

VibrAlign Laser Alignment Tips

Measuring "C" Flange mounted machines with the Fixturlaser Shaft System.

With the machine de-energized and locked out, ensure all the bolts are tight on the "C" Flange. Mount the brackets on the machine shafts as you would for any ordinary shaft alignment with one exception. Only 1 rod should be used for each bracket. The length of the rods should be such that the TD-S and TD-M are outside the diameter of the "C" Flange. This should allow the required 60 degrees of rotation required for a measurement.

Turn on the Display Unit and select the horizontal Shaft Alignment application. Enter the toolbox and select the Tri-Point measurement method. Input the machine dimensions as usual and adjust the laser to the center of the detectors. Position the shafts as far to the left as possible and measure the first point by selecting the measurement icon in the lower left corner of the screen. Rotate the shafts until the measurement icon reappears in the lower left corner of the screen and measure the second point. Rotate the shafts again until the measurement icon appears in the lower left corner again and measure the third point.

Displayed on the screen will be the horizontal shaft alignment results (Top View of the Machine). The displayed alignment results will be "locked". These values should be compared to the alignment tolerances based on the shaft RPM of the machine. If these values are outside the alignment tolerances adjustments will need to be made.

Looking at the Horizontal Angle results, multiply the HA (mils/1") by the distance between the bolts at 9 and 3 O'clock. The results of the multiplication will be the required shim addition.



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(example: HA = 1.2 mils/1" Bolt distance = 10 inches Result = 12 mils) If the coupling is open toward 3 O'clock, the shims must be added under the bolt at 9 O'clock position. If the coupling is open toward 9 O'Clock, the shims must be added under the bolt at 3 O'Clock. Correcting the angular misalignment will change the Horizontal Offset value. Care must be taken that the horizontal offset does not exceed the recommended alignment tolerance for the given shaft RPM following the angular correction.

Adding shims under only one bolt will force the bolts at 12 and 6 O'Clock away from the flange surface. To relieve the induced soft foot, place half the amount of the horizontal correction under the bolt at 12 O'Clock. Now, place half the amount of the horizontal correction under the bolt at 6 O'Clock.

Touch the Vertical Alignment Results Icon (Side View of the Machine) at the bottom of the DU Touch Screen. Look at the value for the Vertical Angle. This value is displayed in units of Mils/1". Measure the distance between the top and bottom mounting bolts on the "C" Flange. Multiply this distance by the Vertical Angle Value (example: VA = .8 mils/1" Bolt distance = 10 inches Result = 8 mils).

If the VA results show the coupling is open at the top, shim correction will need to be inserted under the 6 O'Clock bolt. If the VA results show the coupling is open at the bottom, the shim correction will need to be inserted under 12 O'Clock bolt. Correcting the angular misalignment will change the Horizontal Offset value. Care must be taken that the horizontal offset does not exceed the recommended alignment tolerance for the given shaft RPM following the angular correction.

Adding shims under only one bolt will force the bolts at 9 and 3 O'Clock away from the flange surface. To relieve the induced soft foot, place half the amount of the horizontal correction under the bolt at 9 O'Clock. Now, place half the amount of the horizontal correction under the bolt at 3 O'Clock.



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Select the re-measure icon at the bottom of the DU screen. Re-measure the shaft alignment as before. Verify the alignment results are within the tolerances for the shaft RPM. If the measurement results are within the tolerances for the shaft RPM, the alignment is finished. If the results are out of tolerance, another adjustment must be made.

Typically, this type of mounting does not allow the flange to be moved sideways or vertically due to a mounting slot on the "C" Flange. If you have the ability to move the machines vertically or horizontally to improve the Vertical Offset or the Horizontal Offset, these moves can be monitored using the following procedure.

With the Vertical Alignment Results (Side View) displayed on the screen, position the detectors at the 12 O'Clock Position. The alignment results will now be "LIVE". Loosen the flange bolts and move the machine vertically to its desired position. Retighten the flange bolts.

Select the re-measure icon at the bottom of the DU Screen. Enter the toolbox and select the "Clock Face" measurement method. Position the detectors as close to 9 O'Clock as possible and touch the measure button at the lower left corner of the screen. Rotate the shafts as close to 3 O'Clock as possible and touch the measure button at the lower left corner of the screen.

The results displayed will not be an accurate representation of the actual horizontal shaft alignment, however, with the vertical alignment corrected, you may now move the machine in the horizontal direction until the HO is approximately zero. Horizontal Angle was corrected previously in the procedure.

Select the re-measure icon, enter the system toolbox and select the Tri-Point measurement method. Remeasure the shaft alignment. The results displayed are the actual alignment results.

Store the alignment results by touching the Filing Cabinet icon at the bottom of the DU Screen.

