

# Reduced installation / downtime by replacing bearings DODGE® D-Lok® bearings

## The challenge

A coffee manufacturing facility in New Orleans, LA was having issues with bearings failing on their sealer transfer conveyor entering into their packaging line. The bearings are flange mounted and are arranged such that the common shaft was supported by four bearings. The 17/16 inch setscrew bearings were wearing on the shaft, causing the shaft to spin inside the bearing. The bearings at times would also seize to the shaft, demanding immediate replacement and creating difficulty in removal. The failures were frequent, at eight times a year, four of which were replaced under unplanned downtime. It took four hours to disassemble the shaft from the conveyor and replace the bearings and shaft assembly.

## The Dodge solution

The local distributor representative and ABB Sales Engineers worked together on a solution. After discussing with the manufacturer's maintenance team, the DODGE D-Lok was selected to solve the problem. The D-Lok bearing is mounted with a concentric clamp collar, which makes it easy to install. More importantly, the concentric clamp collar gives the bearing a 360 degree fit around the shaft. There is more clamping force, and there is no setscrew contact to the shaft. This feature will also reduce fretting corrosion, which would cause the bearing to seize to the shaft. This makes the removal process simple, and saves the shaft when the manufacturer needs to replace the bearings. The D-Lok bearings have been running without incident for over 18 months

## The savings

The savings for the replacement bearings and shafting was only the start. The manufacturer realized tremendous savings from the elimination of costly downtime. All savings were the result of taking the time to select the proper 17/16 inch bearing for the application. Cost of labor was not included in the analysis, and can be noted as an added benefit. The shafting material cost was also not taken into account. See the back of this document for complete savings summary.

## The conclusion

Solutions with small products can amount to huge savings. The DODGE D-Lok bearing has shown for years that it is a true problem solving product. Whatever the power transmission problem in your facility, ask your local distributor and ABB Sales Engineers about possible solutions. We are in your facilities every day, solving problems and lowering your Total Cost of Ownership (TCO).



# Total inventory reduction savings: \$91,760

Previous bearing cost + bearing replacement + downtime = \$92,080

DODGE D-Lok cost \$320

## Step 1

For each product that was analyzed, ABB asked the following questions:

- The amount of time required to replace the bearings and shaft assembly.
- Cost of parts for each activity.
- The replacement frequency of each component.
- Downtime costs (\$ per hour).

## Step 2

We calculated annual material (bearings) cost for the existing solution using specific formulas:

*Material cost = replacement frequency x unit cost*

Results:

Previous bearing cost:	\$2,080
Solution bearing cost:	<u>\$ 320</u>
Total for existing shaft cost:	\$1,760

## Step 3

We calculated annual downtime costs for existing bearings and solutions using specific formulas:

*Downtime cost = downtime cost (\$ per hour) x time spent on activity x replacement frequency*

Results:

Previous downtime cost:	\$90,000
Solution bearing cost:	<u>\$ 0</u>
Total for existing shaft cost:	\$90,000

## Step 4

Based on these calculations, we were able to discover a

Total DCS (documented cost savings) of: **\$91,760**

For more information please contact:

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