Full Spectrum Laser LLC Beam Combiner Instructions

Overview

The beam combiner (1) is positioned at 45 degrees to the red laser pointed mounted in the silver tube on the far right of the laser cabinet. The beam combiner is a special optic that is reflective to the red light on the front but transparent to the invisible CO2 laser beam through the back. This allows the combination of the red laser beam and the invisible CO2 laser beam.

You must first align the invisible laser tube using the thermal paper then align the beam combiner. Do **not** adjust mirrors (2) or laser head (3) after it is aligned with the invisible CO2 beam. Adjust only the beam combiner (1) and the red laser pointer so that the red dot passes through the laser head and lens (3) (4). Both the red laser pointer and the beam combiner can be adjusted on their respective mounts.

Holes are predrilled on 4th generation units. With 3rd generation units, we recommend you use double sided tape to adjust the positioning until you are happy with the alignment before drilling holes.

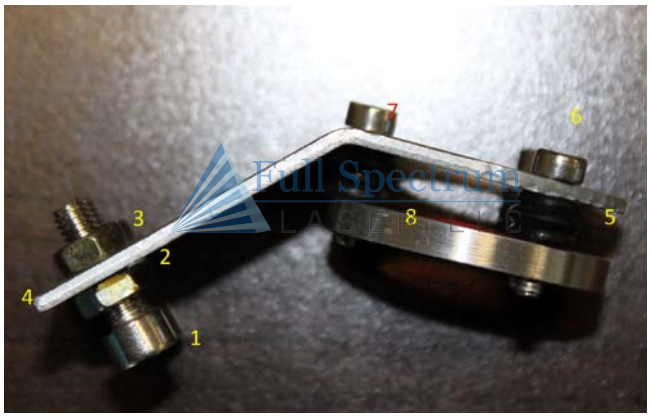
Adjustment of the beam combiner is a time consuming process but only needs to be done once. As long as most of the red beam goes through the laser head the lens will focus the beam to the same spot as the invisible CO2 cutting beam.

Beam Combiner Mount:

Adjust the pair of nuts (2) and (3) to adjust the tilt and mounting distance.

A set of two screws (1) is used to mount against the predrilled holes in the 4th generation laser models.

The ZnSe beam combiner optic is held in place by the holder (8). Screws (7) and (6) with the rubber O-rings (5) hold down the optic against the holder (8). Three screws (6) (7) can be tightened to tilt the beam combiner for precise control.



Red laser pointer and mount

Screw (3) is used to attach the laser diode against the case of the 4th generation models. Screws (1) (2) adjust the position of the laser pointer inside the silver laser diode mount (note there may only be one adjustment screw on some models). Red wire (5) goes to +5V and black wire (6) goes to GND. The 4th generation models are prewired. On the 3rd generation units, you will need to splice 5V from pin 3 of the 6 pin power connection to RetinaEngrave USB as shown below. Both Pin 1 and Pin 6 are GND.