
AEU-27DTCR/-W

ENDODONTIC MOTOR



OPERATION AND
MAINTENANCE MANUAL





SAFETY PRECAUTIONS


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


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


- **WARNING:** Injury or death may result if ignored.
- **CAUTION:** Damage to property or the environment may result if ignored.
- **NOTE:** Important additional information and hints.


 **WARNING:** For use by qualified and trained personnel only.


 **WARNING:** The AEU-27DTCR Endodontic Motor is supplied Non-Sterile. To avoid the risk of bacterial or viral infections, clean, disinfect, and sterilize specified components as recommended in the Maintenance and Sterilization section of this manual, before first use, after repair, and before each patient use thereafter.


 **WARNING:** Inspect the system components for damage or material degradation before each use. If system components do not operate as expected at startup, replace or send for repair. Do not use the device if it appears damaged or defective.

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


 **WARNING:** Do not use this device for any dental procedure other than the stated intended use.


 **WARNING:** Use only the cleaning, disinfection, and sterilization procedures included in this manual. Other procedures may damage the components or increase the risk of cross-contamination between patients.


 **WARNING:** There are no serviceable components inside this unit. Do not disassemble or alter the system or the system components.


 **WARNING:** The 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-27DTCR is not intended for operation in the presence of flammable anesthetics or gases.


 **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.


 **WARNING:** Files are single use only. Never use damaged or worn files as they may separate in the root canal.


 **WARNING:** Always use irrigating coolant when using high-speed handpieces.


 **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:** Federal (United States) 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.


 **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.


 **CAUTION:** Connect mains power cable to a properly grounded outlet only.


 **CAUTION:** The AEU-27DTCR motor is sensitive to impact and may be damaged if dropped or impacted against a hard surface.

 **CAUTION:** It is recommended to always have the patient wear a rubber dam during endodontic procedures.

 **CAUTION:** When sterilizing the AEU-27DTCR motor, do NOT exceed 135° C (275°F).

 **CAUTION:** Do not soak or submerge the AEU-27DTCR motor in any liquid.

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

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

 **NOTE:** Report any malfunction or deterioration in the characteristics and/or performance of this device, as well

as any inadequacy in its labelling or the instructions for use which might lead to or might have led to the death of a patient or user or to a serious deterioration in their state of health (e.g. Serious Adverse Event) immediately to the manufacturer and the regulatory authority where the incident occurred.

ELECTROMAGNETIC COMPATIBILITY

This equipment meets all requirements for safety and performance, related to Electromagnetic Compatibility Standard IEC 60601-1-2:2014.

! **NOTE:** The emissions characteristics of this equipment make it suitable for use in industrial areas and hospitals (CISPR 11 class A). If it is used in a residential environment (for which CISPR 11 class B is normally required) this equipment might not offer adequate protection to radio-frequency communication services. The user might need to take mitigation measures, such as relocating or re-orienting the equipment.

! **WARNING:** Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.

! **WARNING:** Use of accessories, transducers and cables other than those specified or provided by the manufacturer of this equipment could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.

! **WARNING:** Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the Unit, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.

! **CAUTION:** This device was tested to the parameters for Electromagnetic Emission and Immunity as stated in IEC 60601-1- 2:2014 and is within those parameter limits. These requirements provide reasonable protection against harmful electromagnetic interference in a typical medical installation. However, high levels of radio-frequency 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 radio frequency transmitters and other sources of electromagnetic energy.

FCC COMPLIANCE STATEMENT

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CANADA COMPLIANCE STATEMENT

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions: (1) This device may not cause interference. (2) This device must accept any interference, including interference that may cause undesired operation of the device.

EU DECLARATION OF CONFORMITY

Hereby, Aseptico, Inc. declares that the radio equipment type AE-7PMW is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: www.aseptico.com

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Information concerning the accuracy and precision of this product may be obtained upon request by contacting Aseptico at the address shown on this page.



8333 216th Street S.E., Woodinville, WA 98072
 Phone (425) 487-3157
 Web: www.aseptico.com

Congratulations!

Your new Aseptico AEU-27DTCR Endodontic Motor 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-27DTCR an exceptionally powerful and convenient system, capable of supporting rotary and reciprocation Endodontic procedures.

INTENDED PURPOSE & INTENDED USERS

Intended Purpose:

Intended Use	The AEU-27-DTCR is intended to provide root canal procedures.
Indications for Use	For treatment of patients who need root canal therapy.
Contraindications	None known.

Intended Users:

The AEU-27DTCR are prescription devices that are used by healthcare professionals in the field of dentistry.

Intended Patient Population:

There are no restrictions on age group, sex, weight range, health, or other conditions on the patient population.

EXPECTED SERVICE LIFE

Seven years

ESSENTIAL PERFORMANCE

This device does not have ESSENTIAL PERFORMANCE as defined in IEC 60601-1.

AEU-27DTCR

PACKAGE CONTENTS

- AEU-27DTCR Electronic Control Console (P/N 120439)



- 30K RPM Autoclavable Brushless Micromotor (P/N AE-250-30)



- Motor Holder (P/N 461561-02)



- Motor Holder Attaching Bracket (P/N 461653)



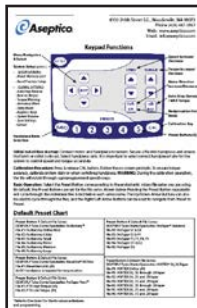
- Footswitch (P/N AE-7PM) (AEU-27DTCR only)



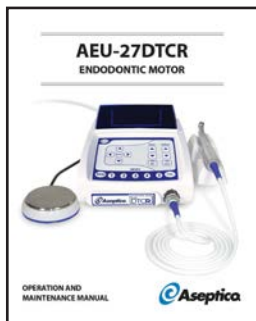
- Power Cord (P/N 840079)



- Quick Reference Guide (P/N 421250)



- Directions for Use (P/N 421249)



- AE-7PMW-4 Wireless On/Off Foot Control with Receiver (AEU-27DTCR-W only)



SUPPORTED HANDPIECES

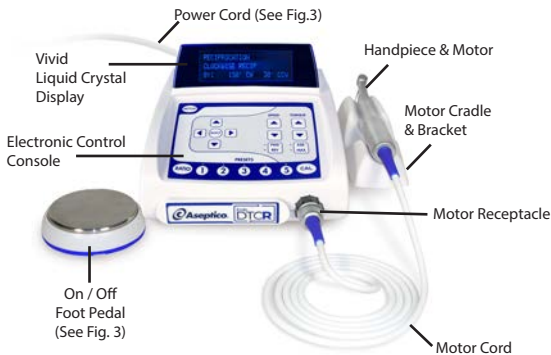
- AHP-71 1:5 Speed-Increasing Handpiece
- TUL-1 1:1 Contra-Angle Handpiece (Dentsply)
- AHP-63 1:1 Contra-Angle Handpiece
- TUL-8M 8:1 Reduction Push-Button Head Contra-Angle Handpiece (Dentsply)
- AHP-88MN 8:1 Reduction Latch-Head Contra-Angle Handpiece (no longer available for sale)
- AHP-88MNP 8:1 Reduction Push-Button Head Contra-Angle Handpiece
- TUL-16M 16:1 Reduction Latch-Head Contra-Angle Handpiece (Dentsply)
- AHP-62MN 16:1 Reduction Latch-Head Contra-Angle Handpiece (no longer available for sale)
- AHP-62MNP 16:1 Reduction Push-Button Head Contra-Angle Handpiece (no longer available for sale)

SYSTEM SETUP

The items identified in the Motor & Cord Sterilization section must be sterilized before each use.

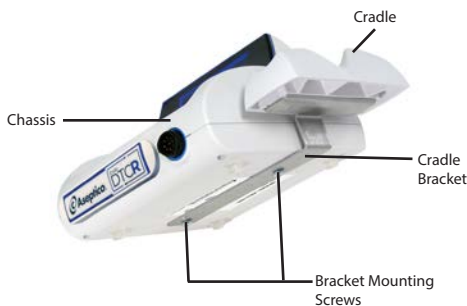
1. Unpack the console and accessories (see Fig. 1).

Figure 1 - Component & Console Identification



2. Install the Motor Cradle: The 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 10-32 X .25 screws provided (see Fig. 2). Align the slot on the bottom of the Cradle with the mounting rail on the Bracket and snap into place.

Figure 2 - Motor Cradle



3. Connect the Motor/Cord Assembly to the Motor Receptacle on the lower right front of the console. The cord connector and receptacle are keyed to engage one another. Insert, then turn the locking nut clockwise to secure.

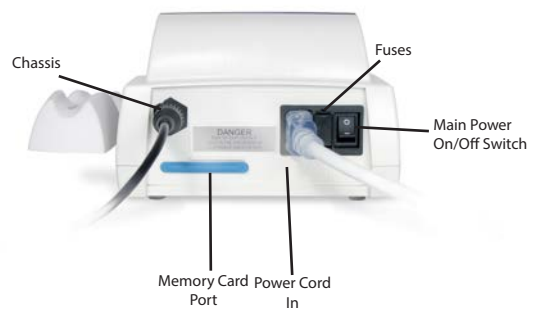
4. Attach the supplied foot pedal or wireless foot control receiver to the connector on the back of unit marked "Foot Pedal" (see Fig. 3). The cord connector and receptacle are keyed to engage one another. Insert, then turn the locking nut clockwise to secure.



If setting up an AE-7PMW or AE-70V2W wireless foot control for the first time, refer to **Battery Install / Replacement** Instructions in the **Maintenance & Cleaning** section to install batteries.

5. Connect the supplied power cord to the receptacle on the back of the unit marked "Power" (see Fig. 3).

Figure 3 - Console Back



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

Figure 4 - Handpiece/Motor Connection



7. If utilizing an AE-7PMW wireless foot control, depress the foot control to ensure motor activation. **Your foot control comes pre-paired to the receiver** and should run the motor when you depress the foot control. If it does not, refer to Pairing Instructions in the **General Operation** section.



QUICK START OPERATION

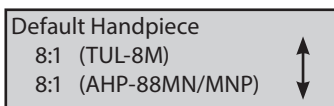
After the unit has been set up, you are ready for quick start operation as follows:

1. Turn the Power Switch on the rear panel of the console from the 'OFF' (O) to the 'ON' (-) position (see Fig. 3). The Console Display will turn on. An introduction will briefly appear on the screen, which displays the software version installed:

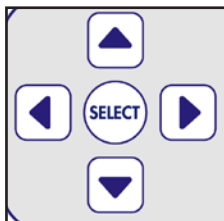
AEU-27DTCR
Rotary & Reciprocation
Ver. xxx

The AEU-27DTCR is programmed at the factory to initially start up with Preset 1 active. Subsequently, when the power is turned on, the last used settings will be active.

2. Set the default handpiece: On your first use (and after recalling Factory Setup - see System Setup Menu), you must specify which default 8:1 ratio handpiece you are using with the AEU-27DTCR. This ensures accurate torque response. The two choices are the TUL-8M and the AHP-88MN/MNP 8:1 reduction handpieces. An 8:1 handpiece is required for reciprocation. The following prompt will display:



Use the Up/Down arrow buttons to select the 8:1 handpiece you are using, then press the SELECT button to confirm your selection.

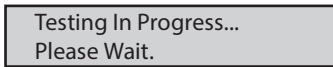


3. Insert an endodontic rotary file into the handpiece.

4. Use the Calibration function to calibrate the AEU-27DTCR. Press and release the CAL button.



The following prompt will display:



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

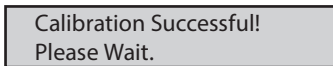


CAUTION: Before calibration, ensure that a file or bit is secured in the handpiece.

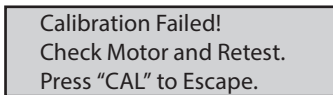


Pressing, holding, then releasing the CAL/SETUP button will enable the system's advanced setup options menu. Refer to the Advanced Operation section for complete instructions.

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

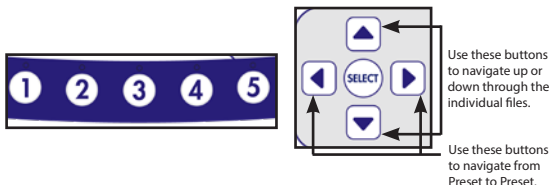


If calibration fails, the following prompt will appear advising the user to press the CAL button to escape out of the test and then check the motor/handpiece for problems:



5. Select the Preset button corresponding to the endodontic rotary file series you are using. By default, the preset buttons are set for the file series shown in Chart 1. Pressing the Preset Key repeatedly will cycle through the individual files listed below each series name. The Up/Down Arrow buttons can also be used to navigate up or down through the individual files, and the Left/Right Arrow buttons can be used to navigate from Preset to Preset.


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 in the Advanced Operation - Global Options section to select desired Sleep Mode activation period), the AEU-27DTCR will go into Sleep Mode to conserve power. To exit Sleep Mode and resume operation, press any key or foot pedal.

Chart 1 - Default Presets

Preset Button 1 Default File Series: DENTSPLY Tulsa Dental Specialties TruNatomy™
File #1: TruNatomy Orifice Mod
File #2: TruNatomy Glider
File #3: TruNatomy Small
File #4: TruNatomy Prime
File #5: TruNatomy Medium
File #6: TruNatomy Large
Preset Button 2 Default File Series: DENTSPLY Tulsa Dental Specialties WaveOne® All Files
File #1: WaveOne Gold (All)
Preset Button 3 Default File Series: DENTSPLY Tulsa Dental Specialties ProTaper Next™ Files
File #1: PTN High Torque (All)
File #2: PTN Low Torque (All)
Preset Button 4 Default File Series: 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
Preset Button 5 Default File Series: 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 and .20 taper



CAUTION

During Calibration, the handpiece will operate, rotating through a pre-programmed speed range. Before calibrating, be sure a file or instrument is secured in the handpiece. An 8:1 handpiece is required for reciprocation.

Note:

WaveOne® and reciprocating files have factory dedicated settings that can not be manipulated by the user.

Note:
The File Series listed above in Chart 1 are trademarks of DENTSPLY Tulsa Dental Specialties.

CONTROL PANEL FUNCTIONS

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

1. 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:

Chart 2 - Handpiece Ratio, Speed, and Torque Ranges

Ratio	Speed (RPM)	Torque (g*cm)
1:5	1,500 - 150,000	2 - 15
1:1	300 - 30,000	4 - 120
8:1*	40 - 3,600	30 - 1,000
16:1	20 - 1,800	60 - 2,000

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 (TUL-16M)**

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 on next page):

System Setup: (press & hold) ③

- SETUP OPTIONS:
 - Preset Memory Lock
 - Recall Factory Setup
- GLOBAL OPTIONS:
 - Auto Stop Reverse
 - Reverse Beeper
 - Torque Warning
 - Accessory Warn
 - Sleep Mode
 - Keypress Beep
 - System Volume
 - Save Settings
 - Cancel

Menu Navigation & Select ⑩

Handpiece Ratio Selection ①

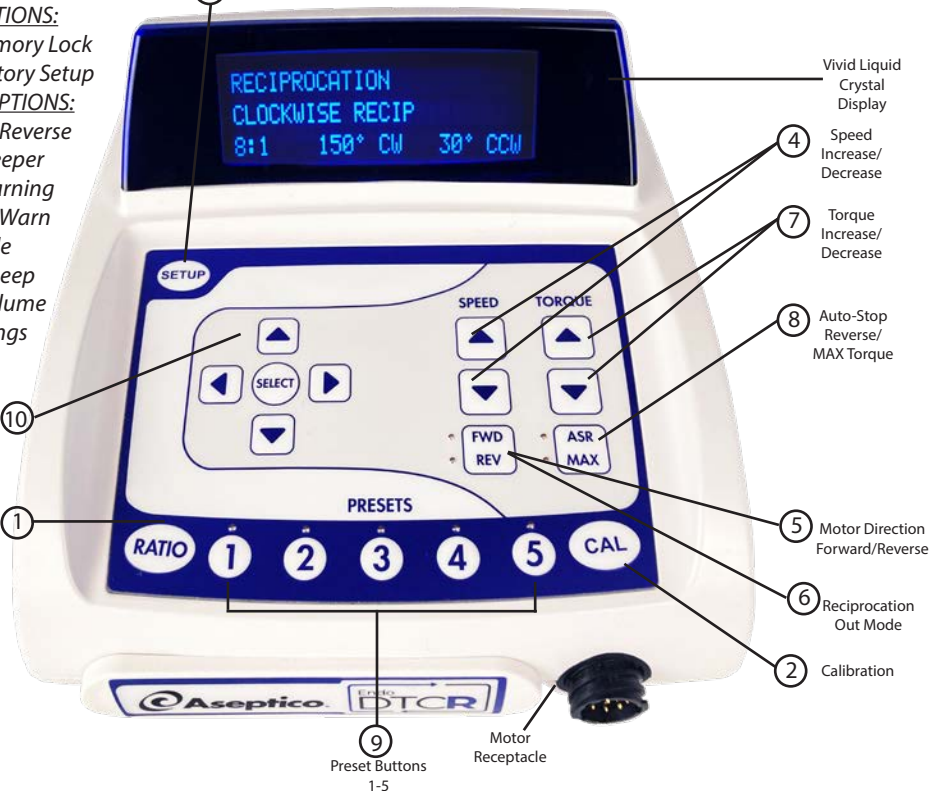


Figure 5 - Console Display & Controls

Vivid Liquid Crystal Display

④ Speed Increase/Decrease

⑦ Torque Increase/Decrease

⑧ Auto-Stop Reverse/MAX Torque

⑤ Motor Direction Forward/Reverse

⑥ Reciprocation Out Mode


② Calibration

⑨ Preset Buttons 1-5

Motor Receptacle

CONTROL PANEL FUNCTIONS (cont.)

Manual Mode:
16:1 1500 RPM 60 g-cm

 The RPM, forward/reverse, and torque settings can also be changed manually - refer to paragraphs 4 - 8 in the Control Panel Functions section for more information on changing these settings.

If a new handpiece/ratio is selected when in Reciprocation mode, the unit enters Manual Mode and displays the new ratio with current reciprocation travel directions clockwise and counterclockwise (example below):


Manual Mode:
16:1 1500 RPM 60 g-cm

B. Press and hold the RATIO button to display a list of all the handpiece/ratio options. Then, use the 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

 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.

2. CAL Button: Activates the Integrated Calibration Program Menu.



System Calibration:

 **CAUTION:** Before calibration, ensure that a handpiece is attached to the motor 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 Restest.
Press "CAL" to Escape.**

3. SETUP Button: Activates the System Setup Menu.

System Setup:


Pressing the SETUP button will enable the System's Setup options menu. Refer to the System Setup section for complete instructions.

4. SPEED Button: Allows 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

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

CONTROL PANEL FUNCTIONS (cont.)

i Speed ranges are accurate when the handpieces referenced in the Quick Start Operation section are used with the supplied 30K motor. Speed ranges are shown in Chart 2.

i When in Reciprocation Mode (Preset #2), the functionality of these SPEED Up/Down buttons is automatically disabled.

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 Global Options Section.

i When in Reciprocation Mode (Preset #2), the functionality of this FWD/REV button changes - Refer to Step 6 below.

6. Reciprocation Button: When in Reciprocation Mode (Preset #2), this button sets the reciprocation function of the motor/handpiece.



Used only when WaveOne(R) or reciprocating files are selected. Press and release the FWD/REV button until the desired function is indicated: a solid green LED with a solid amber LED indicates reciprocating rotation; a blinking green LED with a solid amber LED indicates rotation opposite the cutting direction of the file.

i This reciprocation function is only used with 8:1 ratio handpieces and reciprocating files.

7. 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

12. with the ratio and speed settings (example only):

MANUAL MODE
16:1 1800 RPM 90 g-cm

i When in Reciprocation Mode (Preset #2), the functionality of these TORQUE buttons is automatically disabled.

8. 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.

i Other ASR configurations are available - see Global Options Section for details.

i When in Reciprocation Mode (Preset #2), the functionality of this ASR/MAX button is automatically disabled.

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.


i 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.

9. PRESETS: Allows user to quickly access five factory default file series or user customized file settings.



Select the Preset Button corresponding to the endodontic rotary file series you are using. By default, the preset buttons are set for the file series shown in Chart 1. Press the Preset Button repeatedly to cycle through the individual files listed below each series name. The Up/Down Arrow Buttons can also be used to navigate up or down through the individual files, and the Right/Left Arrow Buttons can be used to navigate from Preset to Preset.

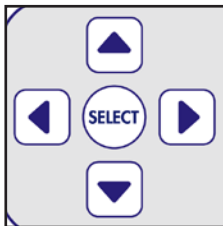
See Chart 3 for a complete library of pre-programmed file speed and torque settings.


 *The console will drive these library files as close to the indicated speed and torque values as allowed by the parameters of the handpieces.*

- 10. Menu Navigation & Select Buttons:** *Allows user to navigate through Presets, menus, and text characters when selecting and adjusting settings.*

SELECT Button - Selects chosen options/settings.

ARROW Buttons - Allow user to navigate laterally (left/right) and vertically (up/down) through Presets and menus.



 *The right-pointing arrow can also be used like the SELECT button to select items, and the left-pointing arrow can be used to exit out of a menu and return back to the previous menu.*


 *If the left arrow is pressed when changing the System Setup or Global Options, the unit will automatically ask to save any changes before exiting out of the Menu.*

Chart 3 - AEU-27/DTCR File Library Settings

TRUNATOMY	Speed (RPM)	Torque (g-cm)
File Size		
TRUNATOMY ORIFICE MOD	500	150
TRUNATOMY GLIDER	500	150
TRUNATOMY SMALL	500	150
TRUNATOMY PRIME	500	150
TRUNATOMY MEDIUM	500	150
TRUNATOMY LARGE	500	150

PATHFILE ALL ¹	Speed (RPM)	Torque (g-cm)
File Size		
PATHFILE (ALL FILES)	300	120

PATHFILE INDIV FILES	Speed (RPM)	Torque (g-cm)
File Size		
PATHFILE SIZE 19	300	120
PATHFILE SIZE 16	300	120
PATHFILE SIZE 13	300	120

WAVEONE ALL	Angle (CW)	Angle (CCW)
File Size		
WAVEONE GOLD (ALL)	30	150

PROTAPER NEXT ²	Speed (RPM)	Torque (g-cm)
File Size		
PTN HIGH TORQUE (ALL)	300	520
PTN LOW TORQUE (ALL)	300	200

PROTAPER UNIVERSAL	Speed (RPM)	Torque (g-cm)
File Size		
PROTAPER S1 & SX	300	520
PROTAPER S2 & F1	300	150
PROTAPER F2 F3 F4 F5	300	312
PROTAPER D1 & D2	500	312
PROTAPER D3	500	150

PROTAPER UNIVERSAL I	Speed (RPM)	Torque (g-cm)
File Size		
PROTAPER S1 & SX	300	520
PROTAPER S2 & F1	300	150
PROTAPER F2 F3 F4 F5	300	312

PROTAPER RETREAT	Speed (RPM)	Torque (g-cm)
File Size		
PROTAPER D1	500	312
PROTAPER D2	500	312
PROTAPER D3	500	150

VORTEX 04, 06 TAPER	Speed (RPM)	Torque (g-cm)
File Size		
VORTEX ORIFICE (ALL)	500	520
VORTEX 04/ 35-50	500	132
VORTEX 04/ 25 & 30	500	104
VORTEX 04/ 15 & 20	500	75
VORTEX 06/ 35-50	500	368
VORTEX 06/ 25 & 30	500	290
VORTEX 06/ 15 & 20	500	195

VORTEX ORIFICE OPENER	Speed (RPM)	Torque (g-cm)
File Size		
VORTEX ORIFICE (ALL)	500	520

VORTEX 04 TAPER	Speed (RPM)	Torque (g-cm)
File Size		
VORTEX 04/ 35-50	500	132
VORTEX 04/ 25 & 30	500	104
VORTEX 04/ 15 & 20	500	75

VORTEX 06 TAPER	Speed (RPM)	Torque (g-cm)
File Size		
VORTEX 06/ 35-50	500	368
VORTEX 06/ 25 & 30	500	290
VORTEX 06/ 15 & 20	500	195

GT Series 20, 30, 40	Speed (RPM)	Torque (g-cm)
File Size		
ACC 90,70,50,35/12	500	700
GT YEL 20/10 & 20/08	300	312
GT YEL 20/06 & 20/04	300	174
GT BLU 30/10 & 30/08	300	347
GT BLU 30/06 & 30/04	300	208
GT BLK 40/10 & 40/08	300	405
GT BLK 40/06 & 40/04	300	230

GT ACC & 20s YELLOW	Speed (RPM)	Torque (g-cm)
File Size		
ACC 90,70,50,35/12	500	700
GT YEL 20/10 & 20/08	300	312
GT YEL 20/06 & 20/04	300	174

GT ACC & 30s BLUE	Speed (RPM)	Torque (g-cm)
File Size		
ACC 90,70,50,35/12	500	700
GT BLU 30/10 & 30/08	300	347
GT BLU 30/06 & 30/04	300	208

GT ACC & 40s BLACK	Speed (RPM)	Torque (g-cm)
File Size		
ACC 90,70,50,35/12	500	700
GT BLK 40/10 & 40/08	300	405
GT BLK 40/06 & 40/04	300	230

GT SERIES X (3)	Speed (RPM)	Torque (g-cm)
File Size		
GT-X 20/04 & 20/06	300	175
GT-X 30&40 /04 & /06	300	210
GT-X 30/08 & 40/08	300	350

GT SERIES X (4)	Speed (RPM)	Torque (g-cm)
File Size		
SERIES X 20/04 20/06	300	175
SERIES X 30/04 30/06	300	210
SERIES X 40/04 40/06	300	210
SERIES X 30/08 40/08	300	350

GT/PROFILE .04	Speed (RPM)	Torque (g-cm)
File Size		
ACC 90,70,50,35/12	500	700
GT 20/10 & GT 20/08	300	312
GT 20/06 & PF 35/04	300	132
PF 30/04 & PF 25/04	300	104
PF 20/04	300	75

PROFILE S29 04 TAPER ³	Speed (RPM)	Torque (g-cm)
File Size		
PF S29 04 SIZE 7 & 6	300	132
PF S29 04 SIZE 5 & 4	300	104
PF S29 04 SIZE 3 & 2	300	75

PROFILE S29 06 TAPER ³	Speed (RPM)	Torque (g-cm)
File Size		
PF S29 06 SIZE 7 & 6	300	368
PF S29 06 SIZE 5 & 4	300	290
PF S29 06 SIZE 3 & 2	300	195

PROFILE ORIFICE OPENER	Speed (RPM)	Torque (g-cm)
File Size		
PF 00 SIZE 6 & 5	300	510
PF 00 SIZE 4 & 3	300	400
PF 00 SIZE 2 & 1	300	256

PROFILE ISO 04 TAPER	Speed (RPM)	Torque (g-cm)
File Size		
PF ISO 40/04 & 35/04	300	132
PF ISO 30/04 & 25/04	300	104
PF ISO 20/04 & 15/04	300	75

PROFILE ISO 06 TAPER	Speed (RPM)	Torque (g-cm)
File Size		
PF ISO 40/06 & 35/06	300	368
PF ISO 30/06 & 25/06	300	290
PF ISO 20/06 & 15/06	300	195

ITR EMULATION SERIES	Speed (RPM)	Torque (g-cm)
File Size		
ACC	500	1000
MAX	300	625
CORONAL	300	250
MID	300	150
APICAL	300	70

LEXICON GATES V 1.20 ⁴	Speed (RPM)	Torque (g-cm)
File Size		
LEXICON GATES #6	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

PRO-POST DRILLS ⁴	Speed (RPM)	Torque (g-cm)
File Size		
PRO-POST DRILLS	2000	1000

RECIPROCATION	Angle (CW)	Angle (CCW)
File Size		
CLOCKWISE RECIP	150	30
COUNTERCLOCKWISE RECIP	30	150

GENERAL OPERATION

After the unit has been set up and the user has become familiar with the system's control panel functions, there are two different modes that can be used to begin operation:

1. MANUAL MODE - The user can use the control panel keypad to adjust the torque and speed settings at any time, except when Reciprocation is selected - reciprocation operating parameters are set at the Factory and cannot be changed. When the torque and speed are changed manually, the Display will indicate Manual Mode.

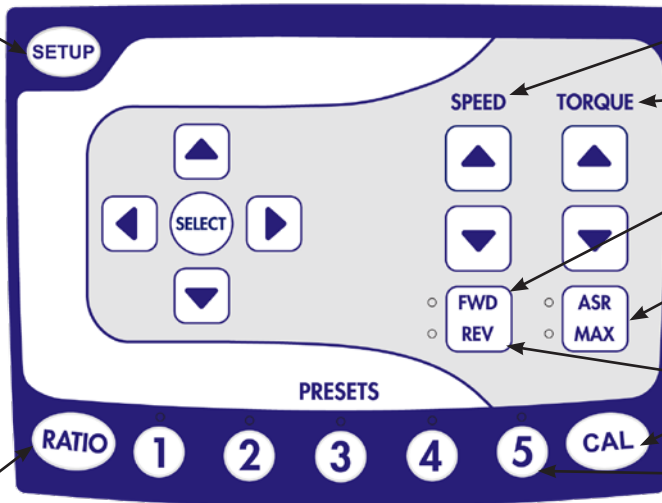
2. PRESET MODE - By default, the unit will start in Preset Mode. This allows the user to quickly access and store up to five different file settings (see Chart 1 for the default presets). Each preset location can be customized by the user. **IMPORTANT:** Before any Presets can be edited, the unit's Memory Lock function must be turned OFF - see Memory Lock instructions in paragraph 2 of the Advanced Operation section.

Figure 6 - AEU-27DTCR Keypad Functions

Menu Navigation & Select

System Setup (press)

- SETUP OPTIONS:
 - Preset Memory Lock
 - Recall Factory Setup
- GLOBAL OPTIONS:
 - Auto Stop Reverse
 - Reverse Beeper
 - Torque Warning
 - Accessory Warn
 - Sleep Mode
 - Keypress Beep
 - System Volume
 - Save Settings
 - Cancel



Handpiece Ratio Selection

Speed Increase/Decrease

Torque Increase/Decrease

Motor Direction Increase/Decrease

Auto-Stop-Reverse / MAX Torque

Reciprocation Out Mode

Calibration Key

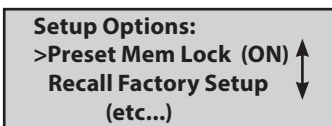
Preset Buttons (5)

ADVANCED OPERATION



When selecting many of the following System Setup options, use the unit's Menu Navigation & Select Buttons (see Fig. 6) to navigate through the menus.

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



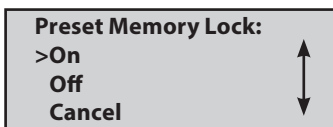
2. Using the Up/Down buttons, move the selector-arrow to either of the top two Setup options and then press the SELECT button. Prompts will appear for both options (see descriptions below).

A. Preset Memory Lock: The unit's Memory Lock feature must be turned OFF before any Presets can be edited. **IMPORTANT:** After editing a Preset, be sure to turn the Memory Lock feature back ON, to protect the integrity of all the Presets' settings.



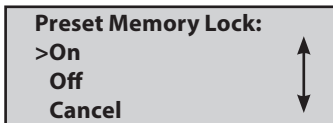
The Memory Lock feature will automatically turn on after 15 minutes of inactivity or after the unit's power has been turned on.

Press the SELECT button. The following menu will display:



Using the Up/Down buttons, move the selector-arrow to the desired command and press the SELECT button. The unit will automatically turn On/Off the Lock Feature and exit the Setup menu. Selecting Cancel will return the user to the previous "Setup Options" menu.

B. 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:



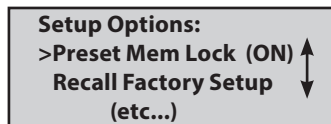
Move the selector-arrow to the desired command and then press the SELECT button:

- **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 display the startup screen before going to the "Default Handpiece" selection prompt (refer to Quick Start Operation section, paragraph 2, for more information).

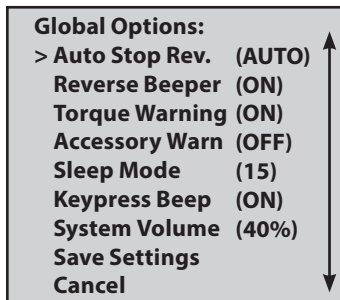
ADVANCED OPERATION - GLOBAL OPTIONS

The following Global Options are system-wide settings and are not saved into any specific Preset buttons when programming.

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



2. Using the Up/Down buttons, move the selector-arrow below the top two System Setup options ("Preset Mem Lock" and "Recall Factory Setup") to the "Auto Stop Rev." option. When pointing to this option or any of the other six options below it, the menu automatically changes to "Global Options". The entire "Global Options" menu consists of the following user-changeable options:

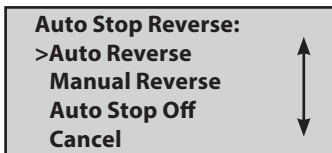




When any of the seven Global Options settings above are changed, the new settings must be saved under the "Save Settings" command before they are activated. Otherwise, the last settings used will stay active. See "Save Settings" option for more details.

Move the selector-arrow to the desired Global Option and then press the SELECT button. Prompts will appear for each option (see descriptions below):

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



- **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 "Global 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.

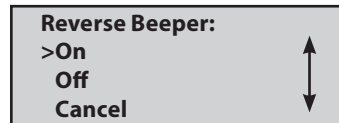
When the Manual Reverse mode is selected, the menu automatically returns to the "Global

Options" menu and displays "(MAN)" at the "Auto Stop Rev." prompt as shown below:



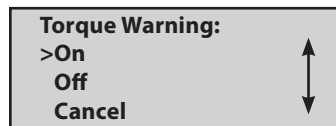
- **Auto Stop Off** - When Auto Stop Off is enabled and the foot pedal is activated, the handpiece will continually rotate in the forward direction and apply the selected torque limit until the foot pedal is released.
- **Cancel** - Exits out of the "Auto Stop Reverse" menu and returns to the previous Global Options menu without saving any changes.

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

C. 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:

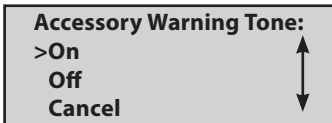


- **On** - Enables the Torque Warning sound. "Torque Warning (ON)" will be displayed on the Global Options menu. **Note:** "Torque Warning (ON)" is the factory default.

ADVANCED OPERATION - GLOBAL OPTIONS (cont.)

- **Off** - Disables the Torque Warning sound. No tone will be emitted when the torque reaches 75%. "Torque Warning (OFF)" will be displayed on the Global Options menu.
- **Cancel** - Exits out of the menu and returns to the Global Options menu without saving any setup changes.

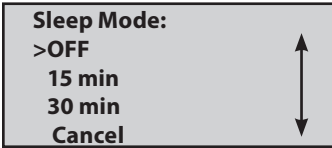
D. Accessory Warning Tone: When the Accessory Warning Tone feature is active ("ON"), a warning tone will be audible when a GT® Accessory file, ITR™ Emulation Accessory file, or ProTaper® Retreatment file is in use. When this option is selected, the following menu will display:



- **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 Global Options menu.
- **Off** - Disables the Accessory Warning tone. "Accessory Warn (OFF)" will be displayed on the Global Options menu. Note: "Accessory Warn (OFF)" is the factory default.
- **Cancel** - Exits out of the menu and returns to the Global Options menu without saving any setup changes.

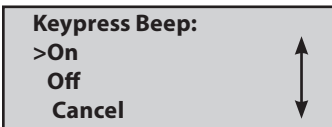
E. Sleep Mode: The user can instruct the unit to automatically enable a Sleep Mode after 15 or 30 minutes of inactivity, to conserve power. In Sleep Mode, the Display will turn off and the blue LEDs above the Preset buttons will blink continuously. To resume normal operation when the unit is in Sleep Mode, press any button on the console or press the foot pedal.

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



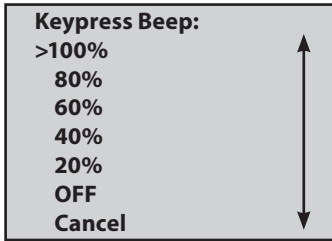
- **OFF** - Disables the Sleep Mode feature. "Sleep Mode (OFF)" will be displayed on the Global Options menu.
- **15 min** - Enables Sleep Mode after 15 minutes of inactivity. "Sleep Mode (15)" will be displayed on the Global Options menu. **Note:** "Sleep Mode (15)" is the factory default.
- **30 min**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

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



- **On** - Enables the Keypress Beep tone. "Keypress Beep (ON)" will be displayed on the Global 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 Global Options menu.
- **Cancel** - Exits out of the Keypress Beep menu and returns to the Global Options menu without saving any changes.

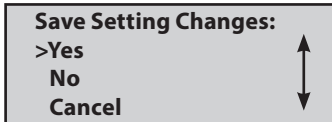
G. System Volume: Allows the user to select the volume level of all system sounds, including reverse beeper, torque warning, accessory tone, and keypress beep. When this option is selected, two quick beeps will sound and the following menu will display:



- **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 Global Options menu without saving any changes.

H. Save Settings: IMPORTANT: When any of the above seven Global 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 Global 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 Global settings, or to cancel out of the menu. When this option is selected, the following prompt will display:

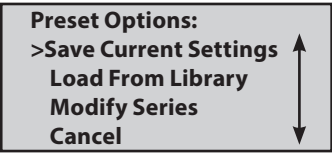


- **YES** - Saves the system-wide settings to the unit software, overwriting the previous settings.
- **NO** - Returns to the last-used Preset settings without saving any edits or changes.
- **Cancel** - Returns to the previous "Global Options" menu without saving any edits or changes.

I. Cancel: Returns to the last-used Preset settings without saving any edits or changes to the Global Options.

ADVANCED OPERATION - EDITING/CREATING PRESETS

1. Before editing Presets, the Memory Lock feature must be turned off. See instructions in the Advanced Operation section.
2. Select the specific Preset (1-5) you wish to customize and adjust its speed, motor direction, hand-piece ratio, and torque settings as desired. **Note:** When adjusting these settings, the unit automatically changes to "Manual Mode".
3. Press, hold, and then release the Preset button that you customized. Two beeps will sound and then the following Preset Options Menu will display:



4. Using the Up/Down buttons, move the selector-arrow to the desired option and then press the SELECT button. Prompts will appear for each option. **Note:** The Cancel option will return the user to the last-used Preset settings without saving any changes.

A. Save Current Settings

- i. Once the "Preset Options" Menu is displayed above in Step-3, position the selector-arrow at the "Save Current Settings" option and press the SELECT button. The following "USER DEFINED PRESET" Menu will display (Example Only):



A flashing cursor will appear under the first letter in "USER DEFINED PRESET", 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 Preset name, use the Left/Right Arrow buttons to move the flashing cursor

laterally under a specific letter in the name, then press the 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 Preset name (not available for reciprocating presets). 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:

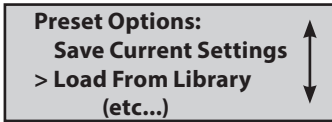


Move the selector-arrow to the desired command using the Up/Down Arrow buttons and then press the SELECT button:

- **YES** - Saves the customized changes into the Preset location, overwriting the previous settings.
- **No** - Returns to the previous Manual Mode menu without saving any edits or changes.
- **Cancel** - Returns to the previous "USER DEFINED PRESET" menu without saving any edits or changes.

B. Load From Library:

- i. With the Memory Lock feature turned Off, press, hold, and then release the specific Preset you wish to customize. Two beeps will sound and then the following Preset Options Menu will display:



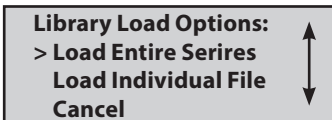
- ii. Using the Up/Down buttons, move the selector-arrow down to the “Load From Library” option and then press the SELECT button. The following menu will display:



- iii. Move the selector-arrow to the desired menu command and then press the SELECT button:
 - a. **Yes:** Uses the default handpiece that was selected earlier when the unit was first turned on or after factory settings were restored.
 - b. **No:** Displays a sub-menu, which lists all the supported 1:5, 1:1, 8:1, and 16:1 handpieces. Move the Up/Down selector-arrow to the desired ratio and press the SELECT button to enable the new handpiece. Cancel returns to the previous menu.
 - c. **Cancel:** Returns to the previous “Preset Options” menu without changing any handpieces or library settings.
- iv. Once the Default Handpiece is selected above in Step-3, the following menu will display, which lists all of the available files in the unit’s File Library (see Chart 3 for the complete list):



- v. Use the 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:



- vi. Move the selector-arrow to the desired menu option and then press the SELECT button:

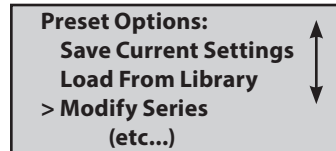
- a. **Load Entire Series:** Loads the entire file series into the Preset location.
 - b. **Load Individual File:** Displays a sub-menu listing all the available individual files in the Selected Series. Move the Up/Down selector-arrow to the desired file choice and then press the SELECT button to enable the new file.
 - c. **Cancel:** Returns to the previous “SELECT File Series” menu without changing any file settings.
- vii. Once the new File/Series is loaded above in Step-6, the following prompt will display:



- viii. Move the selector-arrow to the desired menu option and then press the SELECT button:
 - a. **Yes:** Saves the new File/Series into the Preset location.
 - b. **No:** Returns the Preset to its previous file settings without any edits or changes.
 - c. **Cancel:** Returns to the previous menu without changing any file settings.

C. Modify Series:

- i. With the Memory Lock feature turned Off, press, hold, and then release the Preset button you wish to customize. Two beeps will sound and then the following Preset Options Menu will display.

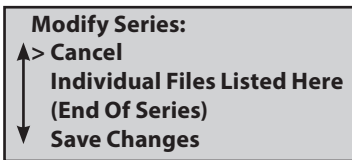


**ADVANCED OPERATION - EDITING/
CREATING PRESETS (cont.)**

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

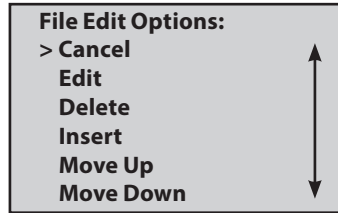


- iii. Move the selector-arrow to the desired menu option and then press the SELECT button:
 - a. **Yes:** Uses the default handpiece that was selected earlier when the unit was first turned on or after factory settings were restored.
 - b. **No:** Displays a sub-menu, which lists all the supported 1:5, 1:1, 8:1, and 16:1 handpieces. Move the Up/Down selector-arrow to the desired ratio and press the SELECT button to enable the new handpiece.
 - c. **Cancel:** Returns to the previous "Preset Options" menu without changing any file series settings.
- iv. Once the Default Handpiece is selected above in Step-3, 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:



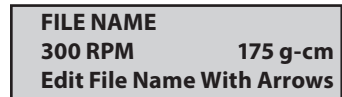
- v. Move the selector-arrow to the desired menu option and then press the SELECT button:
 - a. **Cancel:** Returns to the previous "Use Default Handpiece?" menu without saving any edits or changes.
 - b. **Individual Files List:** When the SELECT button is pressed at an individual file

in the Series, the following "File Edit Options" Menu will display:



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 Left/Right Arrow buttons to move the flashing cursor laterally under the specific letters in the name, then press the 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 (not available for reciprocating presets). Press the Speed or Torque Up/Down buttons accordingly.

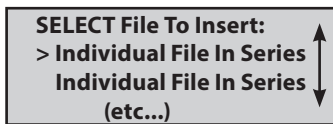
SELECT To Save: After you have edited the File Name and adjusted the Speed and Torque Buttons in the above steps, you can Save your new File by

pressing the SELECT button. Your new File will appear in the “Modify Series” menu.

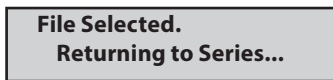
- **Delete** - When the Select button is pressed, the File is immediately deleted from the list of individual files. **NOTE:** Once executed, this command cannot be reversed.
- **Insert** - When the Select button is pressed, the following menu displays, listing all the File Series from the File Library (see Chart 3 for the complete list):



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

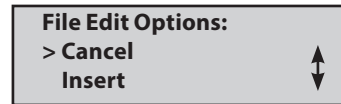


Move the selector-arrow to the individual File that you wish to Insert and press SELECT. The following menu will display briefly, and then the unit will return to the “Modify Series” menu.



- **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:

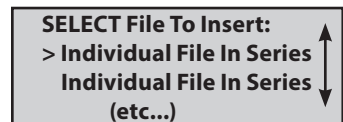


Move the selector-arrow to the desired menu option and press SELECT:

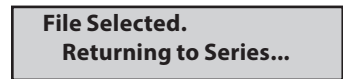
- **Cancel** - Returns to the previous “Modify Series” menu without saving any changes.
- **Insert** - When the Select button is pressed, the following menu will display the entire File Library Series:



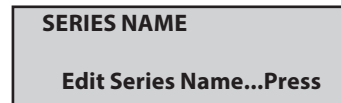
Move the selector-arrow to the desired File Series and press SELECT. The following menu will display:



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:



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



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

- **Edit Series Name** - Use the Left/ Right Arrow buttons to move the

ADVANCED OPERATION - EDITING/ CREATING PRESETS (cont.)

flashing cursor laterally under the individual letters in the current Name, then press the 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:



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

- **YES** - Saves the new Series into the Preset location, overwriting the previous settings.
- **No** - Returns to the previous Preset 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



The AEU-27DTCR 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, 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-27DTCR 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-27DTCR 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).

MOTOR & CORD STERILIZATION

Failure to adhere to the following instructions or blatant misuse of the device and/or related components will be considered abuse of the device and will void all warranty responsibilities.

- The entire AEU-27DTCR motor and cord assembly is fully autoclavable. Before autoclaving the assembly, remove any handpiece from motor and install autoclaving cap into end of the motor cord connector as shown in Figure 7. The cap is supplied with the cord.

Figure 7 - Motor Cord & Sterilization



- Loosely coil the motor cord when autoclaving. Avoid sharply bending the cord when autoclaving.



An autoclaving plug for the motor E-type coupling should not be used. Only one connector-side Autoclaving Cap should be used with the motor.

CAUTION: Do NOT use ultrasonic cleaners.

WARNING: Sterilize the AEU-27DTCR motor between each patient use.

WARNING: Use of a sterilization method or temperatures other than what are prescribed below may damage the AEU-27DTCR motor or present a risk of cross-contamination between patients.

CAUTION: When sterilizing, do NOT exceed 135° C (275°F).

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

Pre-Clean:

1. Thoroughly brush off any visible signs of debris from the AEU-27DTCR motor and cord before sterilizing.
2. Thoroughly clean the device with a moist cloth or towel to remove any remaining signs of debris.

Sterilize:

1. Select one of the three following sterilization methods (A, B, or C):
 - A. Gravity Packaged:
 - Temperature - 132°C (270°F).
 - Full Cycle Time - 15 minutes
 - Minimum Dry Time - 30 minutes
 - B. Gravity Not Packaged (Flash):
 - For Immediate Use Only
 - Temperature - 132°C (270°F).
 - Full Cycle Time - 15 minutes
 - No dry time is required for flash sterilization.
 - C. Prevacuum Packaged:
 - Place in a pouch suitable for steam sterilization and seal it.
 - Preconditioning Pulses - 4
 - Temperature - 132°C (270°F).
 - Full Cycle Time - 4 minutes
 - Minimum Dry Time - 40 minutes



Call Aseptico at 425-487-3157 for any questions or clarifications on these sterilization procedures.

MAINTENANCE & CLEANING

Failure to adhere to the following instructions or blatant misuse of the device and/or related components will be considered abuse of the device and will void all warranty responsibilities.

Handpieces

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.

Motor & Cord Assembly

CAUTION: The AEU-27DTCR motor is sensitive to shock. Do NOT drop or impact motor against a hard surface.

WARNING: Do NOT attempt to disassemble the motor or motor connector.

WARNING: Do NOT oil or lubricate the motor.

WARNING: Do NOT attach a handpiece to motor while motor is running.

WARNING: Do NOT bend the motor cord sharply.

Control Console

- Clean the exterior of the console by wiping with a soft cloth moistened with mild detergent or disinfecting solution.

Foot Pedal

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

AEU-7PMW Wireless Foot Control Pairing Instructions

1. Depress foot control to activate.
2. Peel back the rubber seal to your foot control to reveal the bottom casing.
3. Separate the bottom casing from the top to reveal the pairing button.



4. Press and hold the pairing button in the foot control and turn over to check for Fast Blinking Blue Light.



5. Press and hold the receiver button hard until it is Fast Blinking Blue.



6. After three seconds the flashing should turn into a Solid Blue Light indicating successful pairing

7. To ensure your motor and foot control have connected, press down on your wireless foot control. You should hear an audible beep from the control and you should hear the motor in your Aseptic unit activate.

i When replacing the top casing of your foot control, align to the points marked by the inner label.

i Foot control beep – When connected, the foot control will beep each time it is pressed. Press the pairing button twice quickly to enable/disable the foot control beep.

AE-7PMW Wireless Foot Control Battery Replacement

When an alternating orange LED starts flashing next to your pairing button, it is time to replace your batteries. When the battery is low, the foot control will periodically beep twice (high to low pitch).

1. Peel back the rubber seal to your foot control to reveal the inner casing.



2. Separate the bottom casing from the top to reveal battery.

3. Replace the old battery with a new AA battery.



4. Align top casing to the points marked by the inner label to reassemble.

FUSE REPLACEMENT INSTRUCTIONS

Changing The Fuses:

Warning: Turn the power off and unplug the unit before following the fuse replacement steps.

Replacement Fuses:

1.6A, 250V rated Slo-Blo® type (Fuse size: 5 x 20mm)

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

1. Remove the fuseholder from the power inlet connector. See Figure 8.
2. Replace the fuses in the fuseholder.
3. Reinstall the fuseholder.

Figure 8 - Fuse Replacement






























CAUTION: Turn the power off and unplug the unit before changing the fuses..

TROUBLESHOOTING

Console does not light up when on:
<ul style="list-style-type: none"> • If preset LEDs are blinking, press any key or foot pedal to exit Sleep mode. • Check console to power connection. • Check fuse. If blown, replace with 1.6A, 250V SLO-BLO® fuse.
Console lights up when turned on, but handpiece does not turn:
<ul style="list-style-type: none"> • Check motor plug connection. • Check foot pedal connection. • Depress foot pedal. • Increase RPM. • Increase Torque setting. • Check that a file is properly seated in the handpiece and the latch is closed.
Motor slowing down or sluggish:
<ul style="list-style-type: none"> • 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.
Endo functions displaying incorrectly:
<ul style="list-style-type: none"> • Verify that ratio setting matches handpiece ratio. Use Calibration function. • Turn power switch off, wait 5 seconds, then turn back on to reset.
“Check Motor” warning is displayed:
<ul style="list-style-type: none"> • Check that motor is properly connected to the console. • Check that the proper motor, M250T, is connected to the console.

SYMBOLS TABLE

	Consult Instructions For Use
	Authorized European Representative
	Type B Equipment
	Do Not Open - Risk Of Electric Shock
	Footswitch
	Alternating Current
	Not for General Waste. Separate collection for waste electric and electronic equipment (WEEE) is required
IPX1	Ingress of Water - Classification-Footswitch
	Manufacturer
	Temperature Limitation
	Fuse Rating
	Atmospheric Pressure Limitation
	Caution
	Humidity Limitation
	Protective Earth (Ground)
	Sterilizable at 132°C (270°F)
 <small>Dental Use Only</small>	Rx Dental Use Only
	Catalogue Number
	Serial Number
	Model Number
	UDI - Unique Device Identifier
	Country of Manufacture - USA
	Notified Body for Class 2a Devices
	MD - Medical Device
	Wireless communications
	Low battery
	Fragile, Handle with care
	Keep dry or Keep away from rain

SPECIFICATIONS

Console Dimensions:	6.8"W x 7.5"L x 4.6"H (17.3 cm x 19.1 cm x 11.7 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%

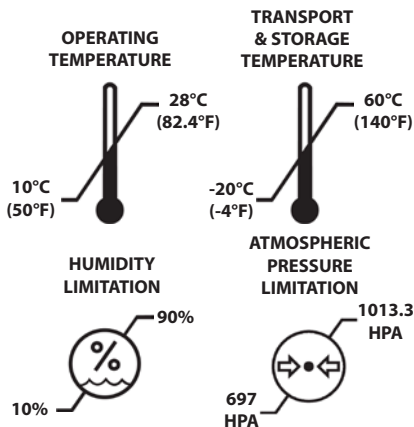
Wireless Foot Control Specifications:

Bluetooth® Low Energy
 Frequency: 2.402 - 2.480 GHz
 Max. Transmit Power: 4 mW
 Contains FCC ID: SQGBL652
 Contains IC: 3147-BL652

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)



ANSI/AAMI E560601-1:2005/(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 60601-1-14:2014 Medical electrical equipment - Part 1: General requirements for basic safety and essential performance

CLASSIFICATIONS:
 Class I Equipment
 Type B Equipment
 Ordinary Equipment - degree of protection against ingress of water

CE
 2797

Manufacturer



Aseptico Inc
 8333 216 St SE
 Woodinville
 WA 98072
 USA



Advena Ltd,
 Tower Business Centre, 2nd Flr,
 Tower Street, Swatar,
 BKR 4013
 Malta



E361057

MESSAGES

System Messages

1. When the system is powered on, the software version will be displayed briefly on the touch screen.
2. Use table below for AE-7PMW wireless foot control indicators.

States for LED Lights and Pairing	Receiver & Foot Control	Foot Control Only
Not Connected	Slow Blinking Blue	
Ready for pairing	Fast Blinking Blue	
Connected	Solid Blue	
Low Battery	NA	Alternating Blue & Orange (high to low pitch beep)
Wake up	NA	Two beeps (low to high pitch)

Error Messages

None

Fault Messages

None

DISPOSAL OF PRODUCT AND WASTE

Dispose of all medical waste products, residues, etc. in accordance with your local, state and country laws. Dispose of the AEU-27DTCR and accessories at the end-of-life in accordance with your local, state and country laws.

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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Rev. A

ECO 15832

3/2026