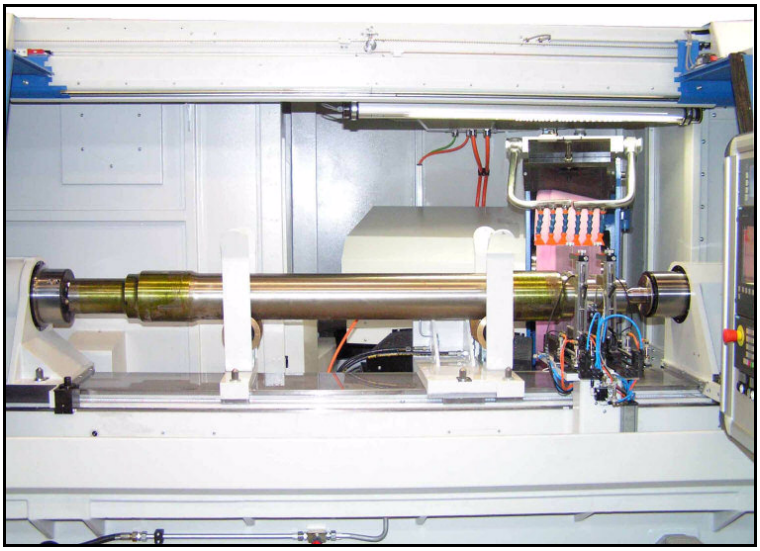
NILES-SIMMONS-HEGENSCHEIDT

Special CNC Axle Grinder For Railway Vehicles
Model: SG-803/2

The Technology Provider

MACHINE DESCRIPTION

The Niles-Simmons-Hegenscheidt SG-803/2 CNC Axle Grinding Machine is specifically designed to provide maximum performance and reliability for the precise grinding of railway axles. The machine will automatically grind railway axles of all sizes with varying diameters, lengths and radii. The machine can be easily programmed to accommodate various type axles found in the railway industry by the use of a Sinumerik 840D.

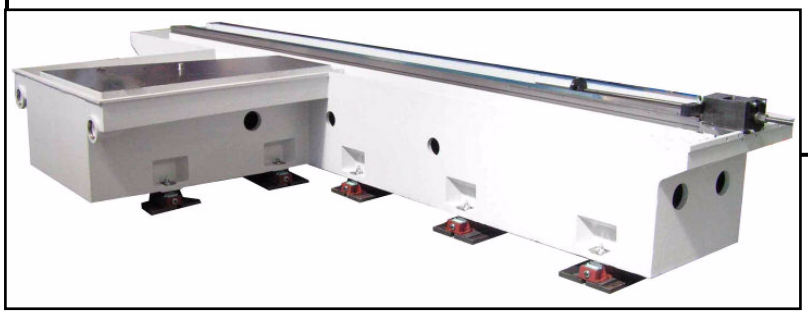


Working area

Base

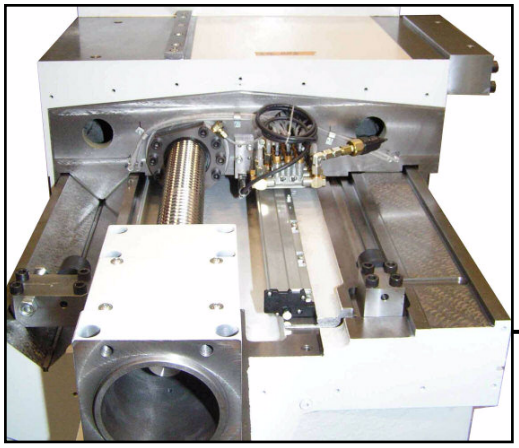
- 1 Piece Casting incl. of sub-base
- Designed for the elimination of thermal expansion and vibration
- V- and flat guidways for workpiece table
- Workpiece lengths up to 2,500mm
- Large 63mm diameter ballscrews on the X and Z axis'

Max Workpiece Diameter Swing	Max Workpiece Length	Sub Base Angle	Weight of Machine
600 mm	2,500 mm	15 Degrees	16,000 kg



Sub-Base

- Part of the bed casting
- Wheelhead Mounts to Sub-Base
- Wheelhead is arranged 15° to the perpendicular of the workpiece



One Piece Sliding Table

- Sliding Table traverses the Z-Axis on lubricated flat and vee ways
- Bellows protect the ways
- 63mm diameter ball screw provides accurate and reliable positioning
- direct drive of ball screw

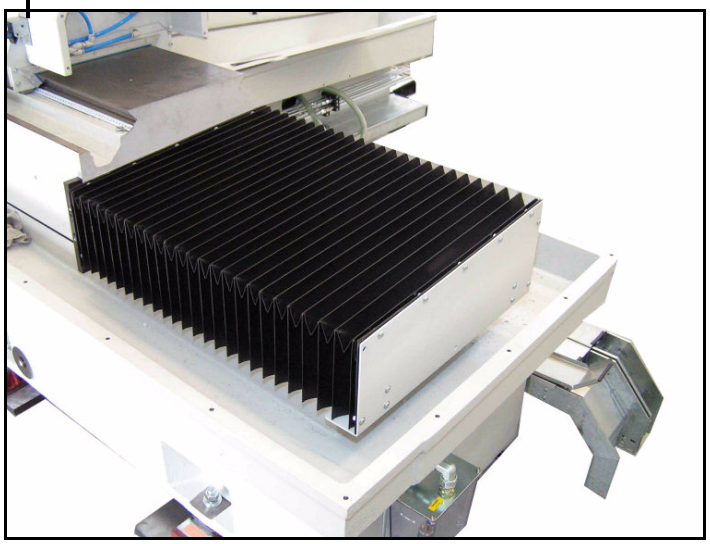
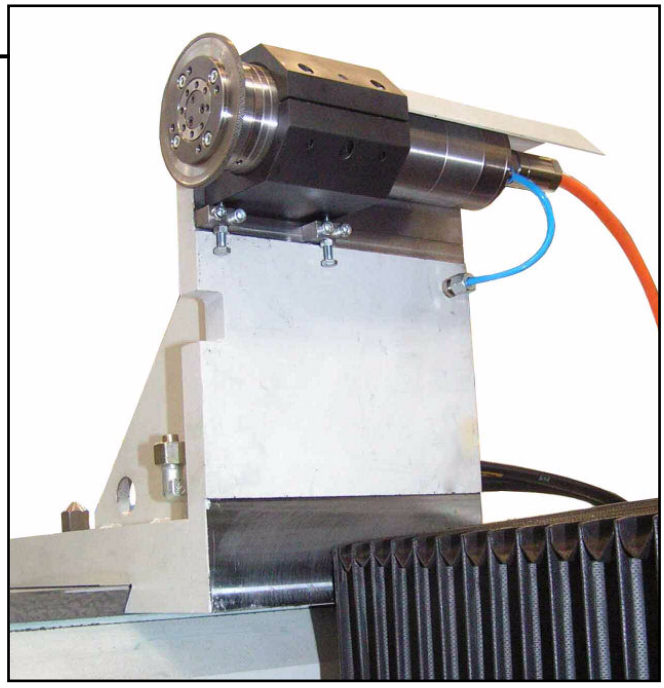


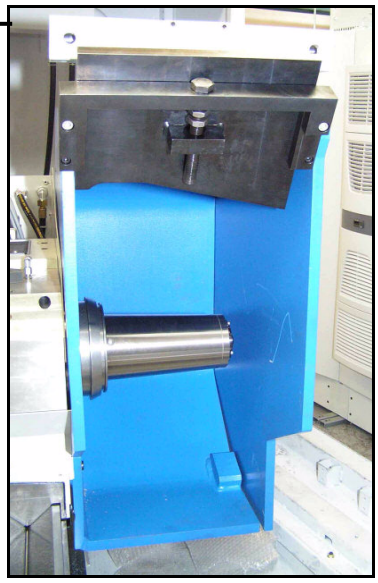
Table Mounted Rotary Diamond Dressing System

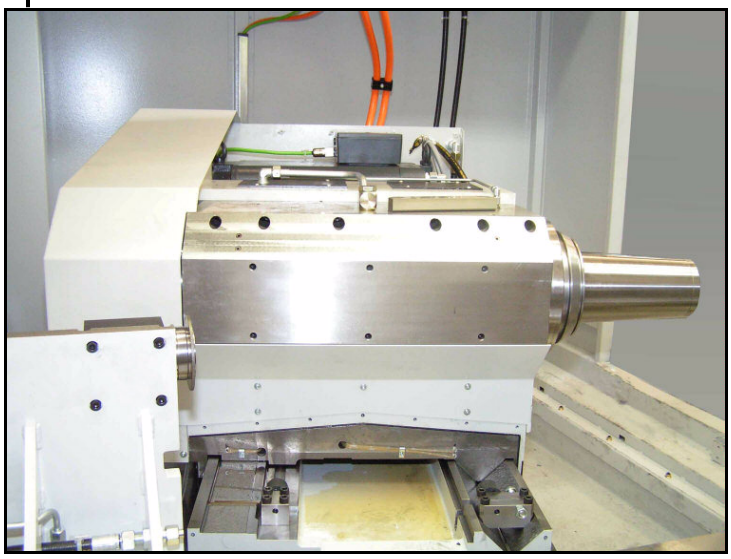
- Provides quick and easy dressing of selected axle profiles
- Massive reduction in dress cycle time results in increased productivity
- CNC stores alignment of dressing wheel in relationship with the grinding wheel, eliminating dress set ups between axles
- Longer life of dressing system reduces cost over a period of years
- Rotary dressing system permits improvement of axle surface finish through enhanced control of dressing parameters



Wheelhead

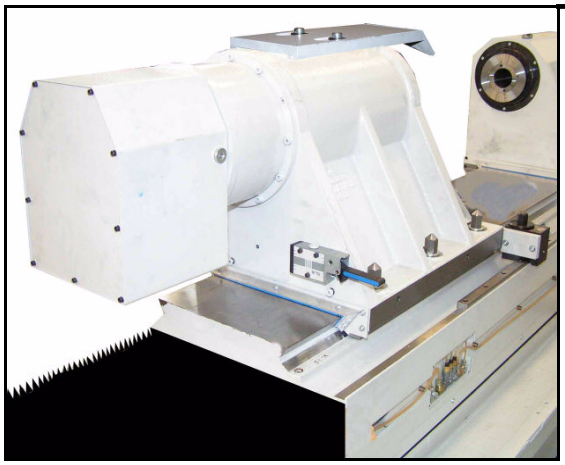
- Wheelhead contains grinding wheel spindle, wheel mount and motor
- Spindle utilizes adjustment free hydrostatic bearings with built in wheel dynamic balancing
- Standard 37kw provides a constant 50m/sec surface speed
- Traverse is on one flat and one vee way which prevents axis skewing, better positional accuracy and longer life

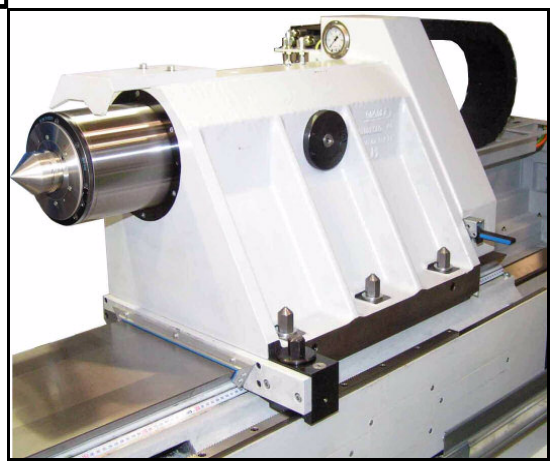




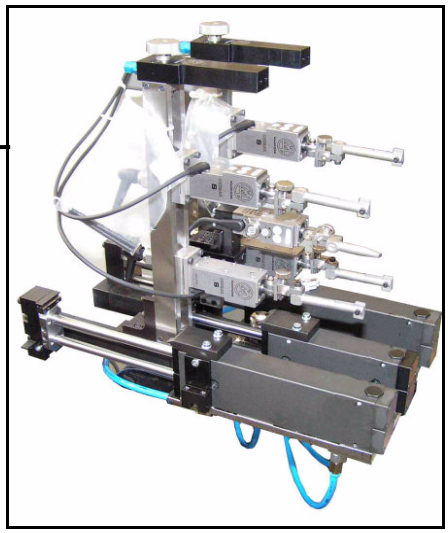
Headstock & Footstock

- Spindle headstock with variable torque motor
- Standard hydraulically actuated footstock with 150mm quill stroke
- Morse No. 6 taper for Headstock and Footstock
- Dovetail clamps fasten Headstock and Footstock to table. Air lift fittings provided to assist in positioning of both the Headstock and Footstock
- Footstock is supplied with dial indicator gauge to allow proper setting and adjustment of tapers required on railway axle journals

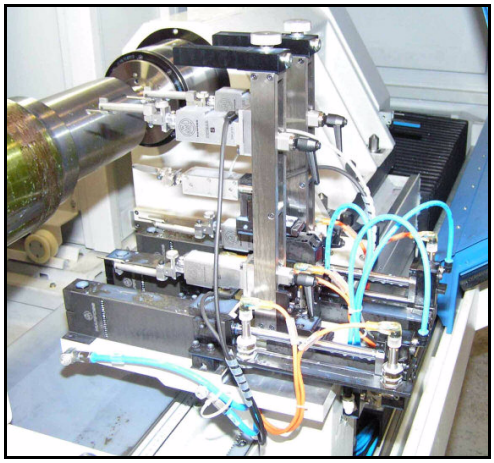


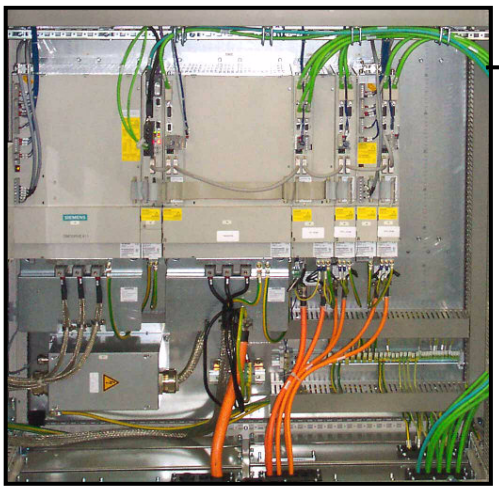


Automatic Shoulder Probe & In-Process & Post-Process Diameter Gauging System



- Shoulder Probe is a base mounted automatic system
- Probe registers on bearing journal flat or axle bearing journal face and provides Z-Axis position data for accurate shoulder and radii grinding
- The in-process diameter gauge provides for accurate diameter grinding on the axle bearing journal
- Post process gauging provides actual diameter data of the bearing journal and optional gauge can be added for wheelseat diameter readings as well.
- Diametric data is stored on the CNC and can be downloaded to the End-User's central computer system





CNC Control System

- Sinumerik 840D
- Windows® based front end driven
- Standard full keyboard
- Dynamic grinding wheel balancing system displayed on screen of MARPOSS control
- Menu driven cycles for dress and grind routines
- USB port for downloading of part programs and other important data such as bearing journal and wheelseat diameters
- Linear glass scales for precise positioning of X and Z axis
- Wheel diameter tracking for constant surface speed
- Alarm menu displays faults
- Cycle time counter
- Automatic dressing can be set to occur after a pre-determined number of grind cycles or when initiated by operator

SPECIFICATIONS

Nominal Swing . . . . . 600 mm
Nominal Table Length . . . . . 4000 mm

Basic Configuration
Plunge Angle . . . . . 15D egrees

Capacities
Max. Dia. Ground New Wheel . . . . . 508 mm
Min. Dia. Ground Worn Wheel . . . . . 10 mm
Work-Piece Length . . . . . .2500 mm

Axis Movements
X-Axis (Wheelhead)
Feedrate . . . . . .15000 mm/min
Resolution . . . . . 0.0001 mm
Z-Axis (Table)
Feedrate . . . . 15000 mm/min
Resolution . . . . . 0.0001 mm

Wheelhead
Grinding Wheel Diameter . . . . . 914 mm
Grinding Wheel Width . . . . . 305 mm
Wheel Speed, max. . . . . .50 m/sec.

Headstock and Footstock
Work Center Tapers . . . . . MT 6
Headstock Speeds . . . . . 1 ... 305 RPM
Spindle Nose . . . . . A 8 DIN 55026
Headstock, max. Torque . . . . . 350 Nm

Machine Weight / Dimensions
Total Length . . . . . 5995 mm
Width (Front to Back) . . . . . 2980 mm
Overall Height . . . . . .23 90 mm
Weight of Machine . . . . . 16,000 kg

Electrical Motors
Wheelhead Drive . . . . . .37 kw
Headstock Work Drive . . . . . 5.3 kw
Hydraulic Pump . . . . . 3.6 kw

THE NSH GROUP

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