

The Objective:

The thrust washer test rig was to be designed to measure the endurance limits of thrust washers by tracking the torque required to twist them by a predetermined angle over the operating life of the washers.

The Challenges:

To achieve static loading normal to the plain of the washer while applying and controlling the bi-directional dynamic load in the plain of the washer at a set frequency to achieve twisting.

The Solution:

The test rig built could measure following parameter

- Axial Load going on to the Thrust Washer
- Temperature rise in the thrust washer during the cycle
- Torque applied to twist the washers
- Pressure built during manual cycle
- Angular Displacement of the washer

The system could control the angular displacement of the washer and checked health of washer in real time. The system will count number of cycles completed and frequency of actuation for the operation can be varied up to 2Hz. Self diagnosis tool incorporated in system will check the health of system before starting of cycle. PC based control and user friendly GUI gave easy of use & report generation to customer.

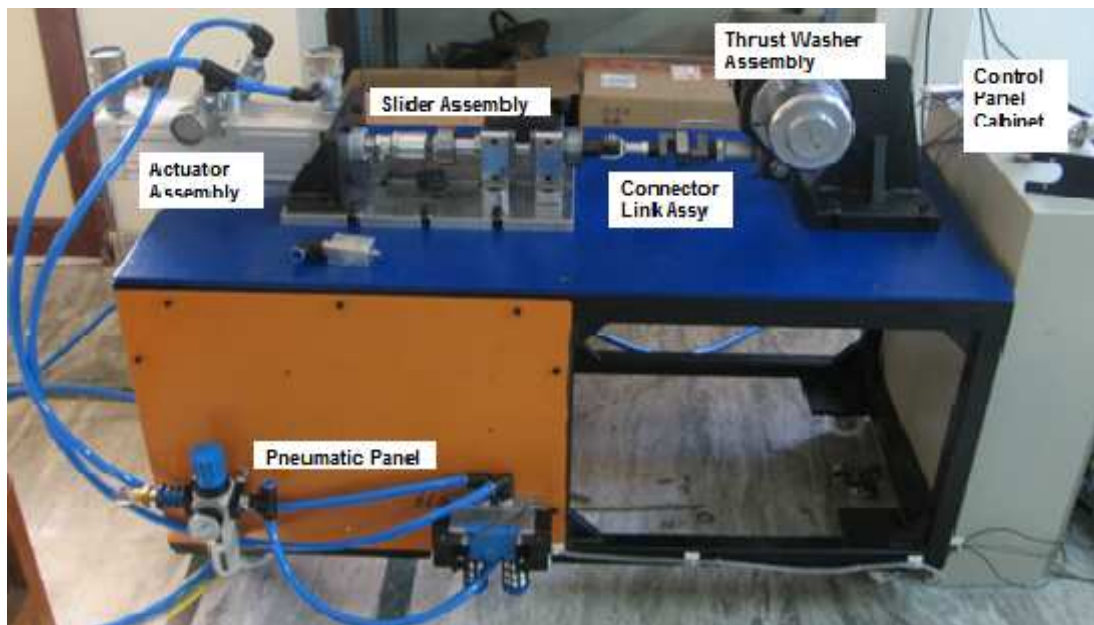


Fig 1: The Thrust Washer Test Rig

The Outcome:

The physical tests were conducted reliably helping the customer to validate their design analysis on a physical component, since the application of the component was safety critical.