

WHEELRESTORE

WR-DCM3

User manual



This Manual is published by:

Wheel Restore Company ApS
Hobrovej 963
DK9530 Stoevring
Denmark

Tel: +45 7022 7070
Email: info@wheelrestore.com

Reproduction of the contents of this publication, fully or in part, is forbidden in accordance with copyright laws without prior written permission from Wheel Restore Company ApS.
This applies to any form of reproduction through printing, duplication, photocopying, etc.

© Wheel Restore Company ApS, Denmark, 2024

Content

- 3 – Introduction
- 3-6 – Disclaimer
- 6 – General limitation and preparation for a Wheel repair
- 7 – Power up and initializing
- 8-9 – Wheel Quality – Final product guidance
- 10 – Operating buttons
- 10-11 – Language settings
- 11 – Changing Factory settings
- 12-13 – Profile Manager
- 13 – Changing Screen
- 14 – Manual Mode
- 15-17 – Diagnostic Menu
- 18 – Repair options overview
- 19 – Deburring
- 20-31 – Start a 'New Wheel'
- 32 – Run Last Scanned Wheel
- 33 – Start a 'Saved Wheel'
- 34 – Special Cutting features
- 35-38 – Calibration Tool - Automatic Positioning Function (APF)
- 39 – Maintenance
- 39-40 – Service and Support
- 39-40 – Hardware Configuration
- 41 – Consumables
- 42 – Disposal



1 – Introduction

Dear technician,

We are confident that you will enjoy working with your new WR-DCM3 – Wheel Restore Machine.

Your machine is running with Software version: XXX

We would like to hear about your experiences with the WR-DCM3. A few words concerning the things that have made an impression on you - positive or negative - would be of great help to us in our efforts to improve our products to an even higher standard. If you have any questions or need additional products, we will assist you with further advice.

If you have any other types of questions, we refer to our Service & Support platform at www.support.wheelrestore.com. Use your login provided at initial training.

Thank you.

2 - Disclaimer

Safety

General Safety Notes

CAUTION: This equipment may only be operated by authorized and trained personnel. Always adhere to the Operator's manual, safety decals, safety procedures, and instructions for safe machine operation. Untrained individuals pose a risk to themselves and the machine.

IMPORTANT: Prior to operation, carefully read all warnings, cautions, and instructions.

Due to safety requirements, the machine is restricted to single-user operation.

Before using the WR-DCM3, it is mandatory to complete a thorough training course and study the manual. The machine, when used correctly, enables high-quality alloy wheel repairs.

CAUTION: The sample programs provided in this manual are for illustrative purposes only and have been tested for accuracy. They do not specify tools, offsets, materials, or work holding. When running an unfamiliar program, always follow safe machining practices.

The WR-DCM3 presents hazards related to rotating work, loosely clamped parts, belts and pulleys, high voltage electricity, and noise. Always adhere to basic safety precautions to minimize the risk of personal injury and mechanical damage.

Adequate illumination is necessary in the work area, including the operator's work area and all accessible machine areas during maintenance or cleaning. Ensuring proper illumination is the responsibility of the user.

Wheel Restore ApS does not have control over cutting tools, work holding, and workpieces. Each of these elements carries potential hazards such as sharp edges, heavy lifting considerations, and chemical composition. It is the user's responsibility to take appropriate action, such as using personal protective equipment (PPE) and receiving proper training.

Regular cleaning of the machine is required during normal use and before maintenance or repair. Safe usage of this equipment necessitates training and possibly the use of appropriate PPE, which falls under the user's responsibility.

The operator's manual serves as a reference guide and should not be the sole source of training. Complete operator training is available through authorized Wheel Restore ApS distributors.

Summary of Wheel Restore Equipment Operations

The Wheel Restore WR-DCM3 is designed for cutting and shaping alloy wheels. It is a general-purpose machine, and listing all materials and cutting types would be impossible. All cutting and shaping operations are performed using a rotating part clamped in a chuck, with tools held on a turret.

Wheel Restore equipment operations are categorized into three areas:

- Operations
- Maintenance
- Service

Operations and Maintenance are intended for trained and qualified machine operators. This Operator's Manual provides essential information for operating the machine.

All other machine operations fall under the category of Service, which should only be performed by specially trained service personnel.

Machine Setup

Machine setup involves the initial configuration of tools, offsets, and fixtures required to perform repetitive functions later during machine operation. Some setup functions can be performed with the door open but are limited to "hold to run."

Machine Operating in Automatic Mode

Automatic operation is initiated by pressing Cycle-Start and can only be performed with the doors closed.

Operator Loading and Unloading of Wheels

Loading and unloading of wheels by the operator occur before and after automatic operations. This should be done with the doors open, and all machine automatic motion stops when the door is open.

Operator Loading and Unloading of Cutting Tools

Tool loading and unloading are infrequent and usually necessary when a worn tool needs replacement.

Maintenance tasks consist of:

- Adding lubricants: Regular lubrication of the spindle and axes is required at specified intervals. This is a normal operator function and should always be done from a safe location outside of the work enclosure (removing the covers).
- Cleaning chips out of the machine: Chip cleaning is necessary based on the type of machining performed. This is a regular operator function performed with the doors open and all machine operations halted.

Service tasks include:

- Repairing a malfunctioning machine: Any machine that is not operating correctly requires service from factory-trained personnel. This is not an operator function and is distinct from maintenance. Installation and service instructions are provided separately from the Operator's Manual.
- Machine moving, unpacking, and installation: Wheel Restore machines are shipped almost ready for operation but still require a trained service person to complete the installation. Installation and service instructions are provided separately from the Operator's Manual.
- Machine packing: Proper machine packing for shipment necessitates using the packing materials supplied by Wheel Restore in the original shipment. Packing should be done by a trained service person. Shipping instructions are provided separately from the Operator's Manual.
- Decommissioning, dismantling, and disposal: Disassembly for shipment is not expected. The machine can be moved as a whole, following the same method used for delivery. The machine can be returned to the manufacturer's distributor for disposal. The manufacturer accepts all components for recycling per Directive 2002/96/EC.
- End-of-life disposal: Disposal of the machine at the end of its life cycle must comply with the laws and regulations in the machine's location. The owner and seller of the machine share the responsibility for proper disposal. The risk analysis does not cover this phase.

General Safety Guidelines for Diamond Cut Machine Operations

1. Authorized Personnel: Only authorized and properly trained personnel should operate the Diamond Cut machine. Untrained individuals pose a risk to themselves and the machine.
2. Read and Follow Instructions: Before operating the Diamond Cut machine, thoroughly read and understand all operating instructions, safety procedures, and warnings provided in the machine's manual.
3. Personal Protective Equipment (PPE): Always wear the required PPE, such as safety glasses, ear protection, and appropriate clothing, when operating the Diamond Cut machine. Additional PPE may be necessary based on the specific machine and operation.
4. Machine Setup: Follow proper procedures for machine setup, including securing workpieces, tools, and fixtures. Ensure all components are correctly aligned and tightened before starting the machine.
5. Machine Environment: Keep the work area clean, well-lit, and free from clutter. Ensure there is adequate space around the machine for safe operation and maintenance.
6. Emergency Stop: Familiarize yourself with the location and operation of the emergency stop button. Be prepared to immediately stop the machine in case of an emergency or unsafe situation.
7. Tool Inspection: Before using any cutting tools, carefully inspect them for damage, wear, or defects. Replace worn or damaged tools promptly to ensure safe and efficient operation.
8. Safe Machining Practices: Always follow safe machining practices, such as appropriate cutting speeds, feeds, and depth of cuts. Avoid excessive force or overloading the machine.
9. Chip Management: Regularly remove chips and debris from the work area to maintain a clear workspace. Use appropriate tools or equipment to safely remove chips without risking injury.
10. Lockout/Tagout: When performing maintenance or repairs on the Diamond Cut machine, follow lockout/tagout procedures to ensure the machine is properly isolated from power sources. Never perform maintenance or repairs on an energized machine.
11. Fire Safety: Keep fire extinguishers readily accessible in the vicinity of the Diamond Cut machine. Follow proper fire prevention measures, such as avoiding the use of flammable materials near the machine and regularly inspecting electrical connections for any signs of damage or overheating.
12. Training and Communication: Ensure that all operators receive comprehensive training on the safe operation of the Diamond Cut machine. Establish clear communication channels for reporting safety concerns, near-misses, or incidents related to the machine.
13. Regular Maintenance: Adhere to the manufacturer's recommended maintenance schedule to keep the Diamond Cut machine in optimal working condition. Promptly address any issues or malfunctions to prevent safety hazards.
14. Reporting Safety Concerns: If you identify any safety hazards or concerns related to the Diamond Cut machine, report them immediately to the appropriate personnel or supervisor. Do not operate the machine if there are unresolved safety issues.

WheelRestore Disclaimer for Equipment Use

Authorized Use: The equipment provided by WheelRestore is intended for authorized use by trained personnel only. Use of the equipment by untrained individuals may result in personal injury, property damage, or other risks. Users must ensure that only authorized individuals operate the equipment.

Compliance with Instructions: Users of the equipment are required to read and follow all provided instructions, operating manuals, safety guidelines, and warnings associated with the equipment. Failure to comply with these instructions may lead to accidents, injuries, or equipment malfunctions. Users should seek clarification or additional training if any aspect of the instructions is unclear.

Assumption of Risk: The use of the equipment carries inherent risks and hazards. Users assume all risks associated with the operation, maintenance, or handling of the equipment. WheelRestore shall not be held liable for any accidents, injuries, damages, or losses resulting from the use or misuse of the equipment. Users are responsible for their own safety and the safety of others while using the equipment.

Maintenance and Inspection: Users are responsible for ensuring that the equipment is properly maintained and regularly inspected for any signs of damage or wear. Any equipment defects or malfunctions must be reported to WheelRestore immediately. Users should follow the recommended maintenance schedule provided by WheelRestore to ensure the equipment's optimal performance and safety.

Safety Precautions: Users must observe all necessary safety precautions when operating the equipment. This includes wearing appropriate personal protective equipment (PPE), using equipment guards and safety devices, and following established safety procedures. Users should receive proper training on safety protocols and adhere to them at all times.

Prohibited Use: Users must not use the equipment for purposes other than its intended use, as specified by WheelRestore. Unauthorized modifications, alterations, or misuse of the equipment are strictly prohibited. Users should use the equipment within its specified limitations and not exceed recommended capacities or operating parameters.

Limitation of Liability: WheelRestore shall not be liable for any direct, indirect, incidental, special, or consequential damages arising from the use or inability to use the equipment, including but not limited to, damages for loss of profits, business interruption, or personal injury. Users understand and acknowledge that the use of the equipment is at their own risk.

Indemnification: Users agree to indemnify and hold harmless WheelRestore and its affiliates, officers, employees, and agents from any claims, damages, liabilities, costs, or expenses arising from the use of the equipment, including any third-party claims. This includes legal fees incurred in defending against such claims.

Product Warranty: Any warranties or guarantees provided by WheelRestore for the equipment are subject to the terms and conditions specified in the applicable warranty documentation. Please refer to the warranty documentation for details regarding warranty coverage, exclusions, and claim procedures. Users should review and understand the warranty terms before using the equipment.

Governing Law: This disclaimer shall be governed by and construed in accordance with the laws of Denmark. Any disputes arising out of or in connection with this disclaimer shall be subject to the exclusive jurisdiction of the courts of Denmark.

Third-Party Equipment and Services: WheelRestore may provide or recommend third-party equipment or services in conjunction with the use of its equipment. The use of such third-party equipment or services is subject to the terms and conditions provided by the respective third parties. WheelRestore does not assume any liability for the performance, safety, or suitability of third-party equipment or services.

User Responsibility: Users are responsible for conducting a thorough risk assessment of their specific application and environment when using the equipment. WheelRestore does not guarantee that the equipment is suitable for every user's specific needs, and users should exercise caution and judgment in determining its appropriateness for their intended purposes.

Modification and Termination: WheelRestore reserves the right to modify or terminate this disclaimer at any time without prior notice. Users are encouraged to review the disclaimer periodically for any updates or changes.

By using the equipment provided by WheelRestore, users acknowledge that they have read, understood, and agreed to comply with this disclaimer and any accompanying terms and conditions. It is the responsibility of users to ensure their understanding and adherence to all safety precautions and guidelines associated with the equipment.

Product Liability Disclaimer

Proper Use and Maintenance: a. Users are responsible for using the product in accordance with the provided instructions, manuals, and guidelines. b. Regular maintenance, inspection, and servicing of the product are necessary to ensure its continued safe and effective operation. c. Failure to follow proper use and maintenance procedures may result in personal injury, property damage, or other adverse consequences for which WheelRestore cannot be held liable.

Assumption of Risk: a. Use of the product involves inherent risks, and users assume full responsibility for these risks. b. Users acknowledge that WheelRestore cannot control or predict all potential circumstances or conditions under which the product may be used, and therefore, users accept any associated risks.

Product Suitability: a. It is the responsibility of users to determine the suitability of the product for their specific needs, requirements, and intended applications. b. WheelRestore provides product information, specifications, and recommendations to the best of its knowledge and abilities, but it does not guarantee the product's suitability for any particular purpose.

Third-Party Components or Modifications: a. WheelRestore may incorporate third-party components or parts into its products. The performance, reliability, or safety of these components is subject to the respective manufacturer's specifications and warranties. b. Any modifications or alterations made to the product by the user or any third party without explicit authorization from WheelRestore may void warranties and release WheelRestore from liability.

Limitation of Liability: a. To the maximum extent permitted by applicable law, WheelRestore shall not be liable for any direct, indirect, incidental, consequential, or special damages arising from the use, misuse, or inability to use the product, including

but not limited to personal injury, property damage, loss of profits, or interruption of business operations. b. The total liability of WheelRestore for any claim related to the product shall not exceed the purchase price paid by the user for the product.

Indemnification: a. Users agree to indemnify, defend, and hold harmless WheelRestore, its employees, agents, and affiliates from any claims, demands, damages, liabilities, and expenses, including reasonable attorney fees, arising out of or in connection with the use or misuse of the product.

Product Modifications and Discontinuation: a. WheelRestore reserves the right to modify, improve, or discontinue its products without prior notice, and shall not be obligated to provide retrofitting or updates to previously sold products.

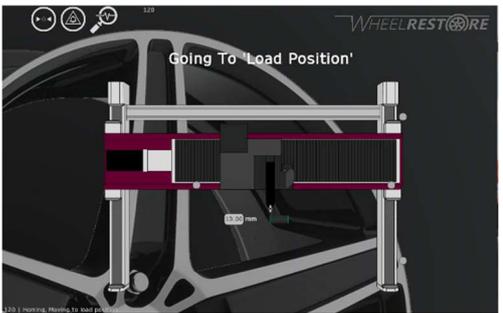
Applicable Laws and Jurisdiction: a. This disclaimer shall be governed by and construed in accordance with the laws of the jurisdiction in which WheelRestore operates. b. Any disputes arising from or in connection with this disclaimer shall be subject to the exclusive jurisdiction of the courts in the aforementioned jurisdiction.

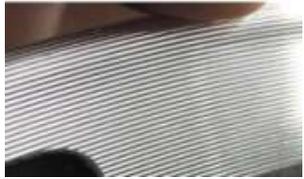
By using the product, users acknowledge that they have read, understood, and agreed to comply with this product liability disclaimer. Users should consult legal or professional advice if they have any concerns or questions regarding their rights, responsibilities, or obligations related to the use of the product.

3 – General limitation and preparation for a Wheel repair This machine is limited to make repairs of cosmetic damaged alloy wheels, with a maximum diameter of 800mm - 31 inch, tyre included. The profile measurement height is limited to a variation of 110mm Clean the Wheel using an acid free Wheel cleaner and make sure all brake dust is removed from the inside and outside of the wheel Check the wheel for cracks and dents. If the wheel has a dent, split or tear it needs to be repaired prior to the Diamond Cut repair Remove the tire from the Wheel using a tire machine or break the bead of the tire in case you run the machine with the tire on. Take off all balancing weights and center cap from the Wheel and make sure all adhesive is removed Check if the painted part (inner colored part) of the Wheel has damages. If so, this needs to be repaired prior to the Diamond Cut repair. You can use one of our HBC Wheel repair systems Prepare the painted part of the Wheel by using Scotch-Brite (grey) or blast the Wheel in our Wheel Blasting cabinet to matt the Wheel, making it ready for the clearcoat once the Diamond Cut repair is completed Remove all dust and dirt from the wheel by using HBC E3 Wheel cleaner (part no. 755) and dry it using a clean cloth

4 – Power up and initializing

<p>4.0</p>		<p>Once you switch on the machine this login screen appears. Enter your username and password and press “continue”.</p> <p>Once unlocked the lock icon turns green</p>
<p>4.1</p>		<p>When switching power on, and after certain alarm conditions, the machine will perform a homing routine for the axes. Tap the window to start, machine will then perform steps described in step 4.2 – 4.5</p>
<p>4.2</p>		<p>Initializing servo axes.</p>
<p>4.3</p>		<p>Initializing Z axis Homing Up/down movement.</p>

<p>4.4</p>	 <p>119 Homing X Axis</p>	<p>Initializing X axis Homing Left/Right movement.</p>
<p>4.5</p>	 <p>120 Going To 'Load Position'</p>	<p>Initializing axes finished Machine moves to load position.</p>

Glossiness		
Glossiness depends on the quality of the alloy, type of Wheel and the cutting tip used for the actual task.		
High Gloss		Setting guide. Feed Rate: 0,1 mm/rev Inner Speed: 200 RPM Outer Speed: 200 RPM Cutting tip WM808(02)
Matt/Rough		Setting guide. Feed Rate: 0,4 mm/rev Inner Speed: 600 RPM Outer Speed: 550 RPM Cutting tip WM801(04)

A cutting tip has a preferable cutting speed for the best performance. Therefore, by having a Higher Inner speed than Outer speed, the cutting result meets the best performance of the tool tips.

We recommend usage of these settings.

Note! The machine has an upper limit of 800 [Rpm]

Tool selection:

Selecting a proper tool for a certain task is crucial and necessary for the result.

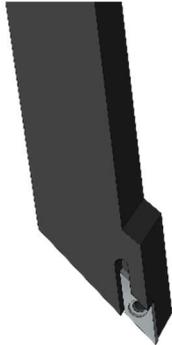
Tool selection guide

Center tool holder is used mostly for relatively flat profiles without high lips or steep curves

Left tool holder is used for more complex wheel profiles with outer lip

Right tool holder is used for more complex wheel with profiles where the center is deeper than the outside, so called concaved wheels

Make sure that the tool holder never touches the profile of the wheel while the machine is operating.

Toolholder for diamond cutting tips Middle	Toolholder for diamond cutting tips Left	Toolholder for diamond cutting tips Right
Most common	Complex wheels	Complex wheels
		
		

Profile measurement

Maximum measuring depth is 110mm. The reach of the laser is 110mm.
We recommend placing the sensor in the middle of the sensing area +/- 55mm

Operation area: "Power" LED must be green, to be in valid range



Use laser tape Item no. WM806

Clean the laser regularly with a soft lint free cloth

Protection cap usage:

During the cutting process, the protection cap should be mounted underneath the laser.
Operator confirms this before cutting sequence starts.

6 – Operating buttons

	<p>Besides the display, there is a set of buttons below the display. Display refers to these buttons, when prompted on the window.</p>
	<p>Emergency stop</p> <p>When pressed the machine stops immediately. All motors release all energy (free run) Safety door is not released before spindle motor stops rotating.</p>
	<p>Reset</p> <p>Constant light safety function activated Blinking waiting for operator, press the button to reset.</p>
	<p>Selector switch</p> <p>Selector switch position depends on which mode machine is operating in. Display prompts which position to be selected. Switching during operation results in a safety fault and can damage the wheel</p>
	<p>Joystick</p> <p>Joystick moves X and Z axis, up/down – left/right</p>

7 - Language settings

<p>7.1</p>		<p>On the main screen select the button to go to the tools menu</p>
<p>7.2</p>		<p>Select “Languages”</p>

<p>7.3</p>		<p>Select the flag of the required language. Press Exit to confirm</p>
<p>7.4</p>		<p>Press "Exit Setup" to exit the Tools menu. This takes you back to the main menu.</p>

8 - Changing Factory settings

<p>8.1</p>		<p>On the main screen select the  button to go to the tools menu</p>
<p>8.2</p>		<p>Select the  button</p>
<p>8.3</p>		<p>Enter the security code provided by Wheel Restore and press "Enter"</p>

<p>8.4</p>		<p>The factory settings are now unlocked and can be changed accordingly. Please note this can ONLY be done after commissioning Wheel Restore.</p>
<p>8.5</p>		<p>At the bottom of the menu the following changes can be made: QR code on/off Light ON time in minutes Change back to Default settings Select "Exit Setup" to go back to the Main Menu</p>

9 - Profile Manager

<p>9.1</p>		<p>On the main screen select the button to go to the tools menu</p>
<p>9.2</p>		<p>Select "Profile Manager"</p>
<p>9.3</p>		<p>Select the profile which you like to edit. You can use the and to scroll up or down the profile menu. Select "Delete" to remove the profile from the list. Please note this is permanent and can not be reversed.</p>

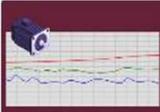
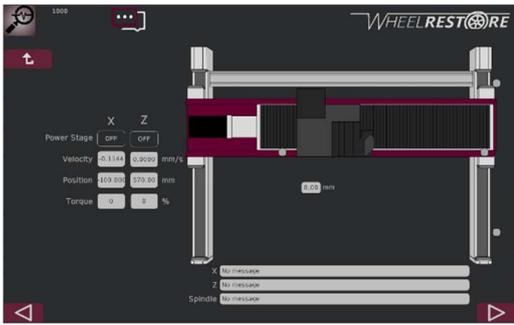
<p>9.4</p>		<p>To edit the profile name select the profile, select the text bar, enter the new name and confirm by pressing “Enter”.</p>
<p>9.5</p>		<p>Select “Rename” to confirm the new name. Select “Exit” to go to the Tools Menu.</p>

10 - Changing Screen Colours

<p>10.1</p>		<p>On the main screen select the  button to go to the tools menu</p>
<p>10.2</p>		<p>You can change the colours of the icons and screen by Selecting “Change Colour Theme”. Each time you Select the icon the colours will change. Once the colours are selected Select “Exit Setup” to go to the main menu.</p>

<p>11.1</p>		<p>On the main screen select the  button to go to the tools menu</p>
<p>11.2</p>		<p>Select "Manual Mode"</p>
<p>11.3</p>		<p>To manually move the X and Z Axis move the selector to "Joystick" </p> <p>Enable the X and/or Z Axis by Selecting  Press the foot pedal and move the joystick in the direction required.</p> <p>To check the spindle put the Selector in "SLS" </p> <p>Enable the spindle by Selecting  and press the foot pedal.</p> <p>Select "Exit Mode" to go to the Tools Menu</p>
<p>11.4</p>		<p>Select "Exit Setup" to go to the main menu.</p>

<p>12.1</p>		<p>On the main screen select the button to go to the Diagnostic menu</p>
<p>12.2</p>		<p>This screen shows the following details: SN; Serial Number of the machine Software Version of PLC and HMI</p> <p> Internet connection detection: Green; connected to internet Grey; not connected to internet</p> <p> Test position of the Joystick The arrow of the direction will turn green when the joystick is moved in that direction. When the arrow doesn't turn green the joystick is faulty.</p> <p> Test position of the Selector Switch The color of the position is turning green to the selectors' position. When the function doesn't turn green the selector is faulty.</p> <p> Test position of the "Reset" button The reset sign will turn green when the "Reset" button is pushed in. When the doesn't turn green the reset button is faulty.</p> <p> Test function emergency stop; when pressing the emergency stop the sign turns green. When the sign doesn't turn green the emergency stop is faulty.</p> <p>Select to open the factory settings, see 12.3</p> <p>Select to open the axis menu, see 12.4</p> <p>Select to open the hour counter, see 12.5</p>

		<p>Select  to open the torgue data, see 12.6</p> <p>Select  to open the alarm log, see 12.7</p> <p>Select  to open the last repaired wheel details, see 12.8</p> <p>Select  to open the last scanned wheel profile, see 12.9</p> <p>Select  to open the safety circuit, see 12.10</p> <p>Select  to open the language selections, see 12.11</p> <p>Select  to open the dialog bar, see 12.12</p>
<p>12.3</p>		<p>Factory settings are pre-set. We recommend not to change the settings.</p>
<p>12.4</p>		<p>This window shows the following details: Power stage X and/or Z Axis on/off Velocity X and/or Z Axis in mm/s Position X and/or Z Axis in mm Torque X and/or Z Axis in % Limit switches active/not active; once activated the sensor turns red. Once this happens the axis must be moved out of reach of the sensor as explained in §11.</p>

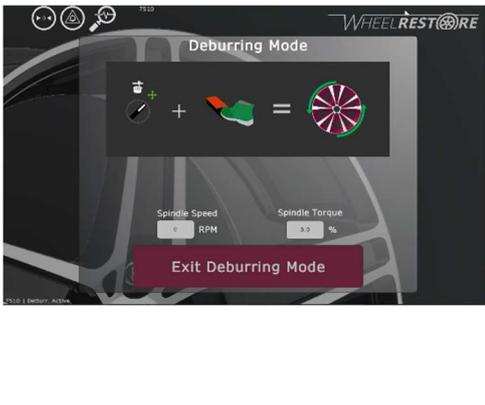
<p>12.5</p>		<p>Hour counter shows the running hours of the machine, defined in the different options</p>																												
<p>12.6</p>		<p>Torque of the X and/or Z Axis This window shows the torque of the X axis, Z axis and Spindle in % X Axis 0 % Z Axis 0 % Spindle 0 % When clicking on the diagram you can go back in time by selecting “-“ Change to the next window by selecting Go to the previous window by selecting </p>																												
<p>12.7</p>		<p>Alarm log showing the details of the alarm history: Time and date the alarm occurred. Alarm message Alarm status Severity of the alarm</p>																												
<p>12.8</p>	<table border="1" data-bbox="491 1272 746 1525"> <thead> <tr> <th>Wheel</th> <th>Small Wheel</th> </tr> </thead> <tbody> <tr><td>Spindle Inner Speed</td><td>400RPM</td></tr> <tr><td>Spindle Outer Speed</td><td>300RPM</td></tr> <tr><td>Feed rate</td><td>0.30mm/rev</td></tr> <tr><td>Inner Mode</td><td>End up</td></tr> <tr><td>Outer Mode</td><td>End up</td></tr> <tr><td>End radius</td><td>1.0mm</td></tr> <tr><td>Tool Change</td><td>Center Cutting Tool</td></tr> <tr><td>Total Depth Movement</td><td>0.00mm</td></tr> <tr><td>Material Removed</td><td>0.00mm</td></tr> <tr><td>Set New Cut Depth</td><td>0.10mm</td></tr> <tr><td>X Axis offset</td><td>0.0mm</td></tr> <tr><td>Peak Detected</td><td>0</td></tr> <tr><td>Slope Detected</td><td>0</td></tr> </tbody> </table>	Wheel	Small Wheel	Spindle Inner Speed	400RPM	Spindle Outer Speed	300RPM	Feed rate	0.30mm/rev	Inner Mode	End up	Outer Mode	End up	End radius	1.0mm	Tool Change	Center Cutting Tool	Total Depth Movement	0.00mm	Material Removed	0.00mm	Set New Cut Depth	0.10mm	X Axis offset	0.0mm	Peak Detected	0	Slope Detected	0	<p>This window shows the following details: QR Code from last produced wheel Settings used on the last repaired wheel</p>
Wheel	Small Wheel																													
Spindle Inner Speed	400RPM																													
Spindle Outer Speed	300RPM																													
Feed rate	0.30mm/rev																													
Inner Mode	End up																													
Outer Mode	End up																													
End radius	1.0mm																													
Tool Change	Center Cutting Tool																													
Total Depth Movement	0.00mm																													
Material Removed	0.00mm																													
Set New Cut Depth	0.10mm																													
X Axis offset	0.0mm																													
Peak Detected	0																													
Slope Detected	0																													
<p>12.9</p>		<p>This window shows the last scanned wheel profile. You can zoom by clicking the magnifier</p>																												

<p>12.10</p>		<p>This window shows you all the safety related functions; emergency stop, door lock, foot pedal, error codes and drives. The software versions of the PLC and HMI are mentioned as well as the serial number of the machine.</p>
<p>12.11</p>		<p>This window allows you to select the required language. Select the flag of your choice and press to go back to the main screen</p>
<p>12.12</p>		<p>Select to open the Remote Dialog bar. A keyboard will open. Type in your message and press "Enter". Your message will appear in the Remote Dialog bar in each window. To close the Dialog function, select </p>
<p>12.13</p>		<p>To close the Diagnostic Menu select </p>

13 – Repair options overview

<p>13.0</p>		<p>Once machine is initialized, this window will appear, also referred to as Main Window. The lock is closed meaning you need to login with your personal credentials. Enter your username and password, then press login and continue. You can now use the machine.</p>
<p>13.1</p>		<p>The machine is ready for repairing Wheels. If the machine is not used for some time (can be changed in the setup) the light switches off automatically. Once you touch one of the "buttons" on the screen or press the blue reset button the light switches on again.</p> <p>There are four selections available. These are described in step 13.2 – 13.5 below.</p>
<p>13.2</p>		<p>At the Main Window select "Start Deburring Mode" if you have a Wheel where the edges need to be processed, using e.g. a grinder or file.</p>

<p>13.3</p>		<p>At the Main Window Select “Start a ‘New Wheel” if you have a Wheel which never been probed before.</p>
<p>13.4</p>		<p>At the Main Window select “Run Last Scanned Wheel” if you have e.g. four equal Wheels, and the first Wheel have been processed.</p>
<p>13.5</p>		<p>At the Main Window select “Start a ‘Saved Wheel” if you want to repair a wheel which has been saved.</p>

<p>14.1</p>		<p>At the Main Window select "Start Deburring mode"</p> <p>Deburring mode allows the operator to spin the wheel in a safe limited speed with the door open, allowing him to grind the edges using a grinder or file*.</p> <p>*The use of safety glasses and gloves are mandatory</p>
		<p>Read the disclaimer and select "Accept disclaimer"</p>
<p>14.2</p>		<p>If Selector is not in position "SLS" a window is shown, until selector is set to "SLS". Otherwise continue to step 14.3</p>
<p>14.3</p>		<p>Press the foot pedal and the wheel starts spinning. Carefully hold the grinder or file against the edge of the Wheel and move it across the edge making sure you touch the edges evenly removing the deepest damages. When releasing the foot pedal the wheel stops spinning allowing the operator to check the Wheel on remaining damages. Repeat the process until a satisfying result is achieved.</p> <p>NOTE! Only press the foot pedal again once the wheel has stopped spinning. Failing to do so will cause an error.</p> <p>Select "Exit Deburring Mode" to go to step 14.1</p>

<p>15.1</p>		<p>At the Main Window select "Start a 'New Wheel'" to go to step 15.2</p>
<p>15.2</p>		<p>Disclaimer terms; read and accept. Select "Accept Disclaimer" to go to step 15.3 Select "Abort" to go to step 10.1</p>
<p>15.3</p>		<p>Operator to check the center cap is removed and the wheel is fastened correctly. Select "Confirm Wheel Fixed and Center Cap removed" to go to step 10.4 Select "Abort" to go to step 15.1</p>
<p>15.4</p>		<p>If the Selector is not in position "SLS" a window is shown, until selector is set to "SLS". Once the selector is set to "SLS" window 15.5 opens automatically</p>
<p>15.5</p>		<p>Spin Test window. For testing the Wheel is straight and not crooked. Select "Small Wheel" for < 18 inch Select "Large Wheel" for > 18 inch Select "With Tyre" if repairing Wheels with tyre mounted. Close the door, press the "reset" button and press the Foot pedal. Once at full speed, make a visual check on the Wheel. If the wheel is crooked or bent, try to release the Wheel from the chuck, turn it approximately 5 cm and fix it again using the T-tool. Repeat until the Wheel is spinning properly. If the Wheel cannot be fixed in a proper way straighten it using a Wheel straightener or skip the Wheel. Select "Continue to Probing" Go to step 15.6 Select "Abort" Go to step 15.1</p>

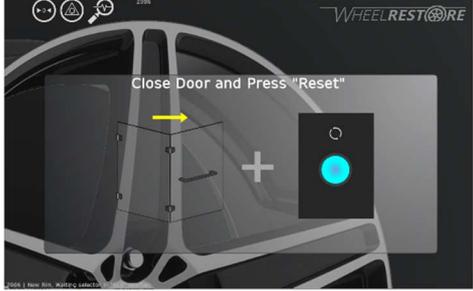
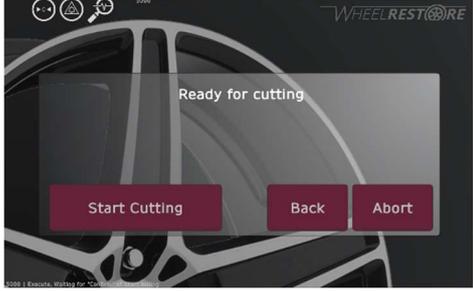
<p>15.6</p>		<p>If Selector is not in position "Joystick" a window is shown, until selector is set to "Joystick". Otherwise continue to step 15.7.</p>
<p>15.7</p>		<p>Apply the laser tape on the surface which needs to be probed. Let the laser tape stick out approximately 1 cm from the inside and outside of the Wheel. Make sure there are no air bubbles or dirt under the tape!</p> <p>Press Foot pedal until it turns green and move the laser with joystick to the white tape until the red light (power) is turning green.</p> <p>Select for slow or for fast movement. Laser distance indicated on the screen must be approx. 55 mm. Make sure the cutting tool does not touch the Wheel anywhere while probing. Reach of the laser is ~110mm, therefore consider the profile height, and make sure to place the laser within this area covering the entire profile height.</p> <p>NOTE! When probing a "concaved" Wheel where the difference in height between highest and deepest part of the Wheel exceeds 60 mm, make sure the laser height is adjusted correctly allowing the laser to probe the entire profile.</p> <p>Move Laser to start position of probing and select "Confirm Start Position". Note Start position is always the most inner part (center) of the diamond cut effect.</p> <p>Select "Confirm Start Position" to go to step 15.8 Select "Back" to go to step 15.4 Select "Abort" to go to step 15.1 Select "i" Go to step 15.7a</p>
<p>15.7a</p>		<p>Instructions how to operate within certain conditions. Select "Exit" to go to step 15.7</p>

<p>15.8</p>		<p>Probing warning Movement of the laser is only allowed from left to right.</p> <p>Select  to turn the light on/off for better visual on the laser light.</p> <p>Select  for more detailed information in a new window. Press Exit to go back to the probe window.</p>
<p>15.9</p>		<p>Graphic curve, while operator probing the Wheel surface from left to Right.</p> <p>Make sure the laser dot is always on the laser tape! Once you have reached the end point (most outer point) of probing select "Confirm profile".</p> <p>If you notice the blue line is not according to the profile of the Wheel and shows high or low peeks while or after probing, then restart the probing process at step 15.7 These peeks can be caused by direct sunlight, dirt or airbubbles under the tape, non-approved tape or not probing over the laser tape.</p> <p>Select "Confirm Probing Finished" to go to step 15.10 Select "Back" to go to step 15.7 Select "Abort" Go to step 15.1</p>
<p>15.10</p>		<p>Once Probing confirmed, system checks for slopes and peaks on the profile. If peak or slope detected this window will appear. A vertical fine blue line will indicate the location of the peak/slope.</p> <p>Select  to zoom.</p> <p>Settings for peak and slope is default 0,2 and 1,5. This can be changed in technical settings</p> <p>Select "Ignore Warning" if peak or slope is acceptable to go to step 15.11, if not select "Back" to do a new probing.</p> <p>Select "Back" to go to step 15.7 Select "Abort" to go to step 15.1</p>

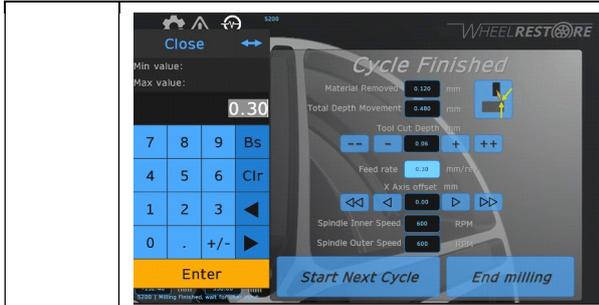
<p>15.11</p>		<p>Zoom Profile /Filtering options. The profile shows 2 line colors; red line is the probe line, green line is the (corrected) cutting line.</p> <p>Select  to zoom. Complex Wheels may require advanced filtering.</p> <p>Select  to open the filtering options. Default filtering is Filter 1. This covers ~85-90% of all Wheels.</p> <p>Filtering in the program will change/adjust the irregularities and curves in the scanned profile. The higher the filter values, the more the scanned profile will be “flattened out”.</p> <p>The filtering can be changed by selecting “Filter 1,2 or 3” where filter 1 stands for default and Filter 3 stands for fine filtering, used for curvy profiles such as concaved wheels. You can change the filtering by tapping the Filter button several times. The result of the filtering will be shown in the diagram. ”Reset” will delete all filters, but you must ALWAYS select a filter. Select ”Settings” to go to the filter settings profile.</p> <p>Select “Confirm Profile” if the profile is according to the requirements.</p> <p>Select “Back” to go to step 15.7 Select “Abort” to go to step 15.1</p>
<p>15.12</p>		<p>Enter the parameters for the first cycle: Note! At first cycle there is no cutting depth entered. This is to ensure profile running as required.</p> <p>Spindle inner speed: 600 RPM Spindle outer speed: 600 RPM Feed rate: 0,4 mm/rev.</p> <p>NOTE! When repairing a Wheel with the tyre we recommend to lower the Spindle speed (inner & outer) to 500 RPM to avoid vibrations.</p> <p>Spindle speed and Feed rate can be set by Selecting the values, enter the values as requested and press “Enter” to confirm. Edge Cut Mode is a selection tool for how to move the cutting tool away from the Wheel. Default the machine will move cutting tool vertical up both at the outer and inner position. Go to section 13.3 for detailed explanation</p> <p>Select "Apply Parameters" to go to step 15.13</p>

		<p>Select "Back" to go to step 15.10 Select "Abort" to go to step 15.1</p>
<p>15.13</p>		<p>Window operator to select tool and cutting direction.</p> <p>Select  when starting outside, cutting inwards.</p> <p>Select  when starting inside, cutting outwards.</p> <p>Select  when starting outside, cutting inside and outwards.</p> <p>Select  when starting inside, cutting outwards and inwards.</p> <p>Select  when using the "right" Tool Holder</p> <p>Select  when using the "center" Tool Holder</p> <p>Select  when using the "left" Tool Holder</p> <p>NOTE! When cutting a 'concaved' wheel where the difference between the highest and deepest point is >50mm (>2") make sure the tool holder sticks out far enough from the turret making sure the axis doesn't touch the wheel during the entire cutting process!</p> <p>Once selected a green "V" confirms the selection. Select "View profile" to go to step 15.14</p> <p>Select "Confirm Selections" to go to step 15.14 Select "Back" to go to step 15.7 Select "Abort" to go to step 15.1</p>

<p>15.14</p>		<p>View Profile shows 2 lines: Green line is the profile measured by the laser. Red line shows the profile as it will be cut</p> <p>Check the 2 lines and make sure there are no high or low peaks between the 2 lines. You can enlarge or minimize the size by touching the window with 2 fingers or pressing the + or -. You can move the profile by sliding it with your fingers or Selecting the arrows.</p> <p>Select "Change View" Switch probed curve and cutting curve between, on top of each other and shifted view. Select "Back" to go to step 15.13</p>
<p>15.15</p>		<p>Set selector to "Normal"</p>
<p>15.16</p>		<p>Close the door and press the "Reset" button. The cutting tool will now move to the starting position in the X direction (horizontal movement).</p>
<p>15.17</p>		<p>Set selector to "Joystick"</p>
<p>15.18</p>		<p>Window operator to move tool to the starting point of the Wheel. The starting point is where the cutter needs to start, depending on the cutting direction as selected in 15.13</p> <p>Press the foot pedal and move the cutting tip to the starting position.</p> <p>If the machine has the Automatic Positioning Function (APF) installed (optional) the cutting tool only needs to be moved in Z direction (downwards) as close to the Wheel as possible. Spin the wheel slowly by hand, to make sure the cutter is NOT touching the Wheel anywhere. If it touches move the cutter up. Select "Confirm Start Position".</p>

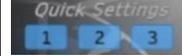
		 for slow or  for fast movement. Select "Confirm Start Position" to go to step 15.19 "Back" Go to step 15.11 "Abort" Go to step 15.1
<p>15.19</p>		<p>Set selector to "Normal"</p>
<p>15.20</p>		<p>Sensor Cover Mounted? Select "Confirm Cover Mounted" Go to step 15.21 Select "Abort" to go to step 15.1</p>
<p>15.21</p>		<p>Remove the tape from the Wheel. Close the door and press the "Reset" button. If the door isn't closed, a window is shown, until door is closed and the "reset" button is pressed. Continue to step 15.22</p>
<p>15.22</p>		<p>Window Ready for cutting? You are now ready to cut the Wheel. Select "Start Cutting" to go to step 15.23 Select "Back" to go to step 15.13 Select "Abort" to go to step 15.1</p>
<p>15.23</p>		<p>Window Initializing Motion System. In case of any irregularities select "Abort Cutting" to go to step 15.43</p>

<p>15.24</p>		<p>Window Starting Spindle while starting the spindle.</p> <p>In case of any irregularities select "Abort Cutting" to go to step 15.43</p>
<p>15.25</p>		<p>Window Cutting while cutting is in progress.</p> <p>The first pass is a shadow cut to check the profile and cutting path match up meaning no material will be removed. In case (too much) material is being removed the operator decides whether to continue or to abort the process. Depending on the location of the removed material of the Wheel the X-axis Offset can be adjusted as described in 15.28</p> <p>In case of any irregularities select "Abort Cutting" to go to step 15.43</p>
<p>15.26</p>		<p>Window Retracting tool when cycle is finished, cutting the tool will be retracted.</p> <p>In case of any irregularities select "Abort Cutting" to go to step 15.43</p>
<p>15.27</p>		<p>Window Stopping Spindle when the 1st cycle is finished.</p>
<p>15.28</p>		<p>Window Cycle Finished.</p> <p>After each cycle, parameters can be adjusted until the required finish has been achieved.</p> <p>Operator must change the parameters: Tool cut depth: min. 0,01 mm - max. 0,30 mm "+" Adds depth with 0,01mm "++" Adds depth with 0,05mm "-“ Reduces depth with 0,01mm "--“ Reduces depth with 0,05mm</p> <p>Feed rate depending on the required finish between: 0,01 mm/rev until 0,6 mm/rev Touch the values icon, change it according to your wishes and press "Enter".</p> <p>Spindle inner speed depending on the required finish: min. 100 RPM - max. 800 RPM</p>

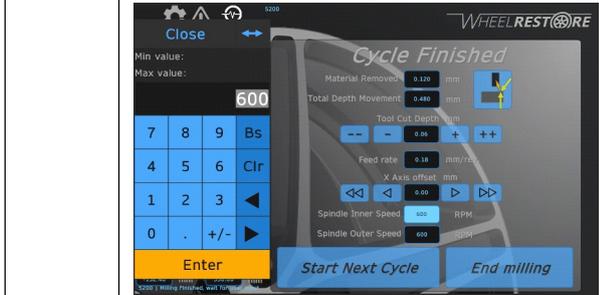


Spindle outer speed depending on the required finish:
min. 100 RPM - max. 800 RPM
Touch the values icon, change it according to your wishes and press "Enter".

Quick settings are available in 3 different settings.



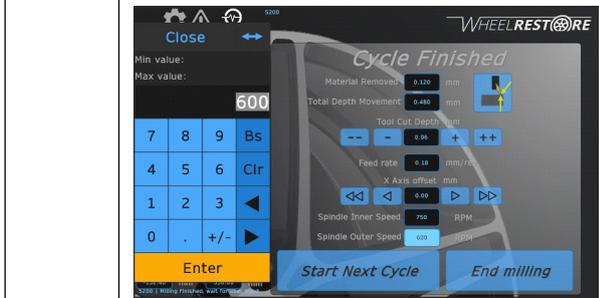
Select Coarse (1), Medium (2), and Fine finish (3)



Default Quick settings:

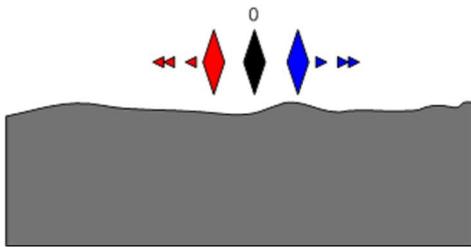
	No. 1:	No. 2:	No. 3:
Feed rate:	0,4 mm/rev.	0,3 mm/rev.	0,1 mm/rev.
Spindle inner speed:	600 RPM	400 RPM	200 RPM
Spindle outer speed:	600 RPM	400 RPM	200 RPM
Tool cut depth:	0,12 mm	0,1 mm	0,07 mm

Default Quick Settings can be changed in the tools menu

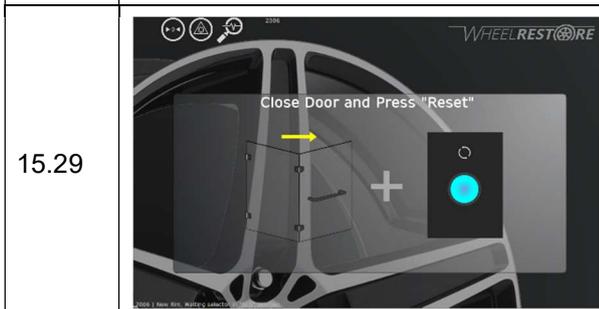


X axis offset is used for compensation, if the start position for Laser and Cutting tool differs. As illustration indicates, it is the tool tip that moves in X direction.

- moves the starting point with 0,2mm to the left
- moves the starting point with 0,1mm to the left
- moves the starting point with 0,2mm to the right
- moves the starting point with 0,1mm to the right



Once the required finish has been achieved.
Select "Start Next Cycle" to go to step 15.24
Select "End cutting" to go to step 15.26



15.29

If the door isn't closed, a window is shown, until door is closed and the "reset" button is pressed.

Continue to step 15.30



15.30

Initializing motion system. Cutting tool moves to the starting position.

If any irregularities select "Abort Cutting" to go to step 15.43

<p>15.31</p>	 	<p>Cutting tool starts at the starting point and moves over the profile. If the material removed is not done evenly the X-Offset must be adjusted as mentioned in 15.28</p> <p>To keep track of removed material, select when Cutting tip starts to remove material from the entire surface. This also activates the Repeat function.</p> <p>Repeat Function (Extended Quick cycle function) The repeat function can only be activated once</p> <p>Profile/material button is selected.</p> <p>Window repeat function</p> <p>By tapping you determine how many passes you want to run without stopping. Maximum repeat times is 3. The cutting depth is limited to 0,1mm per pass.</p> <p>If any irregularities select "Abort Cutting" to go to step 15.43</p>
<p>15.32</p>		<p>After each pass "Start Quick Cycle" is selected when you already know the next cut will be the same as the one just finished using the same settings. This will save time in the cutting proces.</p> <p>If not using "Start Quick Cycle" the screen automatically goes to step 15.33</p>
<p>15.33</p>		<p>If the finish needs to be adjusted enter the required parameters and select "Start New Cycle". Once the finish is according to the required wishes select "End Cutting". Go to step 15.34</p> <p>Window Cycle Finished showing the material removed</p> <p>This value will also be shown on the QR code.</p> <p>We recommend not to remove more than 1,2mm in total due to OEM restrictions.</p>

<p>15.34</p>		<p>Window “Confirm QR Code Scanned” Open the Wheel Restore App on your SMART phone, scan the QR code and fill out the details as shown in the App. Once done select “Confirm QR Code Scanned”</p>
<p>15.35</p>		<p>Window “Go to Load Position” Selecting “Yes” makes the Tool holder move to the Load Position allowing you to take the Wheel out and go to 15.35a Selecting “No” leaves the Tool holder on the same position. Go to 10.36</p>
<p>15.35a</p>		<p>Window “Close Door and press Reset Button” If the door isn’t closed, a window is shown, until door is closed and the “reset” button is pressed. Go to 15.35b</p>
<p>15.35b</p>		<p>Window “Going to Load Position” Machine moves to Load Position Go to 15.36</p>
<p>15.36</p>		<p>Window “Repeat Wheel?” Select “Yes” if you’d like to repeat the same Wheel and go to 15.37 Select “No” if you’re finished with this Wheel and want to finalise the repair process and go to 15.1</p>

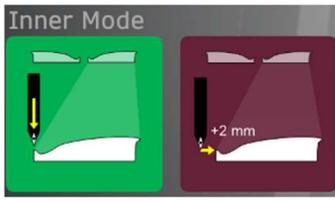
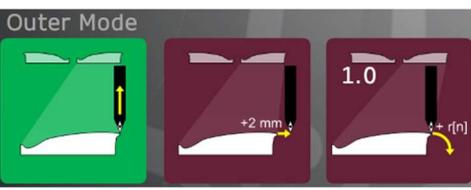
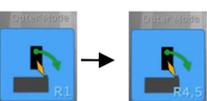
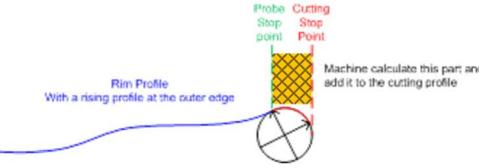
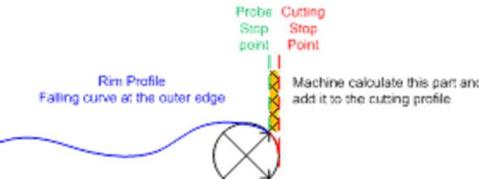
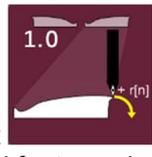
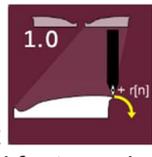
<p>15.37</p>		<p>Window "Save Wheel?" Offers operator whether the Wheel should be saved or not?</p> <p>Select "Yes" to go to step 15.38 Select "No" to go to step 15.31</p>
<p>15.38</p>		<p>Window "Enter Wheel Name" Select at the text 'new Wheel', enter the file name and confirm pressing "Enter". e.g. 'Volvo P60-18-10 [OtI]'</p> <p>Select "Save" to go to step 15.39 Select "Cancel" to go to step 15.37</p>
<p>15.39</p>		<p>Window "Saving Profile" while saving.</p> <p>If an error occurs during saving, see step 15.40 Otherwise go to step 15.41</p>
<p>15.40</p>		<p>Window "save error, Retry?"</p> <p>Select "Yes" to go to step 15.38 Select "No" to go to step 15.37</p>
<p>15.41</p>		<p>Window "Profile saved, Repeat Wheel?"</p> <p>Select "Yes" to go to step 15.2 (Also possible from main window) Select "No" to go to step 15.1</p>

<p>15.42</p>		<p>Window "Repeat Wheel?" (profile not saved) If there is more than one Wheel with same profile you can run the next Wheel if you press "Yes". Note: Make sure the Wheel has the same size and part number.</p> <p>Select "Yes" to go to step 15.2 Select "No" to go to step 15.1</p>
<p>15.43</p>		<p>Window "Aborting" If a cycle is aborted, the motion system attempts to lift the Z axis 2mm and perform a controlled stop of the system.</p> <p>Go to step 15.1</p>

<p>15.1</p>		<p>At the Main Window select "Run Last Scanned Wheel" Go to step 16.2</p>
<p>16.2</p>		<p>Disclaimer terms; read and accept. Select "Accept Disclaimer" to go to step 16.3 Select "Abort" to go to step 16.1</p>
<p>16.3</p>		<p>Window "Wheel fastened and centercap removed?" Select "Confirm Wheel Fixed and Center Cap removed" to go to step 15.4 Select "Abort" to go to step 16.1</p>

17 – Start a 'Saved Wheel'

<p>17.1</p>		<p>At the Main Window select "Start a 'Saved Wheel'" to go to step 17.2</p>
<p>17.2</p>		<p>Select "Confirm Entry" to go to step 17.3 Note! If selection list is empty and Confirm is pressed, a warning will be shown.</p> <p>Select "Cancel" to go to step 17.1</p>
<p>17.3</p>		<p>Window "Wheel fastened and centercap removed?"</p> <p>Select "confirm Wheel fixed and centercap removed" to go to step 15.4 "Abort" Go to step 17.2</p>

<p>18.1</p>	<p>Inner mode options:</p>  <p>Outer mode options:</p>    	<p>Default setting selected is moving the cutting tool upwards at both inner and outer edge.</p> <p>Inner mode can either be Upwards or to the Left.</p>  <p>When  is selected the cutting tip moves additional 2 mm more to the center.</p> <p>Outer mode can be either Upwards, To the Right, or Radius between 1- and 6-mm radius in steps of 0,5mm.</p>  <p>When  is selected the cutting tip moves additional 2 mm more to the outside of the Wheel.</p>  <p>Select  to use the radius function. This is a special feature when having some deep scratches on the outer edge of the Wheel.</p> <p>Use the radius tool to determine the radius.</p> <p>A scan shall be taken as a normal scan, but the operator must stop the scan at the point where the radius shall take effect. The machine calculates the radius size and add it to the cutting profile.</p> <p>Radius will differ depending on the probed profile is with a rising (from vertical and downwards) curve, or with a falling (from vertical and upwards) curve.</p> <p>As illustrations show the radius may appear different depending on probed profile.</p> <p>Wheel Restore offers a tool for cutting the radius(s) of Wheels. Use the tool holder where the cutting tip is mounted on the left side of the tool holder, see picture below.</p>  <p>In order to use the 'radius' option in 'Edge Cut Mode' Select the 'Radius Mode' button and use the "+" to enlarge and the "-" to reduce the radius radius. E.g. R1 means radius of 1 mm (smallest radius available), R6 means radius of 6 mm (biggest radius available).</p>
-------------	--	---

19 - Calibration Tool - Automatic Positioning Function (APF)

<p>19.1</p>		<p>Take the calibration tool with the small mark pointing up. Go to step 19.2</p>
<p>19.2</p>		<p>Place it in the center of the machine. Get the claws to grip it. Go to step 19.3</p>
<p>19.3</p>		<p>Remove sensor cover and go to step 19.4</p>
<p>19.4</p>		<p>At the Main Screen Select  to go to the setup menu. Go to step 19.5</p>

<p>19.5</p>		<p>At the system Setup menu Select “Tool Change”. Go to step 19.6</p>
<p>19.6</p>		<p>Set selector to “Joystick”. Go to step 19.7</p>

<p>19.7</p>		<p>Press the foot pedal and move laser to the Center position* on the calibration tool using the joystick. The power light on top of the laser must be green and the laser Measure must be between 50 and 60 mm. *Note that this must be done very precisely.</p> <p>Select  for slow movement.</p> <p>Select  for fast movement.</p> <p>Select "Confirm position" once the position has been reached. Go to step 19.8</p>
<p>19.8</p>		<p>Press the foot pedal and move the Tool Tip to the Center position* on the Calibration Tool using the joystick. *Note that this must be done very precisely.</p> <p>Select  for slow movement.</p> <p>Select  for fast movement.</p> <p>Select "Confirm position" once the position has been reached and go to step 19.9</p>
<p>19.9</p>		<p>Select "Confirm Position" if the values are set correctly. It's possible to change the values by clicking "Change Values", enter the values according to the parameters required and select "Confirm Position". Go to step 19.10</p>
<p>19.10</p>		<p>Select "Exit Setup". Go to step 19.11</p>

<p>19.11</p>		<p>Tap screen to start. Go to step 19.12</p>
<p>19.12</p>		<p>Set selector to "Normal". Go to step 19.13</p>
<p>19.13</p>		<p>Going to "Load Position". Go to step 19.14</p>
<p>19.14</p>		<p>The machine is now ready for operations.</p>

We strongly recommend that the machine has a yearly service interval performed by a manufacturer approved service technician.

21 – Service and Support

Service and support require a service ticket. WheelRestore offers a service ticket system. In addition to support tickets, the platform offers an overview of ongoing service on the WR-DCM3. This includes files, tasks and software updates. Yearly maintenance can be requested and set up as an event with notifications. [SAS system \(Service & support system\)](#)

Additional information can also be found in the Wheel Restore Knowledge base here: [SAS Knowledge base](#)

Service Level Agreement

Wheel Restore offers a high level of service and support to customers through our Service and Support platform as we know Downtime of the equipment has a serious impact on the company; loss in turnover & profit, delay of repairs & deliveries and most important unhappy customers.

When you purchase a Diamond Cut Wheel Restore Machine we strongly recommend you to get a service agreement, to ensure maximum, professional performance with minimum of downtime.

The different service levels are listed below:

Service overview	Premium+	Premium	Standard
1. priority in support cases and tickets	X		
Extended factory warranty	X		
Free Replacement machine*	X		
Spare parts pricing	50% discount	25% discount**	
Consumables for WM pricing***	15%	5%	
Unlimited software updates	X	X	
Free support & technical tickets	X	X	X
Free access to our support and service system (SAS)	X	X	X
Access to Wheel Restore Repair App (QR) for creation of Repair Cards	X	X	

* Including freight cost in- and outbound

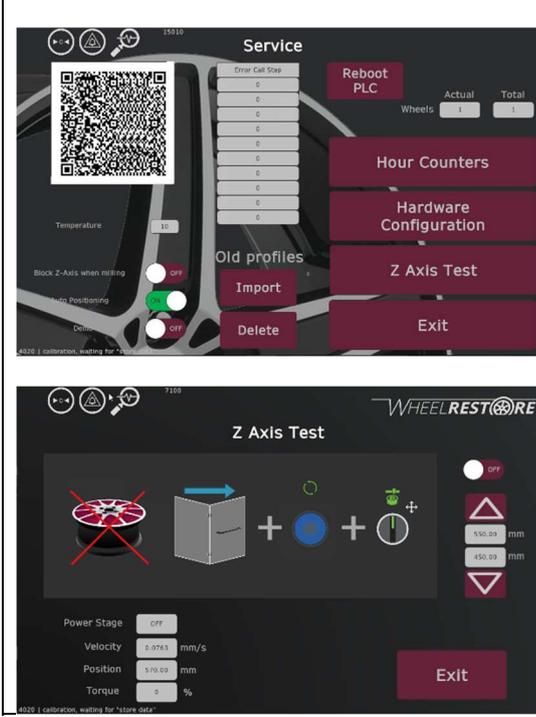
** Breakdown due to wrong usage or out of scope repairs are not included

***See content list

	<p>Service level (Wheel Restore technicians only!)</p> <p>On the main screen select the Tool box button  to go to the tools menu.</p> <p>Select the  button Enter the security code provided by Wheel Restore and press "Enter"</p>
--	---



The factory settings are now unlocked and can be changed accordingly. Please note this can ONLY be done by a by Wheel Restore approved and trained technician!



Service Level shows the following parameters:

- Hour counter management
- Hardware configuration
- Test functions Z-Axis
- Historical error trace

Select "Exit" to go to the main menu

Diamond Cut Wheel Machine Consumables			
Part no.	Product	Picture	Shop link
WM801	Diamond cutting tip (04) 1pcs.		Diamond cutting tip (04) 1pcs.
WM808	Diamond cutting tip (02) 1pcs.		Diamond cutting tip (02) 1pcs.
WM806	Tape 2 pcs special for WM800		Special Tape (for WR-DCM3)
WM816	Radius Tool (for WR-DCM3)		Radius Tool (for WR-DCM3)
WM803	Toolholder for diamond cutting tips Left		Toolholder for diamond cutting tips Left
WM804	Toolholder for diamond cutting tips Right		Toolholder for diamond cutting tips Right
WM805	Toolholder for diamond cutting tips Middle		Toolholder for diamond cutting tips Middle
WM817	Calibration tool (requires a separate software update)		

We have a network of appointed sales distributors in nearly every country around the world. Therefore, and to support you the best possible way, we kindly ask you to follow the relevant option below:

Contact your local sales distributor in your country

Send order to us at order@hbc-system.com

Please note that, if we have an appointed sales distributor in your country, your order will be forwarded to the sales distributor.

If the machine is bought: The machine is separated and sorted according to local environmental requirements.

If the machine is rented: Return machine to FSG.

Reproduction of the contents of this publication, fully or in part, is forbidden in accordance with copyright laws without prior written permission from Wheel Restore Company ApS.

This applies to any form of reproduction through printing, duplication, photocopying, etc.

© Wheel Restore Company ApS, Denmark, 2024