



## Turbine Components: Opening Drill®

The customer manufactures turbine components made from chrome molly alloy steel using a Super 8 VMC with water soluble coolant.

The boring bar machining process moved too slow. The customer needed to reduce cycle time because the parts were scheduled for quick delivery.

Not only did the **Opening Drill®** decrease the cycle time to meet the delivery schedule, it also greatly reduced the cost per hole.



		Measure	Competitor Boring Bars	Opening Drill®
<b>Product:</b>	Opening Drill®	RPM	500	500
<b>Objective:</b>	Decrease cycle time	Feed Rate	0.005 IPR (0.127 mm/rev)	0.005 IPR (0.127 mm/rev)
<b>Industry:</b>	Renewable energy/energy	Penetration Rate	2.5 IPM (63.5 mm/min)	2.5 IPM (63.5 mm/min)
<b>Part:</b>	Turbine components	Cycle Time	2 hr 59 min	1 hr 29.6 min
<b>Material:</b>	Chrome molly alloy steel	The Opening Drill offered <b>40.92%</b> cost per hole savings over the competitor tooling.		
<b>Hole Ø:</b>	3.5" (88.9 mm)			
<b>Hole Depth:</b>	8.0" (203.20 mm)			



▶ Opening Drill®  
Holder: **OP3-1L-BT50**  
Inserts: **OP-05T308-H**

40% cost per hole decrease

The Opening Drill® provided:

- ✓ Decreased cycle time
- ✓ Decreased cost per hole

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