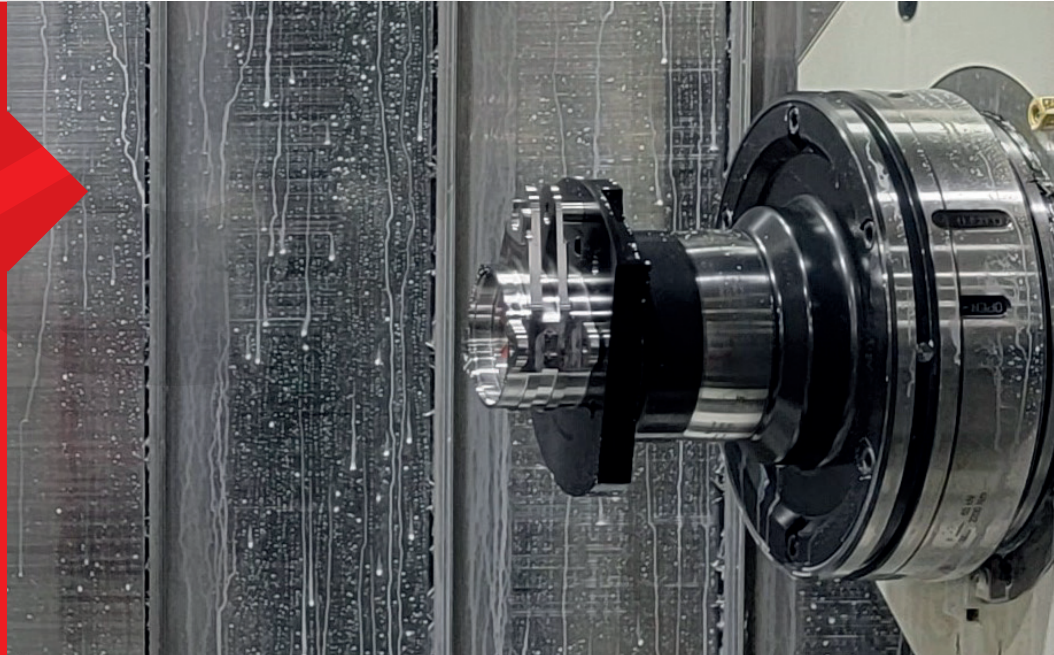


SUCCESS  
STORY  
**CURTISS-  
WRIGHT**

JULY 2025



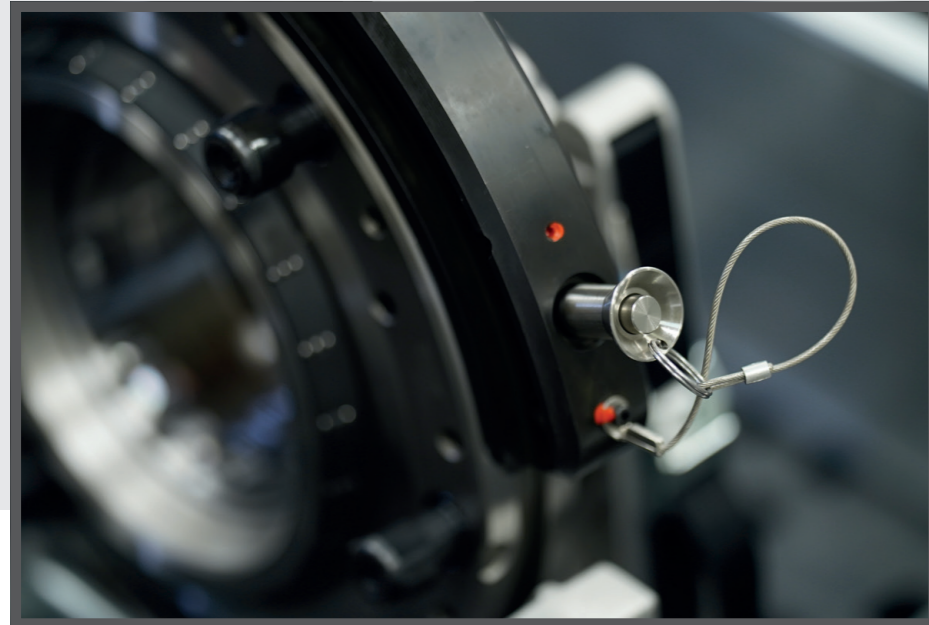
centroteX quick change-over system on DMG Mori NT 4250 turn-mill.

**COMBINED  
MANUFACTURING  
HERITAGE  
AND MODERN  
DEMANDS**

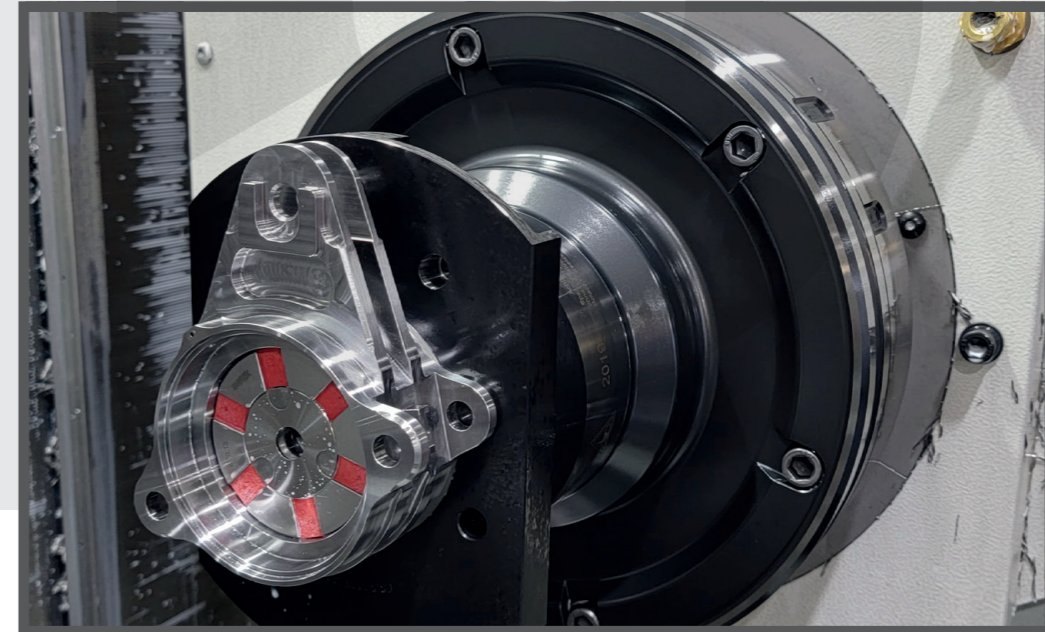
## **COMBINED PRODUCTION CAPABILITIES DELIVER ON-TIME QUALITY AT CURTISS-WRIGHT**

The Actuation Division of Curtiss-Wright in Shelby, North Carolina, produces a variety of components for customers involved in both commercial and military aviation markets. Founded in 1929 through a merger of Curtiss Aeroplane and Motor Corporation and Wright Aeronautical Corporation, the company traces its heritage to the earliest days of aviation. Known for advanced engineering and innovation, today's Curtiss-Wright serves a diversified customer base by providing products and services to the Aerospace and Defense markets, and to the Commercial markets including Power, Process and General Industrial.

At a time when supply chain problems have hampered deliveries in many industry segments, Curtiss-Wright is employing advanced production techniques to ensure timely delivery of high-quality precision components. This approach is evident in the production of ring gears for rotary actuators. Manufactured from 4340M steel, parts require a .001" tolerance overall and a .002" positioning tolerance. Run-out has to be carefully controlled to ensure consistent accuracy.



The HAINBUCH Monteq enables efficient, safe, and ergonomically friendly handling of heavy chucks and clamping devices.



A tailor-made end-stop with a diamond locating pin guarantees accuracy in the machining process.

### ADVANCED EQUIPMENT ENABLES HIGH-PRECISION PRODUCTION

According to Bert Crawford, Curtiss-Wright Manufacturing Engineering Manager, »In order to achieve the production goals we were seeking while maintaining the highest level of quality, our strategy involved developing systems that optimize the combined features of select manufacturing equipment. For instance, our present line includes six DMG Mori NT 4250 turn-milling centers. To provide quick change-over as well as high precision, we equipped the machines with HAINBUCH centroteX quick change-over systems featuring the ability to utilize the MANDO system or the flexibility to mount 3-jaw chucks. Because our operations include lower turret turning and B-axis high-speed milling, turning, boring, slotting, finish milling, and gear skiving, as well as A-axis part transfer to the 2nd spindle, we wanted a system that offered maximum versatility in both machining operations and the change-over.«

### CENTROTEX: FAST CHANGE-OVER, HIGH PRECISION

Edward Reames, Southeast Regional Sales Manager for HAINBUCH America Corp., explains, »The centroteX system is designed for the fast and efficient change-over of larger clamping devices. This is accomplished through

the installation of a machine adapter and clamping device adapter capable of handling collet chucks designed for multiple-size parts, as well as standard 3-jaw OD chucking operations. Repeatability between the machine adapter and the clamping device adapter is better than 0.002 mm without alignment. Maximum clamping device diameter is 260 mm and the change-over time can be as little as 5 minutes.«

### OPERATOR-FRIENDLY HANDLING AND MODULAR ADAPTATION

To facilitate the easy and safe handling of heavy chucks and clamping devices, the HAINBUCH Monteq mounting aid offers an efficient, safe, and ergonomically friendly assist. Suspended above the chuck, the Monteq uses quick-acting screws to secure the clamping device as it is being loaded or unloaded.

A further accessory is the compatible storage container designed to keep all clamping devices at hand and prevent contamination.

Curtiss-Wright also opted for HAINBUCH's MANDO T212 mandrel for ID operations incorporating quick change-over capability. Without detachment of the basic clamping device, the MANDO secures the workpiece, as it provides vibration dampening and protection from

disfigurement thanks to vulcanized clamping elements. Bert Crawford comments, »Because all grip lengths on the part ID are of different lengths, HAINBUCH worked with us to develop an end-stop with a diamond locating pin that guarantees accuracy in the machining process. A hole in the part is located on the diamond pin during A-axis transfer from 1st spindle to the 2nd spindle. The pin is located in the ring gear during part transfer to provide positional accuracy and act as a part driver for heavy machining operations for secondary operations.«

Bert Crawford notes, »Our part order quantities typically go from 25 to 100. Because of the limited order size, quick change-over time is essential to reduce costs.«

HAINBUCH America National Sales Manager Al Dopf states, »For low to mid quantity part runs, change-over time can be the critical determinant when it comes to production – and profit. The right change-over system combines speed, precision, and versatility so as to allow fast set-up, maximum repeatability, and the ability to handle multiple part sizes and configurations.

Sometimes, as with Curtiss-Wright, the customer's needs require specialized engineering solutions. For instance, our HAINBUCH team analyzed customer requirements for fast and efficient part location and developed the diamond locator pin to provide a solution that is both fast and accurate.«

### CUSTOMIZED SOLUTIONS DRIVE PRODUCTION EFFICIENCY

»The HAINBUCH team worked with us all the way in designing and implementing the system that we needed,« says Bert Crawford. »We have been able to initially improve production through set-up reduction and have also set the standard to include HAINBUCH clamping device change-over systems on all DMG Mori NT 4250 turn-mills. By combining technologies such as multi-purpose machining and precision workholding, as well as working with DMG Mori and HAINBUCH to develop specific advances in technology, we are able to improve productivity and maintain our rigid product quality goals. The founders of our companies were among the earliest pioneers in aviation, and it's our continued goal to remain in the forefront of innovation.«



## ABOUT CURTISS-WRIGHT CORPORATION

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Curtiss-Wright Corporation is a global leader in engineering and manufacturing, serving the aerospace, defense, and industrial markets. Founded in 1929 through the merger of Curtiss Aeroplane and Wright Aeronautical, the company has a rich aviation legacy rooted in innovation.

Today, Curtiss-Wright delivers high-performance components, systems, and services that support critical applications worldwide. With a focus on precision, reliability, and advanced technology, the company continues to play a vital role in powering progress across complex and demanding industries.

HAINBUCH develops and produces solutions for clamping, change-over, measuring and automation solutions for milling, turning and grinding operations on machine tools. The leading clamping technology manufacturer offers products such as chucks, mandrels, stationary clamping devices, quick change-over systems and automation solutions. The main focus is on products for set-up time optimization and clamping devices for networked and automated production.

The company's innovative developments include the SPANNTOP chuck [1977], the TOPlus IQ technology with intelligent sensor technology [2007], the energy-efficient lightweight carbon clamping devices [2011] and the AC line for the automated changing of entire clamping devices [2019]. In addition to standard products, HAINBUCH also manufactures individual special solutions and special clamping devices and creates new production possibilities using state-of-the-art clamping device technologies.

Founded in 1951 and based in Marbach, HAINBUCH GmbH is now owner-managed in the third generation and employs around 850 people in Germany, the USA, China, France, Great Britain, Italy, Sweden, Slovakia, Austria, Mexico and Japan.

Find out more at [www.hainbuch.com](http://www.hainbuch.com)