

Gear Cutting of a Steel High-Speed Motor Coupling Flange for the Railroad Transportation Industry



A customer in the Railroad Transportation industry contacted **Link Gear & Machine** about machining a high speed motor coupling flange. Our engineering team examined the prints and 2D files of the part and planned the appropriate steps to manufacture the component. Using our Doosan Puma V550 vertical turning center we machined the coupling flange out of 4140 steel. Our engineering expertise allowed us to achieve a tolerance of $\pm.005''$ and concentricity of $.0015''$. The 61 internal diameter teeth for the flange were cut using a specialized stub tooth gear cutter. The motor coupling flange was then zinc plated to provide protection from the elements. The final component was delivered to Maryland for installation.

Gear Cutting Project Highlights

Product Name	High-Speed Motor Coupling Flange	
Product Description	This high speed motor coupling flange is used within a railroad application.	
Capabilities Applied/Processes	Primary: Gear Shaping <ul style="list-style-type: none"> ■ Cut Gear Using Special Stub Tooth Cutter CNC Turning <ul style="list-style-type: none"> ■ Rough & Finish Bore ■ Turn Side 1 	CNC Milling <ul style="list-style-type: none"> ■ Drill ■ Tap ■ Ream ■ Engrave Secondary: Zinc Plating
Equipment Used to Manufacture Part	Doosan Puma V550	
Overall Part Dimensions	Overall: Diameter: $\varnothing 9.000''$ Length: $2.000''$	Gear Data: Internal Diameter: $\varnothing 4.750''$ Diametral Pitch: 12 DP Teeth: 61
Tightest Tolerances	$\pm.005''$ Concentricity of $.0015''$	True Position of $.005''$
Material Used	4140 Steel	
Max Material Finish	125RMS	
In process testing/inspection performed	First Article Inspection	
Industry for Use	Railroad Transportation	
Delivery Location	Maryland	
Standards Met	Customer supplied print, 2D CAD Drawing	