For the following equipment:

DCM (WM800)

WPM (WM600 & WM500)

SmartWall & Filterbank

Circuit breaker (RCD) tripping

Version 20230711

If you find that the circuit breaker (RCD) consistently trips whenever you turn on the equipment, it is probablycaused by the earth leakage from the equipment to the RCD. Given the industrial nature of the hardware, it is crucial to use an RCD that can withstand a maximum earth leakage of 0.3 amps.

By upgrading to an RCD with the appropriate specifications, capable of accommodating the higher threshold for earth leakage, you can effectively solve the tripping issue. This adjustment will provide a reliable electrical protection.

It is important to note that the current RCD in use commonly allows for a mere 0.03 amps of earth leakage, which is significantly lower than what is required for the industrial setting. Consequently, the RCD may be overly sensitive, leading to frequent trips and disruptions in equipment operation.

To mitigate this issue and ensure the smooth functioning of your equipment, it is strongly recommended to replace the existing RCD with one that aligns with the necessary standards for industrial applications. The upgraded RCD, with its maximum allowance of 0.3 amps for earth leakage, will provide a more appropriate level of protection, reducing the occurrence of unnecessary tripping.

Consult with a local authorized electrician before making any changes to the electrical setup of either the machines or electrical panel.

Safety Disclaimer: Before attempting to change the RCD (circuit breaker), it is important to prioritize safety and adhere to proper electrical procedures. The following disclaimer highlights key safety considerations:

1. Electrical Hazard: Working with electrical components can be dangerous and may lead to electric shock or other serious injuries. It is recommended to turn off the power supply and disconnect all electrical sources before starting any work on the RCD.
2. Professional Assistance: If you are not experienced or confident in handling electrical systems, it is strongly advised to seek professional assistance from a qualified electrician or technician. They have the expertise and knowledge to safely install or replace the RCD, ensuring compliance with local electrical codes and regulations.
3. Proper Tools and Equipment: Ensure that you have the necessary tools and equipment required for the installation or replacement process. Use insulated gloves, safety goggles, and other personal protective equipment (PPE) to protect yourself from potential hazards.
4. Labeling and Documentation: Take note of the existing electrical connections and labeling to ensure correct reinstallation. Documenting the wiring configuration can help in troubleshooting and avoiding errors during the process.
5. Proper Wiring: Follow the manufacturer's instructions and wiring diagrams provided with the new RCD. Ensure that the wiring is done correctly and securely to prevent electrical faults or short circuits.
6. Testing and Verification: Once the replacement is complete, conduct thorough testing and verification of the RCD functionality. Use appropriate testing equipment to ensure proper operation and confirm that the earth leakage is within the specified limits.
7. Compliance with Regulations: Ensure that the new RCD meets the required standards and specifications for your industrial application. Confirm that it can handle the anticipated electrical load and earth leakage requirements without compromising safety.
8. Power Restoration: Once the installation and testing are successfully completed, restore power to the equipment or system in a controlled manner, observing any recommended startup procedures.

Remember, electrical work should be approached with caution and expertise. If you are uncertain about any aspect of the RCD replacement process, it is always best to consult a professional electrician or seek guidance from qualified individuals to ensure the safety and integrity of the electrical system.

In case that it is not possible to replace the circuit breaker (RCD), due to regulations or location, the euipment can be modified by the below listed steps, and hereby decrease the earth leakage, but it will increase the eletrical noise within the components and surounding components.

Before attempting any of the below mentiond solutions, make sure that the euipment is turned off for minimium 5 minutes, and unplugged from the power. All lights on the servo drives must be off.

WPM (Wheel Painting Machine) – WM600 & WM500

1. Turn off the equipment for minmium 5 minutes, and leave it unplugged from the socket
2. Remove the 6 screws in the front of the machine, that holds the cover to the electrical panel
3. Locate the two frequency converters, that look like this:

4. Remove the top plastic cover and the small plastic clip as shown on the picture below

5. Place the servo drives back inside the machine, reconnect all the wires the same way as before disassembling.
6. Put the backplate on the machine and mount the screws.
7. Plug in the machine and run a test.

Smartwall & Filterbak – SM2000 & SM3000

1. Turn off the equipment for minmium 5 minutes, and leave it unplugged from the socket
2. Remove the 4 screws on the top of the machine, that holds the cover to the electrical panel
3. Locate the two frequency converters, that looks like this:

4. Remove the top plastic cover, and the small plastic clip as shown on the picture below

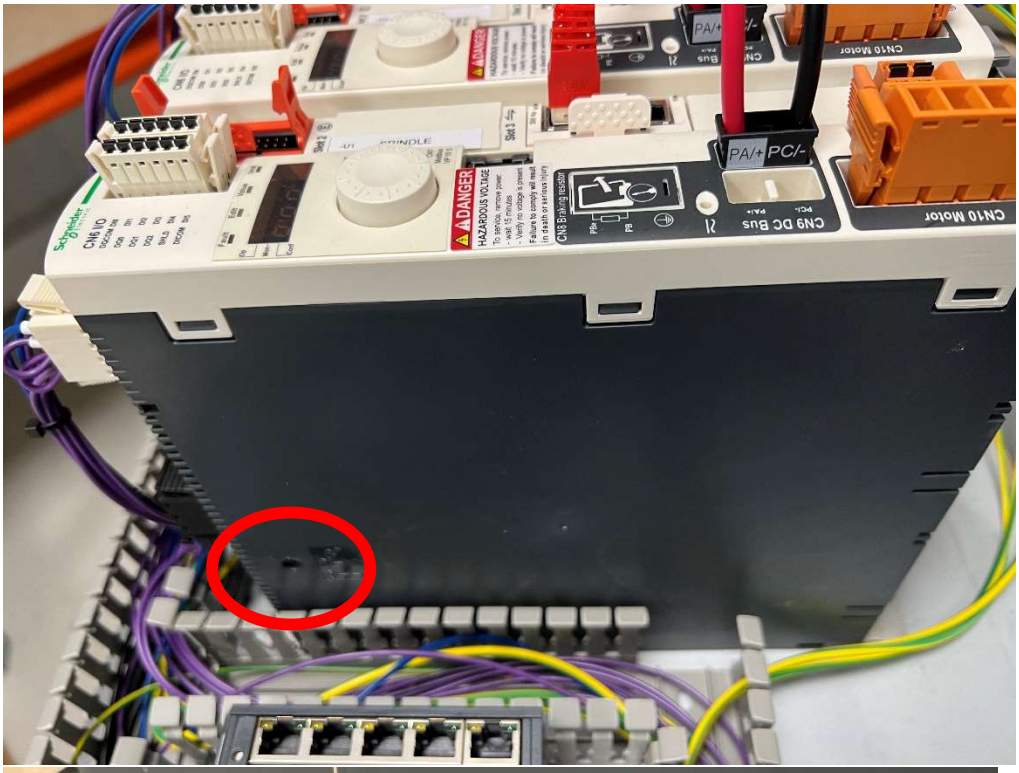
5. Place the servo drives back inside the machine, reconnect all the wires the same way as before disassembling.
6. Put the backplate on the machine and mount the screws.
7. Plug in the machine and run a test.

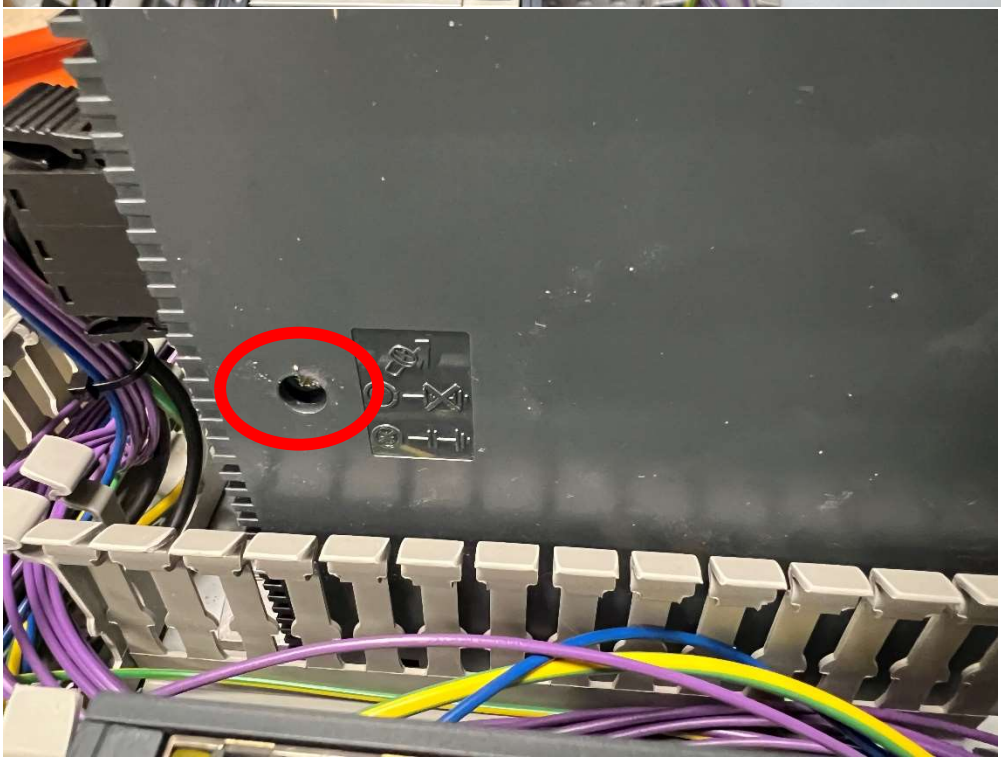
DCM (Diamond Cut Machine) – WM800

1. Turn off the equipment for minmium 5 minutes, and leave it unplugged from the socket
2. Remove the 4 screws in the back of the machine, that holds the cover to the electrical panel
3. Locate the drives (Spindle + X AXIS + Z Axis)as shown here:


Schneider Electric
CN6 I/O
Slot 2
SPINDLE
X AXIS
Z AXIS
Slot 3
DANGER
HAZARDOUS VOLTAGE
CN8 Braking resistor
CN9 DC Bus
CN10 Motor
LXM32SD18M2
LXM32SU45M2

4. On the left side of each of the drives, remove the screw (Please note that the X axis and Z axis drive need to be dismounted from the electric panel, before you can access the screw on these)





5. Place the servo drives back inside the machine, reconnect all the wires the same way as before disassembling.
6. Put the backplate on the machine and mount the screws.
7. Plug in the machine and run a test.

If previously mentiond solutions does not solve the tripping of the RCD, please consult with a local authorized eletrican and Wheel Restore Company ApS.