



NSH USA CORPORATION

MEMBER OF THE NSH GROUP
(NILES-SIMMONS-HEGENSCHEIDT)

Albany, New York, USA



Keeping The World On Track Since 1910





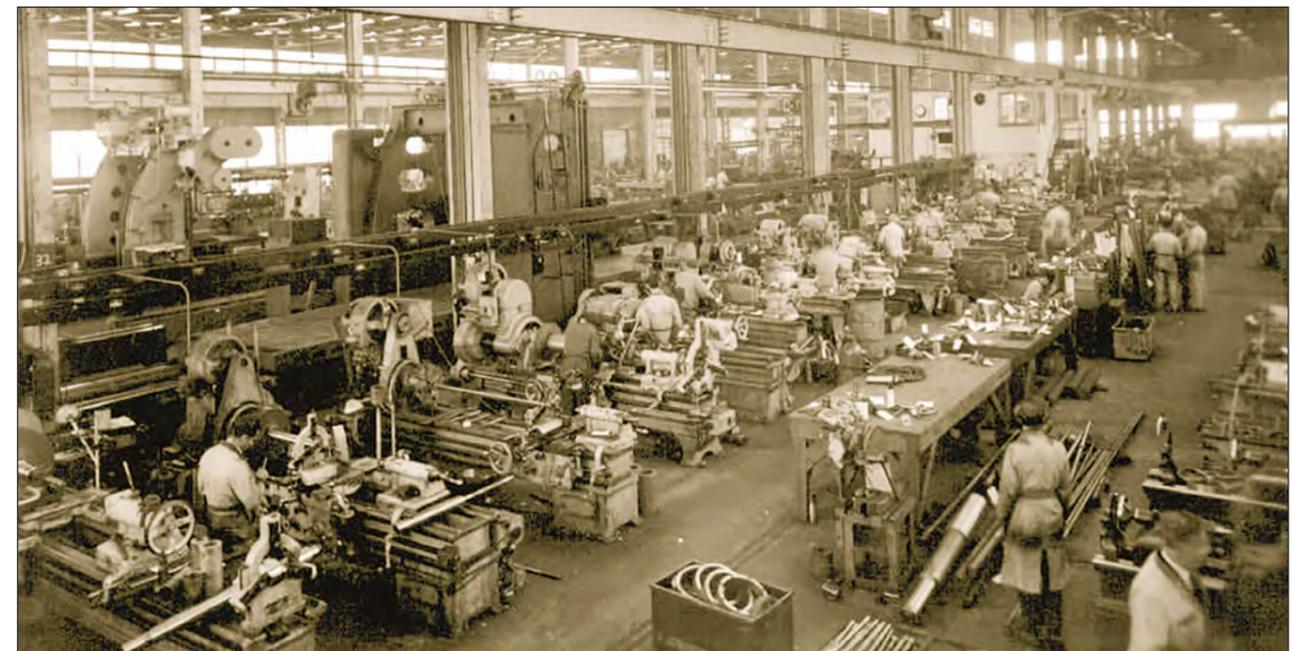
NSH USA and NSH Group History

- 1910
Simmons Machine Tool Corporation founded
- 1984
Stanray® acquired
- 1986
Farrel acquired
- 1992
NILES-SIMMONS Industrial Equipment GmbH founded
- 2000
HEGENSCHEIDT-MFD acquired
- 2000
NSH Group founded
- 2010
Simmons celebrated 100 years in business
- 2021
Simmons became NSH USA Corporation

Company Overview

NSH USA Corporation manufactures specialized and multifunction machine tools and automation systems for railway, automotive, aerospace, and other industrial manufacturers worldwide. Founded in 1910 and based in Albany, New York, NSH USA is a member of the **NSH Group (NILES-SIMMONS-HEGENSCHEIDT)**, an international leader in machine tool technology.

Shortly after the attack on Pearl Harbor on December 7th, 1941, Simmons Machine Tool Corporation pioneered the concept of rebuilding and reengineering machine tools, which was critical to rapidly restoring America's decimated Pacific Fleet. After World War II through the 1980s, Simmons continued to build machine tools for important industries such as power generation, ship building, weapons manufacturing, and railway. In 1984, the company's Chairman, Prof. Dr. Hans J. Naumann, invested in Simmons and strategically focused on the international railway industry. In 2021, Simmons acquired Hegenscheidt-MFD in Sterling Heights, Michigan, with the new entity being named NSH USA Corporation.





NILES-SIMMONS-HEGENSCHEIDT

Machine Tool Group

NSH WORLDWIDE

Being a "world-class" manufacturer means being present worldwide. The **NSH Group (NILES-SIMMONS-HEGENSCHEIDT)** accomplishes this by having significant, preeminent manufacturing facilities in Germany (Chemnitz and Erkelenz), USA (Albany, NY and Sterling Heights, MI), and China.

Customers are supported by technical sales and service offices in Germany, USA, China, India, South Africa, Brazil, Australia, and Mexico.

The NSH Group focuses on the design, manufacture, and support of machine tools with the goal of producing systems of the highest reliability, quality, innovation, and energy efficiency. The subsidiary companies provide industries such as railway, aerospace, defense, automotive, and renewable energy with dependable, service-proven machinery. In addition to specialized and multifunction machines, the NSH Group is one of the world's leading providers of turnkey solutions for the design and implementation of entire production lines and cells.



■ NSH Headquarters

NSH Group - Chemnitz, Germany (a member of VDMA/VDW)

■ Production Facilities

- NILES-SIMMONS INDUSTRIEANLAGEN GmbH - Chemnitz, Germany
- NSH USA - Albany, New York & Sterling Heights, Michigan, USA
- HEGENSCHEIDT-MFD GmbH & Co. KG - Erkelenz, Germany
- NSH-CTI Machine Tool (Jiangxi) Co., LTD - Nanchang, China
- RASOMA Werkzeugmaschinen GmbH - Döbeln, Germany
- WEMA Glauchau GmbH - Glauchau, Germany

■ Sales & Service Offices

- Beijing - China
- New Delhi - India
- Maubeuge - France
- São Paulo - Brazil
- Melbourne - Australia
- Guadalajara - Mexico
- Querétaro - Mexico
- Johannesburg - South Africa

Wheel Shop Equipment

NSH USA offers a complete line of equipment for railway wheel set maintenance and production facilities. From individual machines to grouped machine cells or full wheel shops, our rugged and dependable wheel shop equipment will keep your rail vehicles safe and on track.

We design, manufacture, and install:

- Underfloor and above-floor wheel reprofiling machines
- Wheel boring and machining centers
- Axle lathes and grinders
- Wheel set and axle measurement systems
- Wheel and bearing presses
- Wheel set processing machines
- Automation systems

Our equipment is an integral part of AAR-approved wheel shops, with both transits and heavy haul railroads worldwide depending on our wheel shop equipment.

Made In The USA Since 1910



Stanray Wheel Truing



The **Stanray® wheel truing** product line has been an essential part of railway maintenance facilities since 1949. Freight and transit railways worldwide owe their wheel sets' safe and efficient operation to the Stanray's rugged reliability.

Why Stanray?

- Easy to operate and maintain
- Cuts through wheel defects without operator intervention: The proven full profile milling technology cuts through wheel defects such as flat spots and shelling without changing cutting speed or depth, resulting in more consistent cycle times regardless of wheel wear.
- Full profile milling process creates the optimal wheel profile every time
- No need to undercut: Unlike turning, there's no need to cut under wheel defects such as flat spots or skid flats, saving valuable service metal and extending the wheel set's lifespan.
- Milling process creates small chips for ease of containment and collection

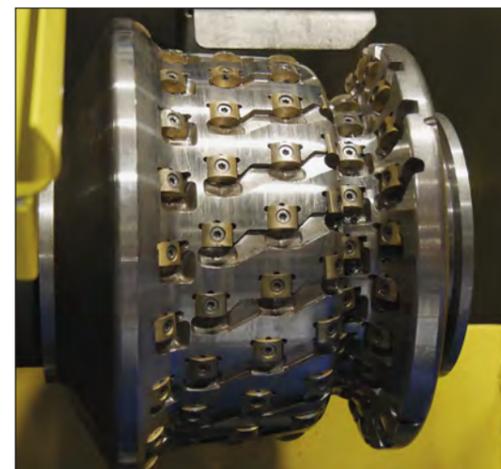
The Stanray name means heavy duty dependability in railroading's harshest conditions.



Stanray M1 Above-Floor Wheel Truing Machine



Stanray M2/M3 Underfloor Wheel Truing Machine



Stanray TN-84C Underfloor Wheel Truing Machine



Wheel Lathes

Hegenscheidt U2000-400D Underfloor Wheel Lathe



Hegenscheidt HP-165 Portal Wheel Lathe

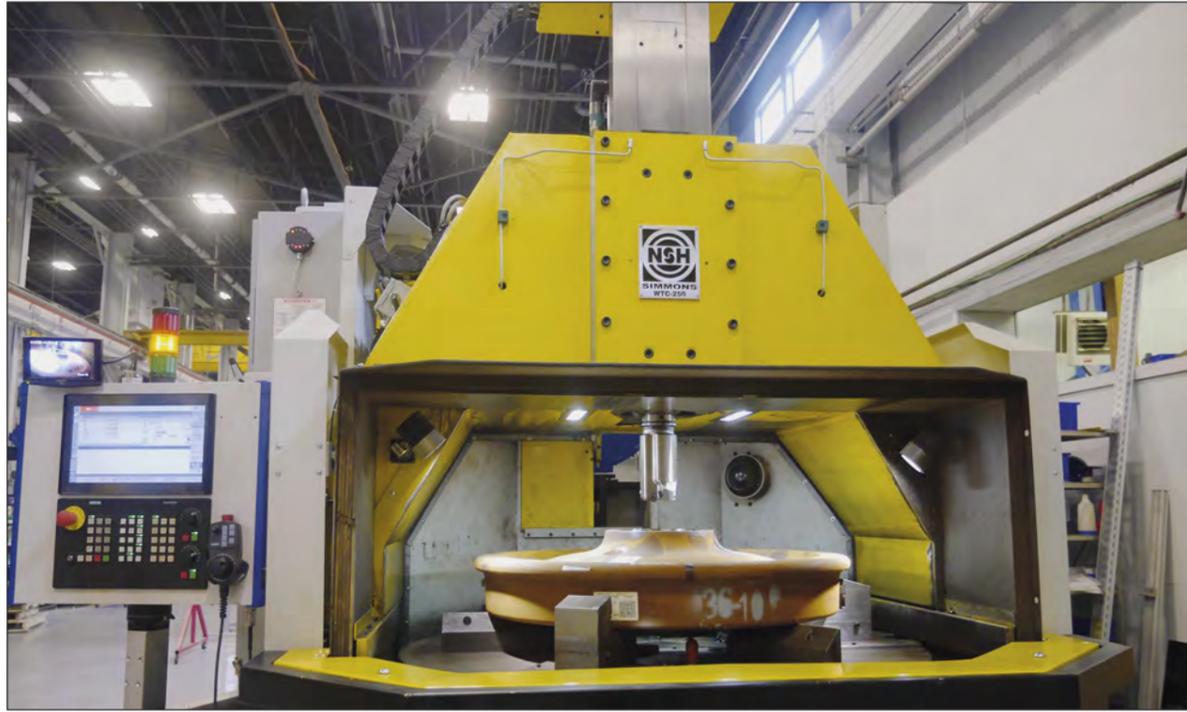
Wheel Lathes

Hegenscheidt Underfloor Wheel Lathes are an integral part of transit and commuter maintenance facilities worldwide. The lathes utilize fully automatic positioning, machining, and measuring processes. The turning technology combined with CNC control and related set-up automation makes it easy to quickly change wheel profiles. The Hegenscheidt Underfloor Wheel Lathe is available as a **U2000-400**, or the **U2000-150** for lighter axle loads. Both can be configured as tandem systems for machining two wheel sets simultaneously. As these machines are pit-mounted, there is no need to remove the wheel sets from the vehicle, reducing dwell time in the maintenance facility. For wheel profile maintenance, we offer the **Simmons SWL-400 Wheel Lathe** and **Hegenscheidt HP-165 Portal Wheel Lathe**. Both are high production CNC machines found in heavy repair and maintenance facilities around the world.



Simmons SWL-400 CNC Wheel Lathe

Wheel Boring & Machining

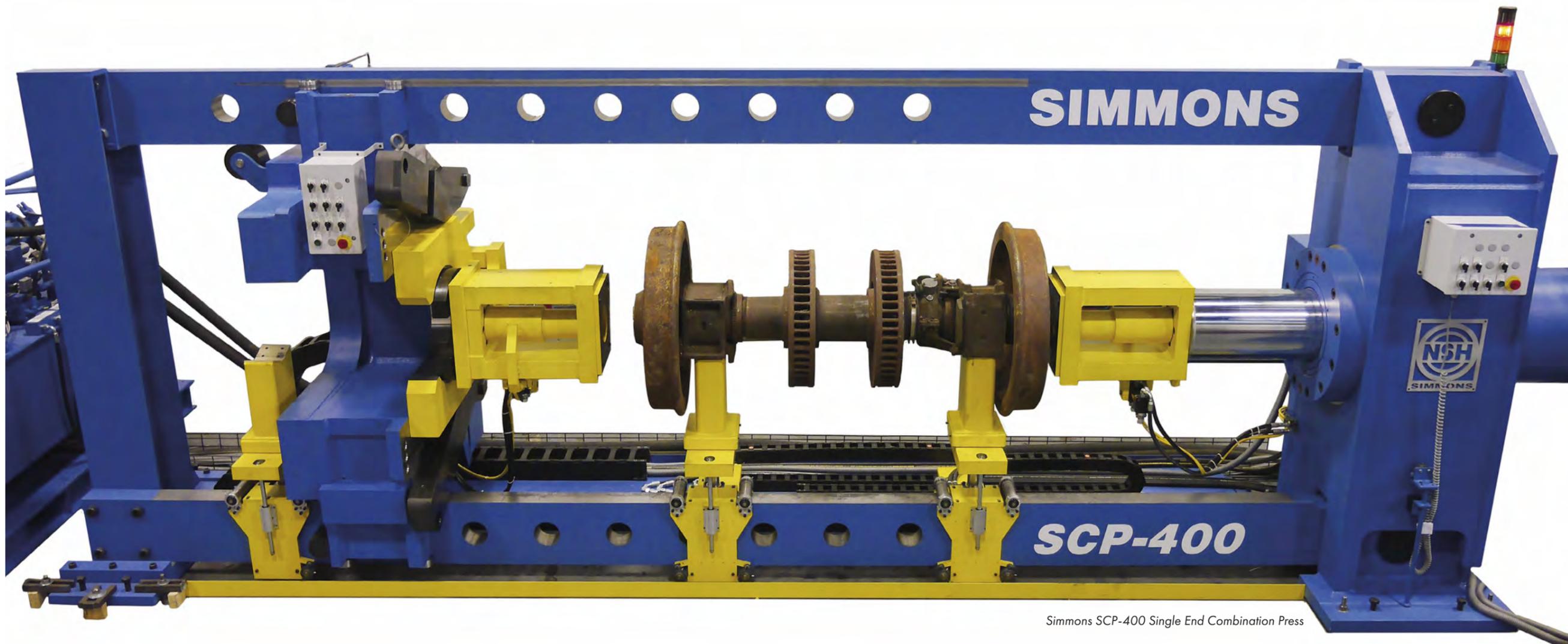


The Niles-Simmons RQ-Series Vertical Turning Centers with one or two ram heads were conceived for heavy duty cutting of railway wheels. Robust design, use of heavy-duty cutting tools with Capto C10 interface, and automatic tool change ensure optimum machining of forged or hot-rolled railway wheels.

NSH USA's wheel boring machines are a vital part of wheel set maintenance and production facilities worldwide. We offer CNC wheel boring and machining centers to fit your facility's production requirements. The machines' extended travel tables accommodate all AAR-approved wheel sizes without manual intervention, increasing workshop throughput. And when integrated with NSH USA's axle lathes and measurement systems, wheels are bored to fit a specific axle, resulting in a significantly lower misfit rate when assembled with a Simmons wheel press.

The **Simmons WTC-250 Wheel Turning Center** is a powerful vertical turning center for boring and machining wheels in high production wheel shops. The bridge straddles the wheel while cutting for optimal stiffness. Front-to-back motion is achieved by dual ball screws and dual absolute linear encoders. The vertical ram is carried in box ways and fitted with a heavy-duty quick change tool interface. An automatic tool changer provides for redundancy and increased productivity. Single point tooling supplies considerable flexibility. The integrated measurement system allows for pre-machining work piece measuring and user-selectable degrees of post-machining part verification. The system easily interfaces with other systems to receive wheel and axle information; it will additionally store production and dimensional results as desired.





Simmons SCP-400 Single End Combination Press

Wheel Set and Bearing Presses

NSH USA offers a full line of wheel and bearing presses for the mounting and demounting of wheel set components. Wheel set maintenance and production facilities around the world depend on these robust and dependable machines. The presses are designed to operate in conjunction with our other wheel shop equipment for automated control of the mounting graph. They can also be operated as stand-alone systems for

mounting and demounting, handling a wide range of wheel set components. The machines are configured to meet the production goals of the wheel set maintenance facility.

The mounting presses include an electronic **Press Recorder**, which produces a pressure diagram, reflecting tonnage over distance. The tonnage recorder stores the pertinent wheel and axle data such as wheel and axle serial numbers, mount number, and misfit causes, allowing the stored data to be saved and accessed at the station or transferred to a central computer and/or printer.



Simmons Automated BMP-070 Bearing Mount Cell



Simmons SMP-200 Production Wheel Press

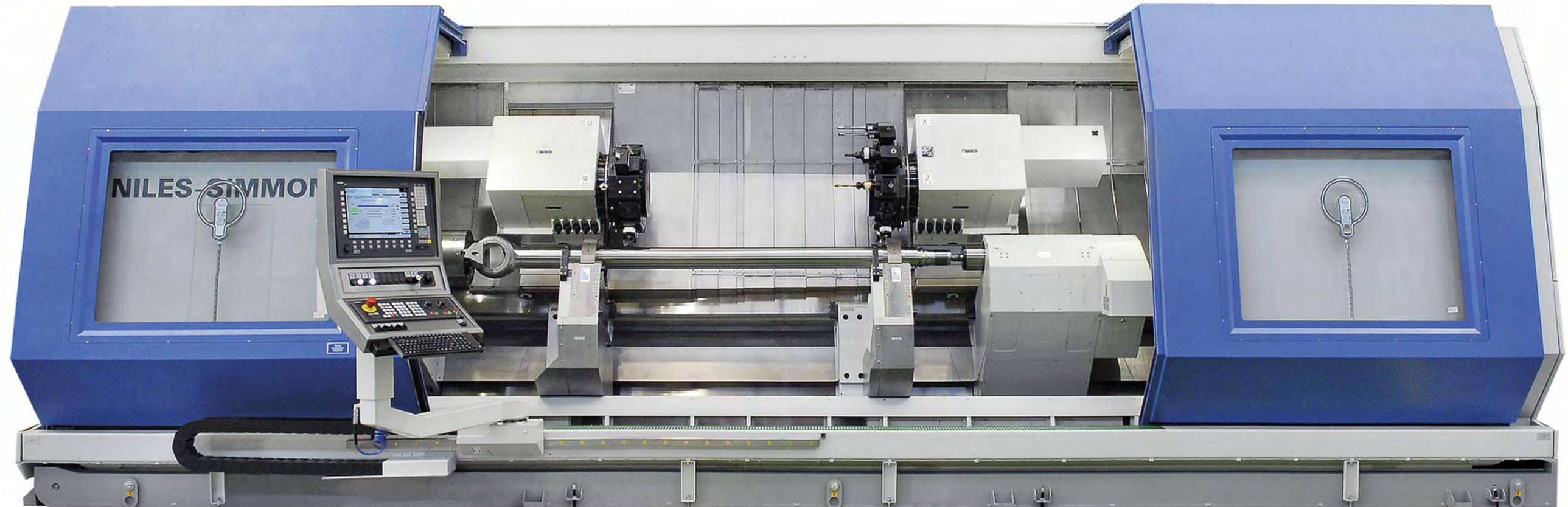


Simmons DCP-400/600 Dual End Combination Press



Automated Wheel and Bearing Mount Cells

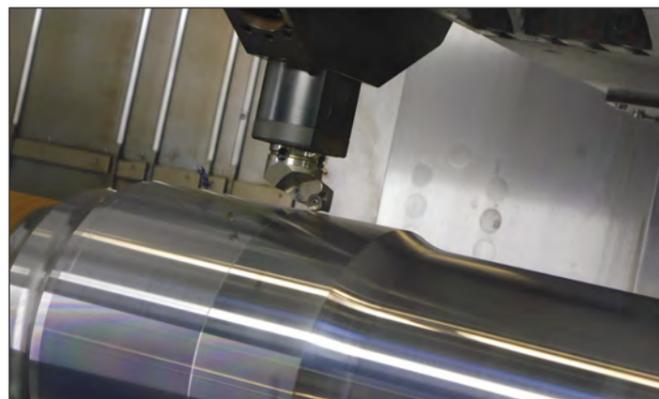
Axle Lathes and Wheel Set Processing



Axle Lathes

The **Niles-Simmons N-Series CNC Axle Lathes** are tried and true slant bed lathes for roughing or finish turning wheel seats, bearing journal fillets, and upset axle ends for reclaiming railway axles. The lathes accommodate a wide range of axle lengths and diameters, and can be integrated with optional automatic loading and unloading via overhead gantry. Configurations are available for axle downsizing and manufacturing.

The lathes are controlled by an easy-to-use CNC system, which is accessed by a Human Machine Interface (HMI) that uses a graphical user interface (GUIs) customized to wheel set maintenance and production facility processes and terminology.

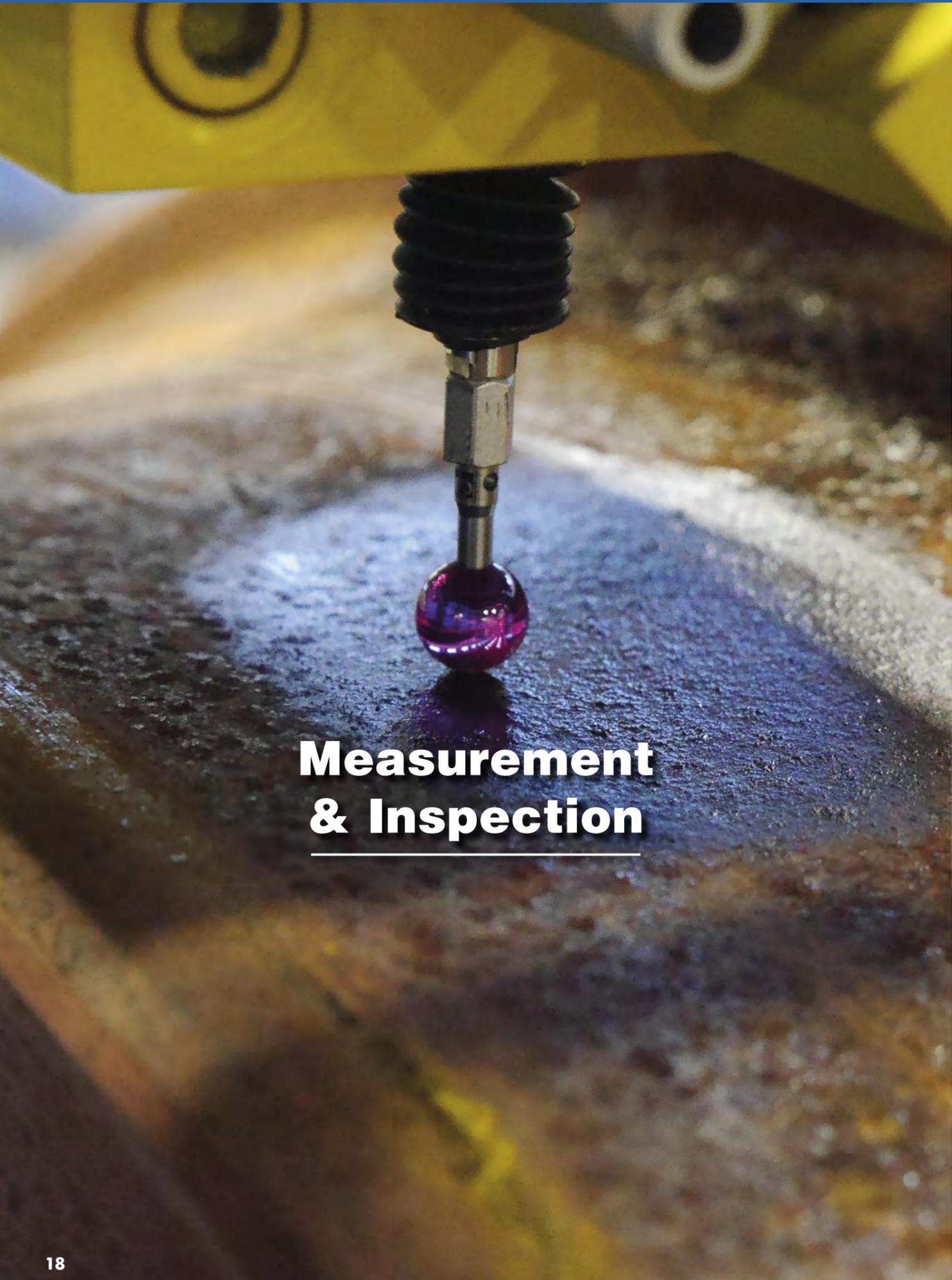


Wheel Set Processing

NSH USA offers a complete line of machines to properly process wheel sets at various stages throughout the wheel shop. The **Simmons WBS-400 Wire Brush Station** automatically cleans the bearing journals, bearing journal fillets, dust guards, and the ends of rolling stock axles on mounted wheel sets. The machine cleans both ends of the axle simultaneously.

The **Simmons BJB-100 Bearing Journal Lubrication Station** automatically applies bearing mounting lubricant and rust inhibitor to the bearing journal and dust guard fillet of railway wheel sets. The station's controls and utilities are shared with a nearby **Simmons BMP-070 Bearing Mount Press** to ensure that both lubrication and mounting occur as one process to prevent drying of the lubricant.

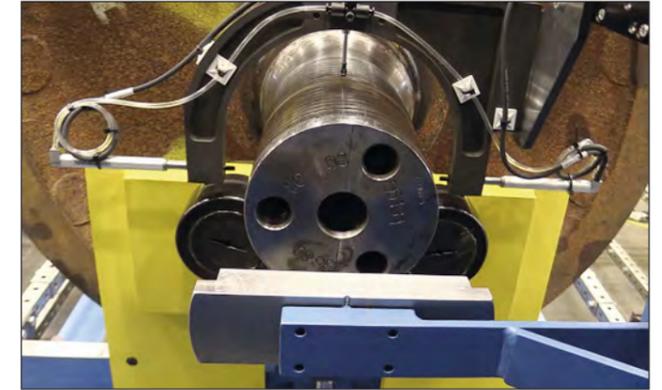




Measurement & Inspection



Simmons WSM-440 Wheel Set Measurement System



Simmons WSM-430 Bearing Journal Measurement System



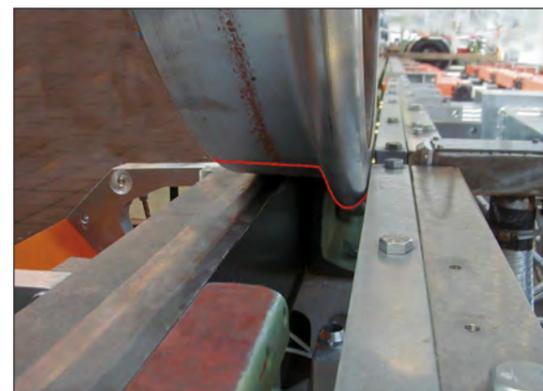
Simmons WSM-410 Wheel Set Runout and Inspection Station



Measurement & Inspection

Wheel set measurement and inspection is a critical process in a wheel set maintenance facility, as the measurement results determine the maintenance processes required. NSH USA offers a variety of automated equipment for measuring, inspecting, and qualifying wheels, axles, and wheel sets. Our measurement machines can interface with a facility supervision system and wheel shop automation systems to route wheel sets based on the measurement results. The machines can also function as standalone stations, with the data being stored in a local database hosted in the machine's computer control or remotely on the customer's server.

NSH USA also offers the **Hegenscheidt ARGUS® II** system, which is a wayside system for measuring railway wheels on in-service, moving vehicles to predict wheel wear. This data is used to determine the optimal time for maintenance and possible wheel reprofiling.



ARGUS® System



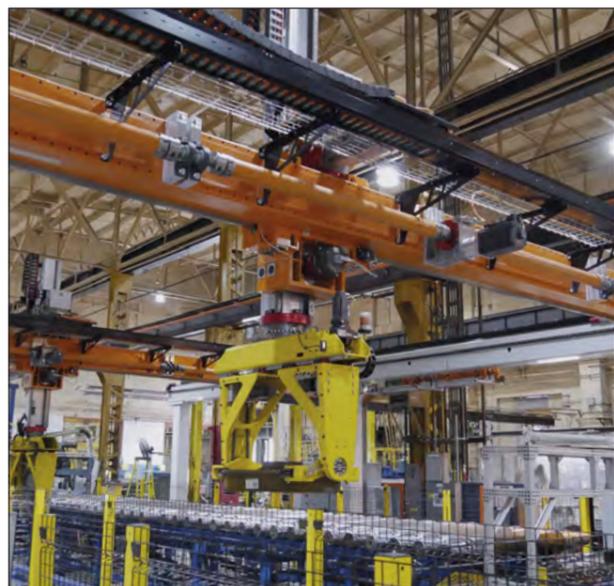


Automation & Turnkey

Whether designing a new facility or integrating automation into existing shops, NSH USA is the right choice to be your heavy payload automation partner. We have successfully automated wheel set maintenance and production facilities around the world. And as a member of The NSH Group, we have additional experience in automating aerospace, automotive, machine building, tool and die, electric motors, and other manufacturing industries.

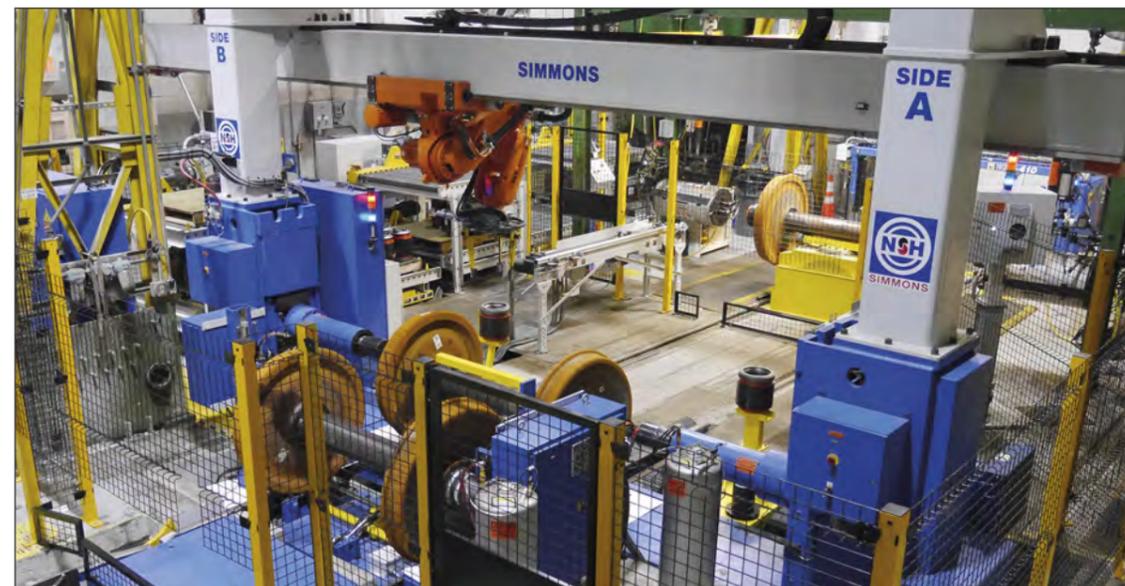
Distinctions of NSH USA's Automation

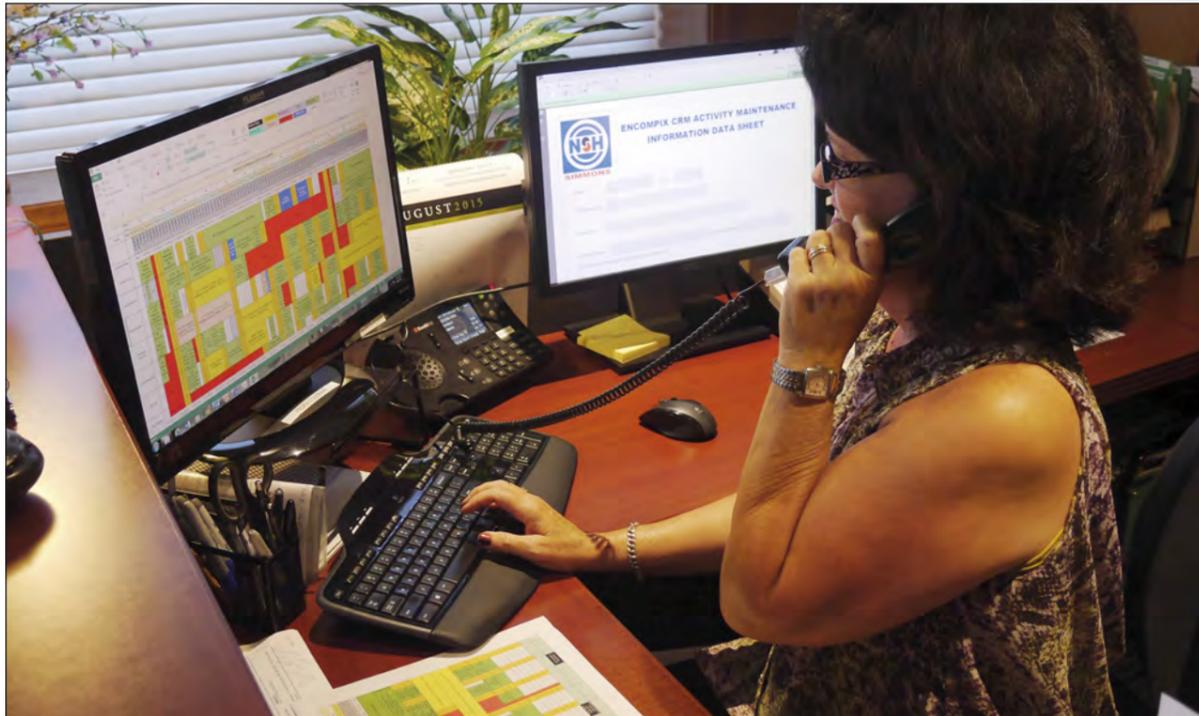
- Extensive experience with heavy payload automation
- Complete in-house integration
- Remote installation & support
- Turnkey solutions



Turnkey Process

- **Design:** NSH USA takes into consideration the customer's production goals and unique challenges. We design custom layouts that combine machine tools, measurement systems, and automation to increase throughput, uptime, and safety.
- **Manufacture:** Our manufacturing facility in Albany, New York has the people and production tools necessary to produce all of the equipment for the project. Machines are tested at our facility to minimize duration and troubleshooting during installation in the field.
- **Install:** We have installed and commissioned machines in some of the world's most remote locations and extreme conditions.
- **Train:** Once everything is installed and commissioned, we provide extensive training for operators and maintenance staff based on their experience level to have the facility up and running soon after hand-off.
- **Service:** Our Customer Service Center is available and ready to support our customers - either remotely or on-site with highly trained field service technicians. We also offer maintenance contracts that fit the customer's needs.





NSH USA Customer Service Center

NSH USA's machine tools and wheel shop equipment are designed and manufactured to keep wheel sets on track for years to come. Utilizing the services offered by the **NSH USA Customer Service Center (CSC)** will extend the life of those machines. The CSC is the main contact for machine technical/mechanical support and preventative maintenance. The CSC offers the following services to increase the life of your machine and maintain your facility's productivity:

- Quarterly and Annual Preventative Maintenance Inspections
- Service of Parts
- Control Upgrades
- Software Upgrades
- Operator and Maintenance Training
- Routine Service

The CSC supplies OEM replacement and spare parts for the complete **Simmons, Stanray[®], Hegenscheidt-MFD, Niles, and Farrel** product lines. Our machine documentation goes back more than 100 years and includes detailed specifications for every machine ever built by NSH USA. Parts not currently in stock are manufactured by NSH USA from the original drawings and specifications.





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