

Revolution Drill®

Case Study: 6006
Industry: Oil & Gas/Petrochemical
Part: Fuel Transfer Component
Material: 1018
Holder: R46X22-150L
Insert: OP-05T308-H



The Challenge

The customer manufactures a component for the fuel transfer industry made from 1018. They use a boring mill with water soluble flood coolant. Each part requires 8 drilled holes.

As their workload increased, the customer needed to speed up operations. They asked Allied for a solution to improve their process and increase throughput.

The Advantages

The Revolution Drill reduced the number of required tools from 3 to 1. The solution also decreased cycle time and reduced tooling costs.

- Increased tool life by 10x
- Reduced cost per hole from \$22.43 to \$4.14
- Total cost savings = 82%

Previous Tooling

3 Tool Process

Drill

- Hole diameter = 0.750" (19.05mm)
- Hole depth = 6" (152.40mm)

Kennametal IC drill

- Hole diameter = 2.5" (63.5mm)
- 400 RPM
- 0.009 IPR (0.23mm)
- 3.6 IPM (91.44 mm/min)

Boring bar

- Hole diameter = 2.8" (71.12mm)

Overall

- Cycle time = 10 minutes
- Tool life = 75 holes

Allied Machine Solution

Revolution Drill®

- 800 RPM
- 0.0035 IPR (0.089 mm/rev)
- 2.8 IPM (71.12 mm/min)
- Cycle time = 2 minutes 9 seconds
- Tool life = 795 holes

