

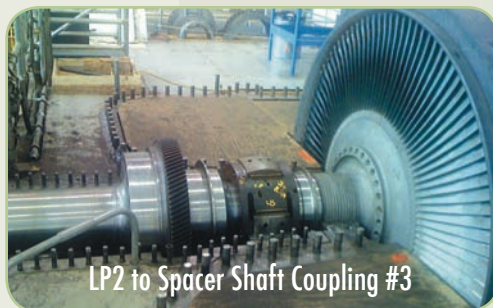
About Us



Since 1997, Freship LLC has provided Laser Alignment and Engineering Services to the Power Generation, Manufacturing, and Maritime Industries. As a group of professional consulting engineers with backgrounds in the Merchant Marine and

Power Generation Industries, we bring our years of experience operating and maintaining steam and diesel power systems and machinery to the services we provide.

- Over ten years experience
- We customize our services to fit your needs
- Emergency response services
- Comprehensive programs from shut down to start up
- Customers include TVA, Siemens, DOMTAR, and many more utilities throughout the country



LP2 to Spacer Shaft Coupling #3



1004 Dockway Drive
Huron, OH 44839
(888) 376-8182
(888) 376-8182 fax
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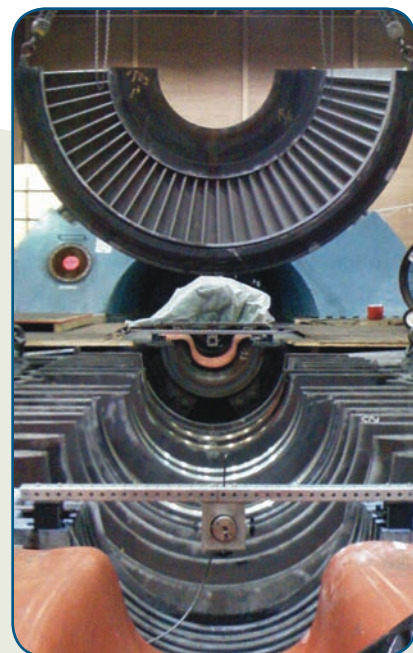


GE 1103 MW Steam Turbine Generator

Freship LLC provides Laser Alignment & Measurement Services to the Power Generation, Manufacturing, and Maritime Industries. As a group of professional consulting engineers with backgrounds in the Merchant Marine and Power Generation Industries, we bring our years of experience operating and maintaining steam and diesel power systems and machinery to the services we provide.

[Laser Alignment & Measurement Services]

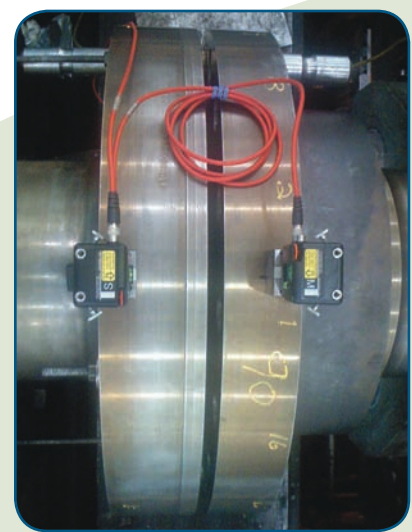
- STEAM AND GAS TURBINES
- SHAFTS / COUPLINGS
- ROTATING EQUIPMENT
- 3-D COORDINATE CONTACT MEASUREMENT
 - FOUNDATION STABILITY ANALYSIS
 - INSTALLATION OF LARGE MACHINERY
 - INSPECTION OF HEAVY EQUIPMENT
- GEOMETRIC MEASUREMENT
 - FLATNESS
 - STRAIGHTNESS
 - SQUARENESS



DIAPHRAGM ALIGNMENT & MOVES

Interactive supervision of the laser alignment system while diaphragm moves are made by plant personnel.

- Quick generation of graphical move sheets
- Verification of moves as they are made
- Accurate & Fast, One section per shift
- Shim Changes
- Side slip corrections
- Arch Springs & Spacers
- Presentation of final component positions as each section is complete.



SHAFT COUPLING ALIGNMENT

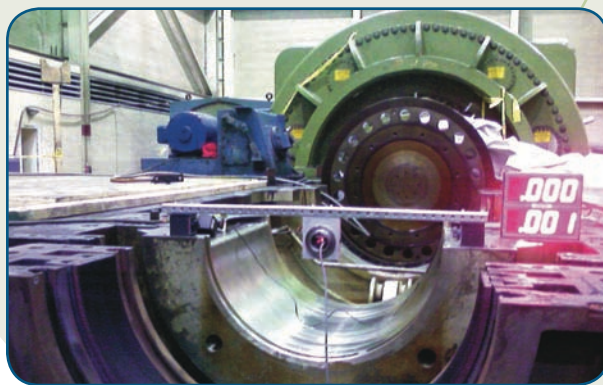
Immediate Graphical Results and live monitoring of moves.

- Multiple Shaft Drive Trains
- Turbine & Diesel Generators
- Turbine & Motor Pumps
- Propulsion Systems
- All Rotating Equipment



STEAM TURBINE LASER ALIGNMENT

- As Found Disassembly Data acquisition
- Long Line laser alignment readings
- Tops Off & Tops On centerline readings
- Distortion analysis of shell horizontal joints
- Roundness measurements for ellipticity offsets
- Opening Alignment Report & Presentation
- Final Alignment Moves
- Rotor Positions & Coupling Checks
- Final Alignment Report



3-D COORDINATE CONTACT MEASUREMENT

Using the Faro Laser Tracker, a foundation stability analysis is performed on steam turbine generator by laying out a 3-D Grid of the foundation columns, turbine table, bearing pedestals and turbine & generator shell supports.