Vibration monitoring and diagnosis - techniques for cost-effective plant maintenance

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Description: -
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Condition Monitoring with Vibration Transmitters

For a stationary outer ring and rotating inner ring, and from the bearing geometry, the fundamental frequencies are derived as follows: The bearing equations assume that no sliding contact occurs and that the rolling elements roll over the raceway surfaces.

Plant Engineering

This reduces the overall operating cost as well as the down time period, increases plant availability and efficiency of rotating machines. This bearing was not manufactured by a premium brand supplier and as a result the overall quality was poor. Unlike raceway defects, cage failures do not usually excite specific ringing frequencies and this limits the effectiveness of the envelope spectrum see Section 4.

Periodic and Continuous Vibration Monitoring for Preventive/Predictive Maintenance of Rotating Machinery

This step is part of the initial condition monitoring process. The bearings were removed from the motor and inspected, when it was found that the condition of the bearing rolling surfaces had deteriorated as a result of poor lubrication, with both circumferential and axial marks on both raceways see Figure 20. It struggles, for example, with equipment which is inaccessible or in a hazardous environment, equipment operating at varying speeds or at varying loads, equipment subject to electrically generated signals and equipment displaying torsional vibration phenomena.

A Complete Guide To Condition Based Maintenance (CBM)

The gear mesh frequency of 36. The calculated inner raceway defect frequency BPFI of the NU217 bearing is 39.

On establishing cost-effective condition-based maintenance Exemplified for vibration-based maintenance in case companies, Journal of Quality in Maintenance Engineering

In general, rolling bearings produce very little vibration when they are free of faults and have distinctive characteristic frequencies when faults develop.

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