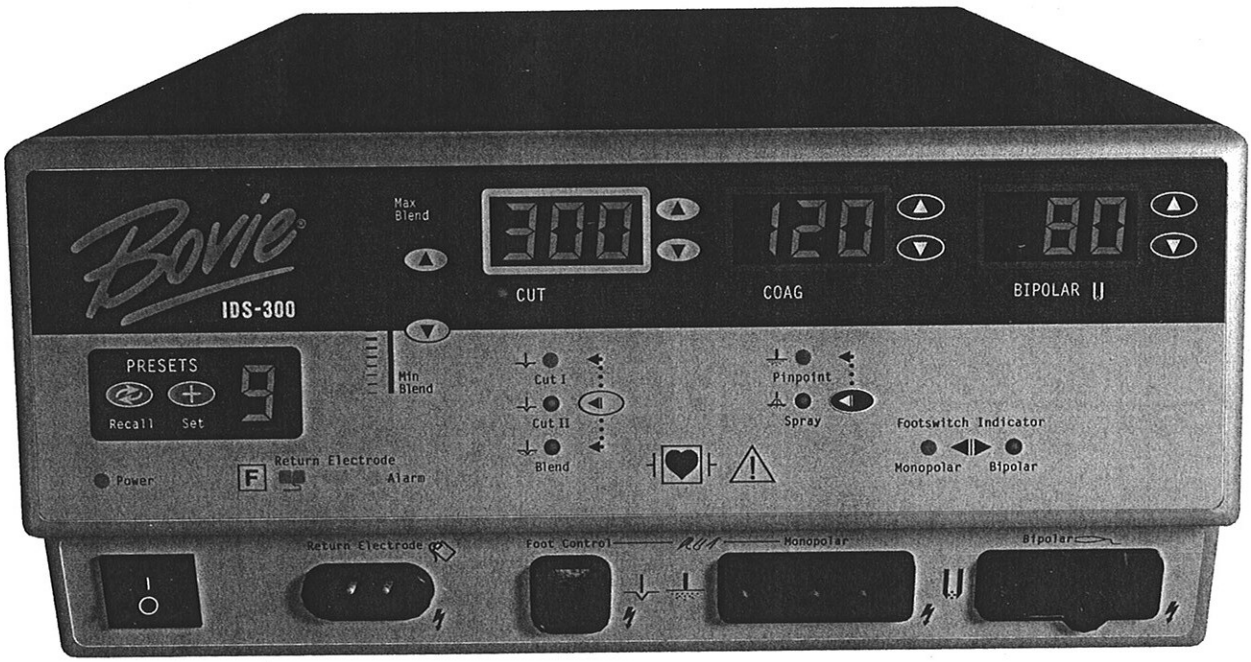
Bovie®

IDS-300



USER'S GUIDE

This manual and the equipment it describes are for use only by qualified medical professionals trained in the particular technique and surgical procedure to be performed. It is intended as a guide for using the Bovie IDS-300 only.

Additional technical information is available in the *Bovie IDS-300 Service Guide*.

Equipment Covered in this Manual

Bovie IDS-300:

Reference No.: IDS-300

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Printed in USA

CONVENTIONS USED IN THIS GUIDE

WARNING:
Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION:
Indicates a hazardous situation which, if not avoided, may result in minor or moderate injury.

NOTICE:
Indicates an operating tip, a maintenance suggestion, or a hazard that may result in product damage.

TABLE OF CONTENTS

LIST OF FIGURES

INTRODUCING THE BOVIE IDS-300

This section includes the following information:

- *Key Features*
- *Components and Accessories*
- *Safety*

CAUTIONS:
Read all warnings, cautions, and instructions provided with this generator before using.

Read the instructions, warnings, and cautions provided with electrosurgical accessories before using. Specific instructions are not included in this manual.

KEY FEATURES

The Bovie IDS-300 includes the latest technology. This unit offers unsurpassed performance, flexibility, reliability, and convenience.

It includes the following features:

- **Two Cut Modes, Cut I & Cut II**
  Two cut modes give the surgeon flexibility to cut all types of tissue without losing performance.
  Cut I generates constant output power over a wide range of impedances.
  Cut II is a softer cut that generates constant output power over a small range of impedances.
- **Blend with 10 Settings**
  The Blend mode is a combination of Cutting and Hemostasis. The Bovie IDS-300 gives the surgeon freedom to adjust the desired level of hemostasis. A setting of 1 is minimal hemostasis with maximum cutting effect. A setting of 10 is maximum hemostasis with minimal cutting effect. The settings can be quickly and easily changed via the front panel.
- **Presets**
  The surgeon can store 10 user-defined presets for easy recall of frequently used settings.
- **Two levels of coagulation: Pinpoint and Spray**
  Pinpoint provides precise control of bleeding in localized areas.
  Spray provides greater control of bleeding in highly vascular tissue over broad surface areas.
- **Return electrode sensing and contact quality monitoring**
  The Bovie IDS-300 incorporates a return electrode contact quality monitoring system (Bovie NEM™). This system detects the type of return electrode: solid or split. The system also continually monitors the contact quality between the patient and the split return electrode. This feature is designed to eliminate patient burns at the return electrode site.

  NOTICE:
  The Bovie NEM™ system requires that you use a split return electrode.

- **Memory**
  The unit automatically powers up to the last used modes and power settings.
- **Isolated RF output**
  This minimizes the potential of alternate site burns.
- **Standard connectors**
  These connectors accept the latest monopolar and bipolar instruments.
- **Self diagnostics**
  These diagnostics continually monitor the unit to ensure proper performance.

COMPONENTS AND ACCESSORIES

You should receive the following components with your generator:

- Bovie IDS-300
- Hospital-grade power cord (110 VAC and 220 VAC)
- User's Guide
- Service Guide

SAFETY

The safe and effective use of electrosurgery depends to a large degree on factors solely under the control of the operator. There is no substitute for a properly trained and vigilant medical staff. It is important that they read, understand, and follow the operating instructions supplied with this electrosurgical equipment.

Physicians have used electrosurgical equipment safely in numerous procedures. Before starting any surgical procedure, the surgeon should be familiar with the medical literature, complications, and hazards of using electrosurgery in that procedure.

To promote the safe use of the Bovie IDS-300, this section presents the warnings and cautions that appear throughout this user's guide. It is important that you read, understand, and follow the instructions in these warnings and cautions so that you can operate this equipment with maximum safety. It is also important that you read, understand, and follow the instructions for use in this user's guide.

WARNINGS:
Hazardous Electrical Output - This equipment is for use only by trained, licensed physicians.
Danger: Fire / Explosion Hazard - Do not use the Bovie IDS-300 in the presence of flammable materials.
Fire / Explosion Hazard - The following substances will contribute to increased fire and explosion hazards in the operating room: • Flammable substances (such as alcohol based skin prepping agents and tinctures) • Naturally occurring flammable gases which may accumulate in body cavities such as the bowel • Oxygen enriched atmospheres • Oxidizing agents (such as nitrous oxide [N_20] atmospheres). The sparking and heating associated with electrosurgery can provide an ignition source. Observe fire precautions at all times. When using electrosurgery in the same room with any of these substances or gases, prevent their accumulation or pooling under surgical drapes, or within the area where electrosurgery is performed.
Connect the power cord to a properly polarized and grounded power source with the frequency and voltage characteristics that match those listed on the back of the unit.
Electric Shock Hazard - Connect the generator power cord to a properly grounded receptacle. Do not use power plug adapters.
Electric Shock Hazard - Always turn off and unplug the generator before cleaning.
Fire Hazard - Do not use extension cords.
Patient Safety - Use the generator only if the self-test has been completed as described. Otherwise, inaccurate power outputs may result.
Failure of the high frequency electrosurgical equipment could result in an unintended increase of output power.
The instrument receptacles on this generator are designed to accept only one instrument at a time. Do not attempt to connect more than one instrument at a time into a given receptacle. Doing so will cause simultaneous activation of the instruments.
Use the lowest output setting necessary to achieve the desired surgical effect. Use the active electrode only for the minimum time necessary in order to lessen the possibility of unintended burn injury. Pediatric applications and/or procedures performed on small anatomic structures may require reduced power settings. The higher the current flow, and the longer the current is applied, the greater the possibility of unintended thermal damage to tissue, especially during use on small structures.

WARNINGS:

Use electrosurgery with caution in the presence of internal or external pacemakers. Interference produced by the use of electrosurgical devices can cause devices such as pacemakers to enter an asynchronous mode or can block the pacemaker effect entirely. Consult the pacemaker manufacturer or hospital Cardiology Department for further information when use of electrosurgical appliances is planned for patients with cardiac pacemakers.

If the patient has an Implantable Cardioverter Defibrillator (ICD), contact the ICD manufacturer for instructions before performing an electrosurgical procedure. Electrosurgery may cause multiple activation of ICDs.

Do not use electrosurgical equipment unless properly trained to use it in the specific procedure being undertaken. Use by physicians without such training has resulted in serious, unintended patient injury, including bowel perforation and unintended, irreversible tissue necrosis.

For surgical procedures where the high frequency current could flow through parts of the body having a relatively small cross-sectional area, the use of bipolar techniques may be desirable to avoid unwanted coagulation.

In some circumstances, potential exists for alternate site burns at points of skin contact (e.g., between the arm and the side of the body). This occurs when electrosurgical current seeks a path to the return electrode that includes the skin-to-skin contact point. Current passing through small skin-to-skin contact points is concentrated and may cause a burn. This is true for grounded, ground referenced, and isolated output generators.

To reduce the potential for alternate site burns, do one or more of the following:

- Avoid skin-to-skin contact points, such as fingers touching leg, when positioning the patient.
- Place 5 to 8 cm (2 to 3 in.) of dry gauze between contact points to ensure that contact does not occur.
- Position the return electrode to provide a direct current route between the surgical site and the return electrode which avoids skin-to-skin contact areas.
- In addition, place patient return electrodes according to the manufacturer's instructions.

Potential for alternate site burns increases if the return electrode is compromised. Bovie Medical recommends the use of split return electrodes and Bovie generators with a contact quality monitoring system.

Do not wrap the accessory cords or return electrode cords around metal objects. This may induce currents that could lead to shocks, fires, or injury to the patient or surgical team.

CAUTIONS:

At no time should you touch the active electrode or bipolar forceps. A burn could result.

Do not stack equipment on top of the generator or place the generator on top of electrical equipment. These configurations are unstable and/or do not allow adequate cooling.

Provide as much distance as possible between the electrosurgical generator and other electronic equipment (such as monitors). An activated electrosurgical generator may cause interference with them.

Non-function of the generator may cause interruption of surgery. A backup generator should be available for use.

Do not turn the activation tone down to an inaudible level. The activation tone alerts the surgical team when an accessory is active.

When using a smoke evacuator in conjunction with the electrosurgical generator, place the smoke evacuator a distance from the generator and set the generator volume control at a level that ensures that the activation tones can be heard.

The use of high frequency current can interfere with the function of other electromagnetic equipment.

When high frequency surgical equipment and physiological monitoring equipment are used simultaneously on the same patient, place any monitoring electrodes as far as possible from the surgical electrodes. Monitoring systems incorporating high frequency current-limiting devices are recommended.

Do not use needles as monitoring electrodes during electrosurgical procedures. Inadvertent electrosurgical burns may result.

To avoid the possibility of an electrosurgical burn to either the patient or the physicians, do not allow the patient to come in contact with a grounded metal object during activation. When activating the unit, do not allow direct skin contact between the patient and the physician.

Remove any loose fitting jewelry from the patient before activation.

Examine all accessories and connections to the electrosurgical generator before use. Ensure that the accessories function as intended. Improper connection may result in arcs, sparks, accessory malfunction, or unintended surgical effects.

When not using active accessories, place them in a holster or in a clean, dry, non-conductive, and highly visible area not in contact with the patient. Inadvertent contact with the patient may result in burns.

Studies have shown that smoke generated during electrosurgical procedures can be potentially harmful to patients and the surgical team. These studies recommend adequately ventilating the smoke by using a surgical smoke evacuator or other means.[1]

1. U.S. Department of Health and Human Services. National Institute for Occupational Safety and Health (NIOSH). Control of Smoke from Laser / Electric Surgical Procedures. HAZARD CONTROLS, Publication No. 96-128, September, 1996).

NOTICES:

If required by local codes, connect the generator to the hospital equalization connector with an equipotential cable.

Do not clean the generator with abrasive cleaning or disinfectant compounds, solvents, or other materials that could scratch the panels or damage the generator.

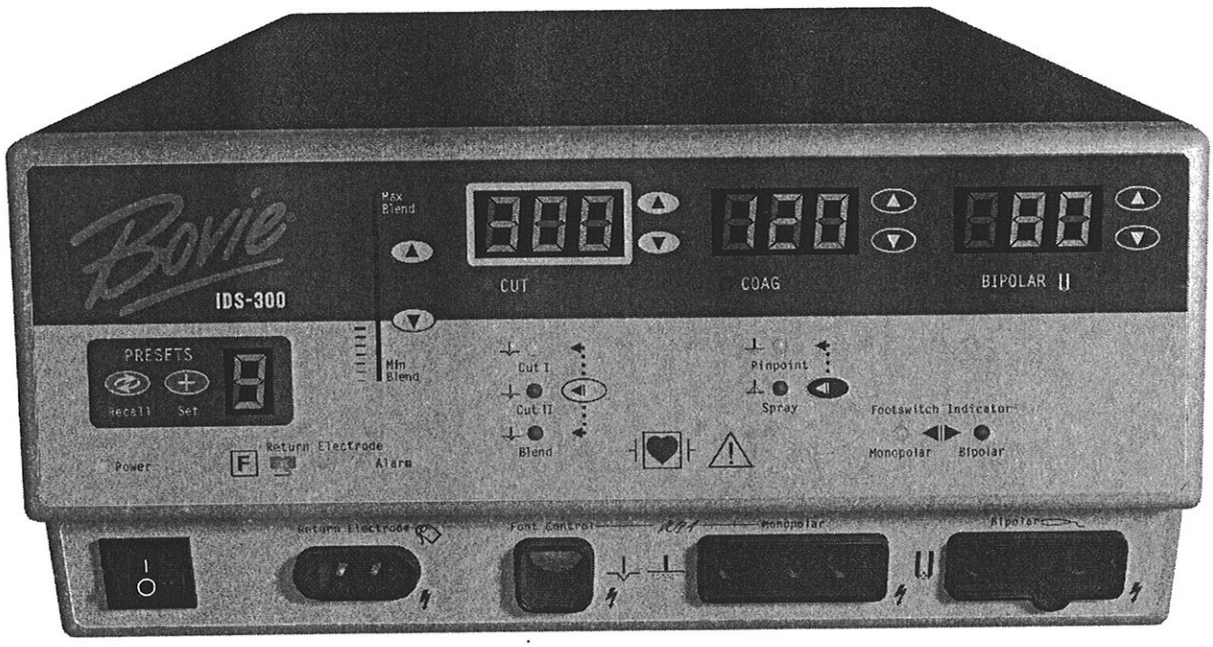
CONTROLS, INDICATORS, AND RECEPTACLES

This section describes:

- *The Front and Rear Panels*
- *Controls, Indicators, Receptacles, and Ports*

FRONT PANEL

Figure 2 – 1 Layout of controls, indicators, and receptacles on the front panel

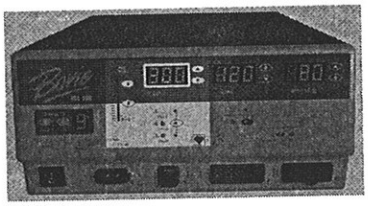


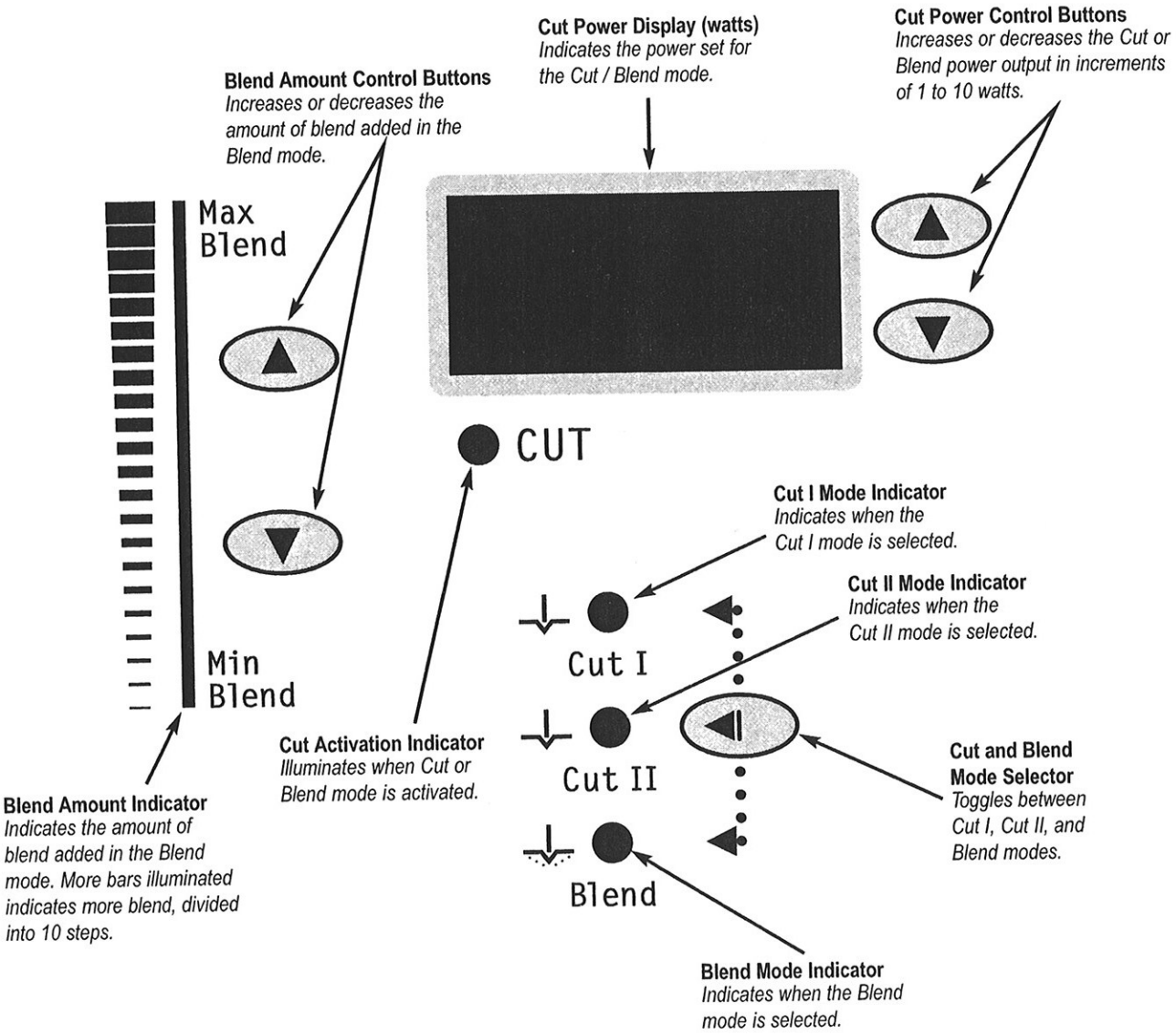
SYMBOLS ON THE FRONT PANEL

SYMBOLS	DESCRIPTION
Cut Controls	
	Cut Mode
	Blend Mode
Coag Controls	
	Pinpoint Mode
	Spray Mode
Bipolar Controls	
	Bipolar Mode
Indicators	
	Split Return Electrode
	Solid Return Electrode
Regulatory Symbology	
	Read instructions before use.
	Type CF Equipment
	RF Isolated – patient connections are isolated from earth at high frequency.
Power Switch and Handpiece Connectors	
	Return Electrode Receptacle
	Caution High Voltage
	Cut Mode
	Coag Mode
	Monopolar Handpiece Receptacle
	Bipolar Mode
	Bipolar Handpiece Receptacle

CUT AND BLEND CONTROLS

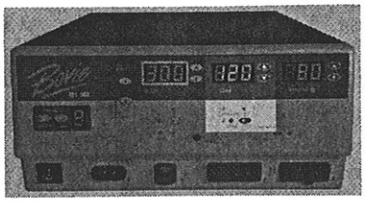
Figure 2 – 2 Controls for the Cut and Blend modes





COAG CONTROLS

Figure 2 – 3 Controls for the Coag mode



Coag Power Display (watts)
Indicates the power set for the Coag mode.

Coag Power Control Buttons
Increases or decreases the Pinpoint or Spray Coag power output in increments of 1 to 10 watts.

Coag Activation Indicator
Illuminates when Coag mode is activated.

COAG

Pinpoint Mode Indicator
Indicates when the Pinpoint mode is selected.

Pinpoint

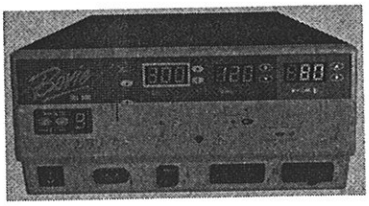
Pinpoint and Spray Mode Selector
Toggles between Pinpoint mode and Spray mode.

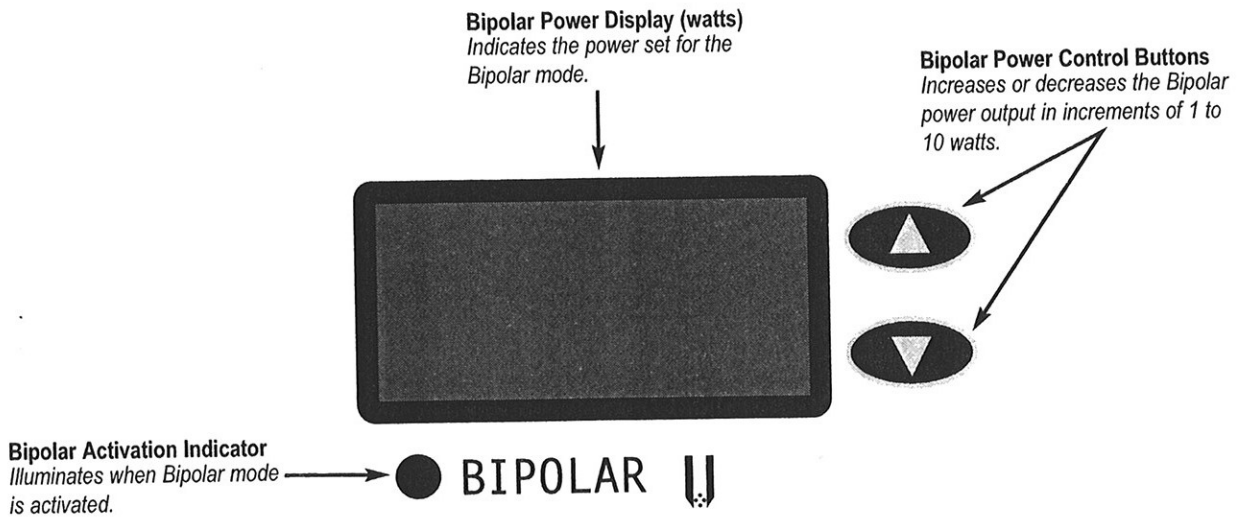
Spray

Spray Mode Indicator
Indicates when the Spray mode is selected.

BIPOLAR CONTROLS

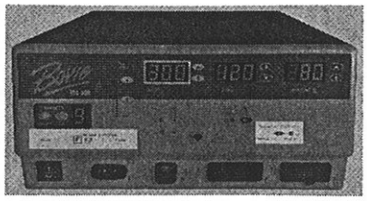
Figure 2 – 4 Controls for the Bipolar mode

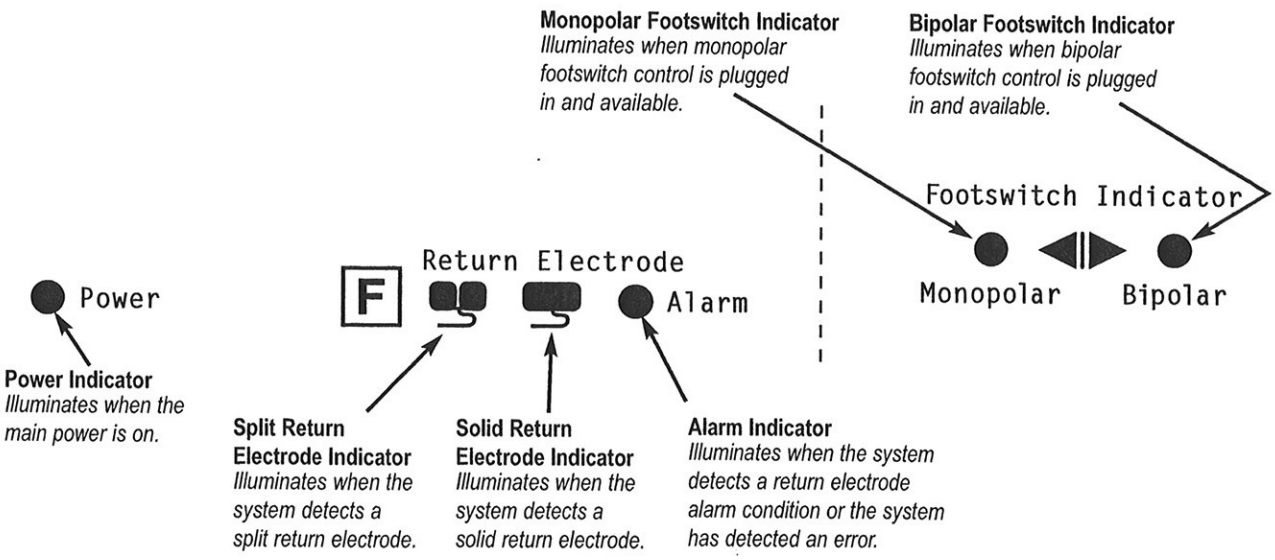




INDICATORS

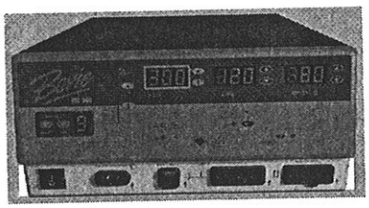
Figure 2 – 5 Indicators for power, return electrodes, and footswitch control

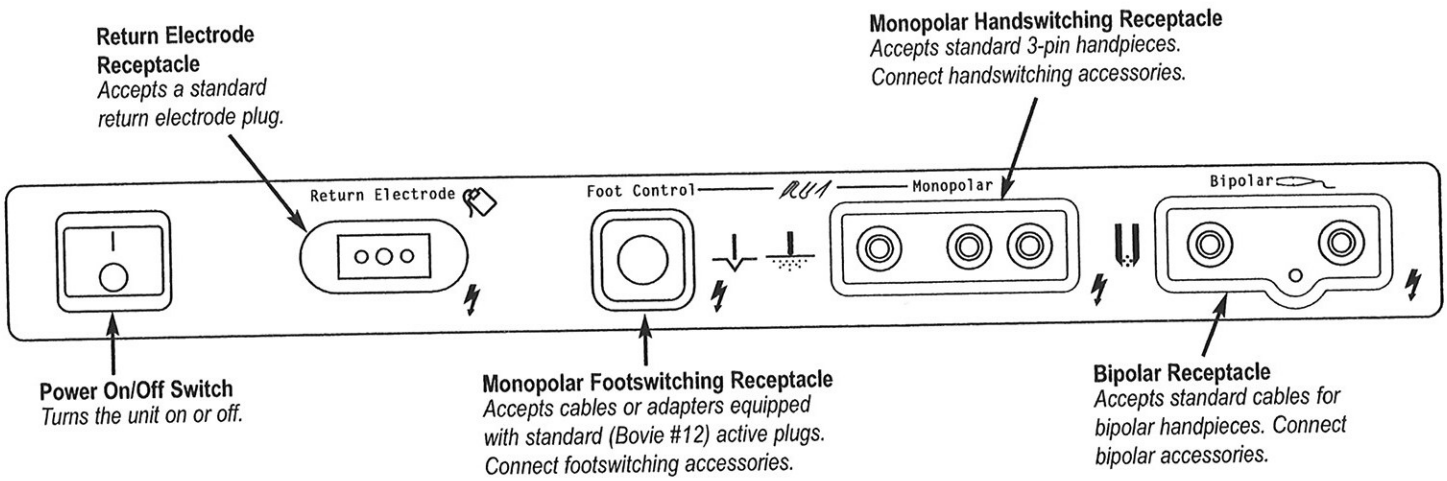




POWER SWITCH AND RECEPTACLES

Figure 2 – 6 Location of the unit power switch and front panel receptacles





Return Electrode Receptacle
Accepts a standard return electrode plug.

Monopolar Handswitching Receptacle
Accepts standard 3-pin handpieces. Connect handswitching accessories.

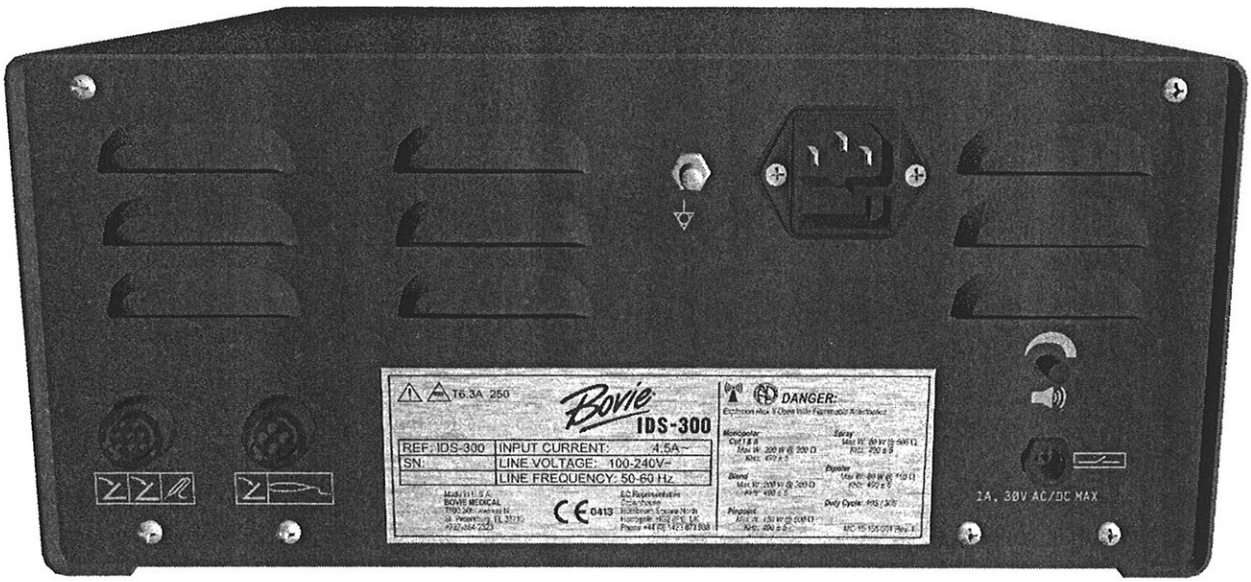
Power On/Off Switch
Turns the unit on or off.

Monopolar Footswitching Receptacle
Accepts cables or adapters equipped with standard (Bovie #12) active plugs. Connect footswitching accessories.

Bipolar Receptacle
Accepts standard cables for bipolar handpieces. Connect bipolar accessories.

REAR PANEL

Figure 2 – 7 Layout of connectors and controls on the rear panel



SYMBOLS ON THE REAR PANEL

SYMBOLS	DESCRIPTION
	Equipotential Ground Stud
	Non-ionizing Radiation
	Volume Control
	Danger - Explosion Risk If Used With Flammable Anesthetics.
	Fuse Enclosed
	Relay Connector
	Monopolar Footswitch Input Jack
	Bipolar Footswitch Input Jack
	Read Instructions Before Use

GETTING STARTED

This section includes the following information:

- *Initial Inspection*
- *Installation*
- *Function Checks*
- *Performance Checks*

INITIAL INSPECTION

When you first unpack your Bovie IDS-300, inspect it visually:

- Look for any signs of damage.
- Verify that the shipping package contains all items listed on the packing list.

If the unit or any accessories are damaged, notify Bovie Medical's Customer Service immediately.
Do not use any damaged equipment.

INSTALLATION

Place the Bovie IDS-300 on any flat surface with a tilt angle not more than 10°. The unit relies on natural convection cooling. Do not block its bottom or rear vents. Ensure that air flows freely on all sides of the unit.

WARNING:
Connect the power cord to a properly polarized and grounded power source with the frequency and voltage characteristics that match those listed on the back of the unit.

FUNCTION CHECKS

Upon initial installation of the unit, perform the tests listed below. Refer to the figures in the previous chapter for the location of connectors and controls.

WARNING:
At no time should you touch the active electrode or bipolar forceps. A burn could result.

Setting Up the Unit

1. Verify that the Power Switch is in the Off (O) position and that no accessories are connected to the unit.
2. Connect a hospital grade power cable to the AC power cable receptacle on the back of the unit, then to a properly grounded wall outlet.
3. Connect a two-button pencil to the appropriate receptacle. The use of Bovie pencils is recommended.
4. Do not connect a patient return electrode at this time.
5. Turn the unit on by switching the power switch to the On (|)position.

Checking the Return Electrode Alarm

1. Adjust the power settings for each mode (Cut I, Cut II, Blend, Pinpoint, Spray, and Bipolar) to one watt.
2. Press the Coag button of the pencil. Verify that an alarm sounds for three seconds and the patient return electrode sensing alarm indicator light illuminates, indicating that no return electrode is connected to the unit.
3. Verify that adjusting the volume control on the back of the unit while the alarm is sounding does not change the alarm volume.

Confirming Modes

Confirm that you can select each mode and adjust the power up and down.

Checking Bipolar Mode (with bipolar footswitch)

1. Plug in the Bipolar footswitch. Verify that the Bipolar footswitch indicator illuminates.
2. Press the pedal on the footswitch. Verify that the Bipolar mode activation indicator illuminates and that the system generates the Bipolar activation tone.
3. While activating the Bipolar mode, rotate the volume control over the full range to verify that the sound is audible throughout the range.
4. Confirm that releasing the pedal returns the unit to an idle state.

Checking Monopolar Mode (with monopolar footswitch)

1. Plug in the Monopolar footswitch. Verify that the monopolar footswitch indicator illuminates.
2. Connect a solid return electrode to the return electrode receptacle. Verify that the green solid return electrode indicator illuminates.
3. Press the Cut pedal (yellow) on the footswitch. Verify that the Cut mode activation indicator illuminates and that the system generates the Cut activation tone.
4. While activating the Cut mode, rotate the volume control over the full range to verify that the sound is audible throughout the range.
5. Press the Coag pedal (blue) on the footswitch. Verify that the Coag mode activation indicator illuminates and that the system generates the Coag activation tone.
6. While activating the Coag mode, rotate the volume control over the full range to verify that the sound is audible throughout the range.

Checking Monopolar Mode (with handswitch)

1. Connect a handswitching handpiece to the Monopolar handpiece receptacle.
2. Connect a solid return electrode to the return electrode receptacle. Verify that the green solid return electrode indicator illuminates.
3. Activate, one at a time, the Cut and Coag handswitching controls. Verify that each control causes the correct indicator and tone to sound.

PERFORMANCE CHECKS

After the unit has passed the preliminary functional test, it is ready for performance testing. A qualified biomedical engineer who is thoroughly familiar with electrosurgical devices should conduct this testing. The testing should include checking all modes of operation for proper function and power output.

USING THE BOVIE IDS-300

This section contains the following procedures:

- *Inspecting the Generator and Accessories*
- *Setup Safety*
- *Setting Up*
- *Preparing for Monopolar Surgery*
- *Preparing for Bipolar Surgery*
- *Setting and Recalling Memory Presets*
- *Activating the Unit*
- *Activation Safety*

CAUTIONS:
Read all warnings, cautions, and instructions provided with this generator before use.

Read the instructions, warnings, and cautions provided with electrosurgical accessories before use. Specific instructions are not included in this manual.

INSPECTING THE GENERATOR AND ACCESSORIES

Before each use of the Bovie IDS-300, verify that the unit and all accessories are in good working order:

- Inspect for damage to the Electrosurgical Generator and all its connections.
- Verify that the appropriate accessories and adapters are present.
- Inspect all cords and connectors for signs of wear, damage, and abrasion.
- Verify that no errors occur when you turn on the unit.

SETUP SAFETY

WARNINGS:

Hazardous Electrical Output - This equipment is for use only by trained, licensed physicians.

Electric Shock Hazard - Connect the generator power cord to a properly grounded receptacle. Do not use power plug adapters.

Connect the power cord to a properly polarized and grounded power source with the frequency and voltage characteristics that match those listed on the back of the unit.

Fire Hazard - Do not use extension cords.

Patient Safety - Use the generator only if the self-test has been completed as described. Otherwise, inaccurate power outputs may result.

The instrument receptacles on this generator are designed to accept only one instrument at a time. Do not attempt to connect more than one instrument at a time into a given receptacle. Doing so will cause simultaneous activation of the instruments.

Failure of the high frequency electrosurgical equipment could result in an unintended increase of output power.

Do not use electrosurgical equipment unless properly trained to use it in the specific procedure being undertaken. Use by physicians without such training has resulted in serious, unintended patient injury, including bowel perforation and unintended, irreversible tissue necrosis.

For surgical procedures where the high frequency current could flow through parts of the body having a relatively small cross-sectional area, the use of bipolar techniques may be desirable to avoid unwanted coagulation.

If the patient has an implantable cardioverter defibrillator (ICD), contact the ICD manufacturer for instructions before performing an electrosurgical procedure. Electrosurgery may cause multiple activation of ICDs.

In some circumstances, potential exists for alternate site burns at points of skin contact (e.g., between the arm and the side of the body). This occurs when electrosurgical current seeks a path to the patient return electrode that includes the skin-to-skin contact point. Current passing through small skin-to-skin contact points is concentrated and may cause a burn. This is true for grounded, ground referenced, and isolated output generators.

To reduce the potential for alternate site burns, do one or more of the following:

- Avoid skin-to-skin contact points, such as fingers touching leg, when positioning the patient.
- Place 5 to 8 cm (2 to 3 in.) of dry gauze between contact points to ensure that contact does not occur.
- Position the return electrode to provide a direct current route between the surgical site and the return electrode which avoids skin-to-skin contact areas.
- In addition, place return electrodes according to the manufacturer's instructions.

Potential for alternate site burns increases if the return electrode is compromised. Bovie Medical recommends the use of split return electrodes and Bovie generators with a contact quality monitoring system.

CAUTIONS:
Do not stack equipment on top of the generator or place the generator on top of electrical equipment. These configurations are unstable and/or do not allow adequate cooling.

Provide as much distance as possible between the electrosurgical generator and other electronic equipment (such as monitors). An activated electrosurgical generator may cause interference with them.

Non-function of the generator may cause interruption of surgery. A backup generator should be available for use.

Do not turn the activation tone down to an inaudible level. The activation tone alerts the surgical team when an accessory is active.

When using a smoke evacuator in conjunction with the electrosurgical generator, place the smoke evacuator a distance from the generator and set the generator volume control at a level that ensures that the activation tones can be heard.

NOTICE:
If required by local codes, connect the generator to the hospital equalization connector with an equipotential cable.

SETTING UP

1. Verify that the generator is Off by pressing the power switch Off (O).
2. Place the generator on a stable flat surface, such as a table, platform, or medical cart. Carts with conductive wheels are recommended. For details, refer to the procedures for your institution or to local codes. Provide at least 10 to 15 cm (4 to 6 in.) of space from the sides and top of the generator for cooling. Normally, the top, sides, and rear panel are warm when you use the generator continuously for extended periods of time.
3. Plug the generator power cord into the AC Power Cable Receptacle on the rear panel.
4. Plug the generator power cord into a grounded receptacle.
5. Turn on the generator by pressing the power switch On (|). Verify the following:
   - All visual indicators and displays on the front panel illuminate.
   - Activation tones sound to verify that the speaker is working properly.
6. If the self-test is successful, a tone sounds. Verify the following:
   - A Cut mode is selected; a Coag mode is selected.
   - Each display shows a power setting. The unit automatically powers up to the last used power settings.
   - The Patient Return Electrode Alarm Indicator illuminates red.

If the self-test is not successful, an alarm tone sounds. An error code may appear in the Cut display and/or the Coag display, in most cases, the generator is disabled. Note the error code and refer to *Section 6, Troubleshooting*.

Once the self-test is successful, connect the accessories and set the generator controls. Refer to *Preparing for Monopolar Surgery* or *Preparing for Bipolar Surgery* later in this section.

PREPARING FOR MONOPOLAR SURGERY

Monopolar surgery requires a return electrode.

Applying the Return Electrode

To maximize patient safety, Bovie Medical recommends using a split return electrode and a Bovie generator with a contact quality monitoring system (Bovie NEM™).

> ***NOTICE:***
> *The Bovie NEM™ system requires that you use a split return electrode.*

Refer to the manufacturer's instructions for application site and placement procedures. When using metal plate return electrodes, use a conductive gel specifically designed for electrosurgery. Select a return electrode site with good blood flow. While a properly applied electrode results in minimal tissue heating beneath the electrode, a good blood flow helps carry heat away from the site.

1. Connect the cable to the Return Electrode receptacle on the front of the unit.
   The unit will automatically sense the presence of a split or solid return electrode and, if a split return electrode is used, will constantly monitor the resistance at the contact between the electrode and the patient.

2. Adjust the Blend setting to the desired amount of hemostasis (Level 1 - 10). Adjustment is preformed by pressing the up or down buttons next to the Blend setting indicator.

Select the desired power settings for Cutting. Adjustment is preformed by pressing the up or down buttons next to the Cut display. When the light above Cut I illuminates, a low Cut mode is selected. When the light above Cut II illuminates, a pure Cut mode is selected.

Select the mode of operation for Coagulation, either Pinpoint or Spray.

Select the desired power setting for Coagulation. Adjustment is preformed by pressing the up or down buttons next to the Coag display.

Connecting Accessories

1. Connect a monopolar handpiece with electrode to the appropriate monopolar handpiece receptacle on the front of the unit.

If using a footswitch activated device, connect an appropriate Bovie footswitch to the monopolar footswitch connecting socket on the rear of the unit.

If you are using...	Connect it to...
Standard 3-pin handswitching pencil	Monopolar handswitching receptacle
Footswitching pencil	Monopolar footswitching receptacle

To activate the Monopolar mode, depress the cut or coag button on the monopolar handpiece or the cut or coag pedal on the monopolar footswitch.

PREPARING FOR BIPOLAR SURGERY

1. Connect a Bipolar cable to the Bipolar receptacle on the front of the unit.

2. Connect a forceps instrument to the bipolar cable.

3. Connect the bipolar footswitch to the bipolar footswitch connecting socket located on the rear of the unit.

To activate the Bipolar mode, depress the pedal on the bipolar footswitch.

SETTING AND RECALLING MEMORY PRESETS

The Bovie IDS-300 incorporates 10 user-defined memory preset settings for easy recall of frequently used settings in all three modes.

Setting and Recalling Presets

Select the desired preset (0-9) by pressing the recall button.

Select the desired mode to be stored by pressing one of the mode membrane switches (Cut, Coag, or Bipolar).

Select the desired power to be stored by using the power output up and down membrane switches.

Once all of the settings are selected, depress and hold the Preset Set button. To indicate the settings have been stored, the Preset Memory Number (0-9) will blink.

To recall a Preset, simply press the Recall button to toggle through all of the presets.

NOTICE:
A small red dot blinking in the lower left corner of the Preset indicator display indicates that the unit is not presently set to a user-defined preset.

ACTIVATING THE UNIT

NOTICE:
Review Activation Safety on page 6 of this section before activating the unit. When you turn on your unit remember the following feature:

The Bovie IDS-300 will power up to the modes and settings displayed when the unit was last activated. For example, if you set Cut I mode at 50 watts and activate the unit, then turn the unit off, it will automatically return to Cut I mode at 50 watts when you turn it on again. Similarly, if you set Pinpoint mode at 40 watts and activate the unit before you turn it off, it will return to Pinpoint mode at 40 watts when you turn it on again.

1. Monopolar Cut - select the mode of operation for Cut: Cut I or Cut II, then select the desired Cut power settings by pressing the up and down buttons next to the Cut power output display.
2. Monopolar Blend - select the Blend mode of operation, then select the desired Blend power settings by pressing the up and down buttons next to the Cut power output display. Next, vary the blend setting by pressing the up and down buttons next to the blend amount indicator graph.
3. Monopolar Coag - select the mode of operation for coagulation: Pinpoint or Spray, then select the coagulation power settings by pressing the up and down buttons next to the Coag power output display.
4. Bipolar - adjust the Bipolar power settings by pressing the up and down buttons next to the Bipolar power output display.
5. Activate the generator by pressing the appropriate button on the handpiece or pedal on the footswitch.

NOTICE:
Monopolar and bipolar footswitching operations are controlled by independent foot controls.

ACTIVATION SAFETY

WARNINGS:

Do not wrap the accessory cords or patient return electrode cords around metal objects. This may induce currents that could lead to shocks, fires, or injury to the patient or surgical team.

Danger: Fire / Explosion Hazard - Do not use the Bovie IDS-300 in the presence of flammable anesthetics.

Fire / Explosion Hazard - The following substances will contribute to increased fire and explosion hazards in the operating room:

- Flammable substances (such as alcohol based skin prepping agents and tinctures)
- Naturally occurring flammable gases that may accumulate in body cavities such as the bowel
- Oxygen enriched atmospheres
- Oxidizing agents (such as nitrous oxide [N_2O] atmospheres).

The sparking and heating associated with electrosurgery can provide an ignition source. Observe fire precautions at all times. When using electrosurgery in the same room with any of these substances or gases, prevent their accumulation or pooling under surgical drapes, or within the area where electrosurgery is performed.

Use the lowest output setting necessary to achieve the desired surgical effect. Use the active electrode only for the minimum time necessary in order to lessen the possibility of unintended burn injury. Pediatric applications and/or procedures performed on small anatomic structures may require reduced power settings. The higher the current flow, and the longer the current is applied, the greater the possibility of unintended thermal damage to tissue, especially during use on small structures.

Use electrosurgery with caution in the presence of internal or external pacemakers. Interference produced by the use of electrosurgical devices can cause devices such as pacemakers to enter an asynchronous mode or can block the pacemaker effect entirely. Consult the pacemaker manufacturer or hospital Cardiology Department for further information when use of electrosurgical appliances is planned for patients with cardiac pacemakers.

CAUTIONS:

The use of high frequency current can interfere with the function of other electromagnetic equipment.

When high frequency surgical equipment and physiological monitoring equipment are used simultaneously on the same patient, place any monitoring electrodes as far as possible from the surgical electrodes.

Do not use needles as monitoring electrodes during electrosurgical procedures. Inadvertent electrosurgical burns may result.

To avoid the possibility of an electrosurgical burn to either the patient or the physicians, do not allow the patient to come in contact with a grounded metal object during activation. When activating the unit, do not allow direct skin contact between the patient and the physician.

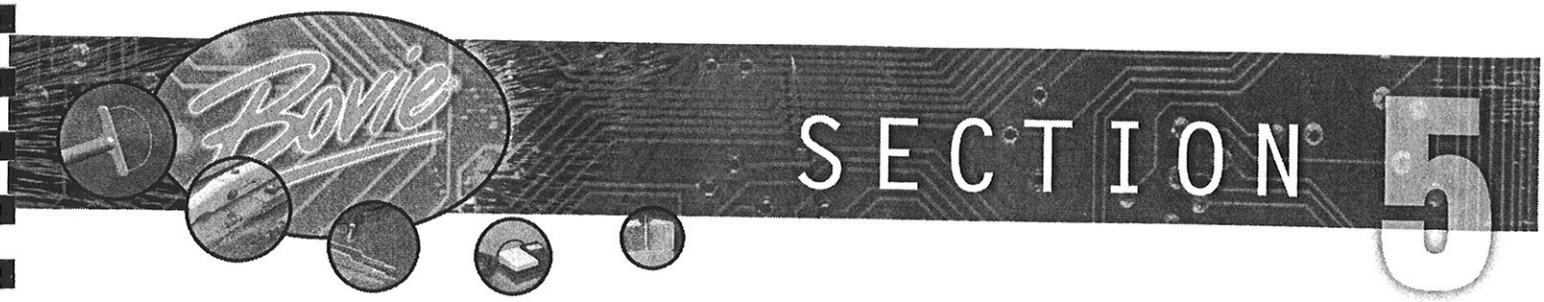
Remove any jewelry from the patient before activation.

Studies have shown that smoke generated during electrosurgical procedures can be potentially harmful to patients and the surgical team. These studies recommend adequately ventilating the smoke by using a surgical smoke evacuator or other means.[1]

Examine all accessories and connections to the electrosurgical generator before use. Ensure that the accessories function as intended. Improper connection may result in arcs, sparks, accessory malfunction, or unintended surgical effects.

When not using active accessories, place them in a holster or in a clean, dry, non-conductive, and highly visible area not in contact with the patient. Inadvertent contact with the patient may result in burns.

1. U.S. Department of Health and Human Services. National Institute for Occupational Safety and Health (NIOSH). Control of Smoke from Laser / Electric Surgical Procedures. HAZARD CONTROLS, Publication No. 96-128, September, 1996.)



MAINTAINING THE BOVIE IDS-300

This section covers the following topics:

- *Cleaning*
- *Periodic Inspection*
- *Fuse Replacement*

Bovie Medical recommends that you complete periodic inspection and performance testing. Perform inspections and performance testing every six months. A qualified biomedical technician should conduct this testing to ensure that the unit is operating effectively and safely.

CLEANING

After each use, clean the unit.

WARNING:
Electric Shock Hazard - Always turn off and unplug the generator before cleaning.

NOTICE:
Do not clean the generator with abrasive cleaning or disinfectant compounds, solvents, or other materials that could scratch the panels or damage the generator.

1. Turn off the generator, and unplug the power cord from the wall outlet.
2. Thoroughly wipe all surfaces of the generator and power cord with a mild cleaning solution or disinfectant and a damp cloth. Follow the procedures approved by your institution or use a validated infection control procedure. Do not allow fluids to enter the chassis. Do not sterilize the generator.

PERIODIC INSPECTION

Every six months, visually inspect the Bovie IDS-300 for signs of wear or damage.
In particular, look for any of the following problems:

- Damage to the power cord
- Damage to the power cable receptacle
- Obvious damage to the unit
- Damage to any receptacle
- Accumulation of lint or debris in or around the unit

FUSE REPLACEMENT

Fuses for the unit reside directly below the Power Cable Receptacle on the rear of the unit.

To replace the fuses, follow this procedure:

1. Unplug the power cord from the wall outlet.
2. Remove the power cord from the Power Cable Receptacle on the rear panel.
3. To release the fuse drawer, insert a small flathead screwdriver into the slot on the drawer below the power cord receptacle. Then, slide the drawer out.
4. Remove the two fuses and replace them with new fuses with the same values.
5. Insert the fuse holder into the Power Cable Receptacle.

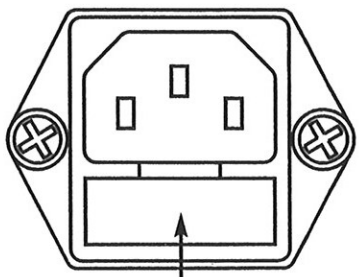


Figure 5 – 1 Fuse holder

TROUBLESHOOTING

This section includes Error Code Descriptions and actions to take to resolve them.

The Bovie IDS-300 includes automatic self-diagnostics. If the diagnostics detect an error, the system displays an error code, sounds an audible tone, and deactivates the unit output power.

Most error codes result from faults in accessories attached to the unit. The following table lists the error codes, describes the errors, and recommends actions to take to resolve the errors.

All error codes are displayed in the Bipolar display.

If the unit displays any other error code, it requires service.

ERROR CODE	DESCRIPTION	RECOMMENDED ACTION
F1	Cut handpiece button may be stuck	1. Turn off, then turn on the generator. Do not press buttons or activate accessory devices during the self-test. 2. If the error code reappears, disconnect all accessories. Turn off, then turn on the generator again. 3. If the problem persists, replace the handpiece of footswitch and repeat the restart. 4. If the error code reappears, record the number and call Bovie Medical customer service.
F2	Coag handpiece button may be stuck	
F3	Cut footswitch pedal may be stuck	
F4	Coag footswitch pedal may be stuck	
F5	Bipolar footswitch pedal may be stuck	
F6	Simultaneous activation error	The unit does not allow simultaneous activation of the cut and coagulation modes. Release either the cut or coag button on the handpiece, or the cut or coag pedal on the footswitch.
E1	Output current out of specification (digital check)	1. Turn the unit off. 2. Turn the unit on. 3. If the error code reappears, contact Bovie Medical customer service.
E2	Output current out of specification (analog check)	
E4	Power limit error	
E5	Internal temperature of a section of the unit exceeded the limit.	1. Turn the unit off. 2. Allow the unit to cool for 20 minutes. 3. Turn the unit on.
E6		
E7		

REPAIR POLICY AND PROCEDURES

Refer to this section for information on:

- *Responsibility of the Manufacturer*
- *Returning the Generator for Service*

RESPONSIBILITY OF THE MANUFACTURER

Bovie Medical is responsible for the safety, reliability, and performance of the generator only under the following circumstances:

- The user has followed the Installation and Setup Procedures in this User's Guide.
- Persons authorized by Bovie Medical performed assembly operation, readjustments, modifications, or repairs.
- The electrical installation of the relevant room complies with local codes and regulatory requirements, such as IEC and BSI.
- Equipment use is in accordance with the Bovie Medical instructions for use.

For warranty information, refer to *Appendix C - Warranty*.

RETURNING THE GENERATOR FOR SERVICE

Before you return the generator, call your Bovie Medical representative for assistance. If instructed to send the generator to Bovie Medical, first obtain a Returned Goods Authorization Number. Then, clean the Generator and ship it to Bovie Medical for service.

Step 1 – Obtain a Returned Goods Authorization Number

Call the Bovie Medical Customer Service Center to obtain a Returned Goods Authorization Number. Have the following information ready when you call:

- Hospital / clinic name / customer number
- Telephone number
- Department / address, city, state, and zip code
- Model number
- Serial number
- Description of the problem
- Type of repair to be done

Step 2 – Clean the Generator

WARNING:
Electric Shock Hazard - Always turn off and unplug the generator before cleaning.

NOTICE:
Do not clean the generator with abrasive cleaning or disinfectant compounds, solvents, or other materials that could scratch the panels or damage the generator.

A. Turn off the generator, and unplug the power cord from the wall outlet.

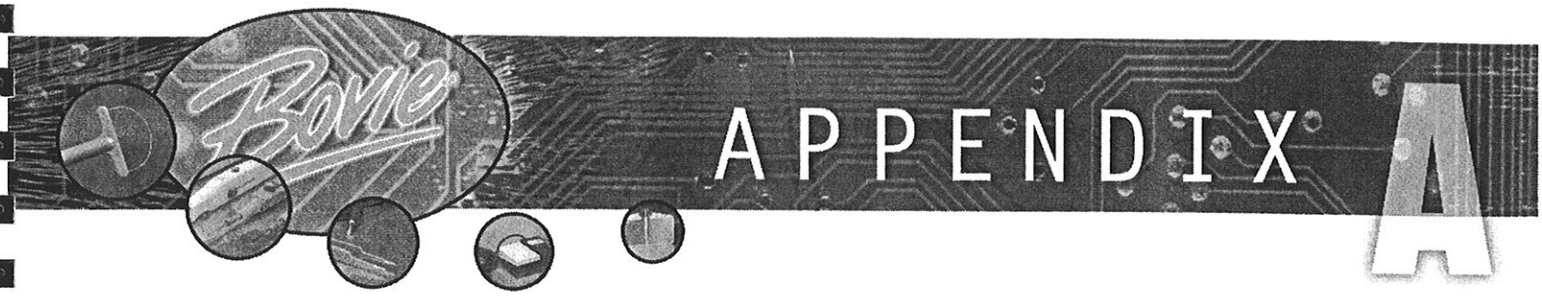
B. Thoroughly wipe all surfaces of the generator and power cord with a mild cleaning solution or disinfectant and a damp cloth. Follow the procedures approved by your institution or use a validated infection control procedure. Do not allow fluids to enter the chassis. You cannot sterilize the generator.

Step 3 – Ship the Generator

A. Attach a tag to the generator that includes the Returned Goods Authorization Number and the information (hospital, phone number, etc.) listed in *Step 1 – Obtain a Returned Goods Authorization Number*.

B. Be sure the generator is completely dry before you pack it for shipment. Package it in its original shipping container, if available.

C. Ship the generator, prepaid, to the address given to you by the Bovie Medical Service Center.



TECHNICAL SPECIFICATIONS

All specifications are nominal and subject to change without notice. A specification referred to as "typical" is within ± 20% of a stated value at room temperature (25° C / 77° F) and a nominal input power voltage.

PERFORMANCE CHARACTERISTICS

Input Power

Input Voltage	100-240 VAC
Mains line frequency range (nominal):	50 / 60 Hz
Power consumption:	500 VAC
Fuses (two):	6.3 A (slow blow)

Duty Cycle

Under maximum power settings and rated load conditions (Pure Cut, 300 watt @ 300 ohm load), the generator is suitable for activation times of 10 seconds ON followed by 30 seconds OFF for one hour.

The internal temperature of the unit is continuously monitored. If the temperature rises above 85^0 C, the alarm will sound and output power will be deactivated.

Dimensions and Weight

Width	31.1 cm (12.25 in.)	**Depth**	41.3 cm (16.25 in.)
Height	15.3 cm (6.00 in.)	**Weight**	< 8.75 kg (< 19 lbs)

Operating Parameters

Ambient temperature range	10° to 40° C (50° to 104° F)
Relative humidity	30% to 75%, non-condensing
Atmospheric pressure	700 to 1060 millibars
Warm-up time	If transported or stored at temperatures outside the operating temperature range, allow one hour for the generator to reach room temperature before use.

Transport and Storage

Generator should fit on all standard Carts for monopolar generators. The device should be stored and used in a room temperature of approximately 77^0 F/25^0 C.

Ambient temperature range	-34° to 65° C (-29° to 149° F)
Relative humidity	0% to 75%, non-condensing
Atmospheric pressure	500 hPa to 1060 hPa

Audio Volume

The audio levels stated below are for activation tones (cut, coag, and bipolar) and alarm tones (return electrode and system alarms) at a distance of one meter. Alarm tones meet the requirements for IEC 60601-2-2.

Activation Tone

Volume (adjustable)	45 to 65 dB
Frequency	Cut I: 1 kHz Cut II: 1 kHz Blend: 1 kHz Pinpoint: 2 kHz Spray: 2 kHz Bipolar: 2 kHz
Duration	Continuous while the generator is activated

Alarm Tone

Volume (not adjustable)	70 dB ± 5dB
Frequency	2 kHz ½ seconds / 1 kHz ½ seconds
Duration	2 seconds

Return Electrode Sensing

The system presents audible and visible alarms when it senses no return electrode.

Solid	Trip resistance: 0 Ω to 5 Ω ± 3 Ω Continuous measurement: Once the system establishes the solid return electrode resistance, an increase of 20 Ω ± 5 Ω in resistance will cause an alarm. When the alarm condition exists, the system deactivates output power.
Split	Trip resistance: 10 Ω ± 5 Ω to 135 Ω ± 10 Ω Continuous measurement: Once the system establishes the split return electrode resistance, an increase of 40% in resistance will cause an alarm. When the alarm condition exists, the system deactivates output power.

Low Frequency (50-60 Hz) Leakage Current

Enclosure source current, ground open	< 500 µA
Source current, patient leads, all outputs	Normal polarity, intact ground: < 10 µA Normal polarity, ground open: < 10 µA Reverse polarity, ground open: < 10 µA
Sink current at high line, all inputs	< 10 µA

High Frequency (RF) Leakage Current

Bipolar RF leakage current	< 63 $mA_{rms\ at\ 80\ watts}$
Monopolar RF leakage current (additional tolerance)	< 150 mA_{rms}

STANDARDS AND IEC CLASSIFICATIONS

Class I Equipment (IEC 60601-1)

Accessible conductive parts cannot become live in the event of a basic insulation failure because of the way in which they are connected to the protective earth conductor.

Type CF Equipment (IEC 60601-1) / Defibrillator Proof

The Bovie IDS-300 provides a high degree of protection against electric shock, particularly regarding allowable leakage currents. It is type CF equipment. Patient connections are isolated from earth and resist the effects of defibrillator discharge.

Drip Proof (IEC 60601-2-2)

The generator enclosure is constructed so that liquid spillage in normal use does not wet electrical insulation or other components which, when wet, are likely to affect adversely the safety of the generator.

Electromagnetic Interference

When other equipment is placed on or beneath a Bovie IDS-300, the unit can be activated without interference. The generator minimizes electromagnetic interference to video equipment used in the operating room.

Electromagnetic Compatibility (IEC 60601-1-2 and IEC 60601-2-2)

The Bovie IDS-300 complies with the appropriate IEC 60601-1-2 and IEC 60601-2-2 specifications regarding electromagnetic compatibility.

Voltage Transients (Emergency Generator Mains Transfer)

The Bovie IDS-300 operates in a safe manner when the transfer is made between line AC and an emergency generator voltage source.

OUTPUT CHARACTERISTICS

Maximum Output for Monopolar and Bipolar Modes

Power readouts agree with actual power into rated load to within 20% or 5 watts, whichever is greater.

Mode	Output Power	Output Frequency	Repetition Rate	Vp-p max	Crest Factor* (Rated Load)
Cut I	300 W @ 300 Ω	490 kHz ± 5 kHz	N / A	2500 V	1.6 ± 20%
Cut II	300 W @ 300 Ω	490 kHz ± 5 kHz	N / A	1500 V	1.6 ± 20%
Blend (Max)	200 W @ 300 Ω	490 kHz ± 5 kHz	30 kHz ± 5 kHz	3300 V	3.5 ± 20%
Pinpoint	120 W @ 500 Ω	490 kHz ± 5 kHz	30 kHz ± 5 kHz	3500 V	4.5 ± 20%
Spray	80 W @ 500 Ω	490 kHz ± 5 kHz	25 to 35 kHz	7000 V	6.5 ± 20%
Bipolar	80 W @ 150 Ω	490 kHz ± 5 kHz	30 kHz ± 5 kHz	1000 V	1.6 ± 20%

OUTPUT POWER CURVES

The curves that follow depict the changes for each mode at specific power settings.

Figure A – 1 Output power vs impedance for Cut I mode

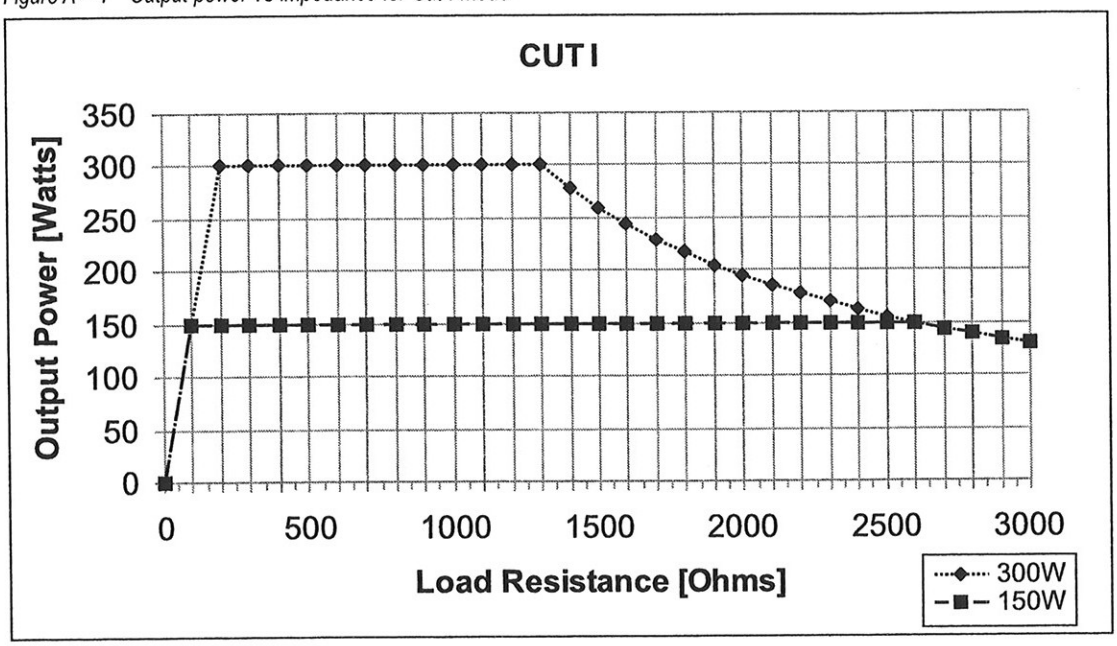


Figure A – 2 Output power vs impedance for Cut II mode

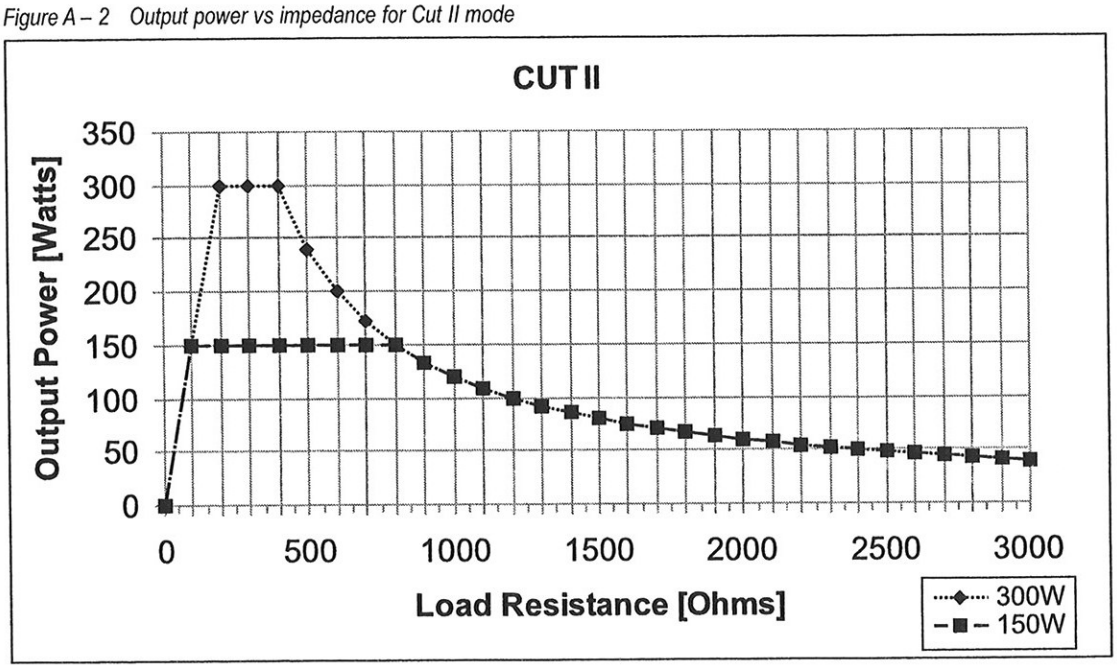


Figure A – 3 Output power versus impedance for Blend mode.

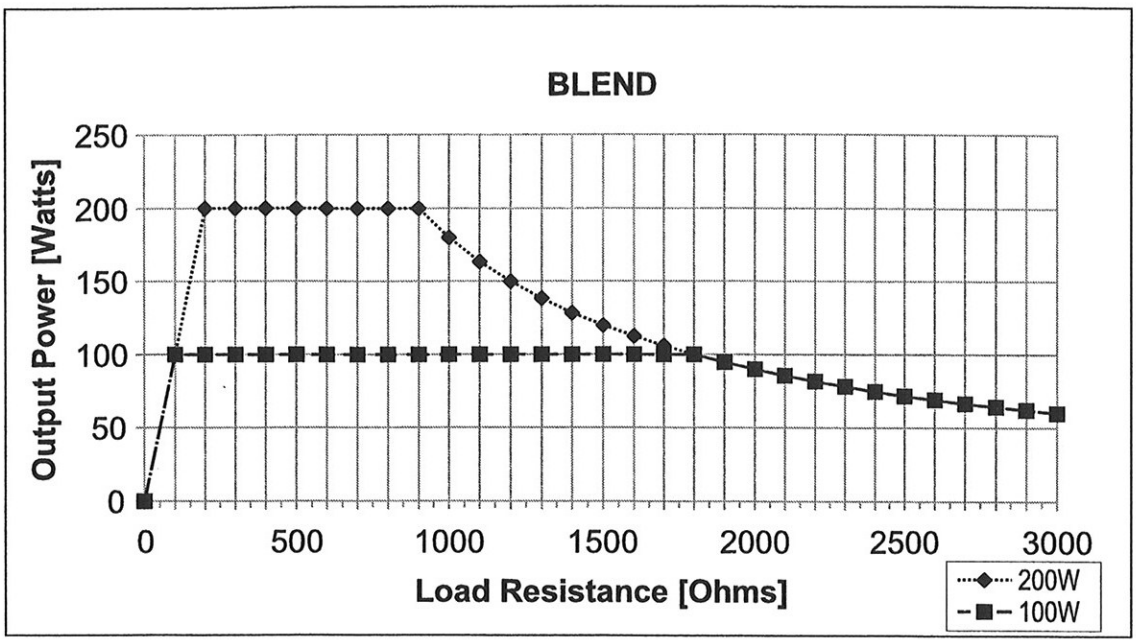


Figure A – 4 Output power versus impedance for Pinpoint mode

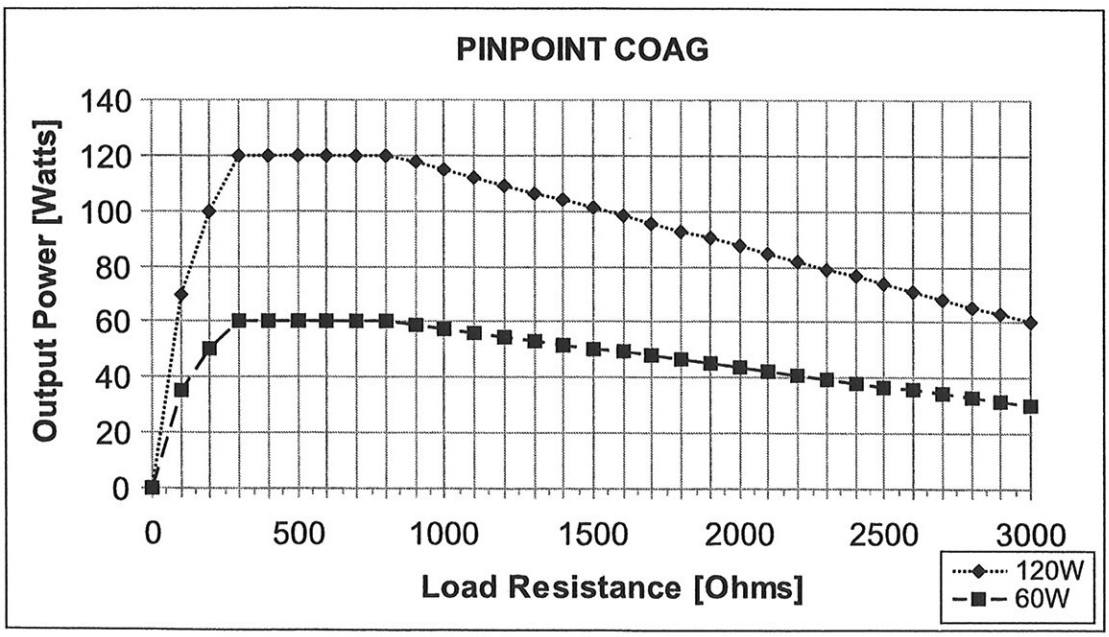


Figure A – 5 Output power vs impedance for Spray mode

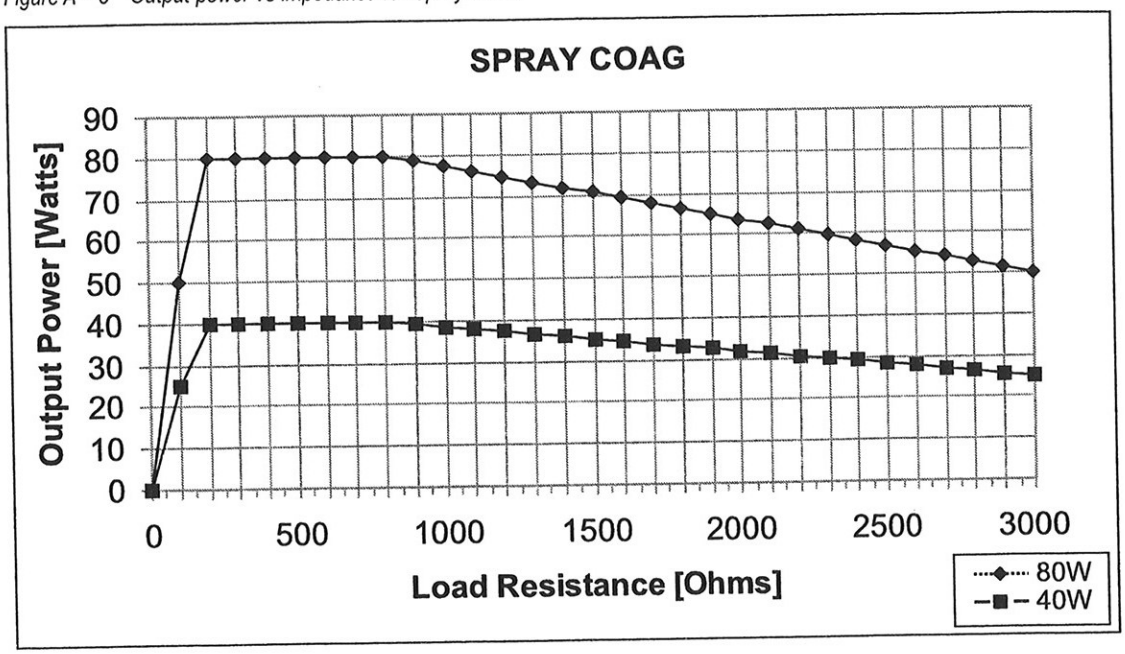
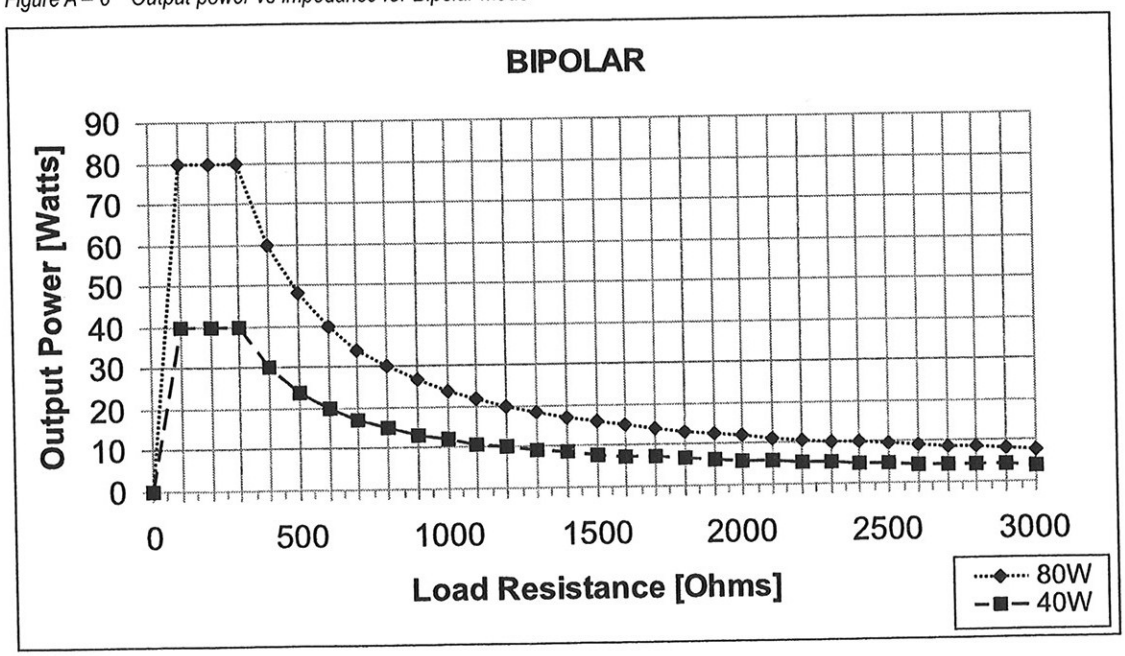
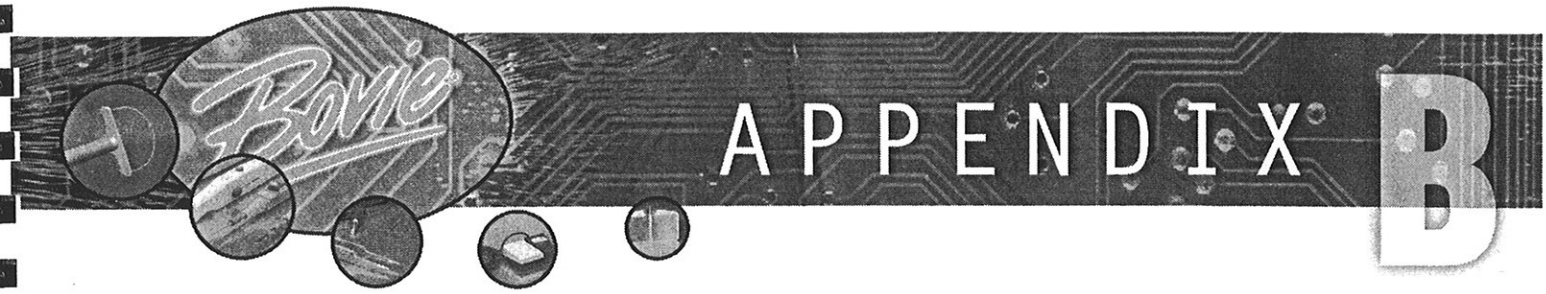


Figure A – 6 Output power vs impedance for Bipolar mode



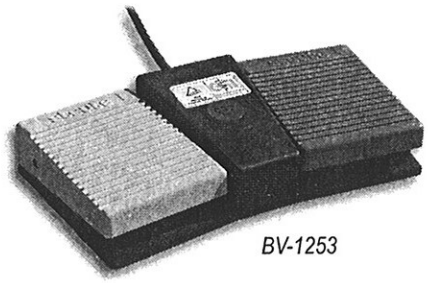


ACCESSORIES

The accessories listed in this section are recommended for use with the Bovie IDS-300. Ensure all accessories are rated for at least the maximum peak output voltage of the generator.

FOOTSWITCHES

BV-1253	Bovie IDS-300 Monopolar Footswitch, Box/1
BV-1254	Bovie IDS-300 Bipolar Footswitch, Box/1



BV-1253

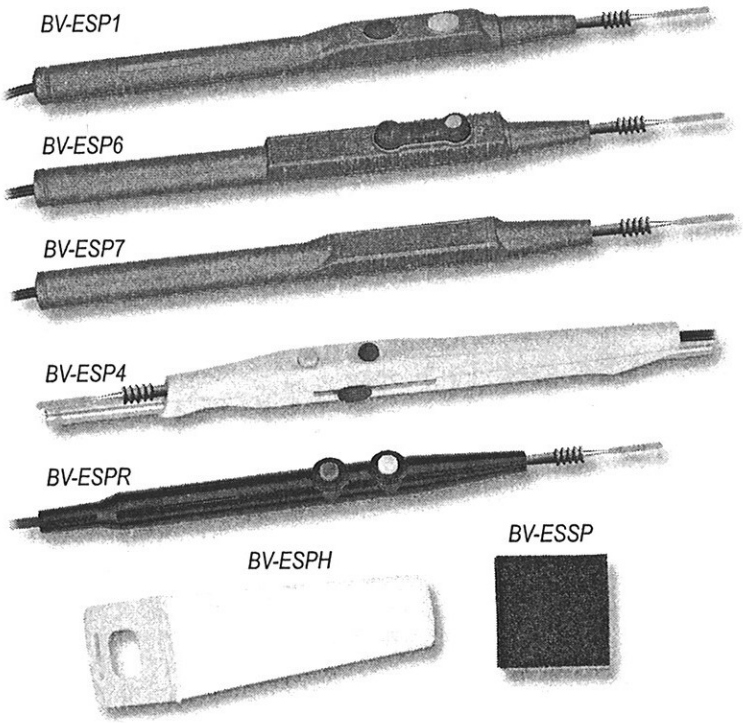
BV-1254

ELECTROSURGICAL PENCILS

The standard Bovie pencils feature button, rocker and foot control available with and without holster and scratch pad. Also available is the Bovie smoke evacuation pencil (BV-ESP4). All disposable pencils are packaged individually and are sterile.

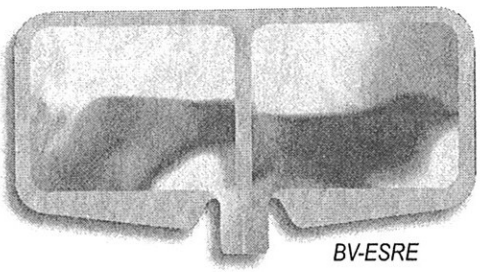
Additionally, Bovie offers a reusable pencil (BV-ESPR). The pencil is validated to forty (40) autoclave cycles. The BV-ESPR is shipped non–sterile.

BV-ESP1	Electrosurgical Push Button Pencil, Box/50
BV-ESP1H	Electrosurgical Push Button Pencil w/Holster, Box/40
BV-ESP1HS	Electrosurgical Push Button Pencil w/Holster & Scratch Pad, Box/40
BV-ESP1N	Electrosurgical Push Button Pencil w/Needle, Box/50
BV-ESP1HN	Electrosurgical Push Button Pencil w/Holster & Needle, Box/40
BV-ESP6	Electrosurgical Rocker Pencil, Box/50
BV-ESP6H	Electrosurgical Rocker Pencil w/Holster, Box/40
BV-ESP6HS	Electrosurgical Rocker Pencil w/Holster & Scratch Pad, Box/40
BV-ESP6N	Electrosurgical Rocker Pencil w/Needle, Box/50
BV-ESP6HN	Electrosurgical Rocker Pencil w/Holster & Needle, Box/40
BV-ESP7	Electrosurgical Foot Control Pencil, Box/50
BV-ESP7H	Electrosurgical Foot Control Pencil w/Holster, Box/40
BV-ESP7HS	Electrosurgical Foot Control Pencil w/Holster & Scratch Pad, Box/40
BV-ESP7N	Electrosurgical Foot Control Pencil w/Needle, Box/50
BV-ESP7HN	Electrosurgical Foot Control Pencil w/Holster & Needle, Box/40
BV-ESP4	Cut-n-Clear™, Smoke & Fluid Evacuation Pencil, Box/5
BV-ESPR	Reusable Pencil, Non-Sterile (Top 40), Box/1
BV-ESPH	Holster for ES Pencil (sterile), Box/40
BV-ESSP	Scratch Pads (sterile), Box/40
BV-1255A	Adapter plug for connecting footswitching pencil to the Bovie IDS-300, Box/1 (not pictured)

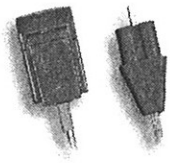


RETURN ELECTRODES

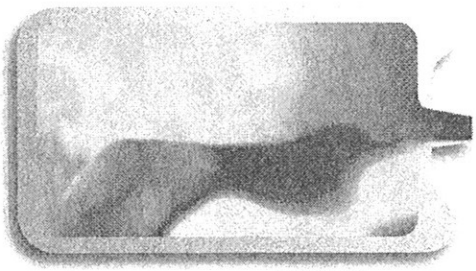
Bovie disposable return electrodes with super adhesive gel are designed for single use with safety and quality built in. Where reusability is requested a reusable electrode and cable are available.



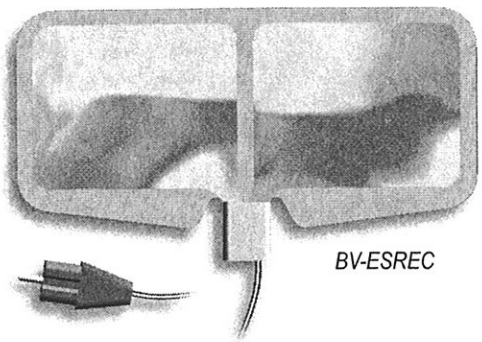
BV-ESRE



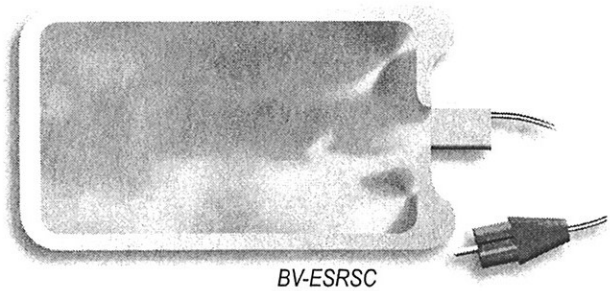
BV-1252C



BV-ESRS



BV-ESREC



BV-ESRSC

BV-ESRE	Disposable Split Adult Return Electrode w/o Cable, Box/50
BV-ESRS	Disposable Solid Adult Return Electrode w/o Cable, Box/50
BV-1252C	Reusable Connecting Cord for ESRE & ESRS to A1250 & A2100, Box/1
BV-ESREC	Disposable Split Adult Return Electrode w/2.8M Cable, Box/50
BV-ESRSC	Disposable Solid Adult Return Electrode w/2.8M Cable, Box/50

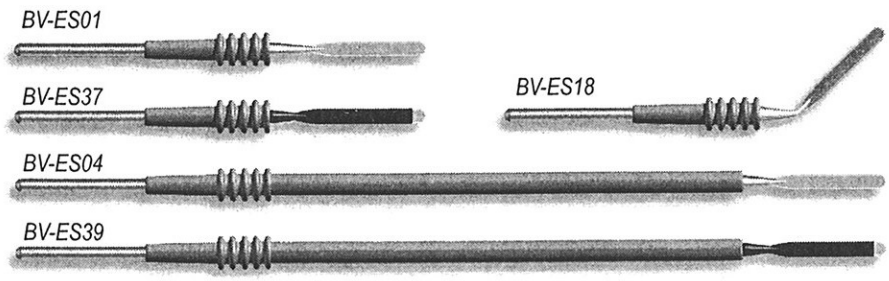
DISPOSABLE ACTIVE ELECTRODES

All electrodes utilize the standard 3/32" stainless steel shafts. All electrodes feature safety grip insulators combining patient and user safety with easy insertion into and removal from the surgical pencil. All disposable electrodes are manufactured to the highest standards.

They come individually packaged and sterile.

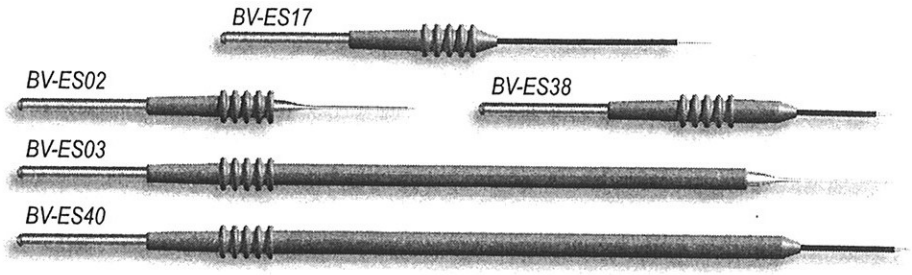
Blade Electrodes

BV-ES01	Standard Blade, Box/50
BV-ES37	Modified Blade, Box/25
BV-ES18	Angled Blade, Box/25
BV-ES04	Extended Blade, Box/25
BV-ES39	Extended Modified Blade, Box/25



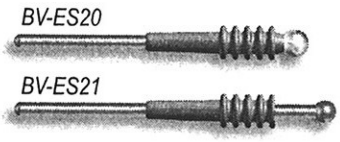
Needle Electrodes

BV-ES17	Flexible Tip, Box/25
BV-ES02	Standard Needle, Box/25
BV-ES38	Modified Needle, Box/25
BV-ES03	Extended Needle, Box/25
BV-ES40	Extended Modified Needle, Box/25



Ball Electrodes

BV-ES20	3/16" Ball, Box/25
BV-ES21	5/32" Ball, Box/25

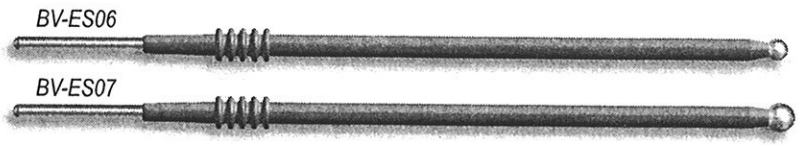


LLETZ ELECTRODES

All Bovie LLETZ Loop and Square electrodes feature tungsten wire for superior shape and integrity throughout the excision procedure. All loops are packaged with a unique protective shell to prevent damage during shipping. Ball electrodes are available in 3mm & 5mm sizes for fulguration and desiccation while the needle electrodes are available for pinpoint coagulation.

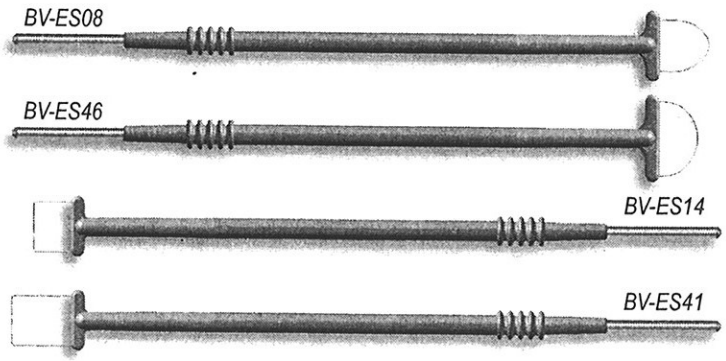
Ball Electrodes

BV-ES06	Extended 3mm Ball, Box/5
BV-ES07	Extended 5mm Ball, Box/5



Loop Electrodes

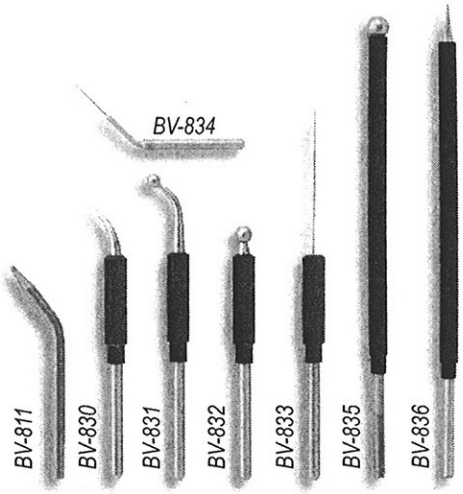
BV-ES08	5mm X 5mm Loop, Box/5
BV-ES09	10mm X 10mm Loop, Box/5
BV-ES10	15mm X 8mm Loop, Box/5
BV-ES11	15mm X 10mm Loop, Box/5
BV-ES12	20mm X 8mm Loop, Box/5
BV-ES13	20mm X 15mm Loop, Box/5
BV-ES31	20mm X 20mm Loop, Box/5
BV-ES42	20mm X 12mm Loop, Box/5
BV-ES43	15mm x 15mm Loop, Box/5
BV-ES44	15mm x 5mm Loop, Box/5
BV-ES45	13mm x 13mm Loop, Box/5
BV-ES46	10mm x 5mm Loop, Box/5
BV-ES47	25mm x 10mm Loop, Box/5
BV-ES41	5mm X 10mm Square, Box/5
BV-ES14	5mm X 5 mm Square, Box/5
BV-ES15	10mm X 4mm Square, Box/5
BV-ES16	10mm X 8mm Square, Box/5



All sizes not pictured.

REUSABLE ACTIVE ELECTRODES

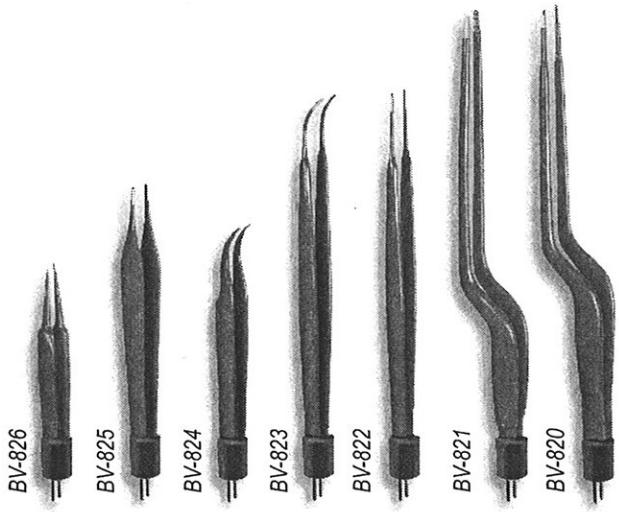
BV-834	Angled, Fine Needle, Box/1
BV-811	Reusable Electrode, Box/1
BV-830	Angled, Sharp Electrode, Box/1
BV-831	Short Angled, Ball, Box/1
BV-832	Short Straight, Ball, Box/1
BV-833	Short Straight, Needle, Box/1
BV-835	Long, Straight Ball, Box/1
BV-836	Long, Straight Needle, Box/1

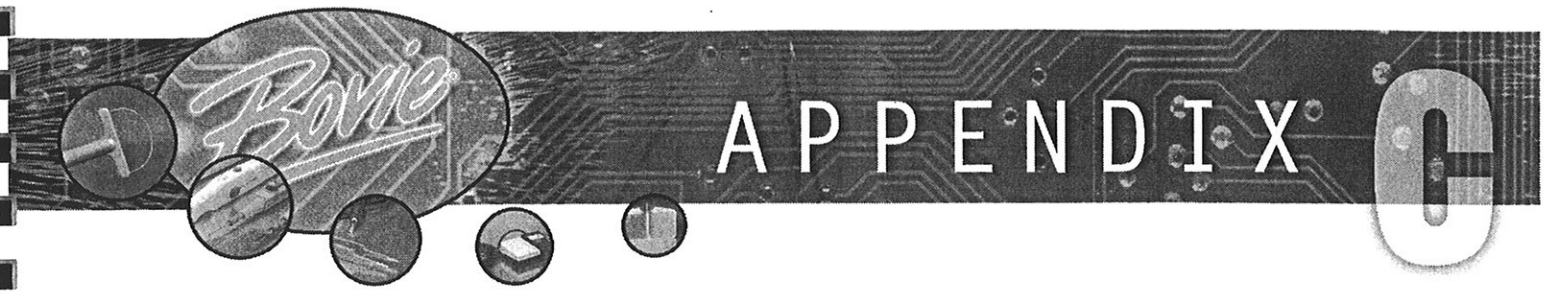


BIPOLAR FORCEPS (REUSABLE)

Reusable Bipolar Forceps are available in micro, 1.0 and 2.0mm tip size and in lengths ranging from 4.5" to 8". These forceps are guaranteed for twenty (20) cycles of autoclaving. A reusable bipolar cord is also available with quality silicone construction.

BV-827	Forceps Cord, Box/1 (not pictured)
BV-826	5" Straight, Fine, Smooth, Box/1
BV-825	5 ½" Straight, Med., Smooth, Box/1
BV-824	5" Curved, Fine, Smooth, Box/1
BV-823	7" Curved, Fine, Smooth, Box/1
BV-822	7" Straight, Fine, Smooth, Box/1
BV-821	7 ½" Bayonet, Med., Smooth, Box/1
BV-820	7 ½" Bayonet, Fine, Smooth, Box/1





WARRANTY

Bovie Medical, warrants each product manufactured by it to be free from defects in material and workmanship under normal use and service for the period(s) set forth below.

Bovie Medical's obligation under this warranty is limited to the repair or replacement, at its sole option, of any product, or part thereof, which has been returned to it or its Distributor within the applicable time period shown below after delivery of the product to the original purchaser, and which examination discloses, to Bovie Medical's satisfaction, that the product is indeed, defective.

This warranty does not apply to any product, or part thereof, which has been repaired or altered outside Bovie Medical's factory in a way so as, in Bovie Medical's judgment, to affect its stability or reliability, or which has been subjected to misuse, neglect, or accident.

The warranty periods for Bovie Medical products are as follows:

- Electrosurgical Generators: One year from date of shipment
- Mounting Fixtures (all models): One year from date of shipment
- Footswitches (all models): Ninety days from date of shipment
- Patient Return Electrodes: Shelf life only as stated on packaging
- Sterile Single Use Accessories: Only as stated on packaging

This warranty is in lieu of all other warranties, express or implied, including without limitation, the warranties of merchantability and fitness for a particular purpose, and of all other obligations or liabilities on the part of Bovie Medical.

Bovie Medical neither assumes nor authorizes any other person to assume for it any other liability in connection with the sale or use of any of Bovie Medical's products.

Notwithstanding any other provision herein or in any other document or communication, Bovie Medical's liability with respect to this agreement and products sold hereunder shall be limited to the aggregate purchase price for the goods sold by Bovie Medical to the customer.

There are no warranties which extend beyond the terms hereof.

Bovie Medical disclaims any liability hereunder or elsewhere in connection with the sale of this product, for indirect or consequential damages.

This warranty and the rights and obligations hereunder shall be construed under and governed by the laws of the State of Florida, USA.

The sole forum for resolving disputes arising under or relating in any way to this warranty is the District Court of the County of Pinellas, State of Florida, USA.

Bovie Medical, its dealers, and representatives reserve the right to make changes in equipment built and/or sold by them at any time without incurring any obligation to make the same or similar changes on equipment previously built and/or sold by them.