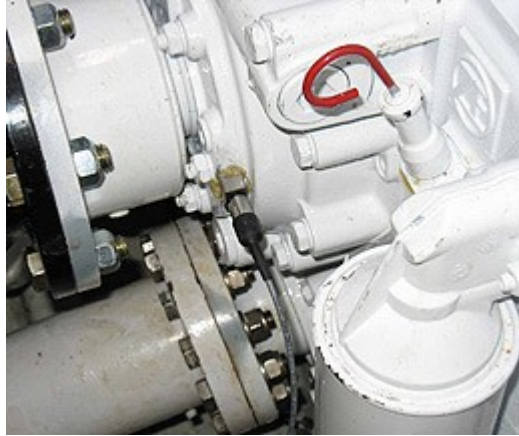


Case History: Marine Gearbox Monitoring



The Problem:

After experiencing Gear Box failure STI was asked by a large yacht owner to recommend a suitable cost effective monitoring solution to monitor marine gearbox health. The Captain wanted visible display of the vibration values for both gearboxes in the cockpit for peace of mind. 24VDC power was available from existing system. If required 24VDC can be derived from any power system using a DC to DC converter.

The Solution:

STI offered two (2) CMCP1100 Accelerometers, one for each gearbox input bearing wired to two (2) CMCP530 Velocity Transmitters located in the engine room. CMCP510 Bright Red LED Displays were mounted in the cockpit dashboard. The CMCP530 Transmitter integrates the acceleration signals from the CMCP1100 Accelerometers to Velocity terms in in/sec. So as not to violate any warrant by drilling and tapping the gearbox directly the accelerometers were stud mounted to a custom mounting block Epoxy mounted to the gears input bearing. ISO 10816 provided excellent data to compare vibration readings to.

The Captain called us after installation to tell us he had high readings after hitting one of the propellers on some rocks. Turned out he bent the propeller shaft and was able to nurse back to port with no additional damage other than shaft repair.

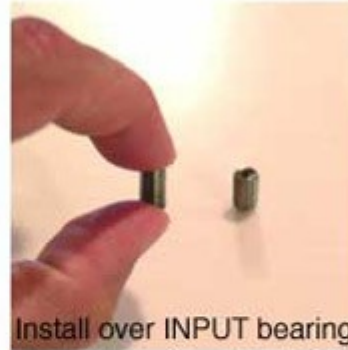
The Captain prepared the following image to aid in installation:

Accelerometer Mounting for ATLANTIS

(Linear Vibration Sensors by STI www.stiweb.com)



ZF V2060



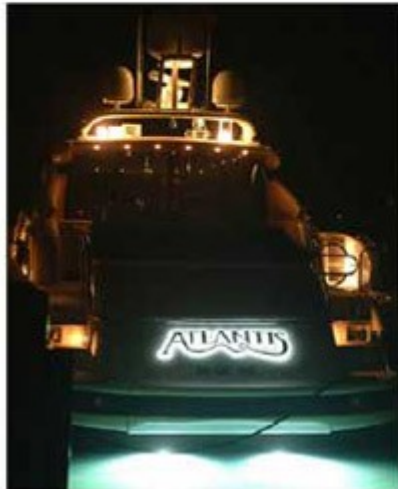
Install over INPUT bearing

Accelerometer mounting studs (3/4" SS shown above) are used to mount accelerometer sensors to gear casing. SS blocks where drilled and tapped for 1/4" X 28 UNF thread and the blocks were glued to the gear. Best location horizontally on side of bearing housing, preferably lined up with the center line of the shaft. Avoid hollow areas of housing that may cause drumming. Identical site for both gears.



Port LCD

STB LCD



Velocity Transmitter



CMCP1100
Vibration Transducer
One for each Gear

Please feel free to contact us with any questions concerning marine gearbox monitoring.