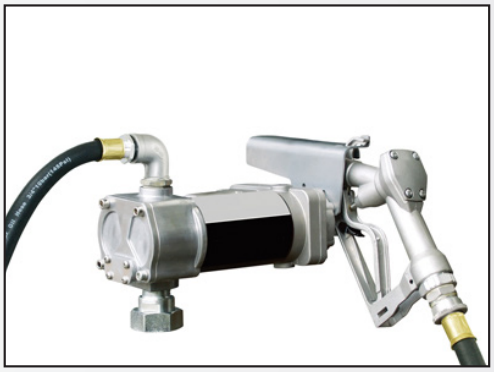
Fuel Transfer Component: Revolution Drill®

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.

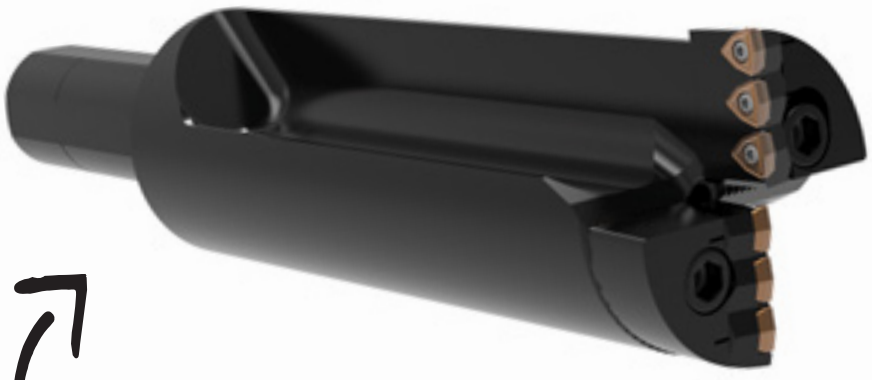
As their workload increased, the customer needed to speed up operations. They asked Allied for a solution to improve their process and increase throughput.

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



Product: Revolution Drill®
Objectives: (1) Decrease cycle time
(2) Decrease cost
Industry: Oil & gas/petrochemical
Part: Fuel transfer component
Material: 1018
Hole Ø: 2.8″ *(71.12 mm)*
Hole Depth: 6.0″ *(152.4 mm)*

Measure	Competitor Tooling	Revolution Drill®
RPM	(1) Drill: Ø = 0.750″ *(19.05 mm)* depth = 6″ *(152.4 mm)* (2) IC drill: Ø = 2.5″ *(63.5 mm)* – 400 RPM 0.009 IPR *(0.229 mm/rev)* – 3.6 IPM *(91.44 mm/min)* (3) Boring bar Ø = 2.8″ *(71.12 mm)*	800
Feed Rate		0.0035 IPR *(0.089 mm/rev)*
Penetration Rate		2.8 IPM *(71.120 mm/min)*
Cycle Time	10 min	2 min 9 sec
Tool Life	75 holes	795 holes
The Revolution Drill offered *81.54%* cost per hole savings over the competitor tooling.		



- Revolution Drill®
  Holder: ***R46X22-150L***
  Inserts: ***OP-05T308-H***

960% tool life increase

The Revolution Drill® provided:

- ✓ Decreased cost per hole
- ✓ Decreased cycle time
- ✓ Increased tool life