



**KAME** CNC  
*5 Axis Systems*

# LEADERS IN 5-AXIS SYSTEMS

KME CNC is a leader in American-made state of the art 5-axis systems. Our systems are unmatched at transforming existing 3-axis vertical machining centers and 4-axis horizontal machining centers into 5-axis production machines.

## SMART TECHNOLOGY

All of KME CNC systems utilize SMART technology. SMART technology will save all work offsets and last positions as tombstones or trunnions move in and out of the machine tool. This is a perfect solution for pallet pool applications or job shops that have a lot of change-over in tombstones and fixturing. SMART technology will also save work offsets and last position in the event machines are shut off or power goes down in the plant.

## MADE IN THE USA

All design, manufacturing, assembly, and programming is done at the KME CNC facility in Southern California. Even the control units are manufactured on site. All products are designed and built with personal care by a devoted development team that ensures the highest standard of customer service. Whether you choose a standard model or need a custom 5-axis system, we will build a solution to match your specific machining needs.

## BUILT FOR PRECISION, BUILT TO LAST

Every base for every tombstone, trunnion and indexer is machined from a solid block of Meehanite, the same cast iron used in high-end CNC machine castings. Our covers are machined from billet, minimizing any chance of a harmonic vibration. At the heart of every system is the harmonic drive unit. Adopting the concept from the robotics industry and applying it to the needs of metalworking, KME CNC is able to offer 300 foot pounds of torque on even our smallest rotary table and up to 900 ft-lb workhorses. KME's harmonic drives are guaranteed for 10,000 hours of zero backlash.

## CUSTOM SOLUTIONS

In addition to its numerous standard configurations, KME CNC can design and build custom 5-axis tombstones and trunnions to meet your specific machining needs. Industries that have benefited from our groundbreaking systems include automotive, aerospace, firearm, defense, and medical manufacturing, just to name a few. KME CNC is dedicated to helping you achieve accuracy, repeatability, and not to mention... profitability!

## STREAMLINED INTEGRATION

KME CNC tombstones and trunnions are able to completely integrate with existing control systems. KME systems work with any CNC machine because they have their own brains, their own memory, and their own independent controller that allows them to interface with the desired equipment. So you do not need to program the transmitter/receiver module. Our units work with direct G code from your machine controls.

*There is no other product on the market that features such advanced technology and manufacturing flexibility!*



**KME PROVIDES EXCELLENT CONSUMER  
SUPPORT. CONTACT US 24/7 THROUGH  
OUR TECHNICAL SUPPORT LINE.  
(714) 345-5816 OR [info@kmecnc.com](mailto:info@kmecnc.com)**

# UPGRADING TO 5-AXIS: A NECESSITY!

Setups are the most important aspect of the machining process. Traditionally, complex components for milling require multiple setups and specific fixturing for intricate details. Every time a workpiece is touched or moved, it costs time, money and accuracy, as Gerard Vacio mentions in his Quick-Change Manufacturing article “Every time you touch it, it costs you money.”

## 5-AXIS POSITIONING ON VIRTUALLY ANY MACHINE

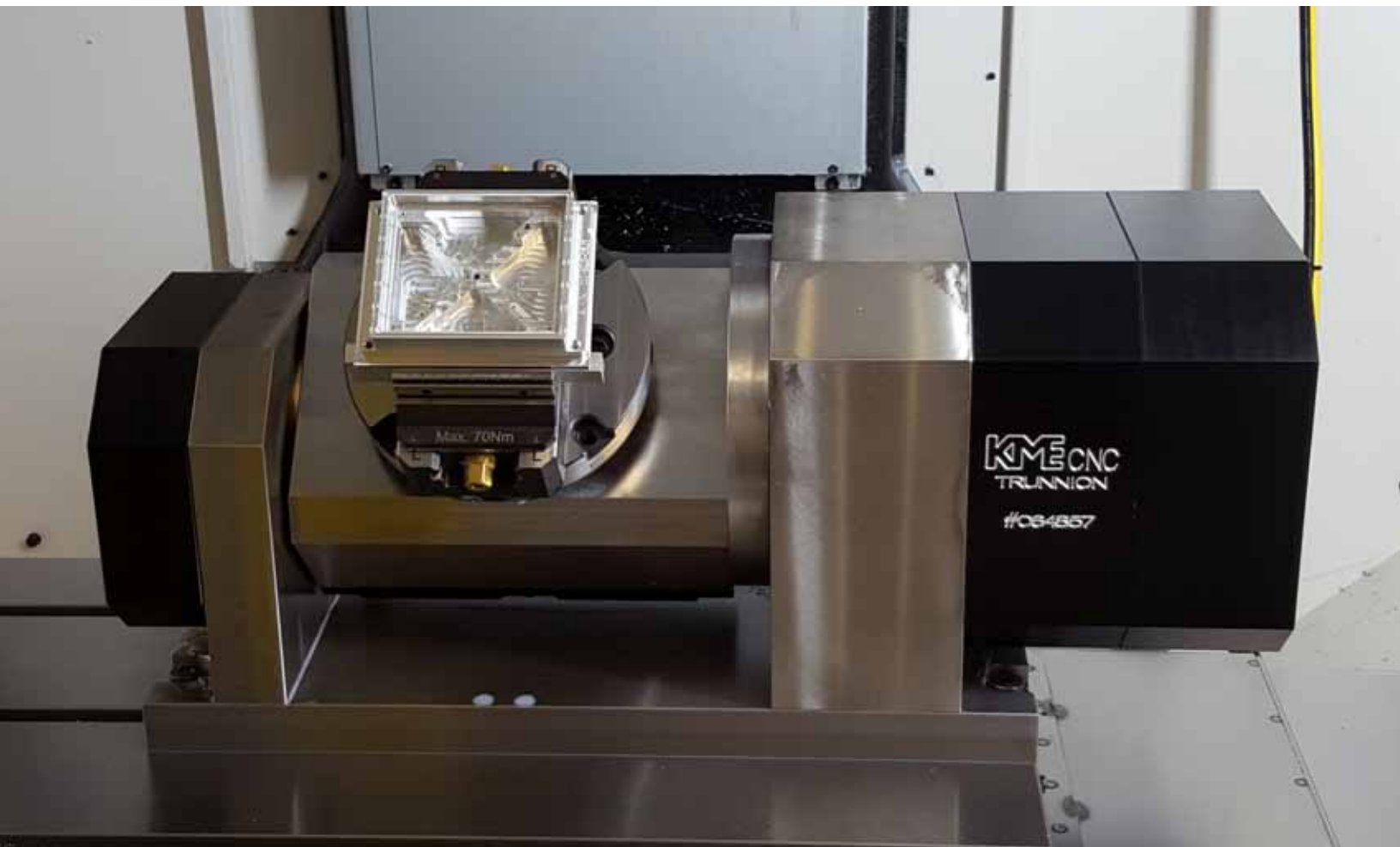
The majority of parts that require machining on multiple faces can be completed in a single setup with 5-axis positioning, 3+2 or 4+1 setups. KME CNC systems work in conjunction with the machines you already have and all of the popular workholding solutions you are already using. Decreasing setup and machining time while increasing accuracy and repeatability add up to profitability!

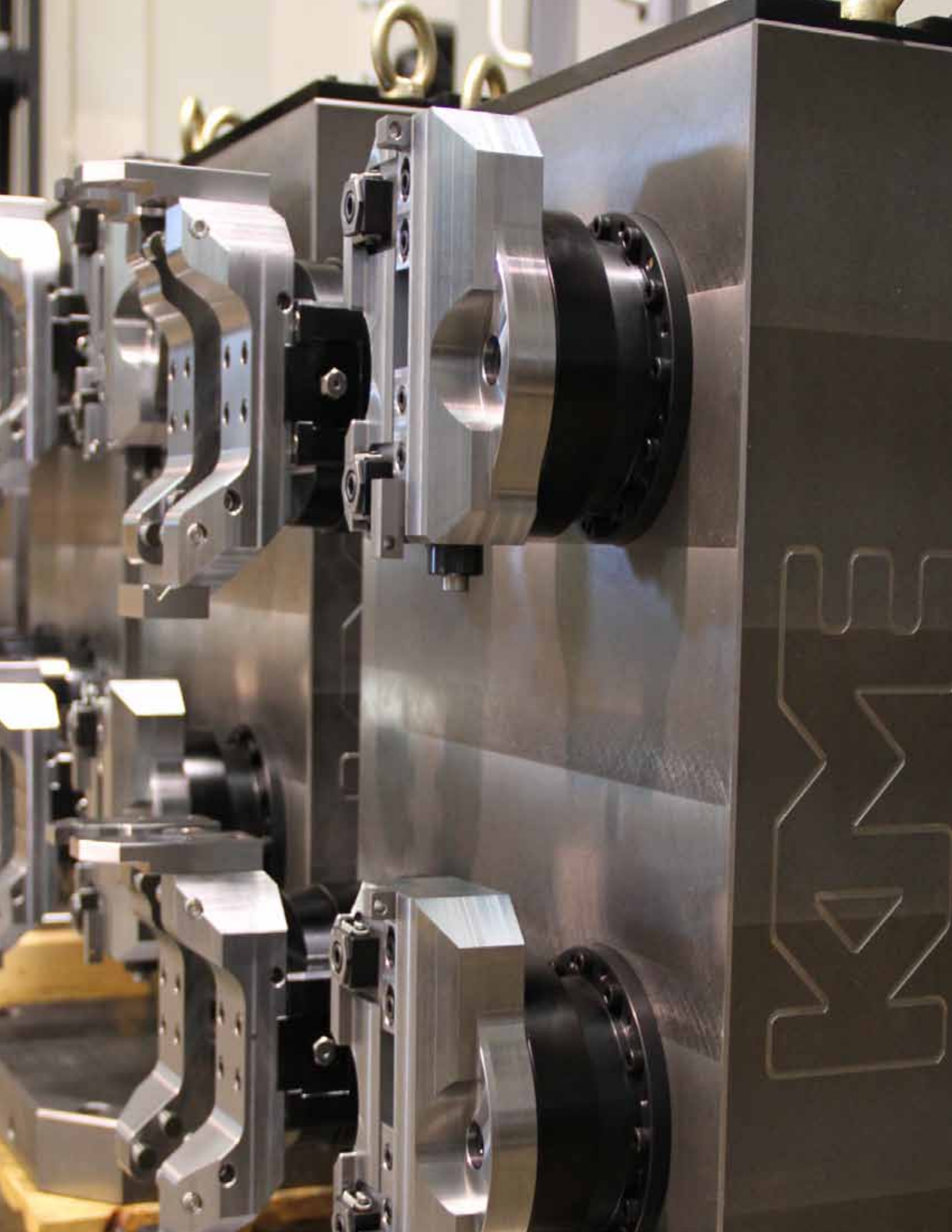
## ACCURACY AND REPEATABILITY

Accuracy is crucial in the manufacturing world. KME CNC 5-axis systems help shops realize a high degree of accuracy by maintaining a single point of holding on a particular part. The machine tool can machine the first point and move to the second point with absolutely no relative deviation. Theoretically, the position of each point within the five faces will be perfect in relation to the capability of the machine tool.

## EXTREME PRODUCTIVITY AT AN AFFORDABLE COST

Adding a KME CNC 5-axis system to an existing machining center is an economical solution to achieving 5-axis productivity. Given that 95% of manufactured parts need 5-axis positioning rather than full 5-axis contouring, KME CNC 5-axis tombstones and 5-axis trunnions allow shops to meet their production demands and take on complex jobs they previously could not have accommodated.





# 5 AXIS WIRELESS TOMBSTONES

Wireless 5-axis tombstones are the future in horizontal machining centers.

## SLEEK DESIGN

Our patented KME CNC 5 axis platters are built right into a precision machined, rigid meehanite cast iron body. Platters extend only a couple inches from the face of the tombstone, taking up less space within the HMC's work zone than a surface-mounted indexer.

Standard models are equipped with four independent 5 axis platters on one side or two platters on both sides of the tombstone. Mill 5+ sides on four different platters with a single setup. Result: four completely machined parts at a time!



## LIGHTS OUT MACHINING

Our wireless tombstones allow for more flexibility than ever before. This patented system comes with no wires, cables or any type of connections. Getting the tombstones in and out of your machines is now as easy as 1-2-3, allowing for change-over or pallet pool applications to run lights-out.

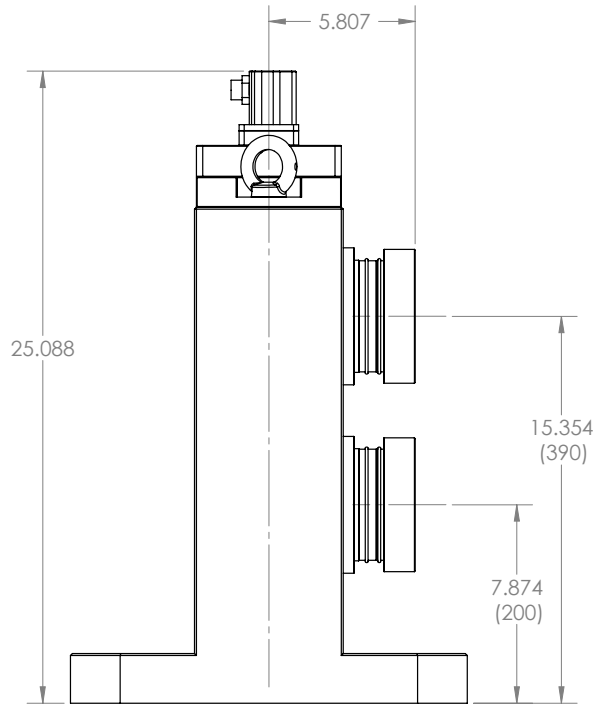
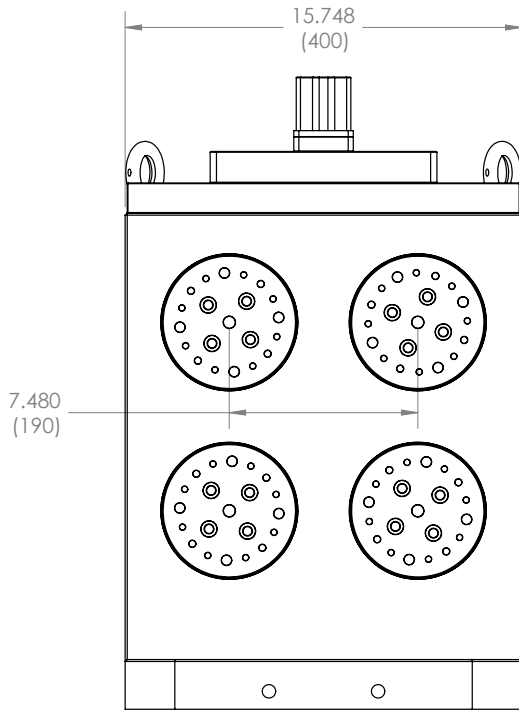
## CUSTOM CONFIGURATIONS

Request a custom setup with up to four 5-axis drives per side. That's eight 5-axis units on one wireless tombstone! Place two wireless tombstones in your HMC for up to sixteen four 5-axis parts ready to be machined. Other configuration options include aluminum tombstones, double sided tombstones, as well as drive configurations designed for your specific machining needs.

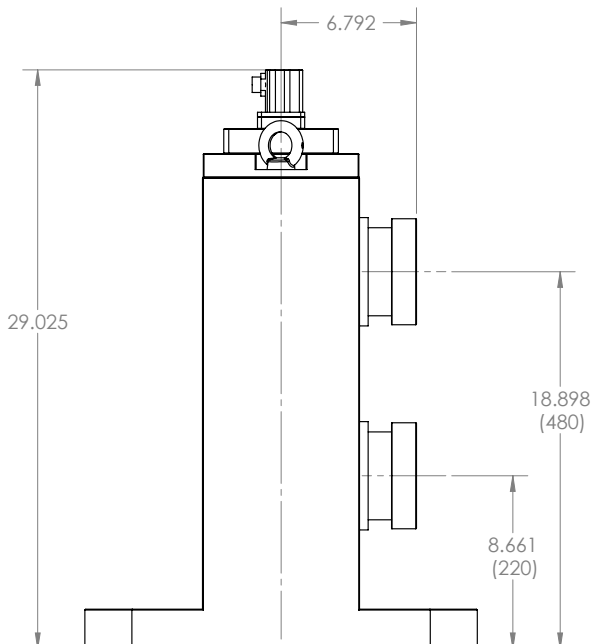
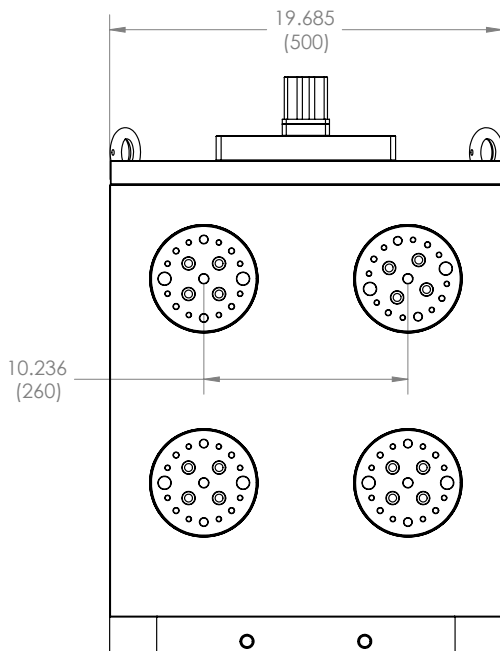
*There is no product on the market that offers this much flexibility combined with such close tolerances.*

Models	300mm Tombstone	400mm Tombstone	500mm Tombstone	630mm Tombstone	800mm Tombstone
Part Number	KME-TS300-2-0	KME-TS400-4-0	KME-TS500-4-0	KME-TS630-4-0	KME-TS800-4-0
Resolution	0.0018	0.0018	0.0018	0.0018	0.0018
Max Rotation/Step	999,999°	999,999°	999,999°	999,999°	999,999°
Max Torque	300 ft-lb / 407 N-m	300 ft-lb / 407 N-m	300 ft-lb / 407 N-m	900 ft-lb / 1220 N-m	900 ft-lb / 1220 N-m
Allowable Load	1000 in-lb	1000 in-lb	1000 in-lb	4000 in-lb	4000 in-lb
Accuracy	± 10 Arc Sec	± 10 Arc Sec	± 10 Arc Sec	± 10 Arc Sec	± 10 Arc Sec
Repeatability	± 5 Arc Sec	± 5 Arc Sec	± 5 Arc Sec	± 5 Arc Sec	± 5 Arc Sec
Continuous Rotation	10 RPM	10 RPM	10 RPM	10 RPM	10 RPM
Gear Ratio	100:1	100:1	100:1	100:1	100:1
Max Part Size	5"	7"	9"	12"	16"
Construction	Meehanite Cast Iron	Meehanite Cast Iron	Meehanite Cast Iron	Meehanite Cast Iron	Meehanite Cast Iron
Anti Corrosion Coating	Raydent Coating	Raydent Coating	Raydent Coating	Raydent Coating	Raydent Coating
Drive Diameter	93mm	113mm	113mm	158mm	158mm
Faceplate Diameter	110mm	135mm	135mm	190mm	190mm
Base Size <sup>2</sup>	300mm <sup>2</sup>	400mm <sup>2</sup>	500mm <sup>2</sup>	630mm <sup>2</sup>	800mm <sup>2</sup>
Height	500mm	500mm	600mm	700mm	800mm
Signal	Single M-code Function	Single M-code Function	Single M-code Function	Single M-code Function	Single M-code Function
Power Requirement	110V @ 10A	110V @ 10A	110V @ 10A	110V @ 10A	110V @ 10A
Approx. Weight	290 lbs	385 lbs	605 lbs	1020 lbs	1590 lbs
List Prices	<i>Please visit <a href="http://www.kmecnc.com">www.kmecnc.com</a> for a quote</i>				

# KME TOMBSTONE MECHANICAL DRAWINGS



**KME-TS400-4-0**



**KME-TS500-4-0**

# WIRELESS TECHNOLOGY

KME CNC's patented five axis tombstone (U.S. Patent No. 8,977,381) utilizes advanced wireless technology to give the competitive advantage of intelligent communication between the tombstone and machine tool.

## INTELLIGENT COMMUNICATION

The system is an RF address-based system that works with a Transmitter/Receiver Module (TRM). Each tombstone has its own unique address. An individual TRM can recognize multiple discrete addresses and control any tombstone that becomes available in the system.

As soon as the tombstone enters the work envelope, the TRM recognizes and engages that specific tombstone and that tombstone only. In a pallet pool rack system, this allows operators to shuttle tombstones in and out of a machining center without having to reset a job.

## VERSATILE POWER MANAGEMENT

The power for the wireless system is driven by power cells that are rated to last up to 8 hours of machining time and can be changed within seconds for maximum productivity.

Power Management Software unique to KME CNC features the ability to shut off desired drives through simple G code programming, which ultimately can double machining time.

Power can be turned on to any specific platter, while shutting off other platters, giving the unit longer machining time.

Take advantage of faster loading and unloading with no wires, cables, or any other type of connection to stand in the way.



**KME CNC's Wireless Tombstone  
in a Pallet Pool Application**





# 360° CABLE MANAGEMENT SYSTEM

KME's state of the art cable management system incorporates a 360 swivel connection for uninterrupted and unrestricted production.

## UNLIMITED ROTATION

Our engineers designed this system with continuity and efficiency in mind, as it keeps wire management to a minimum and prevents any restrictions during production. Customers will not have to worry about wire entanglement or limitations during production because the setup allows tombstones to continuously rotate 360 on the B-axis. A hollow center safely houses the servomotors, circuit boards and all power and signal cables within the tombstone.

## EASY INSTALLATION

Our design team also made concerted efforts to make the installation process easy. The system virtually integrates with all horizontal machining centers on the market for an almost plug-and-play installation. Customers that have already incorporated the brand new system on their machines always mention that they are greatly impressed and satisfied with the amazing benefits of having implemented the flawless design.

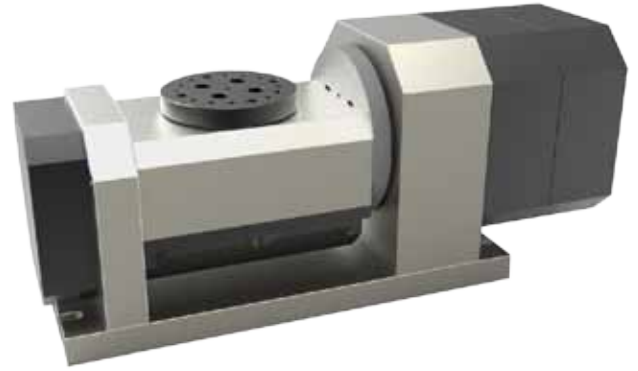




# 5 AXIS TRUNNIONS

KME CNC's 5 axis platters are built right into a precision rigid meehanite cast iron trunnion frame and table.

Trunnions are designed specifically for Vertical Machining Centers. Our standard models come with one, two, or three independent 5 axis platters on the trunnion table, giving your VMC full-range production capability. Custom 5-axis trunnions can be made to specific matching needs including different drive configurations, large or smaller sizes, less or more platters.

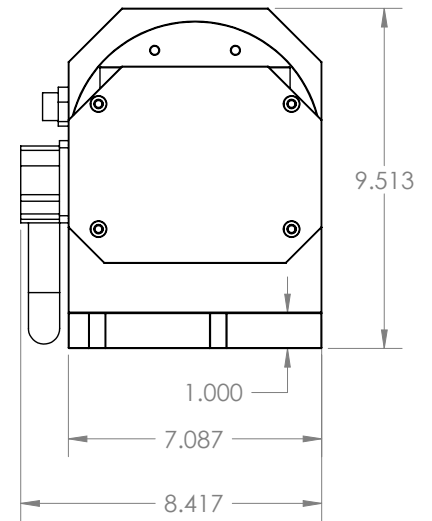
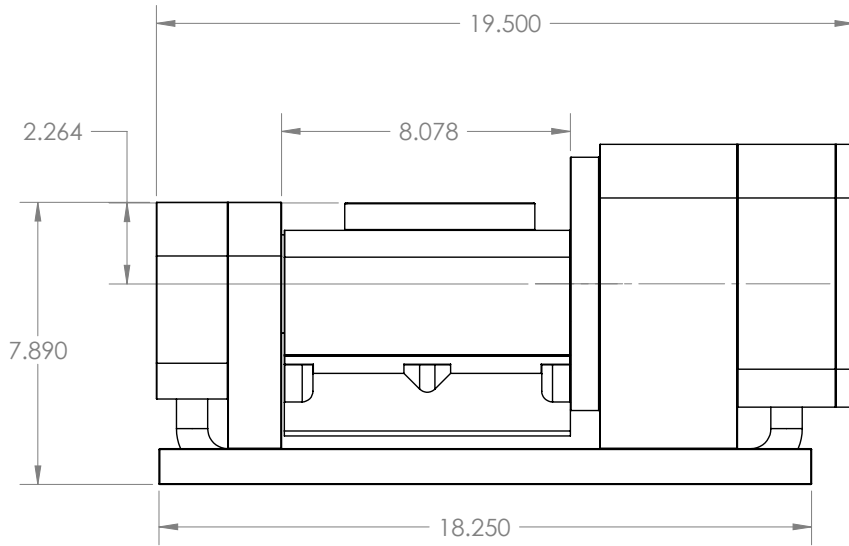


Yes, just like the 5-axis tombstones, KME CNC' trunnions are able to completely integrate with control systems. So you do not need to program the Transmitter/Receiver Module. Our units will work with direct g-code from your machine controls.

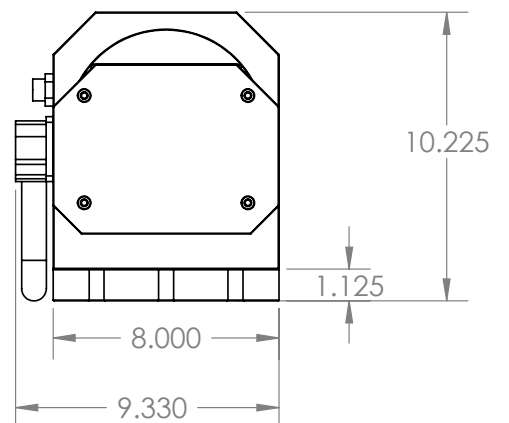
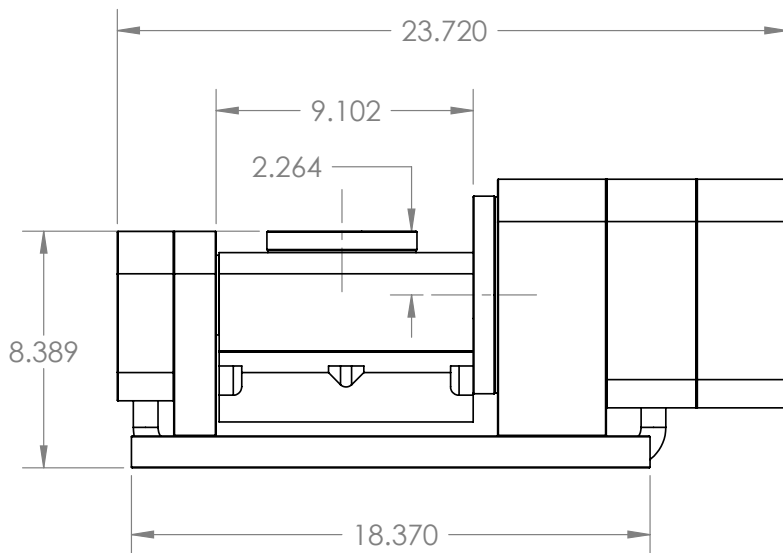
KME CNC can design a trunnion for your specific application. Large or Small parts are not a problem! KME CNC's trunnions have the lowest platter height in the industry, with 7.87" from table to platter, allowing maximum Z height clearance. KME CNC can also manufacture trunnions with larger platters, depending on customers' specific needs.

Models	Single Drive Trunnion		Dual Drive Trunnion	Triple Drive Trunnion
Part Number	KME-TR100S	KME-TR100 (TR100X)	KME-TR200 (TR200X)	KME-TR300 (TR300X)
Resolution	0.0018	0.0018	0.0018	0.0018
Max Rotation/Step	999.999°	999.999°	999.999°	999.999°
Max Torque A Drive	300 ft-lb / 407 N-m	900 ft-lb / 1220 N-m	900 ft-lb / 1220 N-m	900 ft-lb / 1220 N-m
Max Torque C Drive	300 ft-lb / 407 N-m	300 ft-lb / 407 N-m	300 ft-lb / 407 N-m	300 ft-lb / 407 N-m
Accuracy	± 10 Arc Sec	± 10 Arc Sec	± 10 Arc Sec	± 10 Arc Sec
Repeatability	± 5 Arc Sec	± 5 Arc Sec	± 5 Arc Sec	± 5 Arc Sec
Continuous Rotation	10 RPM	10 RPM	10 RPM	10 RPM
Gear Ratio	100:1	100:1	100:1	100:1
Max Part Size	7"	7" (8.25")	7" (8.25")	7" (8.25")
Construction	Meehanite Cast Iron	Meehanite Cast Iron	Meehanite Cast Iron	Meehanite Cast Iron
Anti Corrosion Coating	Raydent Coating	Raydent Coating	Raydent Coating	Raydent Coating
Drive Diameter	113mm	113mm (148mm)	113mm (148mm)	113mm (148mm)
Faceplate Diameter	135mm	135mm (175mm)	135mm (175mm)	135mm (175mm)
Base Length	463.55mm	466.60mm (503.55mm)	655.83mm (730.25mm)	845.06mm (970.25mm)
C Drive Height	200.40mm	212.85mm (260.02mm)	212.85mm (260.02mm)	212.85mm (263.19mm)
Signal	Single M-code Function	Single M-code Function	Single M-code Function	Single M-code Function
Power Requirement	110V @ 10 A	110V @ 10 A	110V @ 10 A	110V @ 10 A
List Price	<i>Please visit <a href="http://www.kmecnc.com">www.kmecnc.com</a> for a quote</i>			

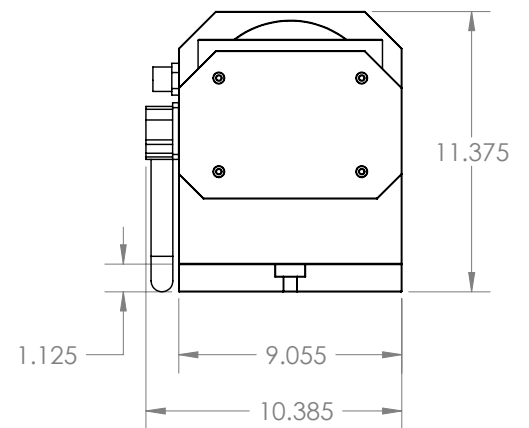
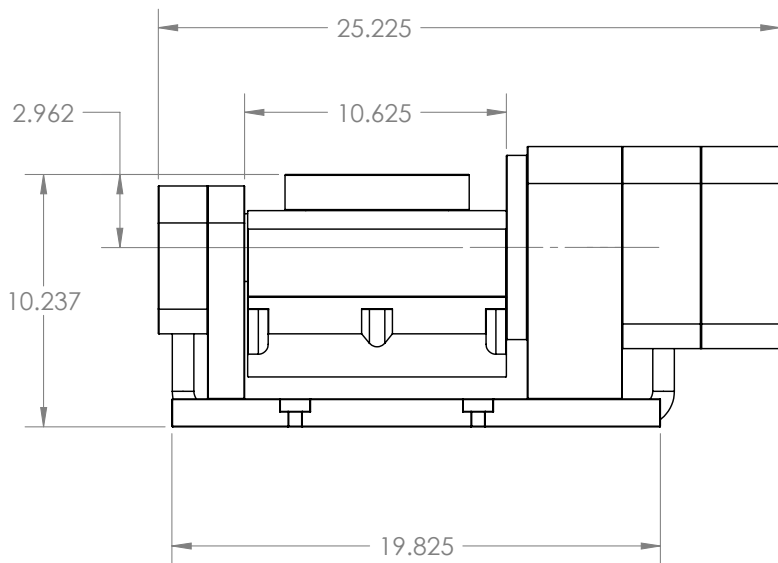
# KME TRUNNION MECHANICAL DRAWINGS



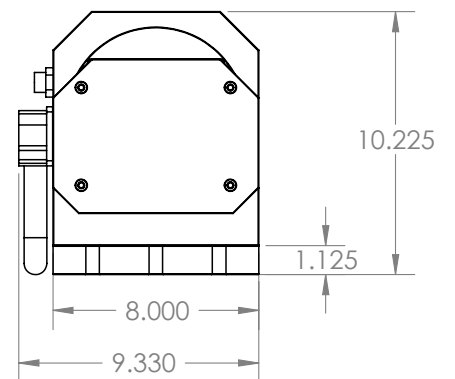
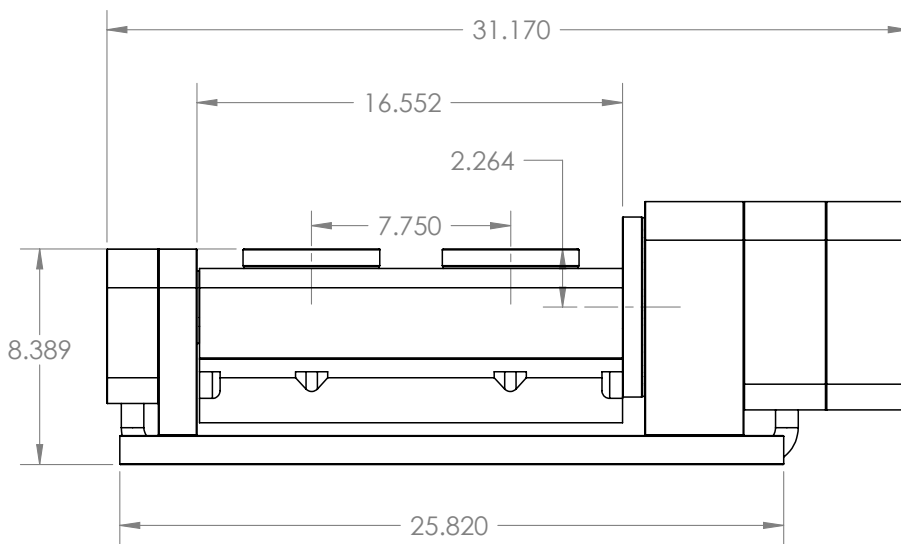
**KME-TR100S**



**KME-TR100**

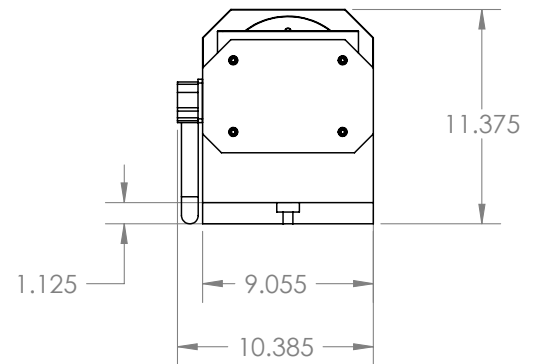
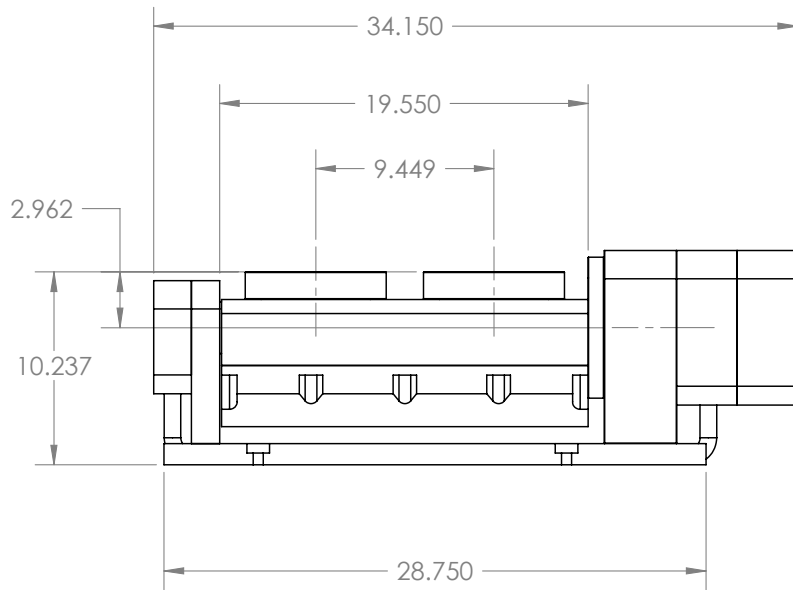


**KME-TR100X**

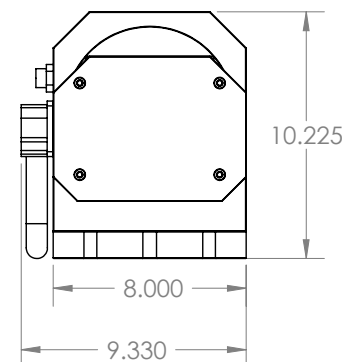
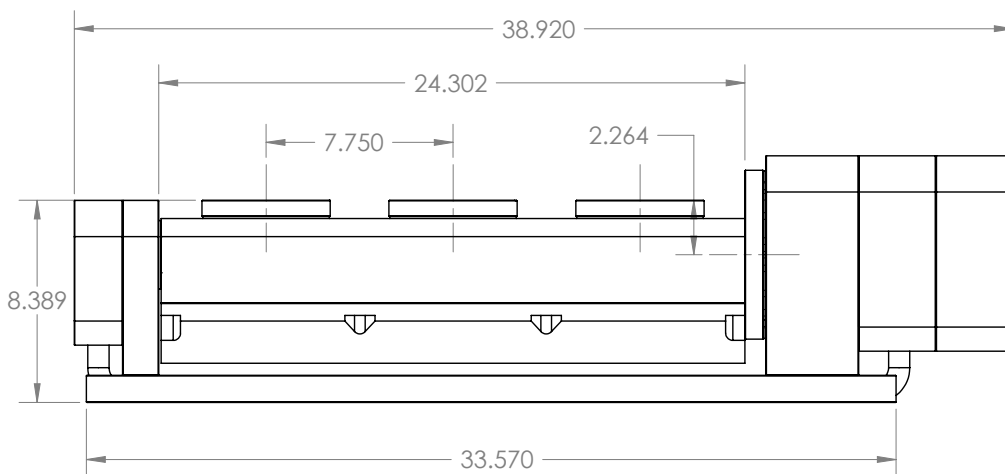


**KME-TR200**

# KME TRUNNION MECHANICAL DRAWINGS

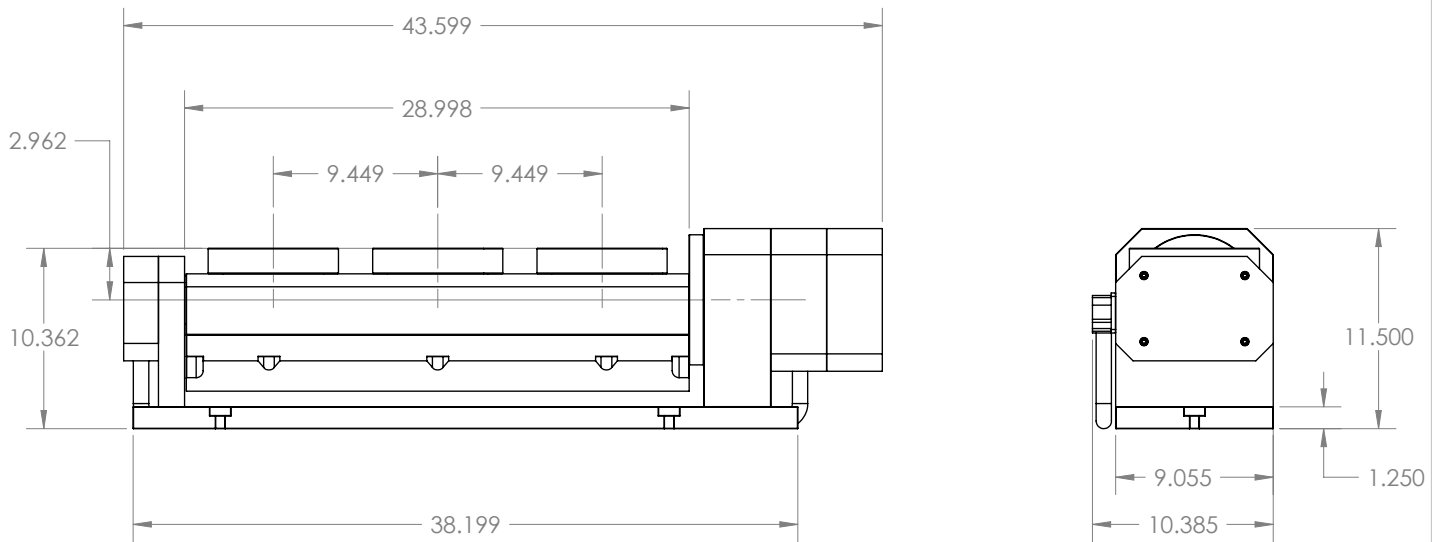


**KME-TR200X**



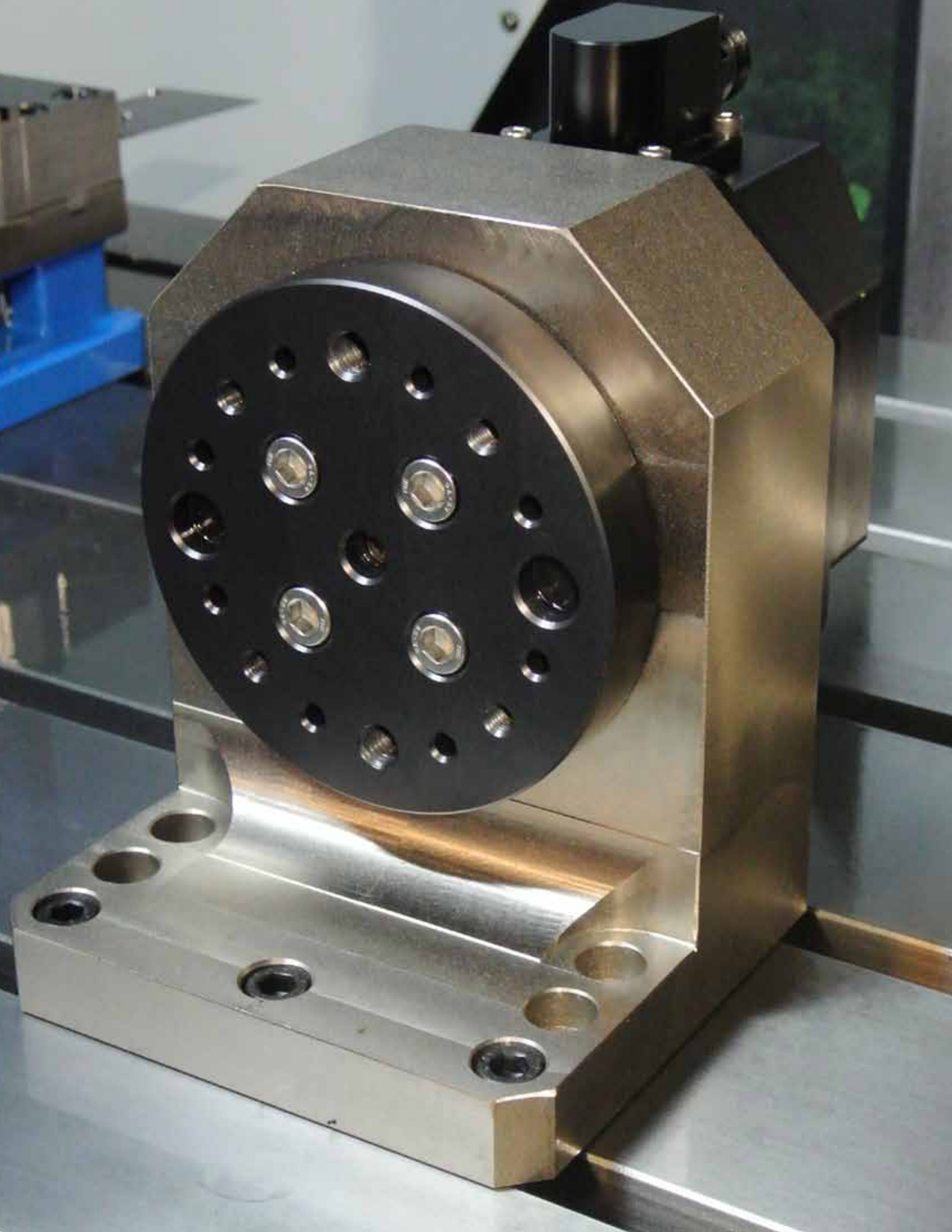
**KME-TR300**

# KME TRUNNION MECHANICAL DRAWINGS



**KME-TR300X**







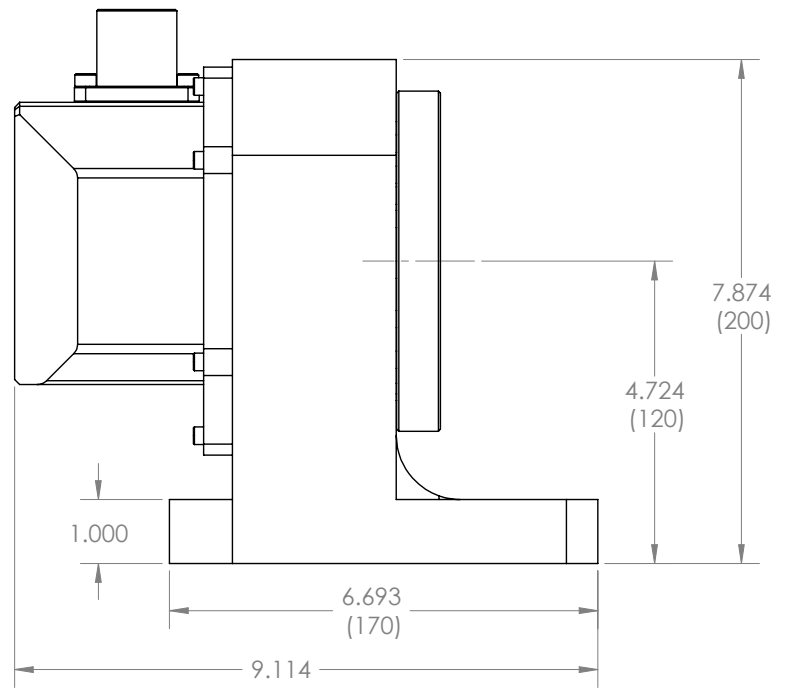
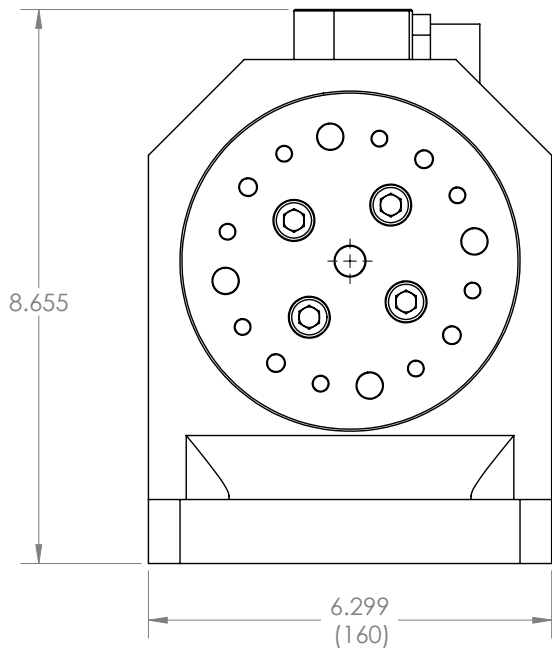
## 4 & 5 AXIS ROTARY TABLE

KME CNC's Rotary Table is built like no other. Engineered to tailor complex machining needs, this unique table can easily integrate with your horizontal or vertical machining centers. From its rigid build, a solid meehanite cast body frame, to its tremendous torque capacity (300 ft-lbs), it can either turn your 4th into a 5th and if your vertical mill is setup with a 4th axis and you want a 5th for positioning, you can simply mount it right on. You can also mount our rotary table on your vertical machining centers to turn your 3rd axis into 4th. Its compact size allows it to be used in numerous applications and with its seamless interface, you find this rotary table to be a simple plug-and-play!

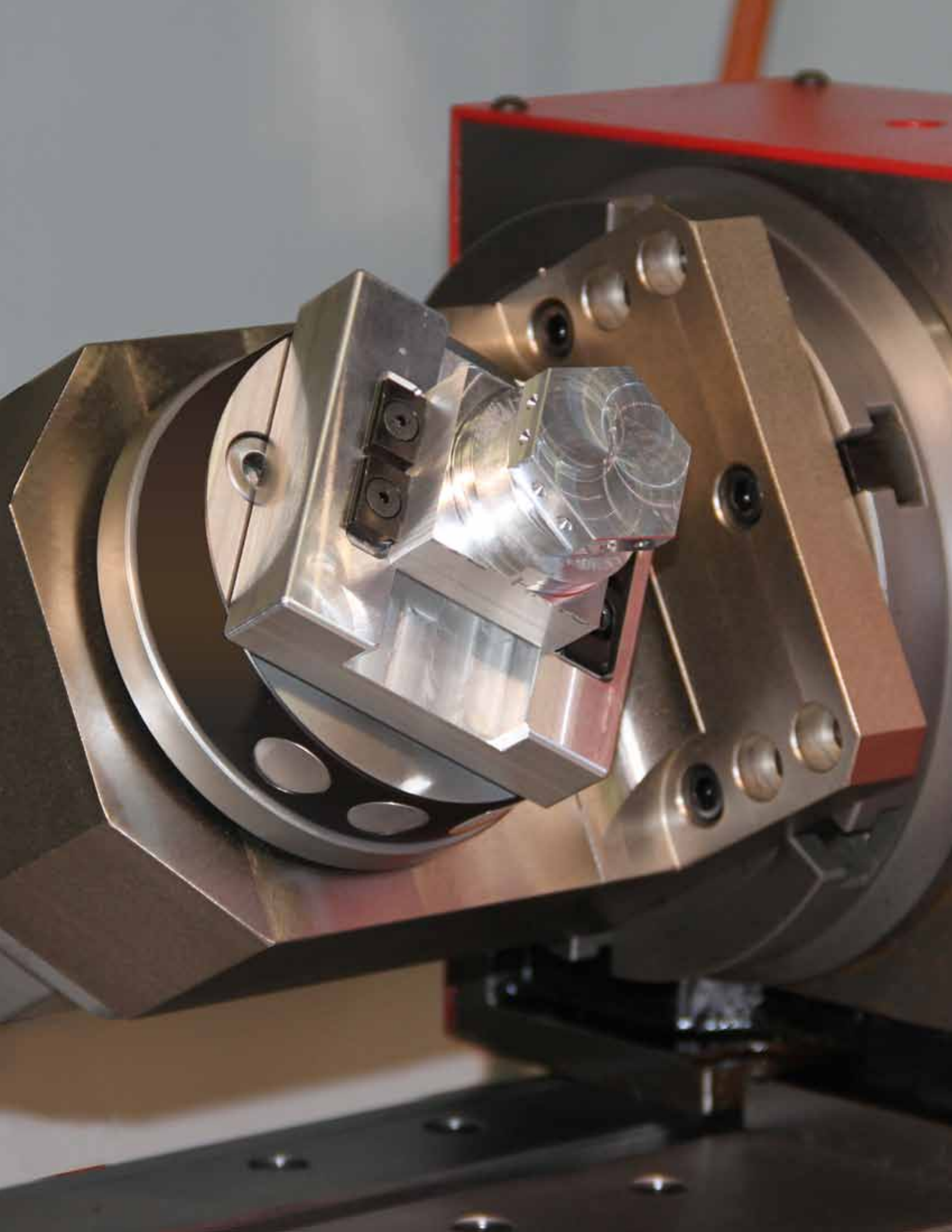


<b>Model and Part Number</b>	<b>ROTARY TABLE KME-NDX-135</b>
<b>Construction</b>	Meehanite Cast Iron
<b>Resolution</b>	0.0018 (555.555 steps per deg)
<b>Max Rotation/Step</b>	999.999°
<b>Max Torque</b>	260 ft-lbs / 353 N-m
<b>Allowable Load</b>	1000 in-lb
<b>Accuracy</b>	± 10 Arc Sec
<b>Repeatability</b>	± 5 Arc Sec
<b>Gear Ratio</b>	100:1
<b>Continuous Rotation</b>	10RPM
<b>Max Part Size</b>	7"
<b>Power Requirement</b>	110V @ 10 A
<b>Anti Corrosion - Gears</b>	Raydent Coating
<b>Anti Corrosion - Block</b>	Nickel Plating
<b>Signal</b>	Single M-code Function
<b>Weight</b>	45 lbs
<b>List Price</b>	<i>Please visit <a href="http://www.kmecnc.com">www.kmecnc.com</a> for quote</i>

# KME ROTARY TABLE MECHANICAL DRAWINGS



**KME-NDX-135**



# KME CNC

5 Axis Systems

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