PRESSURE DISTRIBUTION AND LOAD CARRYING CAPACITY OF JOURNAL BEARING BY USING BIO-OIL

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ABSTRACT

The present study was carried with an aim of checking the feasibility of usage of bio-lubricants as a lubricant in hydrodynamic full journal bearing. The bio-lubricants Jatropha oil and mineral oil turbinol XT46 is used alternatively to check the output of the journal bearing operating parameters. The performance of jatropha oil are more or less equivalent to mineral oil Turbinol XT46. Jatropha is a non-edible sourced Bio-lubricant shows excellent coefficient of friction, noble anti-wear capability, low environmental emission. Recent research states Jatropha have higher viscosity and improves the load carrying capacity. A mineral oil, a synthetic oil and a bio-based lubricant are experimentally and analytically examined for several configurations of load carrying and pressure distribution of journal bearing.

STANDARDIZATION OF MEASUREMENT SYSTEM IN SEAMLESS METAL TUBES

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ABSTRACT

Measurement method is the first step of production control and quality improvement, because operators need precise and accurate data for analyzing and solving problems. Gauge are used instead of existing measurement system (Vernier Caliper, Bore Gauge, Micrometer etc). After analyzing the results, the measurement system will be more precise and more accurate. Company ISMT Ltd. Ahmednagar is a high quality Seamless metal tubes manufacturer in India. They have Flexible capabilities to produce a variety dimension of tubes. Now a days the company receives complaints from customers regarding the quality of the tubes and that did not meet their, as well as customers expectations. One response was that the company installed a new digital measuring table to solve the problem. Unfortunately the measurement table could not solve this problem. By using the guages such as GO, NOGO, Snap etc. the inspection time is reduced, also the productivity increases which leads to economic gains and causes less fatigue to the operator. So replacing the existing measurement system by gauges in the company was useful. In addition this study could evaluate the reliability of the measurement system that the manufacturing plant had recently applied in their production process.

AUTOMATION ON LATHE MACHINE USING HYDRAULIC QUILL ON TAILSTOCK

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ABSTRACT

Nowadays, products can be produced by modern technology, which uses computer software, hardware and firm ware in industries. It is needed to use lathe machine to get more accurate dimensions and irregular shape. So, machines are becoming more and more important in modernized industrialization. There are many conventional lathe machines in our country. To build a new modern developed country, it is required to convert these conventional lathe machines into semi-automatic control lathe machine. Developing and changing into semi-automatic control lathe machine, there are three required portions namely mechanical, electronics and mechatronics. From the mechanical point of view, the design of hydraulic circuit is dramatically needed. The functions of hydraulic circuits for semi-automatic control lathe are analysed in this report. In this report, the hydraulic circuit design which can be used to move the tailstock of lathe machine by using hydraulic pump, double acting cylinder, motor. The hydraulic circuit comprises vane pump, hydraulic motor, and two directional control valves for motion of tailstock: 4/2-way valve.