

# OPERATION and MAINTENANCE INSTRUCTION MANUAL

## AEU-20 Endodontic System

Endo

***ITR***

™



***Aseptic***

P.O. Box 1548 • Woodinville, WA 9 • 8333 216th Street SE, Woodinville WA 98072  
International (425) 487-3157 • Toll Free (800) 426-5913 • [www.aseptico.com](http://www.aseptico.com) • [info@aseptico.com](mailto:info@aseptico.com)

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## SPECIFICATIONS:

Console Size: 5.80" x 7.21" x 3.03"  
(14.73 x 18.31 x 7.70 cm)

Console Weight: 3.5 lbs (1.59 kg)

Power Source: 110V/120V, 60 Hz, or  
220V/250V, 50 Hz

Fuse: 0.315A - 110V  
0.16A - 230V  
Slo-Blo Type

## CLASSIFICATIONS:

Class I

Type B Applied Parts

Ordinary Protection

Not suitable for use in the presence of a flammable anaesthetic mixture mixed with air or with oxygen or nitrous oxide.

**Note:** The power supply cord is the mains appliance disconnect means.

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.



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



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

**WARNING:** 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.



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Your new Aseptico AEU-20 Endodontic System is one of the finest units available to the medical profession. The system features a variable torque brushless motor with digital R.P.M. readout for precise speed control. These features combine to make the perfect surgical motor for endodontic and other medical surgeries.

# *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.

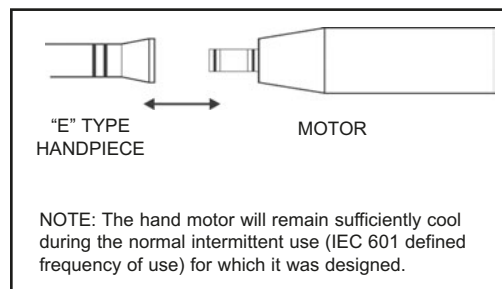
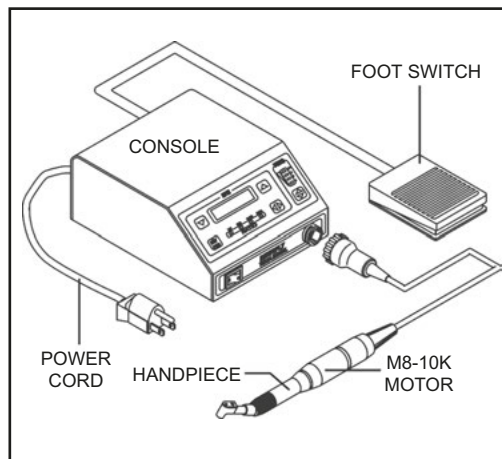
Separate manuals may be provided to cover the operation and maintenance of handpieces or other accessories for your unit.

## **PACKAGE CONTENTS:**

- Electric Control Console
- Remote Power Cord
- Autoclavable 10K Brushless Micro Motor
- Autoclavable Motor Holder
- AE-7P Foot Switch (971-S)
- Handpiece (Purchased separately)

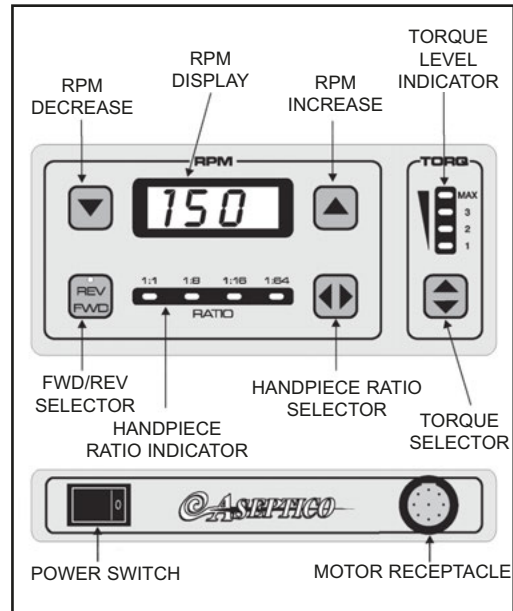
## SETTING UP THE UNIT:

1. Unpack the console and check that the unit is compatible with the voltage from the power source. Use the 110V unit for 110-120V 60Hz voltages, and the 220V unit for 220-250V 50Hz voltages. For alternative voltages (220V-250V), confirm that the type of plug cap is correct for the country of usage and carries the proper certification markings. The correct cord is shipped with the console.
2. Attach the remote power cord to the back of the console and plug into a grounded electrical receptacle.
3. Connect the M-8 10K motor to the receptacle on the lower front panel of the console.
4. Attach the appropriate "E" Type handpiece to the motor, i.e. a 1:8 reduction contra angle.
5. Attach the supplied foot control to the connector on the back of the unit marked "Foot Switch". An On/Off type or a variable speed type foot control may be used.



## OPERATION FUNCTIONS:

1. **Power Switch** - Controls power on/off to console. When turned on, console display should light.
2. **RPM** - Controls speed of motor and hand-piece. Push the up arrow to increase speed and the down arrow to decrease speed. A visual display shows actual RPM. For complete display accuracy, the Ratio Selector must exactly match the ratio of the handpiece being used. All settings are held in memory even after unit is turned off.
3. **Forward/Reverse** - Determines the rotation of the motor and handpiece. A red L.E.D. light and audible beeper indicate the reverse rotation.
4. **Ratio Selector** - Calibrates the RPM display to read accurately for up to four different handpiece ratios. Push the ratio up/down arrow until the indicator light matches the handpiece you are using. Different handpiece ratios are required to obtain different low speed ranges used in endodontic procedures.



## SPEED RANGES:

The speed ranges with a 10K motor are as follows:

1:1	1500 - 9500 RPM
1:8	100 - 950 RPM
1:16	50 - 600 RPM
1:64	20 - 150 RPM

\*Speed ranges will be reduced when using the Torque Control in positions 1, 2, or 3. Full speed ranges are realized only in the maximum torque control setting.

## OPERATION FUNCTIONS - *Cont'd*:

5. **Torque Control** - Allows user to adjust torque limit from maximum to minimum levels, thus reducing the risk of instrument breakage. Push the Torque up/down arrow to select the desired torque level.

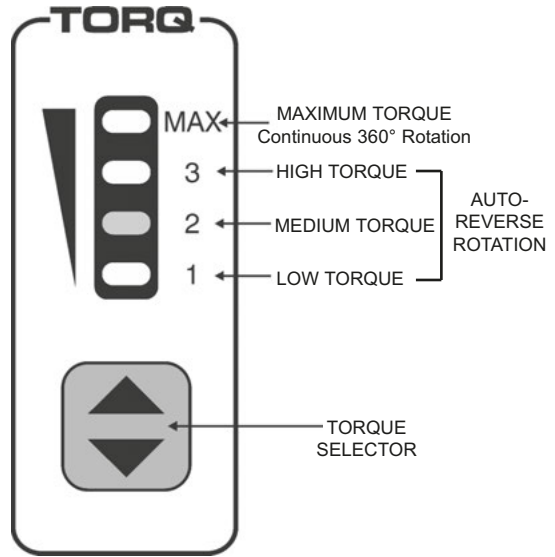
Torque settings 1, 2, and 3 utilize an 'Auto-Reverse' motion when torque limit is reached to aid in freeing a stalled instrument. Once the instrument is released, the motor resumes rotation in the previously programmed direction.

Setting the torque control to the 'MAX' position cancels the 'Auto-Reverse' function and operates the motor in a continuous 360° rotation at maximum torque.

Operating speed and torque level for each ratio position are stored in the computer memory.

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

By adjusting the torque control to reduced limits for each instrument size, and operating at constant RPM, the risk of instrument breakage is greatly reduced.



## OPERATION:

After the unit has been set up and you have made yourself familiar with the operation functions, you are ready for operation as follows:

1. Turn the power switch on the lower left front of the console to the 'ON' position. The front panel display will light.
2. Attach a sterile handpiece to the motor and set the Ratio Selector to match the gear ratio of the handpiece being used (i.e. 1:8 for a 1:8 handpiece, or 1:16 for a 1:16 handpiece).
3. Adjust the up/down arrows on the RPM display to the desired operating speed on the RPM readout.  
**NOTE:** The RPM display indicates true instrument speed when the Ratio Selector is in the appropriate position. For display accuracy, make sure the Ratio Selector matches the actual handpiece ratio.
4. Adjust the 'Torque Control' to the desired operating level. Begin at minimum levels when using endodontic rotary instruments.
5. Depress the foot control to activate motor and begin operation.

## 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.

**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.

## STERILIZATION PROCEDURE:

### Pre-clean

- 1) Thoroughly brush off any visible signs of debris from the AE-4B 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:

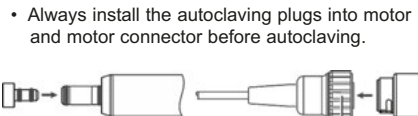
- **Minimum Temperature:** 132° C (270° F)
- **Full Cycle Time:** 20 minutes
- **Minimum Dry time:** 30 minutes

#### B. Prevacuum Wrapped:

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

## 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.



- Always install the autoclaving plugs into motor and motor connector before autoclaving.

- If the autoclaving plug for the motor becomes difficult to remove or install, apply silicone grease or similar lubricant to the O-rings.

**NOTE:** Call Aseptico, Inc. at 1-425-426-5913 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 the motor is running.
- **Do not** bend motor cord sharply.

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

## SYMBOL DEFINITIONS:



Type B Equipment



Attention, consult accompanying documents



Dangerous Voltage



Serial Number

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## TROUBLESHOOTING:

Problem:	Correction:
Console does not light when turned on:	Check console to power connection. Check that unit is compatible with voltage from power source. Check fuse. If blown, replace with 0.315A/250V slo-blo fuse for 110 volts, & 0.16A/250V slo-blo fuse for 220 volts.
Console lights when turned on, but handpiece does not turn:	Check motor plug connection. Check foot switch connection. Depress foot switch. Increase RPM. Check that an instrument is properly seated in the handpiece and the collet is closed.
Improper display:	Turn power switch off, wait 5 seconds, then turn back on to reset. Ratio setting does not match handpiece.
Motor slowing down or sluggish:	Dirty, under-lubricated handpiece. Handpiece lubricant is running into motor. After lubricating, set handpiece with head down to let excess lubricant drain out.



## **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.

