LASERSTAR®
LEARNING CENTER

iWeld® Professional
972 Series Laser Welding System
Quick Setup Guide

LaserStar Technologies Corporation
2461 Orlando Central Parkway, Orlando, Florida 32809
Phone: 407-248-1142 • Email: Service@LaserStar.net

IWELD® PROFESSIONAL 972 SERIES 120VAC & 220VAC QUICK SETUP GUIDE INSTRUCTIONS

ITEMS NEEDED: Phillips Head Screwdriver, 8mm or 5/16" Socket Wrench, Box Cutter, Scissors, Voltage Meter

WORK SPACE: 33" x 21" Area, Weight: 180 lbs

INSPECTION

1. Before opening the shipping container, be sure to inspect the outside of the crate for apparent damage that may have occurred in transit. If you discover damage, immediately contact LaserStar's Service Department.

2. Identify the TIP-N-TELL indicator (located on the outside of the shipping crate). Check to see whether blue beads are present in the top portion of the arrow on the TIP-N-TELL. If you notice blue beads in this area, immediately contact LaserStar's Service Department.

No blue beads present:
(no tipping of crate)

Blue beads present:
(crate has been tipped)

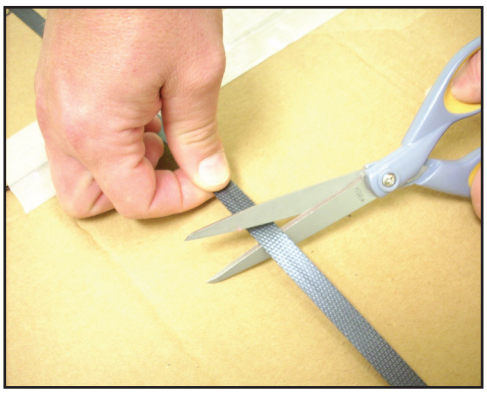
3. Identify the SHOCKWATCH warning sticker (located on the outside of the shipping crate). Check to see whether the tube in the center of the SHOCKWATCH warning is red. If you find the center of this tube is red, immediately contact LaserStar's Service Department.

Tube is not red:
(no shock warning)

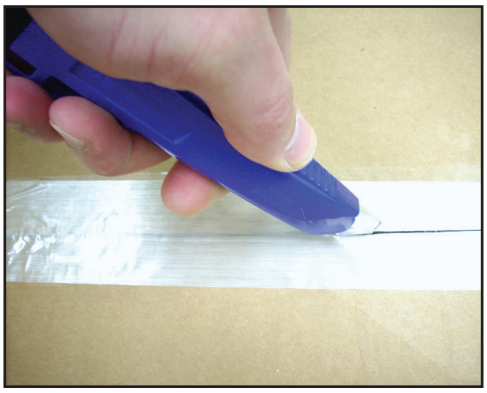
Tube is red:
(shock warning)

UNPACKING

4. Unpack the iWeld by cutting the banding straps and unscrewing the wood screws near the base of the crate. **(Note: A power drill with a cross-head screw attachment is helpful.)**

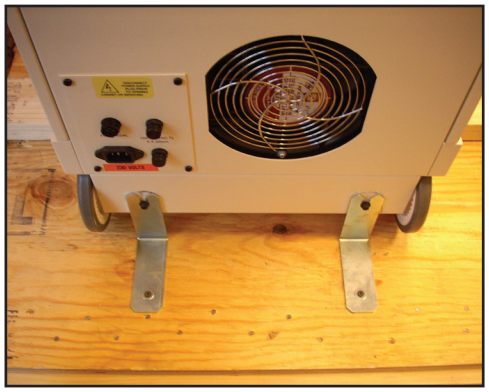


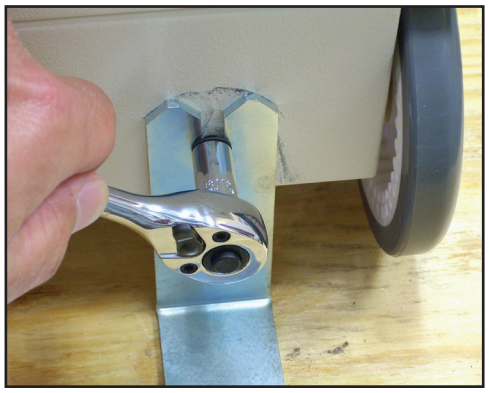
5. Cut and remove the strapping tape securing the top of the tri-wall corrugated cover; this allows the inner foam insert to be removed from the top of the laser system.



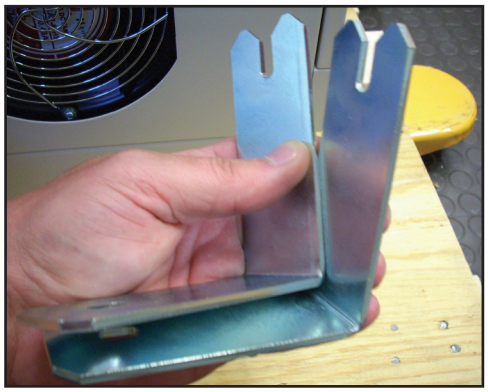
6. Lift the tri-wall corrugated cover off the base. Remove the plastic cover and save it for future use.

7. The laser will come securely mounted to a skid base via two (2) floor anchor brackets (located at the lower rear of the machine). Unscrew the two cross-head screws that secure the brackets to the skid. **(Note: A power drill with a cross-head screw attachment is helpful.)** Using a socket wrench with an 8mm socket, unscrew the two (2) bolts that secure the brackets to the laser. **(Note: A 5/16" socket will work, as well.)**





Do not discard the bolts or floor brackets; save these for future use.



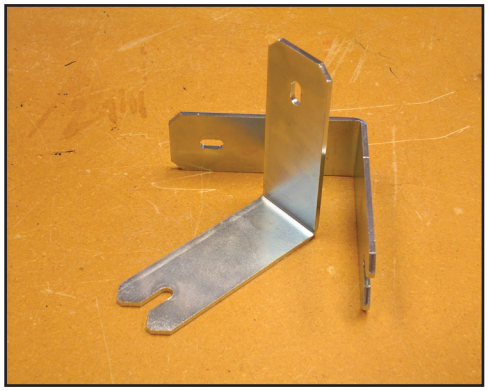
8. Once all items have been removed from the skid base, one person will need to stand in front of the machine and lift it by grasping the tops of the hand openings. Lift the front of the laser by pivoting on the rear wheels high enough for the front wheels to clear the wooden support base.

9. Move the laser forward until the rear wheels clear the skid base; the laser will now be resting on its under-carriage.

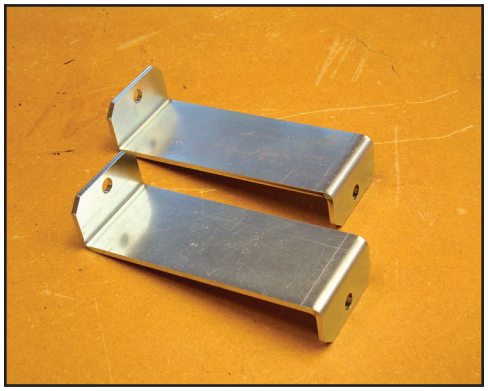
10. Allow the laser slide gently on the undercarriage until the rear wheels touch the floor. Roll the machine forward and gently lower the front wheels onto the floor; the laser will now be off the skid base.

INSTALLING THE ANTI-TIP BRACKETS

The anti-tip brackets are supplied for applications that require the welder to be secured to the floor (horizontal surface) or wall (vertical surface) for increased stability. The instructions that follow show methods for securely mounting the iWeld to the floor, the wall, or both if desired.



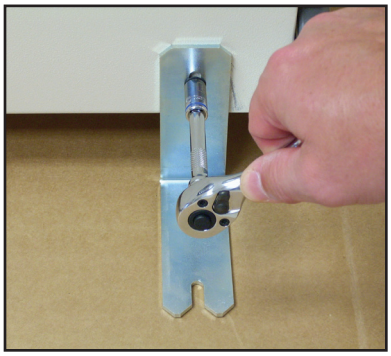
Floor brackets

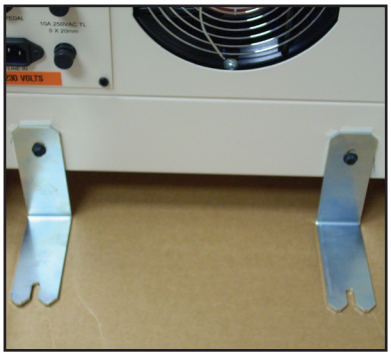


Wall brackets

Floor mount:
(horizontal surface)

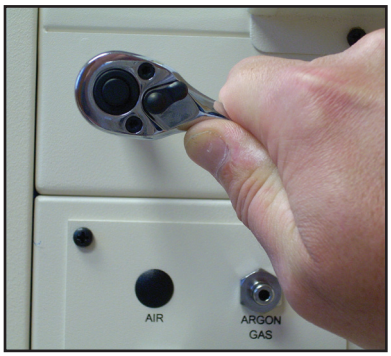
11. Attach the floor anchor brackets to the lower rear of the machine using the bolts (provided) and a socket wrench with an 8mm socket (a 5/16" socket also works); the slotted side of the bracket should be facing toward the floor. When affixing the brackets to the floor, consider the flooring material, and be sure to use the appropriate anchor bolts or screws.

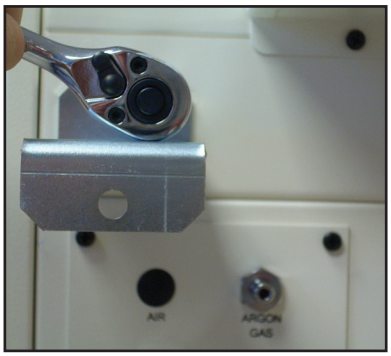


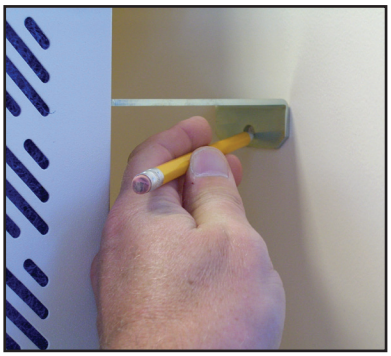


Wall mount:
(vertical surface)

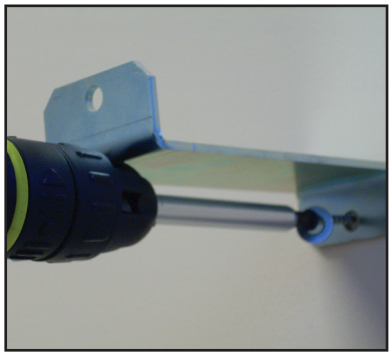
12. Using a socket wrench with an 8mm socket (a 5/16" socket will work, as well), remove the two (2) bolts from the top rear of the machine. Use the bolts to attach the brackets to the laser, tightening with a socket wrench. Gently push the laser forward, ensuring the brackets are resting firmly against the wall; use a pencil to mark the two (2) holes for affixing the machine to the wall surface.







13. Remove the brackets from the rear of the laser and firmly fasten them to the wall with the appropriate anchor bolt or screw. **(Note: For sheetrock walls, is it highly recommended that the bracket be secured to a stud.)** Back the laser to the brackets and align the screw holes with the holes in the brackets. Once alignment is achieved, replace and tighten the bolts to the rear of the laser.




(Note: For added stability, floor and wall brackets can be used simultaneously, if desired. If using both, be sure to follow the previous instructions for floor and wall mounting.

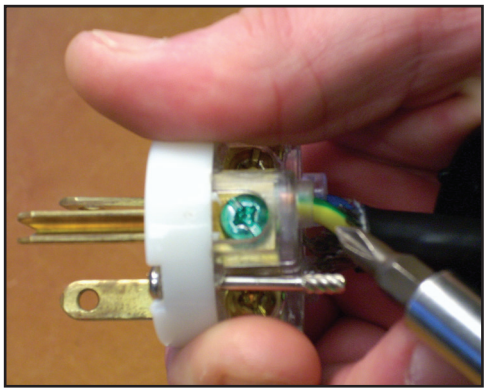
POWER REQUIREMENTS 120V

14. Set a traditional voltage meter to 200VAC and check the wall outlet. An acceptable voltage range is from 108VAC to 132VAC, ~50/60Hz, single-phase unless an alternate agreement was made when the machine was ordered. **(Note: Make sure you are running a dedicated line.)**

POWER REQUIREMENTS 220V

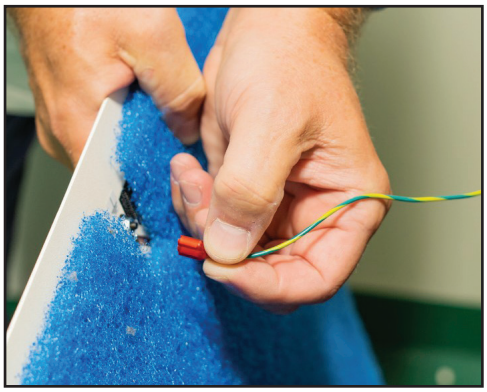
15. Set a traditional voltage meter to 500VAC or 1000VAC and check the wall outlet. An acceptable voltage range is from 208VAC to 240VAC, ~50/60Hz, single-phase unless an alternate agreement was made when the machine was ordered. **(Note: Make sure you are running a dedicated line.)**

16. The 220V units will come with a pigtail power cord. For all other models, when selecting and purchasing your plug, be sure to choose a male plug that is the same configuration as your female wall outlet. Attach the male plug to the power cord using the appropriate screwdriver. **(Note: Make sure to connect the green grounding wire to the green terminal of the plug.)**



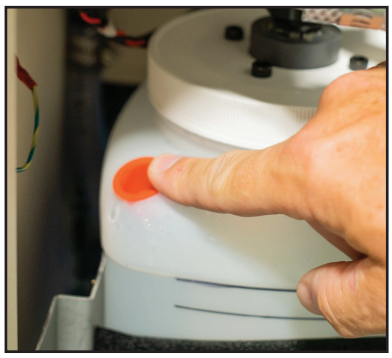
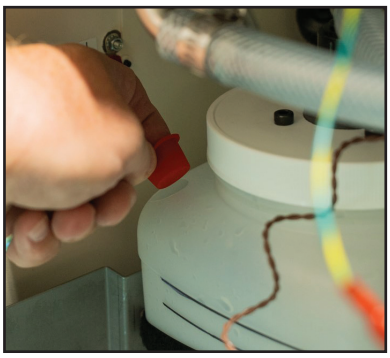
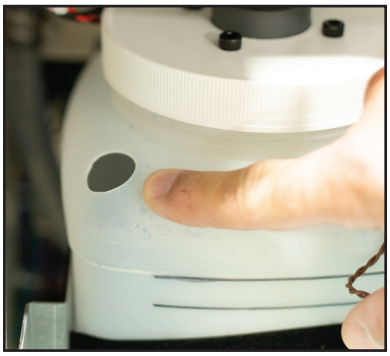
FILLING WITH WATER

17. Remove the left side cover from the machine by unscrewing the six (6) cross-head screws positioned along the sides of the panel. **(Note: A manual screwdriver will work best.)** Move the cover away from the laser and disconnect the grounding cable (located on the inside of the cover). Set the cover aside.



FILLING WITH WATER (CONTINUED)

18. Prepare to fill the distilled water tank by selecting the one-gallon distilled water jug and clear siphon hose (provided). Locate the distilled water tank inside the laser housing and remove the red plug; this will expose a fill hole.

19. Remove the cap from the distilled water jug and place one end of the siphon hose inside. **(Note: Make sure the hose reaches the bottom of the jug.)** Place the other end of the siphon hose into the fill hole on the distilled water tank. Rest the distilled water jug on your knee, ensuring that it sits above the water tank to allow gravity to assist in the water flow.



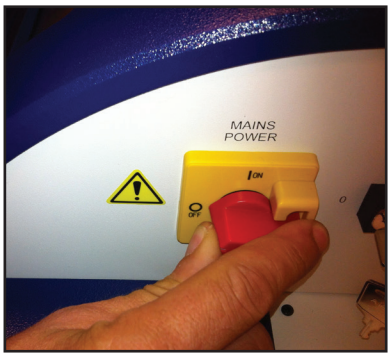
20. While blowing into the jug, place one hand around the top to create an airtight seal. The water will begin to travel through the siphon hose and into the distilled water tank. Make sure the distilled water jug remains above the water tank to allow gravity to assist in the water flow.



21. When the distilled water tank fills to the upper black site line, stop the water flow, and remove the siphon hose. Reinstall the red plug to seal the fill hole on the distilled water tank.

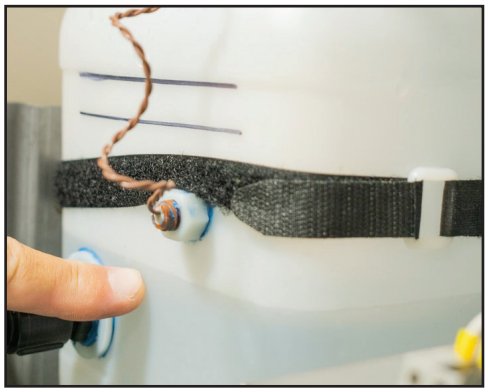

PRIMING THE PUMP

22. Select the power cable from the accessory kit (provided) and plug it into the outlet marked "120V" or "120V Line In" (located on the rear of the machine). Plug the other end of the power cable into a wall outlet and turn on the Mains Power (red and yellow switch; right-hand side of the laser). The pump in the iWeld Pro will imminently begin to circulate the distilled water throughout the system.

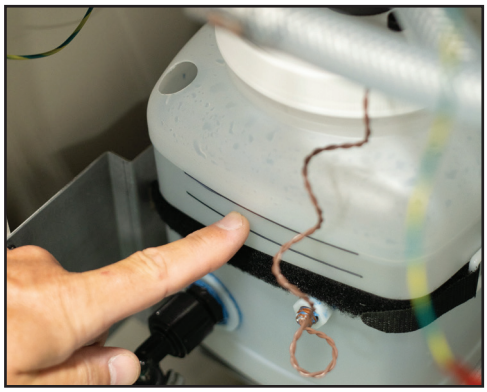
PRIMING THE PUMP (CONTINUED)

23. This will immediately prime the pump and cause the water level in the tank to drop between the two (2) black site lines marked on the outside.



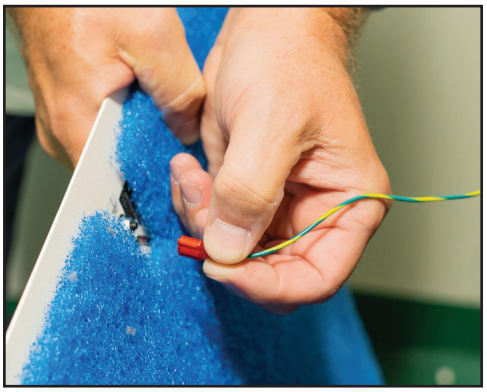
TOPPING OFF THE TANK

24. Check the water level; if the water level dropped BELOW the bottom site line, turn off the Mains Power Switch and repeat steps #15 through #19. **(Note: An acceptable water level is anywhere between the two black site lines.)**



25. If the water level is ABOVE the top site line, turn off the Mains Power Switch. Remove the red plug from the distilled water tank and place the siphon hose into the fill hole. Place the other end of the hose into an empty receptacle and add suction to the hose to begin the siphon process. **(Note: A clean turkey baster works well to apply suction.)** When the water reaches the top site line, stop the siphon process by removing the hose from the distilled water tank.

26. Reconnect the grounding cable and replace the left side cover of the iWeld Pro.



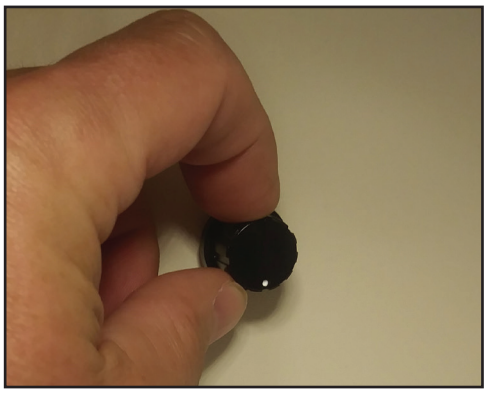
FINAL CONNECTIONS & POWER UP

27. Remove the keys and remote interlock from the bag (located inside the chamber). Place a key in the key switch. Place the remote interlock in the outlet marked "Remote Interlock" (located on the rear of the laser) and turn the locking ring until it's finger tight.

28. Retrieve the foot switch from the accessory kit. Plug the cable into the outlet marked "Foot Pedal" (located on the rear of the laser) and turn the threaded fastener to tighten. Place the pedal on the floor.

INSTALLING THE CHAMBER LIGHTS

If the laser is equipped with a ring lamp, the lamp has been previously installed, and you can proceed with powering up the machine by turning on the key switch; the ring lamp will then power up.

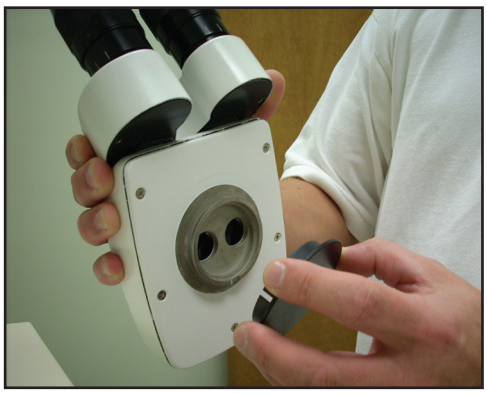


(Note: If the lamp does not power up, turn the black knob inside the chamber clockwise until it turns on.)

In the event you wish to remove the ring lamp, you must first remove the brass gas nozzle by reaching up and depressing the button on the left. The ring lamp can now be removed by loosening the two (2) black thumb screws (located at 4 and 8 o'clock.)

MOUNTING THE MICROSCOPE

29. Remove the scope from its box and take off the plastic cap that protects the flange.



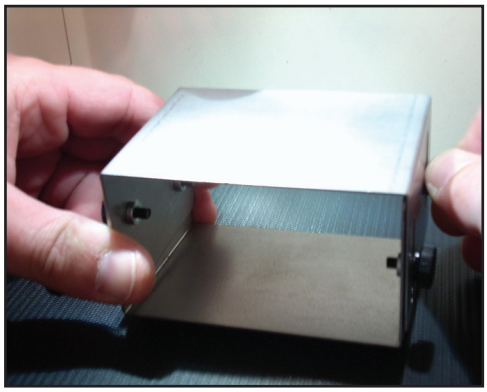
30. Place the flange into the mounting ring at the top front of the laser. Select the 2mm Allen wrench (provided). Holding the scope facing forward, tighten the two (2) mounting screws (located on the mounting ring at 5 and 7 o'clock). When the scope is securely mounted, remove the rubber tube protectors.




31. Remove the oculars from the box and place one in each eye tube. **(Note: One ocular is marked with a "+"; place this ocular into the tube of the operator's dominant eye, usually the right eye.)**

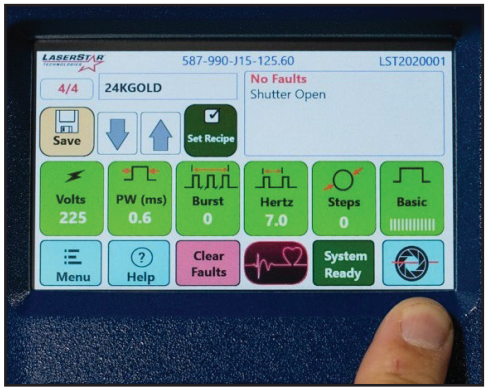

32. If the operator does not wear eyeglasses, you may insert the rubber eye cups on the ends of each ocular.


33. Retrieve the small metal stand from the accessory kit (provided). Place the stand inside the chamber and look through the scope. Adjust the height of the metal stand until clear focus is achieved. Then, lock down the four (4) thumb screws. Adjust the scope to achieve precise clarity and focus. **(Note: If the stand does not reach the proper height, remove the thumb screws and place them in the alternate holes.)**

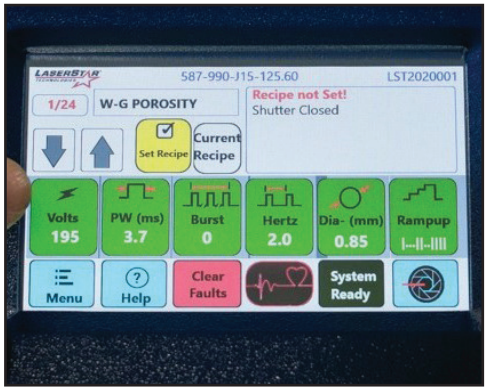


CROSS-HAIR ALIGNMENT

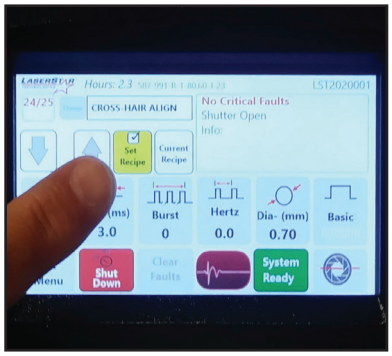
34. Depress the **Safety Shutter Open button** (located in the right-hand corner of the touch screen).

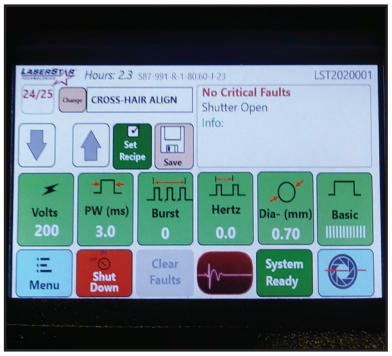


35. Depress the **Arrow buttons** on the touch screen and select memory cell #24/24 CROSS-HAIR ALIGN by using the **Up** or **Down Arrow buttons**.

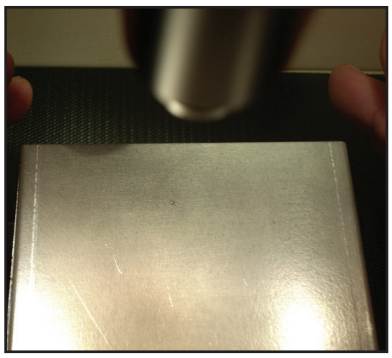


36. Depress the **Set Recipe** button (yellow button; located in the center of the touch screen). The parameter buttons will all turn green.





37. Without touching the stand, depress the foot pedal to the floor; this will release one laser pulse that will appear on the steel stand.



38. Look through the scope to reference the pulse location in comparison to the cross-hair center target. (Figure A)

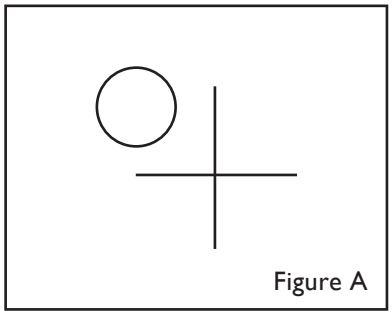


Figure A

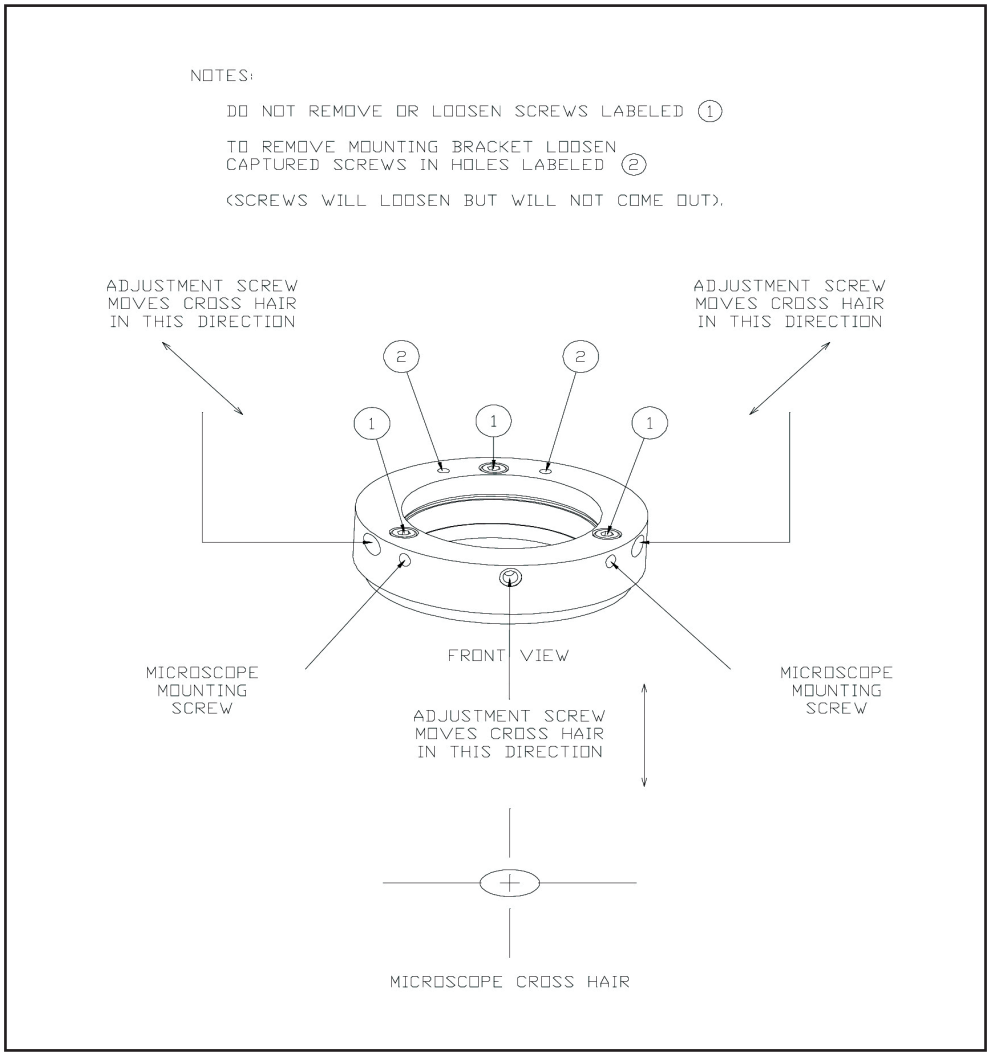
39. Referencing the optical alignment bracket diagram for the microscope, use a 2mm Allen wrench (provided) to move the cross-hair center target directly above the laser pulse position. The three (3) alignment screws on the mounting ring are located at 3, 6, and 9 o'clock. Movement directions are as follows:

3 o'clock screw: moves cross hair (North-East to South-West) ⤢

6 o'clock screw: moves cross hair (North to South) ↕

9 o'clock screw: moves cross hair (North-West to South-East) ⤡

Optical Alignment Bracket Diagram



40. Once the cross-hair center target is correctly positioned in the center of the laser pulse, refire the laser to ensure the accuracy of all adjustments. (Figure B)

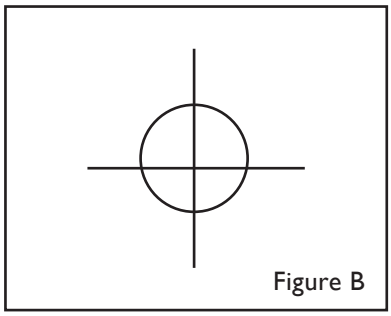


Figure B

Congratulations, you are now ready to begin using your laser welding system! Please proceed to LaserStar Academy to begin your online training.

Notes

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Notes

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LaserStar Academy

Teaching You To Harness The Power Of Hot Light

LaserStar Academy is designed to be our clients' "First Reference" for software and systems training; user guides and operation manuals; maintenance videos & service guides; and FAQ resources. Our goal is to provide clients with a solid foundation of fundamental laser welding and engraving skill sets while providing a real time online resource for LaserStar's worldwide customer base.

www.laserstaracademy.com

LASERSTAR TECHNOLOGIES

LASERSTAR.NET

FLORIDA (HEADQUARTERS)

2461 Orlando Central Parkway
Orlando, Florida 32809 USA
407-248-1142 ▪ Fax: 866-708-5274
Email: sales@laserstar.net

DESIGNED & BUILT IN AMERICA

LASERSTAR ACADEMY

LASERSTARACADEMY.COM

RHODE ISLAND

One Industrial Court
Riverside, Rhode Island 02915 USA
401-438-1500 ▪ Fax: 866-516-3043
Email: sales@laserstar.net

DANGER

CE

LASERSTARTV

LASERSTAR.TV

CALIFORNIA

20 East Foothill Boulevard, Suite 128
Arcadia, California 91006 USA
213-612-0622 ▪ Fax: 866-347-0934
Email: sales@laserstar.net

FOLLOW LASERSTARTV

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