A Compact, Multi-Function Electric Soldering Machine
w/10 Heat Ranges for Most Soldering of Both Precious & Non-Precious Alloys

- Convenient Foot Switch Allows “Hands-Free” Operation During Soldering
- 10 Heat Ranges
- Handles Light to Heavy Soldering of Both Non-Precious & Precious Alloys
- Complete with 8 Accessories

Owner’s Manual
Congratulations!

You have just purchased a quality piece of CMP Dental Laboratory Equipment. It has been carefully quality-controlled and thoroughly tested at the factory for optimum performance and durability. From the smallest bench unit to the largest floor-standing casting machine, each piece of equipment must adhere to the same standards of quality and efficiency that have made all CMP laboratory equipment an outstanding value.

If you have any questions regarding CMP’s quality line of dental laboratory equipment and supplies, please call toll-free: 800-833-2343 or 800-888-5868 (Fax: 518-434-1288) between the hours of 8:00 AM and 4:30 PM Eastern Time. Or, if you prefer, visit us at our web site: www.cmpindustry.com . . . we will be happy to assist you.

Demand the best! Insist on quality CMP Dental Laboratory Equipment.
Unpacking

Carefully unpack your new Electric Soldering Machine and compare parts to photo shown on cover of this manual. If any parts should be missing, contact our customer service department at 1-800-833-2343 or 1-800-888-5868. Damaged items must immediately be claimed with the shipping carrier to insure proper credit.

Electrical Connection

Your new Electric Soldering Machine requires only a standard 115V–60 Hz outlet to operate. As with any electrical device, be sure to place it in an area of the laboratory away from water and all other liquid sources to avoid accidental electrical shock.

Operation

The Electric Soldering Machine is an extremely easy device to operate. In order to obtain the best results, please study the following material before attempting to use the unit for the first time. Follow operating instructions carefully.

Properly used, the Electric Soldering Machine permits the operator to confine the heat to a small area. This limits the possibility of distortion and damage to other areas of the casting. With this method of soldering, it is possible to repair areas adjacent to an acrylic saddle without damaging the acrylic. It also eliminates the need for stripping the saddles on the frame before proceeding with the work.

The Electric Soldering Machine is supplied with two permanently attached leads; a power lead which is plugged into a standard wall receptacle and a foot switch lead. The foot switch should be placed on the floor so the operator can turn the unit on and off by pressing the foot switch with his toe. The carbon should always be in position on the work before the switch is closed and the foot switch should be released as the carbon is removed.

Operating temperature is controlled with the power selecting dial. The higher the number is set, the more heat will be developed. Therefore, for very light work, such as assembling wires used in orthodontic work, the dial would be set to a rather low number between 1 and 3. For medium size sections, such as found in the average partial denture, settings between 4 and 6 may be used. For very large and bulky areas, such as dummies, settings as high as 7 or 8 may be required. As the operator becomes more experienced, higher settings can be utilized.

The heat required for the soldering operation is generated at the tip of the carbon. The carbon holder will accept a 1/4” diameter carbon without the use of any adapters. Depending on the size of the soldering joint to be processed, the use of different size carbons may be required. If a small, delicate solder joint is required, it is advisable to use the provided 1/8” carbon adapter. The larger the carbon used, the more the heat that is generated, the better the chance of a problem with the appliance. Additional optional carbons and adapters in 3/16” and 5/16” sizes are available.
Various ground prongs are provided to aid in the soldering process. A single ground for most repairs, a double-pronged ground to straddle the repair joint (when possible), and a clip ground to allow the operator to have one hand free.

**Operating Procedure**

1) Select a dial setting suitable for the job being processed.

2) Select and insert a carbon suitable for the work.

3) Select and insert a ground suitable for the work.

4) Apply flux to the work area.

5) Place the solder in position.

6) Press the tip of the carbon firmly against the solder to hold it in position at the spot being repaired.

7) Press the ground terminal in position against the work.

8) Press the foot switch and hold it until the solder flows.

9) Simultaneously remove carbon and release foot switch. **Avoid drawing an arc.**

**Note:** If carbon is held in place while solder cools, it is apt to leave a depression.

**Operating Hints**

**CARBONS**
The carbons used for electric soldering are a very hard grade of carbon and are coated with copper so their surface will be a good conductor. This copper coating should be removed only at the very tip of the carbon where heat is desired. Removing the copper for a considerable distance back of the tip will cause inefficient operation. **Never let the copper contact the work.** Shape the tip to a “cone” for most jobs. However, the carbon can be recontoured to provide better contact for different jobs.

**Note:** For better contact, wet the tip of the carbon just before placing it on the work.

**GROUNDS**
Most of the heat generated for the soldering operation is developed right at the tip of the carbon. However, since very high current values are being used, that portion of contact with the ground will tend to heat because of the resistance of the metal to the current flow. This is the reason a double contact ground is provided. If a break in the center of a lingual bar is being repaired, for instance, it is desirable to contact the bar on each side of the broken area so the metal on both sides of the break will be heated to the same extent. If this is not done and one side is hotter than the other, the solder will tend to flow toward the hot side rather than the cold side.

**Note:** Keep the ground contact as close to the joint as possible.
SOLDER
Because the solder is “preplaced” in electric soldering, triple thick should be used in order to get the proper quantity required for such a short length. Two pieces can be “stacked” for those jobs requiring extra volume. Also, if the standard thickness solder is used, it will melt before the metal being soldered is hot enough to accept it and, as a result, the solder will ball up and pull away from the metal instead of flowing over it.

Note: Keep the ground contact as close to the joint as possible.

FLUX
For best results, the flux used in the electric soldering operation should be highly diluted. Take a small quantity of flux from the jar and dilute it in the cover. The flux should be thin and watery, not heavy and paste-like. Flux should be applied to all areas on the work where the solder is to flow.

Note: The under surface of the solder should also be coated with flux but none should be applied on the top surface of the solder against which the “carbon” will be placed.

Specifications

<table>
<thead>
<tr>
<th>Item:</th>
<th>Electric Soldering Unit</th>
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</thead>
<tbody>
<tr>
<td>Electrical:</td>
<td>115/230V–50/60Hz</td>
</tr>
<tr>
<td>Height:</td>
<td>5 1/2&quot; (14 cm)</td>
</tr>
<tr>
<td>Width:</td>
<td>7&quot; (18 cm)</td>
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<tr>
<td>Depth:</td>
<td>6 1/2&quot; (16.5 cm)</td>
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<tr>
<td>Shipping Wt:</td>
<td>10 Lbs (4.54 Kg)</td>
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