

# Wheel Truing 101

Roger D. Collen



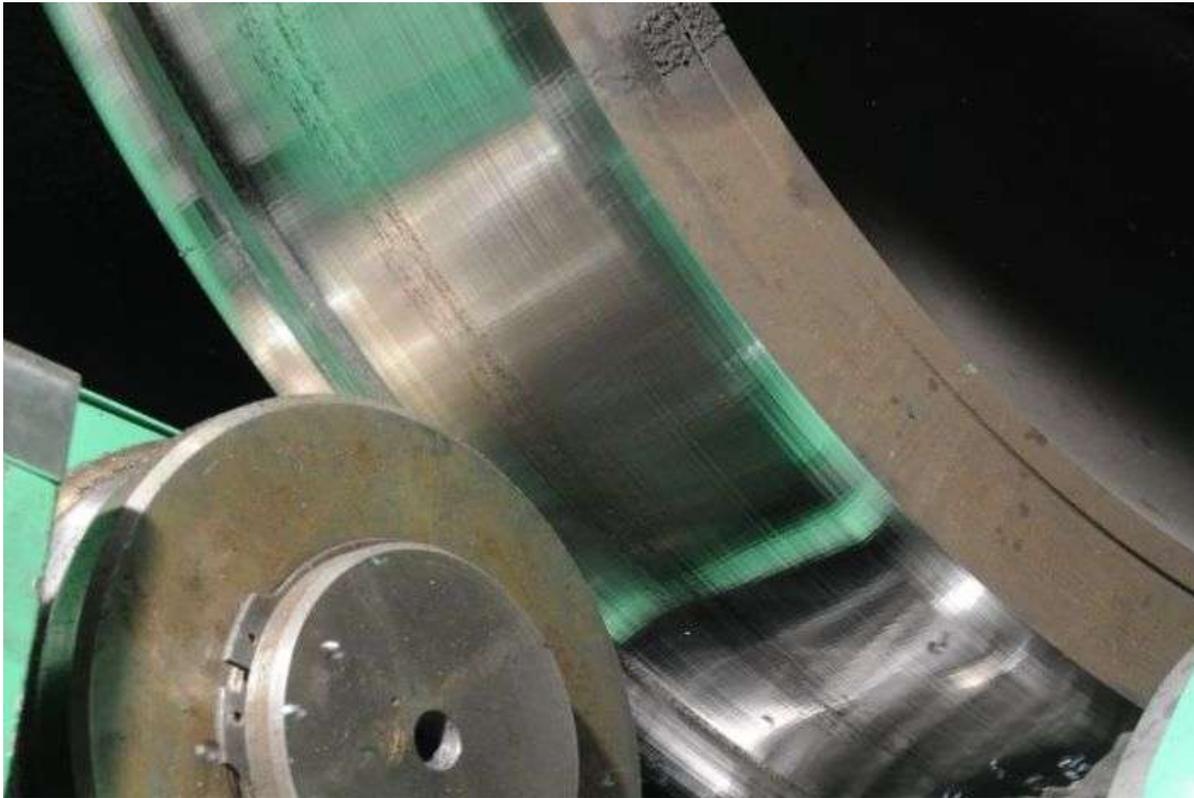
# *Disclaimer*

This equipment is warranted to be free from defects in both materials and workmanship. Should any part of this equipment be defective, it will be repaired or replaced, at option, free of charge (except incoming shipping charges) for a period of one (1) year from the date of original purchase. No charge will be made for parts or labor during this period. Proof of purchase (such as a copy of bill of sale or canceled check) must be submitted to obtain the benefits of this warranty.



# What is Wheel Truing?

Restore the profile of the tread



# Presentation Preview

- Why True Wheels
- Truing Processes
- Truing Equipment Options
- Vehicle Application Notes
- Wheel Truing Auxiliary Systems

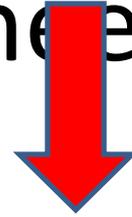


# Why True Wheels

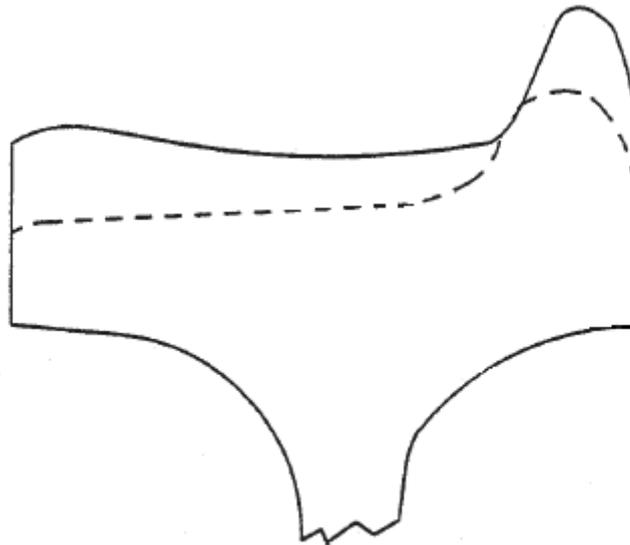
- Economics
  - Cost of replacement wheels
  - Cost of labor to produce and swap wheel sets from rail vehicle



# Why True Wheels

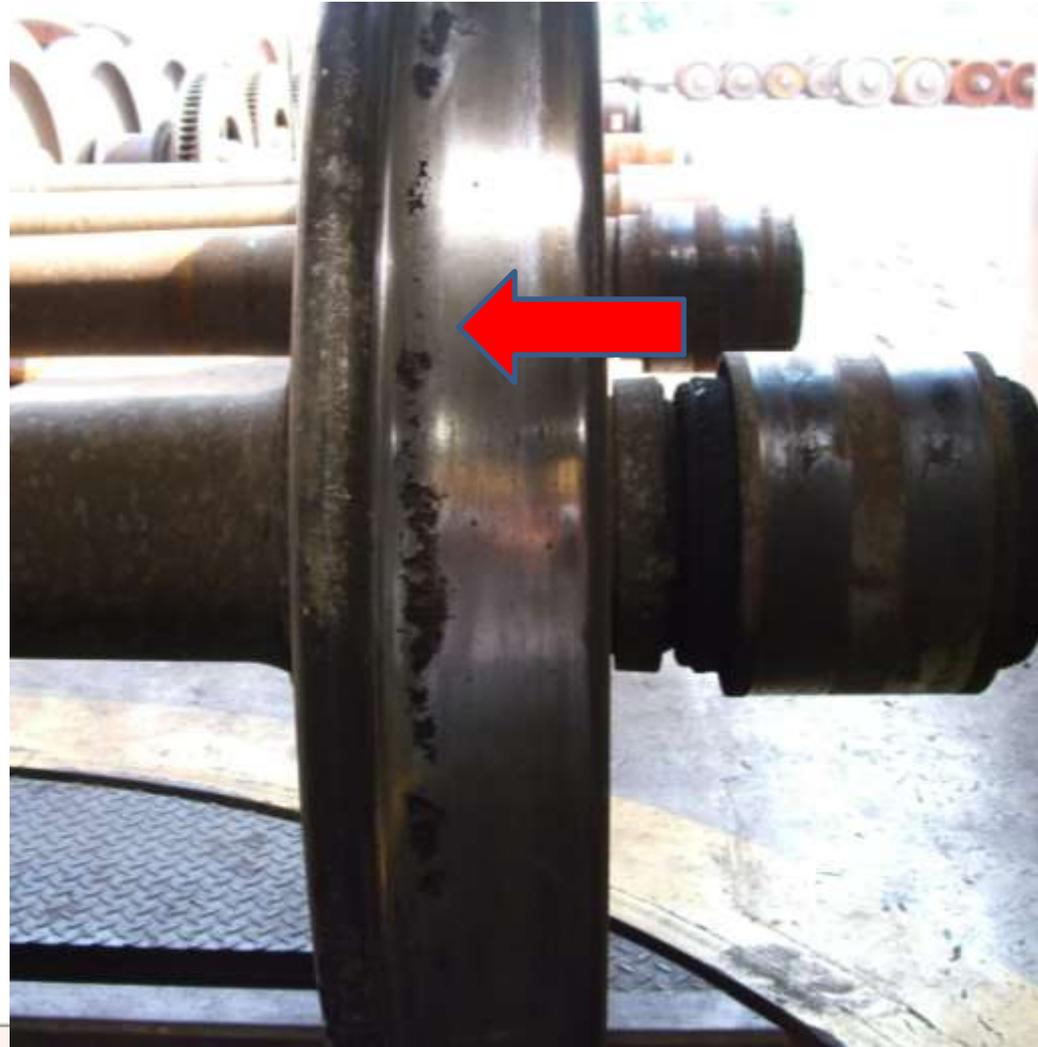


- Wear



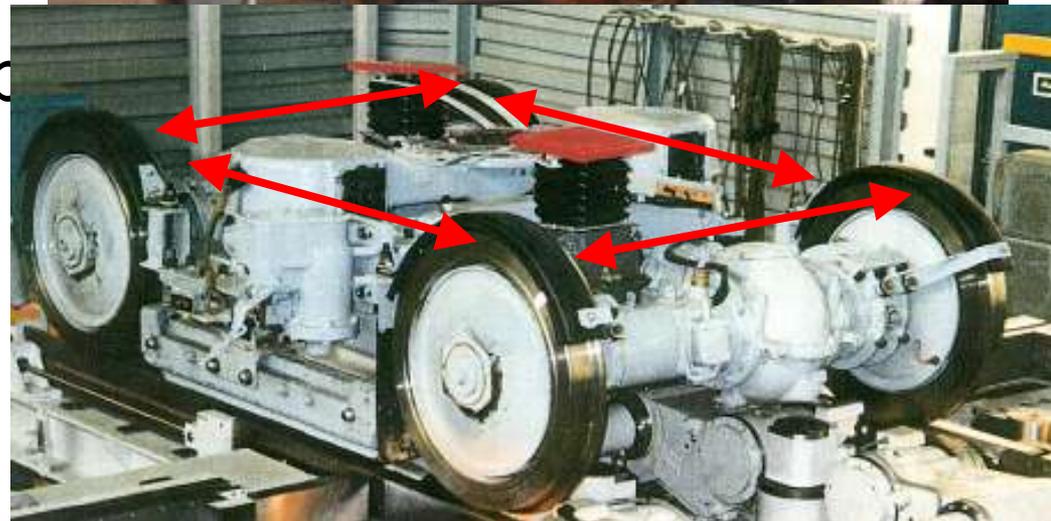
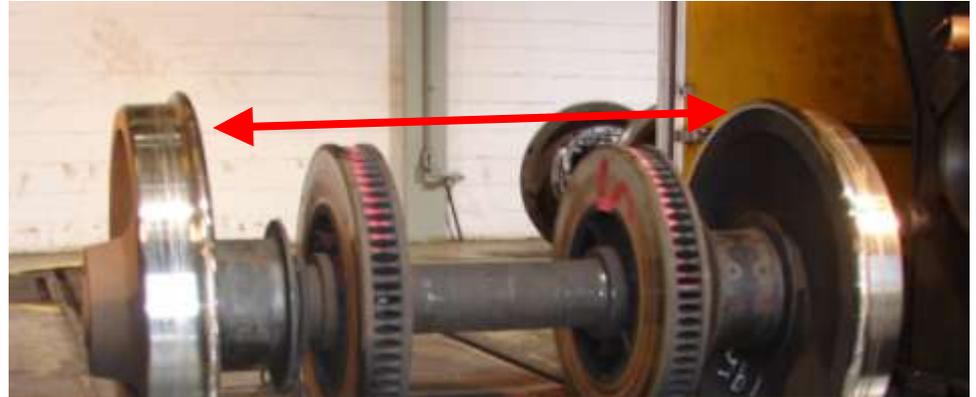
# Why True Wheels

- Wear
- Defects
  - High / thin flange
  - Flat spots
  - Shelling / Built up
  - Cracks
  - Out of round



# Why True Wheels

- Wear
- Defects
  - High / thin flange
  - Flat spots
  - Shelling / Built up
  - Cracks
  - Out of round
- Parity



# Truing Processes

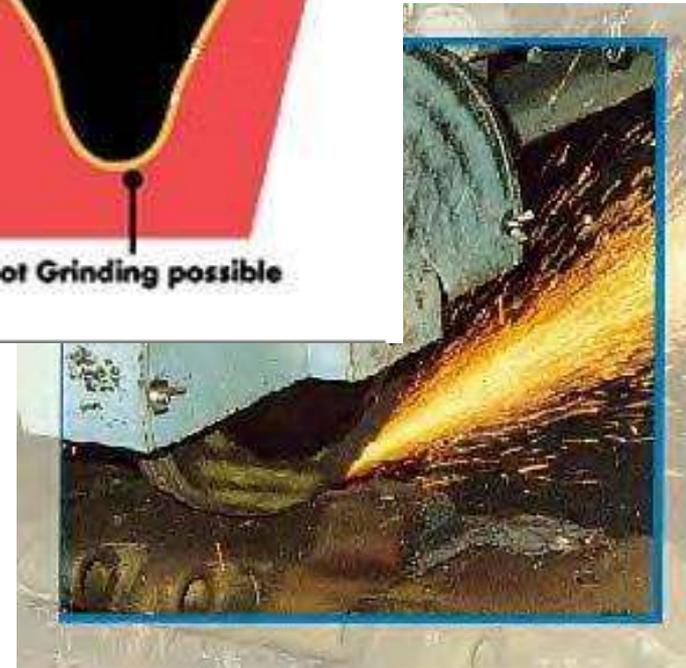
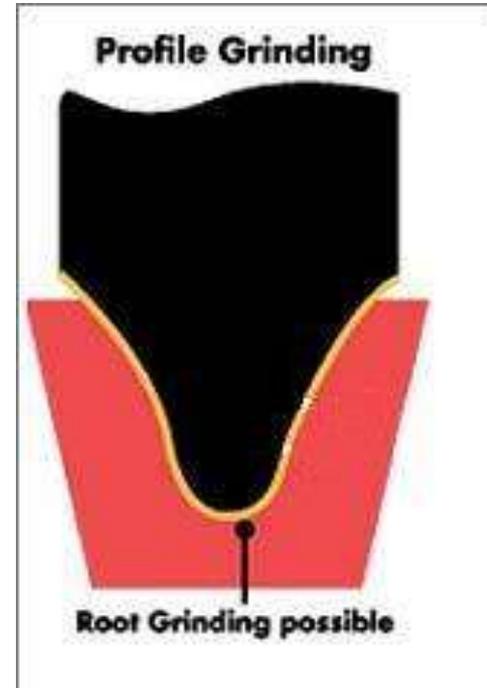
- Grinding
- Milling
- Turning



# Truing Processes

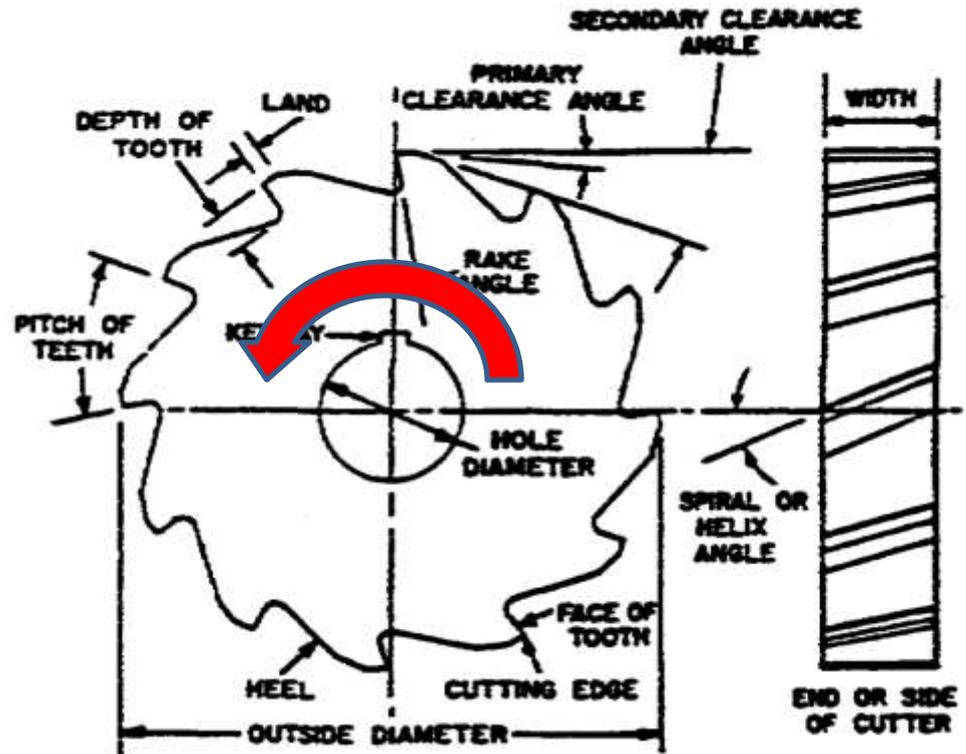
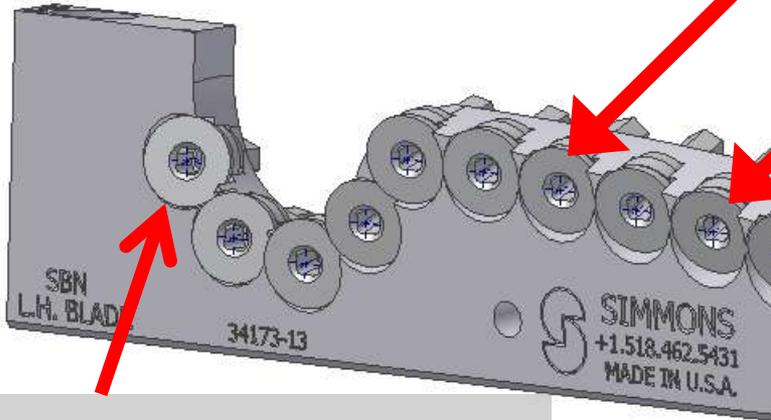
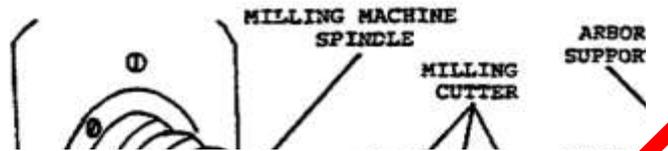
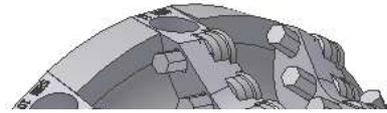
## – Grinding

Process not used in NA for wheel profiling due to very low material removal rate resulting in low productivity



# Truing Processes

- Grinding
- Milling



Carbide Inserts



# Truing Processes

- Grinding
- Milling

Wheel profile built  
into cutter blade



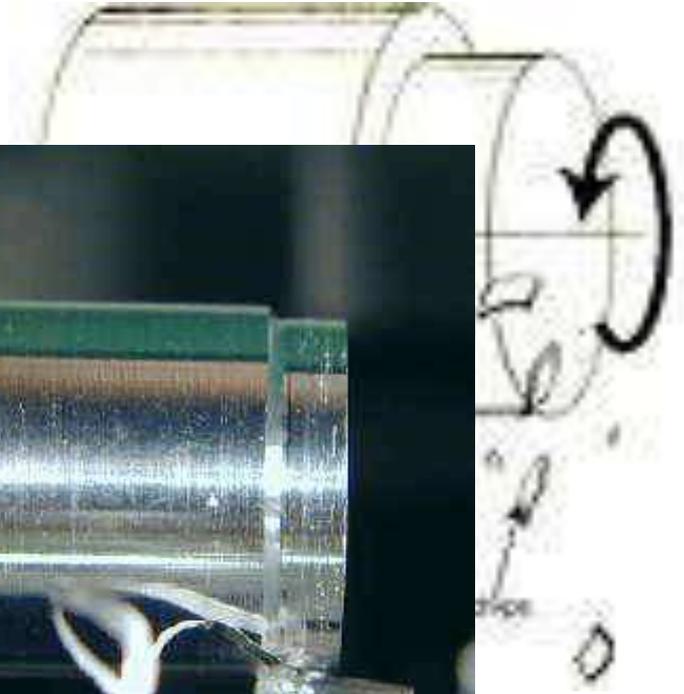
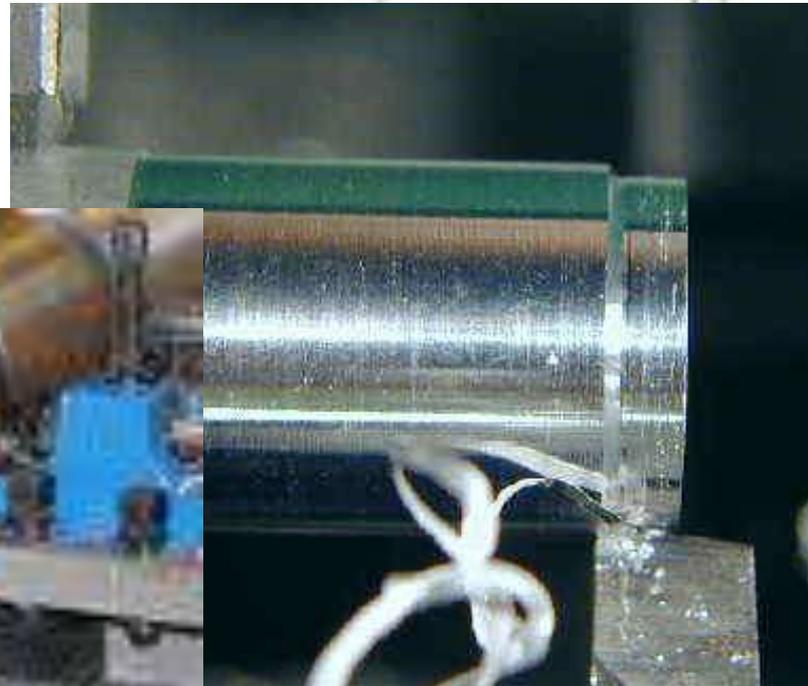
# Truing Processes

- Grinding
- Milling



# Truing Processes

- Grinding
- Milling
- Turning



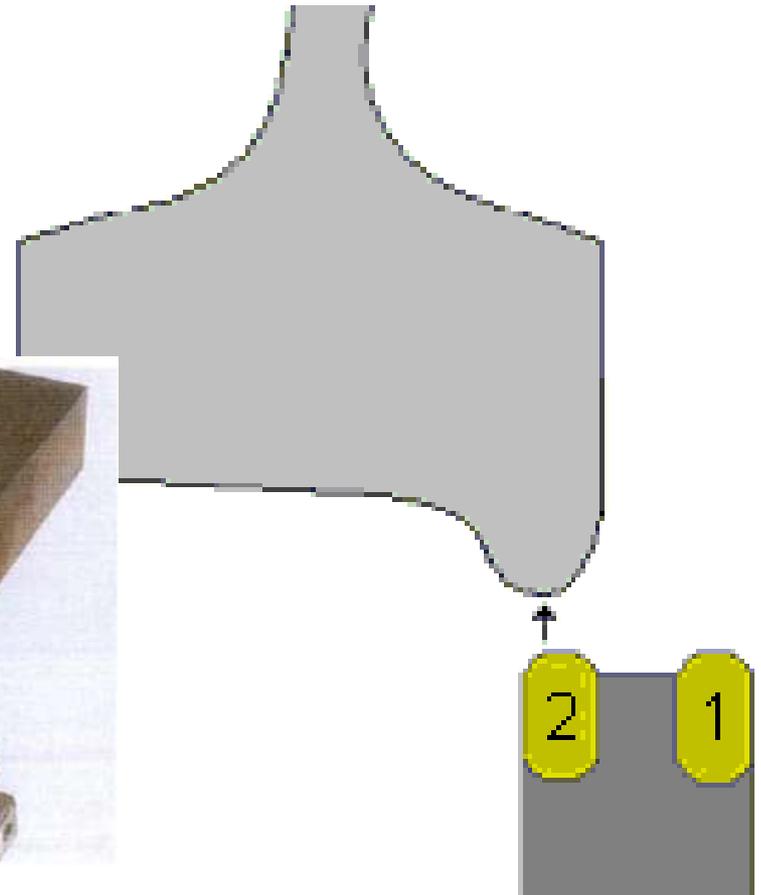
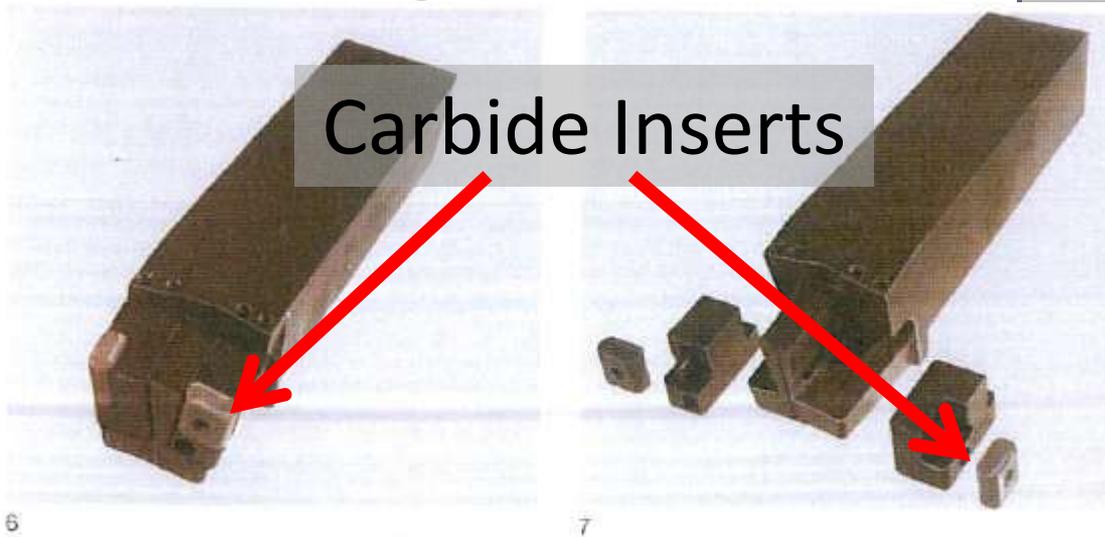
# Truing Processes

- Grinding
- Milling
- Turning



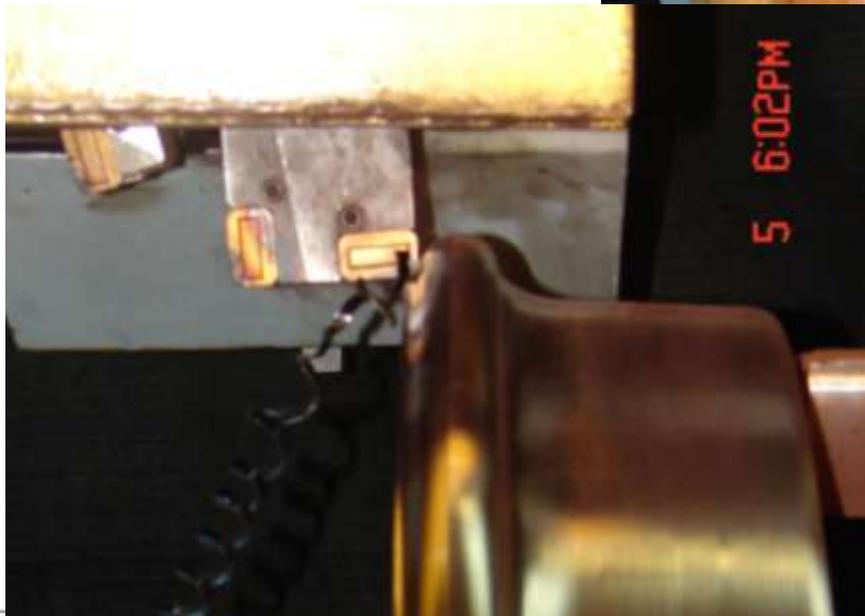
# Truing Processes

- Grinding
- Milling
- Turning



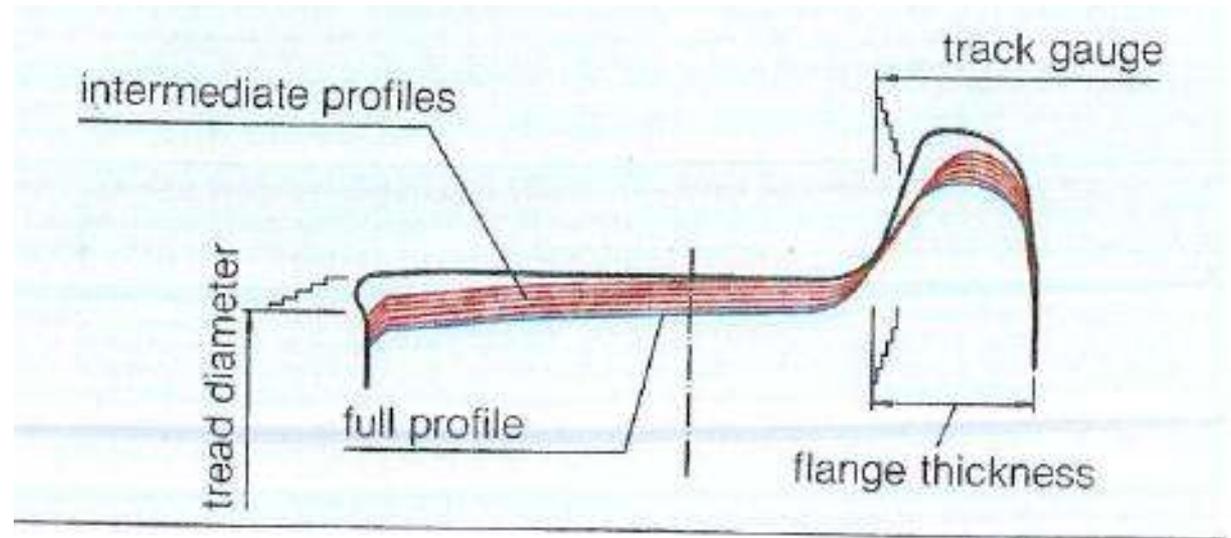
# Truing Processes

- Grinding
- Milling
- Turning



# Truing Processes

- Grinding
- Milling
- Turning

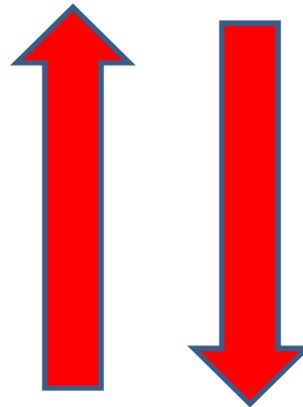


# Truing Processes

## – Surface finish

- Grinding – 16 micro inch
- Milling – 150 to 200 micro inch
- Turning – 60 to 150 micro inch

Improved  
Surface Finish



Productivity  
Reduced



# Wheel Truing Equipment Options

- Portable
- Above floor
- Under floor



# Wheel Truing Equipment Options

- Portable
  - Individual wheel unit



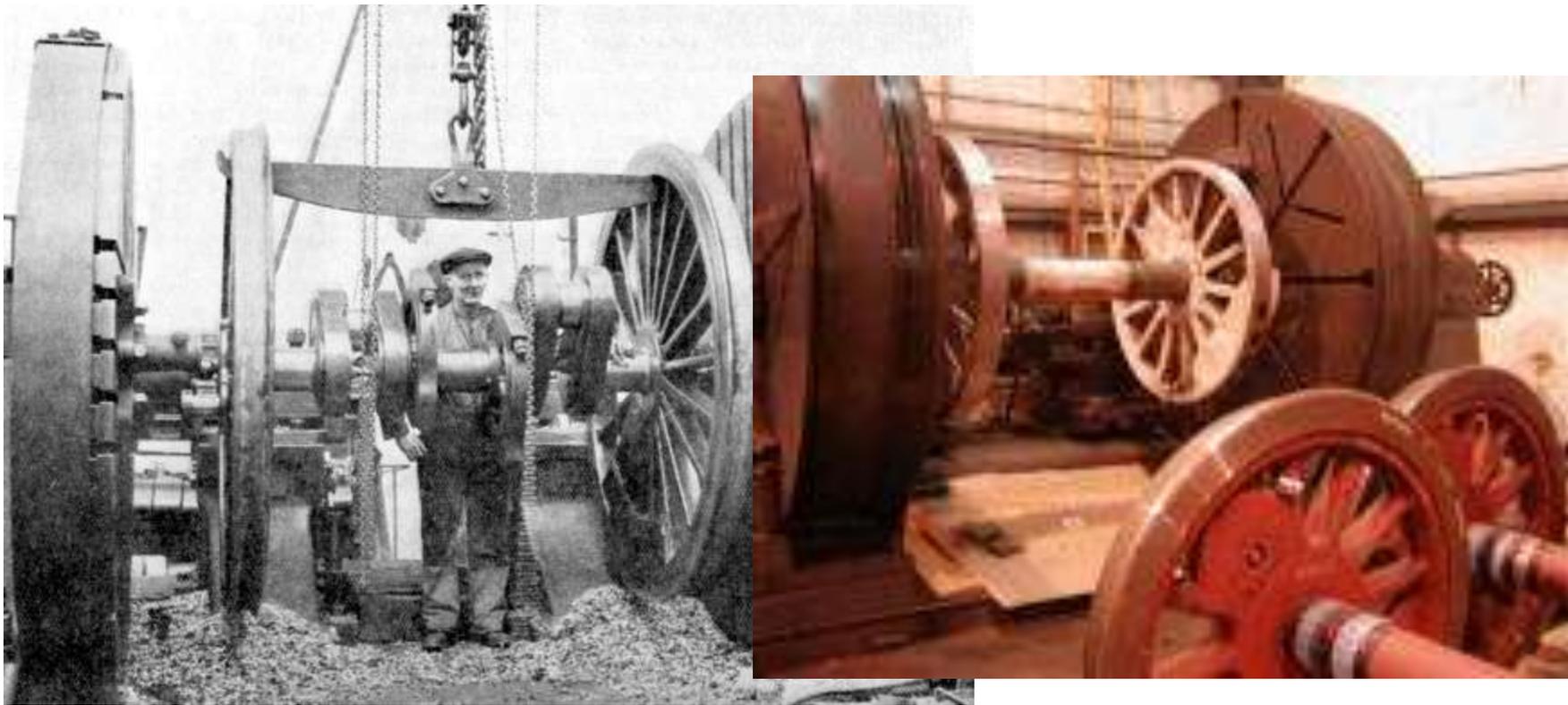
# Wheel Truing Equipment Options

- Portable
  - Mobiturn®



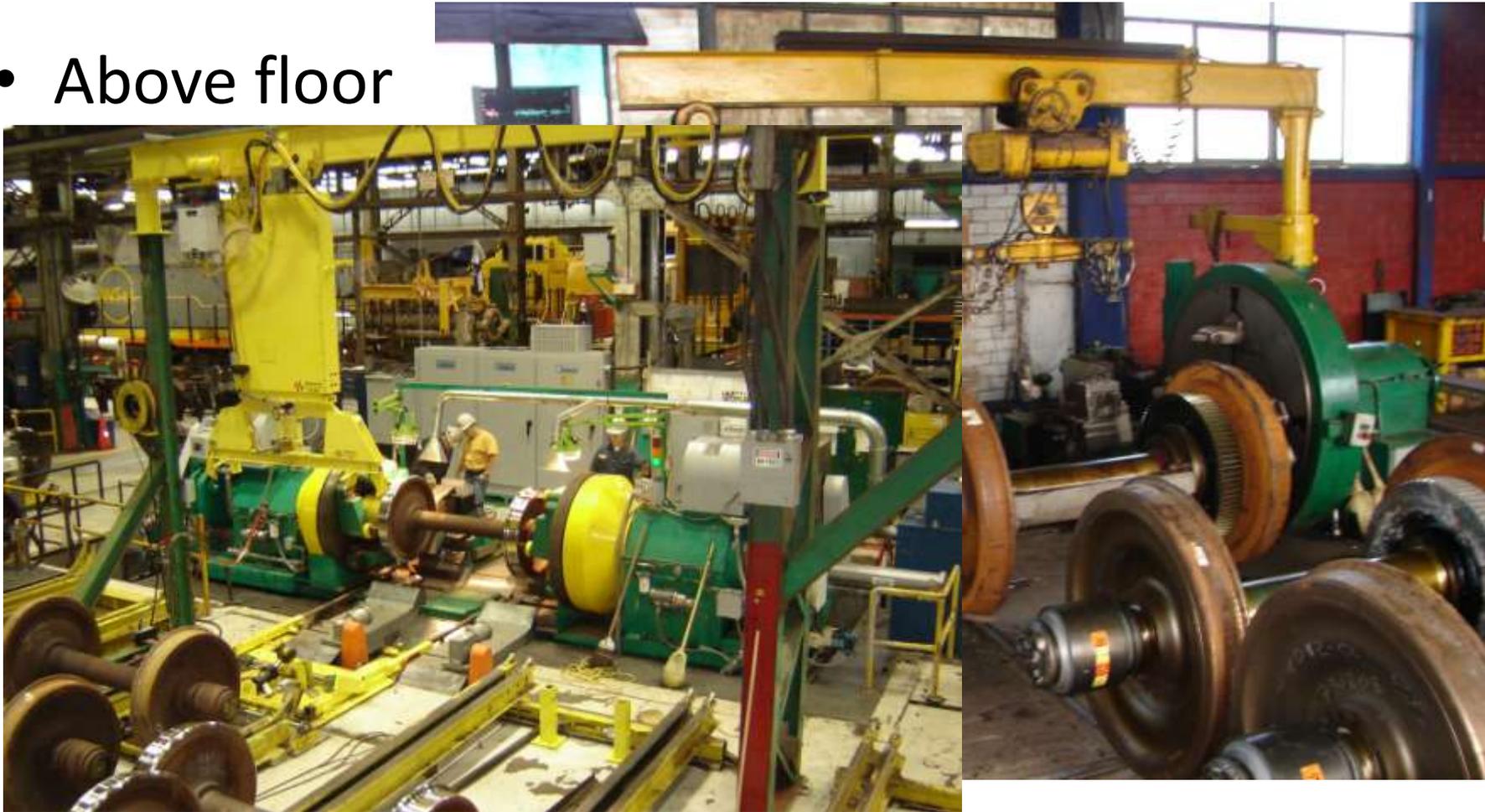
# Wheel Truing Equipment Options

- Above floor



# Wheel Truing Equipment Options

- Above floor



# Wheel Truing Equipment Options

- Above floor – Portal style



# Wheel Truing Equipment Options

- Under floor
  - Milling – Wheel Truing Machine
  - Turning – Underfloor Wheel Lathe

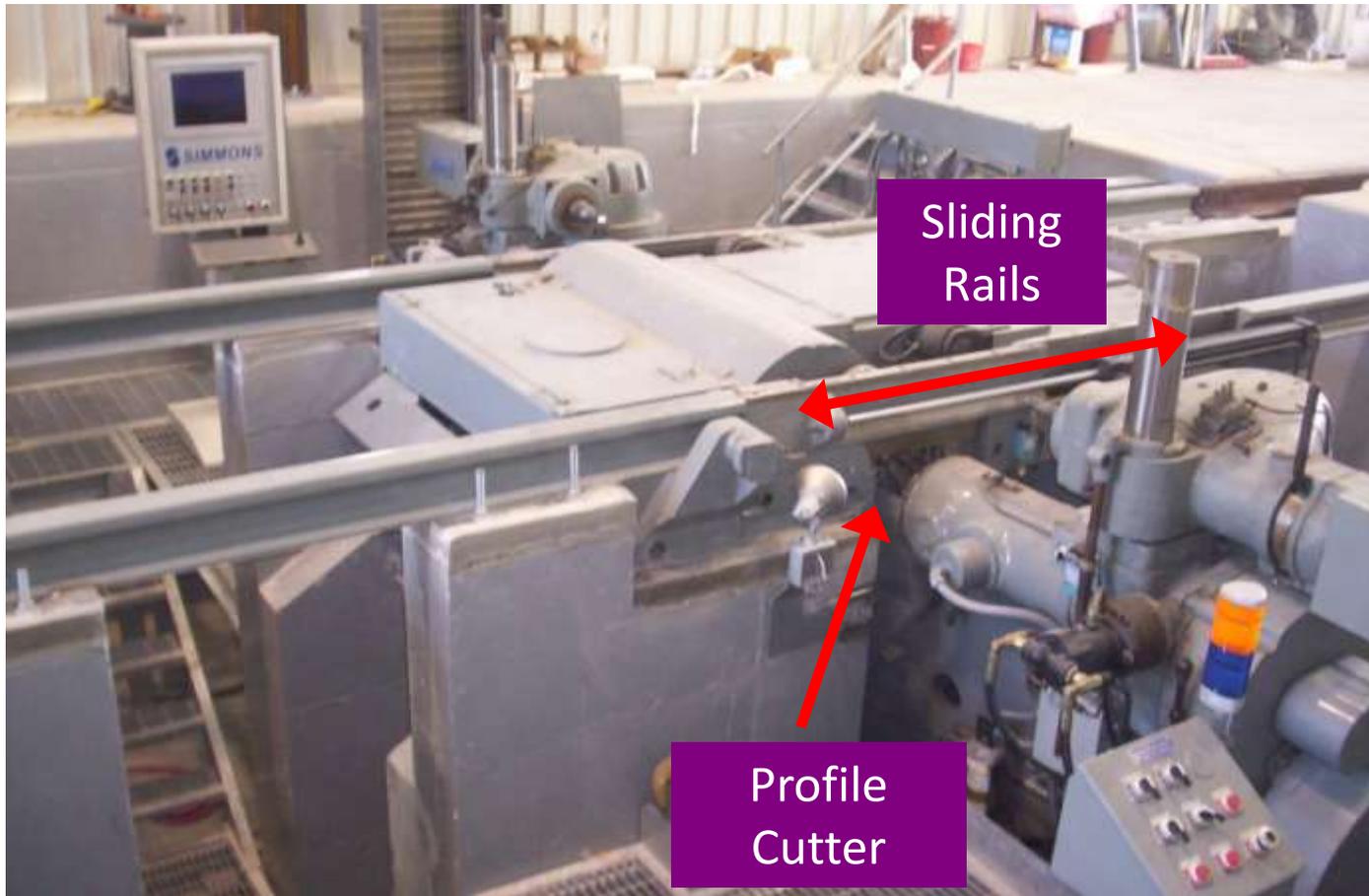


# Wheel Truing Equipment Options

- Under floor
  - Milling – Wheel Truing Machine



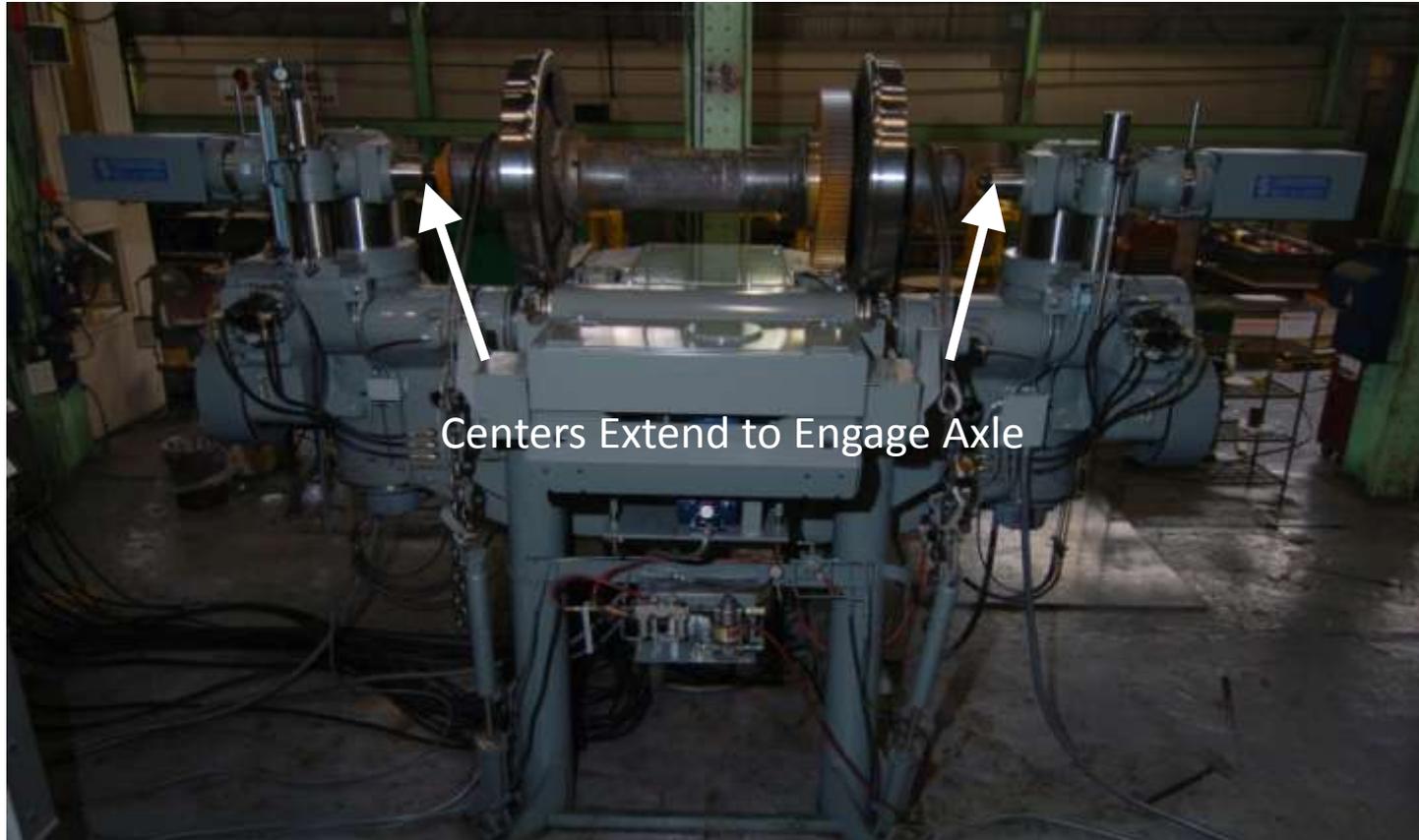
# Wheel Truing Equipment Options



# Wheel Truing Equipment Options



# Wheel Truing Equipment Options



Wheel Truing Machine in Test Stand at' Manufacturing Facility



# Wheel Truing Equipment Options



# Wheel Truing Equipment Options

- Under floor
  - Lathe – Underfloor Wheel Lathe



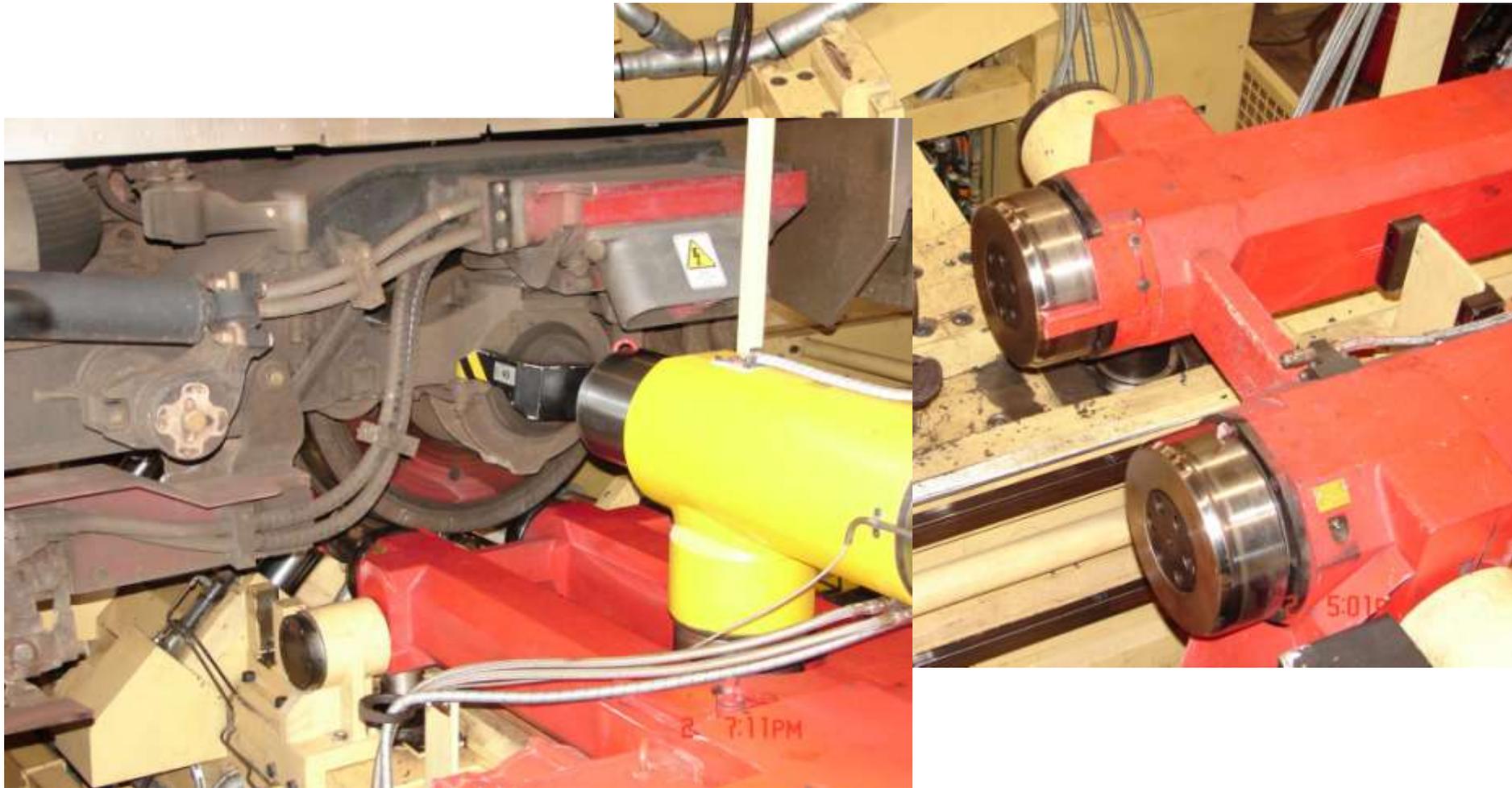
# Wheel Truing Equipment Options



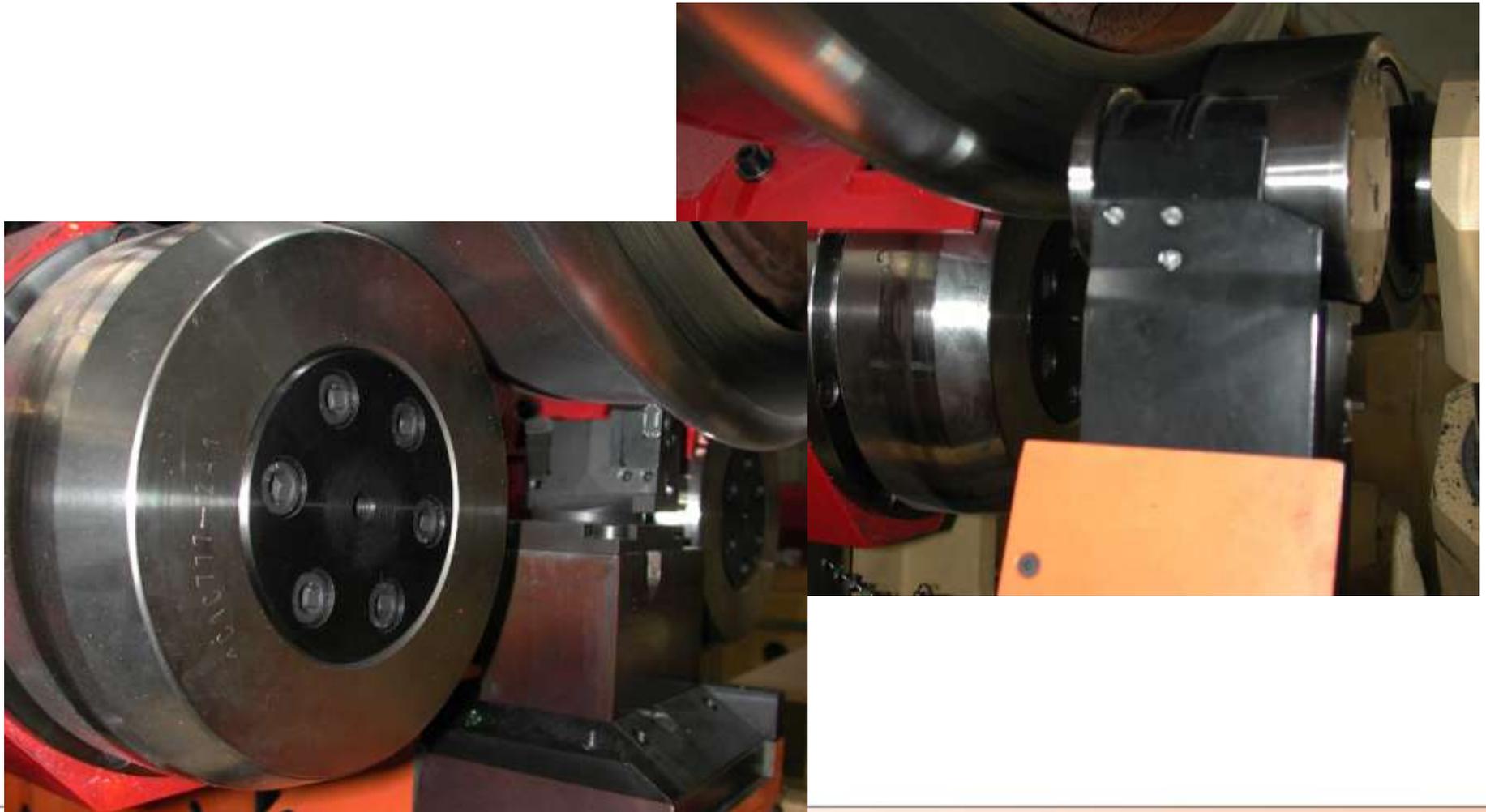
# Wheel Truing Equipment Options



# Wheel Truing Equipment Options



# Wheel Truing Equipment Options



# Wheel Truing Equipment Options



# Some Vehicle Application Notes

- Wheel Truing Machine requires access to the axle centers of the wheel set
- Underfloor Wheel Lathe can be “centerless” requiring no access to axle centers
- Low floor vehicles have obstructions to axle centers and independent wheels

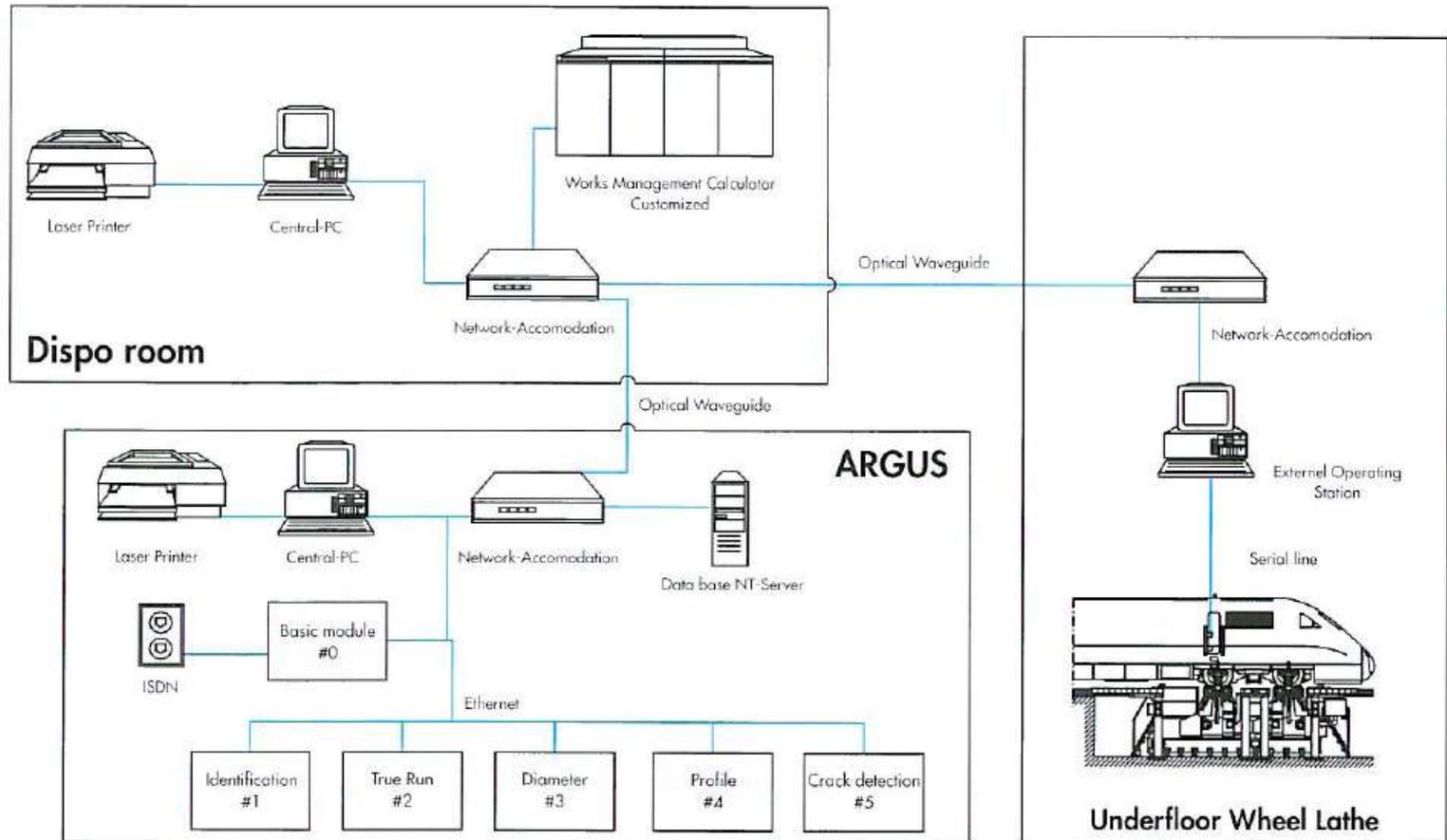
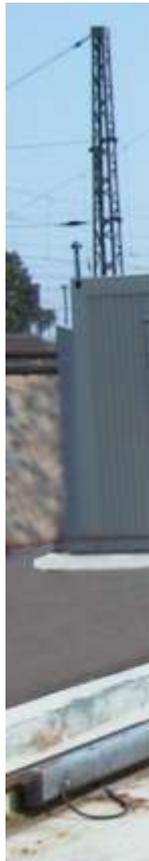


# Wheel Truing Auxiliary Systems

- Wheel Management
  - Data interface with authority database to allow for transfer of wheel measurements and machine performance data to allow for trending analysis
- In-Rail Wheel Inspection Systems
  - In rail wheel inspection systems supply worn wheel data to the wheel truing machine directly or via the wheel management system



# In-Rail Wheel Inspection Systems



# Wheel Truing Auxiliary Systems

- Machine Inspection Systems
  - Optional equipment is available to perform ultrasonic inspection of the profiled wheel for cracks
- Vehicle Progression Systems
  - Multiple type systems are available for progression of vehicles across the wheel truing equipment



# Vehicle Progression Systems



# Wheel Truing Auxiliary Systems

- Chip Collection Systems
  - Chip shredders are available for breaking stringers generated by turning into manageable pieces
  - Vacuum chip conveying systems provide means for dust collection as well as housekeeping tools



# Questions

