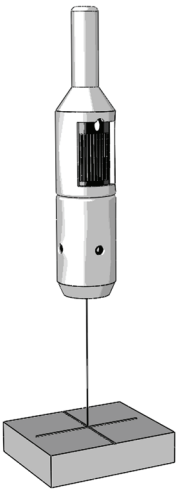
Laser Center/Edge Finder®

Patent Pending — a Registered Trademark of SDA Mfg.



OPERATIONS MANUAL

Laser Center/Edge Finder® Instructions and helpful Hints for Metal, Wood and Plastic applications.

SDA Manufacturing
PO Box 44
Piedra, CA 93649
559.787.2580
www.lasercenteredgefinder.com

Introduction

The Laser Center/Edge Finder® is finding new applications in a variety of working situations in the metals, wood and plastic industries. In all cases the simplicity of visual operations and accuracy allow machine operators to quickly establish location points, edges, centers of material, centers of holes, scribed lines, alignment of vises on mill tables, centering of rotary tables and spin indexers. The tool can also be placed in lathe tailstock to align work in a 4-jaw chuck, re-align the lathe tailstock after off-set for taper cutting and to set lathe tool bit height. The unit can also be used to visually set the mill head angle.

Helpful Hints

MILL WORK: Ideal for measuring material size or width of a hole and its center, as follows: Locate the edge of the material or the edge of a hole and zero the DRO. Move to the other edge of the material or edge of the hole, the DRO will indicate the size. To locate the center of a hole, divide by two and move to the center of the X-axis, zero the DRO. Move the Y-axis until the laser is at the edge of the hole and move the table back the radius of the hole. You should now be at the center of the hole.

To install or re-install a mill vise, place the vise in the approximate position and snug one hold down bolt. Place the Laser Center/ Edge Finder® in the mill chuck or collet and move the X-axis or Y-axis and align the vise jaws with the laser beam and secure the hold down bolts.

LATHE WORK: 4-jaw chuck material alignment: Place the Laser Center/Edge Finder® in the tailstock chuck and loosen and tighten the 4-jaws until the laser beam appears on the center punched mark or scribe line intersection on the work material.

To return a tailstock to the center position after off center setting for taper turning, place the LC/EF in the headstock chuck. Put a live or dead center in the tailstock and move the tailstock close to the nose of the laser. Adjust the side screws of the tailstock until the laser beam is on the tip of the live/dead center.

CNC Metals, Wood or Plastic: Installed and located in the ATC tool fixture, the Laser Center/Edge Finder® allows quick access and the ability to locate the center or any work point on the work material surface. Once a work point on the material is located and that point is stored in memory, return the LC/EF to the ATC rack, pick up the cutter tool and return to the work point.

Operating Instructions

The three 1.5 volt batteries (LR-44 or equivalent) are already installed. Either an appropriate size collet or drill chuck is required to use the 6mm, 1/4",3.8", 10mm or 1/2" shank units. A collet is highly recommended.

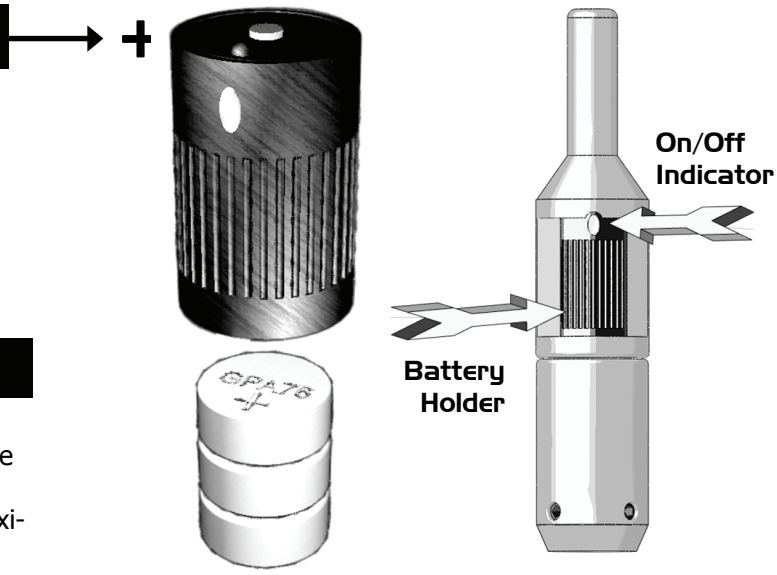
Once the Laser Center/Edge Finder® is installed in the mill apply thumb pressure, slightly downward, to the black Battery Holder/On-Off switch and rotate in either direction. The white mark should be facing out when the unit is powered on.

Do not turn upside down and look at the light source. Move the table until the laser light is showing down the edge of the material, or to find a center punched mark, move the table until the laser dot is in the center of the punched mark.

This is the Direct Method. No more slightly touching the edge of the old center finder and then moving the table and additional amount, the Indirect Method.

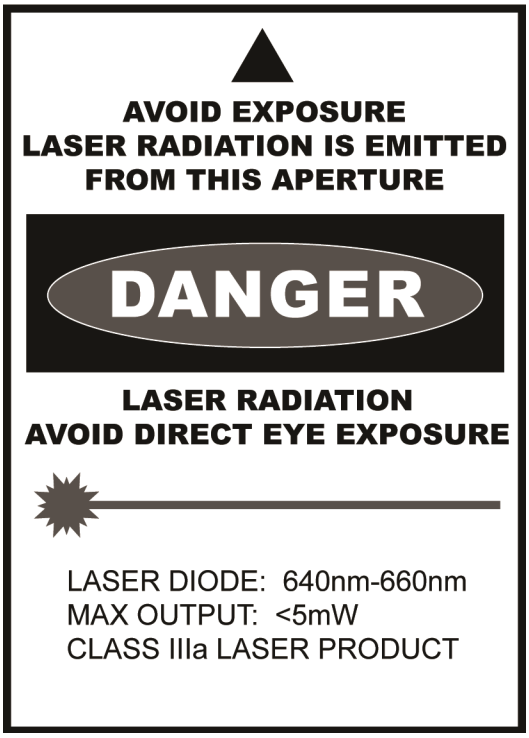
Replacing Batteries

To replace the three batteries: A video of this process can be seen at our website. Unthread the upper and lower parts of the unit with the nose up to prevent the batteries from falling out. Tap out the three old batteries and **stack the three new ones on top of each other with the numbers up. Slip the upper body (and/or battery holder) down over the three new batteries.** Thread the lower body onto the top body. Again, this sequence is demonstrated on our website. Check for alignment.



Polarizer Instructions

Slip the polarizer over the nose piece of the Laser Center/ Edge Finder®. Always rotate the polarizer counter-clockwise to prevent the nose piece from unthreading from the laser body. Rotate the polarizer up to 90 degrees to achieve maximum effect.



A similar warning label is affixed to the body of the LC/EF unit. Always make sure any bystanders in the vicinity of use are made aware of the danger of looking directly into the laser.

Safety Information

1) **DO NOT** remove or deface any product labels. Removing product labels increases the risk of exposure to laser radiation.

2) **DO NOT** stare directly at the laser beam or project the laser beam directly into the eyes of others. Serious eye injury could result.

3) **DO NOT** place the Laser Center/Edge Finder® in a position that may cause anyone to stare into the laser beam intentionally or unintentionally. Serious eye injury could result.

4) **DO NOT** operate the Laser Center/Edge Finder® around children or allow children to operate the tool. Serious eye injury could result.

5) **DO NOT** use the Laser Center/Edge Finder® for any purpose other than those outlined in the instructions. Doing so could result in serious injury.

6) **ALWAYS** turn the Laser Center/Edge Finder® off when not in use. Leaving the tool on increases the risk of someone inadvertently staring into the laser beam.

This unit complies with FDA: 21 CFR Chapter I, Subchapter J and 21 CFR 1040.10 and 1040.11

CNC Wet Cabinet LC/EF

The CNC unit is designed to survive in a wet cabinet environment as another tool in your ATC tool rack inventory.

The only extra care to take in using the unit is to remember to turn it off after using it and putting the blue boot back on. Since the laser light will be covered up you may run the batteries down before you use it again if left on.

The blue boot has a light coating of petroleum jelly on the inside to assist in pulling it off the unit. It is easer to pull off once it is in your tool rack. Just pull on the ring and gently rotate counter-clockwise.

To Our Water Jet Customers

To ensure centering the LC/EF is equipped with an "EZ-Collet" split shank. Install the LC/EF by grasping the unit on the bottom of the nose and slide upwards until the unit bottoms out on the nozzle taper.

The Laser Center/Edge Finder® "EZ-Collet" spit shank model comes to you already aligned on the appropriate size nozzle.

If over time the laser unit looses its grip on the nozzle, you can gently place the shank in a vise with smooth finish jaws and pinch the end slightly.

Alignment Procedure

Should the unit be dropped and is no longer aligned, it is a simple matter to place the unit in the mill and realign, using the adjusting screws on the nose of the unit.

If the Laser Center/Edge Finder® is used on various pieces of equipment, check alignment before using as each machine will have different amount of wear in the quill bearings. Using a collet will significantly improve repeatability.

If it is used predominantly in one machine, once aligned it will offer consistent results.

1. Place the LC/EF in a chuck or collet and turn the LC/EF on with the work surface 4" or less from the nose of the laser.
2. Disengage the chuck and rotate the chuck by hand, note the path traced by the beam. If it is making a circle rather than remaining as a dot, it needs to be aligned
3. Use the supplied Alignment Card or scribe a cross + on the work surface or a piece of paper and place it so the + is approximately in the center of the circle of the beam path.
4. Rotate the chuck until the alignment screws are in a North-South, East-West position.
5. Using the provided 5/64 Allen wrench, loosen the North screw and tighten the South screw, for instance, and then the East-West screws until, when you rotate the chuck, the dot remains in one place and has no perceptible "wobble."