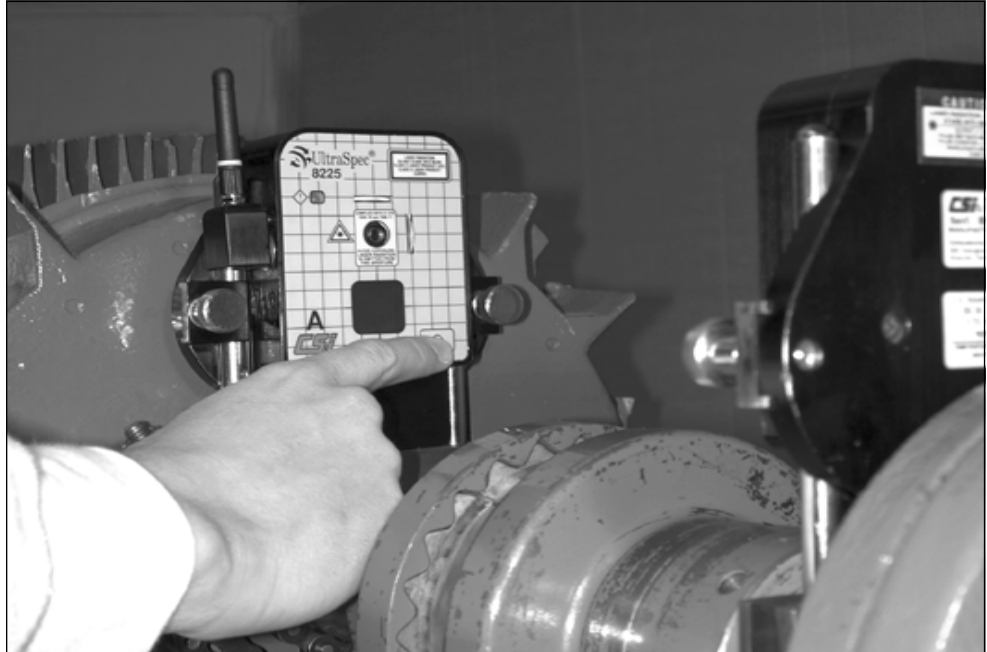


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## Turn the Laser Beams on



To turn the laser beams on, press the power button on each sensor head. See “Battery Usage - Laser Heads” on page 4-16 for power button options.

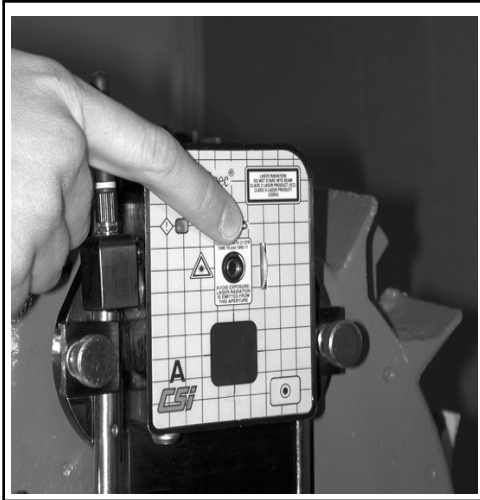
---

### **Caution!**

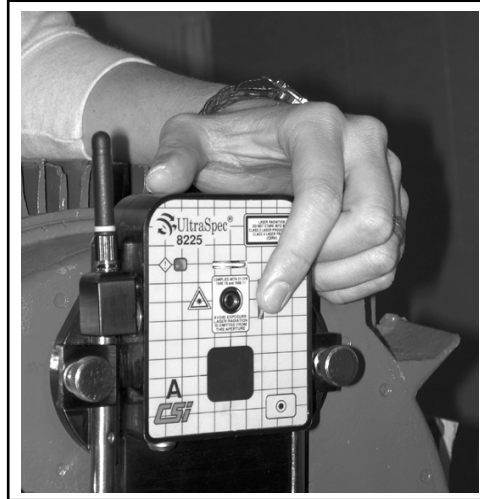
*Although the laser in the 8215/8225 system is low in intensity ( $\leq 1.0$  mW), never direct the beam at a human eye. Use of controls, or adjustments, or performance of procedures other than those specified by CSI may result in hazardous laser radiation exposure. To do so could result in serious personal injury. Always ensure that the sensor heads are mounted securely before turning on the laser beam.*

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## Center the Laser Beams



**Vertical Adjustment**



**Horizontal Adjustment**

Center both Lasers on their associated target by adjusting the thumb wheels on the front of each sensor head.

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### **Note**

If the movement is near the outer limits of its range in one direction, you can gain additional movement by adjusting in the opposite direction.

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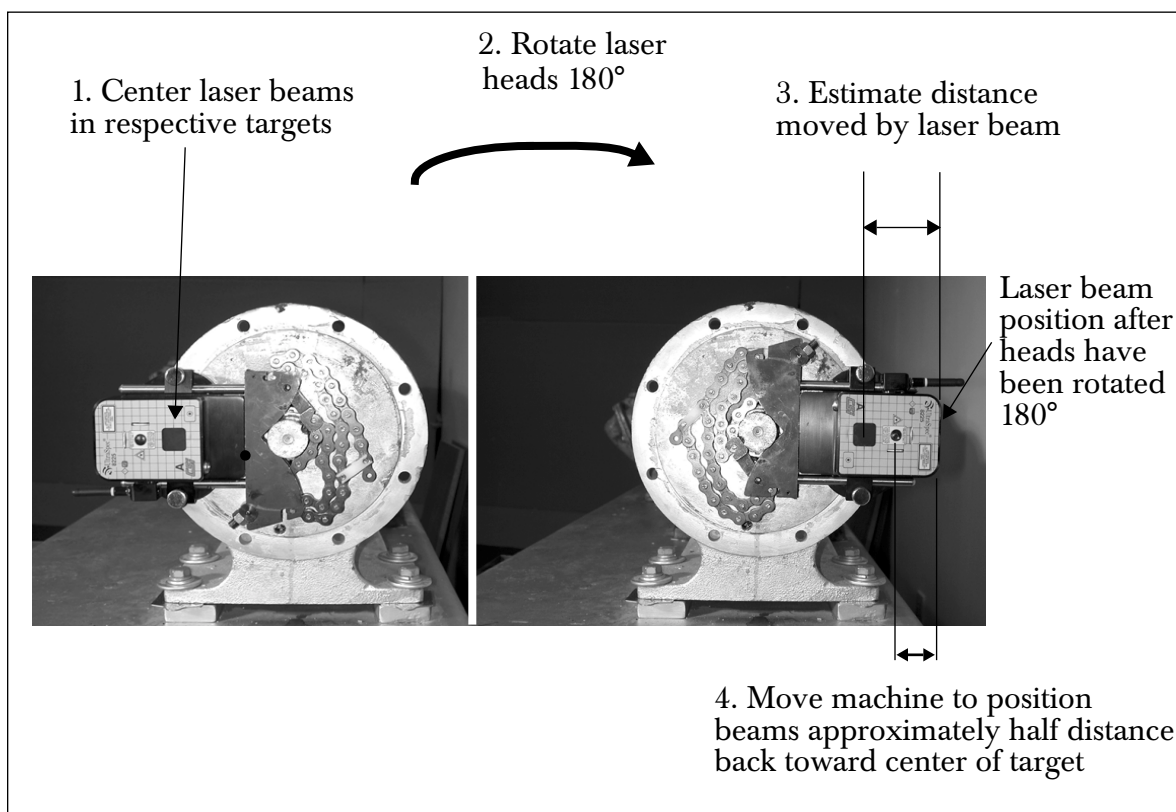
## Rough Alignment of the Laser Beams

Rough alignment may be required to keep the laser beam on the target as the fixtures are rotated. Either of these methods can be used:

- Visible Beam rough alignment – utilizes the visible laser beams without the use of the analyzer
- Partial Sweep rough alignment – utilizes the partial sweep capabilities of the analyzer

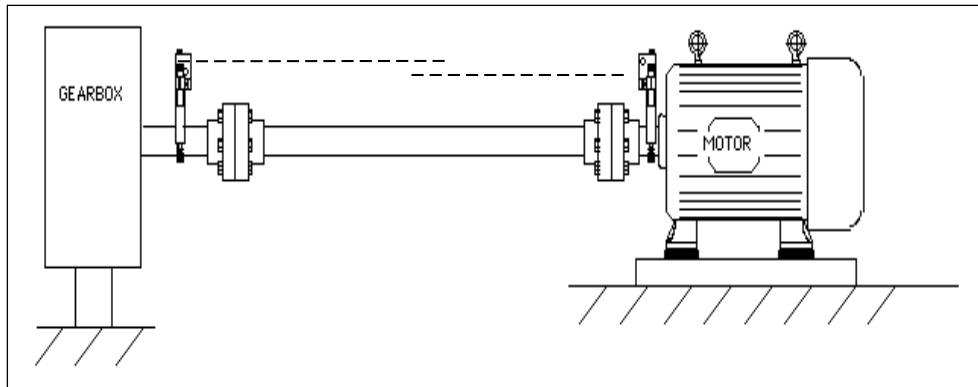
### Visible Beam Rough Alignment

This adjustment must be performed in each of the movement planes (typically horizontal and vertical, when required). A horizontal adjustment is shown in the following figure; duplicate the actions for vertical adjustments.



Rough Horizontal Laser Beam Adjustments

The gridlines on the front panel should assist you in determining the approximate movement(s) needed to rough the machines in. Gridline spacing is 0.3 inches (7.5 mm). The following table shows recommended moves based upon the gross movement of the laser beam on the sensor head. Gross movements are discussed in vertical terms for simplicity. Remember, you are seeing the extended centerline of both machines (see figure below).



Gross Movement		Recommended Machine Move
at Gearbox	at Motor	
Small	Large, down	Angular & Offset – add shims under the inboard Gearbox feet or remove shims from the outboard Gearbox feet.
Large, down	Small	Angular & Offset – add shims under the inboard Motor feet or remove shims from the outboard Motor feet.
Large, up	Large, down	Offset – add shims to all feet of the Gearbox or remove shims from all feet of the Motor.
Large, down	Large, up	Offset – add shims to all feet of the Motor or remove shims from all feet of the Gearbox.
Large, up	Large, up	Angular – add shims under the outboard feet of both machines or remove shims from the inboard feet of both machines.
Large down	Large down	Angular – remove shims from the outboard feet of both machines or add shims under the inboard feet of both machines.

---

**Note**

There will, of course, be combinations of the movements shown in the previous table. However, these recommendations should provide some general guidelines.

**Partial Sweep Rough Alignment**

In this method, you must use the fixtures and set the analyzer to Manual Sweep or Auto Sweep mode. Either method can provide an effective target area much larger than the 20 mm x 20 mm surface area. If the fixtures can be rotated and both beams remain on target **greater than 90°** (*recommended*) of the sweep, the analyzer can produce an alignment solution from the data taken. Data gathered from the portion of sweep that laser beams were off target is rejected. For more information about sweep data collection modes, see Chapter 6, “Acquiring Alignment Data.”

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**Note**

This procedure will also work when using the Dual Pass mode.



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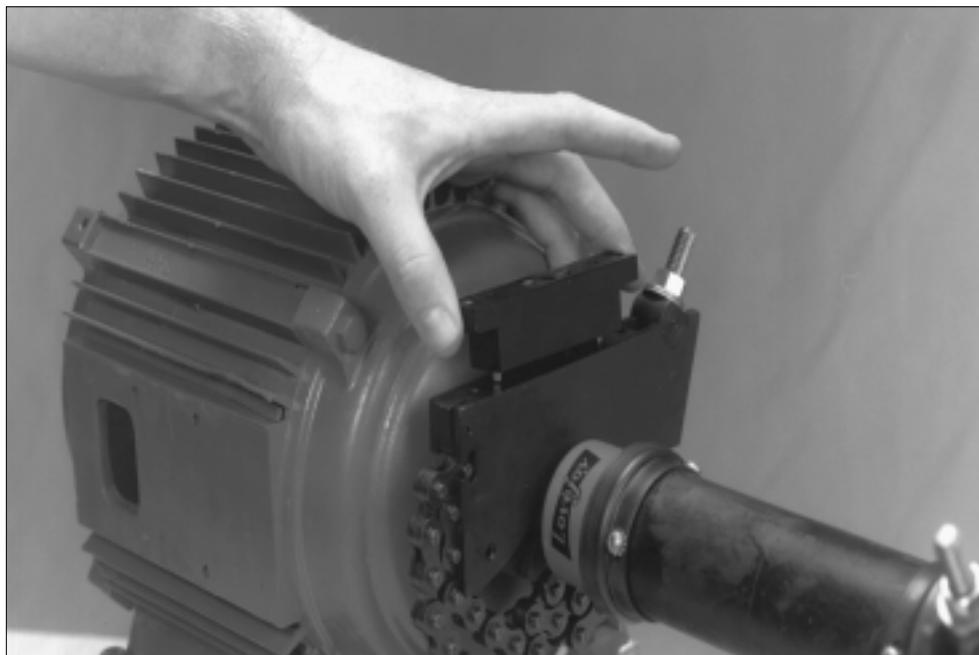
## Introduction to Special Applications

This section covers using additional mounting blocks and mounting on large diameters (> 8 inches). Normally, additional blocks are used to achieve greater coupling clearance however, in some cases, you may find that one (or both) of the mounting blocks must be installed on the coupling itself. For larger diameter shafts (or mounting on a coupling), additional lengths of chain may also be needed to mount the base.

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## Using Additional Mounting Blocks

### Mounting a 1-inch Block



This photograph shows a 1-inch block being mounted and tightened onto the mounting block itself.

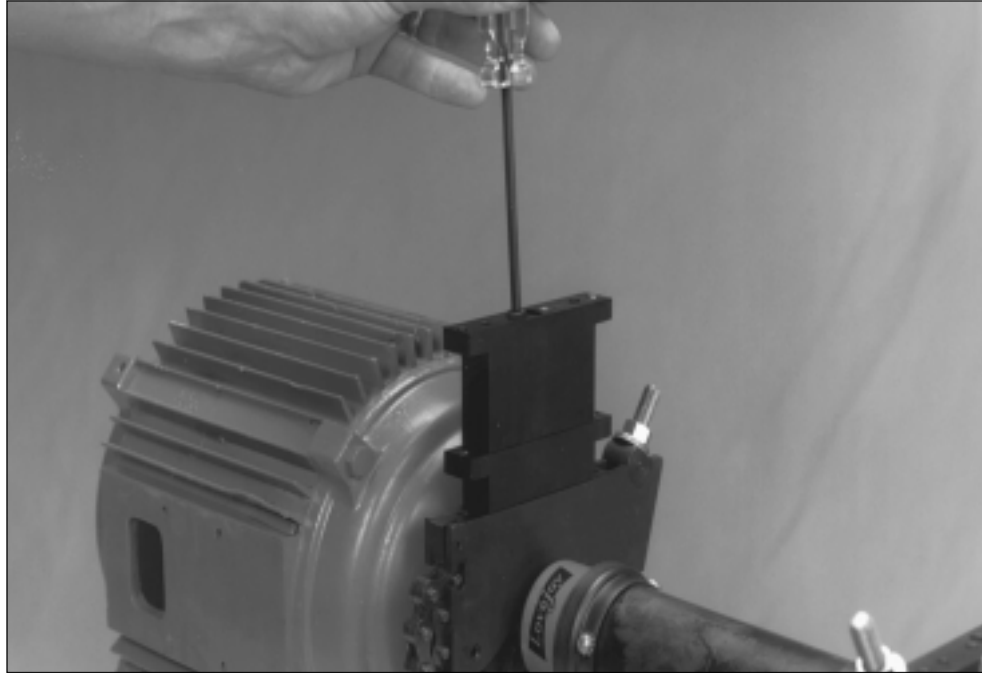
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**Note**

CSI recommends that you tighten all vertical mounting block cap screws to 50 in-lbs (without lubrication).

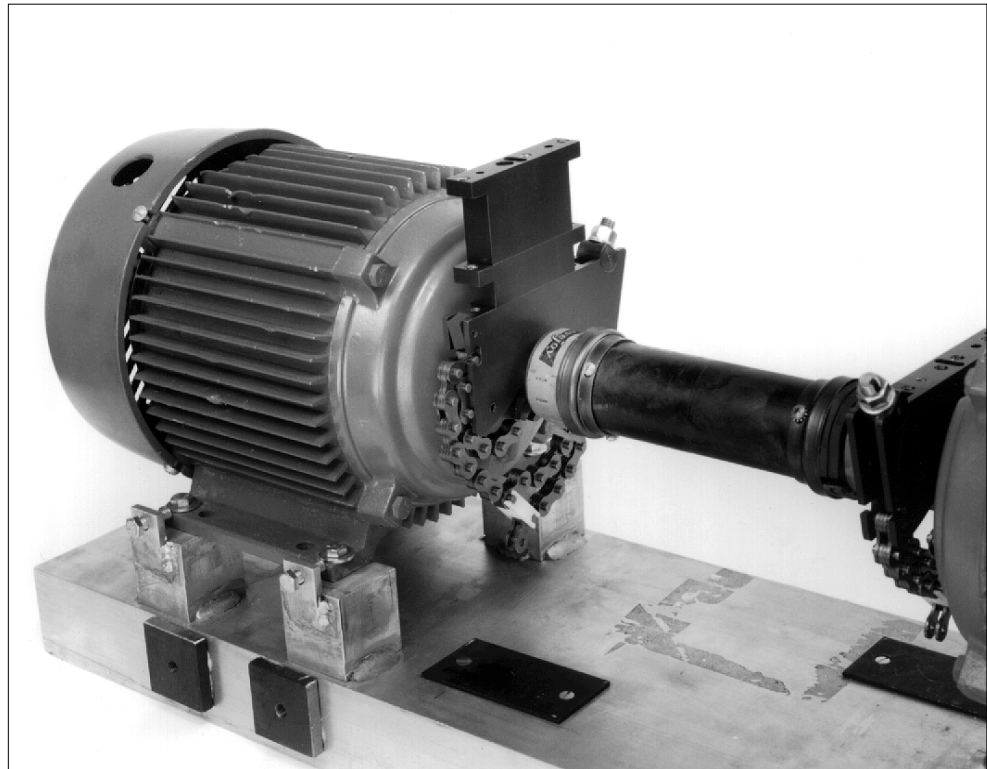
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## Adding a 2-inch Block



This is a picture of a 2-inch block being attached on top of the 1-inch block (the blocks can be stacked in either order).



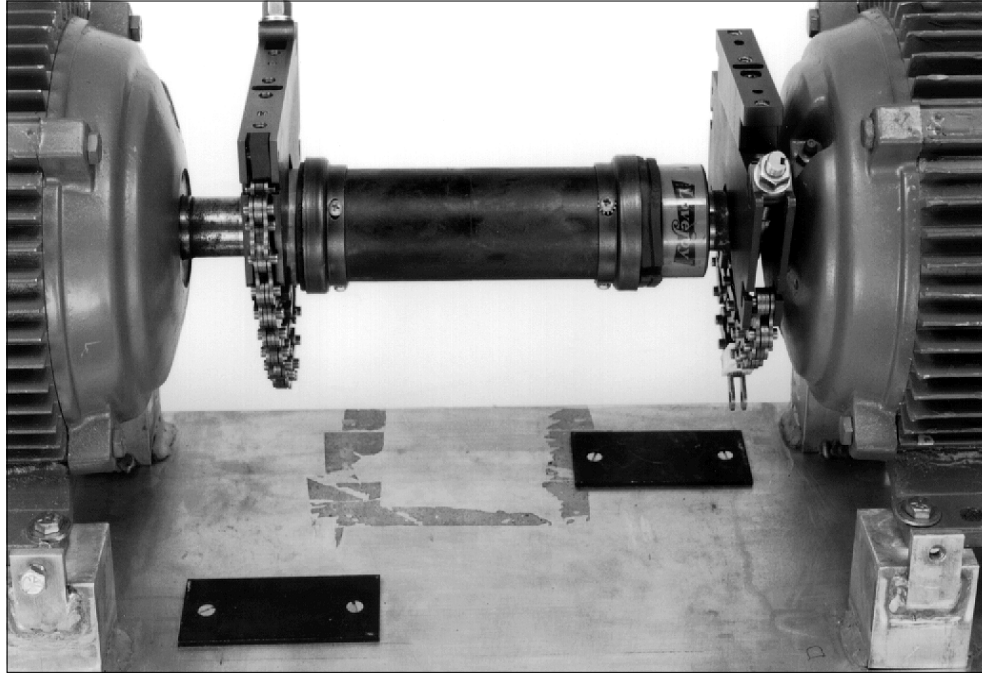


This shows the complete 3-inch extension setup. The following table lists which blocks are to be used for the various vertical extension ranges.

<b>For Vertical Extension Length (inches)</b>	<b>Use These Block(s) (inches)</b>
0	0
1	1
2	2
3	1, 2

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## Mounting One Bracket on a Coupling



If at all possible, CSI recommends that you mount the brackets on the shafts. However, this is not always possible. Occasionally, you may have to mount the bracket on a coupling.

This view shows brackets being mounted to the shaft on one side and the coupling on the other. In order to do this, you may have to use a vertical extension block(s). In the example shown above, a 1-inch extension block is being used on the right side; no block is used on the left (coupling) side.

### Mounting on Shafts (or Couplings) > 8-inch Diameter

Although the mounting base itself can be used on shaft diameters up to 26 inches (660 mm), additional section(s) of chain must be used for applications greater than 8 inches (203 mm) in diameter. CSI sells extension lengths in two foot chain increments (part number D22773). In addition to the chain itself, extension kits include a clevis pin and a hair pin.

Refer to the following table to determine chains needed with various shaft diameters.

<b>For Shaft Diameters Inches (mm)</b>	<b>Use These Chain Lengths</b>
Less than 8 (203)	Standard Chain Length
8 - 15 1/2 (203 - 394)	Standard Chain Length + 1 Optional Length
15 1/2 - 23 (394 - 584)	Standard Chain Length + 2 Optional Lengths
23 - 26 (584 - 660)	Standard Chain Length + 3 Optional Lengths

