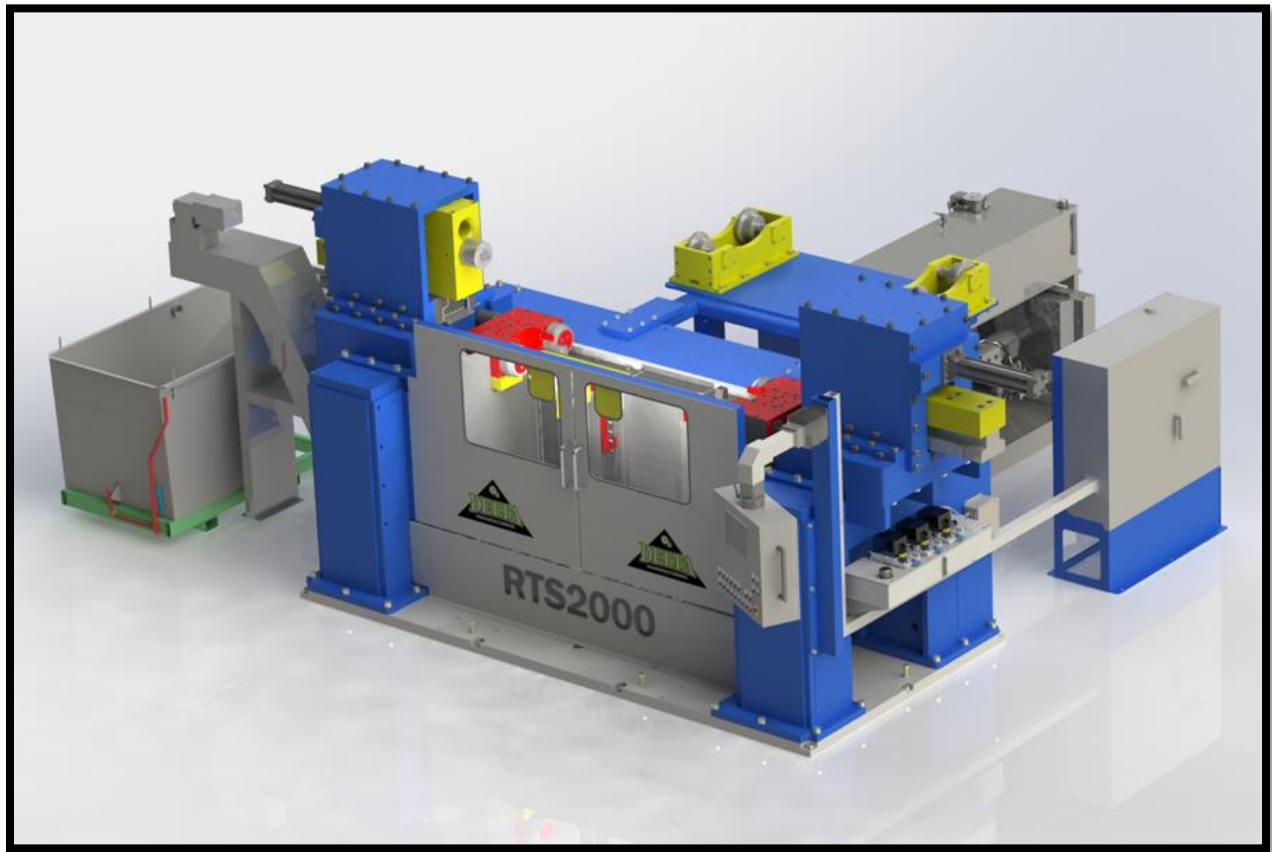


RTS2000H

ABOVE-FLOOR WHEEL LATHE

Machine Specifications



Delta Manufacturing

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MACHINE OPERATION SPECIFICATIONS:

Machine Function

- Simultaneous machining of worn wheels on one axle by re-profiling the wheels to the required specifications and turning the profile to a nominal diameter by eliminating flat spots, high flanges, tread hollows etc.
- The RTS2000H turns the wheels without needing to strip the wheel sets from the bogie
- Single axles can also be turned on this system

Machine Performance

- Axle/truck held in place by using a hold down arm assemblies either on the trucks frame or on the journal box
- Lateral movement arms prevent side-to-side movement
- Rotation of the wheel set achieved by using hydraulically driven friction drive rollers
 - The friction drive rollers also used for auto-centering and lifting.

Machining Tolerances

- Maximum diameter difference of two wheels on one axle: 0.1 mm (0.004") for solid wheels in good condition
- Maximum diameter difference of four wheels on two axles: 0.3 mm (0.012") for solid wheels in good condition
- Radial run-out measured at the taping line: 0.1 mm (0.004") for solid wheels in good condition
- Axial run-out: 0.3 mm (0.012 inch)
- Profile conformity: 0.2 mm (0.008 inch) for solid wheels in good condition
- Surface finish, profile machining: $R_a < 12 \mu m$
- Surface finish inner and outer wheel faces: $R_a < 25 \mu m$
- Axle deflection during machining operations, when restrained by hold-down forces, not to exceed 0.254 mm (0.010")
- Cutting force (if axle load is sufficient) 23kN (5,170lbs)

Machine Operations

- Hold Down Arms:
 - Arms make contact on the top of the journal box or the truck frame, depending on the customer's truck specifications
 - Slide moves along a horizontal box way assembly that is automatically oiled
 - Slide moves in / out using a hydraulic cylinder

- Lateral Movement Stops:
 - Rollers make contact on the back side of the wheel
 - There are a total of 2 idle wheels which auto center
 - Hydraulic cylinders lock rollers between set

- Friction Drive Rollers/Lifting
 - Rollers contact over wheel tread
 - 4 hydraulically driven friction drive rollers that have a taper to match wheel profile
 - The friction drive rollers have a built in taper to match the wheel profile taper
 - The lifting assembly is attached to the base of the friction drives
 - Slide moves along a vertical box way assembly that is automatically oiled
 - Slide moves up / down using a hydraulic cylinder

- Turning Machine:
 - 2 heavy duty lathes
 - Turning machines are independent of each other but will work together to re-profile both wheels at the same time
 - Automatic lubrication
 - Each turning machine consists of 1 x-axis (left/right) and 1 y-axis (up/down) With one large tool containing two inserts

- Controls / Software:
 - Fanuc controls are used for operating the system in conjunction with an automated measuring wheel device
 - The Measuring/Control system indicates the minimum material removal needed to re-profile to a diameter of a single wheel set, all wheels of a single bogie as well as all the bogies of the entire vehicle.
 - Both the software and the measuring device work together in calculating all information, including measurement, operator ID, truck number, location, date etc. All this information can be saved and exported.
 - Hydraulic Controls
 - Display with push button controls.
 - CNC Lathe Controls
 - Fanuc iPendent Touch Screen Control with emergency stop



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Machine Operations Continued

- Automatic Tool Stopping:
 - The cutting tool automatically stops during the cutting process if power is lost to prevent damage to the system or wheel.
 - The lathe controls have a tool retract button to retract the tool from the cutting process any time it is pressed. This returns the lathe to its home position.

- Hydraulic Unit:
 - Feeds oil to all the hydraulic cylinders and/or hydraulic motors on the system.
 - Heat exchanger turns on once oil reaches a certain temperature.
 - Oil filtration system.
 - 150 gallon reservoir tank.

- Lubrication:
 - Centralized automatic lubrication system provides adequate lubrication to all moving components including both lathes
 - All lubrication points controlled by injectors to feed the exact amount of oil needed
 - Injectors controlled using automatic oilers set with timers.

GENERAL INFORMATION:

- Minimum of 12" of reinforced concrete at the base of the machine recommended.
- Wheel Size: Diameter 28" – 45"
- Wheel Profile: Includes up to 20 different profiles per customers specifications.
- Maximum Axle Load: 90,000lbs
- Wheel types:
 - Monobloc wheel
 - Resilient wheel
- Machine can re-profile the following:
 - Single wheel sets
 - Traction motor combos
 - Wheels in a Bogie

POWER REQUIREMENTS

Lathe Controls:

- Controller/Console:
 - Max Power Rating: 60amp, 230vac, 1 Phase / 3 Phase, 50/60hz

HPU: (Hydraulic Power Unit)

- 200amp, 460vac, 3 Phase, 50/60hz
 - Hydraulic Pump Motors
 - Heat Exchanger
 - Conveyor Motor

HYDRAULIC COMPONENTS:

- Hydraulic Drive Motors: (4)
- Hydraulic Cylinders:
 - Drive Assembly: (4)
 - Hold Down Arm Assembly: (2)
 - Lifting: (2)
- 150 Gallon HPU
 - 100hp, 460vac, 3 Phase, 404/5TC TEFC, C-Face w/ Feet, 1.25SF
- VVPC Piston Pump, 8 GPM
- VVPC Piston Pump, 46 GPM

ASSEMBLY SPECIFICATIONS:

Machine Size (not including chip conveyor):

- Length: 160"
- Width: 109"
- Height: 75"
- Weight: Approximately 20,000 LBS.



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Hold Down Assemblies (2):

- Removable Adapter Plates.
 - Accommodate proper holding position for different trucks.
- Ability to adjust to accommodate customer requirements.

Turning Machine (2):

- Adjustable Cutting Feed: 0 – 6.00” IPM
- Rapid Travel: 30” IPM
- Depth of Cut: 0.001 – 0.125” (0.025mm – 3.175mm)
- Average Cutting Time: 1 – 2 Hours per axle
- Max. X-Axis Travel: 11” overall
- Max. Y-Axis Travel: 8 1/2” overall
- Fanuc Motors
- 40:1 Reducers

Measuring Device

- Complete Integrated Measuring System

Paint Scheme:

- Stationary Components:
 - Macropoxy Safety Blue (Tinted to SW4086)
 - Macropoxy Black (Package color)
- Moving Components:
 - Macropoxy Safety Yellow (Package Color)
- Lathe Components:
 - Macropoxy Black (Package Color)
 - Macropoxy Gray (Tinted to SW7664)

CHIP CONVEYOR (OPTIONAL)

- Twin Belt Width Options: 3" to 24" -- as required
- Drive: Heavy duty motor and speed reducer size depending on belt speed and load
- Frame: Formed steel, stationary or portable/ 1.5" Pitch uses 12 Gage , 2.5" Pitch uses 11 Gage
- Bearings: Grease sealed, self-aligning ball bearings
- Safety Options: All MunchMan® conveyors now use current overload sensor with Jam Manager™ program as default safety device





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DUST COLLECTOR (OPTIONAL)

These portable cartridge dust and fume collectors are designed as a cost-effective, highly efficient, solution for OSHA compliant filtering of dusts, fumes, smoke, gasses, and vapors. Maintaining filters at optimum efficiency has always been a problem for traditional collectors, especially for welding fumes and dust. The collector offers a state-of-the-art system — a portable unit with long-lasting cartridges and a fully automatic compressed air cleaning system.

Extremely quiet plug-n-go operation, combined with incredible maneuverability and a powerful 1, 1.5 or 3 horsepower motor (for up to an amazing 2100 CFM airflow), an ideal solution for a wide variety of process applications, including welding, sanding, grinding and deburring.

Fumes are captured by the patented evolution no-smoke extraction arm, travelling through a separate dirty air plenum, with removable dust bin, where heavier particulate drops from the air stream. The air is then filtered through high-efficiency cartridges, returning the clean air back into the environment.

Specifications:

- 1200 CFM
- Direct Drive 1.5 HP. High Pressure Motor/Blower
- 120V 60 Hz 1 PH
- or: 230/460V 60 Hz 3 PH
- Two washable spunbond cartridge filters 99% Efficiency @ .5 Microns
- Heavy-duty swivel locking castors
- Internal spark arrestor baffle
- 6" x 7' Extraction Arm
- In-line damper to adjust airflow
- Noise Rating 78dba
- Removable dust drawer
- Hour Meter filter gauge
- Available as: 120/1/60 or 230/460/3/60
- 6" x 7' Extraction Arm

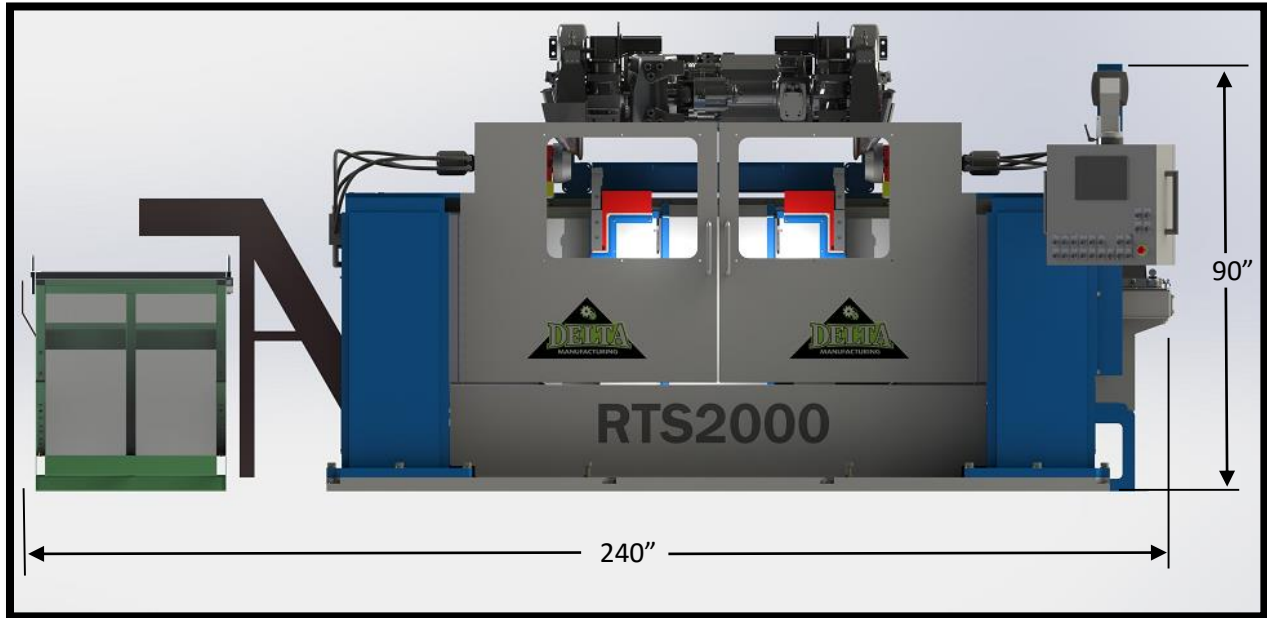


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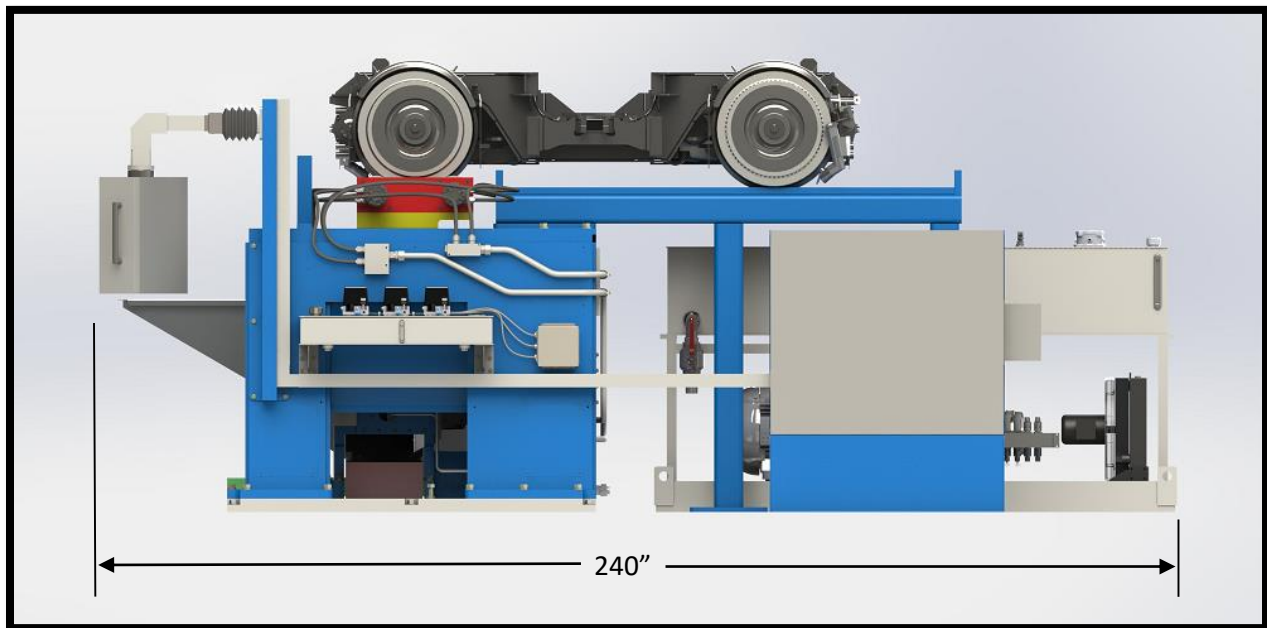
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System Front View



System Side View





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System Top View

