

LUDECA, INC.
1425 NW 88th Ave.
Miami, Florida 33172

Phone: (305) 591-8935
Fax: (305) 591-1537



Bore Alignment Measurement

For Firmware ver. 2.06

Introduction

This technote describes how to use your ROTALIGN system to measure the alignment between two bores. The procedure requires the use of the L 520 Magnetic Bore Brackets and uses the Multipoint measure mode in the ROTALIGN for best results.

Overview

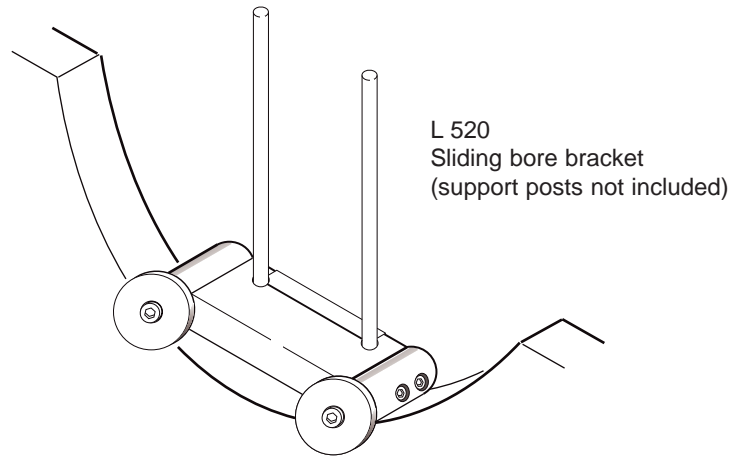
The objective of this procedure is to measure the offset misalignment between two bores. Angular misalignment cannot be reliably measured since very slight defects in the faces of the bores would influence bracket positioning in the bore, thereby adversely affecting the angularity component of the readings. The bores should be clean and free of burrs, rust and other surface defects. Averaging should be set between 128 and 512, depending on the length of the bore, vibration, and atmospheric conditions. The brackets are placed in the same position on their respective bores, ensuring a firm clean contact, with the guide rings firmly seated against the face of the bore. Begin with the default new machine file and enter zero for the distance from Coupling Center to Receiver. The remaining dimensions may be left blank. Adjust the laser to center in XY View and take a point. Move each bracket to the next position by removing and reinstalling it (do not slide it unless you have lubricated the bore and bore face with a very thin film of light oil). Ensure rotational placement accuracy by viewing the inclinometer reading for the Receiver in XY View, and by using an external inclinometer (such as ALI 2.207 or ALI

5.020) for the Laser's bracket. At least 8 points 45° apart should be taken; 12 points every 30° or 16 points every 22.5° is much better. Obtain results. The displayed offset value is the offset of the Receiver's bore with respect to the Laser's bore at the Receiver's location. Always repeat your readings to establish repeatability.

If the bore has a split line so that the faces of the bore are stepped (axially not in the same plane), you must avoid any position which causes the bracket to straddle the step.

Steps 10 & 11: If the laser beam goes out of range at any position you may use the Range Extension Function in XY View as needed.

Step 13 Tip: After completing all sets of readings, press **TABLE** when in the Measure screen to compare repeatability of the results.



Procedure

- 1) Turn ROTALIGN on. **ON OFF**
- 2) Select Horizontal Machine Alignment. **+**
- 3) Press **NEW MACH**. Press **ESC** if necessary, to *not* save the existing file.
- 4) Enter Machine Dimensions as follows:
 - Coupling Diameter = ----" (leave blank).
 - Coupling Center to Receiver = 0".
 - Receiver to Front Foot (Right Machine) = ----".
 - Front Foot to Back Foot, Right Machine = ----".
- 5) Place brackets in the same position in their respective bores.
- 6) Press **M**, **MEAS MODE**, and select Multipoint **M**.
- 7) Press **XY VIEW**. Press **AVERAGE** until 128 (or higher) is displayed and wait for the ROTALIGN to confirm the setting ($n = 128$). Look at the inclinometer reading ($\varphi = x^\circ$). Adjust the Laser's bracket to the same position using an external inclinometer (such as ALI 2.207 or ALI 5.020).
- 8) Adjust beam until "CENTERED". Press **ESC**.
- 9) Press **TAKE POINT**.
- 10) Move the Laser and Receiver brackets to the next measuring position. Make sure the rotational position is matched as exactly as possible with both brackets (use the inclinometer display and the external inclinometer).
- 11) Repeat steps 9 and 10 until at least 8 but preferably 12 or 16 points have been taken.
- 12) After three points have been taken, results will appear in the result boxes of the Measure screen. These represent the offset that exists between the Receiver's bore and the Laser's bore at the Receiver's location. These results should not be considered until at the least 8 points have been taken, over at least 75° . The Angularity Gap result will not be displayed. This does not necessarily mean that the angularity between the bores is zero.
- 13) Press **M**, adjust beam until "CENTERED", and repeat steps 9 through 12 *at least twice more* and compare the repeatability of the results. **■**