

JorVet™



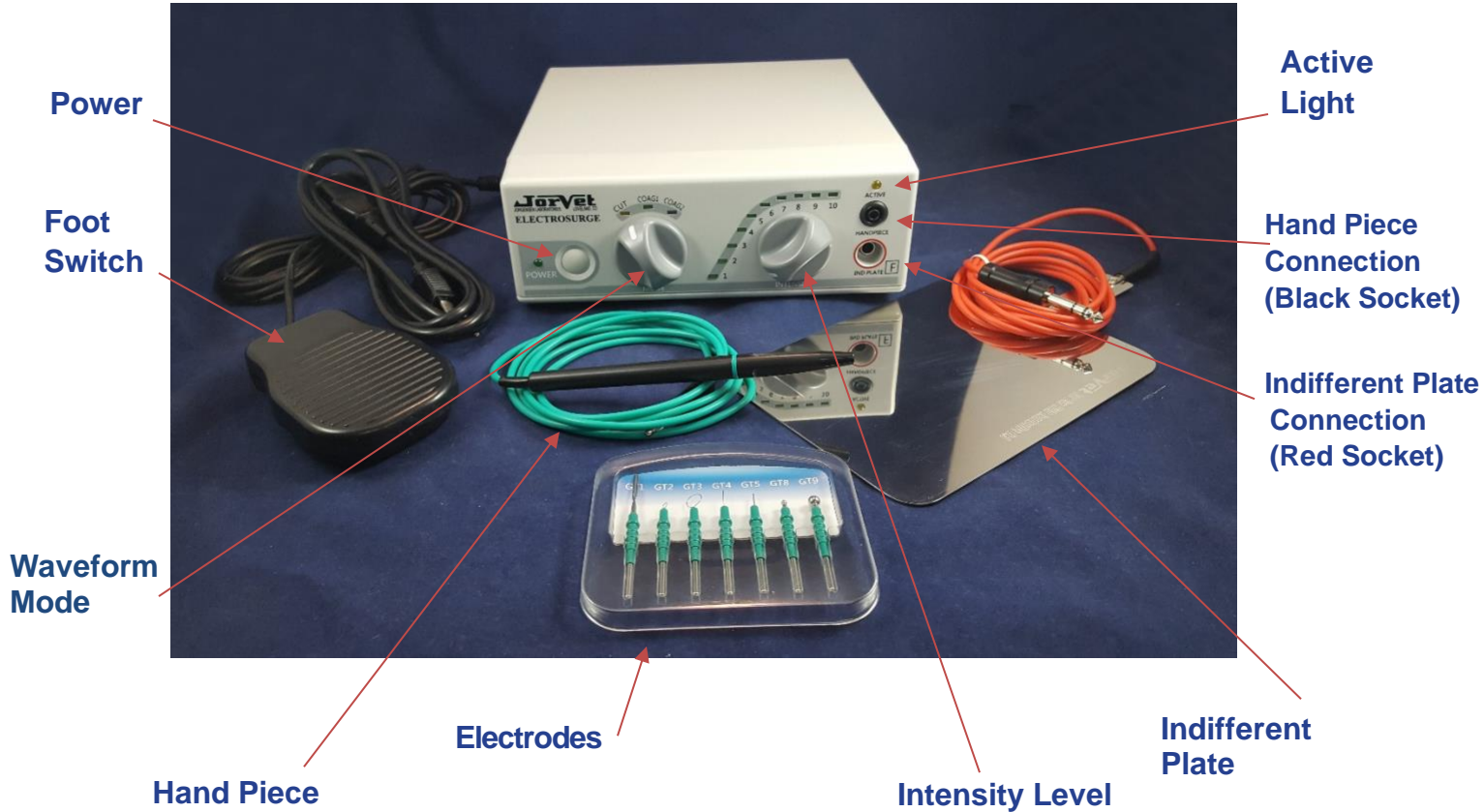
J0470M ELECTROSURGE

Radio-Frequency
Electrosurgery Unit



Operation Instructions

ELECTROSURGE J0470M





JORVET ELECTROSURGE

Radio Frequency Electrosurgical Unit

What Is Radio Frequency Electrosurgery?

Electrosurgery is a commonly used procedure that has been used in both human and veterinary surgery for over 20 years. Ultra-high frequency radio waves are transmitted through a fine wire electrode to a flat antenna on a ground plate placed under the animal. The high frequency radio waves pass through tissue and make a precise surgical incision just like a scalpel blade. The surgeon chooses from varying radio waveforms that result in varying degrees: from pure cutting to hemostasis. Radio frequency electrosurgery should not be confused with electrocautery. Electrocautery uses thermal energy or heat that simply burns the tissue.

The advantages of electrosurgery are fine, precise incisions with hemostasis of small “bleeders”, and less blood obstructing the surgical field. This makes any procedure faster and easier.



What Do the Dial Settings Refer To?

The two dials on the front panel refer to Fig. 1 waveform mode and power intensity. The waveform mode has different settings. This dial allows the selective use of various waveforms that give varying degrees of cutting power and hemostasis.

Cut mode:

This selection produces a sine wave of continuous high frequency that provides smooth cutting power. This creates the least amount of lateral heat and tissue damage. This is the preferred mode for thin avian skin and incisions where heavy bleeding is not a problem. This mode provides for the least amount of hemostasis.

Coag 1 mode:

This selection produces a periodic sine wave with brief rests between cycles. This waveform has less cutting power, but coagulation of small capillary beds is achieved.

Coag 2 mode:

This selection produces a partially-rectified sine wave. This provides the most hemostasis on vessels up to 1/16" in diameter. This mode can also use the indirect method of coagulation. This method employs a fine hemostat to grasp the vessel cleanly. The active electrode can touch the hemostat near the tip and coagulate that vessel.



Getting Started

Remove the unit from the box and lay it on a flat surface.

- 1) Connect the female end of the power cord to the rear of the unit, and the male end in a grounded electrical outlet.
- 2) The male jack of the Black (or Green) surgery hand piece is inserted into the unit into the black socket marked “HANDPIECE” on the front panel.
- 3) Indifferent Plate: This is the red cord. The male jack should be inserted into the red female jack opening marked “IND PLATE” on the front panel.
- 4) Connect the foot pedal in the rear of the unit.
- 5) The Indifferent Plate should be placed under the animal close to the procedure site. Conductive gel must be used to create uniform skin contact and maximize surface contact with the plate. **Failure to use gel can result in plate burns to the animal** in addition to poor or no function.
- 6) Select an electrode and insert the straight shaft end into the top opening of the handpiece. Be careful not to bend or damage the electrode in any way. Do not attempt to unscrew the handpiece as this will damage it.
- 7) Set the waveform dial to the desired mode.
- 8) Select the power intensity. 1 is lowest and 10 is highest. Always start at the minimum level and gradually work up to a level where cutting is smooth but no sparks are emitted.
- 9) The “ACTIVE” light should be lit when the footswitch is pressed. This indicates that radio frequency waves are being sent.
- 10) The electrode should be gently held on the tissue. A smooth, constant motion will produce less lateral heat and the cleanest incision. The tissue should always be kept moist for better and cleaner cutting. Cutting should be done without pressure, as this can damage the tissue and tip.



Practice

It is highly recommended to practice your technique before using the unit on clinical cases. There are a number of text books available on electrosurgery. The wide range of applications can be found by reading through these texts.

- 1) Obtain a fresh, lean cut of beef, such as round or sirloin steak. The meat should reach room temperature. Moisten the meat with a small amount of saline.
- 2) Set up the unit and place the meat on top of the indifferent plate.
- 3) Select an electrode and place it in the hand piece.
- 4) Turn waveform mode to Coag 2.
- 5) Set power level at #8 position.
- 6) Press on the foot pedal.
- 7) Do several incisions and observe the results. This high setting will cause sparking and may char tissue.
- 8) Adjust power to #1. This will illustrate poor cutting or extreme drag.
- 9) Move the power setting to different levels and continue to practice.
- 10) Try different waveform settings, but wait 10 seconds between adjustments. The more you practice the easier the unit will perform for you on actual patients.

Tip: The cutting should be smooth with no sparking or resistance.



Cutting

The tissue should always be moist. Dry tissue can result in surface charring. Saline solutions are the best solution to use. Cutting involves no pressure. The hand should rest on a support in order to keep control over the hand piece. Remember to use a feather light touch.



Hemostasis

Small bleeders can easily be stopped with an electrosurgery unit. The vessel should have direct pressure first placed on a sponge or hemostat. The vessel should be clearly located and not covered with blood. The waveform should be in Coag 1 or Coag 2. Coag 2 is preferred for larger bleeders. The two types of coagulation electrodes are the round ball electrodes and heavier needle. An indirect method uses a hemostat with a fine tip. The vessel is grasped by the hemostat. The electrode is applied to the hemostat about 1" from its end.



Care and Selection of Electrodes

The electrodes can be autoclaved or cold sterilized. The protective rubber on the shaft should be intact. If it is cracked or worn a shock or burn may be felt by the operator. Autoclaving will affect the rubber sleeve over time.

NOTE: Always clean off electrodes after use with a gentle disinfectant.

Electrode Type

There are literally hundreds of different styles of electrodes available from various manufacturers. The JorVet Electrode is the industry standard 3/32" shank. Other manufacturer's electrodes will work on the JorVet unit.



GT1	GT2	GT3	GT4	GT5	GT8	GT9
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- GT1:** Blade Electrode
- GT2:** Small Loop Electrode
- GT3:** Large Loop Electrode
- GT4:** Fine Wire Electrode
- GT5:** Heavy Wire Electrode
- GT8:** Small Ball (2.38mm) Electrode
- GT9:** Heavy Ball (5mm) Electrode



Electrode Styles

Ball end: These are best for hemostasis purposes.

Loop end: These electrodes work nicely with skin tumors or gingival hyperplasia. The loop encircles and slices through tissue. Circle and diamond loop configurations are available.

Straight: Thin wires work well for cutting. The heavier wires work well for hemostasis.



Caution

- 1) Radio frequency can interfere with heart pacemakers. Consult a physician before exposing anyone wearing a pacemaker to radio frequency waves.
- 2) Various ECG and monitoring equipment can be affected by radio frequency waves. Place these items as far away from the Indifferent Plate as possible.
- 3) When changing electrodes do not have the foot pedal depressed.
- 4) Electrosurgery can give off sparks and ignite flammable liquids or gases.
- 5) Electrosurgery still requires anesthesia or analgesia.
- 6) The operator can inflict wounds, burns, or shocks to themselves through inappropriate use. Just as misuse of a scalpel can cut you, so can misuse of electrosurgery units.



Trouble Shooting

- 1) Before starting, make sure all connections are correct.
Remember: Hand piece into black socket; IND plate into red socket.
- 2) Too much sparking: Adjust power down by 2 positions.
- 3) Will not cut:
 - a) Is the power light on?
 - b) Foot pedal connected?
 - c) *ACTIVE* light on when foot pedal is depressed?
 - d) Electrode properly attached?
 - e) Indifferent Plate attached and properly placed?



Autoclaving Handpiece & Electrodes

The handpiece and electrodes should be thoroughly cleaned and dried following a procedure. These can then be autoclaved in a sterilization pouch at no more than 250° F for 10-15 minutes.



Specifications

◆ SKU J0470M

◆ 110 volt (available in 220v)

◆ Output power: 100 watts

◆ Output frequency: 2.0 mHz

◆ Size: Height: 3"

Width: 8 ½"

Depth: 9"

Weight: 7 ½ lbs.

◆ Replacement Fuse: 12.5a 250v fuse.



Users Notes





LIMITED WARRANTY

This Electrosurgy Unit is under warranty for a period of 12-months against defects in workmanship and materials.

Handpiece:	1 year
Indifference Plate:	90 days
Foot Switch:	90 days
Electrodes are not covered under warranty.	

The completed Warranty Card must be returned to Jorgensen Laboratories, Inc. within 14 days of purchase.

Pocket for Copy of Purchase Invoice



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