Judging Lubricating Oil Degradation Based on Insulation Resistance

Degradation of lubricating oil used with machine tools and other equipment is judged by measuring its insulation resistance.

About 25 ml of new machine tool lubricating oil is placed in an SME-8330 liquid sample electrode, and the SME-8330’s connection cable is connected to the Super Megaohm Meter SM-8220. The measurement voltage is set to a value of up to 1000 V. Since the insulation resistance of the oil varies initially during measurement, the measured value is read after setting the timer to count down a fixed interval (for example, 1 min.). Next, the SME-8330 is emptied and loaded with used lubricating oil, which is measured in the same manner as the new oil.

*Make sure that the new and used oil samples are measured at the same temperature.

Because used lubricating oil contains metal fragments due to wear, it has a lower insulation resistance than new oil. An acceptable difference between new and used oil samples can be determined in advance and used as a guideline for oil replacement.

Products used

ULTRA MEGOHMETER SM-8220
LIQUID SAMPLE ELECTRODE SME-8330

Information valid as of March 2016. Specifications are subject to change and revision without notice.