

Application News



simplicity[®]
The Toughest Linear Bearings™

Simplicity[®] Self-Lubricated FrelonGOLD[®] Linear Bearings Increased production and efficiency, eliminated scrap, increased profits



Faced with chronic linear ball bearing failure in carpet tufting machines, one major carpet manufacturer opened their doors to Pacific Bearing Company to research and test new solutions to try to solve some old and predictable problems.

Linear motion is a necessity in modern manufacturing plants, yet oftentimes the available options and optimum solutions are overlooked or unknown — at least until problems provoke a search for a solution. Carpet manufacturing is no different. Linear bearings are critical components in carpet tufting machinery; in fact, this customer had an average of 36 bearings per machine and over 250 machines. Their problem was a normal one — premature catastrophic failure and product contamination, resulting in yards of scrap carpet!

The reason: ball bearings are unable to withstand the conditions. They simply are not made for such aggressive contaminated short stroke, high speed applications. These machines run at hundreds of 25mm strokes per second, resulting in high temperatures, shaft spalling, and typically catastrophically fail within a short period of time after installation. In addition, bearing lube was dripping onto the freshly manufactured carpet, thus causing perpetual scrap.

Fortunately for the flooring manufacturer, this was not much of a problem for Pacific Bearing engineers. Working along with the customer, Pacific Bearing came up with a solution that replaces the bearings in the feet on the tufting machines. The Simplicity Bearings utilizing FrelonGOLD as a bearing material eliminating the balls and ball spalling and because they are self-lubricating, they also eliminated the need for lubrication. In many cases the customer was able to replace the bearing using the slightly damaged shafts from the old linear ball bearing systems. Pacific Bearing recommends new shafting when installing Simplicity bearings.

The results were immediate. Production increased ten percent. Scrap was eliminated, time between rebuilds tripled. Reduction in inertia in turn lowered energy costs and all of the above in turn increased profits. One facility reported the following: One plant that produces 1.26 million yards of carpet a week with 28 machines lost 32,000 to 54,000 yards a week in scrap. With the Simplicity solution in place, that number has fallen to a mere 2000 to 3000 yards per week. Couple that with running up to three times longer without having to rebuild machines adds up to big-time savings.



Simplicity equipped pushdown foot.

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SMOOTH & QUIET LINEAR MOTION™

