

# FSI Can Solve Your Bearing/Housing Challenges

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## **Background:**

Far too often, bearings do not reach their designed life expectancy. It's quite common when bearings are not working properly that shafts, rollers, and drive components will also need replaced. These failures lead to maintenance hours increasing and plant efficiency decreasing.

## **Challenge:**

A large steel manufacturer came to FSI because their roll screen bearings were not lasting as long as they should. The roller bearings were consistently failing, which in turn reduced the product flow to the grate chain. This was an issue because the grate chain is a key component in the pre-heating of the pellets before they go into the kiln and are transported.

There were 620 rollers per stand with 2 bearings per roller. They were changing out approximately 200 rollers and 400 bearings per year that were unable to be reused. This challenge was greatly affecting our customer's steel production and they were looking for a solution.

The customer was currently using an off the shelf OEM Seal Master bearing assembly that was not customized to their specific needs. Plus, the built-in lubricant was not being utilized due to the lack of accessibility to the Zerk grease fitting. Upon examination of the failed bearings, we found that inadequate lubrication, contamination, and overload were the cause of their issues.

## **How We Solved the Problem:**

To solve the problem, we precisely **engineered and designed two alternative solutions**. The customer decided to choose the solution that they felt best met their needs.

The first step was to CNC machine a super protective bearing housing engineered to keep out contaminants. To further protect the bearing housing, we also created a PTFE Rotary Shaft Seal with O ring also made to inhibit contaminants.

To alleviate the lubrication issue, we added a high-load ball bearing, and a double lipped seal system with steel flinger. The ball bearing was a perfect solution because it's pre-lubricated and sealed for life for long periods of operation. In addition, the steel flinger will help prevent contamination.

We included a gasket on the support wall to form a secondary seal between the housing and mounting wall to ensure proper running of the system, stop contamination and prevent uneven wear.

To further add to this solution, we designed a stainless steel endcap that provides access to the bearing enabling for easier repairs and replacements. (For more information on this solution, please see rendering.)

**FSI's solution will increase production, and decrease the replacement of rollers, sprockets and maintenance hours saving our customer time and money. Stay tuned for details on the bearings installation and the success of FSI's solution!**



Experiencing challenges with your bearing housings? Contact Lauren Morelli, FSI Marketing Manager at 412-865-2101 or [lmorelli@worldfsi.net](mailto:lmorelli@worldfsi.net) to learn how we can engineer a custom solution for you!