

NEW TEST EQUIPMENT

The Department of Mechanical and Manufacturing Engineering recently took delivery of two Rotating-Bending Fatigue Testing machines from TecQuipment, UK. The machines were purchased at a total cost of about Khs 2 million by the AMSEN program. AMSEN stands for the African Materials Science and Engineering Network. It is a network of 5 universities in Africa and its aim is to train PhD level engineers and scientists to teach Materials Science and Engineering in universities in Africa. The coordinator of the AMSEN program at the University of Nairobi is Prof George O Rading, who oversaw the whole process of acquisition, installation and commissioning of the equipment.

The two machines were installed and commissioned by Mr David Giddings from TecQuipment, who also held a training session for the Staff of the department, on the use of the machines. The machines will be used by both the undergraduate and postgraduate students in the department to characterize the behaviour of materials under fatigue loading. Simply put, this means the way the material behaves when the load applied to it is continuously varying. Any component of a machine that moves while in service is under fatigue loading.

The supplied equipment is state of the art. Unlike earlier machines where the load was inferred from a weight hanging on the sample, the load in these machines is measured directly by a load cell. The frequency of rotation can be varied continuously from zero to 100 Hz. An automatic switch stops the machine when the specimen breaks. A data acquisition system connected to a PC automatically records the data and produces the resulting S-N curve. It is expected that students and researchers will have fun while studying the fatigue behaviour of their samples.

Mr. David Giddings illustrates to Prof Rading, and Members of Technical staff how the Machine works