

# OPERATION AND MAINTENANCE INSTRUCTION MANUAL

# DTC®2 Electronic Endodontic System

## Model AEU-26



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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.

INDICATIONS FOR USE:


The AEU-26 is an electric drive system for instruments and tools used in dentistry for endodontic procedures. The system includes a wide range of user controls designed to provide precision endodontic procedures.




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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.

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

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

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.

Your new Aseptico DTC®2 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 DTC®2 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 Aseptico 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-26 Electronic Control Console
- Autoclavable Brushless Micromotor, P/N AE-225-30
- 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 420728

### **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
- AE-70V2E Multi-Function Foot Control
- Memory Card, P/N MC-26

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.



## **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.

**CAUTION:** The AEU-26 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-26 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.

**CAUTION:** The AEU-26 motor is sensitive to shock and may be damaged if dropped or impacted against a hard surface.

**WARNING:** Do not disassemble or alter the AEU-26 motor, 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.

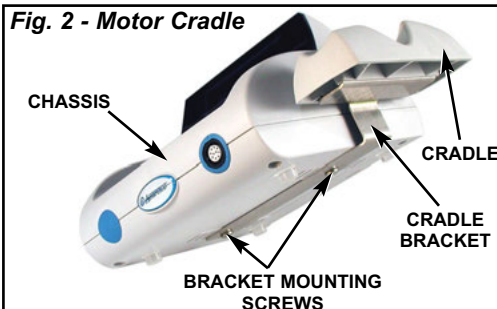
**CAUTION:** It is recommended to always have the patient wear a rubber dam during endodontic procedures.

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

## 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.

**Fig. 2 - Motor Cradle**

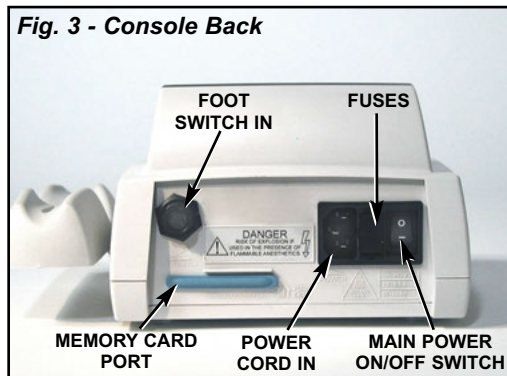


4. Attach the remote power cord to the back of the console (see Figure 3) and plug into a hospital-grade grounded electrical receptacle. Confirm that the type of cord plug cap is correct for the country of usage and carries the proper certification markings.

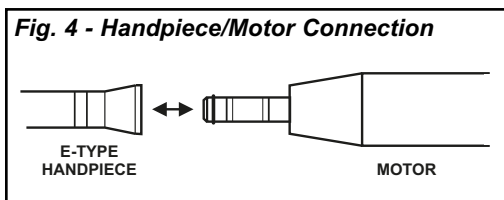
**Fig. 1 - System Components**



5. Connect the Motor/Cord Assembly to the Motor Receptacle on the lower right front of the console. The motor cord connector and console receptacle are keyed to engage one another. **IMPORTANT:** Align the red dot on the motor cord connector with the arrow located on the top of the receptacle. Gently push cord connector straight in to lock into place. Remove cord by pushing inward slightly on the strain relief, then grasping connector body near the red dot and pulling the connector straight out of receptacle.



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



## QUICK START OPERATION

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

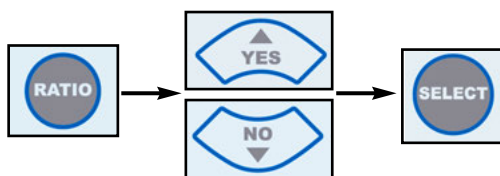
1. Turn the Power Switch on the rear panel of the console from the 'OFF' (O) to the 'ON' (—) position. The Console Display will turn on. An introduction will scroll across the screen then briefly display the software version installed and date:

**ASEPTICO  
AEU-26**

**Ver. X.X    DATE**

The AEU-26 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. Insert a file or bit into the handpiece.
3. Select the handpiece ratio. To calibrate a handpiece for the AEU-26, the user must first select the ratio (8:1 reduction is the default ratio setting — skip this step if using an 8:1 handpiece). Press the **RATIO** key and use the Navigation Up/Down keys to select the ratio that corresponds to the handpiece being used. Press the **SELECT** key to confirm your selection.



4. Use the Calibration function to calibrate the motor and handpiece. Press and release the 'CAL' key. The following prompt will display:

**Attach Handpiece To  
Motor,  
Press 1 To Continue  
Or 3 To Exit.**

Press Key #1 (Preset 1) to continue. The unit will run for several seconds, measuring

the motor and handpiece for an accurate display of speed and torque values.

**CAUTION** - During calibration, the handpiece will run through a series of preprogrammed speeds. Ensure that a file or bit is secured in the handpiece.

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



5. Select the Preset Key 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, page 7. Pressing the Preset Key repeatedly will cycle through the individual files listed below each series name.



**Note:** Pressing and holding a Preset Key will enter advanced preset options. Refer to the Advanced Operation section for instructions.

6. Press the on/off footswitch to activate motor and begin operation.  
**NOTE:** When using the optional AE-70V2E Multi-Function Foot Control, the blue pedal controls the on/off operation of the handpiece exactly like the standard AE-7PM on/off foot control. For a complete explanation of all the AE-70V2E functions, see page 17.
7. After 15 or 30 minutes of inactivity (see instructions on page 16 to select desired Sleep Mode activation period), the AEU-26 will go into Sleep Mode to conserve power. To exit Sleep Mode and resume operation, press the 'STANDBY' Key or foot pedal.

**Chart 1 - AEU-26 Default Presets**

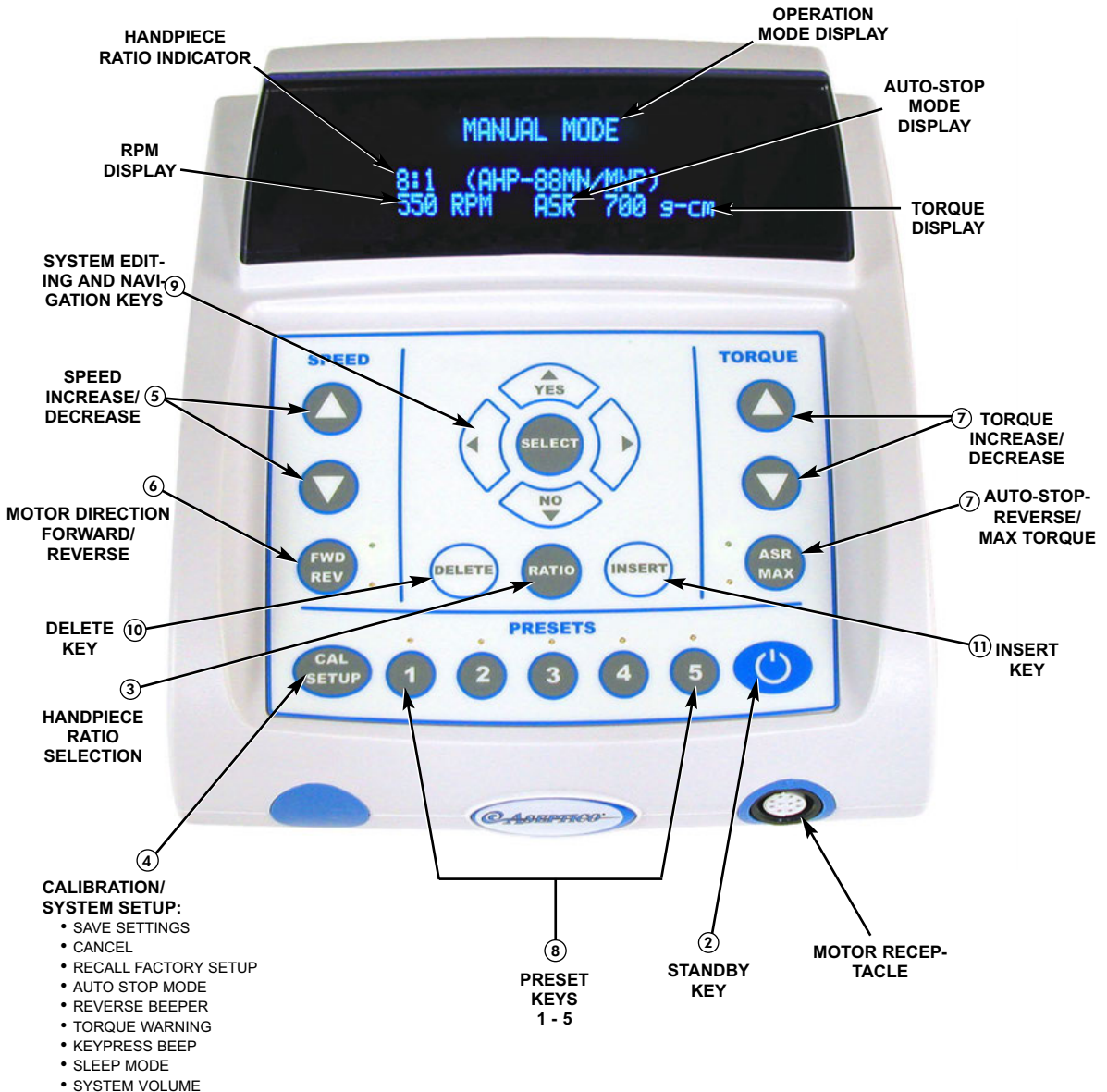
<b>Preset Button 1</b> Default File Series: DENTSPLY Tulsa Dental Specialties VORTEX® 04 Taper Files	
File #1:	VORTEX® 04, .35 through .50 taper
File #2:	VORTEX® 04, .25 and .30 taper
File #3:	VORTEX® 04, .15 and .20 taper
<b>Preset Button 2</b> Default File Series: DENTSPLY Tulsa Dental Specialties VORTEX® 06 Taper Files	
File #1:	VORTEX® 06, .35 through .50 taper
File #2:	VORTEX® 06, .25 and .30 taper
File #3:	VORTEX® 06, .15 and .20 taper
<b>Preset Button 3</b> Default File Series: DENTSPLY Tulsa Dental Specialties GT® Series 20, 30, 40 Files	
File #1:	GT® 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
<b>Preset Button 4</b> 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
<b>Preset Button 5</b> Default File Series: DENTSPLY Tulsa Dental Specialties GT® Series X™ (3) Files	
File #1:	GT-X 20 Series .04 Taper & .06 Taper
File #2:	GT-X 30 Series .04 Taper & .06 Taper GT-X 40 Series .04 Taper & .06 Taper
File #3:	GT-X 30 Series .08 Taper GT-X 40 Series .08 Taper

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

# CONTROL PANEL FUNCTIONS

The intuitive user interface makes it easy to begin using your new AEU-26. Advanced features for editing and programming the system are discussed following the control panel descriptions.

**Fig. 8 - Console Display & Controls**



## 1. Main Power Switch:

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

## 2 Standby Key

*Turns control panel on and off.  
Reactivates system from Sleep Mode.*



a. Press the Standby key to turn system display off and put the system into Sleep Mode. If the console was turned off using the Standby key, or if the unit has entered Sleep Mode, pressing the Standby key again or pressing the foot pedal will return the system settings to the last state used.

## 3 Handpiece Ratio Selector:

*Allows user to select ratio of handpiece.*

Press the RATIO Key to display the handpiece ratio selection options. Press the Up/Down (YES/NO) keys until the Handpiece Ratio matches the handpiece being used. The available ratios are 1:5, 1:1, 8:1, and 16:1. Press SELECT key to set the ratio, or select CANCEL to abort. If a new handpiece ratio is selected while in Manual Mode, the new ratio is immediately activated. If a new ratio is selected while a Preset is active, the user will be given the option to replace the handpiece ratio in that entire Preset file series. The following prompt will display:



**Change The Handpiece  
Ratio For The Current  
Preset?**

**(YES/NO)**

Press YES to change ratio. Press NO to exit Preset - the Unit will automatically switch to Manual Mode and activate the new ratio.

## 4 CAL/SETUP Key:

*Activates the Integrated  
Calibration Program & System  
Setup Menu*



Press and release CAL key to activate the calibration program. The following prompt will display:

**Attach Handpiece To  
Motor,  
Press 1 To Continue  
Or 3 To Exit.**

Press Key #1 (Preset 1) to continue.

The system will automatically run the handpiece and system through a self test. It is recommended to calibrate at the beginning of each day and when handpieces are changed.

Press and hold the CAL/SETUP key to enter SETUP Mode. Refer to the Advanced Operation section (page 14) for instructions.

## 5 SPEED Key:

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

Press the Speed Selector Up/Down keys to adjust speed.

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



## 6 Forward/Reverse (FWD/REV):

*Sets the rotational direction of the  
handpiece.*

The green LED illuminates when forward rotation is selected. The amber LED indicates reverse rotation. An audible tone will also indicate reverse rotation.

Reverse tone may be adjusted or turned off as described in the Advanced Operation section.

## CONTROL PANEL FUNCTIONS - cont'd

**Note:** Speed ranges are accurate when handpieces are used with the supplied 30K motor.

**Fig. 9 - AEU-26 SPEED RANGES**

<b>1:5</b>	<b>1,500 - 150,000</b>	<b>RPM</b>
<b>1:1</b>	<b>300 - 30,000</b>	<b>RPM</b>
<b>8:1</b>	<b>40 - 3,600</b>	<b>RPM</b>
<b>16:1</b>	<b>20 - 1,800</b>	<b>RPM</b>

### 7 TORQUE Controls (ASR/MAX):

Allows the user to select torque limits, in Gram-Centimeter increments. Allows the choice of Auto-Stop-Reverse (ASR), Maximum (MAX), or Torque Limit Modes.

**a. ASR Mode** - For 1:1, 8:1, or 16:1 ratio handpieces only.

ASR is the normal setting for endodontic procedures, indicated by the illuminated green LED. The rotation of the handpiece will automatically alternate between forward and reverse in order to free the instrument when the selected torque is reached. When in ASR mode, press the Torque Selector Up/Down keys until the desired torque level is indicated on the Console Display.

**b. MAX Torque Mode** - For 1:1, 8:1, or 16:1 ratio handpieces only. Press the ASR/MAX key to enter Maximum Torque Mode, which turns off the torque control feature. The amber LED will be illuminated and "MAX" will replace the torque value on the display. This mode allows the motor to run at its maximum torque level and is to be used for lowspeed applications.

**c. Torque Limit Mode** - Pressing the Torque Modes Button (ASR/MAX) until neither LED is lit will limit torque to the value set via the torque Up/Down buttons. The handpiece will stop and then restart



once the load is removed. When the 1:5 handpiece is selected, the Torque Limit Mode is automatically enabled.

### 8 PRESETS:

Allows user to quickly access five

factory default file series or customized file settings.

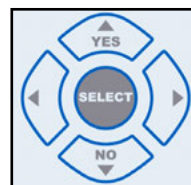


Select the Preset Key corresponding to the endodontic rotary file series you are using. By default, the preset buttons are set for the file series shown in Chart 1 on page 7. Pressing the Preset Button repeatedly will cycle through the individual files listed below each series name. See Chart 2 on page 11 for a complete library of pre-programmed speed and torque settings. **IMPORTANT:** The console will drive the files as close to the library requested speed and torque as the handpiece parameters will allow.

**Note:** Pressing and holding a Preset Key will enter advanced preset options. Refer to the Advanced Operation section, page 12, for instructions on customizing presets.

### 9 System Editing & Navigation Keys:

Allows user to navigate through text characters, menus and adjust settings when modifying presets. **SELECT** key saves reconfigured settings. **YES/NO** Keys allow user to interact with visual prompts on the display.



### 10 DELETE Key:

Allows user to delete a file from a preset series. Also used for editing the label.



### 11 INSERT Key:

Allows user to insert a file to a preset series. Also used for editing the label.



**Chart 2 - AEU-26 File Library Settings**

<b>VORTEX® 04 Taper</b>			
File Size	Speed (RPM)	Torque (g-cm)	
VORTEX 04/35 Thru 04/50	500	132	
VORTEX 04/25 & 04/30	500	104	
VORTEX 04/15 & 04/20	500	75	
<b>VORTEX® 06 Taper</b>			
File Size	Speed (RPM)	Torque (g-cm)	
VORTEX 06/35 Thru 06/50	500	368	
VORTEX 06/25 & 06/30	500	290	
VORTEX 06/15 & 06/20	500	195	

<b>GT® Series 20, 30, 40</b>			
File Size	Speed (RPM)	Torque (g-cm)	
GT 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	

<b>GT® Acc. &amp; 20 Series YELLOW</b>			
File Size	Speed (RPM)	Torque (g-cm)	
GT ACC 90, 70, 50, 35/12	500	700	
GT YEL 20/10 & 20/08	300	312	
GT YEL 20/06 & 20/04	300	174	

<b>GT® Acc. &amp; 30 Series BLUE</b>			
File Size	Speed (RPM)	Torque (g-cm)	
GT ACC 90, 70, 50, 35/12	500	700	
GT BLU 30/10 & 30/08	300	347	
GT BLU 30/06 & 30/04	300	208	

<b>GT® Acc. &amp; 40 Series BLACK</b>			
File Size	Speed (RPM)	Torque (g-cm)	
GT ACC 90, 70, 50, 35/12	500	700	
GT BLK 40/10 & 40/08	300	405	
GT BLK 40/06 & 40/04	300	230	

<b>GT®/PROFILE .04</b>			
File Size	Speed (RPM)	Torque (g-cm)	
GT 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	

<b>PROTAPER® UNIVERSAL</b>			
File Size	Speed (RPM)	Torque (g-cm)	
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	

<b>PROTAPER® UNIVERSAL I</b>			
File Size	Speed (RPM)	Torque (g-cm)	
PROTAPER S1 & SX	300	520	
PROTAPER S2 & F1	300	150	
PROTAPER F2, 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>GT® Series X™ (3)</b>			
File Size	Speed (RPM)	Torque (g-cm)	
GT-X 20/04 & 20/06	300	175	
GT-X 30&40 /04 & /06	300	210	
GT-X 30/08 & 40/08	300	350	

<b>GT® Series X™ (4)</b>			
File Size	Speed (RPM)	Torque (g-cm)	
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	

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

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

<b>PROFILE® ISO 04 TAPER</b>			
File Size	Speed (RPM)	Torque (g-cm)	
PF ISO 40/04 & 35/04	300	132	
PF ISO 30/04 & 25/04	300	104	
PF ISO 20/04 & 15/04	300	75	
<b>PROFILE® ISO 06 TAPER</b>			
File Size	Speed (RPM)	Torque (g-cm)	
PF ISO 40/06 & 35/06	300	368	
PF ISO 30/06 & 25/06	300	290	
PF ISO 20/06 & 15/06	300	195	

<b>PROFILE® OS</b>			
File Size	Speed (RPM)	Torque (g-cm)	
PF OS SIZE 6 & 5	300	510	
PF OS SIZE 4 & 3	300	400	
PF OS SIZE 2 & 1	300	256	

<b>LEXICON® GATES V 1.20</b>			
File Size	Speed (RPM)	Torque (g-cm)	
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	

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

<b>PRO-POST® DRILLS</b>			
File Size	Speed (RPM)	Torque (g-cm)	
PRO-POST DRILLS	2000	1000	

\* S29 represents SERIES 29\*

\*\* Lexicon Gates and Pro-Post Drills are not compatible with 1/16 reduction handpieces, which have a maximum speed of 1800 RPM.

**NOTE:** All the files listed in Chart 2, except the "ITR Emulation Series", are registered trademarks of DENTSPLY Tulsa Dental Specialties.

## ADVANCED 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** - At any time, the user can adjust the torque and speed settings using the control panel keypad. 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 on page 7 for the default presets*). Each preset location can be customized by the user.

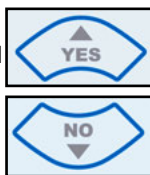
### EDITING PRESETS

**A.** Select the Preset you wish to customize. Adjust its speed, motor direction, handpiece ratio, and torque settings as desired.

**B.** Press, hold (two tones will sound), and then release the specific Preset Key you wish to make changes to. The Preset Options menu on the Console Display will indicate four options:

- 1) **Cancel**
- 2) **Save Current Settings**
- 3) **Load File Series**
- 4) **Build Custom Series**

Press the Navigation Up or Down (YES/NO) Keys to scroll through the options. Press SELECT Key to choose the desired option.



**1) Cancel:** Exits out of the Preset Options menu. No edits/changes will be saved.

**2) Save Current Settings:** Use this option to save any settings changes that were previously made (ref. Step A above):

- a) At the Preset Options prompt, scroll down menu to "Save Current Settings".
- b) Press the SELECT Key. You are now prompted to edit the File Name and/or change the Speed or Torque settings a second time, if so desired.

**NOTE:** These latter changes will overwrite any previous changes that were made in Step A.

Either change the Name using the same editing procedure shown in Step 4) - b), page 13, or keep the current Name as is.

- c) **SELECT To Save:** Press SELECT to save the new File Name. The following message will display:

**Preset Details Were Modified  
Save Changes? (YES/NO)**

Press YES to save changes. The customized file is then loaded into the preset location, under a special series name called USER DEFINED SERIES.

**3) Load File Series:** Loads an entire file series to the preset location. At the Preset Options prompt, scroll down menu to "Load File Series". This menu involves two steps:

**a) SELECT Handpiece:**

- Use the UP or Down Keys to locate the ratio that matches the handpiece being used. The available ratios are 1:5, 1:1, 8:1, and 16:1. A Cancel option is also provided to exit this menu.
- Press the SELECT Key.

**b) SELECT File Series:**

- Use the UP or Down Keys to locate the File Series to be loaded from the Preset File Library (shown in Chart 2, page 11). A Cancel option is also provided to exit this menu.
- Press the SELECT Key.
- The following message will display:

**Preset Details Were Modified  
Save Changes? (YES/NO)**

Press YES to save changes. The new file series is now loaded into the preset location and is ready to use.

**4) Build Custom Series:** Allows the user to reprogram the preset location with custom settings. At the Preset Options prompt, scroll down menu to "Build Custom Series" and press SELECT key. Follow the steps below to modify, add, delete, and save the files' names:

**a) SELECT Handpiece:**

- Use the UP or Down Keys to locate the ratio that matches the handpiece being used. The available ratios are 1:5, 1:1, 8:1, and 16:1. A Cancel option is also provided to exit this menu.
- Press the SELECT Key.

**NOTE:** You cannot intermix different handpiece ratios within the same Preset.

**b) SELECT to Modify, INSERT to Add, or DELETE to Remove File:**

- **MODIFY Files:** Use the UP or Down Keys to locate the particular Preset File to be customized. A Cancel option is provided to exit this menu. Press the SELECT Key.

**Edit File Name With Arrows:** Use the Left or Right arrow buttons to move the display cursor left/right under the File Name's text characters. Position the cursor under the specific character that is to be changed. Use the Up or Down (YES/NO) arrow buttons to change the character to the desired letter, symbol, or numerical value. To enter a blank space into the text line, place the cursor under the character and press the INSERT Key. To delete a character in the text line, place the cursor under the character and press the DELETE Key. Repeat the above procedure for all remaining text characters that are to be changed.

**Press Speed Or Torque Buttons To Change:** Use the SPEED or TORQUE UP or DOWN Keys to increase or decrease the File's Speed or Torque settings.

**Press FWD/REV or ASR/MAX Buttons to change:** Press buttons to select desired motor direction or torque control option.

**SELECT To Save:** Press SELECT to save the new File Name.

- **INSERT File(s):** Step through the list of files in the series and place cursor where you want to insert the new file.

**NOTE:** The new file will be inserted into the list in front of (above) the cursor location. To insert a file at the end of the list, position the cursor on the last line item "(End of Series)".

Press INSERT. You will then be prompted to select the file series in the File Library (ref. Chart 2, page 11) that includes the file you want to add. Place cursor on the desired series and press SELECT. All the individual files in that series will be displayed. You will then be prompted to select the file to insert. Step through the list of files and place cursor on desired file. Press SELECT to insert file into your customized series, or CANCEL to exit out of the menu. If the file you wish to add is not included in the file library, select "User Defined Series". Press SELECT. Modify the speed or torque to the desired settings and then press SELECT to save. You can, edit the File Name using the same editing procedure shown above in Step 4) - b),

- **DELETE File(s):** Step through the files in series. Press DELETE to remove any file from the series
- **Save Changes:** Step through the files in the Series and repeat SELECT, INSERT, and DELETE actions until the series is customized to your preferences. Scroll to the "Save Changes" prompt and press SELECT. You are now prompted to edit the Series Name, if so desired.

**Edit Series Name:** Either change the Name using the same editing procedure shown above in Step 4) - b), or keep the current Name as is. Press SELECT to save the customized Series Name. The following message will display:

**Preset Details Were  
Modified  
Save Changes? (YES/NO)**

Press YES to save changes. The customized file series is now loaded into the preset location and is ready to use.

## ADVANCED OPERATION - Cont'd:

### SETUP

Press and hold the CAL/SETUP Key to enter Setup Options Mode. Press the Up/Down Keys to scroll through the options.



Press SELECT key to select the option to adjust. The options are as follows (Note: Info enclosed in parenthesis indicates currently activated settings):

1. **Save Settings**
2. **Cancel**
3. **Recall Factory Setup**
4. **Auto Stop Mode (ASR)**
5. **Reverse Beeper (ON)**
6. **Torque Warning (ON)**
7. **Keypress Beep (ON)**
8. **Sleep Mode (15)**
9. **System Volume (100%)**

**NOTE:** These are system-wide options and can not be saved to any particular Preset Button during programming. See descriptions for each option below:

#### 1. **Save Settings:**

This option allows the user to accept and save all Setup option changes into System memory. Scroll to "Save Settings" using the Up or Down Keys and press SELECT Key. When this feature is selected, the following message will display:

**System Settings Were  
Modified  
Save Changes? (YES/NO)**

- a) To keep your new settings, press the YES Key.
- b) To ignore all new settings and return the System memory to its previous settings, press the NO key.

#### 2. **Cancel:**

Allows user to exit out of the Setup Options menu without saving any changes to System memory. SELECT "Cancel" to exit.

#### 3. **Recall Factory Setup:**

Recalling the Factory Setup allows you to reset your Endo System to factory specifications. When this feature is selected, the following message will display:

**Factory Reset:  
Are You Sure?  
(YES/NO)**

**NOTE:** Any customized presets will be lost if you Recall Factory Setup.

- a) To keep your customized settings, press the NO Key.
- b) To return the Endo System's presets to the factory settings (as shown in Chart 1 on page 7), press the YES Key. The unit will reset and return to the startup screen and then display the Preset 1 settings.

#### 4. **Auto Stop Mode:**

There are two different Auto Stop Modes to choose from:

- *Auto Stop Reverse* - When the Auto Stop Reverse (ASR) feature is enabled, rotation of the handpiece will automatically stop and reverse when the selected torque limit is reached. Do not release the foot pedal when this occurs; keep the foot pedal activated and the Endo System will automatically alternate between forward and reverse rotation in an attempt to free the instrument.
- *Auto Stop Manual* - When the Auto Stop Manual (ASM) feature 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 control, the handpiece will rotate in the reverse direction. The handpiece will continue to rotate in reverse until the foot control is released once again. If pressure is then reapplied to the foot control, the handpiece will return to forward rotation.

When the Auto Stop Mode feature is selected, the following message will display:

**Auto Stop Mode:**  
**Cancel**  
**Auto Stop Reverse**  
**Auto Stop Manual**

Press the Up/Down Keys to scroll through the options. Press the SELECT Key to select the desired option:

- a) SELECT "Cancel" to escape out of the menu.
- b) SELECT "Auto Stop Reverse" to enable the Auto Stop Reverse feature.

**NOTE:** This setting is *highly recommended* for endodontic procedures.

- c) SELECT "Auto Stop Manual" to enable manual control of Forward/Reverse and disable the Auto Stop Reverse feature.

#### **5. Reverse Beeper:**

When the Reverse Beeper feature is active, an audible beep will sound when the handpiece is rotating in the reverse direction. When this feature is selected, the following message will display:

**Reverse Beeper:**  
**Cancel**  
**On**  
**Off**

Press the Up/Down Keys to scroll through the options. Press the SELECT Key to select the desired option:

- a) SELECT "Cancel" to escape out of the menu.
- b) SELECT "On" to enable the Reverse Beeper feature.
- c) SELECT "Off" to disable the Reverse Beeper feature.

#### **6. Torque Warning:**

When the Torque Warning feature is active, a chirping warning noise will be audible

when the torque level reaches approximately 75% of the selected torque limit. When this feature is selected, the following message will display:

**Torque Warning:**  
**Cancel**  
**On**  
**Off**

Press the Up/Down Keys to scroll through the options. Press the SELECT Key to select the desired option:

- a) SELECT "Cancel" to escape out of the menu.
- b) SELECT "On" to enable the Torque Warning Tone.
- c) SELECT "Off" to disable the Torque Warning Tone.

#### **7. Keypress Beep:**

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

**Keypress Beep:**  
**Cancel**  
**On**  
**Off**

Press the Up/Down Keys to scroll through the options. Press the SELECT Key to select the desired option:

- a) SELECT "Cancel" to escape out of the menu.
- b) SELECT "On" to enable the Keypress Beep feature.
- c) SELECT "Off" to disable the Keypress Beep feature.

## ADVANCED OPERATION - *Cont'd*:

### 8. Sleep Mode:

The Endo System can be programmed to enter Sleep Mode after 15 or 30 minutes of inactivity, to conserve power. In Sleep Mode, the lighted Console Display will turn off and the green LEDs above the five Preset keys will blink consecutively. To resume normal operation when the Endo System is in Sleep Mode, press the Standby key or press the foot pedal.

When this feature is selected, the following message will display:

#### **Sleep Mode:**

**Cancel**  
**OFF**  
**15 min**  
**30 min**

Press the Up/Down Keys to scroll through the options. Press the SELECT Key to select the desired option:

- a) SELECT "Cancel" to escape out of the menu.
- b) SELECT "OFF" to disable Sleep Mode.
- c) SELECT either "15 min" or "30 min" to set the desired Sleep Mode activation period.

### 9. System Volume:

Controls the volume of all system sounds, including reverse beeper, torque warning, and keypress beep. When this feature is selected, the following message will display:

#### **SYSTEM VOLUME:**

**Cancel**  
**OFF**  
**20%**  
**40%**  
**60%**  
**80%**  
**100%**

Press the Up/Down Keys to scroll through the options. Press the SELECT Key to select the desired option:

- a) SELECT "Cancel" to escape out of the menu.
- b) SELECT "OFF" to turn all System sounds Off.
- c) SELECT desired Volume setting, in 20% increments, from "20%" to "100%".

## MULTI-FUNCTION FOOT CONTROL OPERATION

The optional AE-70V2E Multi-Function Foot Control may be used on the AEU-26 Console (see Figure 10). Note keyway on connector. Turn locking sleeve clockwise to secure cable to connector. The AEU-26 will automatically sense the Foot Control and invoke the proper control software, which allows dual functionality, through either the key pad or foot switch.

### **Installation:**

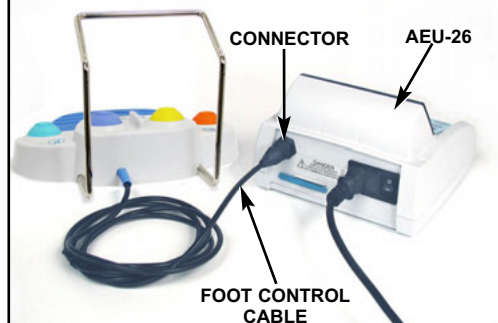
1. Attach the Foot Control cable to the connector on the back of the AEU-26 Console (see Figure 10). Note keyway on connector. Turn locking sleeve clockwise to secure cable to connector. The AEU-26 will automatically sense the Foot Control and invoke the proper control software, which allows dual functionality, through either the key pad or foot switch.

### **Foot Pad Functions (See Figure 11):**

2. The 'M' pad (Upper left - Yellow) performs the same function as the Motor direction button on the console. Each press of the pad

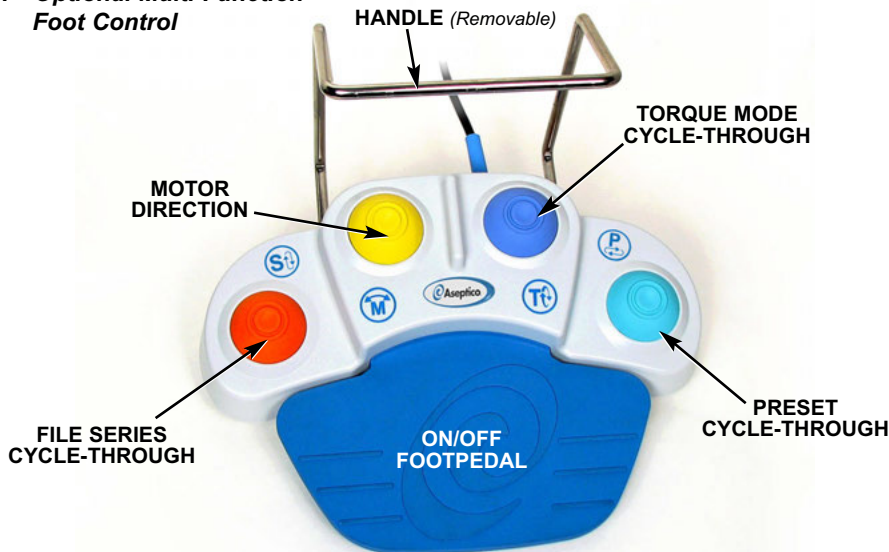


**Fig. 10 - Foot Control Connection**



reverses the direction of Motor rotation. When the Motor is in reverse, the reverse warning tone will sound if this option is selected in the SETUP options.

**Fig. 11 - Optional Multi-Function Foot Control**



## FOOT CONTROL OPERATION - *Cont'd*

3. The 'T' pad (Upper right - Lavender) cycles through the three Torque Modes: Auto-Stop Reverse (ASR), Maximum (MAX), or Torque Limit. Press repeatedly until desired mode is enabled (LEDs located next to the ASR/MAX button will indicate which mode is selected).



4. The 'P' pad (Lower right - Teal) cycles through the five presets, just like the console buttons.



5. The 'S' pad (Lower left - Orange) cycles through the current preset file series. Press to switch to the next file in the series.



6. **Foot Pedal** - The center pedal will switch the Motor 'On/Off' when depressed/released approximately halfway.

**NOTE:** The center pedal can also be used to reactivate the System from Standby mode. Press the pedal briefly to wake up the System and return it to the last state used.

### ***Handle Installation/Removal:***

7. The Foot Control Handle may be installed for easy repositioning of the AE-70V2E.

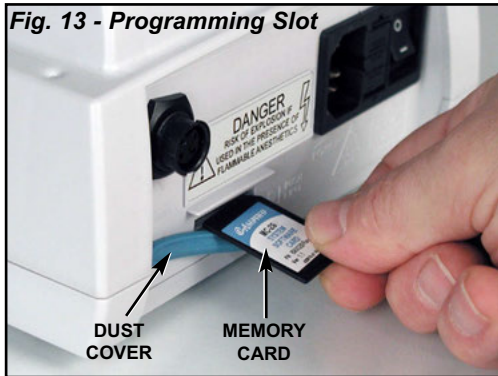
Grasp vertical guide rods and push handle straight into Switch base (see Figure 12). To remove, pull rods straight out.

***Fig. 12 - Handle Installation/Removal***



# REPROGRAMMING THE UNIT

**Fig. 13 - Programming Slot**



The AEU-26 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 13). This Port accepts memory cards 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-26 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-26 Display will show the following message:
 

**Memory Card Detected.  
Re-program? (YES / NO)**

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

**Presets Will Be Erased!  
Continue? (YES / NO)**

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

**Programming...**

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

**Programming Successful.  
Eject Card.**

  - Press the card inward slightly, then release it to eject it. When the card is ejected, the AEU-26 System will reset with normal power-up screen displayed.
9. Remove the memory card and store it in a safe place. Close the rubber dust cover on the Memory Card Port.
 

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

**Programming Failed**

Then:

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

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

# STERILIZATION:



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

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

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

## STERILIZATION PROCEDURE:

### Pre-clean

- 1) Brush off any visible signs of debris from the motor and cord.
- 2) Thoroughly clean the device with a moist cloth or towel to remove any remaining signs of debris.

### Sterilize

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

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

#### A. Standard autoclaving (Gravity displacement method)

**Time:** 15 min

**Temperature:** 132° C (270° F)

**Dry time:** 30 minutes

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

**Time:** 4 minutes

**Temperature:** 132° C (270° F)

**Dry time:** 40 minutes

**Flash Sterilization** – For immediate use only.

#### C. Unwrapped standard autoclaving (Gravity displacement method)

**Time:** 10 minutes

**Temperature:** 132° C (270° F)

No dry time is required for flash sterilization.

### Motor & Cord Assembly:

The entire AE-225-30 motor and cord assembly is fully autoclavable. Loosely coil the motor cord when autoclaving. Avoid sharply bending the cord when autoclaving.

**NOTE:** The motor cradle and mounting bracket are also fully autoclavable.

**Fig. 14 MOTOR & CORD STERILIZATION**



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

## MAINTENANCE & CLEANING:

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

### MOTOR - IMPORTANT!

Protect motor from excess oil draining from handpiece. After lubricating and before autoclaving, stand handpiece by its base on a paper towel and allow excess oil to drain (see Figure 14).



### WARNING

- Do not attempt to disassemble the motor or motor connector.
- Do not oil or lubricate the motor.
- Do not attach a handpiece to the motor while the motor is running.
- Do not bend motor cord sharply.
- The motor is sensitive to shock. Do not drop or impact motor against a hard surface.

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

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

**FOOT CONTROLS** - The exterior of the foot controls may be cleaned by wiping with a soft cloth moistened with mild detergent or disinfecting solution. When cleaning the optional AE-70V2E Multi-Function Foot Control, you may remove the handle from the foot control and wipe clean with disinfectant, then reinstall.

## TROUBLESHOOTING:

Problem:	Correction:
Console does not light when on:	<ul style="list-style-type: none"> <li>• If Preset LEDs are blinking, press Standby key 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 when turned on, but handpiece does not turn:	<ul style="list-style-type: none"> <li>• Check motor plug connection.</li> <li>• Check foot switch connection.</li> <li>• Depress foot switch.</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>
Improper Endo display:	<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>
Cannot remove motor/cord from unit:	<ul style="list-style-type: none"> <li>• Grasp the strain relief directly behind the cord connector and gently push inward. Then, grasp the connector body near the red dot and pull the connector straight out of the motor receptacle.</li> </ul>

## SPECIFICATIONS:

Console Dimensions: 6.8"W x 7.2"L x 4.5"H  
(17.3 cm x 18.5 cm x 11.3 cm)

Console Weight: 2.0 lbs (0.91kg)

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

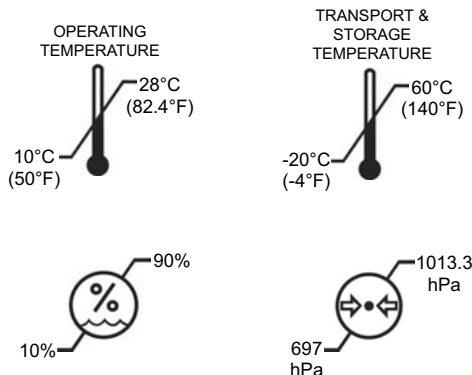
Fuses: 1.6A, 250V, Slo Blow Type

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.



**NOTE:** The AEU-26 features auto-sensing, global voltage compatibility. The fuse indicated is correct for 100V-240V 50/60 Hz line voltage.

1. Remove the Fuse Holder from the Power Inlet connector (see Figure 16).
2. Replace the fuses in the Fuse holder.

#### Replacement Fuses:

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

3. Reinstall the Fuse Holder.



## SYMBOL DEFINITIONS:



Consult Instructions For Use



Type B Equipment



Footswitch



Do Not Throw Into Trash



Manufacturer



Fuse Rating



Motor Direction



Torque Mode Step Through



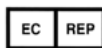
Temperature Limitation



Humidity Limitation



Atmospheric Pressure Limitation



Authorized European Representative



Standby Switch



Dangerous Voltage



Alternating current



Protection Against Dripping Water



Protective Earth (Ground)



Preset Step Through



File Series Step Through



Serial Number



Attention, consult accompanying documents

## **WARRANTY**

Aseptico warrants this product against defects in material or workmanship for a period of two (2) years, from date of original invoice. Some handpieces are warranted for one year under the same conditions. Other handpieces and expendable components, such as air turbines and light bulbs, are covered by shorter warranty periods, or have no warranty. Aseptico's sole obligation under product warranty is (at its sole option and discretion) to repair or replace any defective component or product 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 instructions, usually directing that the product be returned for service. Shipment to Aseptico and the cost thereof is always the responsibility of the purchaser.

Accidental misuse, inappropriate installation, or failure to perform directed maintenance voids the warranty. Deliberately defacing, modifying, or removing the serial number voids the warranty.

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.



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