

Gear Cutting of a Steel Compound Gear & Axle for the Winding Machinery Industry



This compound gear and axle was machined out of 8620 steel for use in a customer's winding machinery. The spec for the gear required a tolerance of $+.0000''/-0.0005''$ and both gears to be of AGMA Quality Class 9 (a minimum $0.0007''$ tooth-to-tooth composite tolerance). We used our Fellows Gear Shaper to produce the teeth for the compound gear. The larger 4.095" diameter gear has 36 teeth and the adjoining smaller 2.210" diameter gear has 20 teeth. This design allows the system the compound gear is used in to speed up or slow down the rotation of the output gear it is mated with. The axle was turned using our Mori Seiki Lathe. The component was heat treated to increase the durability and decrease the wear on the teeth. The compound gear and axle was shipped to Pennsylvania for installation in the appropriate machinery.

Product Name	Steel Compound Gear & Axle	
Product Description	This steel compound gear & axle is used within a winding machine.	
Capabilities Applied/Processes	Primary: Gear Cutting CNC Turning <ul style="list-style-type: none"> ■ Face ■ Turn ■ Thread 	CNC Milling <ul style="list-style-type: none"> ■ Drill ■ Engrave ■ Mill Keyways Secondary: Heat Treatment <ul style="list-style-type: none"> ■ Carburize and Harden to 58 to 62 Rc
Equipment Used to Manufacture Part	Fellows Gear Shaper Mori Seiki Lathe	Kitamura, Daewoo CNC
Overall Part Dimensions	Overall: Diameter: $\varnothing 4.275''$ Length: 7.78" Gear A Data: Pitch Diameter: $\varnothing 4.095''$ Teeth: 36 AGMA Quality: 9	Gear B Data: Pitch Diameter: $\varnothing 2.210''$ Teeth: 20 AGMA Quality: 9
Tightest Tolerances	$+.0000''/-0.0005''$	
Material Used	AISI 8620 Steel	
Max Material Finish	90 RMS (Teeth)	
Industry for Use	Winding Machinery	
Standards Met	Customer supplied print, 2D CAD Drawing	
Delivery Location	Pennsylvania	