



Gear Blank: Opening Drill®

The customer manufactures automotive gear blanks made from free machining steel using a Puma 40HP lathe with water soluble thru-tool coolant.

The customer was not pleased with this process. They needed a solution that would increase productivity, reduce cycle time, and lower their overall cost of production.

The **Opening Drill®** drastically improved the customer's process and achieved the requested results with only one boring pass.



Product:	Opening Drill®	Measure	Competitor Process		Opening Drill® w/ 1 boring pass
			Drill	10 Boring Passes	
Objective:	Decrease cycle time	RPM	764	492	635
Industry:	Automotive	Speed	400 SFM (121.92 M/min)	400 SFM (121.92 M/min)	500 SFM (152.4 M/min)
Part:	Gear blank	Feed Rate	0.004 IPR (0.102 mm/rev)	0.004 IPR (0.102 mm/rev)	0.005 IPR (0.127 mm/rev)
Material:	Free machining steel	Penetration Rate	3.056 IPM (77.622 mm/min)	1.96 IPM (49.784 mm/min)	3.18 IPM (80.772 mm/min)
Hole Ø:	1.50" (38.1 mm)	Cycle Time	33 min		4 min 19 sec
Hole Depth:	6.00" (152.4 mm)				



Opening Drill®
Holder: OP2-1L-SS-1.5

87% cycle time decrease

The Opening Drill® provided:

- ✓ Decreased cycle time
- ✓ Decreased downtime
- ✓ Decreased costs

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