

USER MANUAL



—Please read instructions before use!

WARNING:

BEFORE USING, UNIT MUST BE FILLED WITH **DISTILLED WATER**. SERIOUS DAMAGE WILL OCCUR, AND WARRANTY WILL BE VOID IF THIS PROCESS IS NOT STRICTLY ADHERED TO IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS !

I. PRODUCT SPECIFICATIONS

The Nd:YAG Laser Tattoo Removal System consists of a light-routing system, a power-supply system, a computer controlling system, and a cooling system. The light-routing system is located in the HAND PIECE / GUN, but the power-supply, controlling and cooling system are located in the main box housing of the machine.

PRIMARY TECHNICAL PARAMETERS:

Laser model: Q-switched Nd:YAG Laser (**HR-EX50**)

Laser wavelength: 1064/532 nm

Pulse energy: 1- 50mj

Pulse width: 8ns

Repetition frequency: 1, 2, 3,4,5, Hz

Cooling method: inner circulation water cooling

Power supply: AC110V± 10%, 50~60Hz; 230V±10%, 50~60Hz

Watts: 300

PRIMARY PHYSICAL PARAMETERS:

Dimensions: 370x275x245mm³

Total weight: 18kg

WARNING:

The LASER HAND-PIECE / GUN is **EXTREMELY FRAGILE !**
Dropping and/or sudden impact will cause serious DAMAGE !!!



WARNING: Contained in this USER MANUAL, is a PRACTICE SECTION for the HR-EX50 Q-SWITCH YAG LASER. If you have not read this section, you ARE NOT ready to use the FOOT PEDAL / FIRE LASER SHOTS.

PARTS and their FUNCTIONS:

- 1. RED EMERGENCY BUTTON (FRONT-END) :** IN CASE OF EMERGENCY, immediately press the EMERGENCY BUTTON. The UNIT will instantly POWER-OFF. To RE-SET the EMERGENCY BUTTON, simply turn CLOCKWISE (indicated by ARROWS) until you feel the spring engage the BUTTON into its outer position.
- 2. MAIN POWER SUPPLY SWITCH:** Located at the REAR of the UNIT; it is also **RED** in COLOR and will light up when moved into the UP / ON POSITION.
- 3. METAL SECURITY KEY SWITCH:** This is the FRONT-END power supply SWITCH.
- 4. STAND-BY MODE BUTTON:** Pressing this BUTTON puts the system into STAND-BY MODE.
- 5. FREQUENCY KEY :** Pressing repeatedly sets the UNIT between a frequency of 1~6Hz.
- 6. ENERGY LEVEL KEY:** This is used to adjust the energy higher or lower. Increasing or decreasing ENERGY , “+” or “-” The setting will default at 20mj .
- 7. MENU :** This is used to TOGGLE thru the PRESETS, and make adjustments.

II . Environmental Requirements for Normal Working Conditions

1. Temperature: 5°C-30°C
2. Relative humidity: ≤70%
3. Pressure: 860-1060hPa
4. Power supply: AC110V± 10%, 50~60Hz; 230V±10%, 50~60Hz

Working-Mode Rest Interval: Regardless of whether you are using the UNIT in interval or continuous working-mode, it is recommended to pause for 5 minutes after each continuous output of 5000 pulses. *

How this works with the WATER COOLING SYSTEM: Letting the COOLING WATER circulate thru the machine while the power is ON (but not using the GUN) will help the WATER to cool down. This will affect how well the water can cool down the UNIT once the laser operation has been resumed.

* It is also recommended that, shortly after the unit reaches 5000 PULSES, the water is changed.

III. POWER SUPPLY SPECIFICATIONS

- POWER SUPPLY: AC AC110V \pm 10%, 50~60Hz; 230V \pm 10%, 50~60Hz
- POWER CONNECTION: AC

1. SAFETY FUSE SOCKET: The correct safety fuse should be installed into the power supply socket. The SAFETY FUSE (6A/ ϕ 5 x20) is used to protect the circuitry in the event of a power over-load.

2. POWER INPUT RECEPTOR: The machine should be connected to a power supply using the provided AC POWER CORD.

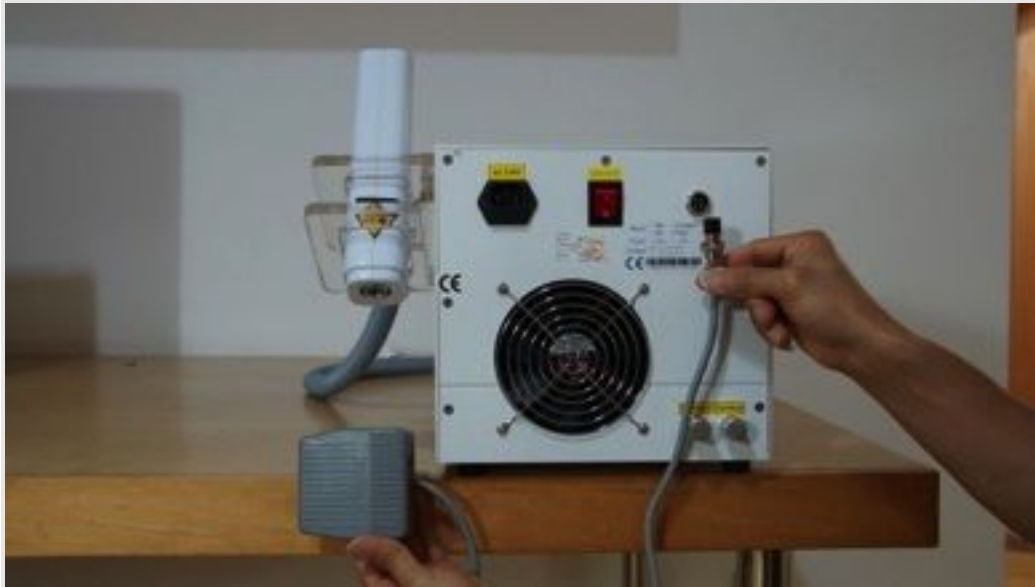
IV. INSTALLATION

WARNING: Machine performance will be compromised if not installed and used according to manufacturer's instructions. DANGER of laser radiation and electrical shock are possible. Power Source (AC WALL CURRENT) should be installed--and performing--according to the above requirements. Use only a qualified electrician to perform your external electrical routing and safety check. This will insure that the proper power current is available for your LASER SYSTEM.

1) The Nd:Yag Laser System has an AC POWER CORD RECEPTOR on the REAR of the UNIT.



2) FOOT-PEDAL SWITCH: Plug the FOOT-PEDAL into its RECEPTOR at the REAR of UNIT. This plug includes a SAFETY LOCK-SCREW which should be tightened securely.





4) Remove protective plastic from LCD MENU SCREEN.

5) Attach HAND-PIECE / GUN holster on RIGHT SIDE of UNIT.



ALWAYS

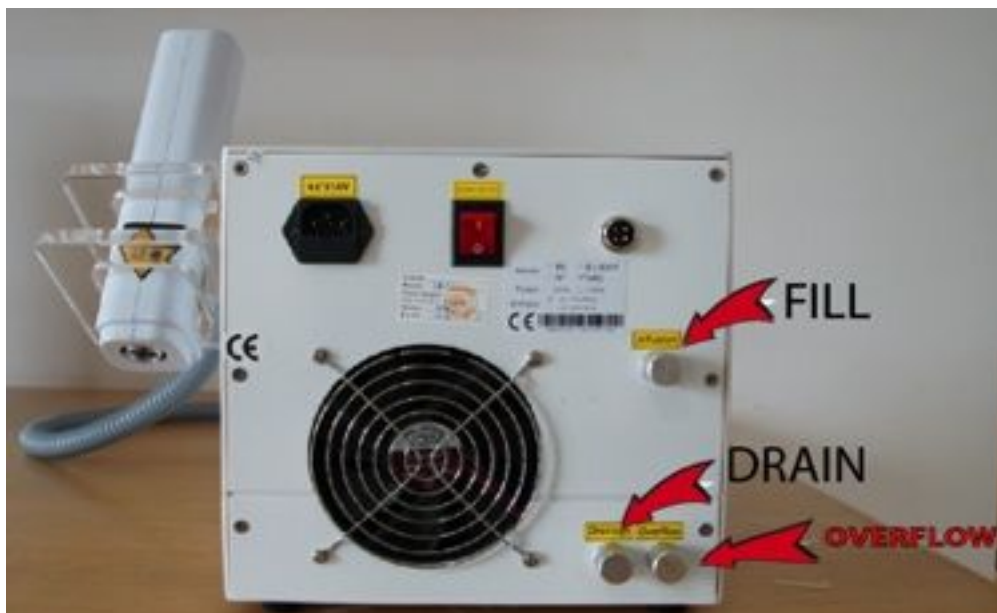
(BEFORE OPERATION)

MAKE SURE the WATER TANK IS FILLED

FILLING THE UNIT WITH WATER

FILL UNIT with **DISTILLED WATER** (DO NOT USE TAP WATER or BOTTLED DRINKING WATER as these contain sediments, minerals and other impurities that can damage the cooling system.)

There are **3 WATER CAPS** on the REAR of the UNIT.



1) FILL CAP

The FILL CAP is used for ADDING WATER to the unit. This is easily done by screwing the FUNNEL / PLASTIC TUBE onto the FILL CAP. Water can then be added, however . . .



(BEFORE filling the UNIT with water, remove the AC POWER CORD from RECEPTOR, and place a small container under the OVERFLOW CAP so that the excess water can be emptied from the UNIT and disposed of properly.)

When adding water, remove the **FILL CAP** and the **OVERFLOW CAP**.

2) OVERFLOW CAP

. . . removing the OVERFLOW CAP before the FILL PROCESS allows you to monitor how much water has entered the UNIT's WATER TANK. When water spills thru the OVERFLOW CAP, the tank is full, and BOTH the FILL CAP and OVERFLOW CAP can then be screwed back into place. (Allow the OVERFLOW WATER to drain before replacing the OVERFLOW CAP)



LET OVER-FLOW WATER DRAIN . . . then . . .

Replace all CAPS



WATER-FILL PROCESS COMPLETE !

3) DRAIN CAP

Periodically, (after 5000 LASER PULSE SHOTS) you should completely drain the water, and refill with fresh water. The DRAIN CAP is used for this process. After draining all the water content, refill the water as explained above.



WARNING:

HAND-PIECE (GUN) OPERATION:

DO NOT attempt to activate the HAND-PIECE until you are familiar with the basics of the treatment process. The entire unit should be fully configured (including the attachment of the appropriate HAND-PIECE HEAD / GUN TIP) and all of the safety guidelines--such as use of PROTECTIVE EYEWEAR--should be studied thoroughly before activating the FOOT-PEDAL and the hand-held FIRING MECHANISM !

It is highly recommended that--whether or not you are an expert with laser devices, FIRST, test / practice on ordinary PRINTED PAPER with various samples of the color spectrum BEFORE aiming and firing the laser light toward actual skin. This will help you to safely gauge the size of the laser shots, practice your targeting skills, and become familiar with the various factors such as FREQUENCY, ENERGY, and DISTANCE from TARGET / skin, as it pertains to this specific laser. It will also help you to become familiar with the feel of this specific FOOT PEDAL and how much pressure is needed to activate a LASER SHOT.

NEVER aim the HAND-GUN PIECE at sensitive body parts--especially the EYES. Always follow this safety guideline, whether or not the system is in STAND-BY MODE or POWERED-DOWN.

CONSIDER YOUR “LINE OF SIGHT “:

Visualize an invisible LINE OF SIGHT from the GUN TIP to wherever it is positioned--AT ALL TIMES ! Any miss-fire of the laser device has a potential of hitting these objects in the LINE OF SIGHT !



ATTACHING GUN TIPS to the HAND-PIECE / GUN.

WARNING: NEVER attempt to replace the TREATMENT HEADS when the system is connected to a power supply. ALWAYS DISCONNECT the AC POWER CORD from the power source AND the UNIT. This will make accidental laser outputs or electrical shock impossible.

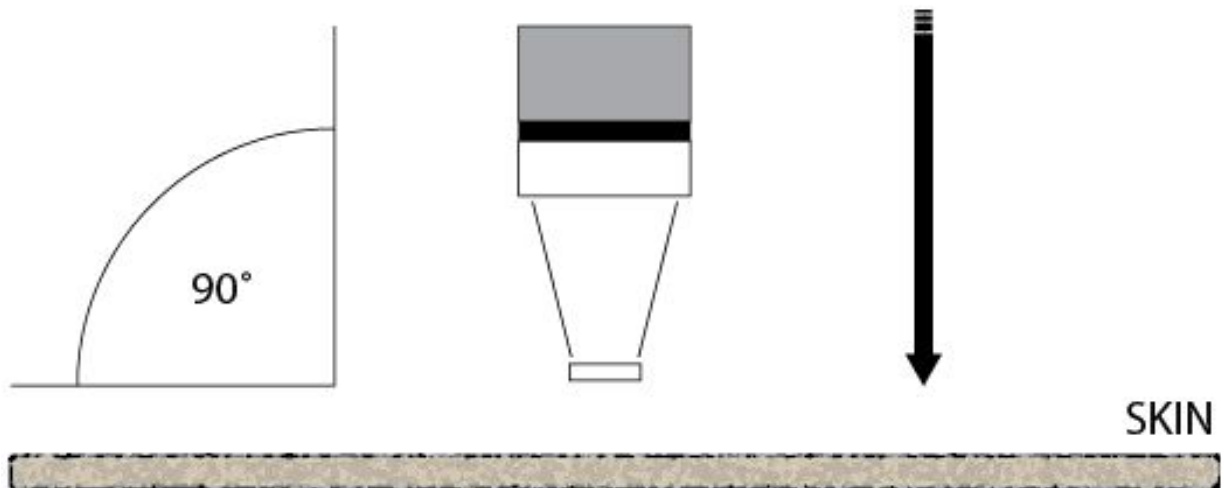
This is easily done by carefully SCREWING either of the GUN TIPS onto the HAND-PIECE / GUN.

By DEFAULT, start by attaching the **V1064nm** to the HAND-PIECE. This is because the **V1064nm GUN TIP** is used to remove BLUE & BLACK PIGMENT which are the first colors to treat in general protocol.

PRACTICE USING THE V1064nm on PRINTED PAPER containing artwork with BLACK INK--as well as other colors to compare outcomes.

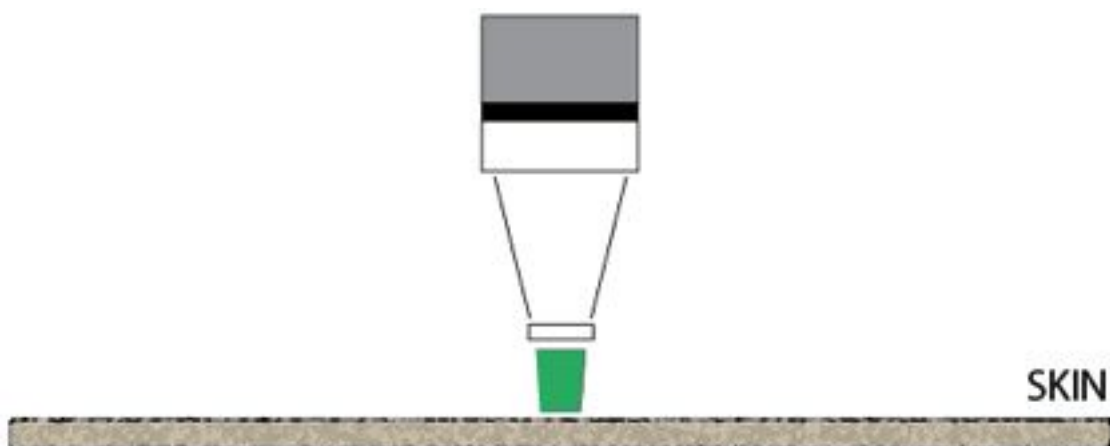
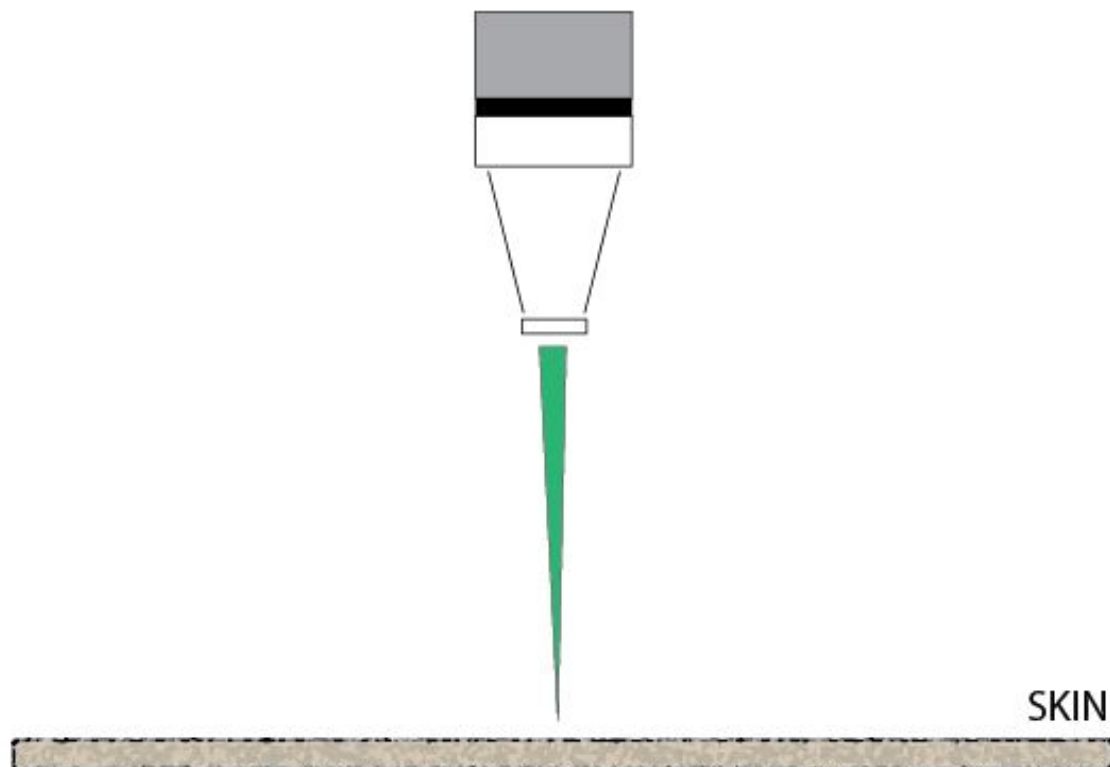
GUN TIP ANGLE IN RELATION TO TREATMENT AREA

The proper GUN TIP ANGLE is 90 degrees to the TARGET area.



GUN TIP DISTANCE IN RELATION TO TREATMENT AREA

Varying the distance of the GUN TIP from TARGET will change the focal point diameter. This is useful when doing smaller or larger areas. **NOTE:** Distances greater than around 4 fingers maximum or 1 finger minimum will diffuse the laser beam rendering poor or no results.



USE OF V532 GUN TIP (POWER-HEAD):



Carefully unscrew the **1064nm GUN TIP** and store in a location where it will not be dropped or knocked-over.

Carefully **SCREW** the **V532nm GUN TIP** onto the **HAND PIECE RECEPTOR** until it is firmly screwed into place.



GETTING STARTED

Begin by familiarizing yourself with the POWER-UP and BOOT-UP process for the SYSTEM:

POWERING-UP:

Attach the AC POWER PLUG to the the RECEPTOR located at the REAR of the UNIT. Connect the opposite end to an AC POWER SUPPLY.

BEFORE TURNING THE POWER ON:

Make sure that the **RED** EMERGENCY SHUT-OFF BUTTON (located at the FRONT of the UNIT) is positioned in the OUT / SPRING-LOADED POSITION.

MAIN POWER-SWICH

On the **REAR** of the UNIT, you will find a **LARGE POWER SWITCH**. (ALSO **RED** in COLOR)

- 1) This is the MAIN POWER SWITCH. Moving this SWITCH into the UP / ON POSITION will run power to the system so that it is now ready for the BOOT-UP SEQUENCE.

SECURITY SWITCH



2) INSERT the METAL SECURITY KEY into the SECURITY LOCK / SWITCH located at the FRONT of the UNIT.

3) Turn the **SECURITY KEY** (clockwise 1/4 TURN). The UNIT will begin the **BOOT-UP** process.

DURING the BOOT-UP SEQUENCE . . .

At this time, the water pump activates, and the SYSTEM begins the BOOT-UP SEQUENCE. You will see the following MENU SCREEN:



AFTER the SYSTEM HAS BOOTED-UP

When the BOOT-UP PROCESS is complete, the system automatically enters into STAND-BY MODE. You will see the following choices on your LCD MENU SCREEN:

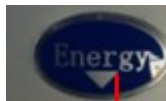


The STAND-BY MODE is used for safely setting the TREATMENT PARAMETERS, such as FREQUENCY, ENERGY LEVEL. In STAND-BY MODE the HAND-GUN PIECE WILL NOT FIRE.

IN STAND-BY MODE you can now . . .



4. ADJUST the SELECTION KEYS:



ENERGY REGULATION KEY

Press this key, to control energy (+ add / - subtract).

(When you hear BEEP, the setting is saved.)



FREQUENCY KEY

Press this key, to control frequency (+ add / - subtract).

(When you hear BEEP, the setting is saved.)



MENU KEY

Pressing the MENU KEY repeatedly allows you to TOGGLE between 6 PRESETS (0 - 5).

HOLD the MENU KEY for 10 seconds (or until you hear BEEP). PRESS the



FUNCTION KEY
to SAVE /
ESCAPE.

In the TEST MODE:

TEST 0: TOGGLES to show TOTAL number of PULSE SHOTS accumulated to date.

TEST 1: SHOWS TOTAL NUMBER PULSE SHOTS

TEST 2: TOGGLES SOUND / SOUND ICON ON / OFF

TEST 3: TOGGLES ENERGY VIEW PREFERENCE

TEST 4: NO FUNCTION

TEST: 5 NO FUNCTION

TEST 6: NO FUNCTION

TEST 7: TOGGLES TEMP VIEW PREFERENCE

TEST 8: NO FUNCTION (SHOWS TEMP READING)

TEST 9: NO FUNCTION (SHOWS TEMP SETTING)

PRESS the **FUNCTION KEY** to **ESCAPE / SAVE**
SETTINGS.



FUNCTION / STAND-BY MODE KEY

The **FUNCTION KEY** also allows you to TOGGLE between STAND-BY MODE or the READY MODE which means the HAND-GUN PIECE is armed and ready to fire LASER SHOTS . . . PRESSING the FOOT PEDAL fires the HAND-GUN PIECE.



WARNING: BEFORE PLACING THE UNIT IN “READY MODE“ and/or USING the FOOT-PEDAL, READ THIS SECTION:

PRACTICE SECTION

After reading this PRACTICE SECTION you will learn how to adjust the OUTPUT LASER SETTINGS.

What will the FOOT-PEDAL do when activated ?

AFTER READING THIS SECTION, you will PRACTICE activating the FOOT-PEDAL on PRINTED PAPER with colored artwork.

YOU WILL PRACTICE THE FOLLOWING SKILLS (**ON PRINTED ARTWORK**):

1. MAKE ABSOLUTELY CERTAIN your foot is not in contact with the FOOT-PEDAL until you are absolutely certain the GUN TIP is positioned on material you intend to destroy. This will prevent unwanted mis-fires.

(**WITH GUN-TIP POSITIONED at 90 degree angle ON TARGET . . .**)

2. . . . CAREFULLY POSITION YOUR FOOT onto the very BACK-EDGE of the FOOT-PEDAL (OPPOSITE SIDE to the CABLE) and notice which position will fire shots . . .

(**WITH GUN-TIP POSITIONED at 90 degree angle ON TARGET . . .**)

- . . . PIVOT your FOOT-PRESSURE forward until a LASER SHOT is fired. Then pivot your FOOT-PRESSURE back, and notice how much pressure can be applied to the FRONT-EDGE without firing shots.
3. TIME-DELAY. You will notice a delay-time between pressing the FOOT-PEDAL, and firing a LASER SHOT. Make note of this, and practice with various FREQUENCY SETTINGS (1 - 5 HZ).
4. PRACTICE placing the UNIT into STAND-BY MODE when you do not intend to fire the HAND-GUN PIECE.
5. LINE-OF-SIGHT: MAKE A MENTAL NOTE of which direction the GUN is aimed--whether you are in STAND-BY or READY MODE. Draw an imaginary LINE-OF-SIGHT from the end of the GUN TIP to the direction it is pointing. Ask yourself if this is truly where you want the GUN POSITIONED. Make a policy to avoid unwanted aiming--EVEN FOR a FRACTION of a SECOND !

ADJUSTING THE LASER OUTPUT SETTINGS

STEP 1. Press the **FUNCTION KEY**. The STAND-BY indicator will come on, and the system enters into STAND-BY MODE.

STEP 2. Press the **ENERGY KEY** "+" or "-" to the desired ENERGY LEVEL

STEP 3. Press the **FREQUENCY KEY** repeatedly to set the frequency from 1~5Hz (UP or DOWN ARROWS will activate).

4. The **HAND PIECE / GUN** is used to aim the LASER LIGHT at the specific skin areas in need of therapy. Stepping on the FOOT-PEDAL outputs laser accompanied by a continuous humming sound. Releasing your foot from the PEDAL will stop the laser output.

Details on the specific application of the GUN TIPS and other techniques--such as the proper distance to position the GUN TIP from the skin--should be reviewed thoroughly before doing treatments on patients. You will find this in the TREATMENT PROTOCOL SECTION of this USER MANUAL. Read first before operating !

WARNING: When the system is POWERED-UP, **DO NOT** aim the HAND PIECE / GUN at sensitive body parts--especially the eyes. Always follow this safety guideline, whether or not the system is in STAND-BY MODE.

TEMPERATURE DISPLAY

The AVERAGE TEMPERATURE reading will range from around 23 c to 40 c. If the UNIT goes above this range, switch the UNIT into STANBY-MODE. If the UNIT continues to display HIGH TEMPERATURE READINGS during short usage (or simply waiting in STAND-BY MODE) check to make sure the unit has sufficient water for cooling. If high-temperature readings continue with sufficient water, IMMEDIATELY POWER-DOWN the UNIT and contact your local Service Center.

NOTE:

IF YOU HAVE READ ALL OF THE INFORMATION UP TO THIS POINT OF THE USER MANUAL, YOU ARE NOW READY TO PRACTICE YOUR 1ST LASER SHOTS.

PLEASE REFER TO THE PRACTICE SECTION.

POWERING-OFF:

1. Press the FUNCTION BUTTON to put the system into STAND-BY MODE.
2. Turn the METAL SECURITY KEY (counter-clockwise) to the POWER-OFF position. Remove the KEY and place into safe storage--out of the reach of children and other unauthorized personnel.
3. Remove the AC POWER CORD from the power supply to make certain that power is disconnected and the UNIT cannot be accidentally activated.

B. MAINTENANCE

I. Basic maintenance

There is an output lens behind aiming device. There is also a lens on the HAND PIECE / GUN. Non-glass surfaces of GUN TIPS can be sanitized with rubbing alcohol between patient treatments. GLASS LENS SURFACES can be cleaned with compressed air--and/or micro-fiber cloth if needed. (It has become more and more common practice to avoid alcohol and water-based solutions when cleaning glass, LCD monitors, etc.)

CHANGING the COOLING WATER

We recommend keeping a record of how many PULSE SHOTS have accumulated during each session. The TOTAL NUMBER OF PULSES can be found by holding the MENU KEY until you see the TEST MODE appear in the LOWER RIGHT-HAND section of the LCD MONITOR. When you have reached a total of 5000 number of PULSES, it's time to change the WATER. (PRESS the FUNCTION KEY to return to the MAIN MENU.

WARNING: Cooling water must be distilled water. DO NOT USE TAP WATER or processed water (such as bottled drinking water), as the minerals and trace sediments can cause damage to the machine's cooling system.

SYSTEM OVER-RIDE PROTECTION

1. The system is equipped with a software Anti-interference Protocol. If the system is turned on, and it detects that there is excessive interference, it will go into STAND-BY MODE. The system will restart and reset automatically.
2. Abrupt stoppage of electrical supply. When this happens, the system will automatically run a SOFTWARE PROTECTION sequence. Normally, after about 1 minute, it is safe to re-start the system.

Maintenance / Service

If your machine is functioning abnormally, immediately contact the seller.

Customization of the UNIT and/or repair work performed by an unauthorized repair service center will VOID the product warranty.

TREATMENT PROTOCOLS

TREATMENT for BLACK and BLUE PIGMENT with the 1064nm GUN TIP

BLACK & BLUE PIGMENT		1064nm GUN
TIP		
RECOVERY TIME (after treatments): Wait 60 - 90 Days.		
FREQUENCY	ENERGY LEVEL	DISTANCE FROM SKIN
3 - 5 HZ	20	avg. 10 mm (one finger)

PRE-TREATMENT COUNSELING

Educate the patient on the following topics:

THE IMPORTANCE OF PROTECTIVE EYE-WEAR

The human eye is very sensitive to laser light--especially 532nm. Eyes illuminated with laser can suffer retina burns, other damage, and/or permanent blindness. LASER OPERATOR must wear laser protective glasses as well as keep the patient's eyes safe when treating. Patients are required to wear the PATIENT GOGGLES (included in the laser kit)--or understand the importance of also keeping the eyes COMPLETELY CLOSED when areas near the eyes are included as part of the treatment. **SPECIAL EYE SHIELD IMPLANTS (NOT INCLUDED IN THIS PACKAGE) may be required for EYELID TREATMENTS.** Irrelevant persons are required to either wear eye protection or leave the treatment room.

SPECIAL CONDITIONS

Before treatment, explain the possibility that their tattoo may contain iron hydronium, and if contacted with laser light can transform into iron oxide yielding an undesirable blackening effect that can be permanent or difficult to remove. Explain to the patient that, for this reason a very small TEST AREA will be designated, and if iron hydronium is detected, the treatment must be stopped immediately.

NORMAL SIDE-EFFECTS

Explain to the patient the possible / most-likely side-effects that will occur after the treatment.

Establish whether or not the PATIENT is prone to scarring (ie, is their body-type more likely to scar ?) :

Observe the area for treatment, and establish whether or not there is any pre-existing scar tissue. Bring these areas of concern to the attention of the patient, so that both the LASER OPERATOR and the PATIENT are not confusing pre-existing conditions with AFTER-TREATMENT results.

Explain to the patient that it is possible to have residual discoloration of pigmentations after removing imprinted tattoo color, which are the pigmentations caused by sunburn after tattoo, as well as a number of other factors such as aging, or simply comparing the newly metabolized skin cells to the surrounding area where the laser was not used.

Also explain to the patient that the tattooed artwork is quite possibly a complex combination of colors, so removing BLUE and BLACK colors, will leave REDS and BROWNS intact until these colors are removed via the appropriate GUN TIP.

Explain that there will be a 60 DAY recovery period of the BLUE & BLACK PIGMENT areas BEFORE, the REDS and BROWNS can be removed with the 532nm GUN TIP.

PHOTOGRAPH the skin areas BEFORE and AFTER treatment to establish a record of progress from start-to-finish.

DIAGNOSIS and FOLLOW-UP

Unless you are a qualified Medical Physician who can accurately diagnose the specific skin condition you are treating, it is recommended that you have the patient first diagnose their condition so that you are certain the Q-switched Nd:YAG Laser (**HR-EX50**) is the appropriate solution.

RELEASE OF LIABILITY FORM

It is highly recommended that the patient sign an Indemnification / Release of Liability Form stating that the patient understands the possible side effects, and assumes responsibility for outcomes that are unforeseeable and therefore impossible for the OPERATOR / TREATMENT FACILITY to control.

Following these basic guidelines for pre-treatment counseling, will help to establish realistic expectations for laser treatment results. Doing this is a simple way to avoid conflict stemming from misunderstandings about the laser process, realistic expectations, and possible ill side-effects.

PREPARING THE SKIN AREA FOR TREATMENT

Cleaning the skin is important. Wash area with a non-irritative soap and water, and allow the skin to “cool-down” after preparation; i.e., make sure it is not slightly red / irritated from rubbing and contact with soap. This may only take a matter of seconds depending on the patient.

NORMAL PHENOMENA DURING OPERATION OF LASER UNIT:

Treating deep tissue BLACK INK areas will produce stronger pigment explosions. Expect a noticeable increase in LASER “ZAP” NOISE with BLACK PIGMENT because BLACK PIGMENT intensely absorbs LASER LIGHT.

After treatment, it is normal for the treatment area to appear swollen and/or red from the process of smashing pigment with laser light--and expect that shallower pigment explosions can cause superficial bleeding that will form a mild scab.

After the first laser treatment, the tissue color will fade; however within a matter of minutes the tattoo color will appear to return. This is a normal phenomena that occurs because the pigment has not yet been fully absorbed by the body.

The process of absorbing the damaged cells into the lymphatic system, and concurrent metabolism of new cells will last for about 2 or 3 WEEKS. During

this period, the treated TATTOO COLOR will GRADUALLY FADE.

Advise that there is a 60 - 90 day recovery period between treatments. This will depend on the individual patient's rate of recovery.

3. Possible SIDE EFFECT regarding hair:

Hair in the treated area will likely fall out and/or fade. Expect new hair to grow back after about 30 DAYS. This NEW HAIR will likely grow back again stronger and darker than before, but over time, it should resume its normal appearance and consistency.

It is normal for the treated area to show signs of superficial bleeding and swelling. Severity will vary from patient to patient.

Expect that when the initial SWELLING and REDNESS subsides, the treated area will form a scab, and possibly itch as the metabolic process of new cells begins. This is normal. This condition will subside in about 2 WEEKS to ONE MONTH. Patients should be encouraged to resist the urge to scratch the healing areas, as this greatly increases the risk of scarring and / or infection.

IMPORTANT AFTER-TREATMENT PROTOCOL

In an effort to MINIMIZE the risk of INFECTION, patients are strongly advised to follow this post-operative protocol:

- 1) DO NOT use any form of eyebrow make-up on the treated area.
- 2) DO NOT wash eyebrows with water for 3 to 7 days.
- 3) AVOID EXPOSING the treated area to SUNLIGHT. Covering the area with clothing or bandaging is the safest method, because the application of SPF SUNSCREENS may cause allergic / adverse interference with the healing process. After scabbing falls off and swelling and redness have subsided, it is safe to protect areas with SPF SUNSCREEN which can assist the long-term healing process by preventing burning and/or subtle sun-damage to new skin cells.
- 4) For patients who bleed more and swell seriously, consult a Medical Doctor's opinion on whether or not ANTIBIOTICS should be taken internally.
- 5) Applying an over-the-counter ANTIBIOTIC OINTMENT to the treated area (such as Neosporin) can greatly reduce the risk of superficial infection, and help reduce the risk of scarring.

TREATMENT for removing BROWN & RED pigmentations with LASER at 532nm

BROWN & RED PIGMENT		532nm GUN
TIP		
RECOVERY TIME (after treatments): Wait 60 - 90 Days.		
FREQUENCY	ENERGY LEVEL	DISTANCE FROM SKIN (average)
3 - 5	20	10 mm (one finger)

The hemoglobin in human body and the tattooed BROWN PIGMENT as well as RED PIGMENT by man-made pigments have a specific absorption to laser at 532nm, so after being illuminated by laser, the epidermal tissue can appear inflamed and/or swollen, and since the RED CAPILLARY BLOOD VESSELS below the epidermis are absorbing the 532nm laser light, it is normal to see broken vessels which can cause temporary pooling of blood beneath the skin. This may also be accompanied by minor external bleeding. The residual blood cell damage and vessel tissue will eventually be metabolized and absorbed by the body, and external scabbing of blood will eventually flake off.

Other possible side effects removing BROWN & RED pigmentations with laser at 532nm:

1. The epidermis can blanch (total loss of pigment) and / or some areas of the epidermis can darken (hyper-pigmentation) if not protected from sun.
2. Treatment areas can show signs of redness and swelling, and, if excessively damaged, will lead to a scab with a recovery-time of from 20 to 60 days--depending upon the patient.

When removing BROWN & RED pigmentations with 532nm laser light, it is recommended to use smaller energy densities so that if multiple treatment are needed, the skin will have less pigment trapped inside of micro-scar tissue. The objective is to shatter pigment with the laser, and allow it to be absorbed by the lymphatic system.

PROTOCOL for PIGMENTATION REMOVAL

1. EYEBROW TREATMENT

REMOVING NORMAL BLUE / BLACK EYEBROW PIGMENT

EYEBROW PIGMENT REMOVAL

BLUE & BLACK		1064nm GUN TIP
RECOVERY TIME (after treatments): Wait 45 - 90 Days.		
FREQUENCY	ENERGY LEVEL	DISTANCE FROM SKIN
3 -5 HZ	20	avg. 10 mm (one finger)

Before removing EYEBROW PIGMENT, it is advised to SHAVE the immediate EYEBROW AREA. This will maximize the LASER OPERATOR's ability to observe and target the treatment area.

1. Set the LIGHT FREQUENCY at 3 - 5 times / per second, the GUN TIP should be positioned at a distance of about 1 finger from skin (about 10 mm).

After the 1st EYEBROW TREATMENT, expect to see color returning in about 10 - 20 minutes,

After 45 days (1.5 months), re-check whether the tattooed color is faded away completely. If not, re-treat the affected area.

BROWN EYEBROW PIGMENT

Set the LIGHT FREQUENCY at 2 - 3 HZ / per second. The head of hand piece should keep a distance of three fingers from skin. After the first purifying, if still remain deeper color on skin, purify once again. After one month and half, recheck it again. If only red color is remained on skin, purify it with green light. When treating with green light, the head of hand piece should keep distance of one to two fingers from skin.

2. EYELID PIGMENTATION REMOVAL

Set the frequency of light to 3 HZ (times per second). The head of hand piece should be kept at a distance of about one finger from skin, and yet it is difficult to purify eyelid. It needs two or three times treatments and each

treatment interval should be two months for the best result.

3. REMOVING TATTOO ARTWORK

It is the same method to remove eyelid. If the tattoo area is too big, simply use 1 pass (treatment) in order to avoid great damage.

4. REMOVING LIP LINER PIGMENTATION

If tattooed with RED LIP-LINER, choose one spot at lip end for testing. If the TEST AREA turn black, the tattooed color definitely contains iron ion. The TREATMENT should not be continued base on the test result.

If tattooed with poppy, ROSE COLORED LIP-LINER (very dark browns, ruby, etc.) and/or LIP, use 1064nm GUN TIP (used for purifying blue and black color) for the first purifying. Set the frequency of light to 3 - 4 hZ / second. Position the GUN TIP 1 - 3 fingers distance from skin.

The 532nm GUN TIP can be used for follow-up treatment.

MULTIPLE PASSES DURING ONE TREATMENT SESSION

(Tattoos, Nevus, Lip / Eye Liner, etc.)

Many Medical Case Studies are showing good results using multiple passes during the same treatment day / session (example: R20). These studies are worth looking into, and possibly incorporating into treatment protocols when evidence proves that the methods are safe and effective based on actual Medical Case Studies.

PATIENT GUIDELINES
for
REDUCING RECOVERY TIME & INCREASING POSITIVE
RESULTS

1. After TREATMENT, within 24 to 48 hours, the skin will most likely appear red and swollen--similar to a mild sunburn. It may even appear blistered, with slight discomfort to the patient. These are all normal responses of tissue exposed to laser treatment. Patients are advised to consult their physician if pain medication is desired.
2. The use of ICE to sooth pain and swelling is an option, but it is advised that a SANITARY container (such as a medical ice bag or zip-lock bag) is used so that the ice is not in direct contact with the treated area. This will ensure that the healing area will be kept clean and dry.
2. The treated area will form a scab within 1 -3 days. The scab should fall off within 5 - 14 days. Inform the patient on the importance of allowing the scabbing process to take place at its own pace, allowing it to form and fall off on its own accord--without interference from the patient . This will help to minimize the risk of scarring .
3. Keep the treatment area dry and clean. Before the scab falls off, the patient can wash it with clear water, and coat some ointment of bacteriophage on it. Alternatively, you can use the boracic acid.
4. When the scab falls off on its own, the treatment area is possible to take on shallow red or pink and/ or slightly indented or protruded. This phenomena will gradually disappear after several weeks or several months.
5. The area treated with laser should avoid direct sunlight for a period of 3 - 6 months. After the scab falls off, the patient can use sun-cream of SPF 15 or stronger when going out. The patient is also advise to wear clothing, sun hats etc., that will prevent direct sunlight from contacting the treated areas. Unprotected areas have a high risk of sun damage including adverse and/ or uneven rates of re-establishing normal color.
7. The patient should have the persistence and confidence in treatment course. It will generally take 30 - 90 days of recovery time to truly judge the overall success of the laser treatment.
8. If for in reason after treatment, the patient is experiencing unusual healing patterns such as yellow puss (or any other signs of infection) and/ or the patient feels an unusual amount of pain, they should be advised to seek the services of a qualified medical physician immediately.