

SpectraQuest introduces the Machinery Fault and Rotor Dynamic Simulator (MFS-RDS)

- *An innovative tool to study oil lubricated journal bearings and machinery faults*
- *Different bearing clearance selection and controllable lubrication oil pressure for rotor dynamics study*
- *Enables in-depth study of oil whirl and whip in fluid film bearings*
- *Convenient installation of proximity probes*
- *Smart design makes the simulator robust and easy to use*
- *Numerous experiment possibilities*
- *Application specific optional kits are available for detailed in-depth investigation of specific vibration phenomena and machinery faults*
- *Available in various packages to fit customer requirements*



Press Release, October 12, 2007

SpectraQuest introduces Machinery Fault and Rotor Dynamics Simulator (MFS-RDS), an innovative tool to study the dynamic behavior for rotor supported by oil lubricated journal bearings, as well as other common machinery faults such as balancing and resonance study. An oil pump is provided with the simulator to drive the lubrication fluid. In addition, it provides different bearing clearance selection and controllable lubrication oil pressure for rotor dynamics whirl and whip phenomena. The MFS-RDS fitted with a resonance kit is the perfect tool to gain practical experience in rotating machinery resonance and learn resonance mitigation methods. With different number of rotor disks installed at various locations on the main shaft, resonances up to the third mode can be excited.

Oil whirl and whip are important instability phenomena associated with rotors supported fluid film bearings. With proper selection of the bearing load (the number of rotor disk), bearing clearance (the selection of bearing cartridge) and oil pressure (adjusting the oil supply valve), the oil whirl and whip can be simulated using the MFS-RDS. One key concept in rotor dynamics is the heavy and high spots. With the MFS-RDS and the optional kits supplied by Spectra Quest, the phase relationship between these two spots can be demonstrated. Couplings, rotors, bearings, and shaft can be changed without removing bearing housings. It is an effective tool for introducing the concepts and principles of rotor dynamics and predictive maintenance to engineering students.

The MFS-RDS is designed to be both versatile and easy to operate. The simulator is constructed with an extended rotor base, fluid film bearings, oil distribution and pressure adjustment system, a sliding shaft, rotors with split collar ends, couplings; all of which are designed to be easily removed and replaced between various experiments. Over twenty-five application specific option kits are available for in-depth studies of rotor dynamics and machinery faults. It comes with a training book and complete operations manual & videos to assist with exercises and learning. From basic to comprehensive, various packages are

designed to provide you with all the tools needed to study rotor dynamics and vibration signatures of different machine malfunctions. Please download the brochure at <http://www.spectraquest.com/resources/downloads/> for more details.

About SpectraQuest

SpectraQuest is a leading developer and manufacturer of turnkey systems and products for enhancing reliability of rotating and reciprocating machinery. These products are ideal platform for research and education in machine fault diagnosis/prognosis, teaching dynamics and vibration courses, and wind turbine drivetrain studies. The distinguishing feature of SpectraQuest is a wide variety of Machinery Fault Simulators and Custom Designed Test Rigs which are sold in over forty five countries around the world. Further information is available at <http://www.spectraquest.com/>.

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