

# Guide for Troubleshooting: ERR Sens4, ERR Sens5

Manual for servicing Degritter RCM

01.2020

# Introduction

In essence the ERR Sens4 and ERR Sens5 indicate that there is a fault with detecting correct water levels in the Degritter machine. This document gives an overview of how water level sensing works in Degritter and how these errors can be solved.

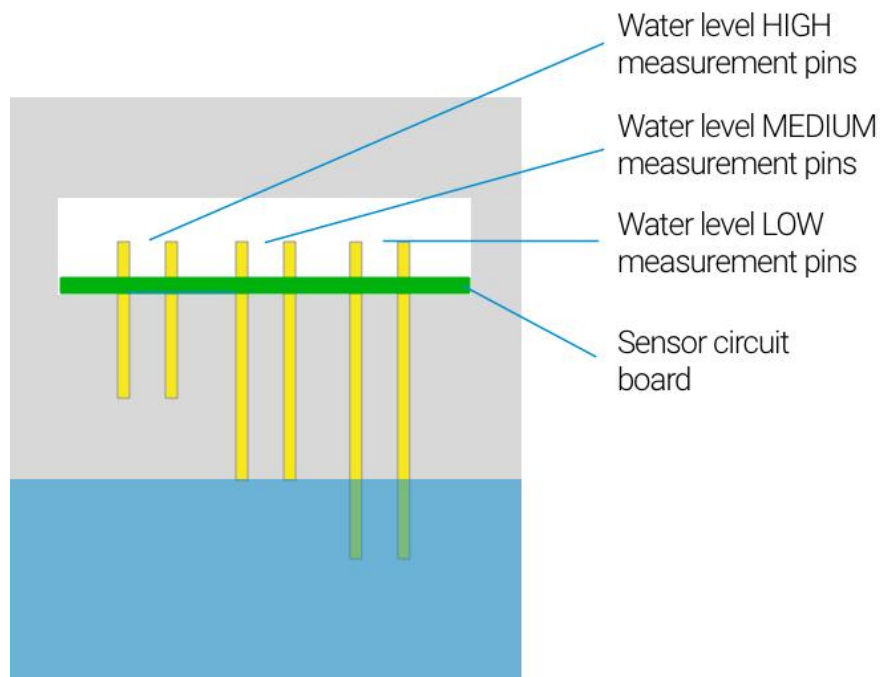
## How water level sensing works

Degritter RCM is detecting different water levels with a set of pin pairs located in the ultrasonic cleaning tank. The machine is measuring electrical resistance between two pins at a very high precision. Water and air have different resistance to electrical conductivity and based on this difference it is possible to determine if the water level has passed the pin pair or not.

All together there are 3 pair of pins in the ultrasonic cleaning tank located near the top. One pair of pins for every water level setting, LOW, MEDIUM and HIGH.

The three pairs at the top also provide additional safety when the machine is filling its ultrasonic tank. If there is a failure with one of the pin pairs at the top and the other ones detect water, the machine will take note and will not pump water over the top of the cleaning tank.

*Water level sensing pins at the top of the ultrasonic tank*



# Water Sensor Errors

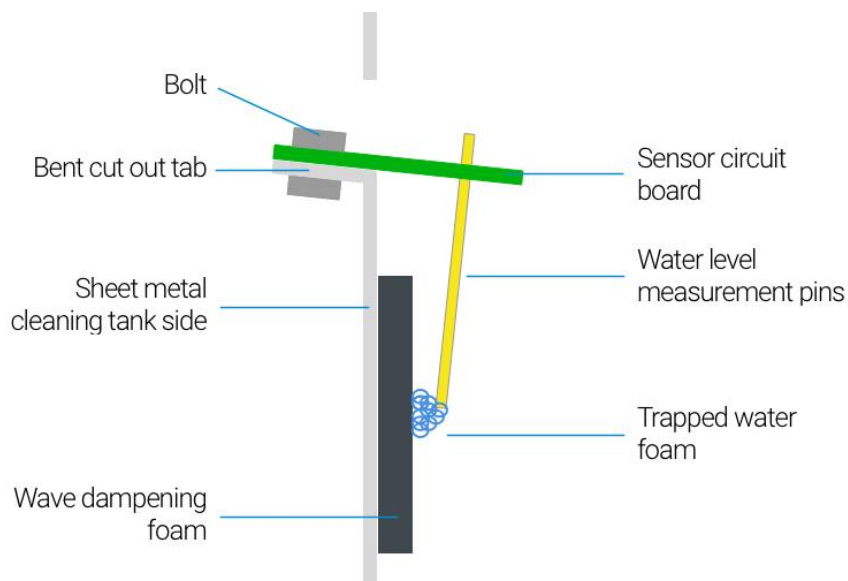
The errors ERR Sens4 and ERR Sens5 occur when the machine detects water with one of the three water sensing pin pairs, but does not detect any water with the pin pair preceding it.

Top Sensor LOW	Top Sensor MEDIUM	Top Sensor HIGH	Error Code
Water	N/A	N/A	No Error
No Water	Water	N/A	ERR Sens4 / ERR Sens5
No Water	No Water	Water	ERR Sens4 / ERR Sens5

## Troubleshooting Top Sensor Failures

The top water level sensors can give out incorrect readings when there remains foam or some dirty between the sensor pins when the water has been pumped out. The foam or dirt can reduce the electrical resistance between the pins and the sensor reading will be similar to water.

**NOTICE:** Using too much cleaning fluid can generate excess foam that attaches to the pins and causes incorrect readings.



## 1. Access top water level sensors

### a. Remove the rubber gasket

To remove the rubber gasket, gently push it towards the center of the record insertion slot.

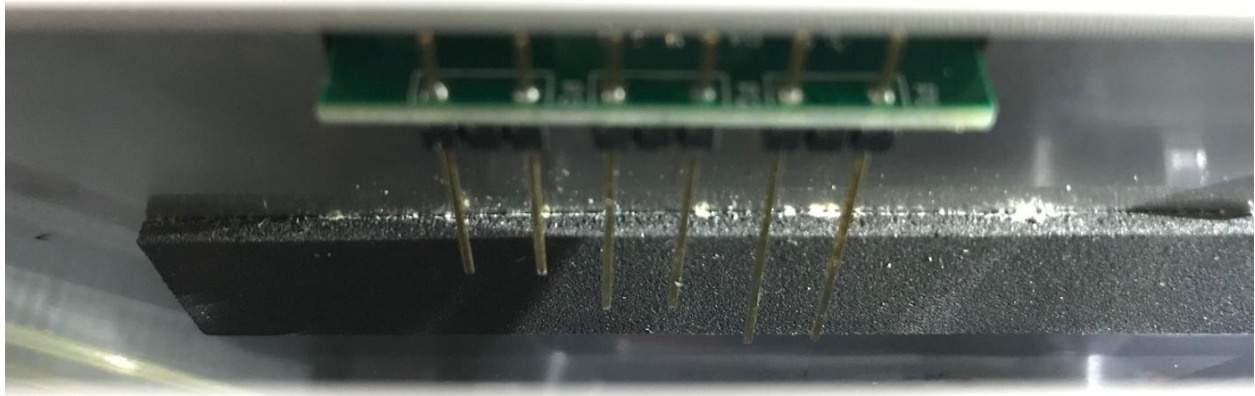


Once the gasket is loosened you can pull it off the machine.



b. Locate water level sensor circuit board

Locate water level sensor circuit board in the opening.



## 2. Clean top water level sensors

Once the sensor board with its pins is visible, it is first recommended to visually inspect the pins and the foam pad that is placed behind them. The foam pad acts as a water wave dampener and prevents wave induced sprinkles from flying up on to the record label.

With the use of regular toothbrush **gently** clean the pins and the foam pad that is located behind the pins.

**NOTICE:** The pins are attached to the circuit board with solder only. When applying too much force, the pins can become loose and the sensor will then fail to work!

## 3. Adjust top water level sensors

If the pins and their surroundings are clean and the issue persists, then it is possible that the circuit board has been attached to the machine in an angle where the pins are directed slightly

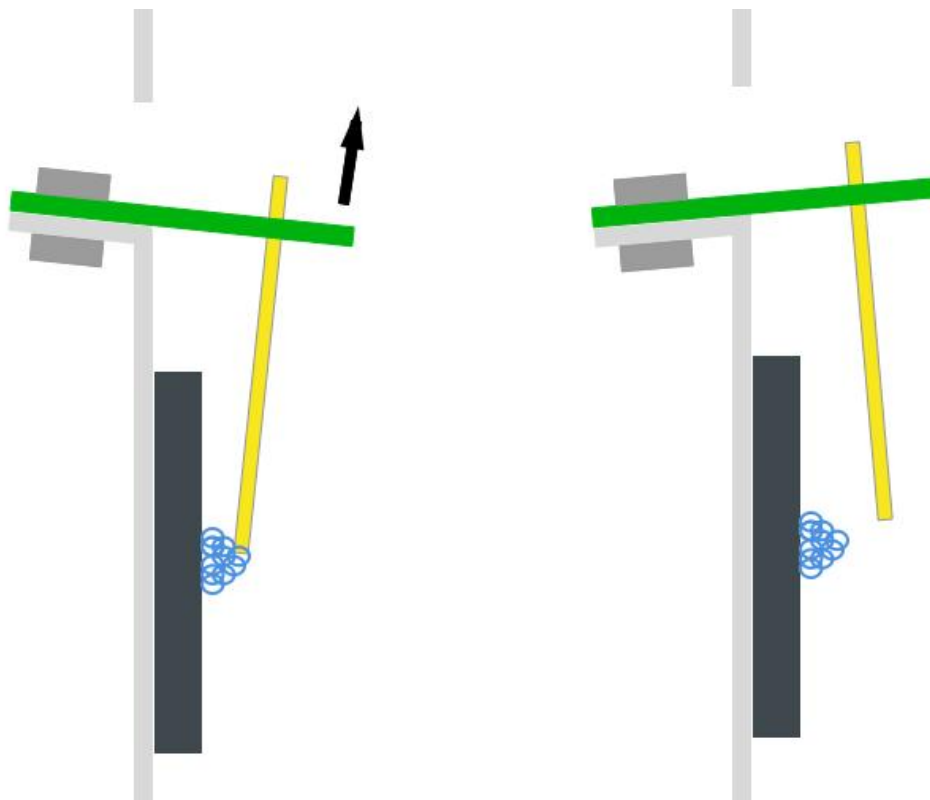
at the face of the ultrasonic tank and the tips of the pins are too close to the ultrasonic cleaning tank side.

To solve this, the sheet metal cutout, on which the water level sensor circuit board is attached, can be bent a bit to adjust the angle of the pins.

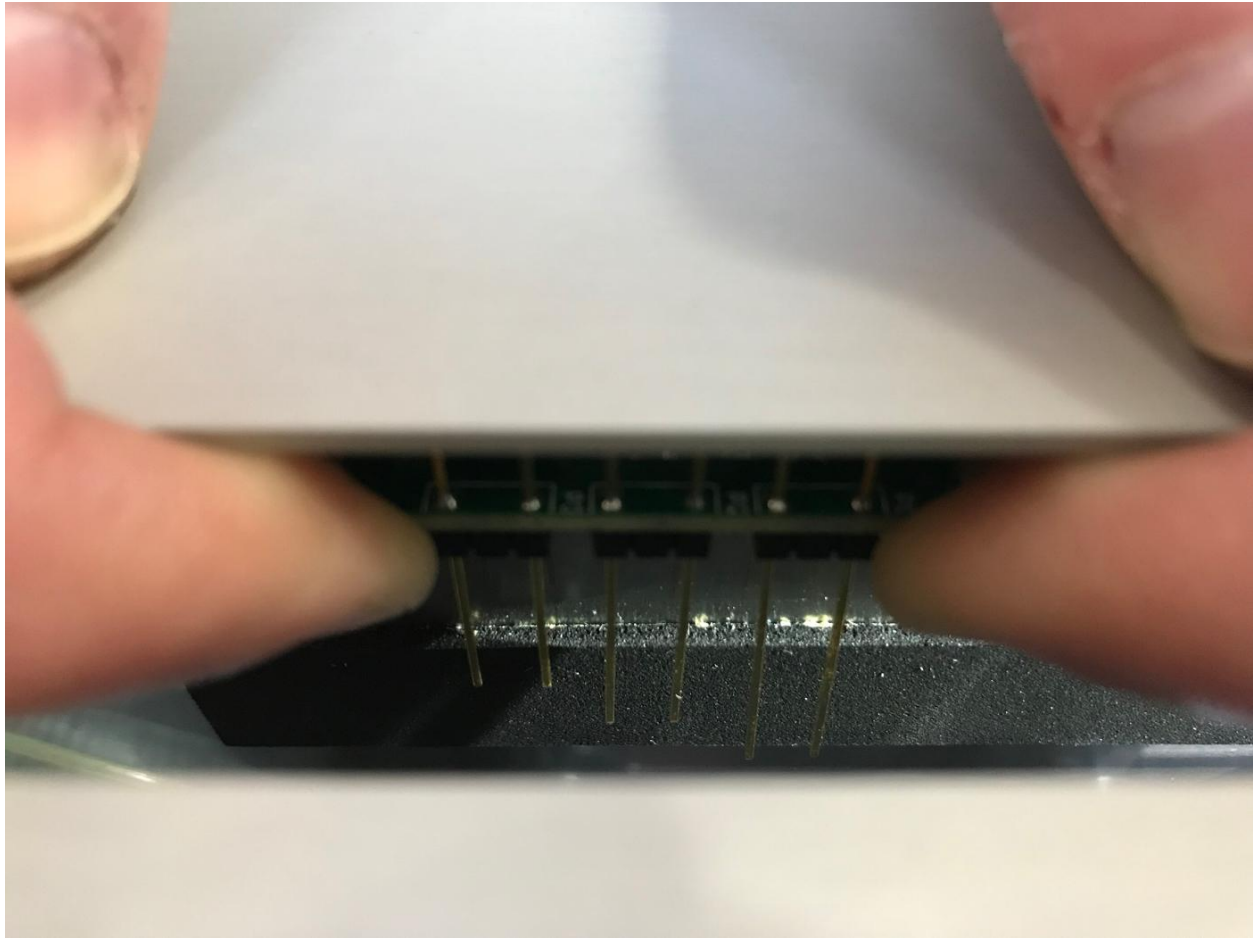
To adjust the board, grab from the circuit board corners using the index finger of both hands and pull the circuit board upwards. Doing so will bend the sheet metal cutout on which the circuit board is mounted. The sheet metal cut out has dashed cuts at the bend to make the bending easier, but bending it using fingers and circuit board requires quite a lot of strength.

**NOTICE:** Do not bend the sensor board pins!

*The sensor pins should be bent slightly away from the ultrasonic tank side*



*Pull the circuit board upwards from the corners with both index fingers*



*Circuit board attachment*





*The cut out tab is cut with slots that simplify bending*

