procedures including; endodontic surgeries, such as drilling into the tooth canal, and general dentistry, such as removing carious material from the dentin.

## CONTRAINDICATIONS:

None Known

## ADVERSE REACTIONS:

None Known



## WARNINGS and SAFETY PRECAUTIONS:

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

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

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

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

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

**CAUTION:** The AEU-27A system is supplied Non-Sterile! Before first use, and before each patient use thereafter, sterilize specified components as recommended in the Sterilization and Maintenance section.

**WARNING:** Use for intended purposes only. Failure to observe the operating instructions may result in the patient or user suffering serious injury or the the product being damaged, possibly beyond repair. Before using this product, make sure that you have studied and understood the operating instructions.

**CAUTION:** Federal law restricts this device to sale by or on the order of a dentist.

**CAUTION:** Use of other dental accessories or sub-assemblies from third-party manufacturers is the sole responsibility of the user.

**CAUTION:** All repairs are to be performed by authorized Aseptico service personnel only.

**WARNING:** Always follow these guidelines when operating the unit:

- Never touch drills, burs, or other handpiece tips when they are still rotating.
- Handpieces should only be attached when the motor has stopped running.

**WARNING:** Do not install where there is a risk of an explosion. The AEU-27A is not intended for operation in the presence of flammable anesthetics or gases.

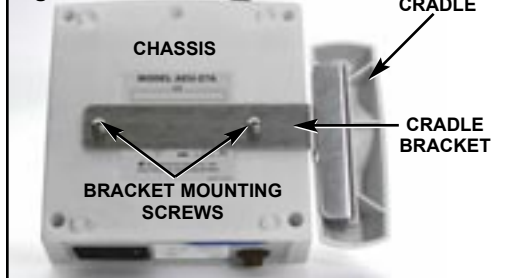
- CAUTION:** In order to ensure the accuracy of torque and speed, it is recommended that calibration be performed for each change of handpiece used for torque controlled operations, or daily if the same handpiece is used.
- WARNING:** Always comply with the endodontic handpiece and file manufacturer's instructions regarding maximum speeds, torques, forward and reverse directions, and use of all instrumentation, drills, burs, etc., used in endodontic applications.
- CAUTION:** Connect mains power cable to a properly grounded outlet only.
- WARNING:** Do not disassemble or alter the AE-250-30 micromotor, console, or foot switch.
- CAUTION:** Use only appliance cord Type C13, 10A per IEC / EN 60320-1. Note: North America, Denmark, Australia, and New Zealand may require hospital grade plugs. Consult local codes.
- WARNING:** Never use damaged or worn files as they may separate in the root canal.
- WARNING:** Do not use this device in conjunction with an electric scalpel or on patients with pacemakers.
- CAUTION:** It is recommended to always have the patient wear a rubber dam during endodontic procedures.
- WARNING:** Always use irrigating coolant when using high-speed handpieces.
- CAUTION:** The AE-250-30 micromotor is sensitive to damage if dropped or impacted against a hard surface.

# Step-By-Step Instructions

## SETTING UP THE UNIT:

1. Unpack the Console and accessories (see Figure 1).
2. Install the Motor Cradle: The autoclavable Motor Cradle can be attached to either side of the Console or placed flat on any adjacent tabletop surface or tray. Install the Cradle by mounting the Cradle Bracket onto the bottom of the Chassis with the two screws provided (see Figure 2). Align the slot on the bottom of the Cradle with the mounting rail on the Bracket and snap into place.
3. Attach the supplied foot control to the connector on the back of unit marked "Footswitch" (see Figure 3). The cord connector and receptacle are keyed to engage one another. Insert, then turn the locking nut clockwise to secure.
4. Attach the remote power cord to the back of the console (see Figure 3) and plug into a hospital-grade grounded electrical

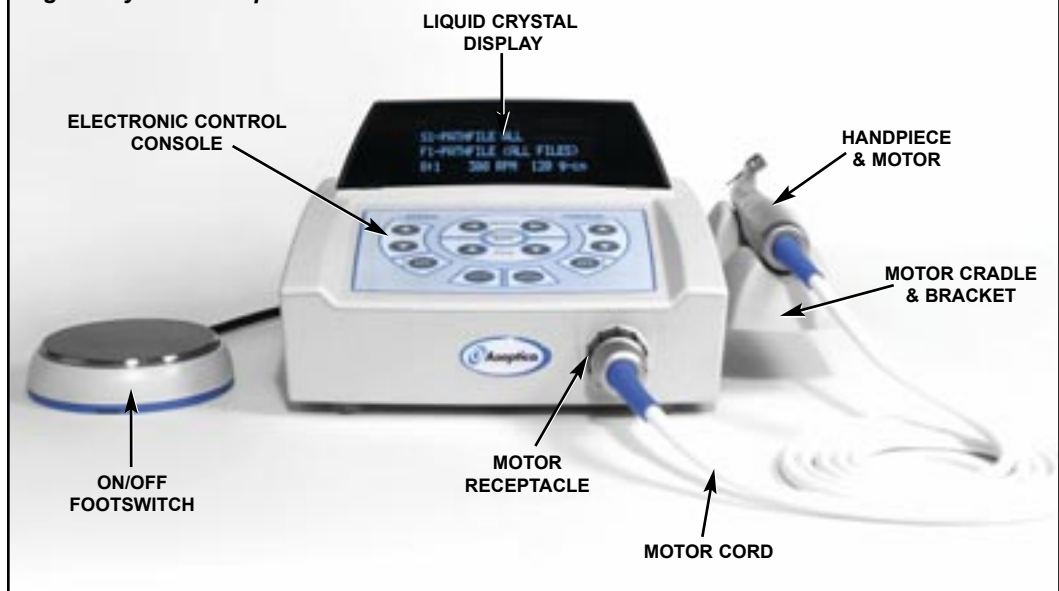
**Fig. 2 - Motor Cradle**



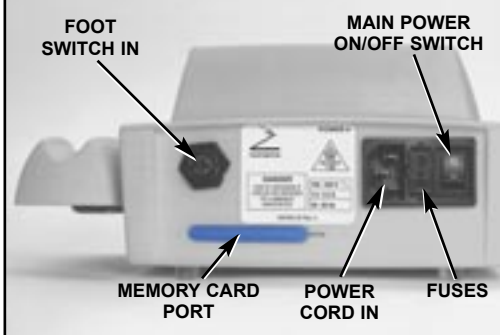
receptacle. Confirm that the type of cord plug cap is correct for the country of usage and carries the proper certification markings.

5. Connect the Motor/Cord Assembly to the Motor Receptacle on the lower right front of the console (see Figure 1).

**Fig. 1 - System Components**

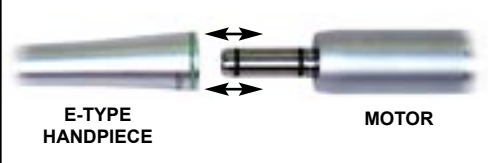


**Fig. 3 - Console Back**



6. Attach the appropriate "E-Type" handpiece to the motor as shown in Figure 4.

**Fig. 4 - Handpiece/Motor Connection**



# QUICK START OPERATION

After the unit has been set up, you are ready for quick start operation as follows:

1. Turn the Power Switch on the rear panel of the console from the 'OFF' (O) to the 'ON' (—) position. The Console Display will turn on. An introduction will scroll across the screen then briefly display the software version installed:

**AEU-27A Endodontic Motor**  
**Ver. X.X**

**Ver. Date (Mo/Day/Yr)**

The AEU-27A is programmed at the factory to initially start up with File Series S1 active. Subsequently, when the power is turned on, the last used settings will be active.

2. Insert an endodontic rotary file into the handpiece.
3. Press and release the Ratio button once to display the currently selected handpiece/ratio, then continue to press and release the RATIO button to cycle through and select the other available handpiece/ratio options. (The default ratio setting is 8:1 reduction.)
4. Use the Calibration function to calibrate the handpiece for the AEU-27A. Before calibrating, ensure that the correct handpiece ratio is selected. Press and release the CAL button.



The following prompt will display:

**Testing In Progress...**  
**Please Wait.**

The unit will run for approximately 30 seconds, measuring the handpiece for an accurate display of speed and torque values.

**CAUTION** - Before calibration, ensure that a file or bit is secured in the handpiece.

**NOTE:** Pressing, holding, then releasing the CAL button will enable the system's advanced setup options menu. Refer to the Advanced Operation section for complete instructions.

If calibration is successful, the following prompt will appear then the unit will return to the last settings used:

**Calibration Successful!**  
**Please Wait.**

If calibration fails, the following prompt will appear advising the user to press the CAL button to escape out of the test and then check the motor/handpiece for problems:

**Calibration Failed!**  
**Check Motor and Retest.**  
**Press "CAL" to Escape.**



5. Select the File Series corresponding to the endodontic rotary file you are using by pressing the SERIES Left/Right arrow buttons. The default File Series are shown in Chart 1, page 8.



Pressing the FILE Up/Down arrow buttons will cycle through the individual files listed under each



Series name. (These Up/Down Arrow buttons can also be used to navigate up or down through the menu options.)

6. Press the foot pedal to activate motor and begin operation. Note that the word "RUN" displays whenever the motor is activated.
7. After 15 minutes of inactivity (see instructions on page 18 to select desired Sleep Mode activation period), the AEU-27A will go into Sleep Mode to conserve power. To exit Sleep Mode and resume operation, press any keypad button or the foot pedal.

## Chart 1 - AEU-27A Default Series

Default Series #1: DENTSPLY Tulsa Dental Specialties PathFile® All Files
File #1: PathFile (All Files)
Default Series #2: DENTSPLY Tulsa Dental Specialties ProTaper Next™ Files
File #1: ProTaper Next High All
File #2: ProTaper Next Low All
Default Series #3: DENTSPLY Tulsa Dental Specialties ProTaper® Universal Files
File #1: ProTaper Universal S1 & SX
File #2: ProTaper Universal S2 & F1
File #3: ProTaper Universal F2, F3, F4, F5
File #4: ProTaper Universal Retreatment D1 & D2
File #5: ProTaper Universal Retreatment D3
Default Series #4: DENTSPLY Tulsa Dental Specialties Vortex® 04 & 06 Taper Files
File #1: Vortex Orifice (All)
File #2: Vortex 04, .35 through .50 taper
File #3: Vortex 04, .25 and .30 taper
File #4: Vortex 04, .15 and .20 taper
File #5: Vortex 06, .35 through .50 taper
File #6: Vortex 06, .25 and .30 taper
File #7: Vortex 06, .15 & 20 taper
Default Series #5: DENTSPLY Tulsa Dental Specialties GT® Series 20, 30, 40 Files
File #1: Accessory 90, 70, 50, 35/.12 taper
File #2: GT Yellow 20 Series, .10 and .08 taper
File #3: GT Yellow 20 Series, .06 and .04 taper
File #4: GT Blue 30 Series, .10 and .08 taper
File #5: GT Blue 30 Series, .06 and .04 taper
File #6: GT Black 40 Series, .10 and .08 taper
File #7: GT Black 40 Series, .06 and .04 taper

**NOTE:** The Series listed above in Chart 1 are registered trademarks of DENTSPLY Tulsa Dental Specialties.



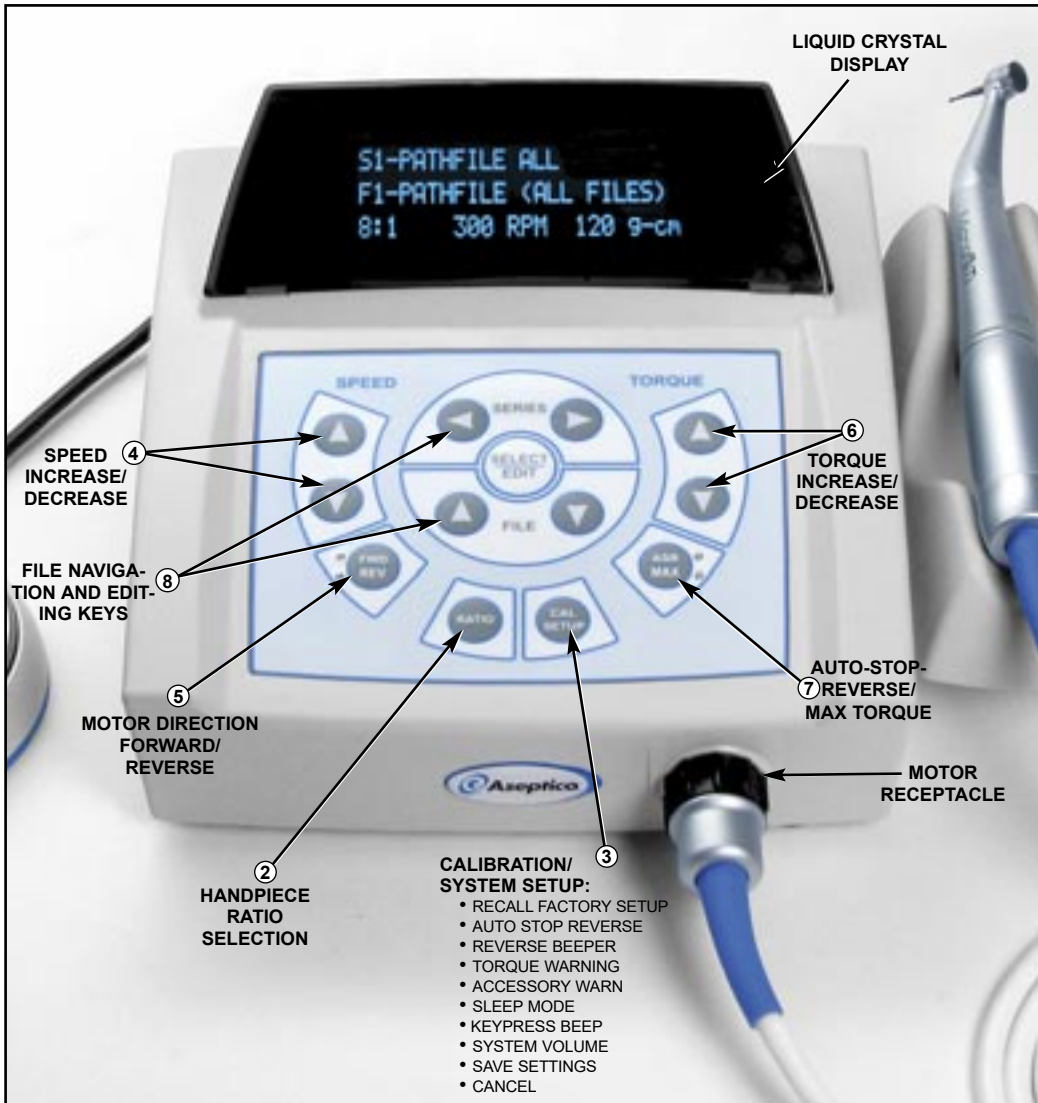
### **CAUTION**

During Calibration, the handpiece will operate, rotating through a preprogrammed speed range. Before calibrating, be sure a file or instrument is secured in the handpiece.

# CONTROL PANEL FUNCTIONS

The intuitive user interface makes it easy to begin using your new AEU-27A. Advanced features for editing and programming the system are discussed following the control panel descriptions.

**Fig. 5 - Console Display & Controls**



## CONTROL PANEL FUNCTIONS - *cont'd*

### 1. Main Power Switch:

Located on back of console (see Figure 3).  
Controls main power On/Off to the console.

### ② Handpiece Ratio Selector:

*Allows user to select handpiece/ratio.*

The RATIO button can select handpieces/ratios in two different ways - refer to either **A** or **B** below:



**A.** Press and release the Ratio button once to display the currently selected handpiece/ratio, then continue to press and release the RATIO button to cycle through the other available handpiece/ratio options. The available handpiece ratios, speed, and torque ranges for each option are shown below in Chart 2:

<b>Chart 2 - Handpiece Options</b>		
<b>Ratio</b>	<b>Speed (RPM)</b>	<b>Torque (g•cm)</b>
1:5	1,500 - 150,000	2 - 15*
1:1	300 - 30,000	4 - 120
8:1	40 - 3,600	30 - 800
16:1	20 - 1,800	60 - 1,500

\* No ASR

The unit will automatically activate the currently displayed option as the new handpiece ratio. The selected ratio will display as follows (example only):

**Selected Handpiece:**  
**16:1 (AHP-62MN/MNP)**

Once a new handpiece/ratio has been selected, the unit automatically enters MANUAL MODE and displays the new ratio with the current RPM and torque settings (example below):

**MANUAL MODE**  
**16:1 1500 RPM 60 g-cm**

(**Note:** The speed, torque, and forward/reverse settings can also be changed manually - refer to paragraphs 4 - 8 on pages 11 & 12 for more information on changing these settings.)

**B.** Press and hold the RATIO button to display a list of all the handpiece/ratio options. Then, use the FILE Up/Down arrow buttons to point to the desired option and press the SELECT button.



The available options are 1:5, 1:1, 8:1, 16:1, and Cancel. Select "Cancel" to exit out of the selection menu. The following prompt will display (example only):



**SELECT Handpiece:**  
**>16:1 (AHP-62MN/MNP)**  
**Cancel**

**Note:** The ratio designations X:Y and Y/X are equivalent; for example, 8:1 is a U.S. term and 1/8 is a European term.

### ③ CAL/SETUP Button:

*Activates the Integrated Calibration Program and System Setup Menus.*



The CAL/SETUP button initiates two different functions: System Calibration and System Setup - refer to **A** & **B** below:

#### **A. System Calibration:**

**CAUTION** - Before calibration, ensure that a handpiece is attached to the motor, the correct handpiece ratio is selected, and a file or bit is secured in the handpiece.

Press and release CAL button to activate the calibration program. The following

prompt will display:

**Testing In Progress...**  
**Please Wait.**

The unit will run for approximately 30 seconds, measuring the handpiece for an accurate display of speed and torque values. It is recommended to calibrate at the beginning of each day and when handpieces are changed.

If calibration is successful, the following prompt will appear, then the unit will return to the last settings used:

**Calibration Successful!**  
**Please Wait.**

If calibration fails, the following prompt will appear advising the user to check the motor/handpiece for problems. Press the CAL button to escape out of the test:

**Calibration Failed!**  
**Check Motor and Retest.**  
**Press "CAL" to Escape.**

## B. System Setup:

Pressing, holding, then releasing the CAL/SETUP button will enable the System's Setup options menu. Refer to the System Setup section, page 16 for complete instructions.

### ④ SPEED Buttons

*Allow user to select desired speed (RPM) for motor/handpiece.*

Press the SPEED Selector Up/Down buttons to adjust speed. The unit will automatically enter MANUAL mode and display the new RPM settings with the ratio and torque



settings (example only):

**MANUAL MODE**  
**16:1 1800 RPM 60 g-cm**

**Note:** For speed accuracy, the Ratio Selector must match the ratio of the handpiece being used.

**Note:** Speed ranges are accurate when the handpieces referenced on page 1 are used with the supplied 30K motor. Speed ranges are shown in Chart 2, page 10.

### ⑤ Forward/Reverse (FWD/REV) Button:

*Sets the rotational direction of the motor/handpiece.*



Press and release FWD/REV button until the desired rotation is indicated: the green LED illuminates when forward rotation is selected; the amber LED indicates reverse rotation. An audible tone will also indicate when reverse rotation is activated. This reverse audible tone may be adjusted or turned off as described in the Setup Options Section, page 17.

### ⑥ Torque Adjustment Buttons:

*Allow the user to adjust torque limits in Gram•Centimeter increments.*

Press the TORQUE Selector Up/Down buttons to adjust torque. The unit will automatically enter MANUAL MODE and display the new TORQUE settings with the ratio and speed settings (example only):



**MANUAL MODE**  
**16:1 1800 RPM 90 g-cm**

## CONTROL PANEL FUNCTIONS - *cont'd*

### ⑦ ASR/MAX Torque Button:

*Allows the user to select Auto-Stop-Reverse (ASR) or Maximum (MAX) torque modes.*



**A. ASR Mode** - For 1:1, 8:1, or 16:1 ratio handpieces only. Auto-Stop-Reverse (ASR) mode is indicated by the illuminated green LED next to the button. Enable ASR mode and press the Torque Selector Up/Down buttons until the desired auto-stop torque limit is indicated on the Console Display. When the foot pedal is activated, the rotation of the handpiece will automatically alternate between forward and reverse whenever the selected auto-stop limit is reached.

**Note:** Other ASR configurations are available - see Global Options Section, page 16 for details.

**B. MAX Torque Mode** - For 1:1, 8:1, or 16:1 ratio handpieces only. MAX Torque Mode is indicated by the illuminated amber LED next to the button and a "MAX" g-cm value on the console display. This mode allows the motor to run at its maximum torque level. When the MAX function is enabled, the Auto-Stop-Reverse (ASR) function and the torque warning tone are automatically disabled.

**IMPORTANT:** When a 1:5 handpiece ratio is selected, the ASR/MAX Torque Limit modes are automatically disabled. The 1:5 handpiece will slow and stop under load and then continue rotating forward once the load is reduced.

### ⑧ File Navigation & Select Buttons:

*Allows user to navigate through Files, File Series, menus, and text characters when selecting and adjusting settings.*



#### **SELECT/EDIT Button** -

Selects chosen options/settings. Also opens Save Menu when saving manual changes to File Series, and accesses File Series Edit Menu when editing File Series names and files (see Editing and Saving File Series, page 20 for more information).

**SERIES ARROW Buttons** - Allow user to navigate laterally (left/right) through the File Series.

**FILES ARROW Buttons** - Allow user to navigate vertically (up/down) through the individual Files within each File Series.

Chart 3 - AEU-27A File Library Settings

<b>PATHFILE ALL</b>			
File Size	Speed (RPM)	Torque (g cm)	
PATHFILE (ALL FILES)	500	120	
<b>PATHFILE INOV FILES</b>			
File Size	Speed (RPM)	Torque (g cm)	
PATHFILE 002E 19	300	120	
PATHFILE 002E 19	300	120	
PATHFILE 002E 13	300	120	
<b>PROTAPER NEXT™</b>			
File Size	Speed (RPM)	Torque (g cm)	
PROTAPER NEXT ALL	300	200	
<b>PROTAPER UNIVERSAL</b>			
File Size	Speed (RPM)	Torque (g cm)	
PROTAPER B1 & B3	300	500	
PROTAPER B2 & F1	300	150	
PROTAPER B2 & F3, F4, & F5	300	312	
PROTAPER D1 & D2	500	150	
PROTAPER D3	500	150	
<b>PROTAPER UNIVERSAL I</b>			
File Size	Speed (RPM)	Torque (g cm)	
PROTAPER B1 & B3	300	500	
PROTAPER B2 & F1	300	150	
PROTAPER B2 & F3, F4, & F5	300	312	
<b>PROTAPER RETREAT</b>			
File Size	Speed (RPM)	Torque (g cm)	
PROTAPER D1	500	312	
PROTAPER D2	500	312	
PROTAPER D3	500	150	
<b>VORTEX® D4 D6 Taper</b>			
File Size	Speed (RPM)	Torque (g cm)	
VORTEX ORIFICE (ALL)	500	500	
VORTEX (4-1/5 - 64-50)	500	132	
VORTEX (4-1/5 - 64-50)	500	104	
VORTEX (4-1/5 - 64-50)	500	75	
VORTEX (6-1/5 - 64-50)	500	500	
VORTEX (6-1/5 - 64-50)	500	290	
VORTEX (6-1/5 - 64-50)	500	195	
<b>VORTEX® ORIFICE OPEN</b>			
File Size	Speed (RPM)	Torque (g cm)	
VORTEX ORIFICE (ALL)	500	500	
<b>VORTEX® D4 Taper</b>			
File Size	Speed (RPM)	Torque (g cm)	
VORTEX (4-1/5 - 64-50)	500	132	
VORTEX (4-1/5 - 64-50)	500	104	
VORTEX (4-1/5 - 64-50)	500	75	

<b>VORTEX® 06 Taper</b>			
File Size	Speed (RPM)	Torque (g cm)	
VORTEX (06-1/5 - 06-50)	500	348	
VORTEX (06-1/5 - 06-50)	500	290	
VORTEX (06-1/5 - 06-50)	500	195	
<b>GT Series 20, 30, 40</b>			
File Size	Speed (RPM)	Torque (g cm)	
GT 00, 70, 50, 35/2	500	200	
GT YEL 20/10 & 20/08	300	312	
GT YEL 20/08 & 20/04	300	174	
GT BLU 30/10 & 30/08	300	347	
GT BLU 30/08 & 30/04	300	208	
GT BLK 40/10 & 40/08	300	406	
GT BLK 40/08 & 40/04	300	220	
<b>GT Acc. &amp; 20 Series YELLOW</b>			
File Size	Speed (RPM)	Torque (g cm)	
GT 00, 70, 50, 35/2	500	200	
GT BLU 30/10 & 30/08	300	347	
GT BLU 30/08 & 30/04	300	208	
GT YEL 20/10 & 20/08	300	312	
GT YEL 20/08 & 20/04	300	174	
<b>GT Acc. &amp; 30 Series BLUE</b>			
File Size	Speed (RPM)	Torque (g cm)	
GT 00, 70, 50, 35/2	500	200	
GT BLU 30/10 & 30/08	300	347	
GT BLU 30/08 & 30/04	300	208	
<b>GT Acc. &amp; 40 Series BLACK</b>			
File Size	Speed (RPM)	Torque (g cm)	
GT 00, 70, 50, 35/2	500	200	
GT BLK 40/10 & 40/08	300	406	
GT BLK 40/08 & 40/04	300	220	
<b>GT Series X® (3)</b>			
File Size	Speed (RPM)	Torque (g cm)	
GT X 20/04 & 20/08	300	175	
GT X 30/04 & 30/08	300	210	
GT X 30/08 & 30/04	300	350	
<b>GT Series X® (4)</b>			
File Size	Speed (RPM)	Torque (g cm)	
GT X 20/04 & 20/08	300	175	
GT X 30/04 & 30/08	300	210	
GT X 30/08 & 30/04	300	350	
<b>GT/PROFILE 04</b>			
File Size	Speed (RPM)	Torque (g cm)	
GT 00, 70, 50, 35/2	500	700	
GT 20/10 & GT 20/08	300	312	
GT 20/08 & GT 20/04	300	132	
GT 30/04 & GT 25/04	300	104	
GT 20/04	300	75	

<b>PROFILE® S29® 04 TAPER</b>			
File Size	Speed (RPM)	Torque (g cm)	
PR S29 04 SIZE 7 & 8	300	132	
PR S29 04 SIZE 5 & 4	300	104	
PR S29 04 SIZE 3 & 2	300	75	
<b>PROFILE® S29® 06 TAPER</b>			
File Size	Speed (RPM)	Torque (g cm)	
PR S29 06 SIZE 7 & 8	300	358	
PR S29 06 SIZE 5 & 4	300	290	
PR S29 06 SIZE 3 & 2	300	195	
<b>PROFILE® ORIFICE OPEN</b>			
File Size	Speed (RPM)	Torque (g cm)	
PR 00 SIZE 8 & 5	300	810	
PR 00 SIZE 4 & 3	300	400	
PR 00 SIZE 2 & 1	300	250	
<b>PROFILE® ISO 04 TAPER</b>			
File Size	Speed (RPM)	Torque (g cm)	
PR ISO 40/08 & 35/08	300	300	
PR ISO 40/04 & 35/04	300	132	
PR ISO 30/04 & 25/04	300	104	
PR ISO 20/04 & 15/04	300	75	
<b>PROFILE® ISO 06 TAPER</b>			
File Size	Speed (RPM)	Torque (g cm)	
PR ISO 40/08 & 35/08	300	300	
PR ISO 30/08 & 25/08	300	200	
PR ISO 20/08 & 15/08	300	195	
<b>ITR EMULATION SERIES</b>			
File Size	Speed (RPM)	Torque (g cm)	
ITR	500	1000	
ITR	500	625	
ITR	500	250	
ITR	500	150	
ITR	500	75	
<b>LEXICON® GATES V 120</b>			
File Size	Speed (RPM)	Torque (g cm)	
LEXICON GATES #8	3000	1000	
LEXICON GATES #5	3000	750	
LEXICON GATES #4	3000	700	
LEXICON GATES #3	3000	400	
LEXICON GATES #2	3000	240	
LEXICON GATES #1	3000	150	
<b>PRO-POST® DRILLS</b>			
File Size	Speed (RPM)	Torque (g cm)	
PRO-POST DRILLS	2000	1000	

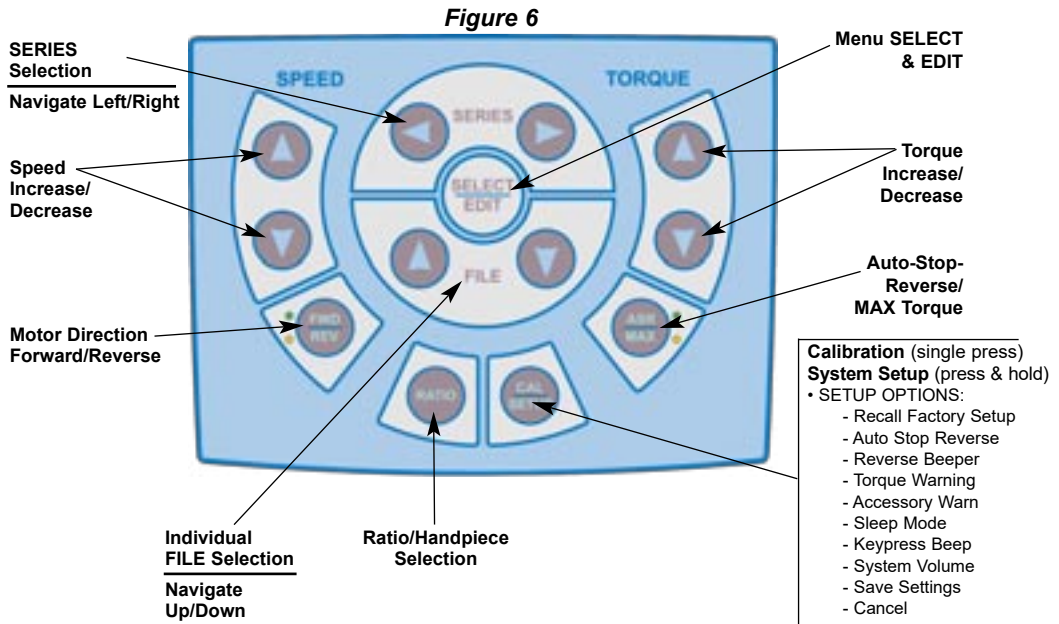
<b>TF®</b>			
File Size	Speed (RPM)	Torque (g cm)	
TF	500	400	
<b>K3™ XF</b>			
File Size	Speed (RPM)	Torque (g cm)	
K300	300	300	
<b>LIGHTSPEED®</b>			
File Size	Speed (RPM)	Torque (g cm)	
LIGHTSPEED	2500	250	
<b>MTWO®</b>			
File Size	Speed (RPM)	Torque (g cm)	
MTWO 3004 PURPLE	200	120	
MTWO 15/04 WH/ITE	200	130	
MTWO 25/08 YELLOW	200	210	
MTWO 25/08 RED	200	200	
MTWO 30/08 BLUE	200	120	
MTWO 35/04 GREEN	200	120	
MTWO 40/04 BLACK	200	160	
MTWO 45/04 WHITE	200	160	
MTWO 30/04 YELLOW	200	200	
MTWO 30/08 BLUE	200	300	
MTWO 35/08 GREEN	200	160	
MTWO 40/08 BLACK	200	170	
MTWO 25/07 RED	200	200	
<b>MTWO® RETREATMENT</b>			
File Size	Speed (RPM)	Torque (g cm)	
MTWO RETREATMENT WHITE	200	30	
MTWO 325/08 RED	200	120	

1. Puffball torque is set at user's preference.
2. Recommended torque is between 200-500 g cm.
3. 50% equivalent 50 HPS 20°.
4. Lactor Gator and Pro-Post Drills are not compatible with 18.1 inch drill handles, which have a minimum speed of 1800 RPM.

# GENERAL OPERATION:

## Keypad Functions:

**Note:** When selecting the following Keypad Functions, use the **SERIES** and **FILE** Arrow Buttons and the **SELECT/EDIT** Button (see Fig. 6) to navigate through the menu options:



After the user has become familiar with the system's keypad functions, use either 1. Manual Mode, or 2. Series Mode below to begin operation:

- 1. MANUAL MODE** - At any time, the user can use the control panel keypad to adjust the ratio, speed, torque, and forward/reverse settings. When the ratio, speed, or torque are changed manually, the Display will indicate Manual Mode, as shown below:

<b>MANUAL MODE</b>		
8:1	550 RPM	132 g-cm

**Note:** To escape out of Manual Mode and switch to the Series Mode, simply press either of the two **SERIES** arrow buttons.

- A. Saving Manual Settings:** At any time, the user can save and store new ratio, speed, and torque settings into any one of the five different default Series. Follow these steps to save new Manual settings:

- 1)** Use the keypad buttons to change the ratio, speed, or torque settings. The Display will indicate Manual Mode.

- 2)** Press and hold the **EDIT** button. Two beeps will sound and then the following Save Menu will display:



<b>Save To Which Series?</b>	
> Cancel	▲
1	
2 (etc...)	▼

3) Using the FILE Up/Down buttons, move the selector-arrow to the desired option (see below) and then press the SELECT button.

- **Cancel:** Returns to the previous “MANUAL” menu without saving any changes.
- **1 - 5:** Selects the specific default Series (S1 through S5) that will be overwritten with the new settings. A prompt will appear, asking for confirmation of the Series Number (example below):

<b>Save To Series 1?</b>	
> Yes	▲
No	
Cancel	▼

4) Move the selector-arrow to the desired option (see below) and then press the SELECT button.

- **Yes:** Saves the changes to the selected Series. The following menu will appear, with asterisks indicating the changed Series and File Names in capital letters and the File renamed to “USER DEFINED FILE” (example below):

<b>*S1-SERIES 1</b>		
<b>*F1-USER DEFINED FILE</b>		
<b>8:1</b>	<b>550 RPM</b>	<b>132 g-cm</b>

**IMPORTANT:** This “Yes” command will overwrite the current settings in the selected Series. To restore the default Series settings to this Series, either re-enter the previous settings manually or Recall the Factory Setup (see page 16).

- **No:** Returns to the previous “MANUAL” menu without saving any changes.

- **Cancel:** Returns to the previous “MANUAL” menu without saving any changes.

2. **SERIES MODE** - By default, the unit will start in this Series Mode. This Mode allows the user to quickly access up to five different Series (see Chart 1 on page 8 for the default Series). These default Series settings can be customized by the user -- refer to the Editing Series instructions on page 20.

**Note:** To switch to Manual Mode from this Series Mode, simply change any speed or torque settings using the keypad buttons. The Display will automatically change to Manual Mode.

## ADVANCED OPERATION - System Setup:

1. Press, hold, and then release the CAL/SETUP button. Two quick beeps will sound and the following menu will display the Setup options:



<b>Setup Options:</b>	
> Recall Factory Setup	↑
Auto Stop Rev. (AUTO)	
Reverse Beeper	(ON)
Torque Warning	(ON)
Accessory Warn	(OFF)
Sleep Mode	(15)
Keypress Beep	(ON)
System Volume	(40%)
Save Settings	
Cancel	↓

2. Using the FILE Up/Down buttons, move the selector-arrow to the desired Setup option and then press the SELECT button. Prompts will appear for each option (see descriptions below).

**A. Recall Factory Setup:** Restores the default factory settings and specifications, overwriting all previous edits and customized settings. Press the SELECT button. The following prompt will display:

<b>Recall Factory Defaults?</b>	
> Cancel	↑
Yes	↓

Move the selector-arrow to the desired command and then press the SELECT button:

- **Cancel** - Returns to the previous "Setup Options" menu without changing any settings. All previous customized settings will remain intact.
- **YES** - Recalls all factory settings. A tone will sound and the unit will briefly show the startup screen before displaying the default Series S1 settings.

**IMPORTANT:** When any of the following seven Setup Options settings are changed, the new settings must be saved under the "Save Settings" command before they are activated. Otherwise, the last settings used will stay active. See "Save Settings" option, page 19, for more details.

**Note:** The Setup Options are system-wide settings and are not saved into any specific Series when programming.

**B. Auto Stop Rev. (Reverse):** There are three different Auto Stop modes to choose from. After pressing the SELECT button, the following menu will display:

<b>Auto Stop Reverse:</b>	
> Auto Reverse	↑
Manual Reverse	
Auto Stop Off	↓
Cancel	

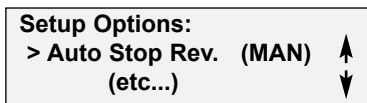
- **Auto Reverse** - When the Auto Reverse mode is enabled, rotation of the handpiece will automatically stop and reverse when the selected torque limit is reached. When maintaining activation of the foot pedal, the System will automatically alternate between forward and reverse rotation in an attempt to free the instrument.

When the Auto Reverse mode is selected, the unit automatically returns to the "Setup Options" menu and displays "(AUTO)" at the "Auto Stop Rev." prompt. **NOTE:** "Auto Stop Rev. (AUTO)" is the factory default.

- **Manual Reverse** - When the Manual Reverse mode is enabled, forward rotation of the handpiece will automatically stop when the selected torque limit is reached. Upon releasing and then reapplying pressure to the foot pedal, the handpiece will rotate in the reverse direction. The handpiece will continue to rotate in reverse until the foot pedal is released once again.

If pressure is then reapplied to the foot pedal, the handpiece will return to forward rotation.

When the Manual Reverse mode is selected, the menu automatically returns to the “Setup Options” menu and displays “(MAN)” at the “Auto Stop Rev.” prompt as shown below:



- **Auto Stop Off** - When Auto Stop Off is enabled and the foot pedal is activated, the handpiece will continually rotate in the forward direction and apply the selected torque limit until the foot pedal is released.

- **Cancel** - Exits out of the “Auto Stop Reverse” menu and returns to the previous Setup Options menu without saving any changes.

**C. Reverse Beeper:** When the Reverse Beeper feature is enabled, an audible beep will sound while the handpiece is rotating in the reverse direction. After pressing the SELECT button, the following menu will display:



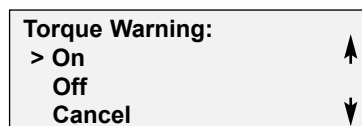
- **On** - Enables the Reverse Beeper sound. “Reverse Beeper (ON)” will be displayed at the Setup Options menu. **NOTE:** “Reverse Beeper (ON)” is the factory default.

- **Off** - Disables the Reverse Beeper sound. No sound will be emitted while the handpiece rotates in reverse. “Reverse Beeper (OFF)” will be displayed on the Setup Options menu.

- **Cancel** - Exits out of the menu and

returns to the Setup Options menu without saving any setup changes

**D. Torque Warning:** When the Torque Warning feature is active (“ON”), a chirping sound will be audible when the torque level reaches approximately 75% of the selected torque limit. When this option is selected, the following menu will display:

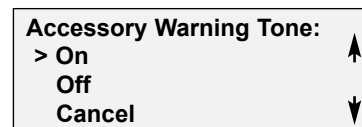


- **On** - Enables the Torque Warning sound. “Torque Warning (ON)” will be displayed on the Setup Options menu. **Note:** “Torque Warning (ON)” is the factory default.

- **Off** - Disables the Torque Warning sound. No tone will be emitted when the torque reaches 75%. “Torque Warning (OFF)” will be displayed on the Setup Options menu.

- **Cancel** - Exits out of the menu and returns to the Setup Options menu without saving any setup changes.

**E. Accessory Warning Tone:** When the Accessory Warning Tone feature is active (“ON”), a warning tone will be audible when a GT® Accessory file, ITR Emulation Accessory file, or ProTaper® Retreatment file is in use. When this option is selected, the following menu will display:



- **On** - Enables the Accessory Warning Tone. A warning sound will be emitted when the above accessory files are used. “Accessory Warn (ON)” will be displayed on the Setup Options menu.

## ADVANCED OPERATION - System Setup, *Cont'd*:

- **Off** - Disables the Accessory Warning tone. "Accessory Warn (OFF)" will be displayed on the Setup Options menu.

**Note:** "Accessory Warn (OFF)" is the factory default.

- **Cancel** - Exits out of the menu and returns to the Setup Options menu without saving any setup changes.

**F. Sleep Mode:** The user can instruct the unit to automatically enable a Sleep Mode after 15 or 30 minutes of inactivity, to conserve power. In Sleep Mode, the Display will turn off and the two green LEDs next to the FWD/REV and ASR/MAX buttons will continuously blink in an alternating pattern. To resume normal operation when the unit is in Sleep Mode, press any button on the keypad or press the foot pedal.

When this option is selected, the following menu will display:

<b>Sleep Mode:</b>	
> OFF	↑
15 min	
30 min	
Cancel	↓

- **OFF** - Disables the Sleep Mode feature. "Sleep Mode (OFF)" will be displayed on the Setup Options menu.
- **15 min** - Enables Sleep Mode after 15 minutes of inactivity. "Sleep Mode (15)" will be displayed on the Setup Options menu.  
**Note:** "Sleep Mode (15)" is the factory default.
- **30 min** - Enables Sleep Mode after 30 minutes of inactivity. "Sleep Mode (30)" will be displayed on the Setup Options menu.
- **Cancel** - Exits out of the Sleep Mode menu and returns to the Setup Options menu without saving any changes.

**G. Keypress Beep:** When the Keypress Beep feature is active, an audible beep will sound when any button on the keypad is pressed. When this option is selected, the following menu will display:

<b>Keypress Beep:</b>	
> On	↑
Off	
Cancel	↓

- **On** - Enables the Keypress Beep tone. "Keypress Beep (ON)" will be displayed on the Setup Options menu. **NOTE:** "Keypress Beep (ON)" is the factory default.
- **Off** - Disables the Keypress Beep sound. No sound will be emitted when a keypad button is pressed. "Keypress Beep (OFF)" will be displayed on the Setup Options menu.
- **Cancel** - Exits out of the Keypress Beep menu and returns to the Setup Options menu without saving any changes.

**H. System Volume:** Allows the user to select the volume level of all system sounds, including reverse beeper, torque warning, accessory tone, and keypress beep. When this option is selected, two quick beeps will sound and the following menu will display:

<b>System Volume:</b>	
> 100%	↑
80%	
60%	
40%	
20%	
OFF	
Cancel	↓

- **100%-20%** - Selects the desired Volume setting, in 20% increments, from "100%" down to "20%". **NOTE:** "System Volume (40%)" is the factory default.

- **Off** - Disables Volume feature, turning off all system sounds.

- **Cancel** - Exits out of the System Volume menu and returns to the Setup Options menu without saving any changes.

**I. Save Settings: IMPORTANT:** When any of the above seven Setup Options settings are changed, the new settings must be saved under the “Save Settings” command. Otherwise, the last-used settings will stay active. **Note:** Multiple Setup Options changes can be changed then saved altogether at one time.

This “Save Settings” option requires the user to either save or ignore the new Setup settings, or to cancel out of the menu.

When this option is selected, the following prompt will display:

<b>Save Setting Changes:</b>	
> <b>Yes</b>	↑
<b>No</b>	
<b>Cancel</b>	↓

- **YES** - Saves the system-wide settings to the unit software, overwriting the previous settings.

- **No** - Returns to the last-used settings without saving any edits or changes.

- **Cancel** - Returns to the previous “Setup Options” menu without saving any edits or changes.

**J. Cancel:** Returns to the last-used settings without saving any edits or changes to the Setup Options.

## ADVANCED OPERATION - Editing and Creating Series:

**Follow the Steps below to customize the AEU-27A default Series:**

1. Use the SERIES Left/Right arrow buttons to select the specific Series (S1-S5) you wish to customize.
2. Press and hold the EDIT button. Two beeps will sound and then the following Series Options Menu will display:

**Series Options:**  
> Save Current Settings   ▲  
Load From Library  
Modify Series  
Cancel                       ▼

3. Using the FILE Up/Down buttons, move the selector-arrow to the desired option and then press the SELECT button. Prompts will appear for each option - see descriptions below and on pages 21-24.  
**Note:** The Cancel option will return the user to the last-used Series settings without saving any changes.

### A. Save Current Settings:

1) Once the "Series Options" Menu is displayed above in Step-2, position the selector-arrow at the "Save Current Settings" option and press the SELECT button. The following "USER DEFINED FILE NAME" Menu will display (Example Only):

**USER DEFINED FILE NAME**  
**1800 RPM                   30 g-cm**  
**Edit File Name With Arrows.**

A flashing cursor will appear under the first letter in "USER DEFINED FILE NAME", and the following three commands will scroll across the bottom of the menu, which allow the user to edit the file name, adjust the speed and torque, and save any changes:

**a) Edit File Name With Arrows:** If you wish to save your new settings under a new FILE name, use the Left/Right SERIES

Arrow buttons to move the flashing cursor laterally under a specific letter in the name, then press the FILE Up/Down Arrow buttons to select the desired alphanumeric symbol. (The Down Arrow moves forward through the alphanumeric range; the Up Arrow moves backward.)

**b) Press Speed Or Torque Buttons To Change:** This prompt gives the user one more opportunity to change the Speed and Torque settings before saving them under the new FILE name. Press the Speed or Torque Up/Down buttons as desired. **Note:** These final changes will overwrite any previous Speed or Torque edits.

**c) SELECT To Save:** After you have edited the File Name and adjusted the Speed and Torque settings in the steps above, you can save your new settings by pressing the SELECT button. The following Menu will appear:

**Save Series Changes?**  
> Yes                       ▲  
No  
Cancel                     ▼

Move the selector-arrow to the desired command using the FILE Up/Down Arrow buttons and then press the SELECT button:

- **YES** - Saves the customized changes into the SERIES location, overwriting the previous settings.
- **No** - Returns to the previous SERIES menu without saving any edits or changes.
- **Cancel** - Returns to the previous File Edit menu without saving any edits or changes.

## B. Load From Library:

1) Using the FILE Up/Down buttons, move the selector-arrow down to the "Load From Library" option and then press the SELECT button. The following menu will display:

<b>SELECT Handpiece:</b>	
> 1:5 (AHP-71)	↑
1:1 (AHP-63)	
8:1 (AHP-88MN/MNP)	
16:1 (AHP-62MN/MNP)	
Cancel	↓

**Note:** When the above menu displays, the selector-arrow automatically points to the previously enabled ratio/handpiece.

2) Move the FILE Up/Down selector arrow to the desired ratio/handpiece and press the SELECT button to enable it.

- **Cancel:** Returns to the previous "Series Options" menu without changing any handpieces or library settings.

3) Once the desired handpiece is selected above in Step-2, the following menu will display, which lists all of the available files in the unit's File Library (see Chart 3 on page 13 for the complete list):

<b>SELECT File Series:</b>	
> PATHFILE ALL FILES	↑
PATHFILE INDIV FILES	
(etc...)	↓

4) Use the FILE Up/Down buttons to move the selector-arrow to the desired Library File Series and then press the SELECT button. The following menu will display:

<b>Library Load Options:</b>	
> Load Entire Series	↑
Load Individual File	
Cancel	↓

5) Move the selector-arrow to the desired menu option and then press the SELECT button:

- **Load Entire Series:** Loads the entire file series into the SERIES location.

- **Load Individual File:** Displays a sub-menu listing of all the available individual files in the selected SERIES. Move the FILE Up/Down selector-arrow to the desired file choice and then press the SELECT button to enable the new file.

- **Cancel:** Returns to the previous "SELECT Series" menu without changing any file settings.

6) Once the new File/Series is loaded above in Step-5, the following prompt will display:

<b>Save Series Changes?</b>	
> Yes	↑
No	
Cancel	↓

7) Move the selector-arrow to the desired menu option and then press the SELECT button:

- **Yes:** Saves the new File/Series into the Series location.

- **No:** Returns the Series to its previous file settings without any edits or changes.

- **Cancel:** Returns to the previous menu without changing any file settings.

## C. Modify Series:

1) Using the FILE Up/Down buttons, move the selector-arrow down to the "Modify Series" option and then press the SELECT button. The following menu will display:

**ADVANCED OPERATION - Editing and Creating Series: *Cont'd*:**

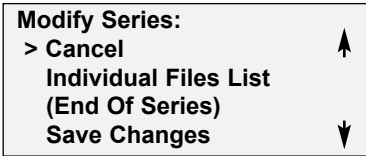


**Note:** When the above menu displays, the selector-arrow automatically points to the previously enabled ratio/handpiece.

**2)** Move the FILE Up/Down selector arrow to the desired ratio/handpiece and press the SELECT button to enable it.

- **Cancel:** Returns to the previous “Series Options” menu without changing any handpieces or library settings.

Once the desired handpiece is selected above in Step-2, the following menu will display, which allows the user to: cancel the modification, edit individual files, add new files from the File Library, and save any changes:



**3)** Move the selector-arrow to the desired menu option and then press the SELECT button:

- **Cancel:** Returns to the previous “SELECT Handpiece:” menu without saving any edits or changes.

**b) Individual Files List:** When the SELECT button is pressed at an individual file in the Series, the following “File Edit Options” Menu will display:



**4)** Move the selector-arrow to the desired menu option and press SELECT:

- **Cancel** - Returns to the previous “Modify Series” menu without saving any changes.
- **Edit** - When Select button is pressed, the following menu will display (example Only).



A flashing cursor will appear under the first letter in “FILE NAME”, and three commands will scroll across the bottom of the menu, which allow the user to edit the file name, adjust the speed and torque, and save any changes.

**Edit File Name With Arrows:** If you wish to save your new settings under a new File Name, use the SERIES Left/Right Arrow buttons to move the flashing cursor laterally under the specific letters in the name, then press the FILE Up/Down Arrow buttons to select the desired alphanumeric symbol. (The Down Arrow moves forward through the alphanumeric range; the Up Arrow moves backward.)

**Press Speed Or Torque Buttons To Change:** You can now change the Speed and Torque settings before saving them under the new File Name. Press the Speed or Torque Up/Down buttons accordingly.



**SELECT To Save:** After you have edited the File Name and adjusted the Speed and Torque Buttons in the above steps, you can Save your new File by pressing the SELECT button. Your new File will appear in the “Modify Series” menu.

- **Delete** - When the Select button is pressed, the File is immediately deleted from the list of individual files. **NOTE:** Once executed, this command cannot be reversed.

- **Insert** - When the Select button is pressed, the following menu displays a listing of all the Series from the File Library (see Chart 3 on page 13 for the complete list):

**SELECT File Series:**

> PATHFILE ALL FILES    ↑

PATHFILE INDIV FILES    ↓

(etc...)

5) Move the selector-arrow to the desired Series and press SELECT. The following menu will display:

**SELECT File To Insert:**

> Individual File In Series    ↑

Individual File In Series    ↓

(etc...)

6) Move the selector-arrow to the individual File that you wish to Insert and press SELECT. The following menu will display briefly, and then the unit will return to the “Modify Series” menu.

**File Selected.**

**Returning to Series...**

- **Move Up** - When the Select button is pressed, the File is immediately moved up one position in the individual file list in the “Modify Series” menu.

- **Move Down** - When the Select button is pressed, the File is immediately moved down one position in the individual file list in the “Modify Series” menu.

**c) End Of Series:** When the “(End Of Series)” option is selected, the following Menu will appear:

**File Edit Options:**

> Cancel    ↑

Insert    ↓

7) Move the selector-arrow to the desired command and press SELECT:

- **Cancel** - Returns to the previous “Modify Series” menu without saving any changes.

- **Insert** - When the Select button is pressed, the following menu will display the entire File Library Series:

**SELECT File Series:**

> PATHFILE ALL FILES    ↑

PATHFILE INDIV FILES    ↓

(etc...)

8) Move the selector-arrow to the desired Series and press SELECT. The following menu will display:

**SELECT File To Insert:**

> Individual File In Series    ↑

Individual File In Series    ↓

(etc...)

9) Move the selector-arrow to the individual File that you wish to Insert and press SELECT. The following menu will display briefly, and then the unit will return to the “Modify Series” menu:

**File Selected.**

**Returning to Series...**

## ADVANCED OPERATION - Editing and Creating Series: *Cont'd*:

**d) Save Changes:** When the “Save Changes” prompt is selected, the following Menu will appear:

<b>SERIES NAME</b>
<b>Edit Series Name...Press</b>

Two prompts, “Edit Series Name” and “Press SELECT To Save Edits”, will scroll across the bottom of the menu:

- **Edit Series Name** - Use the SERIES Left/Right Arrow buttons to move the flashing cursor laterally under the individual letters in the current Name, then press the FILE Up/Down Arrow buttons to select the desired alphanumeric symbol.

- **SELECT To Save Edits** - After you have edited the Series Name, you can Save your new Series by pressing the SELECT button. The following Menu will appear:

<b>Save Series Changes?</b>
<b>&gt; Yes</b>
<b>No</b>
<b>Cancel</b>

**10)** Move the selector-arrow to the desired command and then press the SELECT button:

- **YES** - Saves the new Series into the Series location, overwriting the previous settings.
- **No** - Returns to the previous Series settings menu without saving any edits or changes.
- **Cancel** - Returns to the previous Series renaming menu without saving any edits or changes.

# REPROGRAMMING THE UNIT

**Fig. 7 - Programming Slot**



The AEU-27A has the ability to load software updates and enhance the functionality of the system, should this be desired. A card slot, labeled "Memory Card Port", is provided on the back of the unit (see Figure 7). This Port accepts memory cards, P/N: MC-27A, that are very similar to those used in common consumer devices. These cards, available from Aseptico, enable a user to update software or replace existing software that might have been accidentally erased or corrupted. Contact Aseptico for more information on card usage and availability. To reprogram an AEU-27A unit, follow the Steps below:

## Programming Steps:

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

5. The AEU-27A Display will show the following message:

**Memory Card Detected.  
Re-program?  
(RATIO = YES, CAL = NO)**

- Press the RATIO key on the Control Panel.

6. The Display will show the following message:

**Series Will Be Erased!  
Continue?  
(RATIO = YES, CAL = NO)**

- Press the RATIO key on the Control Panel.

7. The Display will show the following message:

**Programming...**

- A status bar will indicate the progress of the programming.

8. When the programming is complete, the Display will show the following message:

**Programming Successful.  
Eject Card.**

- Press the card inward slightly, then release it to eject it. When the card is ejected, the AEU-27A System will reset with normal power-up screen displayed.

9. Remove the memory card and store it in a safe place. Close the rubber dust cover on the Memory Card Port.

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

**Programming Failed.  
Eject Card.**

Then:

**Console Software Error.  
Re-program unit.**

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

## MAINTENANCE & STERILIZATION:

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

**IMPORTANT** Protect motor from excess oil draining from handpiece. After lubricating and before autoclaving, stand handpiece by its base on a paper towel and allow excess oil to drain (see Figure 8).

**Fig. 8**



**MOTOR & CORD ASSEMBLY** - The entire AE-250-30 micromotor and cord assembly is fully autoclavable. Before autoclaving the assembly, remove the handpiece from motor and install autoclaving cap into end of the motor cord connector as shown in Figure 9. The cap is supplied with the cord.



### STERILIZATION PROCEDURE:

**WARNING** - Sterilize the motor between each patient use.

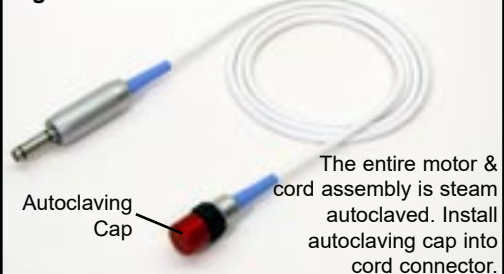
**WARNING** - Use of a sterilization method or temperatures other than what are prescribed may damage the motor or present a risk of cross-contamination between patients.

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

### Pre-Clean:

1. Thoroughly brush off any visible signs of debris from the AE-250-30 micromotor and cord before sterilizing.
2. Thoroughly clean the device with a moist cloth or towel to remove any remaining signs of debris.

**Fig. 9 - MOTOR & CORD STERILIZATION**



### WARNING

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

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

### CAUTION:

The AE-250-30 micromotor is sensitive to shock. Do not drop or impact motor against a hard surface.

### CAUTION FOR ALL STERILIZATION:

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

### Sterilize:

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

#### A. Gravity Wrapped:

- Minimum Temperature - 132°C (270°F).
- Full Cycle Time - 20 minutes
- Minimum Dry Time - 30 minutes

#### B. Gravity Unwrapped "Flash Sterilization":

- For Immediate Use Only
- Minimum Temperature - 132°C (270°F).
- Full Cycle Time - 10 minutes

**C. Prevacuum Wrapped:**

- Preconditioning Pulses - 3
- Minimum Temperature - 132°C (270°F).
- Full Cycle Time - 4 minutes
- Minimum Dry Time - 40 minutes

Avoid sharply bending the cord when auto-claving. Alternatively, wipe down the motor cord with disinfecting solution, and/or sleeve the cord between each patient.

**CONSOLE** - The exterior of the console may be cleaned by wiping with a soft cloth moistened with a mild detergent or a 1:10 bleach solution (1 part household bleach to 10 parts water).

**IMPORTANT:** Use of other cleaning or disinfecting solutions may damage the console and may void the warranty.

**FOOT PEDAL** - The exterior of the foot pedal may be cleaned by wiping with a soft cloth moistened with mild detergent or disinfecting solution.

**NOTE:** Call Aseptico at 1-800-426-5913 for any questions or clarifications on the above sterilization procedures.

## TROUBLESHOOTING:

Problem:	Correction:
Console does not light up when on:	<ul style="list-style-type: none"> <li>• If Sleep Mode LED's are blinking, press any button on Control Panel or press foot pedal to exit Sleep Mode.</li> <li>• Check console to power connection.</li> <li>• Check fuse. If blown, replace with 1.6A, 250V slo-blow fuse.</li> </ul>
Console lights up when turned on, but handpiece does not turn:	<ul style="list-style-type: none"> <li>• Check motor plug connection.</li> <li>• Check foot pedal connection.</li> <li>• Depress foot pedal.</li> <li>• Increase RPM.</li> <li>• Increase Torque setting</li> <li>• Check that a file is properly seated in the handpiece and the latch is closed.</li> </ul>
Motor slowing down or sluggish:	<ul style="list-style-type: none"> <li>• Check for dirty, under-lubricated handpiece.</li> <li>• Check if handpiece lubricant is draining into motor. After lubricating and before autoclaving, stand handpiece on its base to let excess lubricant drain out.</li> </ul>
Endo functions displaying incorrectly:	<ul style="list-style-type: none"> <li>• Verify that ratio setting matches handpiece ratio. Use Calibration function.</li> <li>• Turn power switch off, wait 5 seconds, then turn back on to reset.</li> </ul>
"Check Motor" warning is displayed:	<ul style="list-style-type: none"> <li>• Check that motor is properly connected to the console.</li> <li>• Check that the proper motor, AE-250-30, is connected to the console.</li> </ul>

## SPECIFICATIONS:

**Console Dimensions:** 7.1"W x 7.61"L x 4.35"H  
(18.0 cm x 19.3 cm x 11.0 cm)

**Console Weight:** 2.0 lbs (0.9 kg)

**Power:** 100-240V   
1.0 - 0.5 A  
50-60 HZ

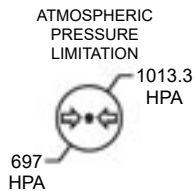
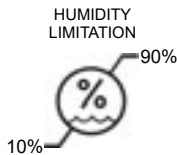
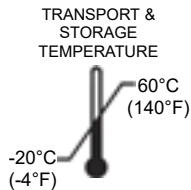
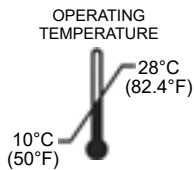
**Fuses:** 1.6A, 250V, Slo Blow Type

**Duty Cycle:** 16.7%

NOTE: The appliance inlet is the mains disconnect means.

### Environmental Conditions:

- Operating Temperature 10 to 28°C (50 to 82.4°F)
- Transportation & Storage Temperature -20 to 60°C (-4 to 140°F)
- Relative Humidity 10 to 90% non-condensing
- Altitude 0 to 3048 meters (0 to 10,000 feet)



## CHANGING THE FUSE:



### **WARNING**



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

1. Remove the Fuse Holder from the Power Inlet connector (see Figure 10).
2. Replace the fuses in the Fuse holder.

#### **Replacement Fuses:**

1.6A, 250V slo-blow fuse  
(Fuse size: 5 x 20mm)


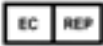

















**NOTE:** The AEU-27A features auto-sensing, global voltage compatibility. The fuse indicated is correct for 100V-240V 50/60 Hz line voltage.

**Fig. 10 - Fuses**





## SYMBOL DEFINITIONS:

	Attention, consult accompanying documents		Authorized European Representative
	Type B Equipment		Do Not Open - Risk Of Electric Shock
	Footswitch		Alternating current
	Do Not Throw Into Trash		Protection Against Dripping Water
	Manufacturer		Temperature Limitation
	Fuse Rating		Atmospheric Pressure Limitation
	Caution, Consult Accompanying Documents		Humidity Limitation
	Protective Earth (Ground)		Sterilize At 132°C (270°F)
	Part Number		Caution: US Federal Law Prohibits Dispensing Without Prescription
	Serial Number		

## This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

## 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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