

VibrAlign Laser Alignment Tips

Limited Rotation Routine

Condition: 180 Degrees of Rotation Is Not Possible; Physical Restrictions Will Not Allow Typical 9:00, and 3:00 Orientations.

Full understanding of the three SHAFT HOG readings will facilitate a modified shaft alignment procedure if a full 180 degrees of rotation cannot be made.

The 9:00 reading zeroes the laser units.

The 3:00 reading then measures the movement of the laser beams across the detectors and halves this value to arrive at the amount of horizontal misalignment.

12:00 reading calculates the amount of vertical misalignment.

As with dial indicators, when the laser units are zeroed and rotated 180 degrees, they read twice the shaft offset in the axis of measurement. Pressing the forward arrow button for the second reading (normally at 3:00) halves the values to measure the actual shaft offsets in that axis. Once the values have been halved, the SHAFT HOG will show the ACTUAL SHAFT OFFSET in WHATEVER AXIS the laser units are repositioned to (i.e., vertical plane at 12:00, horizontal plane at 3:00). We use the horizontal and vertical planes because these are the easiest axes in which to adjust the moveable machine to achieve alignment.

If a full 180 degrees rotation is not possible a modified alignment can be done. In place of the 9:00 position the operator chooses 12:00 minus some known angle (for example 60 degrees shy of 12:00). In place of 3:00 the operator must then choose a position equal to 12:00 plus the same known angle (12:00 + 60 degrees in our example). RELIABILITY OF THE RESULTS WILL DEPEND ON TAKING YOUR FIRST AND SECOND READINGS AT EXACTLY EQUAL ANGLES MINUS AND PLUS 12:00. ALWAYS USE THE LARGEST POSSIBLE ROTATION.



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Procedure

1. Set up and proceed with the alignment as normal, substituting the new first and second positions for 9:00 and 3:00 when taking your readings.
2. After taking the 12:00 reading and pushing the forward arrow button the Coupling Values Screen for the vertical plane appears. If a vertical move is called for, proceed to the Feet Values Screen. Because of the limited rotation (less than 180°) the feet values will be understated. Using the following table, identify the adjustment factor and multiply the feet values by the factor to determine the correct vertical moves. (In our example of 12:00 plus and minus 60°, the feet values must be multiplied by a factor of 2.00.)

Angle	Multiply Feet Values Times		Angle	Multiply Feet Values Times
85°	1.10		50°	2.80
80°	1.20		45°	3.40
75°	1.35		40°	4.30
70°	1.50		35°	5.50
65°	1.70		30°	7.50
60°	2.00		25°	10.70
55°	2.35		20°	16.60

3. Add or remove shims, toggling back and forth from the Feet Values Screen to the Coupling Values Screen to solve the vertical misalignment. **ALWAYS SOLVE THE VERTICAL MISALIGNMENT COMPLETELY BEFORE PROCEEDING TO THE HORIZONTAL MISALIGNMENT.**
4. Proceed to the horizontal Coupling Values Screen, positioning the laser units at 12:00 plus the chosen angle (60° in our example). No adjustment of the feet values is required in solving the horizontal misalignment.

