



ID and OD Hardness Inspection of Hub

Scope

Hubs are hardened to improve resistance to wear caused by bearings and other moving parts.

Challenge

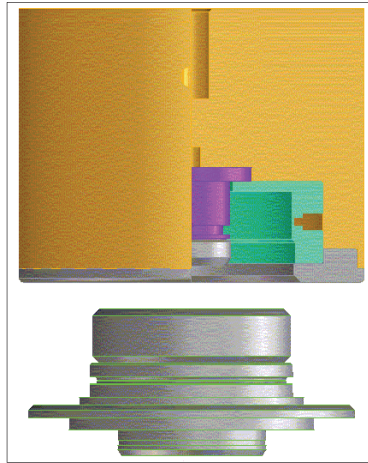
The customer was in need of a reliable method to inspect the hardness of both the ID and OD of Hubs.

This application was to insure a 100% reliable test method to inspect hubs on the ID and OD around the gear teeth, and still needed to keep up with current production rates.

The Solution

A probe was designed with one eddy current coil surrounding the OD and another centered on the ID. With both of these coils in the same probe/housing assembly, cycle time was reduced by 50% and the customer was able to increase their production rate with the confidence of a 100% reliable inspection. Using an InSite HT – the customer was also able to set up the sorting gates and industrial interface with ease.

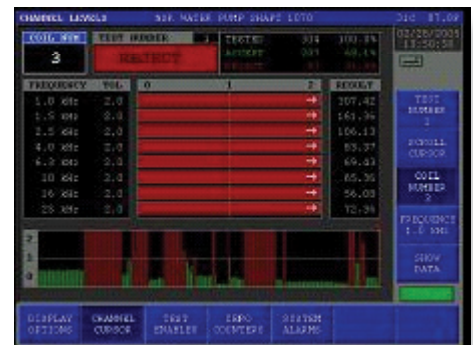
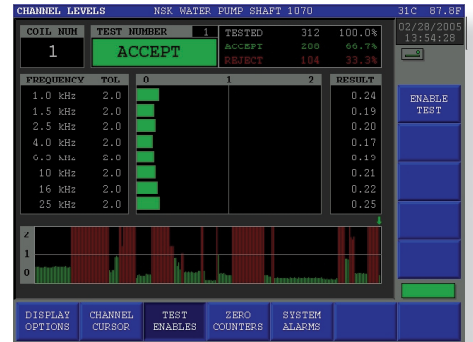
The test was conducted using the InSite's eight frequencies for maximum sensitivity and to help the customer identify a wide variety of different fault conditions.



Employing a selection of specially-created parts which illustrated the faults made it possible to set up the InSite so that the following case depth conditions could be identified:

- Good parts – correct pattern
- Untreated
- Delayed quench
- Short quench
- Short heat
- Misplaced case pattern
- Shallow case pattern

By comparing the electromagnetic signature of the various faults against that of the good parts, it was simple to set up the required sorting gates.



Other Uses

Testing of cylindrical parts