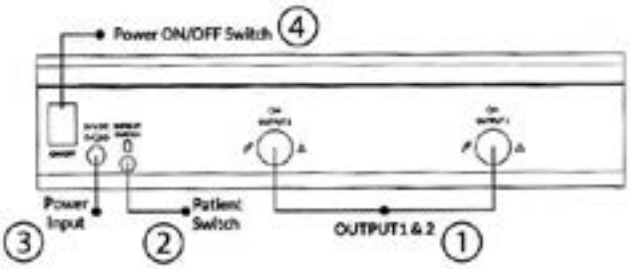
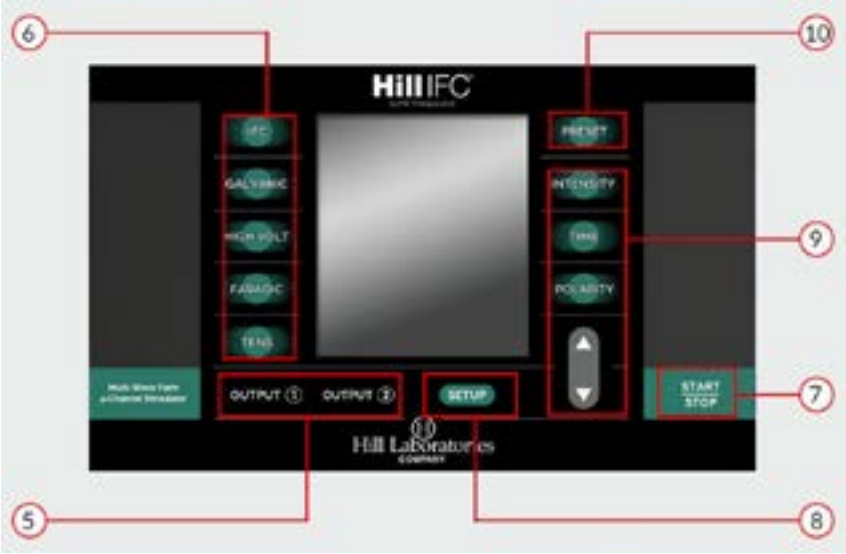
Hill IFC

NEXT GENERATION

4-Channel Multi-Wavelength Interferential Unit

Hill Laboratories
Since 1945





The front panel of HILL IFC have the following functions which are explained as follows.

1. Output Socket: Used to give the output for the treatment with the help of lead wire.
2. Patient Switch: - There is a patient emergency stop switch which is connected to the device via cable to turn off the device immediately by patient. When the Patient pressed the Emergency Stop Button, the device will pause all stimulations (all started treatments) without any delay. The resume of treatments can be done only through main user interface –it means that paused treatments cannot be resumed by Patient Switch, again you have to start the treatment by tap on the start/stop option.
3. Power Input: It is used to connect the line cord into the grounded wall outlet.
4. Rocker Switch: - To start (ON) the device press the rocker switch.
5. Output 1 and 2 Icon: This Icon is used to select the output channel 1&2 or channel3&4. The backlight indication will provide info about selected channels (output).
6. Mode Selection Icon –This option is used to select the treatment modes as per requirement: IFT (IFC), TENS, GALVANIC, HIGH VOLTAGE, FARADIC.
7. Start/Stop Icon: Start/Stop icon on the panel is provided to start or stop a particular treatment.
8. Setup Icon –Used to select or enter the following parameters of treatment: Cyclic ON, Cyclic OFF, Ramp Up/Down, Frequency, Low Beat Frequency; High Beat Frequency, Pulse Width.
9. Time/Intensity/Polarity/ Increment / Decrement(Up/Down) Selection Icon: This icon is used for setup the treatment time/Intensity/Polarity and increasing or decreasing the following parameters: Time, Cyclic ON, Cyclic Off, Ramp Up/Down, Frequency, Low Beat Frequency, High Beat Frequency, Pulse Width, preset Protocols, Time, Intensity.
10. Preset : - This icon is used for selecting preset treatments.

Note:

1. No Load Detection: At no load user will not be able to increase the intensity above 5% but this is not applicable to High voltage Pulse Current Treatment Mode.
2. Output Switching: In order to switch between two outputs, Select Output on Panel.
3. Screen Lock: After 60 sec of inactivity, screen gets locked. To unlock, Long tap on any Icon for 3 seconds.

Accessories

AC Cord 3 Pin 10A, Qty.1 | Adaptor 24V DC, 2.5Amp, Qty.1 | Electrode Self Adhesive, Qty.8 | Patient Switch cable, Qty.1 | Lead Wire 5pin 4 core, Qty.2

Preparing for Treatment

Unpack Self Adhesive Electrode and Lead Wires. | Connect Self Adhesive Electrode to Lead Wires. | Connect lead wire to the device. | Place the self adhesive electrode on the treatment area.

Technical Specifications

Mode	Sub-Mode	Waveform	Voltage (max)
IFC	Quadripolar, Premod, Russian	Sine wave	70Vpp
Galvanic	Continuous, Interrupted	Monophasic Rectangular Pulses	0-16V 0-35V
HIGH VOLT	Continuous, Pulsed Current	Monophasic Pulses	500Vpp
Faradic	Rectangular, Triangular	Monophasic Triangular & Rectangular Pulses	70Vpp
TENS	Conventional, Burst, Modulation	Asymmetrical Biphasic Wave	80Vpp

IFC Presets:

- P01 Acute pain
- P02 Chronic pain
- P03 Edema 1 (1-30 Hz)
- P04 Edema 2 (1-10Hz)
- P05 Nerve Block
- P06 Custom

Precautionary Instructions

The precautionary instructions found in this section and throughout this manual are indicated by specific symbols. Understand these symbols and their definitions before operating this equipment. The definitions of these symbols are as follows:

CAUTION - Text with a "CAUTION" indicator will explain possible Safety infractions that could have the potential to cause minor to moderate injury or damage to equipment.

WARNING - Text with a "WARNING" indicator will explain possible Safety infractions that will potentially cause serious injury and equipment damage.

DANGER - Text with a "DANGER" indicator will explain possible safety infractions that are imminently hazardous situations that would result in death or serious injury.

NO SITTING – Text with a" NO SITTING" indicator will explain possible safety instructions that will potentially cause serious injury and equipment damage.

NO STEPPING ON SURFACE - Text with a **"NO STEPPING ON SURFACE"** indicator will explain possible safety infractions that will cause equipment damage.

NOTE: Throughout this manual "NOTE" may be found. These NOTES are helpful information to aid in the particular area or function being described.

NOMENCLATURE: The following are the symbols used in manual and sticker:

Hardware symbols:

Type B	IEC 60601 Medical Electrical Equipment Class TYPE BF
Electrical TYPE Class II Symbol	Output Indication
DC Input Symbol	Output 2 Lead Wires
Output 1 Lead Wires	

CONTENTS

1. INSTRUCTION FOR THE USER

Please read this instruction manual carefully before using HILL IFC because it is unsafe to start using the device before reading the whole manual. The instruction on the following pages will show you how to use and care for your HILL IFC in a general manner. You should be particularly familiar with the prescription and information precautions before proceeding.

Purpose of This Manual

This manual contains important information regarding the safe and effective operation of your HILL IFC. Your HILL IFC is an electrical device that can provide years of useful service with the proper care and maintenance, as described in this manual.

1.1 CAUTION

- This device must be used only under the continued supervision of a physician or licensed practitioner in the state he/she practices.
- DO NOT operate this unit in an environment where other devices are being used that intentionally radiates electromagnetic energy in an unshielded manner.
- DO NOT use sharp objects such as pencil point or ballpoint pen to operate the buttons on the touch screen.
- This unit should be operated in temperature between +10°C to +40°C, transported and stored in temperature between -30°C to +60°C, with relative humidity ranges from 10% to 95%.
- The HILL IFC system is not designated to prevent the ingress of water liquids. Ingress of water
  or liquids could cause malfunction of internal components of the system and therefore create a risk of injury to the patient.

1.2 Warnings

- The long-term effects of chronic electrical stimulation are unknown.
- Stimulation should not be applied over the carotid sinus nerves, particular in patient with known sensitivity to the carotid sinus reflex.
- The electrode should not be applied over the neck or mouth, or anywhere else on the head. If stimulation is applied over the neck or mouth especially, severe spasm of the laryngeal and pharyngeal muscle may occur and the contraction may be strong enough to close the airway or cause difficulty in breathing.
- Stimulation should not be applied transthoracially in that the introduction of electrical current into the heart may cause cardiac arrhythmias.
- Stimulation should not be applied over swollen, infected, or inflamed areas or skin eruption, e.g. phlebitis, thrombophlebitis, varicose veins, etc.
- Stimulation should not be applied over, or in proximity to, cancerous lesion.

1.3 Precautions

- Safety of the HILL IFC for use during pregnancy has not been established.
- Caution should be used for patient with suspected or diagnosed heart problems.
- Caution should be used for patients with suspected or diagnosed epilepsy.

- Caution should be used in presence of following:
- When there is a tendency of hemorrhage following acute trauma or fracture following recent surgical procedures when muscle contraction may disrupt the healing process
- Over the menstruating or pregnant uterus
- Over area of the skin which lack normal sensation. Some patients may experience skin irritation or hypersensitivity due to the electrical stimulation or electrical conductive medium. The irritation can usually be reduced by using an alternate conductive medium or alternate electrode placement.
- Stimulation settings should be based on the guidance of the prescribing practitioner. Electrode placement should be based on the guidance of the prescribing physician.
- HILL IFC should be kept out of the reach of children. The HILL IFC should be used only with the electrode cables and electrodes recommended for use by the manufacturer.
- The HILL IFC should not be used while driving, operating machinery or during any activity in which Involuntary muscle contraction may put the user at undue risk of injury.
- Ensure the intensity is adjusted slowly and smoothly and not increased beyond the patient's tolerance.
- While treatment Do not lift electrodes off the skin without the intensity being turned down to zero first.
- Also be aware of the skin's resistance as this may suddenly drop causing the intensity to increase.

1.4 Adverse Reactions

Skin irritation and bums beneath the electrodes have been reported with use of this device.

1.5 Conditions

That affect Use The user needs electric outlet near the treatment area.

- The unit should not be used in wet environment.
- Patient should not move while the treatment is ON, this may cause electrodes to leave the skin or electrode cables may break.

1.6 Contraindicated conditions

It is contraindicated to apply therapeutic ultrasound to patients with any of the following conditions:

1. Pregnancy
2. Cardiac pacemaker
3. Skin diseases

1.7 Contraindicated Areas

It is contraindicated to apply to any of the following areas:

1. To the eye
2. To the ear
3. Over a carotid sinus
4. To the heart

2. Introduction

HILL IFC is an electrotherapy device that provides multi-waveform which is tailored for precise pain-relief and rehabilitation needs of the patients with most comfortable electrical stimulation.

The device offers series of standard protocols:

- IFC (Interferential Traditional),
- IFC Pre modulated,
- Russian,
- Galvanic (DC and Interrupted),
- High-voltage pulsed current (HVPC) (Pulse ,Continuous).
- Faradic (Rectangular, Triangular)
- TENS (Conventional, Burst, and Modulation) and

Whose parameters can be adjusted before the treatment and during the treatment.

HILL IFC device which has touchscreen for user- interface with two outputs (4 channels) of electrical stimulation (ESTIM). The clinician can provide two different treatments simultaneously through the two outputs.

The device also has 8 predefined Protocols (PRESETS):

- Edema,
- Deconditioning,
- Chronic Pain,
- Acute Pain,
- Wound Healing,
- Endurance,
- Nerve block and
- Muscle Re-education.

2.1 Intended Use

A) Interferential current stimulation, Pre modulated Bipolar Mode, and Faradic stimulation mode is indicated for:

1. Symptomatic relief and management of chronic (long term) intractable pain.
2. Adjunctive treatment in the management of post-traumatic and postsurgical acute pain condition.

B) EMS (Russian and galvanic interrupted) is indicated for:

1. Relaxation of Muscle spasm.
2. Prevention or Retardation of disuse atrophy.
3. Increasing local blood circulation.
4. Muscle re-education.
5. Immediate post-surgical stimulation of calf muscles to prevent venous thrombosis
6. Maintaining or increasing range of motion.

c) Galvanic-DC Continuous mode is indicated for:

1. Pain associated with trauma or resulting from medical conditions
2. Swelling, Edema, Inflammation, Muscle tension and Nerve pain

3. ACCESSORIES

The device comes with the necessary components as shown below:

S. No.	Particular	Quantity
1	User Manual	1
2	Quick Reference Guide (QRF)	1
3	Adapter 24VDC 2.5A with AC Cord	1
4	Packs of 2"x 2" electrodes (4 per pack)	5
5	Stimulation Wires	2
6	Power Cord	1
7	Patient Safety Cable	1

4. SPECIFICATIONS

4.1 General Specification

Length	:	12" / 300mm
Width	:	6.75" / 170mm
Height	:	3" / 75mm
Net Weight	:	4 pounds / Approx. 1.90 Kg.
Power Input	:	220/110AC, 50/60Hz
Electrical Class	:	CLASS IIa
Operating Temperatures	:	Between +10°C to +40°C
Storage Temperatures	:	Between -30°C to +60°C

4.2 Technical Specification

HILL IFC Predefined IFC Treatments

- **IFC (Interferential) Traditional (4 Pole) P1 –Specifications.**
  a. Beat Frequency:80 -150 Hz (fmin=80Hz, fmax=150Hz);
  • Sweep Low Beat Frequency: 80 Hz (fmin=80Hz);
  • Sweep High Beat Frequency: 150 Hz (fmax=80Hz);
  b. All other parameters as well as the waveforms are the same as they are defined for general IFC.

- **IFC (Interferential) Traditional (4 Pole) P2 –Specification**
  a. Beat Frequency:1 -50 Hz (fmin=1Hz, fmax=50Hz);
  • Sweep Low Beat Frequency: 1 Hz (fmin=1Hz);
  • Sweep High Beat Frequency:50 Hz (fmax=50Hz);
  b. All other parameters as well as the waveforms are the same as they are defined for general IFC

- **IFC (Interferential) Traditional (4 Pole) P3 –Specification**
  a. Beat Frequency:0 -10 Hz (fmin=0Hz, fmax=10Hz);
  • Sweep Low Beat Frequency: 0 Hz (fmin=0Hz);
  • Sweep High Beat Frequency: 10 Hz (fmax=10Hz);
  b. All other parameters as well as the waveforms are the same as they are defined for general IFC.

- **IFC (Interferential) Traditional (4 Pole) P4 –Specification**
  a. Beat Frequency:1 -150 Hz (fmin=1Hz, fmax=150Hz);
  • Sweep Low Beat Frequency: 1 Hz (fmin=1Hz);
  • Sweep High Beat Frequency: 150 Hz (fmax=150Hz);
  b. All other parameters as well as the waveforms are the same as they are defined for general IFC.

- **IFC (Interferential) Traditional (4 Pole) P5 –Specification**
  a. Beat Frequency:1 -250 Hz (fmin=1Hz, fmax=250Hz);
  • Sweep Low Beat Frequency: 1 Hz (fmin=1Hz);
  • Sweep High Beat Frequency: 250 Hz (fmax=250Hz);
  b. All other parameters as well as the waveforms are the same as they are defined for general IFC.

- **IFC (Interferential) Traditional (4 Pole) P6 CUSTOM –**
  Specification a. Beat Frequency:0 -250 Hz (fmin=0 -250 Hz, fmax=0 -250 Hz); • Sweep Low Beat Frequency: 0 -250 Hz (fmin=0 -250 Hz); • Sweep High Beat Frequency: 0 -250 Hz(fmax=0 -250 Hz);
  • System should contain protection that Low Beat Freq (fmin) must be lower than High Beat Freq (fmax); Once 06 is selected, tap SETUP and change Low Frequency with arrows; tap SETUP again and change High Frequency with arrows. Tap START.
  b. All other parameters as well as the waveforms are the same as they are defined for general IFC.

- **IFC Premodulated Specification**
  a) Waveform: Step Sine Wave;
  b) Topology: ESTIM CV (Constant Voltage);
  c) Configuration:2P (it is working in 4P, please consider comment);
  d) Available on Channel(s): 1&2 or 3&4 (all four pads must be used)
  e) Carrier Frequency: 4000 Hz;
  f) Beat Frequency: 1 -250 Hz (Fixed)
  g) Sweep Rate: 1Hz/200msec;
  h) Cycle ON Time: 1 –30 Sec;
  i) Cycle Off Time: 0 –30 Sec (0 for continuous);
  j) Ramp up/down time: 2/2 Sec (cannot be changed);
  k) Intensity: 0 –70Vpp @ 500Ω Resistive load;

- **IFC Russian Specification**
  a) Waveform: Step Sine Wave;
  b) Topology: ESTIM CV (Constant Voltage);
  c) Configuration: 2P (it is working in 4P, please consider comment);
  d) Available on Channel(s):1&2 or 3&4;
  e) Carrier Frequency: 2500 Hz sine wave frequency modulated by a 2550 Hz fixed frequency sine wave of equal amplitudes;

f) Cycle ON Time:1 –30 Sec;
g) Cycle Off Time:0 –30 Sec (0 for continuous);
h) Ramp up/down time: 2/2 Sec (cannot be changed);
i) Intensity: 0 –70Vpp @ 500 Resistive load;

4.3 TENS

- **TENS Conventional**

TENS Conventional protocol is performed through one ESTIM channel (two electrodes). This protocol can be started on single channel (channel #1 or channel #2) or on both channels simultaneously.

Specification

a) Waveform: Symmetrical Biphasic Square wave;
b) Topology: ESTIM CV (Constant Voltage);
c) Configuration:2P (it is working in 4P, please consider comment);
d) Available on Channels: 1&2, 3&4;
e) Frequency:1–150 Hz;
f) Pulse Width:50–400 µsec;
    a. Step 50 µsec;
g) Cycle ON Time:1 –30 Sec;
h) Cycle OFF Time:0 –30 Sec (0 for continuous mode);
i) Ramp up/down time: 2/2 Sec (cannot be changed);
j) Intensity: 0 –80Vpp @ 500Ω Resistive load;

- **TENS Burst**

- Waveform: Symmetrical Biphasic Square wave;
- Topology: ESTIM CV (Constant Voltage);
- Configuration:2P (it is working in 4P, please consider comment);
- Available on Channels: 1&2, 3&4;
- Frequency:1–150 Hz;
- Pulse Width:50–400 µsec;
    - Step 50 µsec;
- Burst rate:7 Pulses per Burst in 14 slots (7 ON / 7 OFF);
- Cycle ON Time:1 –30 Sec;
- Cycle OFF Time:0 –30 Sec (0 for continuous mode);
- Ramp up/down time: 2/2 Sec (cannot be changed);
- Intensity: 0 –80Vpp @ 500Ω Resistive load;

- **TENS Modulation**

- Waveform: Symmetrical Biphasic Square wave;
- Topology: ESTIM CV (Constant Voltage);
- Configuration:2P (it is working in 4P, please consider comment);
- Available on Channels: 1&2, 3&4;
- Frequency:1–150 Hz;
- Pulse Width:50 –400µsec;o Step 50 µsec;
- Modulation: Pulse width (PW) modulation;
- Modulation Period: total 4sec; 2 Seconds for changing Pulse Width from 100% of PW to PW-40% of PW (60% of PW) and 2 seconds for return back to 100% of PW;
- Cycle ON Time:1 –30 Sec;
- Cycle OFF Time:0 –30 Sec (0 for continuous mode);
- Ramp up/down time: 2/2 Sec (cannot be changed);
- Intensity: 0 –80Vpp @ 500Ω Resistive load;

4.4 Galvanic

- **Galvanic–Continuous DC**

- Waveform: Constant value;
- Topology: ESTIM CV (Constant Voltage);
- Configuration:2P (it is working in 4P, please consider comment);
- Available on Channels: 1&2, 3&4;
- Polarity Reversal: On or Off;
  With Polarity Change On, polarity will change every 5 minutes;
- Cycle ON Time: 1 –30 Sec;
- Cycle OFF Time:0 –30 Sec (0 for continuous mode);
- Ramp up/down time: 2/2 Sec (cannot be changed);
- Intensity: 0 –16Vpp @ 500Ω Resistive ohm load;

- **Galvanic –Interrupted DC**

- Waveform: Constant value;
- Topology: ESTIM CV (Constant Voltage);
- Configuration: 2P (it is working in 4P, please consider comment);
- Available on Channels: 1&2, 3&4;
- Pulse ON Period: 2msec (fixed);
- Frequency: 1Hz (fixed);
- Polarity Reversal: On or Off;
- Cycle ON Time:1 –30 Sec;
- Cycle OFF Time:0 –30 Sec (0 for continuous mode);
- Ramp up/down time: 2/2 Sec (cannot be changed);
- Intensity: 0 –16Vpp @ 500Ω Resistive ohm load when PW#2msec;
  17–35Vpp @ 500Ω Resistive ohm load when PW#1msec;
- Intensity: 0-100%

4.5 Faradic Current(Rectangular)

- Waveform: Monophasic Rectangular Pulses;
- Topology: ESTIM CV (Constant Voltage);
- Configuration: 2P (it is working in 4P, please consider comment);
- Available on Channels: 1&2, 3&4;
- Pulse width: 0.1 –1 msec (selectable);Step:0.1 msec;
- Frequency: 30 –70 Hz (selectable); Step:1Hz;
- Polarity Reversal: On or Off;
- Cycle ON Time: 1 –30 Sec;
- Cycle OFF Time: 0 –30 Sec (0 for continuous mode);
- Ramp up/down time: 1 –9 Sec (selectable);
- Intensity: 0 –35Vpp @ 500 Resistive ohm load;

4.6 Faradic Current (Triangular)

- Waveform: Monophasic Triangular Pulses;
- Topology: ESTIM CV (Constant Voltage);
- Configuration: 2P;
- Available on Channels: 1&2, 3&4;
- Pulse width: 0.1 – 5 msec (selectable);
  - Step: 0.1 msec;

- Frequency: 5 – 60 Hz (selectable);
  - Step: 1Hz;
- Polarity Reversal: On or Off;
- Cycle ON Time: 1 – 30 Sec;
- Cycle OFF Time: 0 – 30 Sec (0 for continuous mode);
- Ramp up/down time: 1 – 9 Sec (selectable);
- Output Voltage: 0 – 14Vpp @ 500 Resistive ohm load;
- Intensity: 0-100%

4.7 High Voltage Pulsed Current (HVPC)

- Waveform: Two monophasic pulses on the distance of ~70usec;
- Topology: HVPC;
- Configuration: 2P (it is working in 4P, please consider comment);
- Available on Channels: 1&2, 3&4;
- Polarity: Positive or Negative
- Frequency: 10 -120 pps;
- Sweep: Continuous, 80/120 pps, 1/120 pps, 1/10 pps;
  Fixed period of 4sec when there is no selected Continuous Mode;
- Cycle ON Time: 1 –30 Sec;
- Cycle OFF Time: 0 –30 Sec (0 for continuous mode);
- Ramp up/down time: 0.5 Sec, 1 Sec, 2 Sec, 5 Sec;
- Intensity: 500Vpeak@ 500Ω Resistive ohm load;

4.8 DEVICE TREATMENT MODE

1. The device supported below treatment modes:

- IFC have three sub wave form:
    a. (Interferential Traditional),
    b. IFC Premodulated
    c. Russian
- Galvanic have two sub wave form:
    a. DC
    b. Interrupted
- Faradic have two sub wave form:
    a. Rectangular
    b. Triangular
- TENS have three sub wave form:
    a. Conventional,
    b. Burst,
    c. Modulation and
- High-voltage pulsed current (HVPC) have two sub wave form:
    a. Continuous
    b. Pulse

Note: The above parameters can be adjusted before or in between the treatment.

2. This device also supports 8 predefined protocols (PRESETS) as mentioned below:

Preset	Protocol Name	Current/Waveform
P1	Oedema	High voltage Pulsed Current
P2	Deconditioning	Biphasic Square Wave
P3	Chronic Pain	Premodulated sine wave.
P4	Acute Pain	Interferential (IFT)
P5	Wound Healing	High voltage Pulsed Current
P6	Endurance	Biphasic Square wave.
P7	Nerve Block	Faradic Current
P8	Muscle Re-education	IFT (Russian)

Note: The above parameters are predefined and can be selected through Preset mode.

5. DEVICE OPERATION MODE

5.1 PREPARING ELECTRODES:

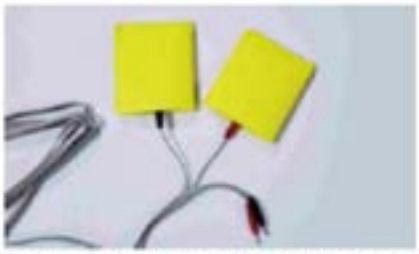
- Use only the electrode cables and electrodes provided with the device by manufacturer.
- Make sure that the entire surface of the electrode is in firm contact with the skin.
- Prepare the skin prior to electrode application. Cleaning of skin shall eliminate any impairment to current conduction on the patient's skin such as an oily or dry surface, or excessive hair coverage. Shaving may be necessary depending upon the density of hair coverage.
- Failure to provide for maximum current conduction efficiency could result in skin irritation relating to increase in current density at electrode site.
- We strongly recommend careful maintenance of the electrodes. This includes the maintenance of electrode cable and the electrodes. Worn cables and/or poor electrodes (or wrong sized electrodes) can have a significant impact upon treatment results.

5.2 INSTRUCTION FOR USE CARBON ELECTRODE

Un-pack Carbon Electrode, Lead Wires & electrode pads. Connect the lead wires in the electrodes.

Soak the electrode pads in water & then rinse out the excess water.

Insert the electrodes in the electrode pads.



Use Electrode with electrode pad for treatment.

5.3 PREREQUISITES:

- Electrodes should never be placed in such a manner as to produce current flow through the cardiac area. The patient should be suitably positioned ensuring maximum comfort and suitable exposure of the body part to be treated.
- Carefully mark the points where electrodes are to be placed and place the electrodes accordingly.
- The electrodes should be applied to the marked points.
- The patient should be explained about the subjective sensory motor feeling that he/she will experience. The patient should experience a sensation of deep, sufficiently strong but pleasant vibrations at rhythmical frequencies and a pleasant tingling sensation.
- Patient should immediately inform the therapist, of any unpleasant sensation or any other discomfort.
- Review prerequisites, contraindications and adverse reactions listed above before starting the device.

5.4 PREPARING THE SKIN

Before applying electrodes, ensure that the areas selected for electrode placement are cleaned properly and the skin is clear and free of surface debris.

6. How to Operate Device

6.1 PLUG IN THE DEVICE

Connect the line cord to the back side of the device. Plug the line cord into the grounded wall outlet that has 110 or 220VAC/50,60Hz. Your supply must match the voltage requirements. Do not connect the HILL IFC to a power supply rated differently than described above.

6.2 Device ON

You can ON the device with the help of rocker switch which is located on the back side of the device.

6.3 Audio Indication

There is audio indication provided through buzzer, which beeps on below respective condition.

- Key pressed sound - The single “beep” effect
- Error sound –Repeated 2 times beep;
- Treatment time timeout indication – Long beep

6.4 Visual Indication

There is visual indication provided through LED, which blink or stable which is described below

- Blinking: Active state, It can be changed by user.
- Stable: Inactive state or selected state, the displayed information shows the user selected choice.
- All LEDs Blinking: It states that Error has generated.

6.5 DEVICE OPERATION RUN TIME

Default value of treatment time is 10 minutes for all standard treatments but user can change the time duration from 5 minutes to 60 minutes with the help of increment option. The increment (step) in process of setup the treatment time is 5 minute.

6.6 DEVICE INTENSITY

The strength of stimulation will be controlled by Intensity. The Intensity can be adjusted during a treatment or when the treatment is paused. You can adjust the intensity from 1 to 100 with the help of increment option.

Note:

1. Polarity can be change (Either positive/negative) before start the treatment, during the treatment user cannot change the polarity.

6.7 MODE AND TREATMENT SELECTION

• Turn switch to “ON” in the back of the unit

• Attach the electrode pads to the patient

• Hand Patient Shutoff Switch to the patient

• Select Quadpolar by tapping IFC.

Use arrows to select from P01 - P06.

When flashing, tap to select.

IFC Presets:

- P01 Acute pain
- P02 Chronic pain
- P03 Edema 1 (1-30 Hz)
- P04 Edema 2 (1-10Hz)
- P05 Nerve Block
- P06 Custom

• Touch Start/Stop

• Time and intensity will be blinking

- Time is set at 10 minutes. To change, tap “Time” and use the arrows: then tap “Time” again to lock in.
- Intensity will blink. Tap “Intensity” and use the arrows to increase intensity to patient’s comfort. Tap “Intensity” again to lock in.
- Time and intensity can be changed while the unit is running.

To stop the treatment

- Hold the Start/Stop button for 2 to 3 seconds

To use both outputs

- Once Output 1 has been set, press and hold Output 2
- Repeat treatment selection as you did with Output 1. You may choose a completely different treatment mode and time.
- Once both modes are running, you may toggle between modes by pressing the desired output button.

Press Output 1-- time and intensity will be shown, then press Output 2 to see its settings.

To stop both outputs

- You must stop one at a time. Hold the Start/Stop for 2 to 3 seconds to stop the output that is presently selected. Now select the other output and hold the Start/Stop button again for 2 to 3 seconds.

If the unit is turned off using the patient switch, both outputs will be stopped at the same time.

- In any of the treatment (IFC, Galvanic, High Volt, Faradic and TENS,), user can change the intensity and time by tap on the Up/down arrow icon on the panel and then press the start icon.

6.8 How to go back to the treatment:

To go back to the any treatment mode long tap on the start/stop button.

7. Turning off the device

- Press the rocker switch to Switch OFF the device.

NOTE: A surge protector is also strongly recommended to protect the device when in use.

8. TROUBLESHOOTING

Observation	Possible Cause	Remedy
Weak stimulation or No stimulation even at maximum intensity setting	Poor electrode contact	Check the electrodes
	Electrode conduction is low or lead wire is worn out	Change electrodes. Change electrode wires.
Uncomfortable stimulation or too strong stimulation	Lack of conductive gel	Pause the stimulation, put more conductive gel and reposition the electrodes on the treatment area. Then restart treatment.
Skin irritation at electrode placement site	Improper contact/gel fried up	Wet or change the electrode
Sudden high intensity while increasing intensity level	Increasing too fast	Increase slowly giving time to patient to his comfort

9. MAINTENANCE

9.1 Cleaning the device

- The device has to be always turned off by means of the main switch when cleaning. The mains power switch has to be in OFF (“0”) position.

- Device must be cleaned thoroughly prior to usage to remove visible soil. To clean the device, use a soft cloth slightly moistened with water. Never use agents containing alcohol, chlorine, ammonia, acetone, benzene or thinners.

- Clean the touch screen gently by using a dry soft cloth. The cloth may be slightly moistened with a commercially available screen cleaner. Never apply the cleaner directly to the screen! Never use abrasive materials; the surface of the device or accessories could get damaged.

- Always turn the device off before disinfecting the lead wires. Disinfectants must not reach the air vents.
- Clean the lead wires after each use with disinfectants approved for use in medical environments. Do not use agents containing chlorine or those with a high alcohol content (more than 20%).
- Use a soft cloth slightly moistened with disinfectant. After disinfection, the accessories must be rinsed with a soft cloth slightly moistened with clean water so as to prevent an undesired allergic reaction!
- The device's accessories are designed for non-invasive use; therefore, they do not need to be sterile and cannot be sterilized

9.2 Cleaning the accessories

Electrode Cables:

- For routine cleaning of the electrode cables use soap and water and thoroughly dry them after cleaning.
- Electrode wires should be kept loosely winded or breakage may occur.
- Inspection of ultrasound head for cracks, which may allow the ingress of conductive gel, if found cracked then it should be replaced by new one.

9.3 Care for Electrodes:

- Use the electrodes recommended by the manufacturer and obey the instructions attached to the electrodes.
- Do not use electrodes on multiple user's / patients. Each patient should have its own electrode pack.
- Do not immerse electrodes in any liquids.
- Store the electrodes in a re-sealable pouch or plastic bag.
- If electrodes get soiled or lose their adhesion; it is advised that you replace them.
- After using any of these electrodes, grasp the corner of the electrode and gently remove it from your skin.
- Do not pull on the electrode snap or wire connection. Reapply the release liner to the adhesive side of the electrode. Store the electrode in a re-sealable pouch or plastic bag'.

10. Routine Maintenance

10.1 Overview

- Before any maintenance, switch the device off and unplug it from the mains! Observe all safety principles. Never dismantle the device and its accessories during cleaning!

- Do not repair the device. All servicing must be carried out by an authorized Hill Laboratories service center. Only original parts can be used for repair; otherwise Hill bears no responsibility for further operation of the device.

- Before contacting your authorized Hill service center, please get ready the device model number, serial number and a detailed description of the issue you have encountered.

11. SUGGESTED ELECTRODE PLACEMENT CHART

Caution: The device should only be operated under supervision of a registered medical practitioner. Electrode placements shown in this library are only for reference purposes. Actual electrode placement may be vary according to pain or patient's condition

For Interferential

For TENS

12. WARRANTY

This product warranty extends to the original consumer/ purchaser of the product.

12.1 WARRANTY COVERAGE

- This product is warranted to be free from defects in materials and workmanship for a period of one (1) year. This warranty ceases if the product has been damaged by accident, in shipment, unreasonable use, misuse, neglect, improper service, repair by unauthorized personnel or cause not arising out of defect in materials or workmanship. This warranty does not extend to any units which are used in violation of the guidelines set forth in this manual, or to units which have been altered or modified, or to damage to products or parts which have had the serial number removed, altered or defaced or rendered illegible.

12.2 WARRANTY DISCLAIMERS

- This warranty is in lieu of all warranties expressed or implied and no representative or person is authorized to assume for manufacturer any other liable in connection with the sale of our products. There shall be no claims for defects or failure of performance or product failure/ any theory of tort, contract or commercial law including, but not limited in negligence, gross

negligence, and strict liability, breach of warranty and breach of contract. Some states do not allow the exclusion or limitation of implied warranties or consequential damages, so the above limitations may not apply to you. Manufacturer is not responsible or liable for indirect special or consequential damages arising out of or in connection with the use/performance of the product or other damage with respect to loss of property or loss revenues or profit.

12.3 LEGAL REMEDIES

- This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

12.4 WARRANTY PERFORMANCE

- During the above one-year warranty period, a product with a defect will be repaired or replaced with a reconditioned comparable unit at distributor's option when the product is returned to the distributor. The repaired or replacement product will be in warranty for the balance of the one-year warranty period and an additional one-month period. No charge will be made for such repair or replacement.

12.5 CUSTOMER SERVICE

- For in-warranty service, no charge is made for service and return postage. Please return the product packed with sufficient protection, postage insurance and prepaid to:

  Hill Laboratories, 3 N. Bacton Hill Road, Frazer, PA 19355. You must include a statement of the problem along with your name, address, phone number and email address.

12.6 Warranty Period

- 12-months standard warranty

12.7 OUT OF WARRANTY SERVICE

- There will be charges rendered for repairs made to the product after the expiration of the one (1) year warranty period. For repairs, call 1-877-445-5020 or email Barb@HillLabs.com. Please include your serial number. You will receive an email response with instructions for sending your unit to the Service Center.

Visit HillLabs.com/shop to see our other great theapy products!

1-877-445-5020 • 3 N. Bacton Hill Road, Frazer, PA 19355