

TECHTALK DESIGN ADVICE SERIES

THE TRUE COST OF LINEAR BEARING LUBRICATION



Last year I was studying the true costs of lubrication in bearing systems. Since we manufacture oil and maintenance-free plastic bearings, it's not hard to understand my agenda in doing this, but even I was surprised.

Over and over again the main reasons cited as the causes of bearing failures were lubrication-related issues. In fact, one major ball-bearing manufacturer completed a study claiming 54% of all bearings failed due to lubrication issues, while another one said this percentage was closer to 80%.

Yet many companies I visit do not feel the up-front cost savings of DryLin[®] linear bearings versus other bearings - which can be between 25-50% - justify the re-design.

However, I would challenge you to consider the other costs associated with ball bearings: for example, how much cost is incurred due to machine downtime? How much does it cost a plant to lubricate bearing points? How much do all the grease lines, fittings and lubrication systems actually add to the overall cost of a bearing system?

As stated, 54%-80% of ball bearings fail either due to improper maintenance or contamination of the lubrication system; often leading to machine shutdowns, or damage to motors and other parts of the system. Many companies use the figure of \$500 per hour (ref: Lean Maintenance for Lean Manufacturing by Howard C. Cooper) to determine the costs of this downtime. Some use numbers that are much higher.



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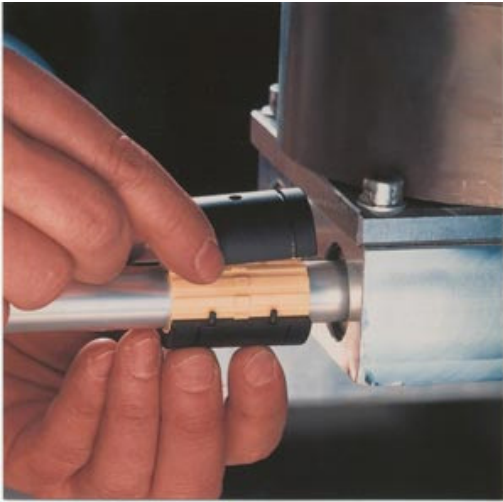
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How much does it cost to actually lubricate a ball bearing?

One major oil company estimates that it takes 3 minutes* to properly lubricate one grease point on a machine and that, if you have 20 grease points each requiring daily maintenance, you will pay \$7,300 per year to maintain that machine (ref: Lubrication Automation website). This is equivalent to \$365 per bearing, using \$20 per hour for overheads; a number many managers may argue is too low. Imagine the costs savings if you have several machines on one production line. You could save some serious cash - and earn some serious praise from your boss at the same time.

*If you think 3 minutes sounds like a long time, the article 'Grease Guns - Learning the Basics' courtesy of Machinery Lubrication magazine helps put this into perspective.

['Lean Maintenance for Lean Manufacturing' - Howard C. Cooper](#)

[Lubrication Automation website](#)

['Grease Guns - Learning the Basics' - Machinery Lubrication magazine](#)

What about the cost of ancillary parts required for some ball-bearing applications - such as oil zerks and lines (including the special machining required to install these on your machine) oil reservoirs, scrapers, wipes, seals, central-lubrication systems? All of this adds up to extra purchase orders and lead times. One customer I visited in the packaging industry told me they add \$125 per bearing for a centralized-lubrication system.

DryLin® linear bearings require none of these components to function properly. They function using a high-performance, self-lubricating polymer liner in place of ball bearings and maintain a constant coefficient of friction: DryLin® can move just as smoothly on cycle 1,000 as it can on cycle 1,000,000 - without requiring any maintenance.

As always, I'm interested in hearing your thoughts on this subject - especially if you think we may be able to help you reduce maintenance on your machine. E-mail Matt at mmowry@igus.com.

Useful Links and Tools

[Determine which DryLin® bearing is right for your application](#)

[Need help specifying a system? Let igus® do the work for you!](#)