NEWS RELEASE

Simplicity®: the Preferred Choice for ADI's New De-burring System

Rockford, IL – March 12, 2010

Advance Design Industries (ADI) in Sheffield Village, Ohio has designed and built innovative custom machine systems for industrial and defense applications for more than 50 years. Their latest problem-solving design, a de-burring system that removes burrs from hobbed gears, was constructed using a series of drive platforms, a robotic with grinding tool attachment and brushing stations. To accurately and repeatedly position the various stations, in a multitude of pre-programmed locations, ADI required a linear motion system that could endure the contaminated environment and heavy loads of the application. To accomplish this, they turned to PBC Linear products once again, due to their successful implementation of previous systems designed together.

The Application

For the de-burring system to succeed, ADI required a linear motion technology that could perform under 50,000 lbs of load in a dirty, industrial machine-tool work area. De-burring is the process of removing burrs, or excess protruding material, from large gears (70-120'' in diameter). Eventually, these gears will

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be utilized as the driving mechanism for applications such as crane turn tables and energy efficient wind turbines.

The de-burring machine rotates the gear through the robotic grinding station, then through each brushing station for an assured, smooth end-product. Excess material not removed, could result in noise, binding and installation problems. Three drive platforms as well as the robot and brush stations, riding on PBC linear bearing system, adjust to the locations for various sizes of geared rings.

The Problem

An immense load (50,000 lbs) and harsh environment restricted what technology ADI could use for linear motion. Ball-bearing systems would deteriorate with vibration and spall shafting under the heavy load. Excess dirt, dust and particulate can collect in the ball cages, resulting in stalling and catastrophic failure. The drive platforms, though very important to adjust for different gear sizes, are seldom used for day-to-day functions; thus requiring a linear system that needs little lubrication, but still provides smooth and reliable performance when needed.

The Solution

For this application, ADI favored plane bearing technology due to its ability to thrive in contaminated environments and sustain even

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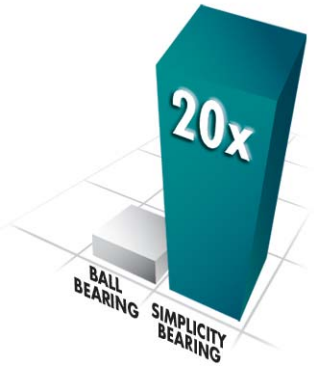
disbursement of forces versus the small point of contact provided by ball-bearings. Additionally, the bearings need to prevent stick-slip, a common problem to bearing systems which are not routinely in motion.



As a result of previous application success, performance and cost efficiency, ADI decided to implement Simplicity® bearings as the linear motion system for all stations of the de-burring machine. Simplicity® self-lubricating linear plane bearings require little to no upkeep maintenance, excel in harsh environments and handle heavy load applications. This is due to the bearings' design and FrelonGold® liner. Simplicity® bearings can run for years under constant or intermittent use. The low friction, self-lubricating system requires no additional grease or oil (as long as application is within design criteria). FrelonGold® has also been shown to handle up to 20x the load of a traditional ball-bearing! The Simplicity® bearing wipes all dirt, dust and grime clean off the shaft—providing a reliable, smooth and long-lasting linear motion system.

The Result

Simplicity® bearing/shafting assemblies were installed into the drive platforms, robot station and brushing station of the system. Testing was conducted over a period of two months with the bearings performing without failure. Now, ADI is looking into manufacturing additional gear de-burring systems guided by Simplicity® technology. For more information on PBC Linear or Simplicity® technology, please email us at marketing@pbclinear.com. You can also contact us by phone at 1.800.729.9085, or visit us on the web at our RST dedicated webpage: RST.pbclinear.com.

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