

VibrAlign Laser Alignment Tips

FL151 Level Calibration Procedure

This procedure will run you through calibrating the levels in the FL151 Laser Transmitter

I. Items Needed

1. (1) FL151 Laser Transmitter
2. (1) Combi-Laser Display Box, (1) TD-S, (1) TD-M
3. (2) 10' Cables and (1) Extension Cable (17.5' Minimum)
4. (1) 3-00289 Fixture*
5. (1) SK-MCS8x20 Screw*
6. (1) 1-0083 Magnetic Base*
7. (2) 3-0310 Rods*
8. (1) 5/8 UNC M8 Adapter
9. (1) Heavy Duty Tripod with rotating top
- 10.(1) Angular Bracket (L Shaped)
- 11.(1) Level adjustment tool

(*Please note that the part numbers on lines 4-7 refer to the part numbers displayed in your User's manual on pages 8-9.)

II. Setting Up

In order to do the procedure you will need to mount the tripod next to a counter or a table. Make sure that you have a good surface so that the magnetic base does not move around. It is preferable that you also have a distance of about 20-25 feet that you can work with so that the levels will be calibrated accurately.

1. Set up the magnetic base, fixture, screw, and rods so that you can mount the TD-M on the magnetic base.



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2. Attach the 5/8 UNC M8 adapter to the Angular bracket on the longest part opposite of the short end of the bracket using the M8 screw that attaches the adapter to the bracket. Be sure to have 2 screws opposite each other on each side of the 5/8 UNC M8 adapter to mount the Angular Bracket to the FL151.
3. Attach the angular bracket to the bottom of the FL151. *(If you have it set up right the rotational center of the turret will match up with the UNC adapter.)*
4. Mount the FL151 with the angular attachment to the tripod.
5. Attach the cables to the FL151 and TD-M from the display box.

III. Measuring

1. Turn on the Combi-Laser System. Enter the straightness program by pressing # 3.
2. Place the TD-M at a point as close as possible to the FL151 Laser Transmitter.
3. Place the yellow dot on the bottom of the turret below the laser beam in line with one of the lines on the FL151 base.
4. Rotate the FL151 so that one of the levels on the Transmitter is perpendicular with the TD-M. Adjust both levels to the center using the micrometers.
5. Aim the laser beam from the FL151 into the TD-M. Mark the position of the magnetic base at that position. *(Mark the position well as you will be returning to this position several times throughout this procedure.)*



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6. Move the TD-M to the far position (*about 20-25 feet*) so that the laser beam is striking the TD-M detector and mark the position of the magnetic base.
7. Once you have established the two positions you are ready to measure.
8. Place the TD-M at the near position (*closest to the FL151*). Once you have a value on the screen press the A button on the display box to zero the value. Move the TD-M to the far position.
9. Using a pen and a piece of paper record the value that is displayed.
10. Rotate the turret on the FL151 180° (*the light will be shining in the opposite direction of the TD-M*).
11. Rotate the FL151 180° and aim the laser beam back into the center of the TD-M.
12. Using the micrometers adjust both of the levels back to a level position.
13. Bring the TD-M back to the near position.
14. Press the left arrow and then press the A button to zero the value.
15. Take the TD-M to the far position and record the value. You will now have 2 values that you have recorded. If the levels are calibrated the numbers should be close. If they aren't close (*within 3-5 mils*) then you will have to adjust the level. You want to adjust the level to the midway point between the two values that you recorded e.g.: My first value was + 167.0 mils and my second value was + 207.0 mils. The midway value is +187.0 mils. Using the micrometer that adjusts the axis perpendicular to the TD-M, I would adjust my second value of + 207.0 mils down until it read + 187.0 mils. Since the TD-M will not be directly in front of the FL151 (*within 1-2"*) there will be a step affect that you will have to compensate for because of the distance



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between the TD-M at the near point and the FL151. In order to compensate for this you will have to overshoot a little (*e.g.: instead of adjusting the value to +187.0 mils you want to go to +182.0 mils or + 183.0 mils*) depending upon the distance between the FL151 and the TD-M at the near position, and the distance between the near and far positions.

16. After adjusting the micrometer, the level that is perpendicular to the TD-M will be out of adjustment. Re-adjust the level to a level position using the tool that matches up with the tamper proof screw at the edge of the level.

17. After the level has been adjusted you can check it by going back to step 10 in this procedure and following the steps over. Don't forget that even though I took the value too far I am still looking for that + 187.0 mils value when I check it.

18. To adjust the level in the other axis start with step 3 above and follow the procedure.

