

# OPERATION and MAINTENANCE INSTRUCTION MANUAL

## AEU-25 Electronic Endodontic System



**Aseptic**<sup>®</sup>

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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.

## SPECIFICATIONS:

Console Size:	3.5" x 5" x 7" (9 cm x 13 cm x 18 cm)
Console Weight:	3.55 lbs (1.6 kg)
Power Source:	Dual Voltage 115V or 230V AC
Power Consumption	
Maximum:	100 W (approx.)
Sleep Mode:	6 W



MEDICAL ELECTRICAL EQUIPMENT  
WITH RESPECT TO ELECTRIC  
SHOCK, FIRE AND MECHANICAL  
HAZARDS ONLY IN ACCORDANCE  
WITH UL 2601-1 and CAN/CSA C22.2  
No. 601.1



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Your new Aseptico Endo DTC® is one of the most advanced units available to the dental profession. This system features advanced digital torque control technology with auto-stop reverse to help prevent file breakage in the canal, five programmable memory buttons with an onboard file library, an integrated calibration system, and the versatility of an autoclavable 30,000 RPM brushless micro motor. These features combine to make the perfect rotary file system for endodontic and other dental 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**

- Electronic Control Console
- Remote Power Cord
- AE-4B-30 Autoclavable 30K Brushless Micro Motor
- Autoclavable Motor Holder
- AE-7P Foot Switch (971-S)

## SETTING UP THE UNIT:

1. Unpack the console and check that the Voltage Selector is set to the proper voltage. Use 115v for 110-120v 60Hz voltages, and the 230v for 220-250v 50Hz voltages. To change the Voltage Selector, see page 15.
2. Attach the power cord to the back of the Console and plug into a grounded electrical outlet.
3. Connect the AE-4B-30 motor to the receptacle on the lower front panel of the console.
4. Attach the "E" Type handpiece to the motor. See Figure 2.
5. Attach the supplied AE-7P On/Off Foot Switch to the connector on the back of the unit marked "Foot Switch".

Figure 1

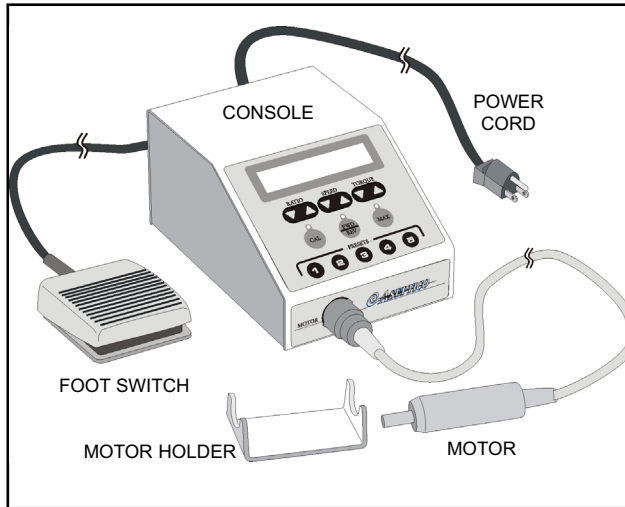
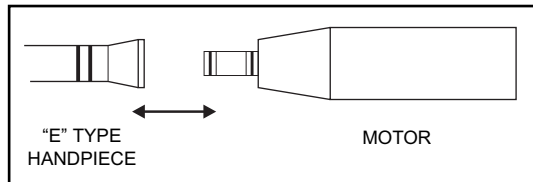


Figure 2



### CAUTION

Do not attempt to operate the Endo DTC® while configured in the 115V mode with a 230V power source. This could damage the electrical components and will void the warranty.

Figure 3 - Console Front

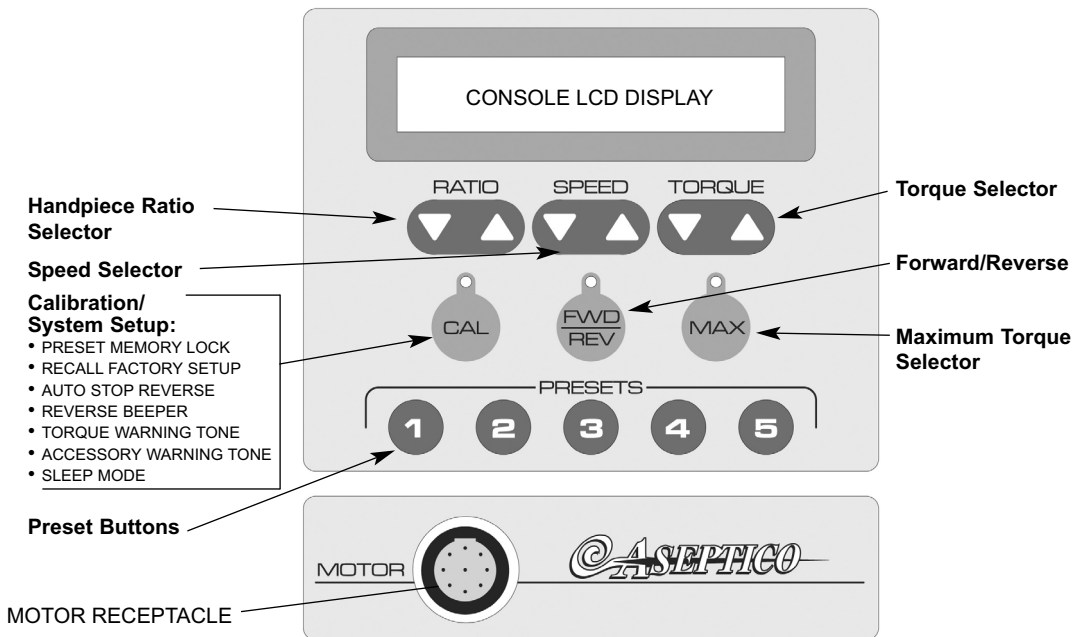
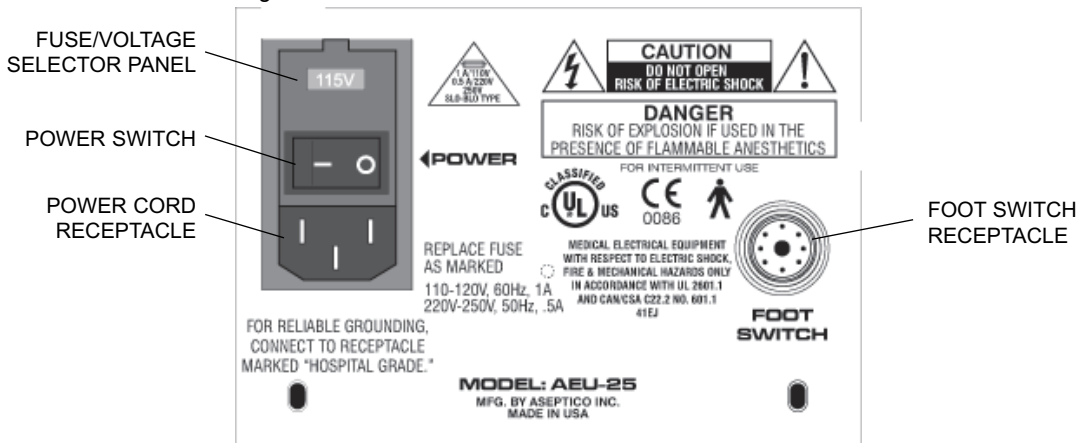


Figure 4 - Console Back



\* See page 6 for **ADVANCED OPERATION AND FUNCTIONS**

## 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' (0) to the 'ON' (–) position.

The Console LCD Display will light and the Startup Screen (shown below) will be displayed for a few seconds. The Startup Screen displays the software version onboard your Endo DTC®.

### **ASEPTICO AEU-25 Software Rev. ASP05**

2. Insert an endodontic rotary file into the handpiece.
3. Use the Calibration function to calibrate the Endo DTC®. See Caution at right. Press and release the “CAL” button. The unit will run for a few seconds, measuring the handpiece for an accurate display of speed and torque values.
4. Select the Preset Button corresponding to the endodontic rotary file series you are using.  
By default, the Endo DTC® preset buttons are set for the file series shown in Chart 1. Pressing the Preset Button repeatedly will cycle through the individual files listed below each series name.

5. Press the foot pedal to activate motor and begin operation.

*When using the optional AE-7D Dual Foot Control:*

The black (right side) pedal controls the on/off operation of the handpiece (exactly like the standard AE-7P foot pedal).

The blue (left side) pedal provides a hands-free way to operate the preset buttons:

- To step to the next individual file of an entire file series on the active preset button: Press and release the blue pedal.
  - To step to the next preset button: Press and hold the blue pedal for 1/2 sec. (until you hear a double beep), then release the blue pedal.
6. After 20 minutes of inactivity, the Endo DTC® will go into Sleep Mode to conserve power. To exit Sleep Mode and resume operation, press the Foot Pedal.

Chart 1 - Endo DTC® Default Presets



**CAUTION**

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

**Preset Button 1** 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

**Preset Button 2** 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

**Preset Button 3** 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

**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 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

# ADVANCED OPERATION AND FUNCTIONS

## 1. HANDPIECE RATIO SELECTOR:

Sets the Handpiece Ratio Indicator on the Console LCD Display to read accurately for different handpiece ratios.

Multiple handpieces with different ratios are often required to obtain the various speed ranges used in dental procedures.

The available handpiece ratios and speed & torque ranges for each are shown in Chart 2 below.

*Chart 2 - Ratio, Speed and, Torque*

Aseptic Model No.	Handpiece Ratio	Speed Range (RPM)	Torque Range (g•cm)
AHP-71	5/1	1,500 - 150,000	2-15 (No ASR)
AHP-63	1/1	300 - 30,000	4 - 125
AHP-66	1/4	75 - 7,500	15 - 500
AHP-88/88MP	1/8	40 - 3,750	30 - 1,000
AHP-62/62M	1/16	20 - 1,800	60 - 2,000
AHP-61	1/64	5 - 460	400 - 7,000

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

Push the Handpiece Ratio Selector up or down arrows until the displayed handpiece ratio matches the handpiece ratio you are using. Ratio settings are held in memory even after unit is turned off.

Auto Stop Reverse (ASR) is not available with Increaser handpieces.

## 2. SPEED (RPM) SELECTOR:

Controls the speed of the motor and handpiece.

Push the Speed Up arrow to increase speed and the Speed Down arrow to decrease speed. The Speed (RPM) Indicator on the Console LCD Display shows actual RPM. For display accuracy, the displayed handpiece ratio must exactly match the ratio of the handpiece being used. Speed settings are held in memory even after unit is turned off.

## 3. TORQUE SELECTOR:

Allows the user to adjust exact torque limits in Gram•Centimeter increments. Push the Torque Selector up/down arrows until the desired torque level is indicated on the Console LCD Display. By adjusting the torque control to reduced limits for each instrument size and operating the handpiece at a constant RPM, the risk of instrument breakage is greatly reduced.

Torque settings are held in memory even after unit is turned off.

For most endodontic root canal applications, the included 1/8 reduction contra-angle handpiece is normally used. Proper contra-angle maintenance, including cleaning and lubrication are essential to minimize torque losses when using the torque reduction settings.

## 4. FORWARD/REVERSE SELECTOR (FWD/REV):

Determines the rotation of the motor and handpiece. A red LED light above this button will indicate the reverse rotation during operation. When the Reverse Beeper (BPR) feature is active, an audible beeper (and the red LED light) will indicate the reverse rotation.

## 5. MAXIMUM TORQUE BUTTON (MAX):

Press and release to override the Endo DTC® Torque Control feature.

### **With MAX Torque activated:**

The LED above the Max. Torque Button will display a steady red light, the Torque Indicator will display "MAX", and the motor will operate at full torque. When the Max function is enabled, the Auto Stop Reverse (ASR) and torque warning tone features are automatically disabled.

### **With MAX Torque disabled:**

When the motor reaches the programmed maximum torque level, the LED above the Max. Torque Button will blink green. This is the normal setting for endodontic procedures.



## 6. CALIBRATION AND SYSTEM SETUP BUTTON:

### Calibration (CAL):

Press and release the "CAL" button to activate the Integrated Calibration System. The AEU-25 will automatically run the handpiece and system through a self test.

Use the Calibration function in the following circumstances:

- At the beginning of each day
- After changing handpieces (especially when changing handpiece type)
- After changing files or burs (optional)

### System Setup Menu:

Press and hold the "CAL" button until you hear a double beep to enter the System Setup Menu. After entering the System Setup Menu, the following setup options will be displayed on the Console LCD Display.

### PRESET MEMORY LOCK

**1=on, 2=off, 3=esc**

By default, the Preset Memory Lock is activated to prevent the user from inadvertently entering the File Library during a procedure.

To customize the Preset Buttons with other File Library Settings or User Defined Presets, the Preset Memory Lock must be disabled.

To protect any customized presets, re-enable the Preset Memory Lock after programming the Preset Buttons.

This is a system-wide setting and is not saved on a Preset Button when programming.

- To enable the Preset Memory Lock, press 1.
- To disable the Preset Memory Lock, press 2.
- To exit the System Setup Menu without changes, press 3.

## RECALL FACTORY SETUP

**1=no, 2=yes, 3=esc**

Recalling the Factory Setup allows you to reset your Endo DTC® to factory specifications.

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

- To keep your customized settings, press 1.
- To return the Endo DTC® preset buttons to the factory settings (as shown in Chart 1 on page 5), press 2.
- **CONFIRM RECALL** will appear. Select 2 to confirm recall or select 1 to reject changes.
- To exit the System Setup Menu and save changes, press 3.

## AUTO STOP REVERSE

**1=on, 2=off, 3=esc**

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 DTC® will automatically alternate between forward and reverse rotation in an attempt to free the instrument.

The Auto Stop Reverse setting is saved when programming Preset Buttons.

- To enable the Auto Stop Reverse feature, press 1.  
This setting is *highly recommended* for endodontic procedures.
- To disable the Auto Stop Reverse feature, press 2.  
Disabling auto stop reverse is *not recommended* for endodontic procedures, as file separation may occur.
- To exit the System Setup Menu without changes, press 3. **SAVE CHANGES** selection will appear. Select 1 to save changes and exit or select 2 to reject all changes and exit.

## **SYSTEM SETUP MENU - CONTINUED:**

### **REVERSE BEEPER**

**1=on, 2=off, 3=esc**

When the Reverse Beeper (BPR) feature is active, an audible beep will sound when the handpiece is rotating in the reverse direction. This is a system-wide setting and is not saved on a Preset Button when programming.

- To enable the Reverse Beeper feature, press 1.
- To disable the Reverse Beeper feature, press 2.
- To exit the System Setup Menu without changes, press 3. **SAVE CHANGES** selection will appear. Select 1 to save changes and exit or select 2 to reject all changes and exit.

### **TORQUE WARNING TONE**

**1=on, 2=off, 3=esc**

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. This is a system-wide setting and is not saved on a Preset Button when programming.

- To enable the Torque Warning Tone, press 1.
- To disable the Torque Warning Tone, press 2.
- To exit the System Setup Menu without changes, press 3. **SAVE CHANGES** selection will appear. Select 1 to save changes and exit or select 2 to reject all changes and exit.

### **ACCESSORY WARNING TONE**

**1=off, 2=on, 3=esc**

When the Accessory Warning feature is active, a warning tone will be audible when a GT Accessory file or ITR Emulation Accessory file is in use. This is a system-wide setting and is not saved on a Preset Button when programming.

- To disable the Accessory Warning, press 1.
- To enable the Accessory Warning press 2.

- To exit the System Setup, press 3. **SAVE CHANGES** selection will appear. Select 1 to save changes and exit or select 2 to reject all changes and exit.

### **SLEEP MODE**

**1=on, 2=off, 3=esc**

After 20 minutes of inactivity, the Endo DTC® will enter Sleep Mode to conserve power. In Sleep Mode, the lighted Console LCD display will turn off and the green LEDs above the CAL, FWD/REV, and MAX buttons will blink once every second.

To resume normal operation when the Endo DTC® is in Sleep Mode, press any button on the console or press the foot control.

This is a system-wide setting and is not saved on a Preset Button when programming.

- To enable the Sleep Mode, press 1.
- To disable the Sleep Mode, press 2.
- To exit the System Setup, press 3. **SAVE CHANGES** selection will appear. Select 1 to save changes and exit or select 2 to reject all changes and exit.

### **7. POWER SWITCH:**

Controls power on/off to console. On the switch, the on position is represented by a '1' and the off position is represented by a '0'. When the AEU-25 is turned on and not in Sleep Mode (see System Setup Menu page 6), the Console LCD Display will light.

## 8. INTRODUCTION TO PROGRAMMING PRESET BUTTONS:

By default, the Preset Buttons are programmed to recall the file series shown in Chart 1 on page 5.

The Preset Buttons are also used to navigate the various menus in the System Setup and File Library.

The Preset Buttons can be customized to suit individual preferences. There are three ways to program a preset button.

The Preset Buttons can be programmed with:

1. An Entire File Series from the File Library
2. A Single File from the File Library
3. A User Defined Preset

When recalling a preset button, three different displays will appear depending on how the preset button was programmed:

1. If an Entire File Series was programmed on the preset button (as is the case for the factory default setup), the File Series and File Name will be displayed, as shown in the example below.

File Series  
**GT ACC & 20s YELLOW**  
**GT ACC 90, 70, 50, 35/12**  
 File Name #1

Pressing the same preset button again will step to the next file in the file series, as shown below.

File Series  
**GT ACC & 20s YELLOW**  
**GT YEL 20/10 & 20/08**  
 File Name #2

2. If a Single File was programmed on the preset button, the words "Single File Preset" and the File Name will be displayed, as shown in the example below.

Preset Type  
**SINGLE FILE PRESET**  
**PROTAPER SX & S1**  
 File Name

3. If a User Defined Preset was programmed on the preset button, the words "User Defined Preset" and the Handpiece Ratio, Speed in RPM, and Torque in Gram•Centimeters, will be displayed, as shown in the example below.

Preset Type  
**USER DEFINED PRESET**  
**1/8 AG      300      240**  
 Ratio                  Speed          Torque

4. For all programming modes:

When in the Endo DTC® is in operation (with the foot pedal pressed), the Operation Screen will be displayed. The Operation Screen will show the Handpiece Ratio, Speed (in RPM), Torque (in Gram•Centimeters), Reverse Beeper (if enabled), and Auto Stop Reverse (if enabled).

Ratio                  Speed          Torque  
**1/8 AG      300      240**  
~~BPR ASR~~    RPM    g-cm

{Reverse Beeper} {Auto Stop Reverse}

## 9. PROGRAMMING A PRESET BUTTON WITH AN ENTIRE FILE SERIES:

1. Disable the Preset Memory Lock.  
For instructions, read about the System Setup Menu beginning on page 6.
2. Press and hold the desired Preset Button for 1 second (until you hear a double beep).
3. The display will show:

**ACCESS FILE LIBRARY?**  
**1=yes, 2=no, 3=esc**

Press Button #1 to access file library.

4. The display will show:

**GT ACC & 20s YELLOW**  
**1=next, 2=ok, 3=esc**

Press Button #1 repeatedly until the desired file series is shown on the display. See the Chart 3 on page 11 for a list of available file series.

### *Example 1:*

To go to the Protaper® Universal series, press preset button #1 three times. The display will then show:

**PROTAPER UNIVERSAL**  
**1=next, 2=ok, 3=esc**

5. Press Button #2 to select the displayed file series.
6. The display will show:

**LOAD ENTIRE SERIES?**  
**1=yes, 2=no, 3=esc**

Press Button #1 to load the entire series.

7. The display will show:

**1/8 AG (AHP-88)**  
**1=next, 2=ok, 3=esc**

Press Button #1 repeatedly to cycle through the available handpiece ratios.

When the displayed handpiece ratio matches the handpiece ratio you are using with this File Series, press Button #2.

8. The Preset Button is now set with the selected file series.

### *For Example 1:*

The display will now show:

**PROTAPER UNIVERSAL**  
**PROTAPER SX & S1**

Pressing the Preset Button repeatedly will cycle through the individual files in the selected series.

9. When you have completed the customization of the desired preset buttons, re-enable the Preset Memory Lock to avoid inadvertently entering the File Library during a procedure. For instructions, read about the System Setup Menu beginning on page 6.

**Chart 3 - Endo DTC® 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

\* Before programming presets, disable Preset Memory Lock - found in System Setup menu. Hold down desired Preset Button until you hear a double beep. After programming presets, re-enable Preset Memory Lock.

\*\* 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.

## 10. PROGRAMMING A PRESET BUTTON WITH A SINGLE FILE

1. Disable the Preset Memory Lock.  
For instructions, read about the System Setup Menu beginning on page 6.
2. Press and hold the desired Preset Button for 1 second (until you hear a double beep).

3. The display will show:

**ACCESS FILE LIBRARY?**  
**1=yes, 2=no, 3=esc**

Press Button #1 to access the File Library.

4. The display will show:

**GT ACC & 20s YELLOW**  
**1=next, 2=ok, 3=esc**

Press Button #1 repeatedly until the desired file series is shown on the display. See Chart 3 on page 11 for a list of available file series.

### *Example 2:*

To go to the Protaper® Universal series, press preset button #1 three times. The display will then show:

**PROTAPER UNIVERSAL**  
**1=next, 2=ok, 3=esc**

5. Press Button #2 to select the displayed file series.

6. The display will show:

**LOAD ENTIRE SERIES?**  
**1=yes, 2=no, 3=esc**

Press Button #2. Do not load entire series.

7. Press Button #1 repeatedly until the desired file is shown on the display.  
See Chart 3 on page 11 for a list of available files in each file series.

### *Example 2:*

To go to the F2, F3, F4, and F5 files in the Protaper® Universal series, press Button #1 twice. The display will show the following:

**PROTAPER F2 F3 F4 F5**  
**1=next, 2=ok, 3=esc**

8. Press Button #2 to select the displayed files.

9. The display will show:

**1/8 AG (AHP-88)**  
**1=next, 2=ok, 3=esc**

- a. If you are using the 1/8 AG handpiece with this file series, press Button #2 and go on to Step 10.
- b. If you are using a handpiece other than the 1/8 AG handpiece, press Button #1 and choose the correct handpiece. For instructions, refer to i and ii on page 10.

10. The Preset Button is now set with the selected single file settings.

*For Example 2 above:*

The display will now show:

**SINGLE FILE PRESET**  
**PROTAPER F2 F3 F4 F5**

11. When you have completed the programming of the desired preset buttons, re-enable the Preset Memory Lock to avoid inadvertently entering the File Library during a procedure. For instructions, read about the System Setup Menu beginning on page 6.

## 11. PROGRAMMING A PRESET BUTTON WITH A USER DEFINED PRESET

1. Disable the Preset Memory Lock and enable or disable Auto Stop Reverse and torque warning tone.  
For instructions, read about the System Setup Menu beginning on page 6.
2. Set the Handpiece Ratio to the correct setting.  
Press the Handpiece Ratio Selector up or down arrows until the Handpiece Ratio Indicator matches the ratio of the handpiece to be used.
3. Set the speed to the desired setting.  
Press the Speed Selector up/down arrows until the desired speed is shown on the display.
4. Set the torque level to the desired setting.  
Press the Torque Selector up/down arrows until the desired torque is shown on the display.  
To operate the motor at full torque, press the "MAX" Torque Button. The LED above the "MAX" Torque Button will display a steady red light, the Torque Indicator on the display will read "MAX". Operating at max. torque will override the Auto Stop Reverse feature.
5. Set Handpiece Rotation to the desired direction.  
Press the Forward/Reverse Selector to change the direction of handpiece rotation. A red L.E.D. light above the Forward/Reverse Selector indicates reverse rotation.
6. Press and hold the desired Preset Button for 1 second (until you hear a double beep).

7. The display will show:

### **ACCESS FILE LIBRARY?**

**1=yes, 2=no, 3=esc**

Press Button #2. Do not access the file library.

8. The display will show:

### **SAVE CURRENT SETTINGS?**

**1=yes, 2=no, 3=esc**

Press Button #1 to record settings on the Preset Button.

9. The display will resemble the following:

(The handpiece ratio, speed and torque values will vary according to your settings).

### **USER DEFINED PRESET**

**1/8 AG 300 240**

The Preset Button is now programmed with the specified settings.

10. When you have completed the programming of the desired preset buttons, re-enable the Preset Memory Lock to avoid inadvertently entering the File Library during a procedure. For instructions, read about the System Setup Menu beginning on page 6.

# 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) Thoroughly 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. Gravity Wrapped:

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

#### B. Prevacuum Wrapped:

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

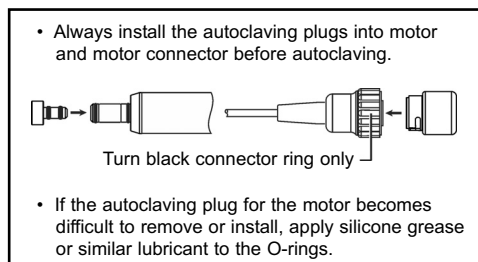
**Flash Sterilization** – For immediate use only.

#### C. Gravity Unwrapped:

- **Minimum Temperature:** 132° C (270° F)
  - **Full Cycle Time:** 10 minutes
- No dry time is required for flash sterilization.

## MOTOR & CORD ASSEMBLY:

- The entire motor and cord assembly is fully autoclavable. Before autoclaving the assembly, remove any handpiece from motor and install autoclaving plugs into the end of the motor and motor cord connector as shown below. The plugs are supplied with the motor and cord.
- Loosely coil the motor cord when autoclaving. Avoid sharply bending the cord when autoclaving.



**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 purchased for complete maintenance instructions.

**CONSOLE MAINTENANCE** - The exterior of the console may be cleaned by wiping with a soft cloth moistened with mild detergent or disinfecting solution.



### 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 motor is running.
- Do not bend motor cord sharply.

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



## CHANGING THE FUSE OR VOLTAGE -



### WARNING

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

1. Use a small flathead screwdriver to open the Fuse/Voltage Selector Panel on the back of the unit.
2. Remove the red Fuseholder from the unit.
- 3a. Changing the fuse:  
Replace the blown fuses on either side of the Fuseholder.  
Replacement Fuses:  
115V: 1.0A/250V slo-blo fuse  
230V: 0.5A/250V slo-blo fuse
- 3b. Changing the voltage:  
The proper fuses for the country of use are sent in the unit. When changing voltage, replace the fuses with fuses that are rated for the new voltage.  
Turn the Fuseholder until the white lettering with the proper voltage is right side up.
4. Replace the Fuseholder and close the Fuse/Voltage Selector Panel.
5. Select a power cord or grounded plug adapter specific to the country of use.

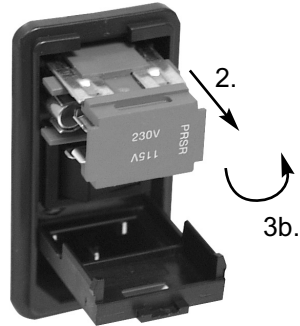
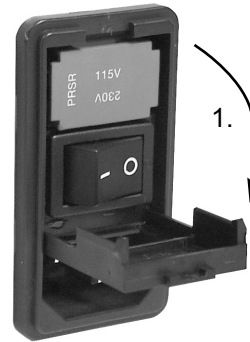


### CAUTION

Do not attempt to operate the Endo DTC® while configured in the 115V mode with a 230V power source. This could damage the electrical components and will void the warranty.

## CHANGING THE VOLTAGE

Follow the corresponding steps.



## TROUBLESHOOTING:

Problem:	Correction:
Console does not light when turned on:	If lights are blinking, press a button or foot switch to exit Sleep Mode. Check console to power connection. Check voltage setting. Check fuse. If blown, replace with 1.0A/250V slo-blo fuse for 115 volts, & 0.5A/250V slo-blo fuse for 230 volts.
Console lights when turned on, but handpiece does not turn:	Check motor plug connection. Check foot switch connection. Depress foot switch. Check that a file is properly seated in the handpiece and the latch is closed.
Improper display:	Verify that ratio setting matches handpiece ratio. Use Calibration function. Turn power switch off, wait 5 seconds, then turn back on to reset.
Motor slowing down or sluggish:	Dirty, under-lubricated handpiece. Handpiece lubricant is running into motor. After lubricating and before autoclaving, set handpiece with head down to let excess lubricant drain out. Check voltage setting.

## NOTES:

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## SYMBOL DEFINITIONS:



Type B  
Equipment



Dangerous  
Voltage



Attention - Consult  
Accompanying  
Documents



Serial Number

The UL 2601 Standard Duty Cycle for Intermittent Use is 1 min. on / 5 min. off.

**WARNING:** This device has been tested and found to comply with the emissions requirements of EN 55011:1991. 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.



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## **WARRANTY**

Aseptico warrants its products 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.