

TITLE: Shaft Lead Measurement Bench

Proposal/Scope

Trelleborg Sealing Solutions R&D would like a device to streamline the process of measuring shaft lead. If the finishing process for a rotary shaft is done poorly, certain artifacts can be introduced that affect seal performance and can invalidate testing. One of these artifacts is called shaft lead where the turning process creates helical machine mark patterns which cause the shaft to behave like a screw. For seals to function properly, the shaft lead (expressed as an angle) must be below given test specification. TSS is currently capable of measuring the shaft lead angle but would like to automate and streamline the current method. Shaft lead is currently measured by placing a string with a weight onto a shaft, rotating the shaft, and tracking the distance the string moves. This is performed on a manual lathe. TSS would like to automate this process by having a standalone table top unit that can automatically measure the lead and display the measured value. The custom machine design would be capable of measuring the lead on a variety of shaft diameters. The machine should operate automatically after an operator initiates the start of the process. The lead angle measured should be displayed.

Budget: \$3000