LASERSTAR®
LEARNING CENTER

iWeld® Benchtop
992 Series Laser Welding System
Quick Setup Guide

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IWELD® BENCHTOP 992 SERIES
QUICK SETUP GUIDE INSTRUCTIONS

ITEMS NEEDED: Phillips Head Screwdriver or Power Drill with Phillips Head Drill Bit, 8mm or 5/16" socket Wrench, Box Cutter, Scissors, Voltage Meter

WORK SPACE: 24" x 24" Area, Table: 26" – 28" high (recommended); Weight: 90 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)

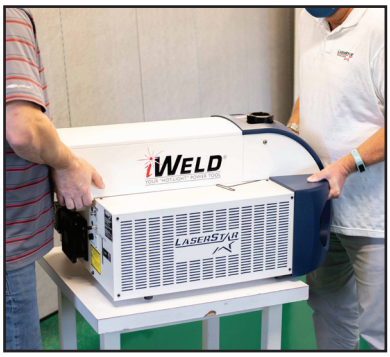
3. Identify the SHOCKWATCH warning sticker (located on the outside of the shipping crate). Check to see whether the tube in the center of the SHOCKWATCH warning is red. If you find the center of this tube is red, immediately contact LaserStar's Service Department.

Tube is not red:
(no shock warning)

Tube is red:
(shock warning)

UNPACKING

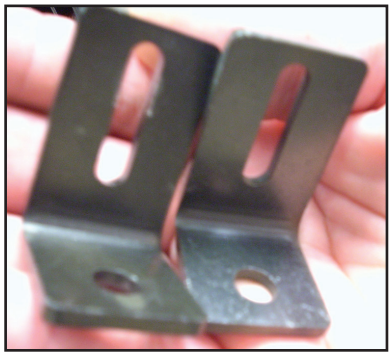
4. Unpack the iWeld by unscrewing the wood screws near the base of the crate. **(Note: A power drill with a cross-head screw attachment is helpful.)** Lift the tri-wall corrugated cover off the base. Two people can now carefully lift the laser and place it on a sturdy tabletop.

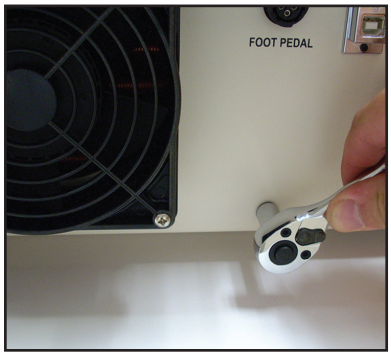


INSTALLING ANCHOR BRACKETS

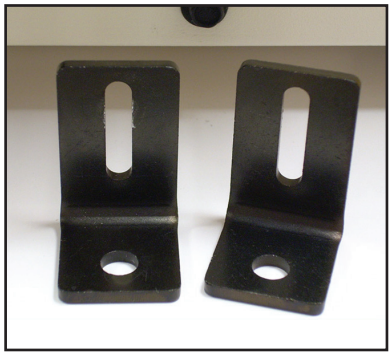
Brackets are supplied for applications that require the welder to be secured to a tabletop for increased stability. The instructions that follow show the method for securely mounting the iWeld to a table surface.

5. Locate the two (2) anchor brackets within the accessory kit (provided). Using a socket wrench with an 8mm socket, remove the two (2) bolts from the bottom rear of the laser. **(Note: A 5/16" socket will work, as well.)**





6. With the slotted side of the bracket facing toward the laser welder, thread the bolt into the hole, and use the socket wrench to secure the brackets to the rear of the laser.



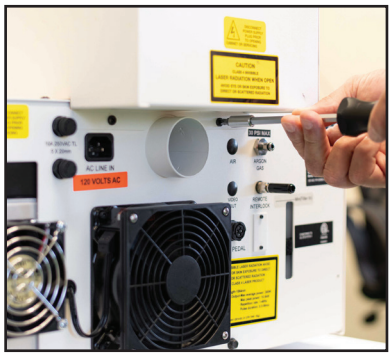

7. Securely fasten the brackets to the tabletop using the appropriate anchor bolts or screws.

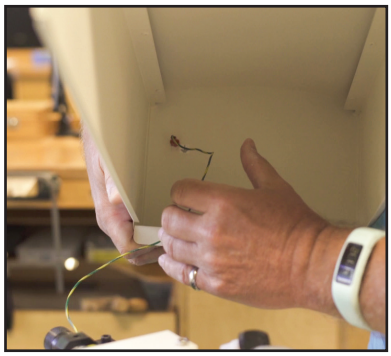

POWER REQUIREMENTS

8. 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.)**

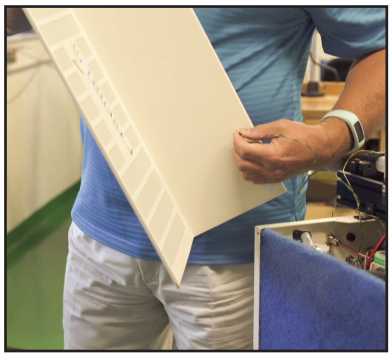
ADDING DISTILLED WATER

9. Remove the top cover from the iWeld by unscrewing the two (2) cross-head screws located at the top rear of the machine. **(Note: A manual screwdriver works best.)** Lift the cover and disconnect the grounding cable (located on the inside of the cover); set the cover aside.

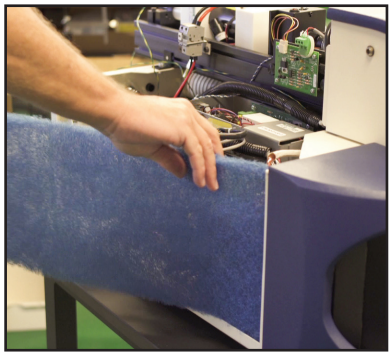




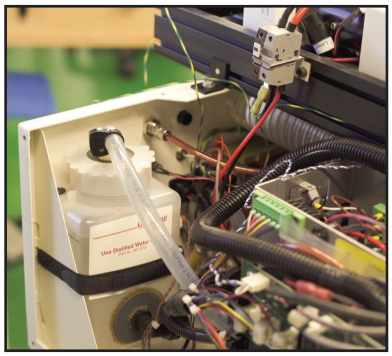
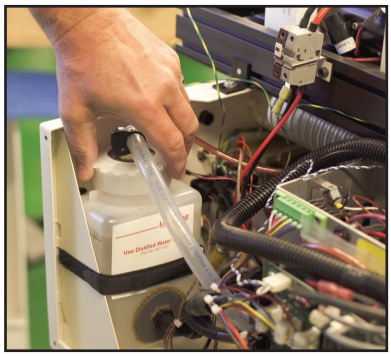
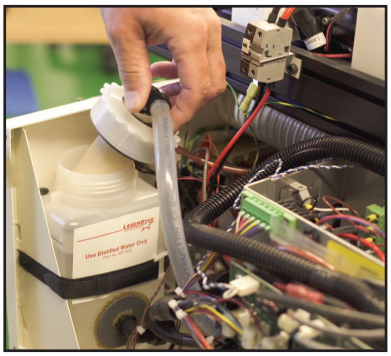
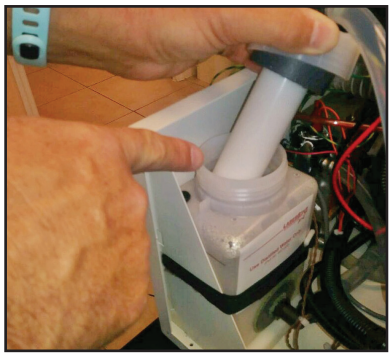
10. Remove the left-side cover from the machine by unscrewing the six (6) cross-head screws positioned along the sides of the panel. **(Note: A manual screwdriver works best.)** Move the cover away from the machine and disconnect the grounding cable (located on the inside top of the cover); set the cover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



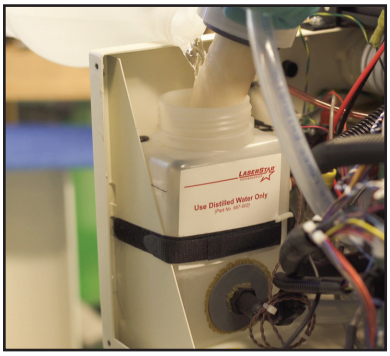
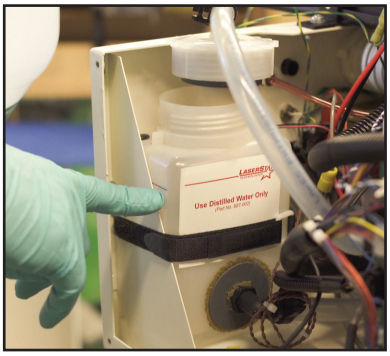
11. Remove the blue filter and set aside.



12. Locate the distilled water tank (rear of the iWeld) and open the container by unscrewing the top cover. Pull the top cover and attached filter upward carefully; remove and set aside. **(Warning: Make sure that your bare skin or fingers do not touch the water filter.)**

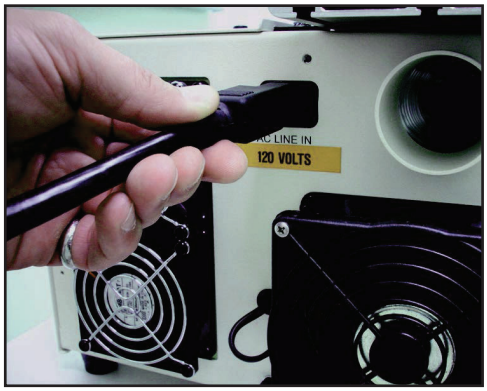
13. Using a clean funnel, siphon hose or by carefully pouring directly, fill the distilled water tank with the distilled water (provided) to the black site line (max – filter out) marked on the side of the tank. **(Warning: Make sure the water does not come into contact with the electrical components.)**

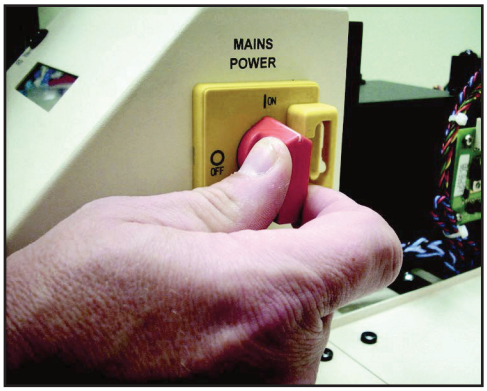



14. Replace the top cover and filter for the distilled water tank. Next, verify that both the **Mains Power** Switch and Key Switch are "OFF."

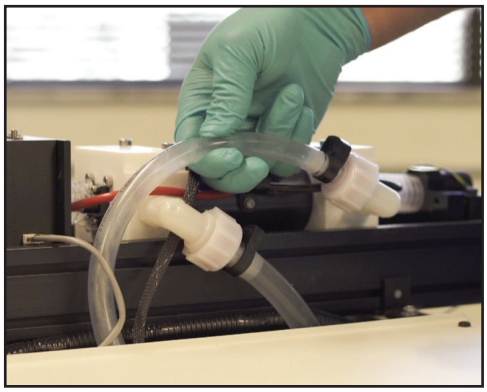
PRIMING THE PUMP

15. Select the power cable from the accessory kit and plug it into the outlet marked "AC LINE IN" (verify the AC voltage; outlet is located on the rear of the machine). Plug the other end of the power cable into a wall outlet. Next, recheck that the water level in the distilled water tank reaches the appropriate site line (max – filter out). Turn "ON" the **Mains Power** (red and yellow switch; right-hand side of the laser).



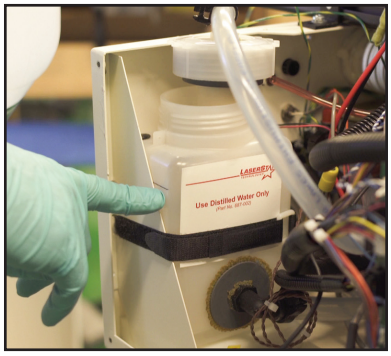


16. Locate the pump chamber (black and white) on the top of the iWeld; there are two (2) water lines on the side of this chamber. With your finger and thumb, momentarily pinch the water line sitting closest to the rear of the machine (you will most likely notice a bubble pass through). Continue with this process until there are no bubbles remaining.

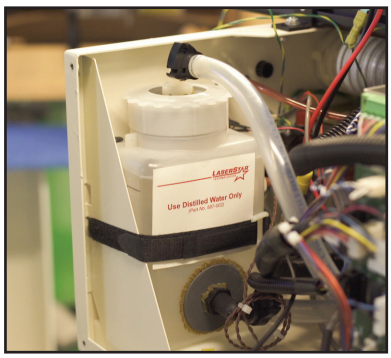


TOPPING OFF THE TANK

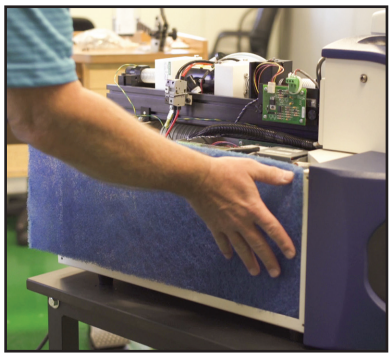
17. Turn the **Mains Power** Switch "OFF." The water level will have most likely dropped below both black site lines: min (filter in) and max (filter out). Fill the distilled water tank once more to the max (filter out) site line. Now, check the water level; it should be above the min (filter in) line (located on the rear of the machine; behind the water tank). **(Warning: Do not use the machine if the distilled water is below the min (filter in) site line.)**

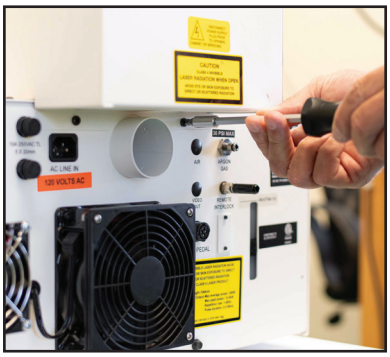


18. Turn the **Mains Power** Switch "ON" and allow the laser to run for about 5 minutes (or until there are no more bubbles cycling through the water lines). Check the water level in the distilled water tank and fill with additional water, as needed.



19. Retrieve and reinsert the blue filter into the machine. Next, locate the top and left-side covers for the iWeld. Before replacing the covers, be sure to reconnect each of the grounding cables.





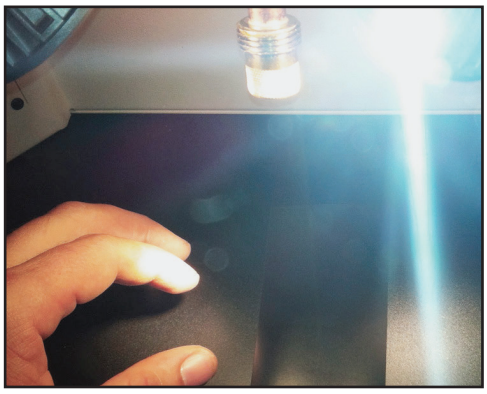
FINAL CONNECTIONS & POWER UP

20. Remove the keys and remote interlock from the bag (located inside the work 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 manually until it’s finger tight.

21. 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.

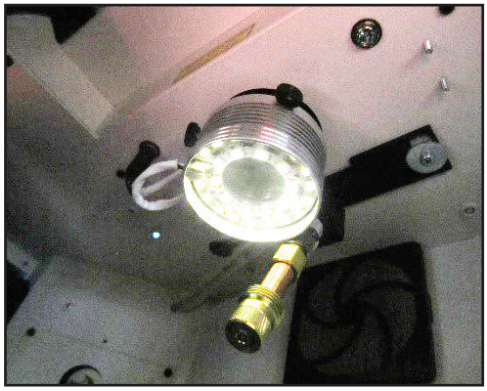
POWERING UP THE CHAMBER LIGHT

22. Turn "ON" the key switch; this will power up the software and L.E.D. lights inside the chamber.



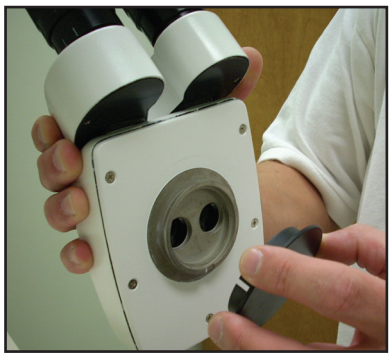
If the laser is equipped with a ring lamp, the lamp has been previously installed, and you can proceed with powering up the machine by turning "ON" the key switch; this will power up the ring lamp. **(Note: If the ring lamp does not power up, turn the black knob [inside the chamber] clockwise until it 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 of the component. Now, remove the ring lamp by loosening the two (2) black thumb screws (located at 4 and 8 o'clock.)



MICROSCOPE MOUNTING & ADJUSTMENTS

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

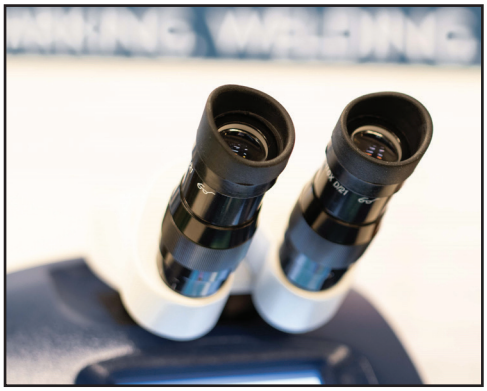



24. Place the flange into the mounting ring at the top front of the laser. Retrieve the 2mm Allen wrench (provided). Holding the scope facing forward, tighten the two (2) mounting screws (located on the mounting ring at 5 and 7 o'clock). When the scope is securely mounted, remove the rubber tube protectors.

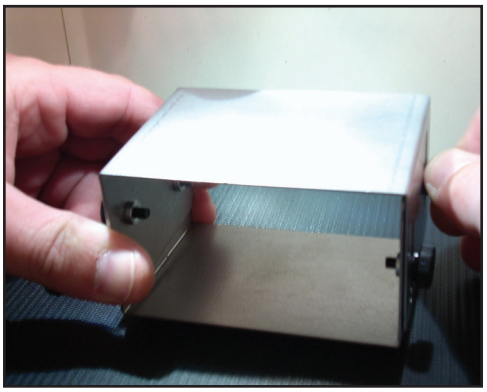


25. Remove the oculars from the box and place one in each eye tube. **(Note: One ocular is marked with a "+;" place this ocular into the tube of the operator's dominant eye—usually the right eye.)**


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

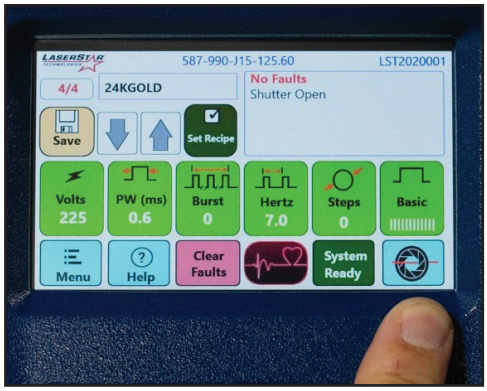


27. Retrieve the small metal stand from the accessory kit. Place the stand inside the chamber and look through the scope. Adjust the height of the metal stand until it is clearly in view. **(Note: If the stand does not reach the appropriate viewing height, remove the thumb screws and place them in the alternate holes.)** When complete, turn the four (4) thumb screws to lock the stand into place. Next, adjust the scope until the metal stand is in focus.

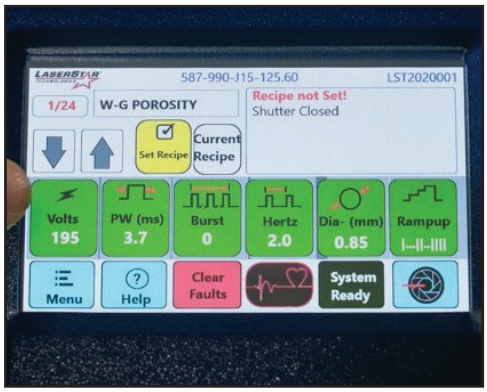


CROSS-HAIR ALIGNMENT

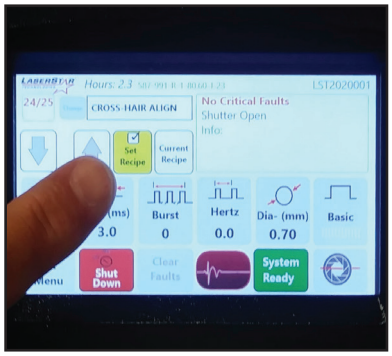
28. Depress the **Safety Shutter Open button** (located in the right-hand corner of the touch screen).

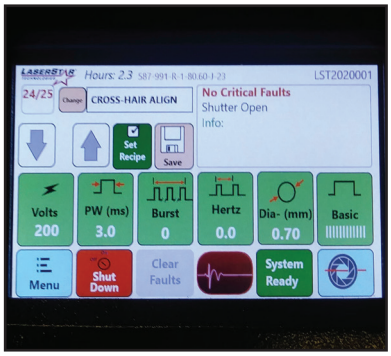


29. Depress the **Arrow buttons** on the touch screen and select memory cell #24/24 CROSS-HAIR ALIGN by using the **Up** or **Down Arrow buttons**.

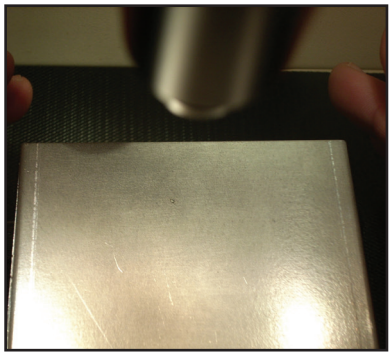


30. Depress the **Set Recipe** button (yellow button; located in the center of the touch screen). The parameter buttons will all turn green.

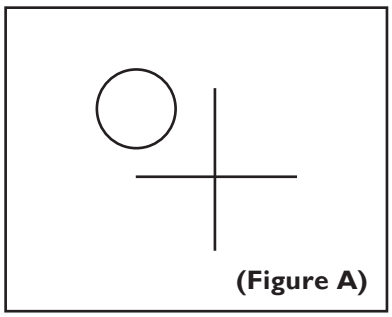


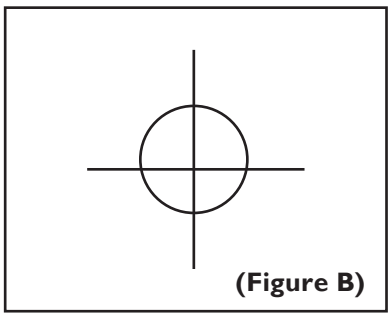


31. Without touching the stand, depress the foot pedal to the floor; this will release one laser pulse that will appear on the steel stand.



32. Look through the scope to reference the pulse "spot" location when compared with the cross-hair center target **(Figure A).** Proper alignment requires moving the cross-hair center directly above the laser pulse position, as indicated below in **Figure B**.





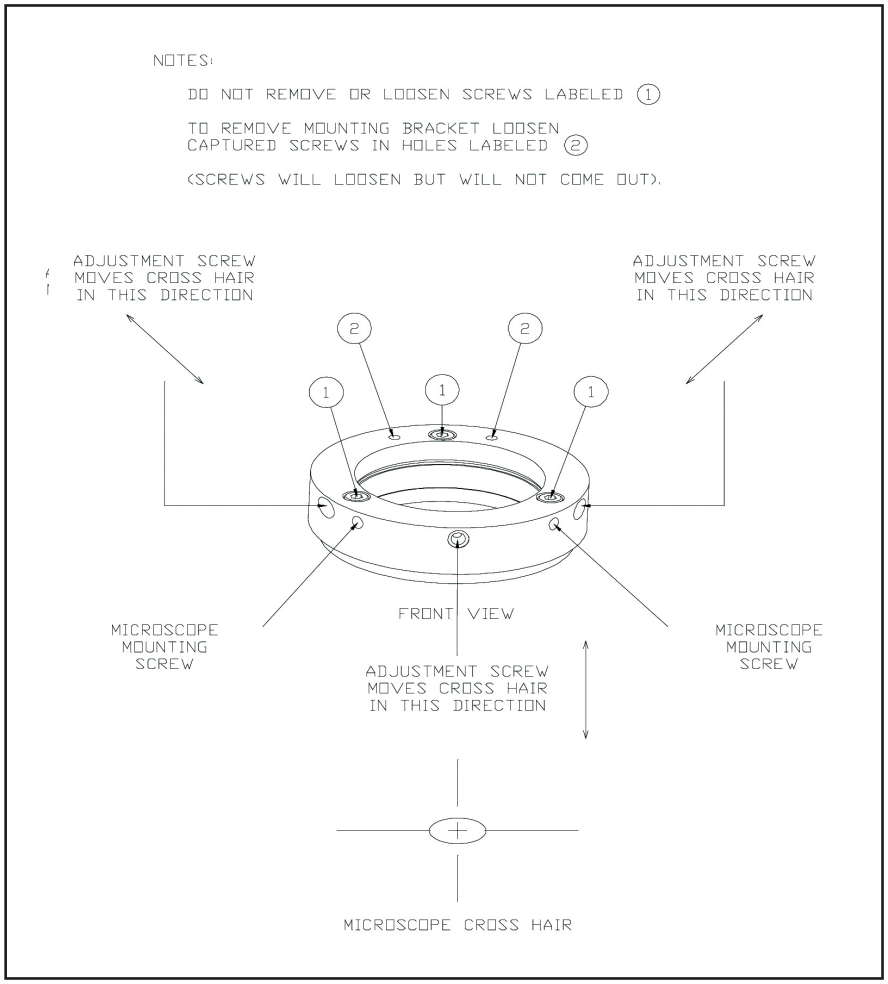
33. Referencing the optical alignment bracket diagram below, use a 2mm Allen wrench (provided) and the three (3) alignment screws to move the cross-hair center target directly above the laser pulse position. The alignment screws are positioned on the mounting ring at 3, 6, and 9 o'clock. Movement directions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



34. Once the cross-hair center target is correctly positioned in the center of the laser pulse (reference **Figure B;** previous page), refire the laser to ensure the accuracy of all adjustments.

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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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.

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