

**Caution:** Federal Law restricts this device to sale by or on the order of a properly licensed practitioner.

## **Parkell Sensimatic™ 600SE Electrosurge**

### **IMPORTANT- READ FIRST**

This manual, in whole or in part, should not be considered a substitute for formal training. Appropriate education in the use of electrosurgical procedures is REQUIRED prior to undertaking any procedures on patients.

### **DEVICE DESCRIPTION**

The Sensimatic Model 600SE is a solid-state dental electrosurgery unit. It features a low-impedance, high-frequency output not commonly found in electrosurgery units with tube circuitry. Once set for the case at hand, the device adjusts automatically during the procedure to compensate for different resistance loads encountered at the operative site.

### **INTENDED USE/INDICATIONS**

Model 600SE is useful in oral surgery, periodontia, orthodontia, endodontia, prosthodontia, operative and crown and bridge procedures.

From the dozens of uses cited in current literature, we indicate some areas where electrosurgery has proven useful in the practice of general dentistry.

- **For impression taking**, to gain access to margins of prepared teeth or to remove interproximal tissue
- **To extend the clinical height of crowns**
- **Gingivectomy**
- **Removal of pericoronal tissue on 3rd molars**
- **Biopsy (bloodless)**
- **To reduce and remove swollen and hypertrophied gum** tissue around the necks of teeth, to gain better access and visibility
- **To plane tissue of edentulous region prior to making impressions** for prosthodontics
- **To coagulate bleeding** prior to cementation procedures
- **To remove excess flabby tissue or tissue tabs**
- **To incise, excise, drain or coagulate minor periodontal** conditions
- **To uncover unerupted teeth**
- **For surgery with antisepsis and hemostasis**
- **Implant surgery** - although electrosurgical devices allow clean, smooth incisions with lessened bleeding, they are recommended only for first-stage surgery. Touching the implant with the electrode is extremely dangerous. Therefore, use of these devices in later stages of implant surgical procedures is to be avoided.

### **CONTRAINDICATIONS**

- Do not use this device around persons wearing a pacemaker.

**WARNING:**

- **Always exert caution during use.** Electrosurgery units are designed to allow controlled destruction of soft tissue and therefore are inherently dangerous.
- **Do not use in any situation where the electrode will touch metal restorations, implants, bone or teeth.** Such exposure may result in bone necrosis.
- **Stop use immediately at the first sign of tissue blanching and avoid prolonged tissue contact.** Allow tissue to cool 10 seconds between cuts. Excessive exposure may retard healing and cause sloughing.
- **Do not use in the presence of flammable or explosive gases.** (Nitrous oxide analgesia is acceptable.)
- **Do not operate unit if RF indicator light remains lit when the foot switch is not depressed.** This indicates that a malfunction has occurred and the unit must be returned to Parkell for servicing.
- **The unit should not be immersed in water or other liquids.** Avoid placing where it can fall or be pulled into liquid. Do not reach for the device if it has fallen into liquid. Do not use the device after it has fallen into liquid (Return it to Parkell for servicing.) Danger of electrical shock.
- **Do not modify this device.** Modification may violate safety codes and endanger patient and operator. Any modification will void the warranty.

**PRECAUTIONS**

**Caution:** Do not operate the electrosurge without using the patient indifferent pad. The pad should not touch the patient's bare skin.

**Caution:** Turn power off before changing electrodes to avoid shock exposure. After locking the electrode in the handpiece, examine it carefully to assure that the metal shaft is fully seated with no metal exposed.

**Caution:** Be sure handpiece, cable and electrodes are dry before using to avoid shock.

**Caution:** Before each use, inspect the electrode to assure that the plastic sheathing (insulation) covering the metal shaft is intact. Do not bend the electrode where it is insulated, as this may crack the plastic sheath.

**Caution:** Release footswitch before inserting or removing the handpiece from the patient's mouth.

**Caution:** Do not allow cables to be coiled or twisted around metal objects.

**Individualization of treatment:**

If patient or operator is pregnant, suffers diabetes or bleeding disorders or is being irradiated, consult the patient's physician concerning the advisability of using electrosurgery.

**Conformance to Standards:**

The Sensimatic 600SE is ETL listed and conforms to UL2601-1. Parkell's quality system is certified to ISO9001/EN46001. Certified to CAN/CSA C22.2 No. 601.1.

The device is CE marked - certified to European Medical Device Directive (93/42/EEC).

**HOW SUPPLIED**

- |  |                     |
|--|---------------------|
| ■ Sensimatic power unit with foot switch | ■ 6 Electrodes      |
| ■ Self-stick handpiece holding clip      | ■ 2 fuses           |
| ■ Surgical handpiece and cable           | ■ Operator's manual |
| ■ Patient indifferent plate and cable    |                     |

## HOOK-UP

Locate the device where it will be convenient, but where there is no chance it will be pulled into liquid.

Plug line cord of unit into a grounded electrical outlet.\* Never operate equipment without complete and proper grounding. Plug the indifferent plate and surgical handpiece into the matching color-coded outlets on the front panel.

## SPECIFICATIONS

**Power Requirements:** Line Voltage - 117 Volts +/- 10% AC, 60 Hz, 2 amps maximum  
Optional 220 Volts +/- 10%, 50/60 Hz, 1.2 amps maximum

**Fuses** - 2.5A, 120/230V, Type T (Both line and neutral fused)

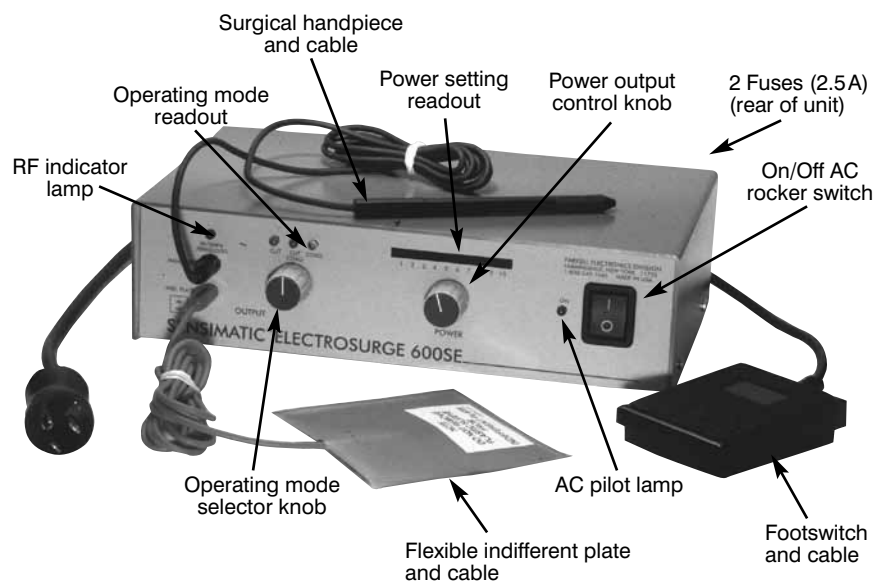
**Operating Frequency** - 1.4 -1.7 MHz (megacycles)

**Maximum Power Output** - 70 Watts rms (@ 400 Ohm load) approximate

**Maximum Output Voltage** (no load) - 286 Volts rms

**Size** - 3" H x 6 1/2" D x 11" W (75mm x 165mm x 280mm)

**Weight** - 8.3 pounds (3 3/4 kg)



Certified to  
MDD  
93/42/EEC



Ground  
Terminal



Type BF  
Equipment



Referenced to ground  
at high frequencies

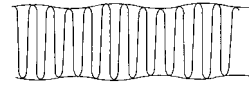
\* The UL2601-1 standard specifies a hospital grade outlet to assure ground reliability.

## SENSIMATIC'S HIGH FREQUENCY (RF) OUTPUT MODES

Sensimatic generates 3 different high frequency waveforms. Each has differing surgical characteristics which cause different histological effects on soft tissue.

### ■ RF Mode No. 1, Cutting with least coagulation

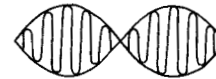
A filtered, unmodulated current for cutting with the least amount of coagulation. Suited for closed wound surgery where incisions will be sutured.



Fully rectified,  
fully filtered

### ■ RF Mode No. 2, Cutting with balanced coagulation

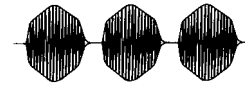
A fully rectified, modulated, undamped current for cutting with coagulation when control of bleeding is desired. It is the most widely employed current in dentistry and is suited for cutting procedures where incisions will not be sutured.



Fully rectified,  
unfiltered

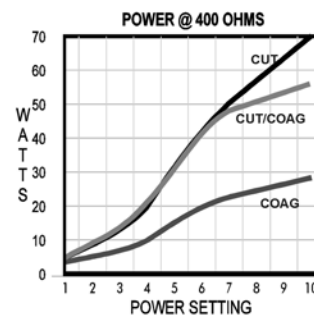
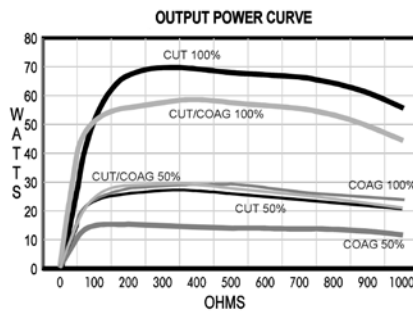
### ■ RF Mode No. 3, Coagulation - A partially-rectified

current for coagulation without cutting. This waveform has been found most effective for precise, pin-point surface coagulation with minimal tissue destruction.



Partially rectified,  
unfiltered

Fulguration or Spark Gap Current is almost never used in dentistry, but primarily in dermatology for carbonizing unwanted surface growths. It is available using Mode No. 1, with a power setting of 7 or higher.



## INSTRUCTIONS FOR USE

Always verify settings before using.

Turn power unit off before touching or changing electrodes. Select appropriate electrode for the procedure and make sure the sheathing (insulation) is in good condition. Insert electrode into surgical handpiece, making sure it is fully seated with no metal shaft exposed. Turn the end of the handpiece until electrode is locked in place.

Push AC rocker switch on front panel. AC indicator lamp will light indicating the unit is on. Use mode selector knob to choose operating wave form for the case at hand. Use power output knob to select power for the case at hand.

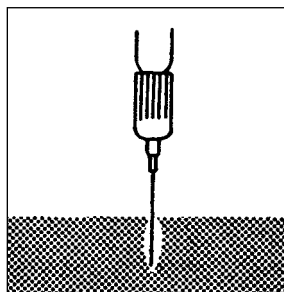
To activate handpiece, depress foot switch. RF pilot lamp will light. This indicates high frequency power is flowing. If RF lamp stays on when foot switch is not depressed, this indicates a malfunction. Unit should not be used. Return it to Parkell for service.

With incisions using needle-type electrodes, try starting at power setting, No. 4. With excisions using small loop- type electrodes, try starting at power setting No. 5. Using larger loop electrodes, try starting at No. 6. If electrode drags, increase power to the next higher setting, until smooth, non-dragging cutting is achieved.

For the coagulation mode with ball electrodes, try starting at power setting No. 3. Coagulation is controlled by the length of time the electrode is kept in contact with the tissue, the size of the electrode and the power used. It is evidenced by a whitish blanching around the point of contact. If necessary increase power until suitable coagulation is achieved.

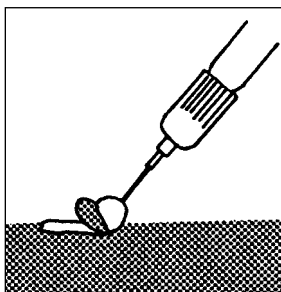
For fulguration (carbonization of tissue) use mode #1 and try starting at a power setting of 7. Fulguration is almost never indicated in dentistry.

**For Incisions -**



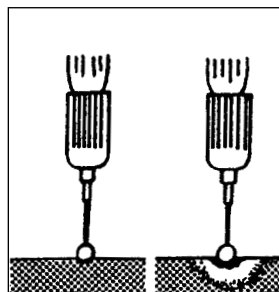
**Use needle electrodes  
(Start at about No. 4)**

**For Excisions -**



**Use loop electrodes  
(Start at about No. 5)**

**For Coagulation -**



**Use ball electrodes  
(Start at about No. 3)**

Good hand support and finger rests are necessary before tissue is contacted.

Always use lowest possible power setting for the procedure at hand. Once the power is set, the 600SE's power output takes over by automatically programming the power output for the operator in response to the tissue condition at the operative site. So repeated minor power adjustments are unnecessary and postoperative healing is enhanced. Tissue to be cut should be slightly moist.

The patient indifferent plate is suggested for all patient procedures. It can be semi-permanently attached to the soft upholstery of the chair, or put behind the patient's back or sat upon. Do not attach indifferent plate to metal frame of chair. Avoid patient contact with metal frame of chair or ground.

Local anesthetic is indicated for all electrosurgical interventions.

Use plastic (not metal) mirror handles, suction tips and retractors, etc., to avoid minor shocks from accidental contact with active electrode.

Work in a clear, slightly moist field. Excessive moisture at the site will lessen effectiveness.

Operate with the electrode tip as perpendicular as possible to the plane of intervention. Keep the electrode in constant, controlled, uninterrupted motion. Cut with a light, smooth, even stroke. Avoid electrode penetrations of more than 1 mm in depth. For deep preparations, make repeated shallow penetrations, allowing about 10 seconds between interventions for the tissue to cool. Continually wipe carbonized tissue tags from the electrode with an alcohol-moistened wipe.

Avoid electrode dragging which is usually caused by too little power, excessive moisture or a dirty electrode.

To familiarize yourself with the device, practice by cutting a fresh, moist piece of beef at room temperature. Place it directly on the indifferent plate.

### **COMMON CAUSES OF SOME CLINICAL PROBLEMS**

**Excessive elimination of tissue or excessive thinning of a gingival collar** - Often caused by improper electrode selection. For example, using a wide loop electrode on the labial surface of lower anterior teeth where a straight needle type is indicated.

**Dragging electrode action, even at the recommended dial setting** - Can be caused by dirty electrode or too deep a tissue penetration (more than 2mm), or inadequate contact between patient and indifferent plate (sometimes due to extra thick clothing), impediment at site of contact, or too little power.

**Retarded healing or tissue sloughing** - Caused by a variety of reasons, for example:

- a) Too deep an electrode penetration of tissue or too slow electrode movement
- b) Erratic cutting motion by the operator, too long in one spot or picking at or pecking at tissue instead of a constant even motion
- c) Dirty electrodes
- d) Site of operation too wet causing dissipation of current from electrode.

### **ODOR CONTROL**

A minor inconvenience of electrosurgery is the creation of odors in the operatory. This should be explained in advance to the patient. Use of oral evacuation equipment by an assistant during surgery will remove most of the odor. Spraying with ozium or other suitable room air fresheners before surgery will also help to minimize odors. It has also been found helpful to put a little dab of Vicks or similarly medicated ointment on upper lip of the patient to mask odors.

### **CLEANING & STERILIZATION**

**Cables, Handles and Indifferent Plate** - Can be kept clean by washing with soap and water or wiped with alcohol or cold sterilants. Knots, kinks, curls or sharp bends in cables are to be avoided. Make sure these parts are completely dry before each use. Occasional attention should be given to contact points to see they are clean and free of film. Do not dry heat sterilize the accessories.

**Electrodes** - Should be sterilized in a steam autoclave after each use. Steam sterilization should be carried out at 250°F (121 °C) for 30 minutes at 15 psi. Do not dry heat sterilize.

Handpiece with attached cable can also be autoclaved using the same procedure as the electrodes.

### **MAINTENANCE**

**Model 600SE Power Unit** - Requires little or no maintenance for years of dependable trouble-free service. Caution auxiliary personnel not to wet or attempt to sterilize the power unit itself.

To assure continuing proper performance from your Sensimatic 600SE, it should be returned to Parkell, freight pre-paid, at least once every 24 months for inspection. There will be a moderate charge for this service.

See full details on enclosed warranty registration card.

### **SERVICE AND PARTS**

Within the US, all repairs must be made by Parkell. Outside the US, repairs must be made by a Parkell-authorized facility.

Complete service and parts facility exists at Parkell, Inc., 300 Executive Drive Edgewood, N.Y. 11717. Equipment needing service should be returned, freight pre-paid via United Parcel Service and insured for original purchase price. Include unit with all accessories, except electrodes. Ship in original carton. Add plenty of cushioning material and overbox to protect your unit during shipping. Storage & transit: Keep dry between 50°-110°F.

If you purchased this product from a dealer please register your product via the internet @ [www.parkell.com](http://www.parkell.com). Click on the "Product Registration" button on the Home Page. Please print out a copy of the "Warranty Registration" page for your records.

#### REPLACEMENT PARTS

Part No. D633, Electrode Handpiece with cable

Part No. D635, Patient Indifferent Plate with cable

#### ELECTRODES

■ TURN POWER UNIT OFF BEFORE TOUCHING OR CHANGING ELECTRODES.

■ Before each use make sure the plastic sheathing (insulation) covering the electrode is completely intact. Replace if necessary. (Also doublecheck the integrity of the handpiece cable.)

■ Make sure the electrode is fully seated in the handpiece (with no metal shaft exposed) and that it is locked in the handpiece.

■ DO NOT BEND THE METAL SHAFT OF THE ELECTRODE, you may damage the plastic sheathing (insulation). If you want to alter the shape of the cutting portion of the electrode you can do so only before its first use, and you can only bend the cutting wire at the end of the electrode.

They must be kept spotlessly clean, as dirty electrodes will impair the function of the equipment and cause unnecessary tissue damage. During procedures they can be wiped clean with an alcohol-moistened gauze to remove tissue.

■ Tips should be sterilized after each use in an autoclave (at 250°F for 30 minutes at 15psi), DO NOT DRY- HEAT STERILIZE. Thoroughly clean electrodes immediately after each use, making sure all deposits & debris are removed. An ultrasonic cleaner may be used. Failure to thoroughly clean prior to autoclaving can result in ineffective sterilization. If carbon deposits cannot be easily removed, a fine sandpaper disk can be used with the fingers to re-expose the metal.

#### Interchangeable Dental Electrodes (not shown actual size)



T2 - Bent straight wire



T5 - Medium round loop



T8 - Narrow loop  
(Vertical)



T16 - Narrow loop -  
(Horizontal)



C3 - Small Ball



AP-11/2 Right angle

#### SUGGESTED ELECTRODES FOR SPECIFIC APPLICATIONS

**1) Access to subgingival caries** - Bloodless removal of gingival tissue provides a clean, dry field for improved restorations. Electrode recommendations: # T2; # T8

**2) Positive cementation** - Removal of tissue tags and control of bleeding for more retentive cementation. Electrode recommendations: # T5; # T8; # T16

**3) Bleeding control and coagulation** - Makes impression taking, cavity preparation, restoration insertion, and all operative and crown and bridge procedures easier. Amount of hemostasis depends on tissue health. Electrode recommendations: # C3

**4) Widening gingival sulcus** - Provides space for impression material beyond margins of preparation for more accurate impression taking. Electrode recommendations: # AP-1 1/2

**5) Lengthen clinical crowns** - Salvage “unsalvageable” teeth by creating workable clinical crown length in endodontic, prosthodontic, and operative procedures.  
Electrode recommendations: # T2

**6) Esthetic tissue contouring** - Improves smiles by altering gingival levels for a more esthetic appearance. Electrode recommendations: # T2; # T5; # T8; # T16

**7) Recontour edentulous ridges** - Removal of redundant soft tissue makes impression taking and fitting complete and partial dentures more accurate and comfortable.  
Electrode recommendations: # T2; # T8; # T16

**8) Removal of hyperplastic and hypertrophic tissue** - Ideal around Dilantin hypertrophy. Electrode recommendations: # T5; # T8; # T16

**9) Pericoronitis** - Fast, easy removal of pericoronal flaps around third molars.  
Electrode recommendations: # T5; # T8; # T16

**10) Gingivectomy and gingivaplasty** - Makes elimination of periodontal pockets bloodless and easy to do. Electrode recommendations: # T2; # T5; # T16

**11) Frenectomy** - Relieves undue muscle tension - often improves esthetics.  
Electrode recommendations: # T2

**12) Delayed eruption** - Expose erupting permanent teeth quickly and atraumatically.  
Electrode recommendations: # T2; # T5

**13) Biopsy** - Controlled incision around suspected lesions in normal tissue easy to do.  
Electrode recommendations: # T5

**14) Implantology** - Clean, smooth incisions with control of bleeding for fast bone exposure. Electrode recommendations: # T2; # T8; # T16

**15) Periodontal flaps** - Controlled incisions for better healing. Electrode recommendations: # T2; # T8; # T16

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