

Title: Rotary Test Stand Setup Alignment

Industry Sponsor: Trelleborg Sealing Solutions

PFW Students: 3-4 Mechanical Engineering students

Budget : \$1000

Project Description and Scope:

Trelleborg's Testing & Technology Center Laboratory utilizes rotary shaft testing stations for various tests conducted to validate product performance. The rotary test stands require shaft-to-shaft alignment and also shaft-to-bore alignment within a few thousandths of an inch. Current methods of setting up the test stands require very tedious iterative steps, checking and re-checking the alignment using various measurement instruments. In addition, the physical structure of the test stand, consisting of two horizontal parallel shafts, is in question of potentially inducing unintended errors in measurement due to shaft deflection. Some analysis of the support shafts will be necessary to determine if they are properly designed. Trelleborg would like for the Sr. Design Team to design a more accurate and repeatable setup method and perform analysis of the test stand frame components to determine proper sizing and redesign if necessary, to minimize setup error.