

## Introduction

For over 50 years, MIC Group has provided manufacturing solutions to our customers utilizing our global facilities and unmatched offering of services. Renowned for our superior quality, unparalleled customer service, and expert technical support, MIC Group offers comprehensive solutions to the most complex of manufacturing challenges. Precision Machining, Electron Beam Welding, Investment Casting, Pressure Testing & NDT and Integrated Supply Chain Services coupled with a proactive Safety Culture, comprehensive Quality Program and an extensive Engineering and Programming department make up the myriad of services MIC Group provides. These capabilities allow us to focus on the extensive needs of our customers. As a result we are able to provide a lower cost, shorter lead times and a host of solutions for our customers, regardless of industry.

## Specifications

Part Weight Limit	Up to 5 Tons based on crane(s)
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Primary Materials	Stainless Steel Nickel Based Alloys Cobalt Based Alloys Beryllium Copper Titanium MP35N
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Quality Certifications	ISO 9001:2008
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## Turning Summary

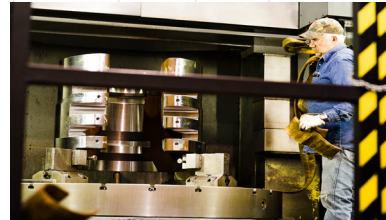
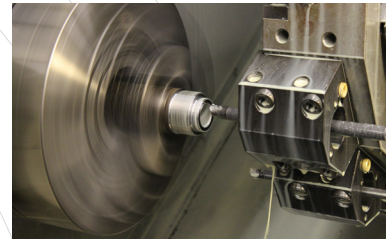
While we specialize in “long” tubular type parts with tolerances into the +/- .0001” range, we are able to adapt to meet any of our customer needs relative to part dimensions, material and quantities. We do this by employing both Horizontal and Vertical Turning capabilities. Many times customers have unique needs associated with size, weight and material that cannot be addressed through just one type of turning service. MIC Group has invested in both Horizontal and Vertical Turning Machines to allow us to address these needs. Both of these machine types address even the most complex issues of our customers and we are able to do so in house while working in conjunction with our other services as applicable. Our Turning services are available at all of our locations and are supported by utilizing the latest technologies and machining techniques.

## Horizontal Turning Specifications

Type(s)	CNC Manual	Max Boring Depth	3" to 40" in length
Spindle Bore Size	1" to 10 1/2" in dia.	Distance between Centers	12" to 224" in length
# of Axis	2	Steady Rest OD	2" to 30" in dia.
Live Tooling	Yes	Rearchuck	Yes
Max Swing	8" to 40" in dia.	Work Envelopes (Min)	6" x 12" 6" x 14"
Max Turning	6" to 32" in dia.	Work Envelopes (Max)	19" x 120" 20" x 180" 32" x 224" 30" x 70"

## Vertical Turning Specifications

Type	CNC
Max Cutting Height	63"
Max Swing	98"
# of Axis	2
Work Envelope	63" x 98"

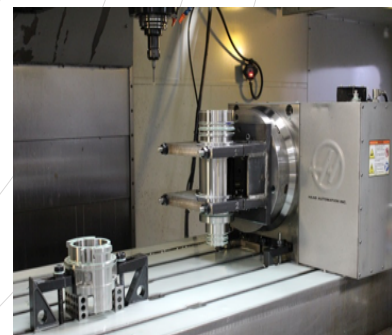


## Milling Summary

Whether your needs require difficult Vertical Milling processes or the unique aspects of Horizontal Milling, our knowledge and industry leading equipment enable us to tackle the most difficult of our customers milling requirements. Our machines provide this service up to 5 Axis' on our Vertical Milling Machines and 4 Axis' on our Horizontal Milling Machines. Available at all of our locations, either onsite or through the utilization of our intercompany processes, we are able to bring our services to our customers regardless of your location.

## Vertical Milling Specifications

Type	CNC
Through Spindle Coolant	Yes
High Pressure Coolant	Yes
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Dual Pallet	X,Y,Z
Working Envelopes/Max	120" x 35" x 40" 120" x 40" x 30" 141" x 36" x 32"



## Horizontal Milling Specifications

Type	CNC
Through Spindle Coolant	Yes
High Pressure Coolant	Yes
Dual Pallet	Yes
# of Axis	4 X,Y,Z
Working Envelopes/Max	59" x 47" x 27" 60" x 60" x 48" 118" x 90" x 63"



## Wire & Plunge EDM Summary

MIC Group offers Electrical Discharge Machining (EDM) as part of our specialty services. EDM uses an electrical discharge or spark to remove material and is typically applied to complex dimensional shapes. This method is especially well-suited for cutting intricate contours or delicate cavities that would be difficult to produce with a grinder, an end mill or other cutting tools. In addition Material Hardness has little to no impact on its effectiveness and can be applied to any material that is electrically conductive. MIC Group has a dedicated EDM Department that supports all of our Precision Machining Services as well as EDM specific requirements from our customers. We operate both Wire and Plunge EDM.

## Specficiations

Type	Wire	Plunge
Max Tank Height	16.5"	17.7"
Working Envelope	41" x 32" x 16.5"	43" x 32" x 18"
Open Height Min	1.0"	1.0"
Open Height Max	16.5"	17.7"



## Gundrill Summary

Gundrilling is a special and unique machining service that creates a long, very straight, relatively small diameter hole. The service is applicable to a broad range of materials. We are able to achieve tight tolerances, smooth surface finishes and then easily repeat the process. Typically, this specialized service is not a core competency of a machining organization. MIC Group is pleased to offer in-house gundrilling to our customers to eliminate the extended project lead time associated with outsourcing. This, in turn, saves our customers time and money.

## Specifications

Min Diameter & Max Depth	.093" x 30"
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Max Diameter & Max Depth	1.5" x 72"
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## Ejector Drilling & Honing Summary

Similar to Gundrilling only with greater diameters, Ejector drilling provides the same benefits but with larger residual holes. Also called a dual tube system it uses high pressure coolant in the space between the inner and outer tube so the chips are discharged through the same inner tube providing an efficient chip removal process. This in turn makes a more efficient metal removal process. Honing is a precise and efficient process of creating a finished inside diameter dimension. This process is highly applicable to parts which require a relatively large diameter hole with tight tolerances.

## Ejector Drilling Specifications

Max Diameter & Max Depth	5.25" ID x 155"
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## Honing Specifications

Max Diameter & Max Depth	4.25" ID x 155"
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Max Diameter & Max Depth	4.5" ID x 144"
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