OMIC

SUBTRACTIVE

OMP 409

RAPID BALL-SCREW MANUFACTURING

The industry required a new solution for the rapid manufacturing of a specific type of linear actuator known as the ball screw. Traditionally, ball screws are produced through a three-step process: first, machining or cold rolling to create the general shape; second, case hardening to enhance durability; and third, precision grinding to achieve the final dimensions.

OMIC R&D embarked on a project to demonstrate innovative methods for producing ball screws with tighter tolerances and faster production times than traditional grinding techniques. Our new approach leverages advanced technologies and processes to streamline manufacturing, reduce production time, and improve the accuracy of the finished product.

This project not only enhances the efficiency of ball screw manufacturing but also improves the overall quality of the components. By adopting these novel methods, manufacturers can achieve superior performance, reduce costs, and accelerate production timelines, ultimately leading to more reliable and efficient linear actuators.

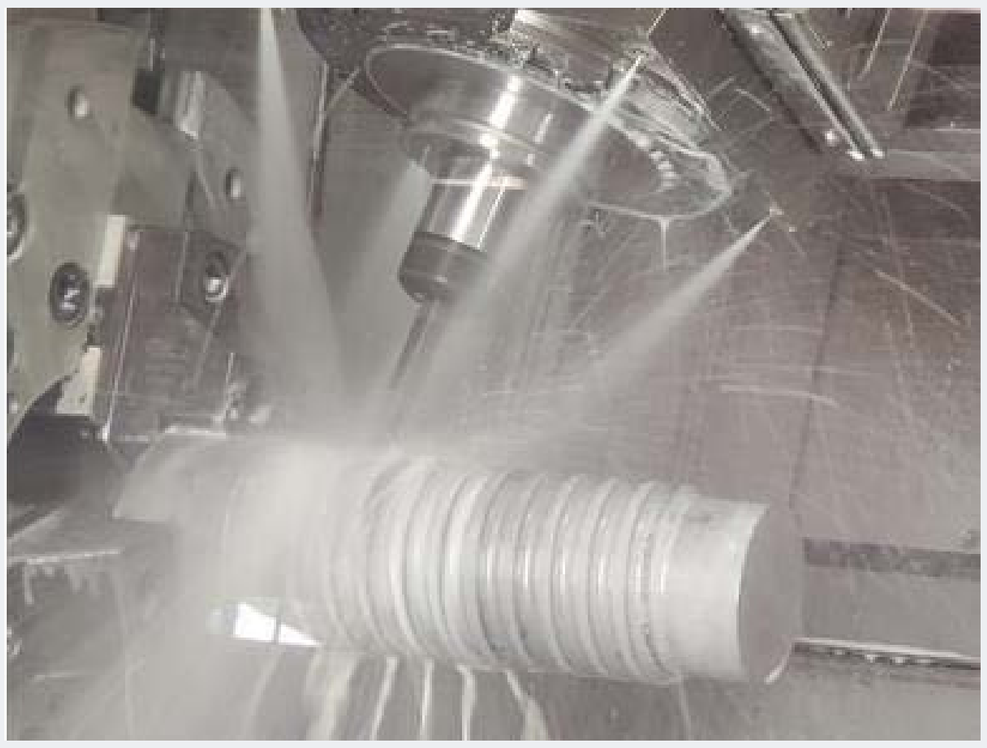

Fig 1 - Example of roughing the form

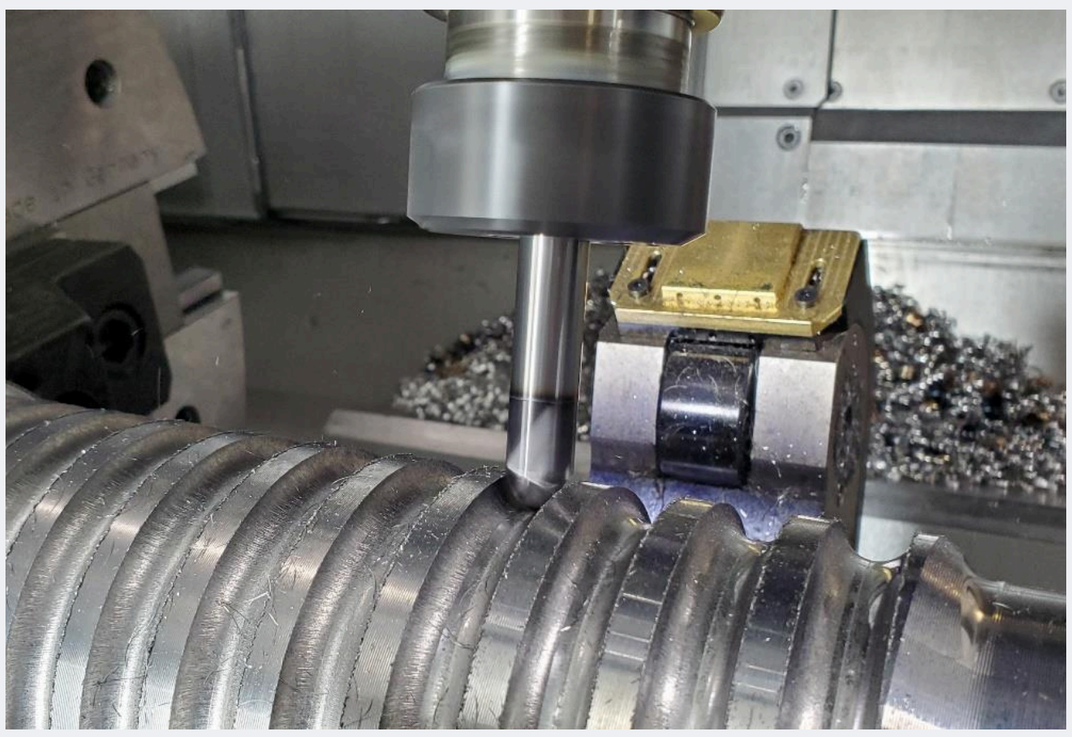

Fig 2 - Example of finish milling using 2 flute polish endmill from OSG

Research was conducted primarily by Josh Koch at OMIC R&D

Industry participants include:
Boeing
ZOLLER
Oregon Tech