

BALL BEARINGS DAMAGE

CASE HISTORY – CH 001

GENERAL INFORMATION

INDUSTRY

Petrochemical

MACHINE

DC Motor – fan of oven refiner

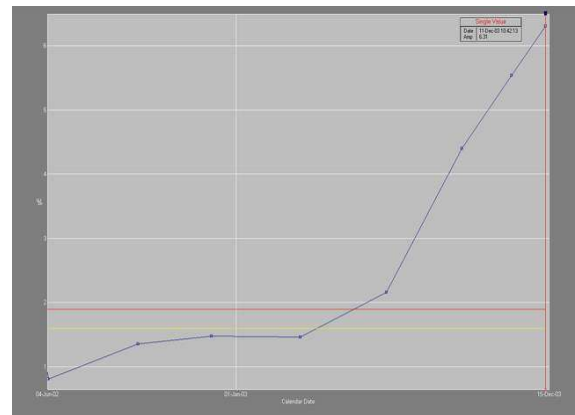
TECHNOLOGY USED

Vibration analysis

PROBLEM ENCOUNTERED

A trend analysis of the global values of vibrations acquired periodically, in line with the predictive maintenance plan, has highlighted a considerable increase.

Trend of the global values of vibrations



RESULTS OF ANALYSIS

DIAGNOSIS

Analysis of the vibration spectra has shown the presence of localized damage to the races of the bearings' drive end side, probably due to current passing through the shaft. This diagnosis was also confirmed by measuring the shaft tension.

EVALUATION

Serious

RECOMMENDATIONS

Overhaul the motor, including the replacement of the bearings, within ten days. Install an insulated bearing (as a rule, normally, the non-drive-end side).

Damaged bearing



RESULTS OF ACTION TAKEN

RESULTS OF INSPECTION / CHECK UP

The presence of localized damage to the races of the bearings' drive-end side, due to current passing through the shaft. In particular, there were equidistant transversal striations present in the load zone of the outrace.

AVOIDED OCCURENCE

Breakdown of the bearings and the emergency replacement of the motor.

AVOIDED DOWNTIME

8 hours of plant shut-down

COST BENEFIT OF LOST PRODUCTION AVOIDED

40.000 euro

Damaged bearing

