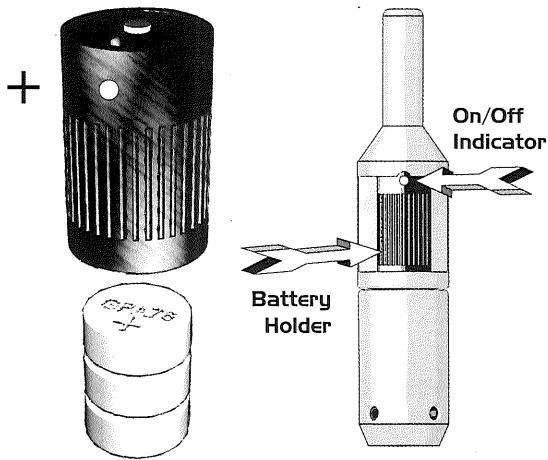


## Replacing Batteries



To replace the three batteries: With the nose pointed up to prevent the batteries from falling out, unthread the upper and lower parts of the unit. 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.\* Check for alignment. For battery replacement, use LR-44, GPA76, AG13, G14A or A347 batteries. Batteries are available through SDA Manufacturing LLC or your local provider.

\*A video of this process can be seen at our website.

## 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.

To use the double Polarizer, simply rotate the upper body in one direction to minimize the laser image, and rotate the bottom body in the opposite direction and you should be able to thin the lines or achieve just a single laser dot.

## Helpful Hints

**Mill Work:** Ideal for measuring material size or the 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, move the X-axis until the laser dot is on the edge of the hole, being in the center is immaterial. Zero the X-axis or DRO and continue traveling to the other side of the hole, note the reading and back track half the distance. Do the same thing for the Y-axis. You should now be at the center of the hole. The new multi-ring unit makes it even easier to re-enter an existing hole.

To install or reinstall 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 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 point of work on the work material surface. Once a point of work 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 point of work.

# Laser Center/Edge Finder®

Patent Issued Nov. 2006

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## OWNERS MANUAL



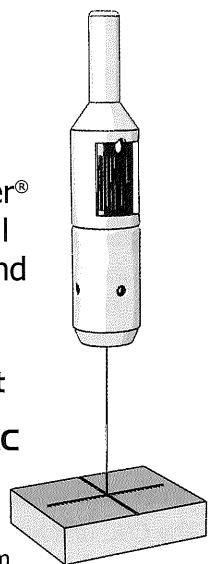
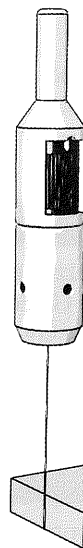
Laser Center/Edge Finder®  
Instructions and helpful  
Hints for Metal, Wood and  
Plastic applications

Class I Laser Product

SDA Manufacturing LLC

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## Introduction

The Laser Center/Edge Finder® (LC/EF) is finding new applications in a variety of working situations in diverse industries, including metal, wood and plastics, as well as in the areas of medical and education. 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 a lathe tailstock to align work in a 4-jaw chuck, re-align the lathe tailstock after offset for taper cutting and to set lathe tool bit height. The unit can also be used to visually set the mill head angle. These are just some of the ways that our customers have been able to simplify their work using the LC/EF.

## Battery Powered Units

There are three 1.5 volt batteries (LR-44 or equivalent) included in the unit and are already installed when received. 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 dot should be facing out when the unit is powered on.**

**DO NOT** turn it 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 or scribed lines. This is the Direct Method since it is not necessary to touch the material at any time.

## AC Powered Units

AC powered units come with a power cord. This fits into the receptacle on the front of the LC/EF and is meant to plug into a 120 volt electrical receptacle. To turn off the unit, simply unplug the LC/EF.

## Waterjet Units

The waterjet units come in either a split shank (EZ-Collet) model, or a solid shank model.

## Waterjet Split Shank Models

To ensure that the LC/EF split shank is properly centered, 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 split shank unit only comes in the battery powered version.**

The LC/EF split shank model comes to you already aligned on the appropriate size nozzle. If over time the laser unit loses its grip on the nozzle, you can gently place the shank in a vice with smooth finish jaws and pinch the end **slightly**.

## Waterjet Solid Shank Models

The solid shank model should be installed when the nozzle is removed. After finding the desired point, remove the LC/EF and replace the nozzle. The solid shank can be purchased either battery powered or AC powered. The AC powered unit should be plugged into the receptacle on the front of the LC/EF and into a 120 volt electrical receptacle.

## CNC Wet Cabinet Model

The CNC unit is designed to survive in a wet cabinet environment as another tool in your ATC tool rack inventory and comes with a blue boot to protect it.

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 it is left on. You will need to put the polarizer on each time you use the LC/EF because the boot will not fit over the Polarizer.

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

## Bridge Mount Units

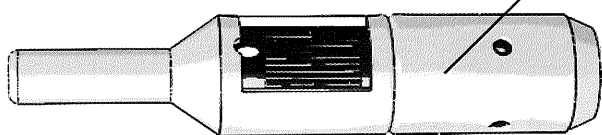
The Bridge Mount Laser Center/Edge Finder® is designed for use on a waterjet or wood CNC machine. It should be mounted on the bridge or spindle head. It comes with a dot or crosshair lens for aligning the work piece and establishing a starting point. The waterjet or CNC would then be given an offset instruction so the cutter goes to the exact point to start the project. The AC Bridge Mount unit is meant to be plugged into a 120 v. receptacle. The battery powered unit is powered by three 1.5 volt batteries (LR-44 or equivalent).

## Special Lens Units

- The crosshair lens unit allows the operator to orient the material or align a work piece on the work table.
- The 5 concentric circle lens unit allows the operator to re-enter an existing hole quickly and accurately by raising or lowering the quill to match the existing hole diameter.

### Explanatory and Certification Label

CLASS 1 LASER  
PRODUCT  
EN/IEC 60825-1  
2014 (2007 USA)  
Complies with US FDA  
performance standards  
for laser products  
except for deviations  
pursuant to Laser  
Notice No. 50, dated  
June 29, 2007



### Manufacturer ID & Serial No. Label

This Laser Product is designated as Class 1 during all procedures of operation.

## Laser Parameters

Wavelength	650nm
Laser Power for classification	<100µW
Mode of Operation	Continuous Wave

Caution - use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

## Safety Information

- 1) **DO NOT** modify the unit or remove protective housing. Never attempt to remove the laser itself. Never operate the unit if the housing is damaged or defective. If damage occurs, return it to the manufacturer.
- 2) **DO NOT** stare into the laser source or project the laser beam directly into the eyes of others, or at reflective surfaces. Always turn the unit off when not in use. Leaving the tool on increases the risk of someone inadvertently staring into the laser beam. Serious eye injury could result.
- 3) **DO NOT** operate the Laser Center/Edge Finder® around children or allow children to operate the tool. Do not place it in a position that may cause anyone to stare into the laser beam. Serious eye injury could result.
- 4) **DO NOT** use the LC/EF for any purpose other than those for which it was designed and outlined in the instructions. Doing so could result in serious injury.

## Maintenance

The only maintenance required on the LC/EF that should be performed by the purchaser is alignment and replacing batteries. No other maintenance is required.

## Service

NO SERVICE or service related adjustments should be performed by the customer. No attempt should be made to remove the laser itself from its housing. If the outside housing should be damaged in any way, it should be returned to the manufacturer.

## 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 and the provided allen wrench.

If the Laser Center/Edge Finder® is used on various pieces of equipment, check alignment before using, as each machine will have different amounts 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 collet and turn the LC/EF on with the work surface 16" or less from the nose of the laser.
2. Disengage the mill and rotate the collet by hand, noting the path traced by the beam. If it is tracing 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. Slide the Polarizer down to expose the alignment screws. Rotate the Polarizer counter-clockwise to make the dot small.
5. Rotate the collet until the alignment screws are in a North-South, East-West position.
6. Using the provided 5/64 Allen Wrench, loosen the North screw and tighten the South screw and then the East-West screws until, when you rotate the collet, the dot remains in one place and has no perceptible "wobble".