

30  
COMPLETE SOLUTION  
FOR NDT/NDE  
YEARS

ATG

RAILWAYS

# NDT Solutions for Railways

Production ■ Magnetic Particle Inspection ■ Ultrasonic Testing  
Qualification ■ NDT Testing ■ NDT Inspections ■ Consultancy

ATG

NONDESTRUCTIVE TESTING

DEFECTS UT EQUIPMENT

NDT

INSPECTION

CRANKSHAFT

OEM

UNIMAG

NDE

CERTIFICATION  
RAILWAYS

MPI

AXLES

WHEELSHOPS

MAINTENANCE

TESTING

DEFECTS

PRODUCTION

CRACKS

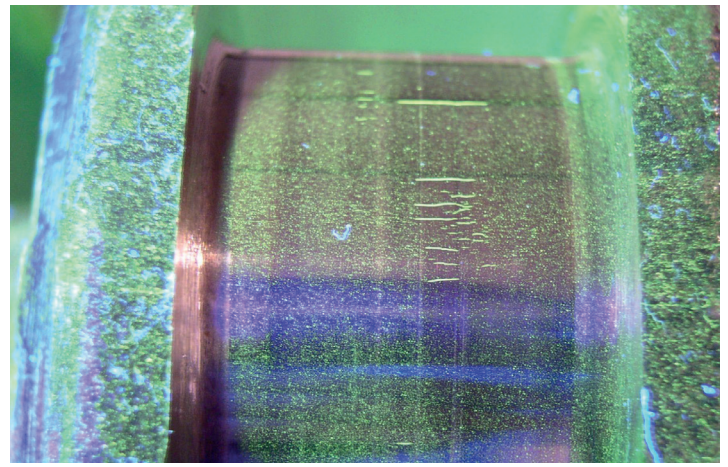
PRODUCTION

QUALIFICATION

# Introduction

ATG (Advanced Technology Group), Ltd. is a leading company working in the field of industrial inspections with 30 years long tradition, experience and reputation for its superior quality, high product innovation, variability and experienced personnel. ATG tailor-made high quality equipment for standard NDT methods in any level of customization. Own R&D team ensures inclusion of the most modern and innovative solutions for the most demanding Customers.

ATG staff consists of more than 20 NDT Level III specialists, available to perform the most demanding tasks related to NDT inspections, personnel qualification and consultancy activities.



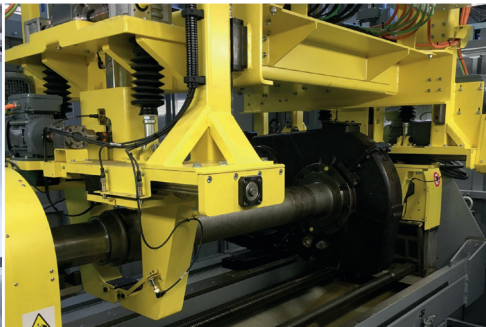
## Production of NDT equipment

ATG designs and manufactures a complete range of **Magnetic Particle Inspection** systems and equipment for the railway industry in all required magnetization combinations: AC, HWDC. ATG is able to fulfill the most of the customer's requirements by own design of mechanical and electrical workshop. The MPI systems can be equipped by Automatic Defect Recognition system based on AI and using cameras and special UV lights.

For safety control of railway wheelsets, axles and wheels ATG also offers **Ultrasonic Testing, Eddy Current and Visual inspection** systems used in maintenance depots or production workshops. All our NDT systems are designed for both testing of dismantled wheelsets or solo hollow, or solid axles from the trains and for testing of hollow axles without any dismantling from trains.



UNIMAG WST – wheel set MPI testing



UNIMAG 2600 AC/AC/AC – axles MPI testing



UZM 400 – UT scanning system for bearing rings

## NDT methods covered

### Magnetic Particle Inspection (MPI)

- Maintenance (Wheelset inspection systems, Axles inspection systems, Crankshaft inspection)
- Production (wheels, wheel sets, axles, shafts, bearings, springs and many other parts)
- Customized solutions based on customer requests and our 30 years of experiences

### Ultrasonic Testing (UT)

- Production (wheels, axles, wheelsets, bearings, rail)
- UZM series, horizontal immersion UT systems
- Customized manipulation for high-speed inline applications, using special probes
- Typically delivered together with MPI

## Maintenance

### Wheelset inspection systems

#### UNIMAG WST

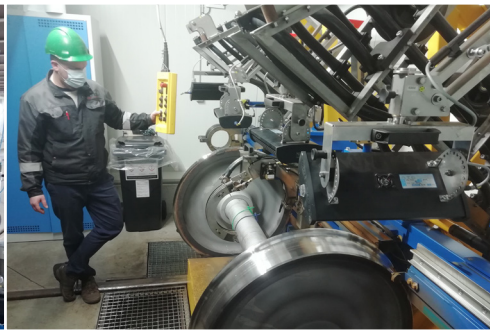
UNIMAG WST is a system for testing of railway wheelsets acc. to VPI 09, that significantly increases the productivity (from 60 min to 18 min/pc), quality and testing reliability in the railway industry. Delivered equipment includes a system of integrated mirrored coils of various types for magnetizing of the wheels, rail contact surface, hubs and axles. Hydraulic lifting with wheelset rotation and collection of magnetic suspension is used for manipulation purposes. System can be further equipped by tools for magnetizing of axles only, including current flow.

#### Key features

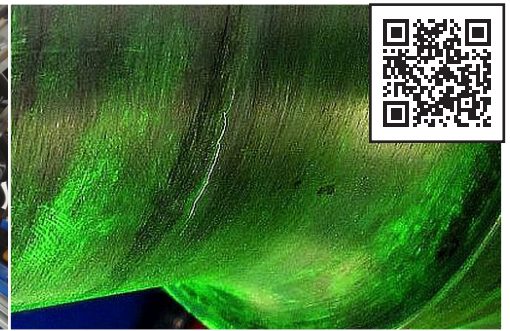
- Easy, ergonomics and safe manipulation
- Fast and reliable testing in accordance with VPI09 standard
- Max. 18 minutes per wheelset, including manipulation
- Power reserve in the level of the electric current
- High load factor of 60%



UNIMAG WST



UNIMAG WST



CRACK INDICATION

## MAGMAN 4000 R

MAGMAN 4000 R+MZC 1000S is an universal and economy solution for all maintenance centers with lower numbers of tested wheelsets. The MAGMAN 4000 R has been designed for feeding of long cables and 4 turns MZC1000S coil. Thanks to its power and 4 turns on the coil, the system can achieve magnetic field intensity of 3,2 kA/m on the wheel hub, according to the requirements of EN ISO 13 262 and DB auditors. The MAGMAN 4000 R can also feed any contacts for circular magnetization of the axles!



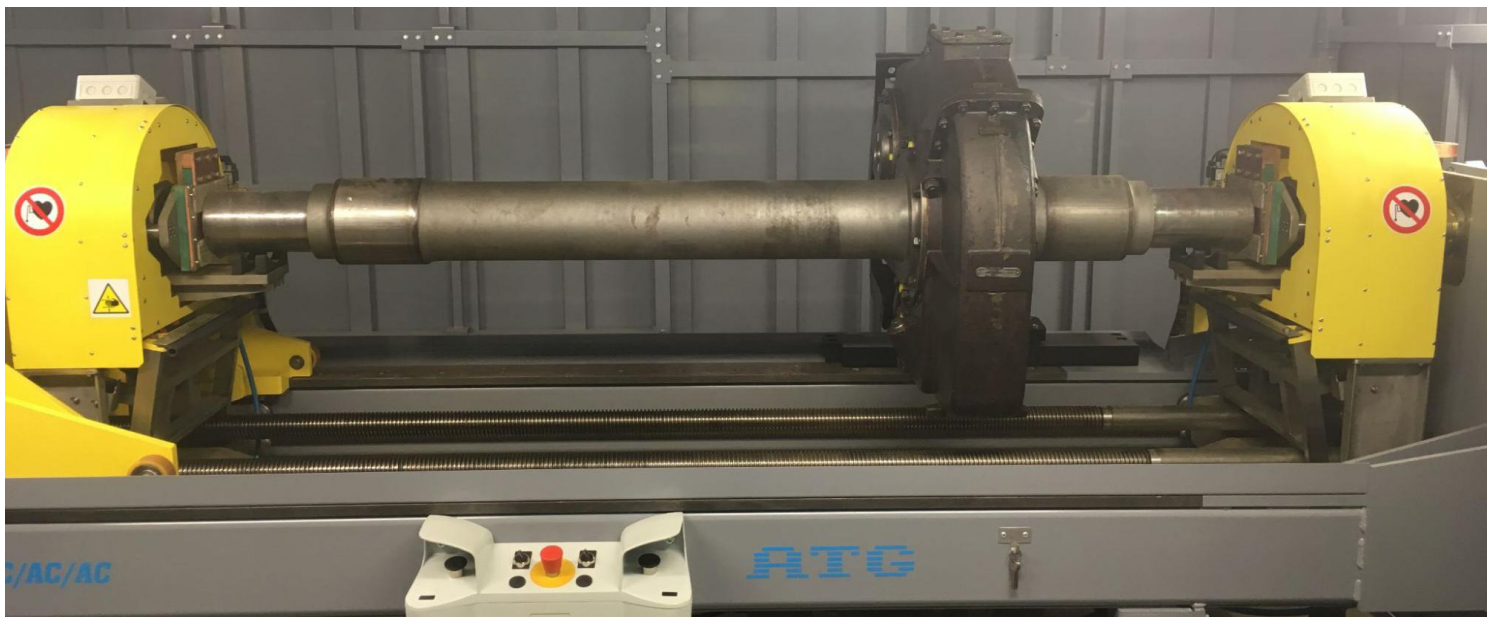
## UZM 400

The UZM 400 enables comprehensive ultrasonic testing with automatic loading, precise positioning, and automatic result evaluation - all on the control panel. Thanks to automatic scanning, clear process monitoring and automatic sorting of parts into OK and NOK categories testing is quick and precise.

## Axles inspection systems

### UNIMAG 2600 AC/AC/AC

The UNIMAG 2600 AC/AC/AC is a fully automatic MPI machine for testing of axles (solid and hollow). The MPI bench has been installed in a very modern automatic maintenance center with an automatic loading system to each technological position. The UNIMAG is equipped with 2 automatically moving coils and pneumatic clamping with the "point" clamping system. There are 3 independent current sources (AC) for combined magnetization of the axles including the gear box, or brake components. System is connected with MES /Machine Execution System/ and is automatically loading, unloading and transferring all the data about testing and its results to the central database.



### UNIMAG 3000 AC

Semi automatic MPI bench for reliable inspection of Axles, suitable also for any other heavy industry application. Combined magnetization and motorized coil.

# Crankshaft inspection

## UNIMAG 5600

UNIMAG 5600 AC, or its modification is an excellent MPI bench used for testing of diesel generator crank shafts, or any other longer parts. System is equipped with a powerful AC generator and is capable of feeding 600 mm coil, or bigger if needed.

## Production

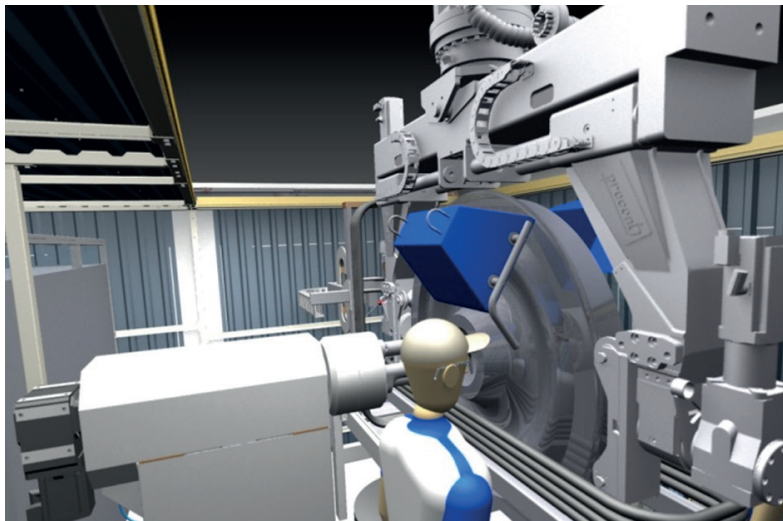
### Wheel production

#### UNIMAG VERT

Fully automatic MPI system UNIMAG 1400 VERT is an unique customized solution working in an automatic production line of wheels. Unique clamping system via central holes, bring higher testing reliability on the running surface of the wheel!

#### Key features

- Automatic loading from above, integrated in production line
- Clamping via central hole
- AC/AC/AC combined magnetization
- Safe and reliable inspection
- Cycle time 4,5 minute (with ADR app. 2 minutes only)



### Axles production

#### UNIMAG 3000 AC/AC

Semi automatic MPI bench for reliable inspection of Axles, suitable also for any other heavy industry application. Combined magnetization and motorized coil.

## Qualification

Complexity of the NDT process requires to be performed only by properly qualified staff. Qualification of NDT personnel in railway industry has been performed on the base of qualification and certification acc. to EN ISO 9712:2022 for relevant industrial sectors used in railway. Consequently is performed additional specific and practical part of qualification in for railway approved training/examination centers.

ATG is approved training center of accredited certification body COO NSD of VVÚŽ (SK) according to UIC 960 in sector "Railway Transport".

## Consultancy - Outside Agency Services - Services of NDT Level 3

Complexity of the NDT process requires a proper Quality Management System. The NDT Level 3 personnel has significant role for establishing and maintenance of NDT system/process.

In case of absence of own Employer's NDT Level 3, the Employer may nominate to fulfill all (or a part of) NDT Level 3 responsibilities to outsourced Outside Agency, which can substitute requested activities of responsible person for given special process.

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