527 – *Excitation of Natural Frequency in Large Motors by Double Frequency Test*

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Abstract: The double frequency test is a method widely used due to several factors that make it more attractive compared to others methods of testing electric motors. The advantages of the test method for large motors will be evaluated presenting two cases of resonance.
The first case is an induction motor with a shaft center height of 630 mm, six poles that has arrived to technical assistance for shaft recovery. In the initial condition, the vibration was approved. During the double frequency test the rotor increased vibration over time. Near temperature stabilization, the amplitude reached levels of 10 mm/s rms.
In the second case, an induction motor with a shaft center height of 710 mm, eight poles, the vibration amplitude above 50 mm / s r.m.s was detected in the heat exchanger during the double frequency test. The positive points reinforce the advantage of the test method and both examples demonstrate the necessary care with excitation of natural frequencies in rotating and static parts of motors. Those cases are related to the acceptance tests at factory.