

NON-DESTRUCTIVE TESTING

POWDERED METAL

RESONANT INSPECTION OF HUBS



Generic rendering of approximately 1-inch diameter part

PROBLEM

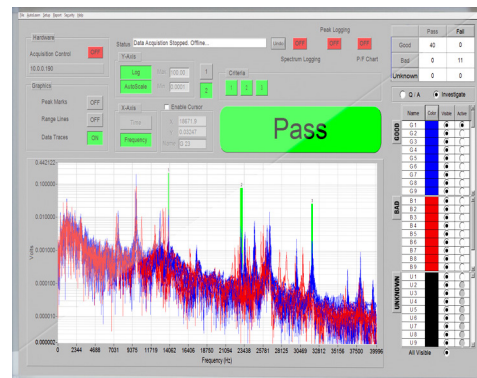
A manufacturer of a disk-shaped hub was experiencing crack formations in parts due to a variance in press settings. Redundant 100% post-sintering visual inspection was not only time-consuming and expensive, but was also unreliable – as it failed to catch many of the cracked parts.

SOLUTION

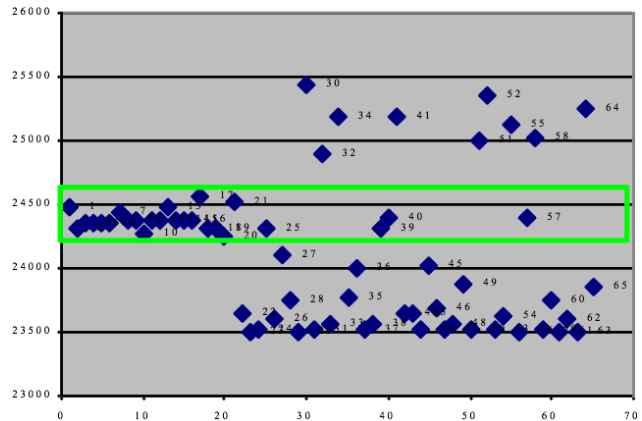
The NDT-RAM resonant inspection technique detected cracks of two levels of severity. The on-line quality inspection system required no part preparation and was automated with a high throughput conveyor. 100% quality screening was achieved at a rate of approximately three seconds per part.

BENEFIT

In addition to saving the significant labor time and cost involved in visual inspection, the manufacturer has objective 100% quality inspection and an on-going dynamic measurement of whole part integrity. By consistently monitoring the dynamic shifts, process improvements were identified and implemented to reduce scrap and enhance efficiency for increased bottom line profits.



Frequency spectrum of typical part



2nd criteria resonant frequency
All good parts fall within green tolerance band