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## #1001 - Micro Deburring and Surface Finish Improvement

**Industry:** Automotive - Manufacturers of motor vehicle couplers

**Mfg/Method:** Machining

**Alloy:** Steel

**Problem:** The customer was looking to improve upon the performance of their parts. The Ball Screw and Ball Screw Nut are part of an assembly. The assembly is motor driven and it can be operated by hand turning. The Ball Screw, which is 48" long raises and lowers a recreational vehicle. The screw threads have sharp burr edges, which have a tendency to seize and gall or potentially lock-up. The customer required a free traveling Ball Screw, which is fastened in the Ball Screw Nut. Safety and performance are extremely important.

**Solution:** Our customer electropolished several Ball Screws and Ball Screw Nuts as samples over a three-year period. Our customer sampled several lots. They said that electropolishing well surpassed their expectations. The electropolished Ball Screw reduced the galling significantly. Our customer's standard test is 5,000 cycles up and down. The Ball Screw went well over 5,000 cycles without a problem. Electropolishing is now part of the design.

**Note to engineer:** *Most threading operations leave a fairly rough or burred surface that interferes with final operation. However, once threads are rolled or cut, the surfaces are often sensitive to damage, eliminating the use of normal deburring processes. Electropolishing is a proven process to smooth and deburr thread areas without part damage and minimal dimensional change. Please consider sending a sample of your component so that you may experiment.*

