



## Loctite® Fixmaster® Steel Liquid Saves Machine Shop Customer \$150,947

*Engineering Mistake Could Have Doubled Cost & Time of Project*



### SITUATION

A machine shop had been commissioned to manufacture 400 hubs for a customer in the power generation industry. Each hub cost \$380 at a total cost of \$152,000. When the plans were specified, the customer's drafting engineer mistakenly neglected to reverse the bolt patterns of the holes. This caused two of the holes to be drilled in the wrong place on the hubs. As drilling was the last process in the job, scrapping the entire hub seemed like the only alternative. That's when they called in Henkel to help.

### SOLUTION

The local Loctite® products representative recommended Loctite® Fixmaster® Steel Liquid, a high-performance, steel-filled epoxy that is pourable and self-leveling.

Loctite® ODC-Free Cleaner & Degreaser was used to clean the hub and prepare the surface. The bottom of the improperly drilled holes were then covered with duct tape to keep any epoxy from running out during filling. After slowly mixing Loctite® Fixmaster® Steel Liquid to minimize air bubble entrapment, the mixing paddle was dipped into the Loctite® Fixmaster® Steel Liquid and held above each hole (*Figure 1*). The material ran down the paddle, filling each hole, and was then allowed to self-level (*Figure 2*). After 24 hours, the surface was machined and the holes were re-drilled (*Figure 3*).

### RESULTS

Instead of scrapping the 400 hubs that had already been machined, worth \$152,000, and re-doing the entire job, the shop was able to salvage the parts with \$1,053 worth of Loctite® Fixmaster® Steel Liquid. As the power generation customer had specified the location of the holes, they were happy to approve of the repair.



Figure 1



Figure 2



Figure 3

(*Figure 1*) The incorrect holes were filled with Loctite® Fixmaster® Steel Liquid and allowed to self-level.

(*Figure 2*) After 24 hours, the surface was machined.

(*Figure 3*) The holes were then re-drilled in the correct position.

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