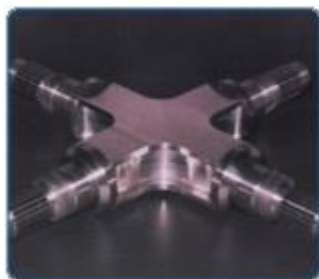


Spline Cutting of Stainless Steel Gimbal Journal for the Homeland Security Industry



Using our expertise in CNC Machining we were able to manufacture a very complex component for a customer in Maryland associated with the Homeland Security industry. The most important feature of the part is the 24 teeth of the splines on all four shafts of the piece. It was very important that the spline cutting process held the required tolerance so the journal would be compatible with previously produced internal splines on its mating part. Prior to cutting the splines, the stainless steel was heat treated to the H1100 condition. The spline cutting for the journal gimbal was performed on our gear shaping machine. The additional machining was performed using our lathe and milling machines. Passivation was performed on the part adhering to MIL-S-5002C, Type II. The journal gimbal was delivered to Maryland for installation and use.

Spline Cutting Project Highlights

Product Name	Stainless Steel Gimbal Journal	
Product Description	This stainless steel gimbal journal is used within a homeland security application.	
Capabilities Applied/Processes	Spline Cutting <ul style="list-style-type: none"> ■ Cut Spline 4 Places CNC Milling <ul style="list-style-type: none"> ■ Mill Thickness ■ Mill Shape ■ Mill Diameters ■ Mill Undercut ■ Counter Bore 	CNC Turning <ul style="list-style-type: none"> ■ Turn ■ Thread ■ Chamfer Secondary: Heat Treatment <ul style="list-style-type: none"> ■ Heat Treat to H1100 Passivation WaterJet Cutting
Equipment Used to Manufacture Part	Mazak CNC Kitamura CNC	
Overall Part Dimensions	Overall Width: 17.400" Spline: Pitch Diameter: Ø1.500"	Class 4 External Involute Teeth: 24 Pitch: 16/32
Tightest Tolerances	+0.0000"/-.0006" Perpendicularity of .010"	Total Runout of .001" Parallelism of .001"
Material Used	Stainless Steel	
Max Material Finish	32 RMS	
In process testing/inspection performed	Yes	
Estimated Part Weight	40#	
Industry for Use	Homeland Security	
Standards Met	Customer supplied print, 2D CAD Drawing	
Delivery Location	Maryland	