

Case Study

Thermoforming Systems LLC



A Roller Screw Providing High Load, High Speed and Long Life... No Problem

Thermoforming Systems LLC (TSL), a world leader in plastic thermoforming machine tools, was experiencing unacceptable failure rates from their roller screws. TSL turned to Creative Motion Control (CMC) and, working closely together, TSL and CMC developed a winning solution for TSL's demanding applications.

“Our screws were failing. We needed a partner who would analyze our application and provide a custom roller screw and bearing solution that will give us the life we need at a reasonable cost and lead time. CMC took on the challenge and has done an outstanding job.” - Terry Litke, Director - Mechanical Engineering, TSL

The roller screw assembly is used to mechanically pre-stretch heated plastic in a heavy duty continuous thermoforming machine. The screw (100x50 -- 100mm screw with a 50mm lead) is driven by three 15KW electronically geared servo motors and develops 36,000 lbf thrust (10" stroke at 10 strokes/min) at speeds up to 32"/second in a 24/7 production environment. CMC was able to co-engineer a custom solution and deliver the finished product, including



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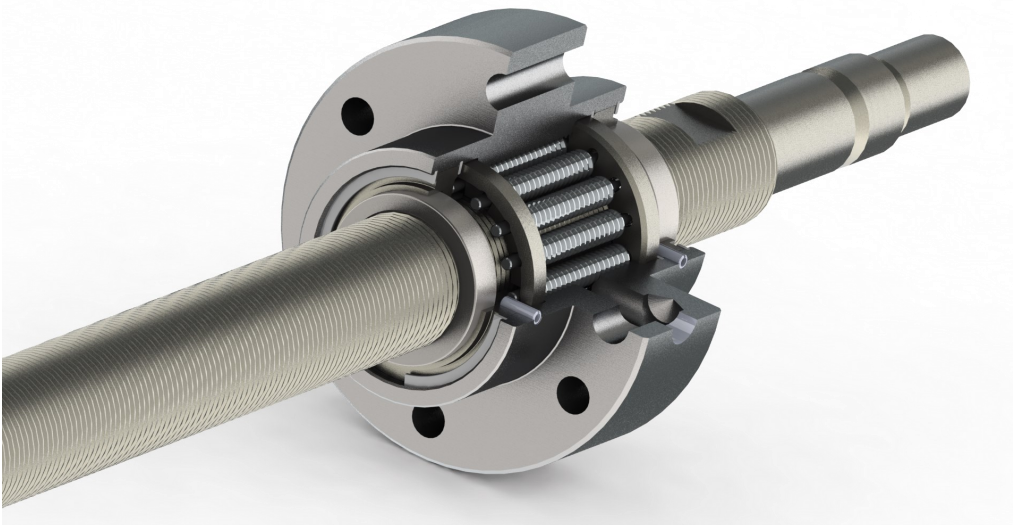
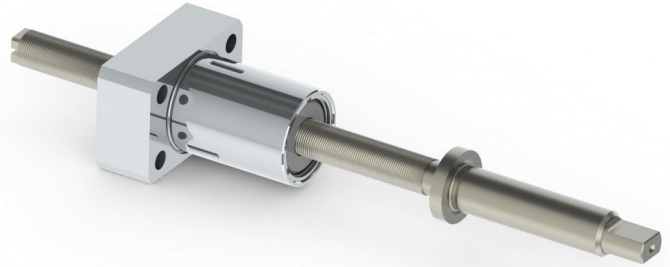


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the roller screw, drive shaft, and high capacity thrust bearing support assembly, in three months.

The CMC solution runs smoother, quieter, and cooler than TSL's previous solution. With CMC's patented Grooved Roller Bearing technology, the bearing support will no longer have to be replaced midway through the life of the roller screw, yet it is smaller than the previous bearing support. This dramatically reduces downtime, maintenance, and of course bearing replacement costs.



Creative Motion Control, located in Redmond, WA, specializes in high precision planetary roller screws, as well as super long life thrust and radial industrial bearings — Grooved Roller Bearings.

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CMC: CREATIVE SOLUTIONS TO AUTOMATION CHALLENGES