

Optical path adjustment

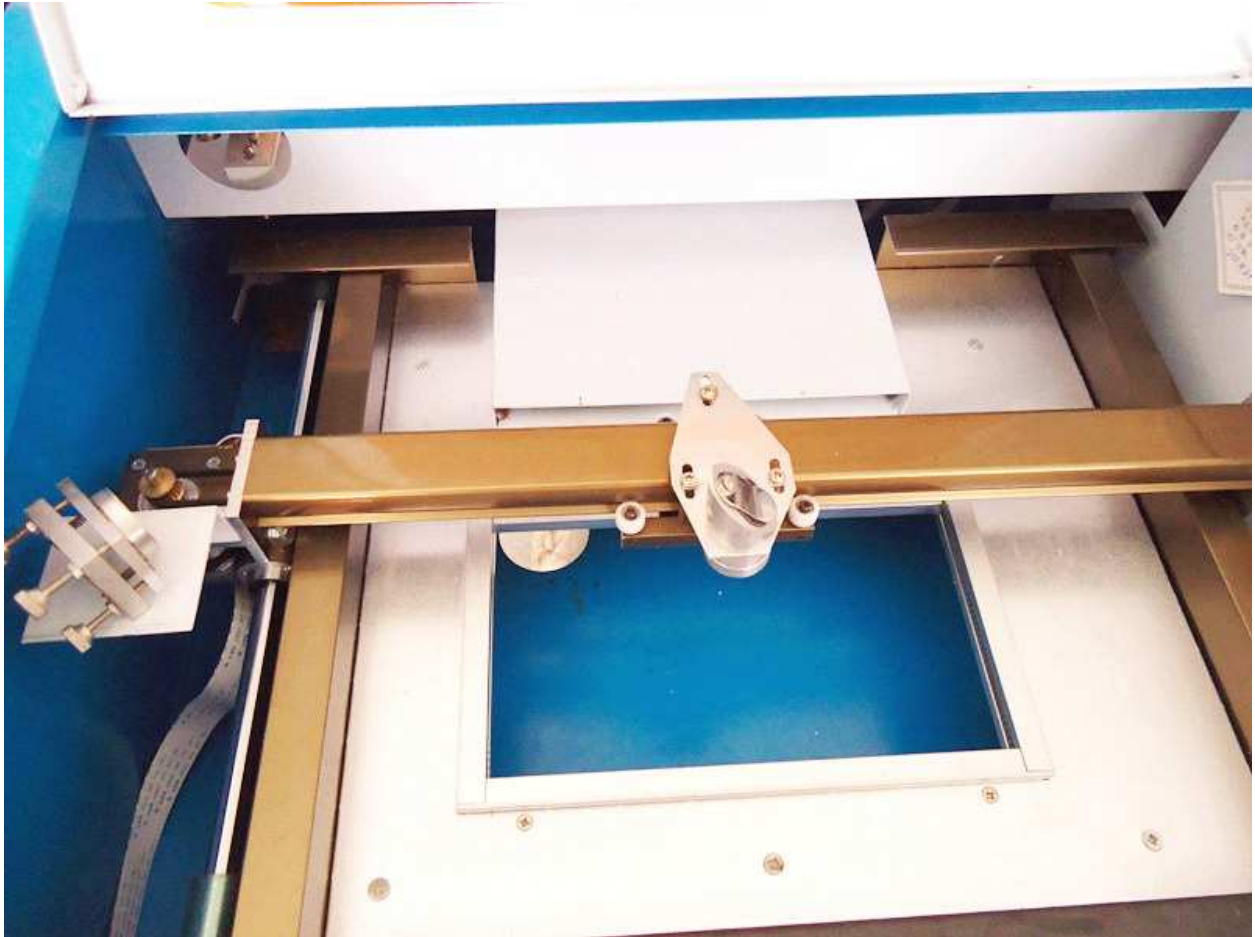


Figure 1

Figure 1 shows you the area of the optical path. There are three reflecting mirrors and one focus lens. We'll refer to them as #1, #2, #3 and #4. #1, #2, #3 are reflecting lenses and #4 is the focus lens. Refer to Figure 2 and Figure 3.

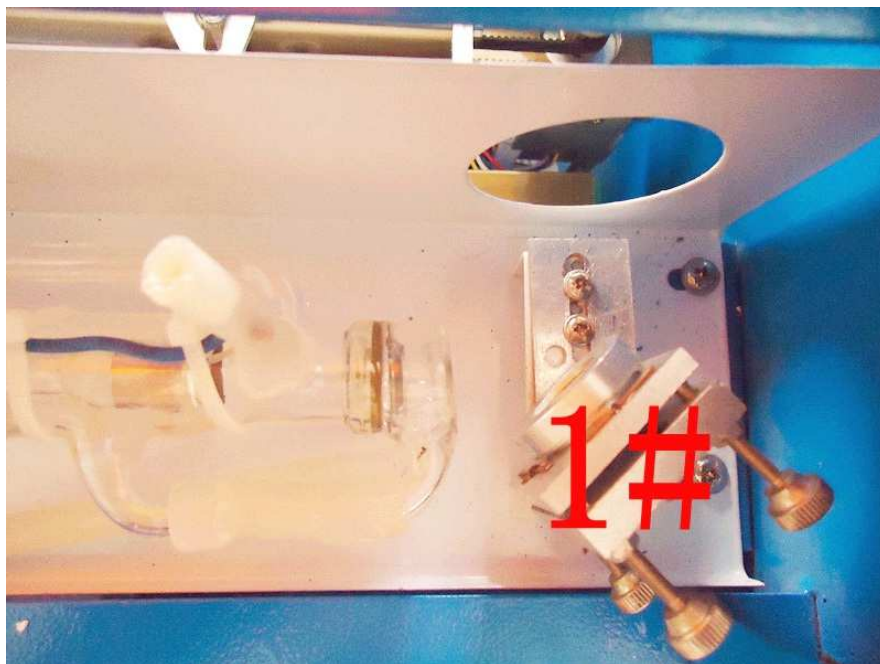


Figure 2

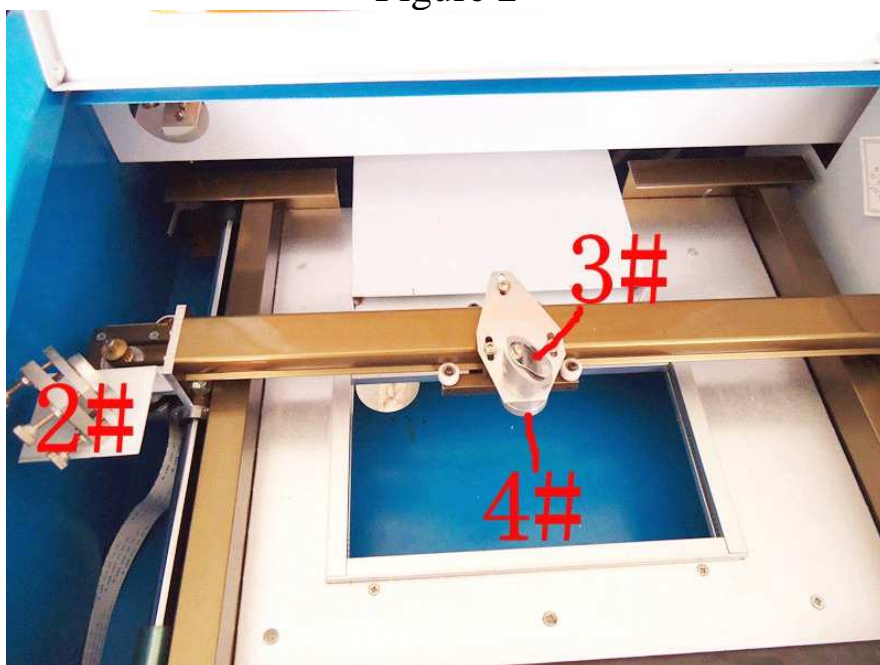


Figure 3



Figure 4

Figure 4 shows the control panel. On the control panel you have the power switch, laser switch, test switch, current regulation knob, and the current indicator.

Operating the Machine

1. Turn on machine.
2. Turn on laser switch; the laser WILL NOT activate of this switch is off. **Make sure you have water pumping through laser machine before activating laser. This WILL void your warrantee!**
3. Push test switch momentarily, this will activate the laser. At the same time, as the laser test switch is pushed, you will be able to

- read the mA from the current indicator. This switch is used to adjust the current and show the laser before engraving or cutting.
4. Current regulation: We can adjust the current value by turning the knob. The current will be higher when knob is turned clockwise.

Laser Adjustment

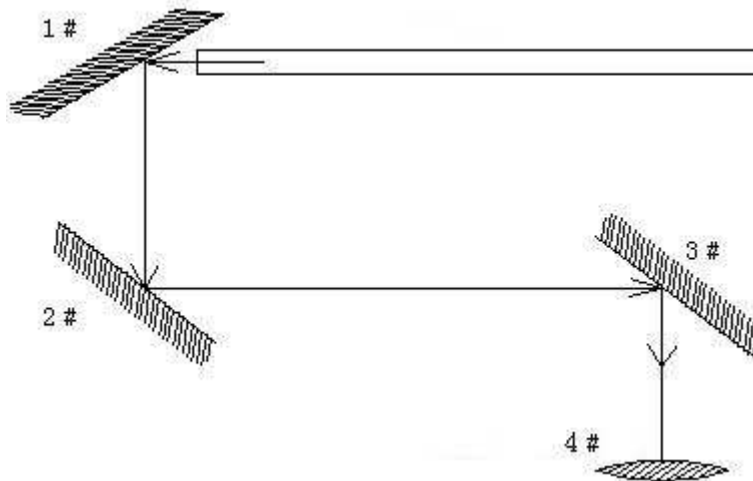


Figure 5

Step 1: Adjust the current value to 6mA

Step 2: Attach 4 layers of double sided adhesive tape on the #1 mirror, and momentarily push the test switch. This will burn a spot showing the path of the laser. Make sure the spot is near the center of the mirror. If it is not, please adjust the laser tubes position to achieve that.

Step 3: Next, go ahead and do the same procedure for mirror #2. Place 4 layers of tape onto mirror #2 and p[osition the X-beam to position A nearest to the laser tube. Momentarily push the test switch to get a burn spot on the tape. To avoid being burnt from a misaligned mirror please place a piece of cardboard in front of mirror #2, to get the general position of the laser spot. The laser spot should also be near the center of the mirror. Figure 6 is showing the tape on mirror #2.

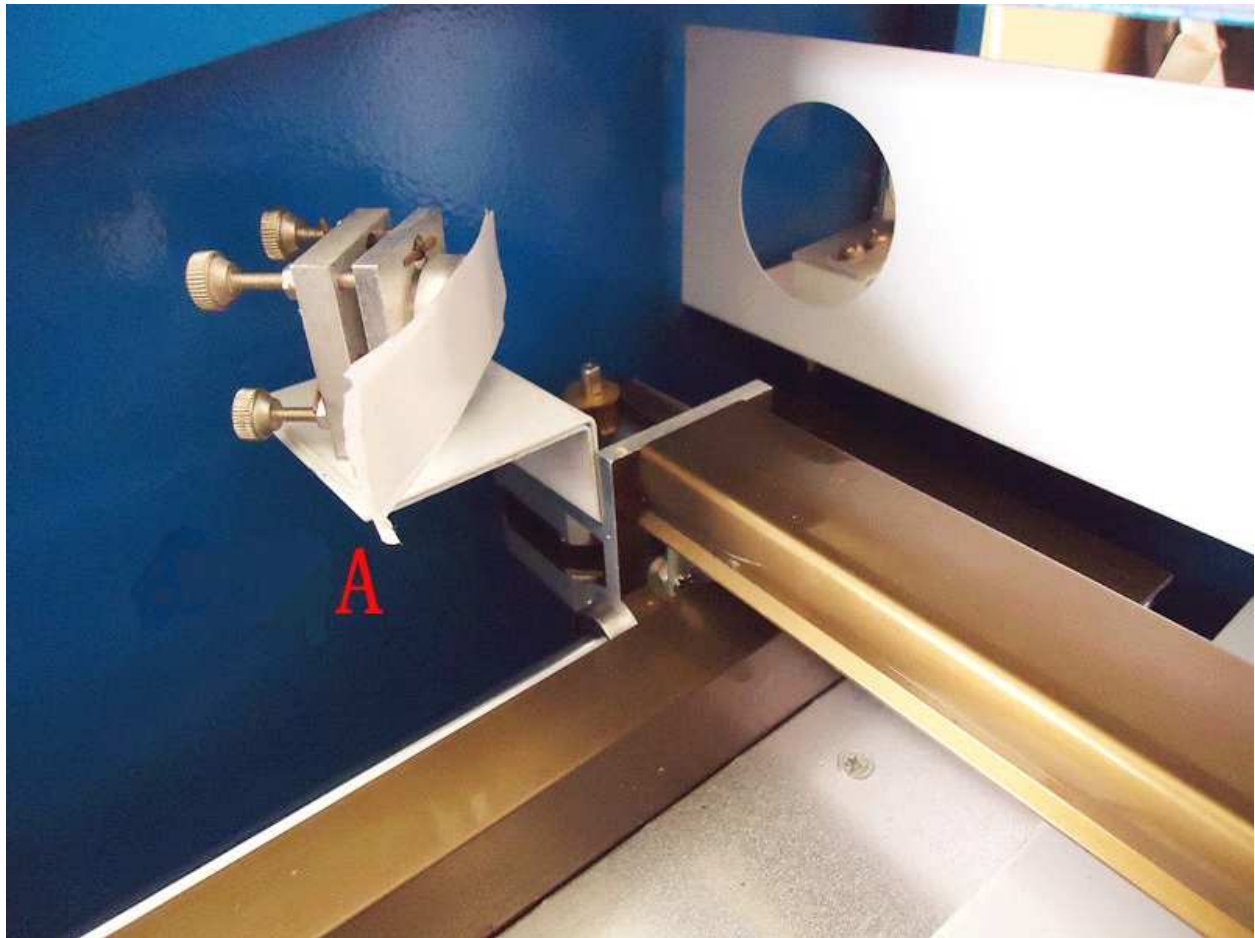


Figure 6

Step 4: Move the X axis beam to position B slowly where is it farthest from the laser tube, then momentarily push the test switch to get another burn spot on the tape.

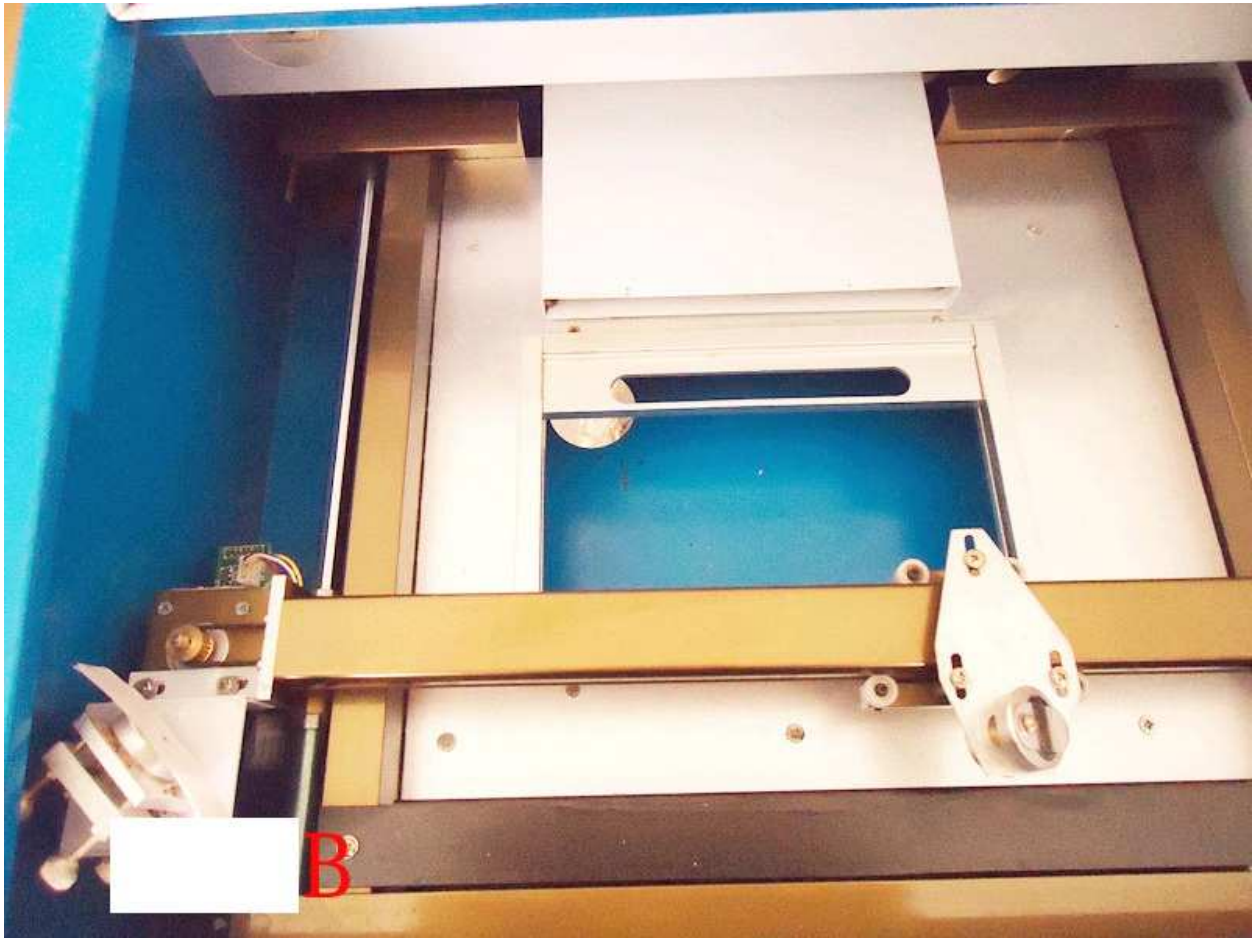


Figure 7

Step 5: If the second spot is not in the same position as the first, adjust the screws at the back of the #1 mirror please loosen the nuts which are used to fix the adjusting screws. Adjust the screws accordingly until the burn spot is in the middle of the mirror.

There are three adjusting screws used to adjust these mirrors. The top two are used to adjust the spot left and right, the bottom screw is used to move the spot up and down.

Step 6: repeat steps 3, 4 and 5 until the two spots are in the same position.

Step 7: put tape on the third mirror, move the laser head near the #2 mirror and momentarily push the test switch to get a burn spot on the tape.

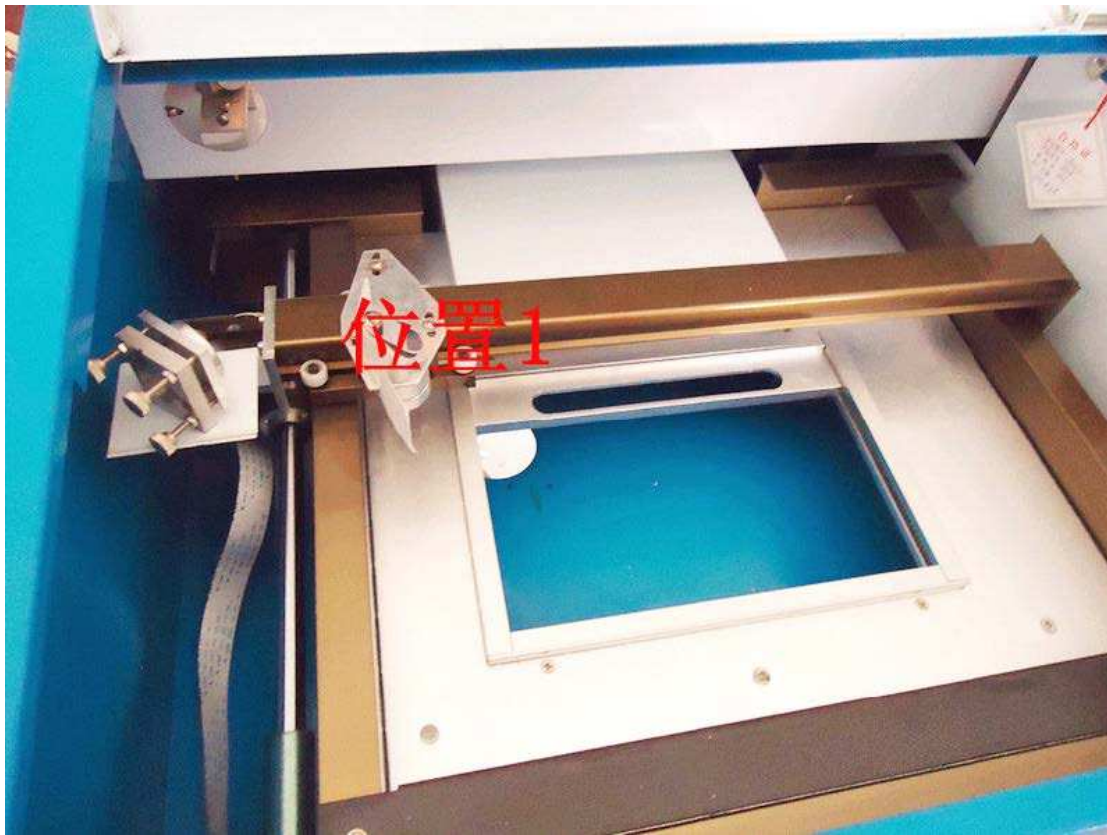


Figure 8

Step 8: Move the laser head slowly to the other end as far away from the #2 mirror. Momentarily push the test switch to get a burn spot onto the tape. It is advised to place a piece of cardboard at the front of mirror #3 to get a general idea of the position of the laser spot.

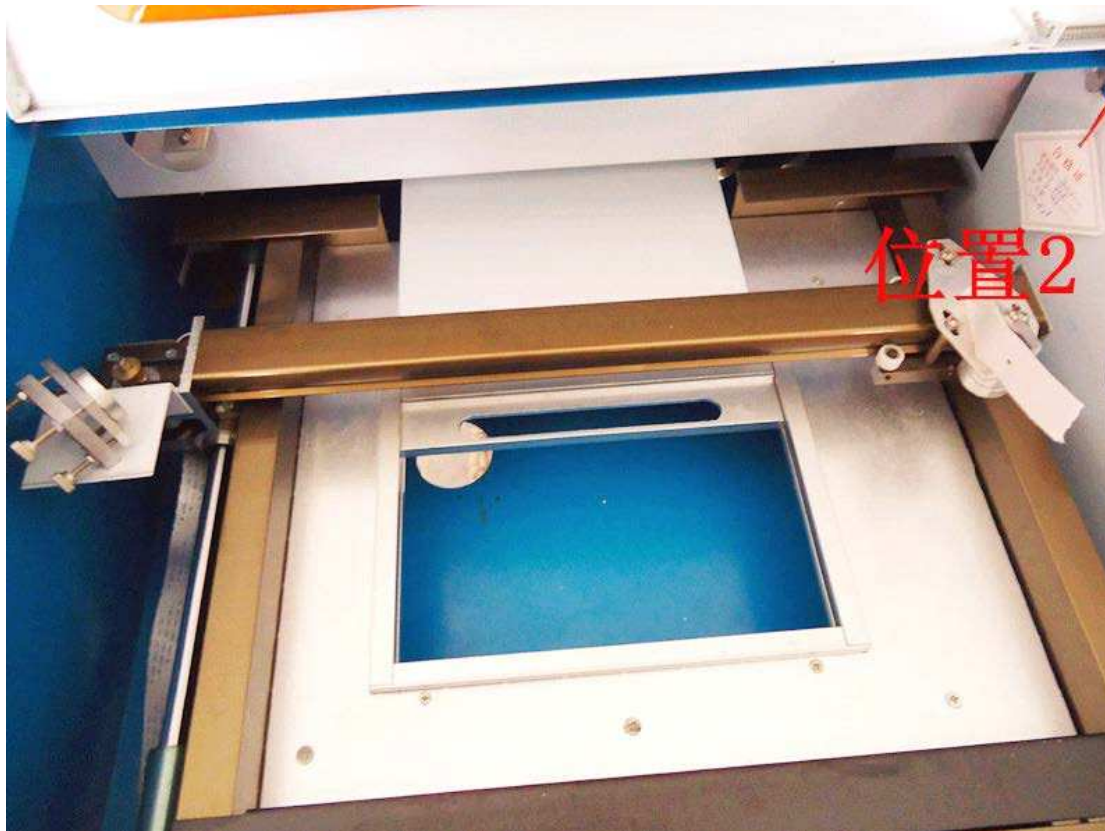


Figure 9

Step 9: If these two spots don't overlap, please adjust the three screws on the back of mirror #2, as shown in figure 10.



Figure 10

Step 10: please repeat steps 7, 8, and 9 until the two spots overlap.

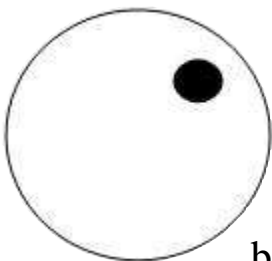


Figure 11

Step 11: Put tape on the hole at the top of the laser head (figure 11), momentarily push the test switch to get a burn spot. The spot should be near the center of the hole.

Step 12: If the spot is not at the center of the hole, we take the situation shown below.

The burn mark shows on the upper right.



We need to move the laser tube up or down to adjust the spot up or down. We move the laser tube front or back to adjust the spot moving left or right.

For the situation shown above, we move the laser tube lower and a bit toward the front, as shown in the pictures below.

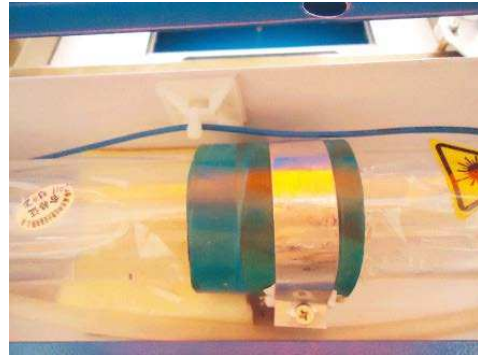
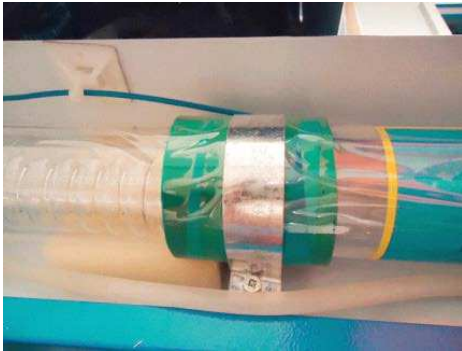


Figure 12