iWeld® Workstation 1902/1902-MFX Series Quick Setup Guide

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IWELD® 1902/1902-MFX 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: 25" x 43" Area, Weight: Model Dependent

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. It's recommended that two people unpack the device. Cut the banding straps and unscrew 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.

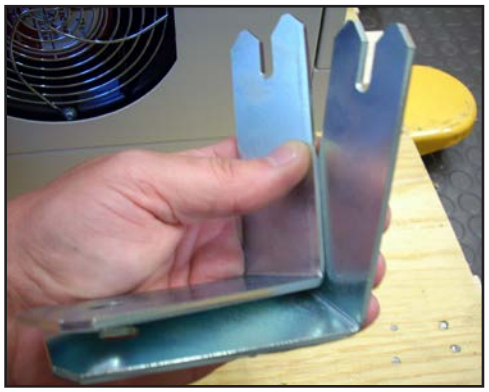
6. Two people can now lift the tri-wall corrugated cover off the base. Remove the plastic cover. **(Note: Be sure to save the plastic cover and use it to protect the machine from dust while it's not in use.)**


7. Remove the boxes under the machine. These house the MFX component (if applicable) and relevant accesories that may be included with the machine, including the argon gas regulator or side monitor.

8. The laser will come securely mounted to a skid base via two (2) floor anchor brackets (located at the lower rear of the machine) and two (2) wall brackets (if installing the non-MFX laser). Unscrew the 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 bolts that secure the brackets to the laser. **(Note: A 5/16" socket will work, as well.)**

Re-install bolts to the back of the laser after removing brackets.

Do not discard the anti-tip brackets; save these for future use.



9. Ramp recommended. One person will need to stand in front of the machine and lift it by grasping the bottom of the chamber. Lift the front of the laser by pivoting on the rear wheels high enough for the front wheels to clear the wooden support base. Move the laser back until the front wheels clear the skid base; the laser will now be resting on its undercarriage.

10. Allow the laser to 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.

POWER REQUIREMENTS 120V

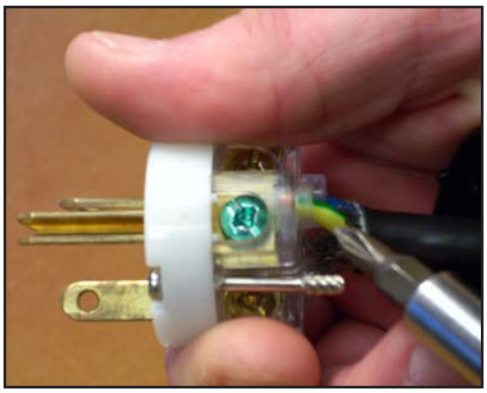
11. Set a traditional voltage meter to 200VAC and check the wall outlet. An acceptable voltage range is from 108VAC to 132VAC, ~50/60Hz, single-phase unless an alternate agreement was made when the machine was ordered. **(Note: Make sure you are running a dedicated line.)**

POWER REQUIREMENTS 220V

12. 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.)**

CHECK THE PLUG AND OUTLET

13. 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

14. 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.



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



***The water is either DEIONIZED or DISTILLED. Please check the water jug and the water tank to make sure that they match. If your machine requires DEIONIZED water then the distilled water will damage your machine.**

16. Remove the cap from the 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 water tank. Rest the water jug on your knee, ensuring that it sits above the water tank to allow gravity to assist in the water flow.



17. 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 water tank. Make sure the water jug remains above the water tank to allow gravity to assist in the water flow.

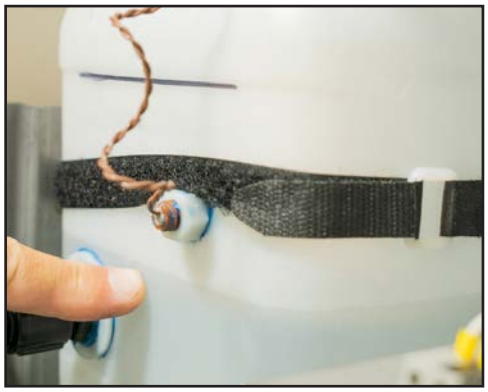


18. When the water tank fills to the upper black site line, stop the water flow, and remove the siphon hose. Reinstall the red plug to seal the fill hole on the water tank; the pump is now primed.

PRIMING THE PUMP

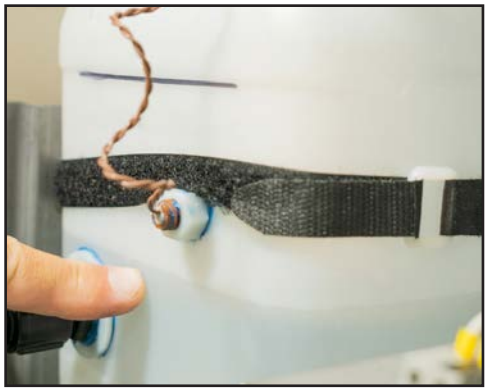
19. Select the power cable from the accessory kit (provided) and plug it into the outlet on the rear of the machine, it will be marked with the appropriate input voltage. Plug the other end of the power cable into a wall outlet and turn on the Mains Power (red and yellow switch; right-hand side of the laser). The pump in the iWeld will imminently begin to circulate the water throughout the system.

20. This will immediately prime the pump and cause the water level in the tank to drop.



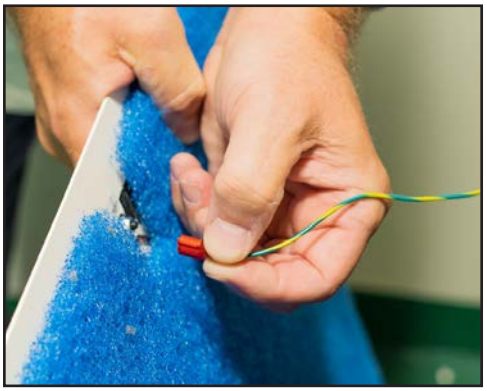
TOPPING OFF THE TANK

21. Check the water level; if the water level dropped BELOW the line, turn off the Mains Power switch and repeat steps #15 through #19. (Note: An acceptable water level is anywhere between the site line and notably below the red plug.)



22. If the water level is getting close to the red plug, turn off the Mains Power Switch. Remove the red plug from the 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 nears the site line, stop the siphon process by removing the hose from the water tank.

23. Reconnect the grounding cable and replace the left-side cover of the machine.

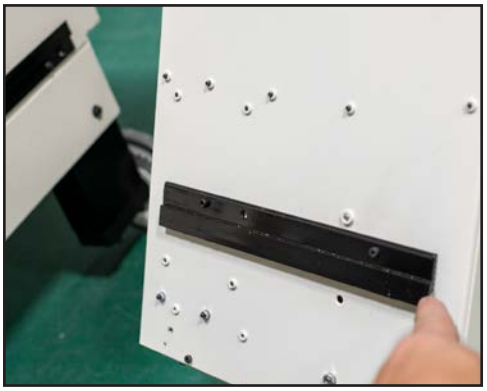
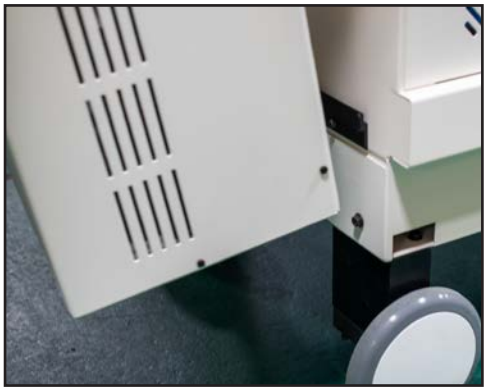


INSTALLING THE MFX COMPONENT

(NOTE: Skip to "Final Connections & Power Up" if you did not purchase the MFX Components.)

24. Remove the two (2) bolts from the back of the machine, just below and to the left of the wires. Save these in order to secure the MFX component later.


25. Retrieve the MFX component from its container. Align the long black metal strip from the back of the MFX component above a similar black metal strip located at rear of the machine. It will slide in.

26. Once it is secure, take the bolts from step 14 and screw them back to the machine through the MFX component's top metal braces.


27. **Make sure that before you start to plug the MFX component to the laser that the mains switch is off for both the machine and the MFX component.** It is located at the bottom of the MFX component.

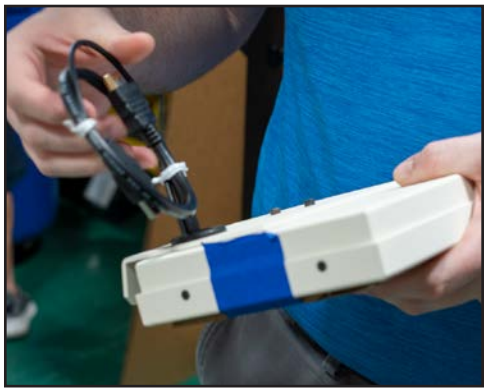
28. After securing the MFX component, you will now connect all of the wires from the back of machine to the component. All wires have labels that match their corresponding ports. (i.e. HDMI to HDMI)

Make sure that when you're ready to use the machine that you also turn the MFX component on as well.

INSTALLING THE MONITOR

(NOTE: Skip to "Final Connections & Power Up" if you did not purchase the MFX Components.)

29. The laser comes equipped with a side monitor. Retrieve the monitor from the accessory kit. The monitor will come assembled. You will need to disassemble the monitor for easier installation.

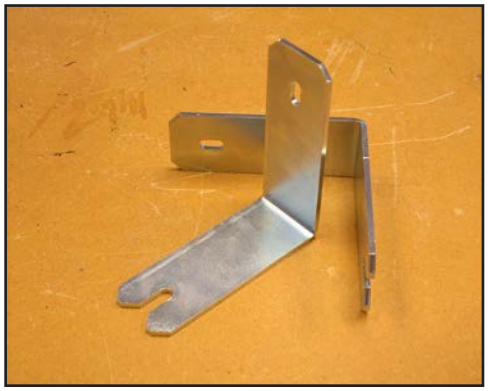


30. Remove the bolts from the top of the machine besides the mains power switch. Then bolt the monitor's stand to the machine.

31. Feed the wires from the back of the monitor through the hole on the stand then plug them into the machine. Then bolt the monitor back to the stand.

INSTALLING THE ANTI-TIP BRACKETS

32. The anti-tip brackets are supplied for applications that require the welder to be secured to the floor (and wall if it isn't an MFX) for increased stability. The instructions that follow show methods for securely mounting the laser system to the floor, the wall, or both if desired.

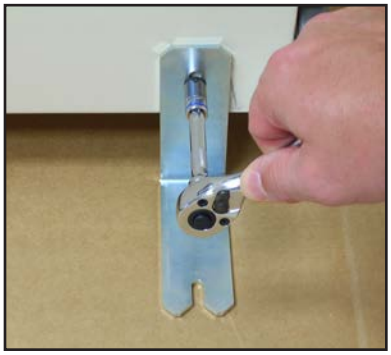


Floor brackets

Wall brackets

(NOTE: Brackets may look different, but the steps will largely be the same.)

33. 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) or power drill; 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.



FINAL CONNECTIONS & POWER UP

34. 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.

35. Retrieve the foot switch from the accessory kit. Plug the cable into the outlet marked "Foot Pedal" on the back of the laser* and turn the threaded fastener to tighten. Place the pedal on the floor.

* If you purchased the MFX version, it is located on the top of the MFX component.

INSTALLING THE CHAMBER LIGHTS

36. 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

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

38. 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.

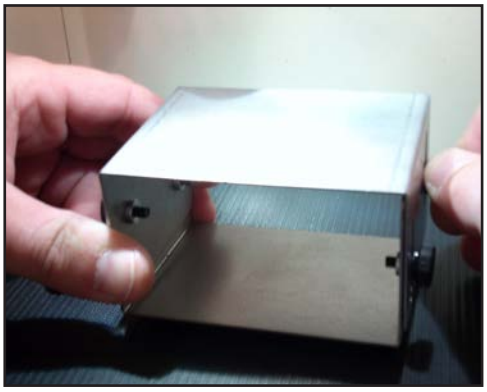



39. Remove the oculars from the box and place one in each eye tube. The user must set the dominant eyepiece's ocular tube to its '0' position (center of adjustment) before finding focus. **(Note: One ocular is marked with a "+"; place this ocular into the tube of the operator's dominant eye, usually the right eye.)**


The dominant eyepiece should not be adjusted from its center-of-adjustment while the non-dominant eyepiece should be adjusted to match the dominant eyepiece's focus (the view through both eyepieces should be identical, and the end-user should only adjust the one without a crosshair to achieve this).

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


41. 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.)**



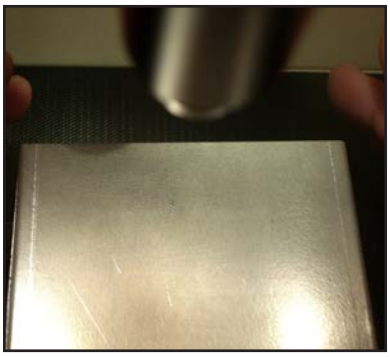

CROSS-HAIR ALIGNMENT

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

43. 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**.

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

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



46. Look through the microscope to reference the pulse spot position and compare with the location of the cross-hair center target. **(Figure A)** When properly aligned, these will overlap. **(Figure B)** For alignment and movement instructions, be sure to reference the **Optical Alignment Diagram** (next page).

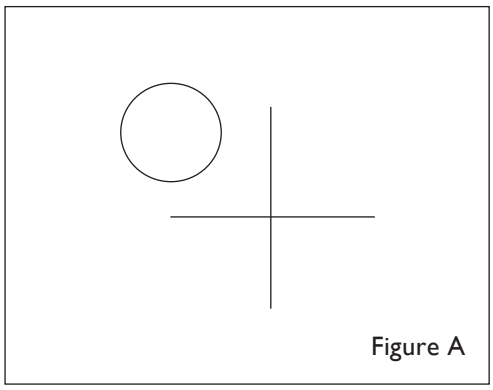


Figure A

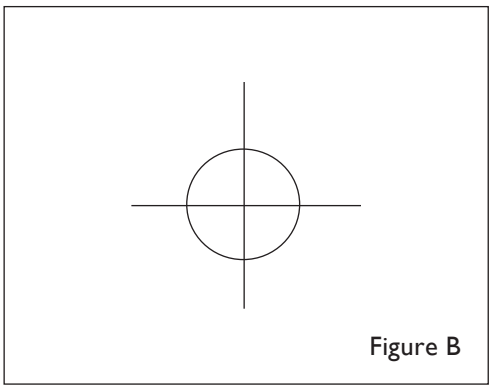


Figure B

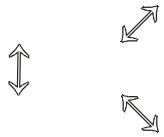
47. Referencing the optical alignment bracket diagram for the microscope, use a 2mm Allen wrench (provided) to move the cross-hair center target directly above the laser pulse position. The three (3) alignment screws on the mounting ring are located at 3, 6, and 9 o'clock.

Movement directions are as follows:

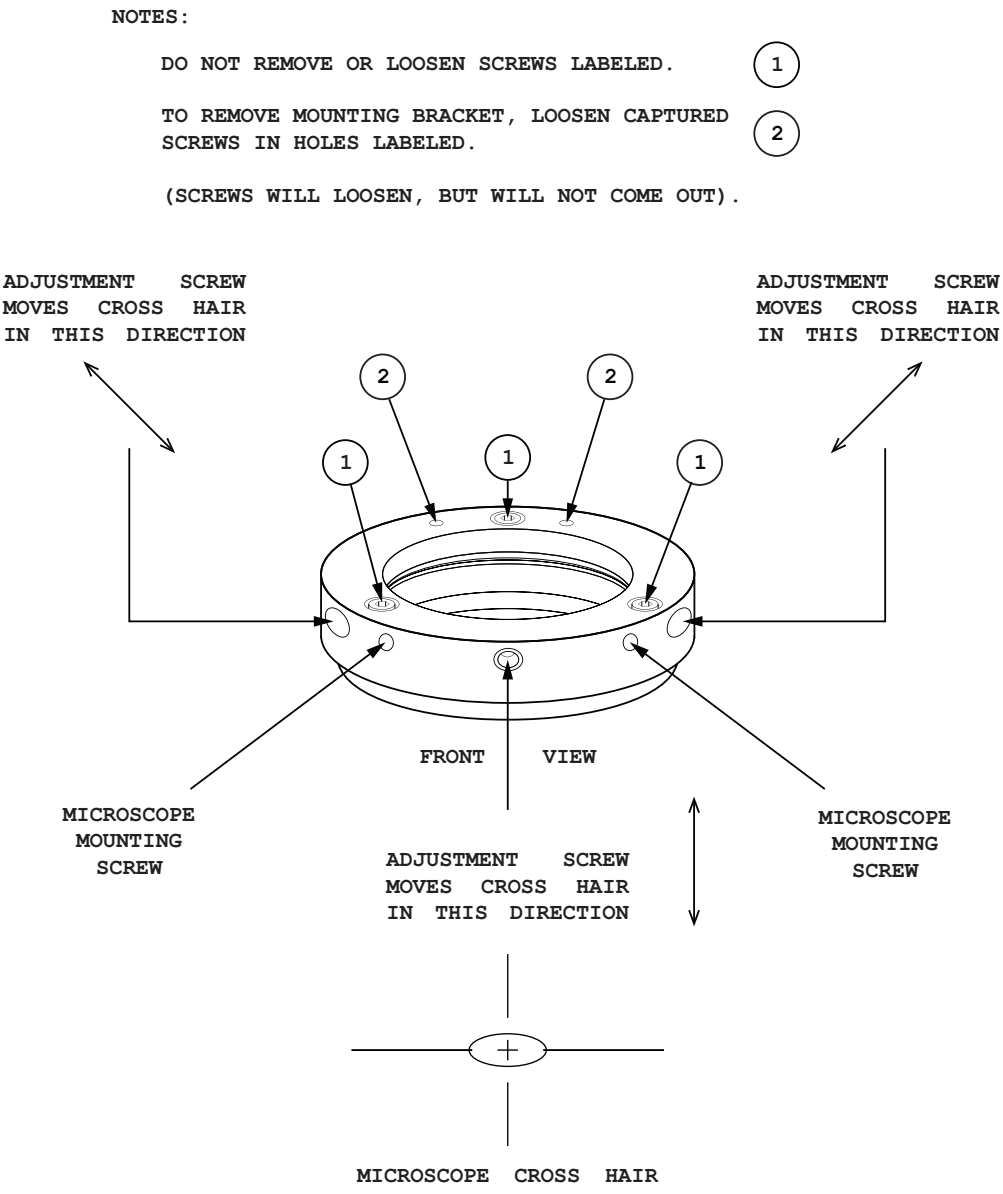
3 o'clock screw: moves cross hair (North-East to South-West)

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

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



Optical Alignment Diagram



48. 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)

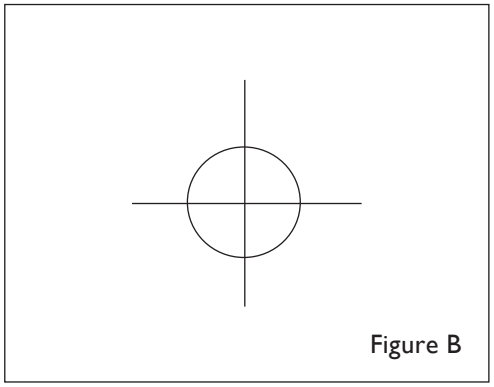


Figure B

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

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

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