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Level 2

Refurbishment/Overhaul of Underfloor Wheel Lathes

Endorsement and Authorisation

Endorsed by:

Malcolm Miles, Working Group Chair

Authorised by:

James Allenden, Steering Group Chair

Accepted for issue by:

Mick McManus, National Standards Manager

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Issue record

Issue	Date	Comments
1	Dec 2009	First Issue following Stakeholder Review

Compliance

This Network Rail standard is mandatory and shall be complied with by Network Rail and its contractors if applicable from 06 March 2010.

When this standard is implemented, it is permissible for all projects that have formally completed GRIP Stage 4 to continue to comply with the Issue of any relevant Network Rail Standards current when GRIP Stage 4 was reached and not to comply with requirements contained herein, unless the designated Standard Owner has stipulated otherwise in the accompanying Briefing Note.

Reference documentation

Doc Ref Number	Title
GL/RT1255	Low Voltage Power Supplies in Electrified Areas
BS 1134	Assessment of Surface Texture. Methods and instrumentation
BS 1710	Specification for Identification of Pipelines and Services
BS 3790	Specification for Belt Drives Endless wedge belts, Endless V-belts,Banded V-belts and their corresponding pulleys
BS 3858	Specification for binding and identification sleeves for use on electric cables and wires.
BS 5499	Graphical symbols and signs.Safety signs including fire safety signs. Signs with specific safety meanings.
BS 7671	Requirements For Electrical Installation (IEE Wiring Regulations)
BS EN 953	Safety of Machinery. Guards. General Requirements for the Design and Construction of Fixed and Moveable Guards
BS EN 982	Safety of Machinery. Safety Requirements for Fluid Power Systems and their Components. Hydraulics.
BS EN 1837	Safety of Machinery. Integral Lighting of Machines.
BS EN 13788	Machine tools. Safety. Multi spindle Automatic Turning Machines
BS EN 60073	Basic Safety Principles For man-Machine Interface Marking and Identification. Coding principles for indicators and actuators
BS EN 60204 - 1	Safety of machinery. Electrical Equipment of Machines. General Requirements
BS EN 60439 - 1	Low Voltage Switchgear And Control Gear Assemblies.

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	Type tested and partially type tested assemblies
BS EN 60529	Specification for Degrees of Protection Provided by Enclosures (IP code)
BS EN 60947-5-1	Specification for low-voltage switchgear and control gear. Control circuit devices and switching elements. Electromechanical control circuit devices.
SI 1992/3073	The Supply of Machinery(Safety) Regulations
SI 1998/2306	The Provision and Use of work Equipment Regulations
SI 1998/2307	The Lifting Operations and Lifting Equipment Regulations

The Railway Group Standards and other references included in the above table are given for guidance purposes, but are not intended to be exhaustive list of all relevant documents.

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1 Purpose

This specification defines the technical requirements for the refurbishment of underfloor wheel lathes used for the reprofiling of wheelsets within maintenance depots.

2 Scope

This specification defines the requirements for the refurbishment, testing and commissioning of underfloor wheel lathes at Network Rail owned Light Maintenance Depots (LMD's) and other Network Rail Maintenance Facilities

3 Definitions

Depth of Cut	The amount by which the radius of a wheel is reduced in a single cutting pass.
Diameter Parity	The maximum permissible variation on diameter between one wheel and another on the same axle when measured at the specified gauging plane
Flange Height	The difference between the radius of the wheel at the tip of the flange, and the radius of the wheel at the tread datum position.
Flange Thickness	The thickness of the flange at a point 13mm above the tread datum position.
Minimum Metal	The least amount of metal which would be required to be taken off the smallest wheel set in order to reprofile that wheel leaving a witness mark of maximum width 10mm.

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PLC	A Programmable Logic Controller, **PLC**, is a small computer used for automation of real-world processes, such as control of machinery. The PLC usually uses a microprocessor. Unlike general-purpose computers, the PLC is packaged and designed for extended temperature ranges, dirty or dusty conditions, immunity to electrical noise, and is mechanically more rugged and resistant to vibration and impact.
Radial Run Out	The variation of position of the considered feature with respect to a fixed point during one complete revolution about the datum axis without axial movement.
Reprofile	To machine a wheel or wheels on a wheelset to restore the wheel rim to its original profile or if so desired, a new profile
Section of Cut	The area of metal being removed at the point of cut (sq. mm.) derived from the depth of cut (mm) x feed rate (mm/rev).
Surface Finish	The specified limit of surface roughness in accordance with BS 1134.
Wheel Rim	The whole of the wheel periphery from and including the chamfer at the outer edge of the wheel up to the point of blending of the flange crown radius with the inside face of the wheel
Wheelset	A complete unit comprising an axle and two complete wheels together with any gear wheels, brake discs, etc, but without axle bearings and their end caps, spacer's seals and other associated fittings.
Wheelset Back to Back Dimension	The dimension between the wheelset flange-back faces, measured parallel to the axle centreline with the wheelset in the free (unloaded) condition.

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Wheel Wobble	The total axial displacement of the wheel tread when the wheelset is rotated, measured at the flange back.
Witness Mark	An area of unmachined material which can remain after reprofiling a previously worn tread to demonstrate that the minimum of material has been removed. *Note; No witness mark will be acceptable if thermal damage is present.*

All other terms used within this document shall have their meaning as described in the relevant Railway Group Standards or other applicable Network Rail document.

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