

WHEELRESTORE

WM500

User manual



This Manual is published by:

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1 – Introduction

Dear technician,

We are confident that you will enjoy working with your new WM500 – Semi Automatic Wheel Spray Booth.

Your machine is running with Software version: XXXX

We would like to hear about your experiences with the WM500. 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

General Safety Guidelines for Robot Operations

Authorized Personnel:

Only authorized and properly trained personnel should operate or interact with the robot. Untrained individuals may be at risk of injury or damage when working with the robot.

Read and Follow Instructions:

Thoroughly read and understand all provided instructions, manuals, safety guidelines, and warnings associated with the robot. Adhere to the recommended operating procedures and safety precautions.

Training and Familiarization:

Ensure that all personnel operating or working with the robot receive comprehensive training on its safe operation, programming, and maintenance. Familiarize yourself with the robot's specific features, limitations, and emergency stop procedures.

Risk Assessment:

Conduct a thorough risk assessment of the work environment and tasks involving the robot. Identify potential hazards and implement appropriate safety measures to mitigate risks, such as barriers, safety interlocks, or protective enclosures.

Personal Protective Equipment (PPE):

Wear the required PPE, such as safety glasses, gloves, and protective clothing, as specified for the specific robot and its associated tasks. Additional PPE may be necessary based on the work environment.

Emergency Stop:

Know the location and operation of the emergency stop button or switches. Be prepared to stop the robot's operation quickly and safely, in case of an emergency or unsafe situation.

Safe Work Envelope:

Be aware of the robot's reach, movement range, and any potential pinch points or collision areas. Maintain a safe distance from the robot while it is in operation to prevent accidental contact.

Restricted Access:

Control access to the robot's workspace to authorized personnel only. Ensure that non-essential personnel are kept at a safe distance from the robot during operation to prevent accidents or interference.

Interference Prevention:

Keep the work area clear of obstacles, tools, or loose objects that may interfere with the robot's movement or operation. Ensure that no personnel are within the robot's reach or hazardous zones while it is in motion.

Tooling and Fixtures:

Follow proper procedures for installing, securing, and removing tooling or fixtures on the robot. Ensure that they are correctly aligned, fastened, and suitable for the intended tasks to prevent accidents or equipment damage.

Maintenance and Inspection:

Regularly inspect the robot for signs of wear, damage, or malfunction. Follow the manufacturer's recommended maintenance schedule and promptly address any issues or faults to maintain the robot's optimal performance and safety.

Communication and Collaboration:

Establish clear communication channels and protocols when working with the robot in a shared workspace. Coordinate tasks with other personnel to prevent conflicts and ensure safe collaboration.

Power and Energy Sources:

Exercise caution when working with power sources or energy systems connected to the robot. Follow proper lockout/tagout procedures when performing maintenance, repairs, or accessing electrical components.

Reporting Safety Concerns:

If any safety hazards or concerns related to the robot are identified, report them immediately to the appropriate personnel or supervisor. Do not operate the robot if there are unresolved safety issues.

Product Liability DisclaimerProper 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 forementioned 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 rim painting

This machine is limited to paint alloy rims, with a maximum diameter of 558 mm - 22 inch. The rim width is limited to **XXXmm**.

Clean the rim using an acid free rim 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 painting process.

Remove the tire from the rim using a tire machine.

Take off all balancing weights and center cap from the rim and make sure all adhesive is removed.

Check if the painted part of the rim has damages. If so, this needs to be repaired prior to the painting process.

You can use one of our HBC rim repair systems.


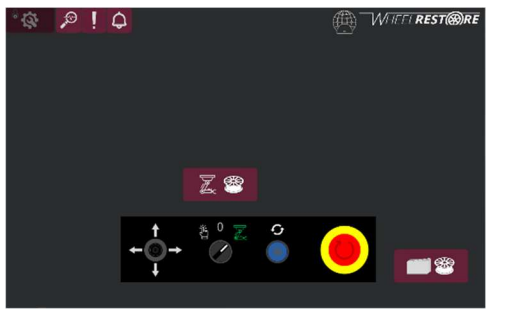

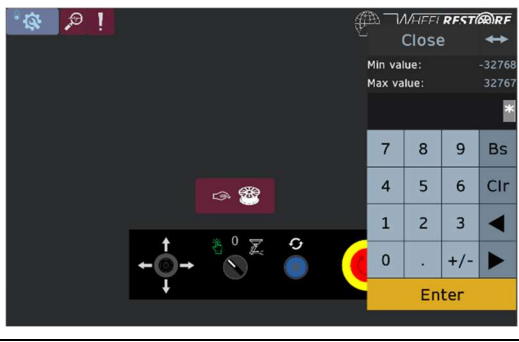
Prepare the painted part of the rim by using Scotch-Brite (grey) or blast the rim in our Wheel Blasting cabinet to matt the rim, making it ready for the painting process.

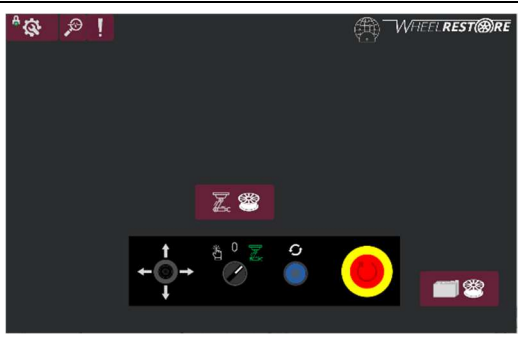

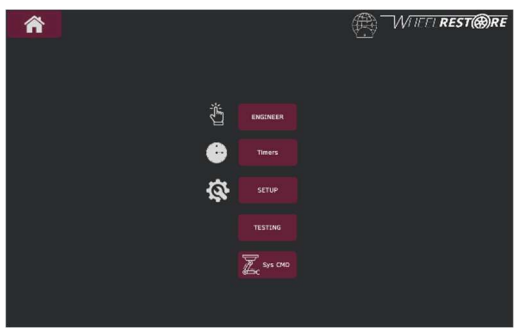

Remove all dust from the wheel by using HBC E3 Wheel cleaner (part no. 755) and dry it using a clean cloth

Use a TagRag (part no. 150) to remove the fine dust as the last step before painting.

4 – Power up and initializing

- Connect the air supply to the machine. The machine requires min. 4 bar to operate.
- Connect the LAN cable to the HMI screen at the open port (ETH1).
- Connect the power by plugging in the plug into the socket. The machine requires 230V, 16A.
- Once powered up wait until you see the Startup screen.

4.1		<p>When switching power on, and after certain alarm conditions, the machine will require a homing routine for the robot and wheel holder. Tap the window to start.</p> <p>NOTE: If the HMI screen is not responsive press and hold the blue reset button for min. 3 seconds</p>
4.2		<p>Click </p>
4.3		<p>Enter the code provided by Wheel Restore and press enter.</p>

4.4		<p>Settings are now unlocked. Click the  button to open the settings menu. The settings menu is now unlocked and can be changed accordingly. Please note this can ONLY be done after commissioning Wheel Restore.</p>
4.5		<p>Click  to go to the homing procedure</p>

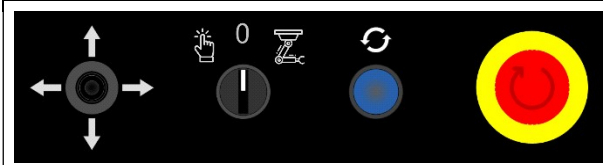
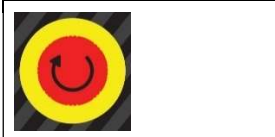



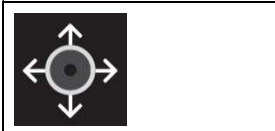
5 – Painting Quality – Final product guidance – Settings Paint gun

- Paint application has a preferable setting for the best quality. Depending on the application by either paint gun or aerosol we recommend usage of these settings.
- Operating pressure when using the paint gun is 1.5 bar and can be adjusted by turning the manometer inside the cabinet.
- Mixing ratio of the 840 Diamond Cut Clearcoat is 5:1 plus 50% thinner.

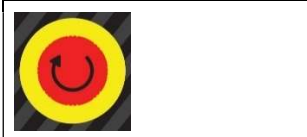

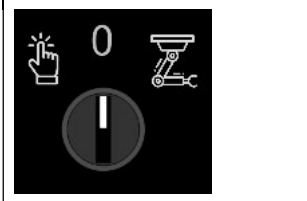




• KEY-POINTS FOR A PERFECT PAINTING RESULT








- Rim Temperature
 - Recommended temperature is ~20 degrees Celsius / 70 degrees Fahrenheit.
- Product temperature
 - Aerosol; recommended temperature is ~30 degrees Celsius / 80 degrees Fahrenheit.
 - Mixing paint; recommended temperature is ~20 degrees Celsius / 70 degrees Fahrenheit.
- Spray distance
 - Recommended distance between rim and aerosol/paint gun is 10-15 cm
- Product viscosity
- Spray travel speed
- Spray nozzle
- Spray pressure
- First layer half coat
- Flash-off time 4 min.
- Second layer full coat “wet in wet spray”
- Flash off after second layer 4 min.
- Final curing 15 min.

6 – Operating buttons

	<p>Besides the display, there is a set of buttons/switches below the display.</p> <p>Display refers to these buttons, when prompted on the window.</p>	
	Emergency stop	When pressed the machine stops immediately. All motors release all energy (free run)
	Reset	Constant light safety function activated. Blinking or sign on the HMI screen waiting for operator, press the button to reset.
	Selector switch	<p>Selector switch position depends on which mode machine is operating in. Switch to  for manual operation.</p> <p>Switching during operation results in a safety fault and can cause damage to the rim or machine.</p>
	Joystick	Joystick moves the wheel holder horizontal and vertical. Moving the joystick to the left/right spins the rim in that direction.

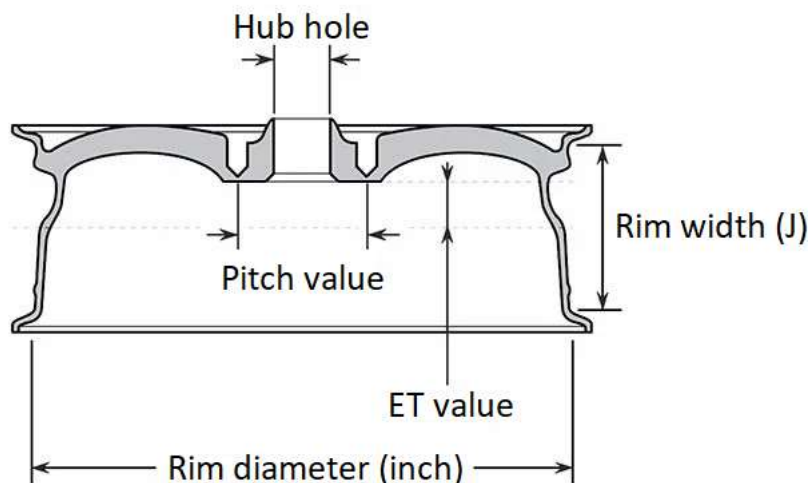
7 – HMI Screen buttons

	Emergency stop
	Reset
	Selector switch
	Joystick
	Internet connection – When green internet connection is active
	Diagnostic screen
	Warnings

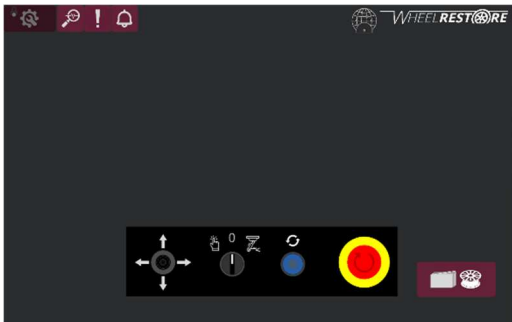

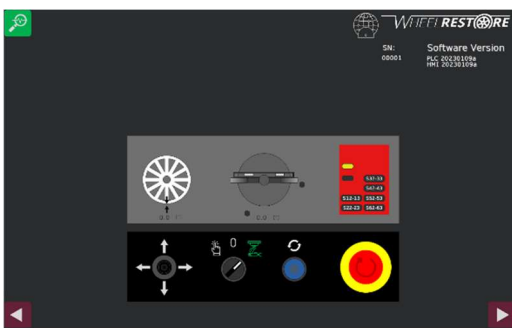
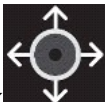







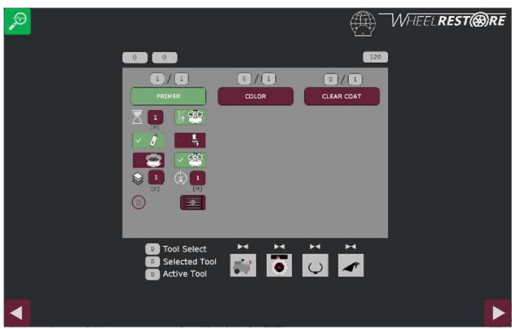


	Alarms – Turns red when alarm is present
	Settings - Locked
	Settings - Unlocked
	Manual Operation – Manual mode
	Home button
	Cancel button
	Extraction Fan activated

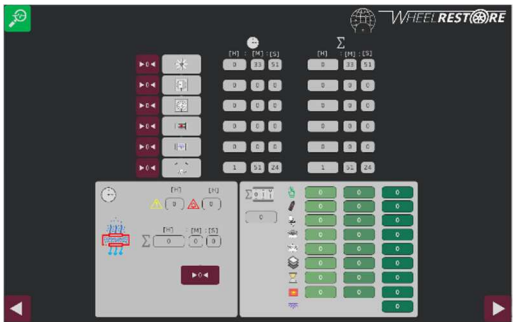


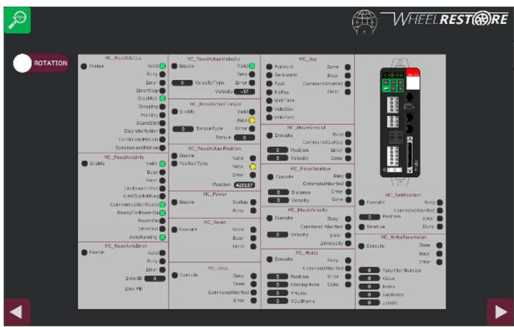


8 – Explanation of the rim

- To fully understand the rim and description as written in the manual, below an explanation of the measurements required before starting the painting procedure. Putting in wrong information may cause damage to the equipment.




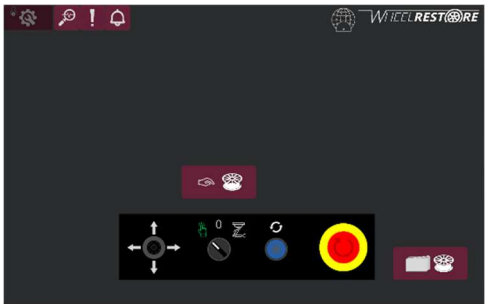

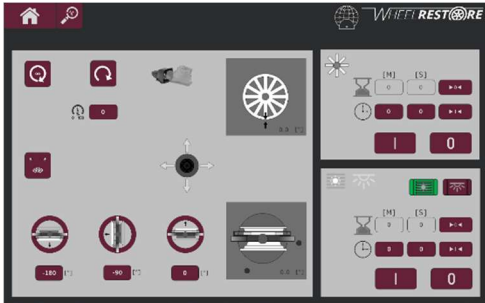




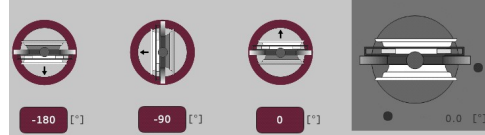






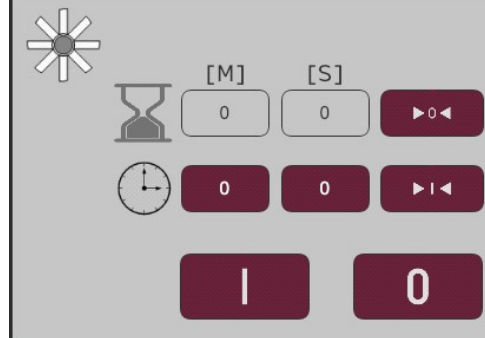







9 - Diagnostic Menu











9.1		<p>On the main screen select the  button to go to the Diagnostic menu</p>
9.2		<p>Diagnostic screen 1.</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 a small red sign will show next to the sign. When the sign doesn't appear the emergency stop is faulty.</p> <p>Click  to go to the next screen.</p> <p>Click  to go to the previous screen.</p>
9.3		<p>Diagnostic screen 2.</p> <p>Click  to go to the next screen.</p> <p>Click  to go to the previous screen.</p>

9.4		<p>Diagnostic screen 3.</p> <p>Click  to go to the next screen.</p> <p>Click  to go to the previous screen.</p>
9.5		<p>Diagnostic screen 4.</p> <p>Click  to go to the next screen.</p> <p>Click  to go to the previous screen.</p>
9.6		<p>Diagnostic screen 5.</p> <p>Click  to go to the next screen.</p> <p>Click  to go to the previous screen.</p>

10 - Manual Mode

10.1		<p>Put the rim inside the Wheel Holder on the lower 2 wheels with the valve hole downwards. Make sure the wheels are put on the wheel hub as shown on the picture. Close the Wheel holder using the ratched with a 10mm cap until the rim is tight* and can not be spinned by hand and click  to confirm.</p> <p>*NOTE: tightening the rim too much may result in damaging the Wheel Holder</p>
10.2		<p>On the main screen change the selector to Manual mode</p>

10.3		<p>Open the manual mode by clicking </p>
10.4		<p>Click here  and enter the required RPM for the rim to spin</p> <p>Click here  to start the spinning of the rim</p> <p>Click here  to change the direction of the spinning rim</p> <p>Click here  to switch on the light</p>
10.5		<p>In this section the position of the rim in the wheel holder can be adjusted. Here  you can select the required angle of the rim facing down. Click  to enter a value and press enter.</p> <p>Here  you can select the required angle of the rim facing forward. Click  to enter a value and press enter.</p> <p>Here  you can select the required angle of the rim facing up. Click  to enter a value and press enter.</p>
10.6		<p>In this section you can activate the extraction fan. Click  to turn of the fan.</p> <p>Click  to turn of the fan.</p> <p>Here    you can enter the time you want the fan to run in minutes and seconds. Click  to reset.</p> <p>Click  to set timer to zero.</p>

10.7		<p>In this section you can activate the curing lamps.</p> <p>Click  to switch on the Infra Red lamp. Click  to switch on the UV lamp.</p> <p>Click  to turn of the light.</p> <p>Click  to turn of the light.</p> <p>Here    you can enter the time you want the light to run in minutes and seconds. Click  to reset.</p> <p>Click  to set timer to zero.</p>
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11 – Maintenance

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

12 – 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 WM500. 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](#)

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.

13 – Disposal

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.

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