Labeling for the HerOption™ Uterine Cryoblation Therapy System (P000032)

- **User's Manual**
- **Instructions for Use/Package Insert (for disposable)**
- **Patient Brochure**

her option
UTERINE CRYOBLATION THERAPY

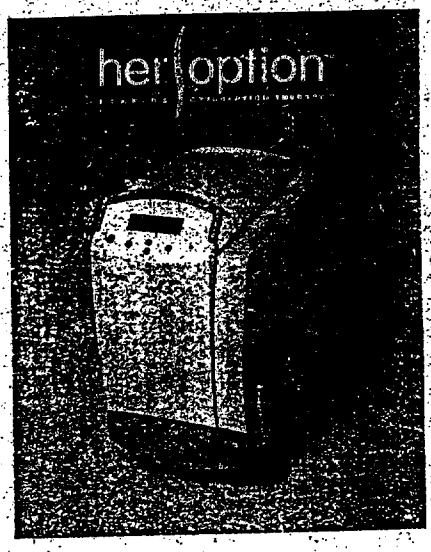
User's Manual

CG-1
CU-1

Caution: Federal (USA) Law restricts this device to sale by or on the order of a physician trained in gynecologic ultrasound.

For Immediate Technical Support, Call: 858-775-0858

IMPORTANT
Save this Manual
Includes:
- **Operating Instructions**
- **Safety Warnings**
- **Technical Specification**
- **Customer Service**
- **Trouble Diagnosis**
- **Warranty**



CryoGen

BEFORE OPERATING THE **Her Option™ Uterine Cryoblation Therapy™** SYSTEM, READ ALL INSTRUCTIONS IN THIS MANUAL CAREFULLY.

TABLE OF CONTENTS:

ELECTRICAL INFORMATION:

This device has been tested to, and found to be in compliance with the following standards for medical device: EN55011/1991Group 1 Class B and CISPR11 (1990) Group 1 Class B.

This equipment has been tested and found to comply with the standards in EN 60601-1:1990 + A1:1993 + A2:1995 excluding clauses 36, 48 and 52, UL2601:1997, excluding clauses 36, 48 and 52. Particular Clauses in UL471:1998. These limits are designed to provide reasonable protection against harmful interference in a typical medical installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to other devices in the vicinity. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to other devices, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving device.
- Increase the separation between the equipment.
- Connect the equipment into an outlet on a circuit different from that to which the other device(s) are connected.
- Consult the manufacturer or field service technician for help.

Symbols Key:

	Attention: See Instructions for Use
	Lot number
	Catalog number
	Do not reuse
	Sterilized by radiation. Do not use if package is opened or damaged.
	Use by date
	Date of Manufacture
	UL approved for Canada and US with respect to electric shock, fire and mechanical hazards only in accordance with UL2601-1/CAN/CSA C22.2.
	CE mark and Identification number of Notified Body. The product meets the essential requirements of Medical Device Directive 93/42 EEC.
	Off (power: disconnection from the mains)
	On (power: connection to the mains)
	Standby
	Up arrow
	Down arrow
	Equipotentiality
	Alternating current
	Type BF Equipment

Customer Service and Support:

For Immediate Technical Support Call: 858-775-0858

To order more supplies or for help operating your system, please contact:

CryoGen, Inc.
Customer Service Department
11065 Sorrento Valley Court
San Diego, CA 92121
(858) 450-6868
(858) 450-3187 fax
www.cryogen-inc.com
Toll Free (888) 634-0444, ext. 1

FEDERAL (USA) LAW PROHIBITS THOIS DEVICE TO SALE BY OR ON THE ORDER OF A PHYSICIAN TRAINED IN GYNECOLOGIC ULTRASOUND.

Device Description and Principle of Operation:

The **Her Option™ Uterine Cryoblation Therapy™** System is a cryosurgical device with a gas cooled Cryoprobe. Its operation is based on the Joule-Thomson principle in which pressurized gas is expanded through a small orifice to produce cooling. The coolant or gas used in the system is a proprietary blend of commonly used coolants, which are non-toxic, non-corrosive, non-flammable and non-CFC.

The system is intended to destroy tissue during surgical procedures by the application of extreme cold at the distal tip of the Cryoprobe. A -20°C temperature is lethal to the tissue. The ice front advances through the uterine tissue, rather than expanding within the endometrial cavity.

The **Her Option™ Uterine Cryoblation Therapy™** System includes a Console, a Cryoprobe and a disposable Control Unit. A compressor housed in the Console is fully charged with coolant and is semi-hermetically sealed prior to shipping to ensure zero leakage. Activation of the System freeze cycle causes gas to exit the compressor and flow to the Probe where it expands to a low pressure across a small diameter orifice in the tip of the Probe. As a result, a rapid temperature drop occurs. This temperature drop is transferred to the tissue-contacting tip of the disposable Control Unit, causing freezing. Gas then returns to the compressor and is recirculated. Deactivation of the freeze cycle stops gas flow to the Probe, ending cooling. The disposable sterile **Her Option™ Uterine Cryoblation Therapy™** Control Unit is sold separately. The Cryoprobe with Control Unit attached is referred to as the Probe.

Indications:

The **Her Option™ Uterine Cryoblation Therapy™** System is a closed-cycle cryosurgical device intended to ablate the endometrial lining of the uterus in pre-menopausal women with menorrhagia (excessive bleeding) due to benign causes for whom childbearing is complete.

Contraindications:

The device is contraindicated for use in:

- A patient who is pregnant or who desires to become pregnant in the future. (Pregnancies following ablation can be dangerous for both mother and fetus.)
- A patient with a known or suspected endometrial carcinoma (uterine cancer) or premalignant change of the endometrium such as unresolved adenomatous hyperplasia.
- A patient with an active genital or urinary tract infection at the time of the procedure (e.g., cervicitis, vaginitis, endometritis, salpingitis or cystitis).
- A patient with active pelvic inflammatory disease (PID).
- A patient with an intrauterine device (IUD) currently in place.
- A patient with any anatomic or pathologic condition in which weakness of the myometrium could exist, such as history of previous classical cesarean sections or transmural myomectomy.

Warnings:

Failure to follow any instructions or to heed any warnings or precautions could result in serious patient injury.

General

- Although endometrial ablation using the **Her Option™ Uterine Cryoblation Therapy™** System significantly decreases the likelihood of pregnancy, it is not a sterilization procedure. The patient should be advised of appropriate birth control methods.
- Endometrial ablation does not eliminate the potential for endometrial hyperplasia, or adenocarcinoma of the endometrium and may mask the physician's ability to detect or make a diagnosis of such pathology.

Technical

- Endometrial ablation procedures using the **Her Option™ Uterine Cryoblation Therapy™** System should be performed only by medical professionals who have experience in performing procedures within the uterine cavity, such as IUD insertion or dilatation and curettage (D&C) and who have adequate training and

familiarity with the use of **Her Option™ Uterine Cryoblation Therapy™** System.

- **The sterile Her Option™ Control Unit is for single use only, do not attempt to re-sterilize or reuse.**
- Use caution not to perforate the uterine wall when sounding the uterus or inserting the Probe. If a perforation is present, the procedure should be terminated immediately.
- There is the potential for thermal injury to adjacent organs if the CryoZone extends beyond the serosal surface of the uterus; therefore, it is necessary to visualize and monito the growth of the CryoZone with ultrasound. The freeze cycle should be stopped if the leading edge of the CryoZone reaches the serosal surface.

Precautions:

- Endometrial ablation procedures using the **Her Option™ Uterine Cryoblation Therapy™** System should be performed only by physicians trained in gynecologic ultrasound.
- The **Her Option™ Uterine Cryoblation Therapy™** System is a sealed system. Tampering with the Console or Cryoprobe may result in loss of gas and loss of effectiveness.
- Clean and disinfect the stainless steel Cryoprobe according to instructions under "Sterilization and Cleaning" in this user manual. DO NOT AUTOCLAVE. DO NOT IMMERSE CRYOPROBE IN LIQUIDS.
- Do not use the Control Unit if there is any evidence of tampering or damage to the sterile package.
- Spark generation is possible: DO NOT use the system in an oxygen rich environment.
- Do not bend the Cryoprobe or the Cryoprobe Control Unit.
- The Flexline is delicate and consists of four separate tubes each carrying fluids. Avoid sharp bending of the Flexline or pulling on the Flexline as a means of towing the **Her Option™** Console.
- If the power is interrupted during one of the freeze cycles or the display temperature fails to achieve 10° C, use room temperature normal saline to accelerate the heating process and allow removal of the Probe.
- Do not attempt to disassemble the **Her Option™** Console, Cryoprobe or sterile disposable Control Unit.
- DO NOT allow ventilation holes on Console to become obstructed, damage may occur.

- The Probe tip may become adherent to the tissue during freezing. Allow adequate time during the heat cycle for tissue to warm before attempting to remove the Probe (approximately 2 minutes, or when the temperature is above 10° C). Do not attempt to remove Probe from tissue if there is significant resistance.

- Patients who have undergone endometrial ablation and are later placed on hormone replacement therapy should have a progestin included in their medical regimen in order to avoid the increased risk of endometrial adenocarcinoma associated with unopposed estrogen replacement therapy.

- The safety and effectiveness of Her Option™ for ablation of the endometrial lining of the uterus has not been fully evaluated in patients:

  - With a uterus greater than 300cc in volume or a uterine sound greater than 10cm,
  - With a uterine sound less than 4.0cm,
  - Who have undergone a previous endometrial ablation procedure,
  - With intramural myomas greater than 2cm in diameter, intrauterine polyps, or pedunculated fibroids,
  - With a septate uterus, or,
  - Who are post-menopausal.

Adverse Events:

The Her Option™ device was evaluated in a randomized, prospective, multi-center clinical study, comparing the Her Option™ to a control arm of rollerball endometrial ablation (REA). There were no reported incidents of serious device-related adverse events in the cryoblation group.-Tables 1a - c summarize the adverse events for the 272 patients treated in this study:

Table 1a - Adverse Events During Procedure and within 24 hours Post-Procedure

Adverse Event	Cryo n=186	REA n=86
Uterine cramping	15 (8%)	4 (5%)
Other abdominal or pelvic pain/cramping	27 (15%)	10 (12%)
Nausea and vomiting	4 (2%)	4 (5%)
Hot flashes	2 (1%)	0 (0%)
Hyponatremia/Fluid Overload	0 (0%)	3 (3%)
Perforation*	1 (.5%)	1 (1%)
Cervical/vaginal laceration	0 (0%)	1 (1%)

**Cryo perforation occurred during sounding prior to treatment. REA perforation occurred during treatment.*

Table 1b - Adverse Events at 2 week Post-Procedure

Adverse Event	Cryo n=186	REA n=86
Uterine cramping	5 (3%)	0 (0%)
Other abdominal or pelvic pain/cramping	7 (4%)	8 (9%)
Urinary tract infection (UTI)	5 (3%)	3 (3%)
Hot flashes	6 (3%)	3 (3%)
Vaginal infection	2 (1%)	1 (1%)
Nausea/vomiting	2 (1%)	2 (2%)

Table 1c – Adverse Events at 3, 6, and 12 months Post-Procedure*

Adverse Event	Cryo n=186	REA n=86
Uterine cramping	7 (4%)	5 (6%)
Other abdominal or pelvic pain/cramping	26 (14%)	16 (19%)
Vaginal infection	7 (4%)	1 (1%)
Hot flashes	3 (2%)	7 (8%)
Urinary tract infection	2 (1%)	3 (3%)
Nausea/vomiting	1 (.5%)	1 (1%)

Below is a more detailed description of the Adverse Events reported above:

- **Pelvic Pain/Cramping** – Peri-operative cramping typically lasted a few hours and rarely continued beyond the first day following ablation. Some of the mild cramping was reported as resolved without medication. The use of non-steroidal anti-inflammatory drugs (NSAID's) was reported to typically manage the cramping and pain.
- **Nausea and Vomiting** – Nausea and vomiting was managed with medication.
- **Bladder Infection/Vaginal Infection** – The infections were managed with oral antibiotics.
- **Other Events** – Other Adverse Events reported which occurred in no greater than 1% of the patients treated with **Her Option™** include: severe bleeding, difficulty recovering from anesthesia and pregnancy (1 patient).

Potential Adverse Events:

The following potential adverse events were ***not*** observed in clinical studies of the **Her Option™ Uterine Cryoblation Therapy™** but could occur:

- Endometritis
- Difficulty with defecation or micturition
- Hematometra
- Thermal injury to adjacent tissue
- Hemorrhage
- Post-ablation tubal sterilization syndrome

Clinical Study:

Purpose: The use of cryoablation in the treatment of menorrhagia from benign causes in pre-menopausal women was compared to REA to evaluate safety and effectiveness.

Study Endpoints: The primary effectiveness measure was a validated menstrual diary scoring system developed by Higham (Higham JM, O'Brien PMS, Shaw RW. Assessment of menstrual blood loss using a pictorial chart (Br J Obstet Gynaecol 1990;97:734-9). Patient success was defined as a reduction in menstrual flow at 1 year to a diary score of ≤75. Study success was defined as a statistical difference of less than 20% in patient success rates between Cryo and REA. Secondary endpoints included responses from a quality-of-life questionnaire. Safety evaluation was based on the adverse events reported during the study, including device-related complications. The type of anesthesia required to complete the procedure was also recorded.

Methods: A randomized (2:1), prospective study was conducted at 10 clinical sites which included 275 patients diagnosed with menorrhagia. Study subjects were required to meet the following key inclusion/exclusion criteria

Inclusion criteria:

- ✓ Premenopausal female, between 30 and 50 years of age, in good general health
- ✓ Documented history of excessive uterine bleeding and a completed pictorial blood assessment chart (PBAC) of >150 for at least one menstrual cycle
- ✓ Previously failed or refused traditional medical therapy, D&C and Depo-Provera
- ✓ Uterine sound measurement ≤ 10 cm
- ✓ Uterine volumetric measurement ≤ 300 cc.
- ✓ Patient does not desire to maintain fertility

Exclusion criteria:

- ✓ Clotting defects or bleeding disorders
- ✓ Poor general health
- ✓ Patient below age 30 or above age 50
- ✓ Active pelvic inflammatory disease
- ✓ Abnormal pap smear within the previous year, unless appropriately evaluated
- ✓ History of gynecologic malignancy within the past 5 years
- ✓ Intramural myomas greater than 2 cm diameter
- ✓ Intrauterine polyps
- ✓ Pedunculated fibroids

- ✓ Septate uterus
- ✓ Previous endometrial ablation procedure or other uterine surgery in which thinning of the uterine musculature occurs
- ✓ Malignant pathology or hyperplasia within the previous six months, as documented by endometrial biopsy
- ✓ Pregnancy
- ✓ Women who desire to maintain fertility

Menstrual diary scores were collected pre-treatment and at 3, 6 and 12 months post-treatment. Patients were given Lupron 28 days prior to the cryoablation therapy.

Patient Population:

- 279 patients randomized, 193 to Cryo/86 to REA.(Intent to Treat Group)
- ✓ 3 Cryo patients withdrew consent prior to treatment
- ✓ 1 did not meet the Inclusion/Exclusion criteria
- 275 patients in Device Evaluation Group :189 Cryo/86 REA
- ✓ 3 Cryo equipment malfunctions precluding initiation of treatment and crossover to REA
- 272 patients in Safety Evaluation Group: 186 Cryo/86 REA

Baseline characteristics between cryo and REA patients were compared and found to be statistically equivalent with regard to age, body mass index, gravidity, parity, full-term deliveries, previous Cesarean section, prevous D&C, previous tubal ligation, presence of fibroids or myomas, cavity sounding length, severe menstrual pain and cramping, severe PMS symptoms, medical therapy for menorrhagia, hematocrit and FSH. One variaible, pretreatment PBAC diary scores demonstrated moderate statistical significance ($p<0.05$). Median pretreatment PBAC scores were higher in the group treated with cryoblation.

Results:

Primary Endpoint: Bleeding scores

Patient success was based on a reduction in diary score from $\geq$ 150 pre-treatment to $\leq$75 at one year. Effectiveness rates are based on the intent to treat population.

Table 2a – Effectiveness: Diary Scores at 1 year

	CRYO n=193	REA n=86
Number of successful patients (diary score≤75)	130	63
Study success rate (% patients with diary score ≤75)	67.4%	73.3%
Number of patients with amenorrhea (diary score = 0)	43	40
Amenorrhea rate (% patients with diary score = 0)	22.2%	46.5%

Ten (10)Cryo patients and 6 REA patients were lost to follow-up. All of these patients were considered treatment failures in calculating the intent-to-treat effectiveness rates.

Secondary Endpoint: Patient Satisfaction

Quality of Life (QOL) data was obtained using the SF-36 Health Survey as well as a version of the validated Dartmouth COOP assessment tool. Because there are no QOL questions pertaining to menorrhagia, approval from the Dartmouth Committee was granted to use the same style of questions and format them according to the study design. Parameters included SF-36 PMS symptoms and menstrual pain indices.

Table 2b – Effectiveness - Quality of Life (QoL) at 1 year (Scale 1-5)

	CRYO	REA
Number of patients in intent to treat group (n=275)	193	86
Number of patients who responded to QOL questionnaire (n=230)	157	73
QOL Pre-op (mean ± SD)	3.4 ± 1.0	3.5 ± 0.9
Improvement in QOL (mean ± SD)	1.3 ± 0.7	1.3 ± 0.9
% patients reported time lost from work/other activities: Pre-operatively	74%	71%
Post-operatively	6%	7%
% patients very/ extremely satisfied*	76%	79%
% patients recommend to a friend*	78%	80%

**Satisfaction and recommendation rates are based on the intent to treat group.*

Clinical Study Observations

During the multi-center clinical study of 189 women scheduled for treatment with an earlier version of the HER OPTION System, a 25% malfunction rate was reported. The device malfunctions reported during the clinical study did not result in any safety issues. The System has since been modified to correct the causes of the malfunctions noted. A post-market study is underway to verify reliability of the modified HER OPTION System and to demonstrate that the malfunction rate has been acceptably reduced.

During the multi-center clinical study, there was a range of treatment success rates observed across the investigational sites, 2 sites in particular had lower success rates. Although some contributing factors have been identified, a post-market study is underway to evaluate the standardized surgical techniques for providing effective endometrial ablation using the HerOption™ Uterine Cryoblation Therapy™ System.

Anesthesia was delivered at the discretion of the investigator and attending anesthesiologist. General anesthesia was administered to 92% (79/86) of the REA patients and 46% (85/186) of the cryoablation patients. Of the cryoablation group, 39% (72/186) of the patients received a paracervical block with conscious sedation as compared to only 1% (1/86) of the REA group.

There are data specific to the degree of dilation available on 164 cryoablation patients and 76 rollerball patients. Of these patients, Twenty-one (11%) of the cryoablation patients did not receive any dilation, whereas all (100%) rollerball patients received some degree of dilation. This difference is statistically significant with a p value of 0.0003.

There were 9 patients enrolled in the study who underwent hysterectomy prior to 12 months for the following reasons:

Table 3 - Hysterectomy

REASON FOR HYSTERECTOMY	CRYO	REA
Cramping/PMS	1	
Cramping/bleeding	3	1
Bleeding	2	1
Pain		1
Totals	6	3

**6 of the hysterectomies were in women ≤40 years (4 Cryo/2REA) and 3 were ≥ 40 years (2Cryo/1REA)*

Patient Selection:

Menorrhagia can be caused by a variety of underlying problems including, but not limited to, endometrial cancer, hormone imbalance, anovulation, drugs, myomas and polyps. Patients should be thoroughly evaluated to determine the cause of the menorrhagia prior to any treatment being initiated.

Patient Information:

Patients should be counseled regarding the risks, benefits and alternatives prior to the performance of this procedure. This counseling should include the need for post-procedure contraception where indicated. This procedure is not a sterilization procedure and subsequent pregnancies may be dangerous for the mother and fetus.

Vaginal discharge is possible following the procedure. This may last from a few days to a few weeks. Any unusual or foul smelling draining should be reported to the physician immediately.

Pre-Op Work Up:

The Pre-op work up should include: History and complete physical examination, including pelvic exam; Negative PAP smear and endometrial biopsy to rule out cervical or endometrial malignancy and pre-malignant changes to the uterus; Sonography, hysteroscopy, hysterosalpingography or any other indicated diagnostic tests or procedures that might uncover a possible cause for menorrhagia within six months of performing the Her Option™ procedure.

Pre-Treatment Preparation of Patient:

It is recommended that the lining of the uterine cavity be thinned prior to Her Option™ Uterine Cryoblation Therapy™ . Thinning can be accomplished by administering a GnRH agonist 21 – 28 days prior to the procedure or performing suction curretage immediately prior to the cryoblation procedure.

A non-steroidal anti-inflammatory drug (NSAID) may be given to the patient one hour

prior to the treatment and continued post-operatively as needed.

Clinical Use Checklist:

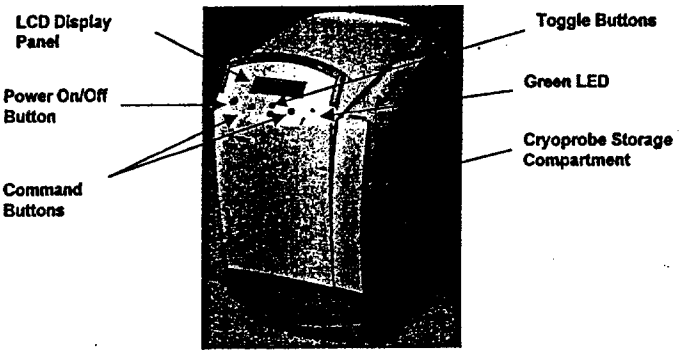
Prior to using HerOption™ for the first time, physicians should be trained and familiar with the following procedures and techniques:

- intrauterine gynecological procedures;
- recognizinge the tip of the cryoprobe in the uterus and the CryoZone as it advances toward the serosa;
- placing the tip of the cryoprobe in the uterine cornu; and,
- confirming (via ultrasound) maintenance of the proper placement of the cryoprobe tip.

The physician, as well as adjunctive personnel, should review and be familiar with the HerOption™ training material (User's Manual, training video, Clinical Use protocol).

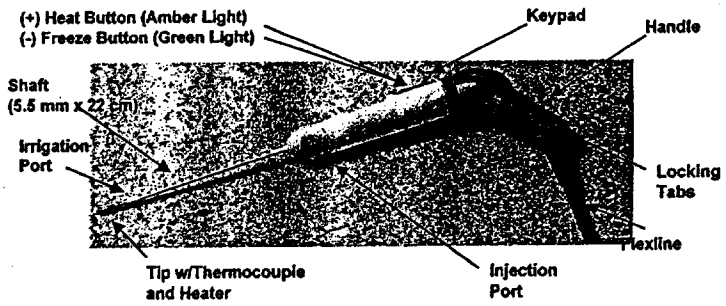
Her Option™ Uterine Cryoblation Therapy™ System:

CONSOLE AND CRYOPROBE



ITEM	MODEL #
Her Option™ Console with Cryoprobe	CG-1

Cryoprobe with attached Control Unit



ITEM	MODEL #
Sterile Her Option™ disposable Control Unit (for use with the Her Option™ Console Model CG-1).	CU-1

System Technical Specifications:

Table I - Technical Specifications for the Her Option™ Uterine Cryoblation Therapy™ System:

Specification	
Weight	68 kg (150 lbs.)
Dimensions (LxWxH)	66 x 36 x 69 cm (26" x 14" x 27")
Ambient Temperature	15 - 35°C
Configuration	Air Cooled
Noise	<63 dBA at 1 M
Flexfine	
Outer Diameter	1.3 cm (0.5")
Length	259.1 cm (8.5')

Table II Electrical Specifications for Her Option™ Uterine Cryoblation Therapy™ System

Specification	Her Option™ Uterine Cryoblation Therapy™ System
Voltages	100/120/220/240 V_{RMS}
Frequency	50/60 Hz
Rating	1200 VA

Note: The system can be configured through internal switches for any combination of the following voltages and frequencies. Refer to the label on the rear of the unit to determine the system configuration.

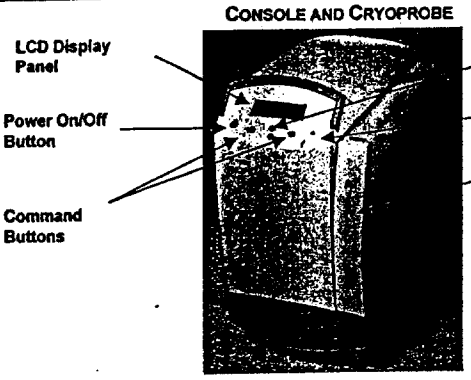
Table III –Technical Specifications for Her Option™ Cryoprobe and Control Unit:

Specification	Her Option™ Cryoprobe
Total Length	43.2 cm (17.0")
CryoZone Diameter	3.8 mm (0.15")
CryoZone Length	48 mm (1.89")

Specification	Her Option™ Control Unit CU-1
Shaft Diameter	5.5 mm (0.2")
Insertion Length	22 cm (8.7")
Probe Cold Tip Diameter	4.7 mm (0.2")
Probe Cold Tip Length	35 mm (1.4")
Injection Port	Female Luer

Her Option™ Uterine Cryoblation Therapy™ System:

CONSOLE AND CRYOPROBE



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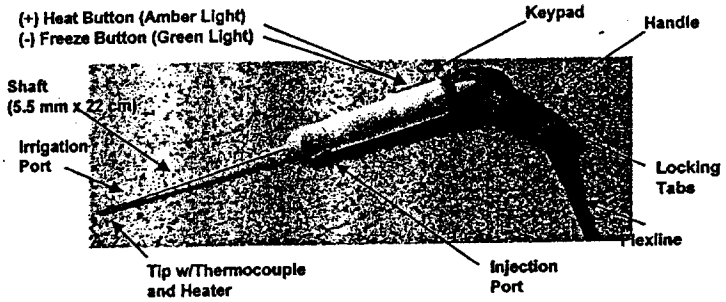
Her Option™ Console with Cryoprobe	CG-1

Cryoprobe with attached Control Unit



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Her Option™ Component Descriptions

The **Her Option™ Uterine Cryoblation Therapy™** consists of three components: The Console (which contains the compressor system, LCD display panel and microprocessor), the Cryoprobe, and the disposable Control Unit. **Her Option™ Uterine Cryoblation Therapy™** System cannot be operated without the Control Unit. The Cryoprobe with attached Control Unit is referred to as the Probe.

SYSTEM COMPONENTS

Her Option™ Uterine Cryoblation Therapy™ Console:

The Console plugs into a standard electrical outlet. The System controls and LCD display panel are mounted on the front of the Console. The Console has wheels that allow for easy portability and maneuverability. Brakes are also provided for Console stability. There is a storage compartment on the side of the Console that provides the Cryoprobe with protection and cleanliness during storage.

The **Her Option™** Console LCD display panel has the following indicators and controls:

Table IV: LCD Panel Indicators and Controls

Indicator/Control	Function
Green LED	Illuminates when the Main Power Switch* is on.
Power On/Off Button	Controls power for the system.
LCD Display Panel	Displays information relating to the status of the system.
LCD Display Panel Command Buttons (Left and Right)	Enters the corresponding commands which are displayed on the LCD display panel.
LCD Display Panel Toggle Buttons (Up and Down)	Moves cursor through menu items on the LCD display panel.

* The Main Power Switch is located on the rear panel of the console.

Her Option™ Cryoprobe:

The Cryoprobe has a handle, a shaft, and a Flexline, which connects the Cryoprobe to the compressor housed within the Console. The Cryoprobe is inserted into the disposable Control Unit and provides cooling of the tip through conductive heat transfer. Freezing is focused at the distal tip of the Control Unit which is 3.5 cm long. The Cryoprobe is insulated, ensuring that only the tip of the Control Unit Probe gets cold.

Her Option™ Control Unit:

The disposable Control Unit is provided sterile and is intended for single use only. The Control Unit is designed to fit over the Cryoprobe during use and incorporates the "Minus" or "Freeze" and "Plus" or "Heat" control buttons, a green/amber LED light indicator, a saline injection port, the heater and a thermocouple.

The "Minus" and "Plus" buttons are located on the Control Unit. These buttons control the freeze/standby and heat/standby functions, respectively. The Freeze button is on the left and is designated by a minus (-) sign. The Heat button is on the right and is designated by a (+) sign. The green/amber LED light indicates active freezing (green) and active heating (amber).

NOTE: To pause at any time during the freeze cycle, depress the Freeze (-) button again. While paused, the word "Standby" (indicating standby function) and the temperature are displayed on the screen, the timer is stopped, and the green indicator light is deactivated.

Depress the Freeze (-) button again to resume freezing. The screen will indicate "Freeze", the timer will resume counting, and the green light will illuminate.

The saline injection port is located on the posterior side of the nose cone of the Control Unit. The saline injection port is designed to allow the direct attachment of a 30 cc slip fit syringe and allow the user to instill saline through a small lumen in the Control Unit. For added flexibility, a sterile umbilical tube may be connected to the syringe and to the saline injection port.

A thermocouple and heater are incorporated into the tip of the Control Unit. The thermocouple registers the tip temperature and conveys the information to the LCD display panel. The heater is controlled by the Heat (+) button. It is activated when the Heat (+) button is depressed only if the registered tip temperature is below +37° C The heater automatically warms to and maintains a tip temperature of+37° C.

The Control Unit incorporates the following indicators and controls:

Table V: Control Unit Indicators and Controls

Indicator/Control	Function
Minus (-) Button	Initiates freezing. When depressed again during the freeze cycle, initiates pause.
Plus (+) Button	Initiates heating.
Green/Amber LED	Green light illuminates when freezing; amber light illuminates when heating.
Saline Injection Port	Connection point for 30 cc sterile syringe and injection of saline through the Control Unit tip.
Thermocouple	Registers and conveys tip temperature to display panel.
Heater	Activates when Heat (+) button is depressed. Delivers heat to tip of the disposable Control Unit.

System Classification:

According to IEC 601-1 the **Her Option™ Uterine Cryoblation Therapy™** is classified as follows:

- Type of protection against electrical shock – Class I equipment.
- Degree of protection against electrical shock – type BF.
- Degree of protection against ingress of foreign material – IPXO.
- Mode of operation – capable of continuous operation for up to 8 hours.
- Equipment not suitable for use in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide.

Gas Supply:

The **Her Option™ Uterine Cryoblation Therapy™** System is a closed cycle system, which comes fully charged and semi-hermetically sealed. The coolant or gas used is a proprietary blend of common gases, which are non-toxic, non-corrosive, non-flammable and non-CFC. Since the coolant is recirculated, replenishment is not necessary.

System Storage and Transport:

The **Her Option™ Uterine Cryoblation Therapy™** System may be safely stored and transported under the following conditions:

• Ambient Temperature Range:	–20° C (-4° F) to +60° C (140° F)
• Relative Humidity:	10% to 100% non-condensing
• Atmospheric Pressure	500 hPa to 1060 hPa. (375 mm Hg to 795 mm Hg)

NOTE: If system has been exposed to temperatures outside the range of 0° C (32° F) to +40° C (104° F) wait a minimum of 5 hours prior to operating the **Her Option™** System.

System Operational Conditions:

The **Her Option™ Uterine Cryoblation Therapy™** System may be safely operated under the following conditions:

• Ambient Temperature Range:	+10° C (50° F) to +35° C (95° F)
• Relative Humidity:	30% to 75% non-condensing
• Atmospheric Pressure	700 hPa to 1060 hPa. (525 mm Hg to 795 mm Hg)

Control Unit Storage and Transport:

The Control Unit (CU) may be safely stored and transported under the following conditions:

- Shipping Temperature Range: -20° C (-4° F) to +60° C (140° F)
- Storage Temperature Range: -15° C (5° F) to +35° C (95° F)
- Relative Humidity: 10% to 80% non-condensing
- Atmospheric Pressure 500 hPa to 1060 hPa. (375 mm Hg to 795 mm Hg)

Equipment Disposal:

The Her Option™ Uterine Cryoblation Therapy™ System contains electronic printed circuit assemblies, refrigerants and polyolester oil. Follow local governing ordinances and recycling plans regarding disposal or recycling of electronic components, refrigerants and oil.

Operation:

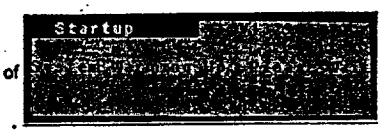
Preparation for Procedural Use:

NOTE: **This section is written for two people, a non-sterile assistant (Assistant) and a sterile-gloved physician (Physician). To ensure proper attachment of the sterile Control Unit, follow the steps below.**

1) (Assistant) Plug the Console into a grounded outlet 120V/60Hz. Turn the main power switch (located on the rear panel of the Console) to ON (|). The green LED on the front panel of the Console will illuminate.

2) (Assistant) Depress the power On/Off button on the front of the Console. During power-up the system will go through a series of internal checks and a warming-up of the compressor system. This will take approximately 3 minutes.

LCD Display Panel:



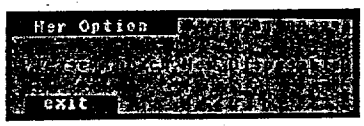
3) After self-test and warm-up, the LCD display panel will show the "her option™" logo and two choices, "Options" and "Start".

LCD Display Panel:

4) (Assistant) Select Start to begin the procedure.

5) The display panel directs the user to "Please Attach New Disposable" Her Option™ Control Unit.

LCD Display Panel:



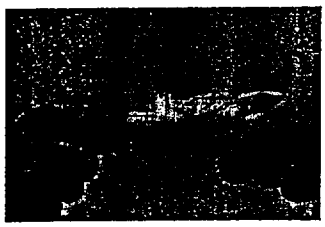
6) (Assistant) Open the Cryoprobe storage compartment located on the right side of the Console by gently, yet firmly pulling the side door open towards the front of the unit.

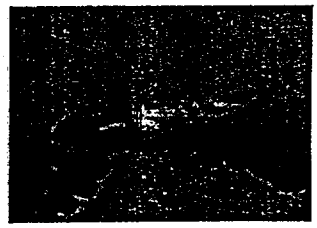
7) (Assistant): Gently remove the Cryoprobe from its storage position by pulling back and then up. **It is very important to wipe off the Cryoprobe tip if residual white paste is present.** This will ensure good electrical contact between the Control Unit and Cryoprobe handle.

8) (Assistant and Physician) Using sterile technique, remove the Control Unit from the tray.

9) (Physician) Slide the drape back over the Control Unit as shown below. Grasp the sterile Control Unit with the gray Keypad facing up. As the assistant holds the Cryoprobe handle, carefully insert the Control Unit onto the Cryoprobe (see picture below).

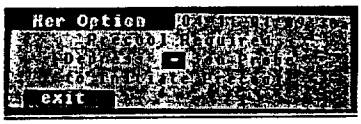
10) Using a slow steady motion gently push the Control Unit until the locking tabs are fully engaged into the Cryoprobe handle.





11) Once the system has recognized that a new sterile Control Unit is attached, the screen displays "PreCool Required, Depress (–) on Probe to Initiate PreCool".

LCD Display Panel:



12) (Assistant/Physician) Depress **Freeze** (-) button on the Control Unit Keypad (under the plastic drape) to initiate PreCool or **Exit** to return to the "Options and Start" screen.

13) **A PreCool Cycle must be performed immediately prior to use.** Once the Freeze (-) button is depressed on the Control Unit, the display will read "PreCool" and "PreCooling" will flash. The PreCool Cycle is a totally automated feature and can not be interrupted. This cycle will last approximately 3-5 minutes. The system will automatically end the PreCool freeze stage and turn on the heater.

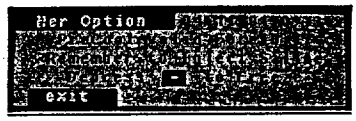
The heating portion of the PreCool Cycle ends when the heater automatically warms to 37°C.

NOTE: **This is the only time during system operation that activity will be initiated automatically.**

LCD Display Panel:

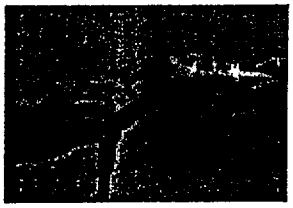
At this point, the PreCool Cycle is complete, and the Control Unit Probe is ready for use. The system will display "PreCool Valid For 11:00" minutes, "Remember to Inject Saline", "Depress (-) to Freeze".

LCD Display Panel:

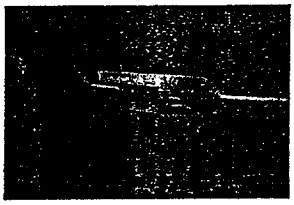


NOTE: **For maximum efficiency, begin the first uterine freeze within 11:00 minutes of the PreCool Cycle. The system will require a repeat PreCool Cycle if you exceed the 11:00 minute time limit.**

14) (Assistant): Grasp the two white tabs extending from the side of the Control Unit drape and gently draw the sterile drape over the Cryoprobe handle and Flexline.



15) (Physician): Attach the saline-filled 30 cc slip fit syringe to the injection port, or, if preferred, use an extension tube. Inject a small amount of saline (1 – 2cc's) to flush air from the Probe.



A Note About Operating Modes:

NOTE: **The Freeze/Heat cycle, function (Freeze, Heat or Standby), temperature and timer are displayed during all cycles. The timer is activated when either the Freeze (-) or Heat (+) button is depressed and restarts at "0" at the beginning of each Freeze or Heat cycle. The timer is stopped during Standby.**

NOTE: **The Freeze function is controlled using only the (-) button and Heat is controlled using only the (+) button on the Control Unit Keypad. The Standby functions can be controlled with both (+/-) when system is in the Freeze or Heat cycle.**

Patient Preparation:

For this procedure, the patient is usually placed in a dorsal lithotomy position; however, patient positioning is up to the physician's discretion. Administer appropriate anesthesia, and, if required, dilate the cervix to 6mm. For optimal image when using abdominal ultrasound guidance, the bladder should be full. Sound the uterus immediately prior to insertion of the Probe to determine maximum length to fundus. This information can be used to verify the insertion depth of the **Her Option™** Probe using the markings on the Probe.

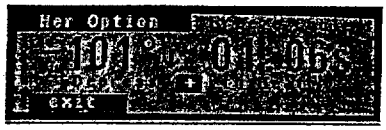
System Use:

1) Straighten the uterine cavity by grasping the cervix with a single tooth tenaculum placed on the anterior lip of the cervix and hold in place with gentle traction. Under ultrasound guidance in a near saggital plane, insert **Her Option™** Control Unit into the patient's uterus up to the fundus and angle toward the left or right cornu.
   - *Rotate the ultrasound transducer 90° to view the transverse plane and verify lateral placement in desired cornu. As observed in the training video, the tip of the Cryoprobe is easily visualized under ultrasound.*
   - *Ensure that the Probe is kept in the same horizontal plane as the uterus. It is important to maintain traction on the tenaculum and steady the Probe for approximately 2 minutes to ensure the Probe remains in contact with the fundus.*
   - *Perforation is unlikely yet possible. Use ultrasound to verify that the Cryoprobe tip is visualized within the uterine cavity.*

2) Instill 5-10 cc of saline into the uterus using the filled syringe which has been connected to the injection port on the Control Unit. The saline injection eliminates air pockets and ensures good thermal contact between the Probe and the tissue.

3) Depress the Freeze (-) button on the Control Unit to initiate freezing. A green light on the Control Unit indicates that freezing is occurring. An arrow pointing down next to the temperature indicates that the system is Freezing. The display panel will read "Freeze Cycle 1" and "Depress (+) to Heat". The system will make an audible beep at two minute intervals during the Freeze Cycle mode.

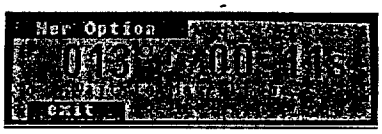
LCD Display Panel:



NOTE: **This Freeze Cycle should continue for four (4) minutes, or terminate the cycle earlier if ultrasound imaging indicates the CryoZone leading edge is approaching the serosal surface of the uterus.**

4) Termination of the Freeze Cycle is not automatic. Freezing is terminated when the Heat (+) button on the disposable Control Unit is depressed and when the system moves into the Heat Cycle. An amber light on the Control Unit indicates that heating is occurring, and the arrow on the display panel is pointing up. The display panel will read "Heat Cycle 1" and "Wait to Move Probe".

LCD Display Panel:



NOTE: **After 10 minutes have passed in the Freeze Cycle, the system will move to Standby. The Heat (+) button must be pressed to move to the Heat Cycle.**

5) Heating is automatically maintained and switched to the "Standby" function when the temperature reaches +37° C. The display panel will read "Standby" and "Depress (–) to Freeze". The system will remain in "Standby" awaiting the next uterine Freeze Cycle.

LCD Display Panel:

6) At the completion of Heat Cycle 1 inject 5-10 cc of room temperature normal saline and withdraw the Control Unit tip back into the endocervical canal. To ensure proper placement into the opposite lateral cornu, additional warm saline may be required.

NOTE: **Because the Control Unit tip adheres to the tissue during freezing, remove the Probe ONLY when the tip temperature has achieved 10° C.**

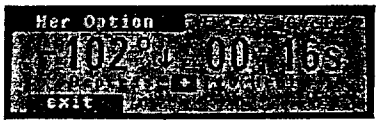
7) Using transverse ultrasound guidance, position the Control Unit Probe up to the fundus and angle toward the opposite cornu. **The probe should be visible next to the original CryoZone.**

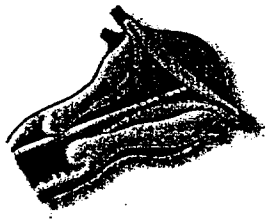
NOTE: **If the tip temperature registers less than 15°C for more than 10 seconds after positioning the Probe for the next Freeze, you may have placed the Control Unit Probe back into the channel of a previously formed iceball. The Control Unit Probe needs to be repositioned away from the original iceball. Check tip temperature again.**

8) Inject 5-10 cc of room temperature normal saline and depress the Freeze (-) button to initiate the next uterine Freeze Cycle. The display panel will read "Freeze Cycle 2" and "Depress (+) to Heat". The arrow will be in the down position and the Control unit LED will be green.

NOTE: **This Freeze Cycle should continue for six (6) minutes or be terminated earlier if ultrasound imaging indicates the CryoZone leading edge is approaching the serosal surface of the uterus.**

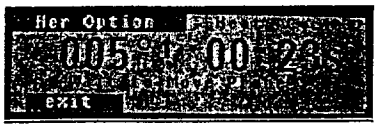
LCD Display Panel:



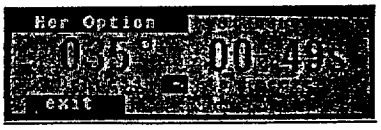


9) Freezing is terminated when the Heat (+) button on the Control Unit is depressed or when the 10 minute time limit has been reached. The amber light on the Control Unit and the arrow in the up position indicates heating is occurring. The display panel will read "Heat Cycle 2" and "Wait to Move Probe". Heat Cycle 2 ends when the display panel reads "Standby" and "Depress (-) to Freeze".

LCD Display Panel:

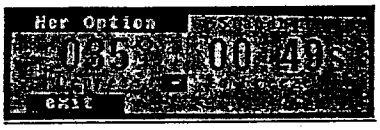


LCD Display Panel:



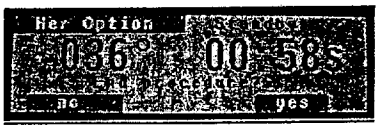
10) Heat Cycle 2 ends when the display panel reads "Standby" and "Depress (-) to Freeze".

LCD Display Panel:



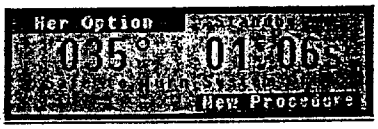
11) Upon completion of the procedure press Exit. The display panel will read "End procedure?". After removing the Probe, choose Yes to end the procedure.

LCD Display Panel:



12) When Yes is chosen to end the procedure, the display panel will read "Standby" and "Safe to Turn System Off". For a new procedure press New Procedure to return to the "Options" and "Start" screen.

LCD Display Panel:

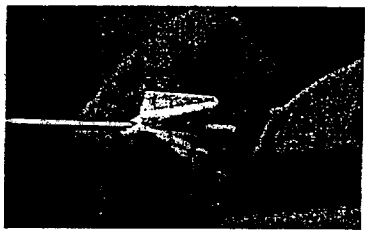


13)Turn the power switch on the front of the console to off.

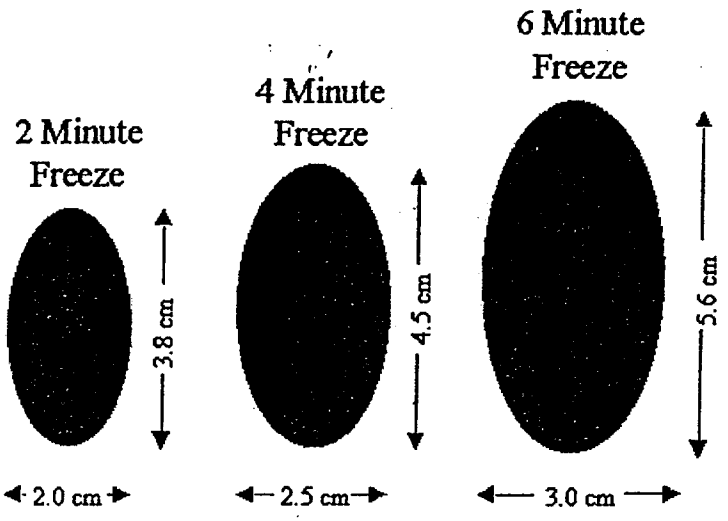
NOTE: ONCE THE PROCEDURE HAS ENDED, THE SYSTEM CANNOT BE RESTARTED USING THE SAME DISPOSABLE CONTROL UNIT.

NOTE: THE SYSTEM SHOULD BE TURNED OFF (BY DEPRESSING THE ON/OFF BUTTON) AFTER EACH PROCEDURE AND BETWEEN PROCEDURES.

4) An ungloved assistant should use 70% isopropyl alcohol to remove any residual paste from the surface of the Cyroprobe tip before feeding the Flexline back into the storage compartment and placing the Cryoprobe in the cradle. For full instructions on cleaning and disinfecting refer to "Sterilization and Cleaning" section of this manual.



CryoZone Dimensions:



*The representative CryoZone dimensions illustrated above were obtained during in-vitro testing in media which simulates tissue. Please note that the sizes above show the average CryoZone that can be expected in actual clinical use. Ultrasound does not provide an accurate size measurement, however, it does provide visualization of the CryoZone and the proximity of the leading edge to the serosal surface of the uterus.

System Options:

The "Options Menu" is displayed when Options is selected from the Options/Start Menu. The Options Menu displays "Device Set-Up", and "Procedure Log" selections. The Device Set-Up and Procedure Log menus are described below.

SETTING TIME AND DATE:

1) Select **Device Set-Up** from the Options menu using the **Up/Down** toggle buttons and the **select** command button.

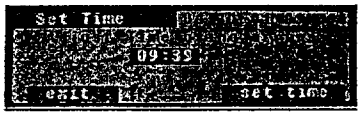
LCD Display Panel:

2) Use the **Up/Down** toggle buttons and the **select** command button to choose which parameter to set: "Time, Day, Month or Year".

LCD Display Panel:

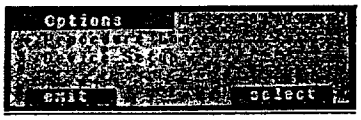
3) Use the **Up/Down** toggle buttons to scroll to the desired parameter. Be sure to enter time according to the military clock (0:00 to 24:00 hours). Select **set time** to save the time setting and return to the Device Set-Up Menu. Select the next parameter to set and repeat the above procedure. Continue in this manner until the device Time and Date are set.

LCD Display Panel:



4) Select **Exit** to return to the Options Menu. Exit again to return to the **Options/Start** menu or use the **Up/Down** toggle buttons to select Procedure Log.

LCD Display Panel:

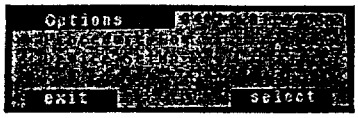


PROCEDURE LOG:

Each operation of each procedure is logged according to date and time. To view the Procedure Log:

1) Select **Procedure Log** from the Options Menu and depress **select**.

LCD Display Panel:



2) Use the **Up/Down** toggle buttons to scroll through the procedure logs by date and time.

LCD Display Panel:

3) Select **Exit** again to return to the Options/Start Menu.

LCD Display Panel:

Log Format:

The entries in the log are:

Date, Time, Operation, Elapsed Time, Process Param 1, Process Param 2

Where,

Date	• Is the date of the procedure expressed as mmddyy. Mm=month, dd=day, yy=year
Time	• Is the time of the procedure expressed as hhmm. Hh=hour (24hr format), mm=minute
Operation	• Is either PreCool, Freeze or Heat expressed as P#, F# or H#, respectively. The # represents the cycle within a given procedure. For example, the second Freeze in a procedure would be 'F2'.
Elapsed Time	• Is elapsed time of the operation expressed as mm.m. mm.m=minutes to the tenths of a minute.
Process Param 1	• Is the minimum temperature (°C) achieved in a PreCool or Freeze or is the GMC run-time (hrs) if the operation was Heat.
Process Param 2	• Is the maximum flow (slpm) achieved in a PreCool or Freeze or is the cumulative number of procedures if the operation was Heat.

Cleaning and Sterilization:

The **Her Option™** Disposable Control Unit is provided sterile. It is sterilized using Gamma Irradiation. **If there is any evidence of damage to, or tampering with the sterile package, do not use the Control Unit.** Do not attempt to reuse and/or re-sterilize the Control Unit.

The Cryoprobe shaft and handle should be cleaned and disinfected with 70% isopropyl alcohol. **Do not immerse any portion of the Cryoprobe in liquid.** After wiping the Cryoprobe with alcohol, route the Flexline into the storage compartment and place the Cryoprobe in the cradle of the storage compartment. The storage compartment door and lid should close easily. If resistance is met, gently pull the Flexline out and route it back into the storage compartment.

Trouble-Diagnosis:

The table below contains system error and warning messages, which might be encountered. This list is not exhaustive - please write down other error/warning messages.

For immediate assistance call technical support at 858-775-0858. For regular service or routine maintenance call CryoGen, Inc. toll-free at (888) 634-0444, press 1.

Error Message/Issue(s)	Possible Cause(s)	Solutions
Please Attach New Disposable	1) Control Unit not properly engaged 2) Probe tip was not cleaned of residual white paste prior to engaging the Control Unit. 3) Control Unit malfunction 4) Previously used Control Unit	1) Ensure Control Unit is fully engaged. 2) Remove Control Unit and wipe off a small amount of white paste from the very end of Probe tip using alcohol wipes. Note: Removing all the paste will generate warmer temperature and poorer outcomes. 3) Call CryoGen, Inc. for service. 4) Obtain new Control Unit.
Tip Heater Current Low	1) Control Unit not properly engaged 2) Control Unit malfunction 3) Console internal error	1) Ensure Control Unit is fully engaged. Note: If this occurs DURING a procedure, allow adequate time to heat the Probe tip before removing Probe. DO NOT remove Probe if resistance is felt. 2) Replace Control Unit. 3) Call CryoGen, Inc. for service.
Tip Heater Current High	1) Heater malfunction	1) Replace Control Unit Note: If this error occurs DURING a procedure, the system will not operate. Allow adequate time to heat the Probe tip before removing Probe. DO NOT remove Probe if resistance is felt. Call CryoGen, Inc. for service.
Cryoprobe timeout error or Cryoprobe data error	1) Control Unit not properly engaged 2) Control Unit malfunction 3) Console internal error	1) Ensure Control Unit is fully engaged. 2) Replace Control Unit. 3) Call CryoGen, Inc. for service.
GMC pressure below limit	1) Possible system leak 2) Faulty pressure sensor 3) System left in cold temperature ambient storage 4) System re-started rapidly following shutdown	1) Proceed with caution. Call CryoGen, Inc. for service. Please note that gas mixture used in Her Option ™ is non-toxic, non-corrosive, non-flammable and non-CFC. 2) Proceed with caution. Call CryoGen, Inc. for service. 3) Allow time to acclimate to room temperature. 4) Allow time for pressure equalization.

GMC pressure above limit	1) Faulty pressure sensor or compressor problem	1) Call CryoGen, Inc. for service.
Pump pressure low	1) Possible system leak	1) Proceed with caution. Call CryoGen, Inc. for service. Please note that gas mixture used in Her Option ™ is non-toxic, non-corrosive, non-flammable and non-CFC.
	2) Low gas pressure	2) Call CryoGen, Inc. for service.
	3) System left in cold temperature ambient storage	3) Allow time to acclimate to room temperature.
	4) System re-started rapidly following shutdown	4) Allow time for pressure equalization.
PCC pressure above limit	1) Ventilation holes obstructed	1) Remove obstruction.
	2) Cooling fan not operating or faulty pressure sensor	2) Call CryoGen, Inc. for service.
PCC Pressure below limit	1) System error	1) Call CryoGen, Inc. for service.
Flange heater current low	1) System warning	1) Proceed with caution. Call CryoGen, Inc. for service.
Dewar temp high	1) Control Unit malfunction (thermocouple problem)	1) Replace Control Unit. Call CryoGen, Inc. for service.
	2) Console internal error	2) Call CryoGen, Inc. for service.
Dewar temp below limit	1) Control Unit malfunction, (thermocouple problem)	1) Replace Control Unit.
	2) Dewar compromised	2) Call CryoGen, Inc. for service
Tip Temp High Check Disposable	1) Control Unit not properly engaged	1) Ensure there is no excess grease on the Cryoprobe tip and the Control Unit is fully engaged. Press Proceed to continue.
	2) Control Unit malfunction (thermocouple problem)	2) Replace Control Unit. Note: If this error occurs DURING a procedure, the system will not operate. Allow adequate time to heat the Probe tip before removing Probe. DO NOT remove Probe if resistance is felt.
	3) Console internal error	3) Call CryoGen, Inc. for service.
Temp sensor #2 off scale	1) Control Unit not properly engaged	1) Ensure there is no excess grease on the Cryoprobe tip and the Control Unit is fully engaged. Press Proceed to continue.
	2) Control Unit malfunction (thermocouple problem)	2) Replace Control Unit. Note: If this error occurs DURING a procedure, the system will not operate. Allow adequate time to heat the Probe tip before removing Probe. DO NOT remove Probe if resistance is felt.
	3) Console internal error	3) Call CryoGen, Inc. for service.
Complete system power shutdown	1) Power cord was accidentally unplugged.	1) Plug in power cord and turn system on. Follow system display messages and continue with procedure as necessary. Use tip heater or warm saline through the injection port to allow the removal of the Probe.
	2) Circuit breaker overloaded and tripped	2) Reset circuit breaker by depressing main power switch at rear of Console. If this is not successful, depress the two auxiliary circuit breaker reset buttons also located on the back of the console.

Warranty:

The **Her Option™ Uterine Cryoblation Therapy™** System is under warranty for a period of one (1) year after the purchase date. This warranty covers any service, repairs, or replacement due to manufacturing defects. It does not include damage incurred during use.

The sterile disposable Control Unit is not covered under this warranty. However, if there is a manufacturing defect in the sterile Control Unit, CryoGen will replace it. If there is any evidence that the sterile Control Unit has been reused, this offer is null and void.

Service:

If the **Her Option™ Uterine Cryoblation Therapy™** System is determined to be inoperable, please contact CryoGen's Customer Service Department toll-free at (888) 634-0444, ext. 1, for instructions for return of the device to CryoGen. The Customer Service Department will provide a Return Material Authorization number and instructions for cleaning and repackaging the Console for return to CryoGen for repair or service.

NOTE: Any device related incidents or problems, which are suspected to represent a safety issue should be reported Immediately to CryoGen's Customer Service Department Please follow appropriate FDA guidelines regarding completion of any related MedWatch (MDR) report.

Toll-free: (888) 634-0444, ext. 1

Maintenance:

Any maintenance to the system must be performed by CryoGen. Please do not attempt to service the system.

For Immediate Technical Support, Call: 858-775-0858

Manufactured by:

CryoGen, Inc.
11065 Sorrento Valley Court
San Diego, California 92121
(858) 450-6868
(858) 450-3187 Fax
www.cryogen-inc.com
Toll-free: (888) 634-0444, ext. 1

CryoGen

her option™
UTERINE CRYOBLATION THERAPY™

Caution: Federal (USA) law prohibits this device to sale by or on the order of a physician trained in gynecologic ultrasound

Instructions for Use / Package Insert

Device Description and Principle of Operation:

The HER OPTION™ Uterine Cryoblation Therapy™ System is a cryosurgical device with a gas cooled Cryoprobe. Its operation is based on the Joule-Thomson principle in which pressurized gas is expanded through a small orifice to produce cooling. The coolant or gas used in the system is a proprietary blend of commonly used coolants, which are non-toxic, non-corrosive, non-flammable and non-CFC.

The system is intended to destroy tissue during surgical procedures by the application of extreme cold at the distal tip of the Cryoprobe. A -20° C temperature is lethal to the tissue. The Cryozone ice front advances through the uterine tissue, rather than expanding within the endometrial cavity.

The HER OPTION™ System includes a Console, a Cryoprobe and a disposable Control Unit. A compressor housed in the Console is fully charged with coolant and hermetically sealed prior to shipping to ensure zero leakage. Activation of the System freeze cycle causes gas to exit the compressor and flow to the Probe where it expands to a low pressure across a small diameter orifice in the tip of the Probe. As a result, a rapid temperature drop occurs. This temperature drop is transferred to the tissue-contacting tip of the disposable Control Unit, causing freezing. Gas then returns back to the compressor and is re-circulated. Deactivation of the freeze cycle stops gas flow to the Probe, ending cooling. The disposable sterile HER OPTION™ Control Unit is sold separately.

Indications:

The HER OPTION™ Uterine Cryoblation Therapy™ System is a closed-cycle cryosurgical device intended to ablate the endometrial lining of the uterus in pre-menopausal women with menorrhagia or excessive bleeding due to benign causes for whom childbearing is complete.

raindications:

The device is contraindicated for use in:

- A patient who is pregnant or who desires to become pregnant in the future. *(Pregnancies following ablation can be dangerous for both mother and fetus).*
- A patient with a known or suspected endometrial carcinoma (uterine cancer) or premalignant change of the endometrium such as unresolved adenomatous hyperplasia.
- A patient with an active genital or urinary tract infection at the time of the procedure (e.g., cervicitis, vaginitis, endometritis, salpingitis or cystitis).
- A patient with active pelvic inflammatory disease (PID).
- A patient with an intrauterine device (IUD) currently in place.
- A patient with any anatomic or pathologic condition in which weakness of the myometrium could exist, such as history of previous classical cesarean sections or transmural myomectomy.

Warnings:

Failure to follow any instructions or to heed any warnings or precautions could result in serious patient injury.

General

- Although endometrial ablation with the HER OPTION™ Uterine Cryoblation Therapy™ System significantly decreases the likelihood of pregnancy, it is not a sterilization procedure. The patient should be advised of appropriate birth control methods.
- Endometrial ablation does not eliminate the potential for endometrial hyperplasia, or adenocarcinoma of the endometrium and may mask the physician's ability to detect or make a diagnosis of such pathology.

Technical

- Endometrial ablation procedures using the HER OPTION™ Uterine Cryoblation Therapy™ System should be performed only by medical professionals who have experience in performing procedures within the uterine cavity, such as IUD insertion or dilation and curettage (D&C) and who have adequate training and familiarity with use of the HER OPTION™ System.
- The sterile HER OPTION™ Control Unit is for single use only, do not attempt to re-sterilize or reuse.
- Use caution not to perforate the uterine wall when sounding the uterus or inserting the Cryoprobe. If a perforation is present, the procedure should be terminated immediately.
- There is the potential for thermal injury to adjacent organs if the CryoZone extends beyond the serosal surface of the uterus; therefore, it is necessary to visualize and monitor the growth of the CryoZone with ultrasound. The freeze cycle should be stopped if the leading edge of the CryoZone reaches the serosal surface.

*Below is a more detailed description of the Adverse Events reported above:

- **Pelvic Pain/Cramping** – Peri-operative cramping typically lasted a few hours and rarely continued beyond the first day following ablation. Some of the mild cramping was reported as resolved without medication. The use of non-steroidal anti-inflammatory drugs (NSAID's) was reported to typically manage the cramping and pain.
- **Nausea and Vomiting** – Nausea and vomiting was managed with medication.

Bladder Infection/Vaginal Infection – The infections were managed with oral antibiotics.

Other Events – Other Adverse Events reported which occurred in no greater than 1% of the patients treated with HerOption™ include: severe bleeding, difficulty recovering from anesthesia and pregnancy (1 patient).

Potential Adverse Events:

The following potential adverse events were not observed in clinical studies of the HER OPTION™ Uterine Cryoblation Therapy™ but could occur:

- Endometritis
- Difficulty with defecation or micturition
- Hematometra
- Thermal injury to adjacent tissue
- Hemorrhage
- Post ablation tubal sterilization syndrome

Clinical Study:

Purpose: The use of cryoablation in the treatment of menorrhagia from benign causes in pre-menopausal women was compared to REA to evaluate safety and effectiveness.

Study Endpoints: The primary effectiveness measure was a validated menstrual diary scoring system developed by Higham (Higham JM, O'Brien PMS, Shaw RW. Assessment of menstrual blood loss using a pictorial chart (Br J Obstet Gynaecol 1990;97:734-9). Patient success was defined as a reduction in menstrual flow at 1 year to a diary score of <75. Study success was defined as a statistical difference of less than 20% in patient success rates between Cryo and REA. Secondary endpoints included responses from a quality-of-life questionnaire. Safety evaluation was based on the adverse events reported during the study, including device-related complications. The type of anesthesia required to complete the procedure was also recorded.

Methods: A randomized (2:1), prospective study was conducted at 10 clinical sites which included 275 patients diagnosed with menorrhagia. Study subjects were required to meet the following key inclusion/exclusion criteria

Inclusion criteria:

- ✓ Premenopausal female, between 30 and 50 years of age, in good general health
- ✓ Documented history of excessive uterine bleeding and a completed pictorial blood assessment chart (PBAC) of >150 for at least one menstrual cycle
- ✓ Previously failed or refused traditional medical therapy, D&C and Depo-Provera
- ✓ Uterine sound measurement ≤ 10 cm
- ✓ Uterine volumetric measurement < 300 cc.
- ✓ Patient does not desire to maintain fertility

Exclusion criteria:

- ✓ Clotting defects or bleeding disorders
- ✓ Poor general health
- ✓ Patient below age 30 or above age 50
- ✓ Active pelvic inflammatory disease
- ✓ Abnormal pap smear within the previous year, unless appropriately evaluated
- ✓ History of gynecologic malignancy within the past 5 years
- ✓ Intramural myomas greater than 2 cm diameter
- ✓ Intrauterine polyps
- ✓ Pedunculated fibroids
- ✓ Septate uterus
- ✓ Previous endometrial ablation procedure or other uterine surgery in which thinning of the uterine musculature occurs
- ✓ Malignant pathology or hyperplasia within the previous six months, as documented by endometrial biopsy
- ✓ Pregnancy
- ✓ Women who desire to maintain fertility

Menstrual diary scores were collected pre-treatment and at 3, 6 and 12 months post-treatment. Patients were given Lupron 28 days prior to the cryoablation therapy.

Patient Population:

- 279 patients randomized, 193 to Cryo/86 to REA.(Intent to Treat Group)
  - ✓ 3 Cryo patients withdrew consent prior to treatment
  - ✓ 1 did not meet the Inclusion/Exclusion criteria
- 275 patients in Device Evaluation Group :189 Cryo/86 REA
  - ✓ 3 Cryo equipment malfunctions precluding initiation of treatment and crossover to REA
- 272 patients in Safety Evaluation Group: 186 Cryo/86 REA

Baseline characteristics between cryo and REA patients were compared and found to be statistically equivalent with regard to age, body mass index, gravidity, parity, full-term deliveries, previous Cesarean section, prevous D&C, previous tubal ligation, presence of fibroids or myomas, cavity sounding length, severe menstrual pain and cramping, severe PMS symptoms, medical therapy for menorrhagia, hematocrit and FSH. One

There were 9 patients enrolled in the study who underwent hysterectomy prior to the 12-month follow-up for the following reasons:

Table 3 - Hysterectomy

Reason for Hysterectomy	CRYO	REA
Cramping/PMS	1	
Cramping/bleeding	3	1
[illegible]ng	2	1
		1
	6	3

**6 of the hysterectomies were in women <40 years (4 Cryo/2REA) and 3 were > 40 years (2Cryo/1REA)*

Patient Selection:

Menorrhagia can be caused by a variety of underlying problems including, but not limited to, endometrial cancer, hormone imbalance, anovulation, drugs, myomas and polyps. Patients should be thoroughly evaluated to determine the cause of the menorrhagia prior to any treatment being initiated.

Patient Information:

Patients should be counseled regarding the risks, benefits and alternatives prior to the performance of this procedure. This counseling should include the need for post-procedure contraception where indicated. This procedure is not a sterilization procedure and subsequent pregnancies may be dangerous for the mother and fetus.

Vaginal discharge is possible following the procedure. This may last from a few days to a few weeks. Any unusual or foul smelling draining should be reported to the physician immediately.

Pre-Op Work Up:

The Pre-op work up should include: History and complete physical examination, including pelvic exam; Negative PAP smear and endometrial biopsy to rule out cervical or endometrial malignancy and pre-malignant changes to the uterus; Sonography, hysteroscopy, hystero-salpingography or any other indicated diagnostic test or procedure that might uncover a possible cause for menorrhagia within six months of performing the HER OPTION™ procedure.

Pre-Treatment Preparation of Patient:

It is recommended that the lining of the uterine cavity be thinned prior to HER OPTION™ Cryoblation Therapy™. Thinning can be accomplished by administering a GnRH agonist 21 – 28 days prior to the procedure or performing suction curretage immediately prior to the cryoblation procedure.

steroidal anti-inflammatory drug (NSAID) may be given to the patient one hour prior to the treatment and continued post-operatively as needed.

Clinical Use Checklist:

Prior to using HerOption™ for the first time, physicians should be trained and familiar with the following procedures and techniques:

- intrauterine gynecological procedures;
- recognizing the tip of the cryoprobe in the uterus and the CryoZone as it advances toward the serosa;
- placing the tip of the cryoprobe in the uterine cornu; and,
- confirming (via ultrasound) maintenance of the proper placement of the cryoprobe tip.

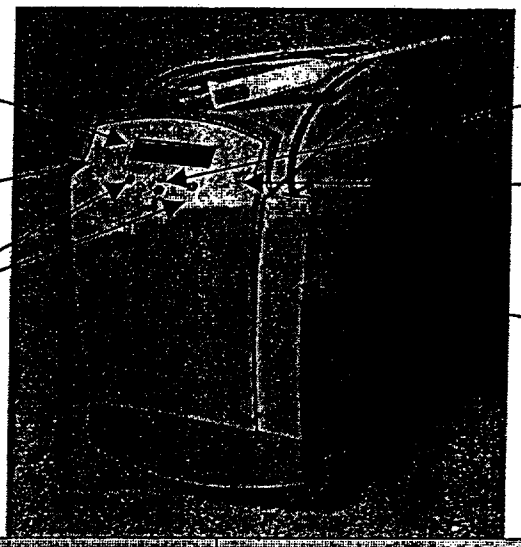
The physician, as well as adjunctive personnel, should review and be familiar with the HerOption™ training material (User's Manual, training video, Clinical Use protocol).

Power Source:

The power source is a compressor unit, which continuously supplies the pressurized gas or coolant mixture. The compressor has an operating pressure of 350 – 400psi. This is 2 to 9 times lower than the operating pressure of other cryosurgical devices. A pressure control feedback loop controls the stroke of the compressor and limits the pressure to less than 400 psi.

HER OPTION™ UTERINE CYOBLATION THERAPY™ SYSTEM

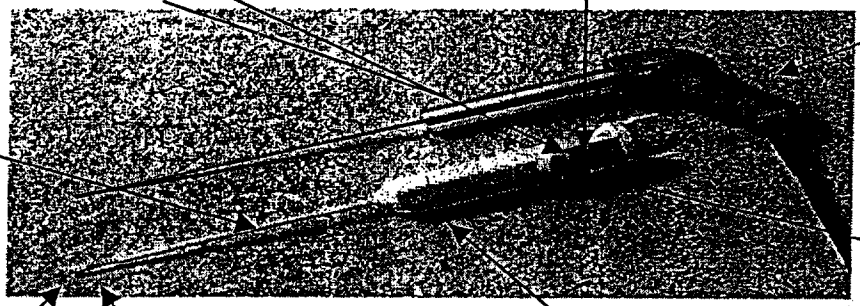
CONSOLE AND CRYOPROBE



ITEM	MODEL #
HER OPTION™ Console with Cryoprobe	CG-1

Supplied Separately:

CRYOPROBE AND CONTROL UNIT



ITEM	MODEL #
Sterile HER OPTION™ Disposable Control Unit (for Use with the HER OPTION™ Console Model CG-1).	CU-1

	To Physician:
See locking tabs.	Grasp the sterile Control Unit and gently push until the locking tabs are fully engaged with the Cryoprobe handle. If it is difficult or you are unable to attach the sterile Control Unit to the Cryoprobe handle DO NOT attempt to force the units together. Remove the sterile Control Unit from the Cryoprobe handle. Using 70% isopropyl alcohol dampened four by four, wipe all existing thermal conductive media (TCM), a white, petroleum-based substance, from the distal end of the Cryoprobe handle, then re-attempt connection of the sterile Control Unit and the Cryoprobe handle.
	To Assistant:
	Grasp the two tabs extending from the side of the Control Unit drape and gently draw the drape over the Cryoprobe handle and flexline.
	To Physician:
See Injection port.	Attach the saline-filled 50cc slip fit syringe to the injection port, or, if preferred, include a connection tube.
	To Assistant:
See On/Off.	Depress the power On/Off button on the front of the console. During power-up the system will go through a series of internal checks and a cycling of the compressor system. This will take approximately 10 seconds.
See LED Display.	Upon power-up the LCD display panel will show the "HER OPTION" logo and two choices, "Options" and "Start".
See Start.	Depress the Start button to begin the procedure.
See Display.	If a disposable Control Unit is not detected, or if it has been connected improperly, the display directs the user to "Please attach new disposable" HER OPTION Control Unit. Reattach the Control Unit. The system will automatically recognize proper attachment.
See LED Display.	Once the system has recognized that a new sterile Control Unit is attached, the screen displays "PreCool Required".
Depress Freeze (minus) button on disposable Control Unit	A PreCool must be performed immediately prior to use. To perform the PreCool, depress the Freeze (minus) button on the disposable Control Unit. The display will read "PreCool" and "precooling" will flash. The PreCool cycle will last approximately 3-5 minutes. The heater will start automatically once the temperature and flow rate has stabilized. The "PreCool" cycle ends when the heater automatically warms to and maintains 37°C.After the tip has warmed, the probe is ready for use. The system will display "PreCool Complete", "Remember to Inject Saline", "PreCool valid for 11:00 minutes. For maximum efficiency, begin the first uterine freeze within 11:00 minutes of the PreCool Cycle. The system will require a repeat PreCool Cycle if you exceed the 11:00 minute time limit. The Freeze/Heat cycle#, function (freeze, stand by, or heat), temperature and a timer are displayed during all cycles. The timer is activated when either the Freeze (minus) or Heat (plus) button is depressed and restarts at "0" at the beginning of each Freeze and Heat cycle. The timer is in stasis during a Pause. Freeze and Pause functions are controlled using only the (minus) button and Heat and Standby are controlled using only the (plus) button on the Control Unit.
Physician Actions	To Physician:
Assess cervical diameter ***Fill bladder if necessary*** ***Place single-tooth tenaculum on anterior cervical lip.***	If required, dilate the cervix to 6mm. For optimal image when using abdominal ultrasound guidance, the bladder should be full to ensure adequate ultrasound imaging. Use a single-tooth tenaculum on the anterior cervical lip for traction and ease of use in placement of the Control Unit. Sound the uterus. The HER OPTON™ DCU has sound demarcations along the Cryoprobe shaft.
Position ultrasound transducer ***Insert HER OPTION Control Unit*** ***Verify placement with transverse plane ultrasound image.***	Using ultrasound guidance in a saggital plane, position the Control Unit probe into the patient's uterus at an angle up to the fundus and toward the left or right cornu. Rotate the ultrasound transducer 90° to view the transverse plane and verify lateral placement toward desired cornu.
Inject 5-10cc saline	Inject 5-10cc of saline into the uterus using the filled 50cc syringe, which has been connected to the injection port on the Control Unit. The saline injection eliminates air pockets and ensures good thermal contact between the probe and the tissue.
Depress Freeze (minus) button ***View Cryozone growth via ultrasound*** ***View temperature decline on Control Panel***	Depress the Freeze (minus) button on the Control Unit to initiate freezing. A green light on the Control Unit indicates that freezing is occurring and the display panel will read "Freeze Cycle 1", and a down-arrow will be displayed. This freeze should continue for four (4) minutes, or terminate the cycle earlier if ultrasound imaging indicates the CryoZone leading edge is approaching the serosal surface of the uterus.