Aerospace Gears: Opening Drill®

The customer manufactures aerospace gears made from 4340 (28 Rc) using a Mazak Lathe with oil-based water soluble coolant.

The customer realized this process was not optimal, and they contacted Allied for a solution.

The **Opening Drill®** paid for itself after only 60 parts. The customer also makes a number of aerospace gears from of 15-5 stainless and 4340 (ranging from 1.00" ID to 4.50" ID *(25.4 mm to 114.3 mm)*), and they plan to utilize the Opening Drill in these additional applications.

Product: Opening Drill®
Objective: Improve process
Industry: Aerospace
Part: Gears
Material: 4340
Hole Ø: 3.75" *(95.25 mm)*
Hole Depth: 7.00" *(177.8 mm)*

Measure	Competitor Boring Bar	Opening Drill®
RPM	400	509
Feed Rate	0.012 IPR *(0.305 mm/rev)*	0.004 IPR *(0.102 mm/rev)*
Penetration Rate	4.8 IPM *(121.92 mm/min)*	2.037 IPM *(51.74 mm/min)*
Cycle Time	19 min	3 min 30 sec
Tool Life	30 parts	30 parts

▸ Opening Drill®
Holder: ***OP3-1L-SS1.5***

82% cycle time decrease

The Opening Drill® provided:

- ✓ Decreased cycle time
- ✓ Reduced boring passes
- ✓ Decreased cost per hole