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O2 Sensor Check (Process Build and RFS)

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O2 Sensor Check
Overview

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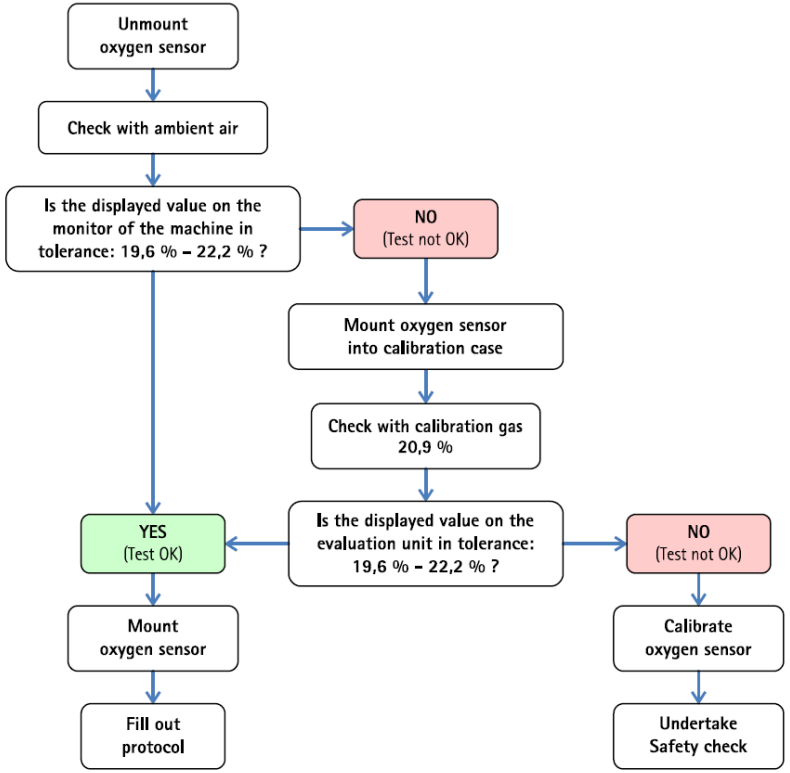
In order to ensure that no adverse chemical reactions occur during the process, the machine needs to be sure that the Oxygen levels are below a certain amount. This task is performed by the Oxygen Sensor.
There are 2 oxygen sensors in the machine: one in the process chamber and another in the recirculating filter system.

The processes to check the correct functioning of both of these sensors is described in the following slides. First, the full process for the check in the process chamber will be described. Next, the steps in the process that are different for the RFS sensor will be described.



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O2 Sensor Check

Step 1 – Open Process Chamber Door

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EOS M300-4 Process Chamber

1. Open the door in order to expose the O2 sensor to ambient

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O2 Sensor Check

Step 2 – Software - Dashboard

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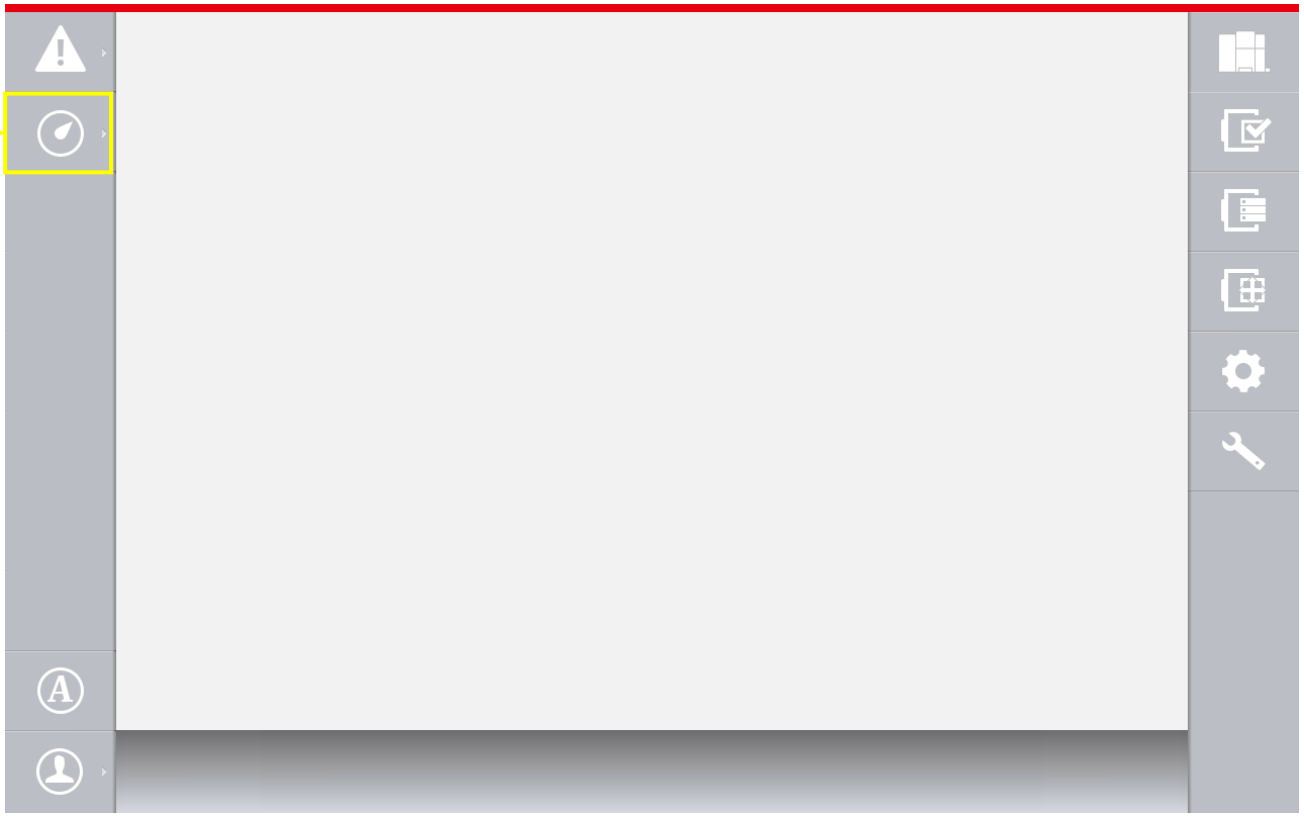
1. On a machine HMI, select the Dashboard button



EOS M300-4 HMI

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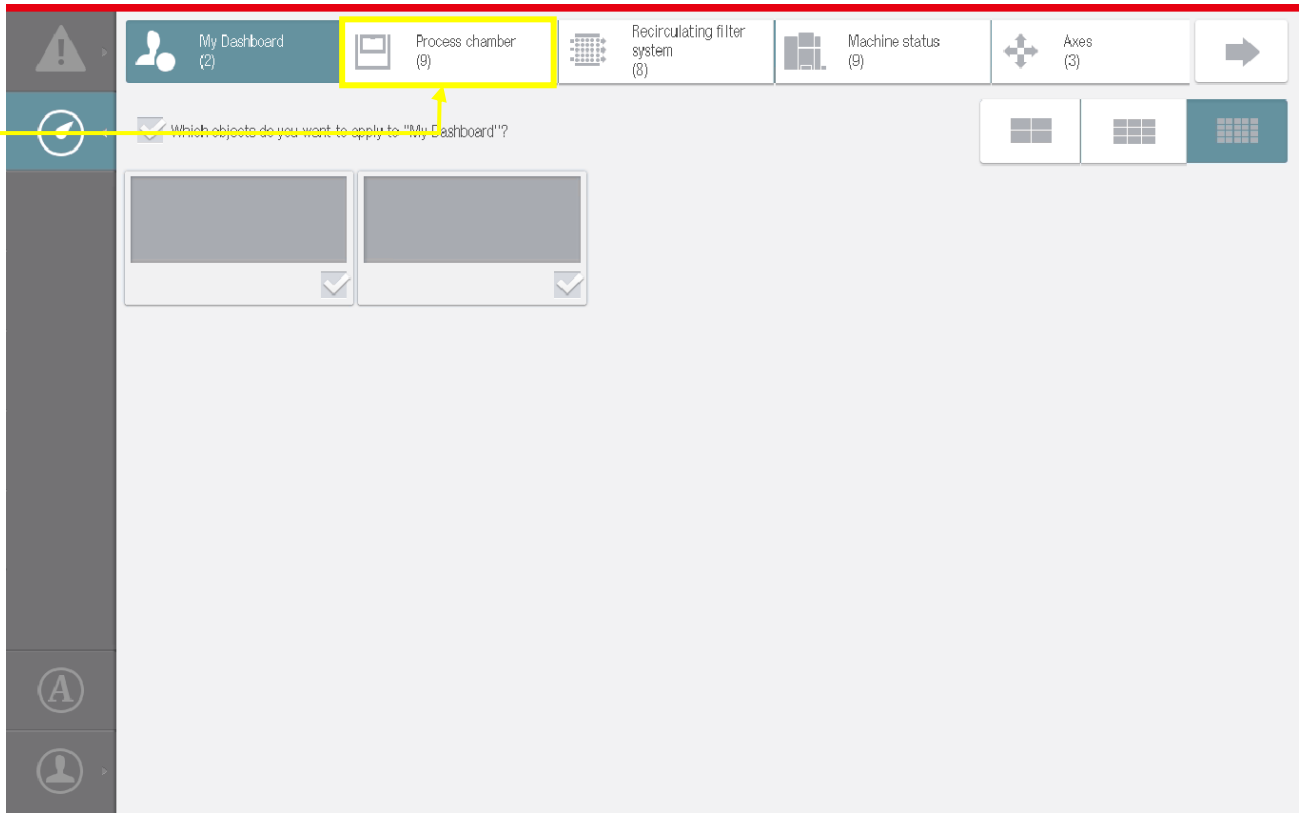
Step 2 – Software - Process Chamber

2. On the dashboard, select the Process Chamber button



EOS M300-4 HMI

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O2 Sensor Check

Step 3 – Ambient Air Sensor Check

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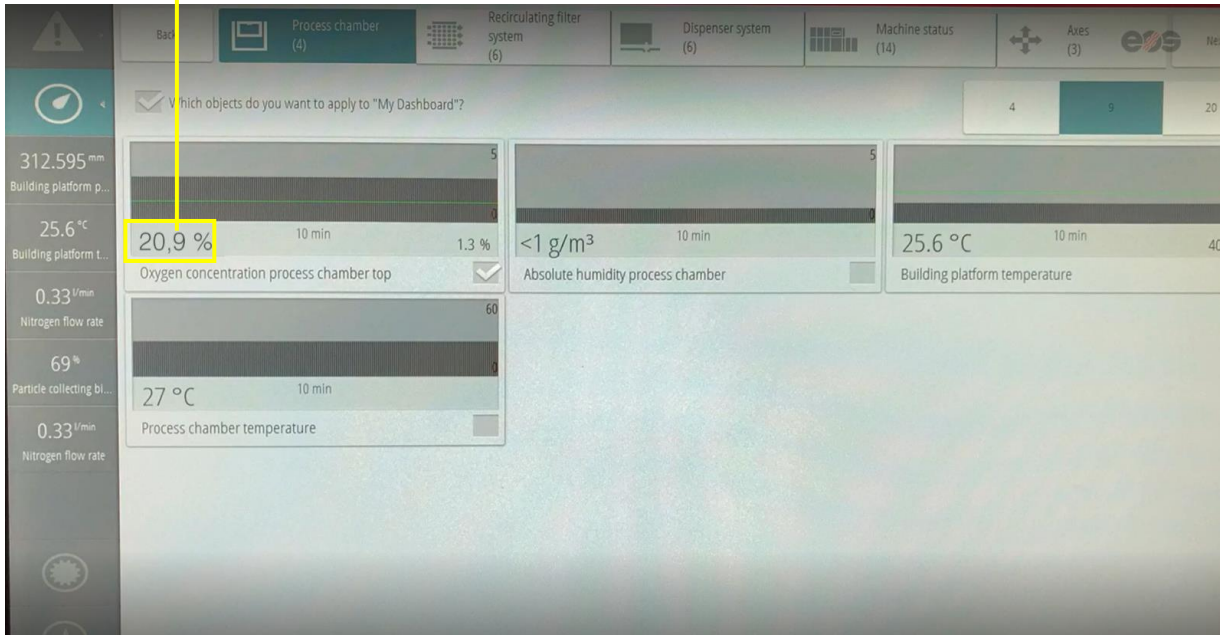
1. Once on the Process chamber screen, check the oxygen concentration level



EOS M300-4

If a value between 19.6% and 22.2% is indicated, proceed to step 7.
This means everything is ok

If a value less than 19.6% or greater than 22.2% is indicated, proceed to step 4

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O2 Sensor Check

Step 4 – Remove the O2 Sensor

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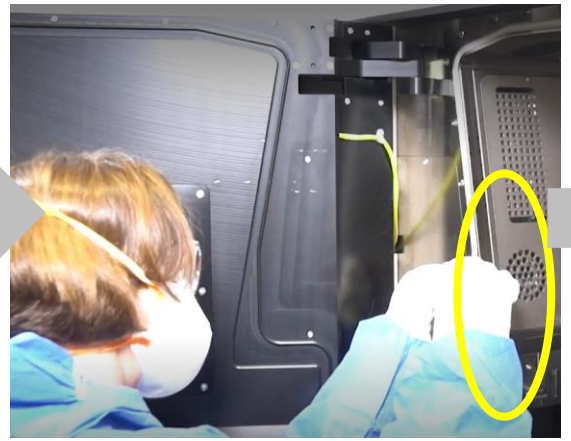
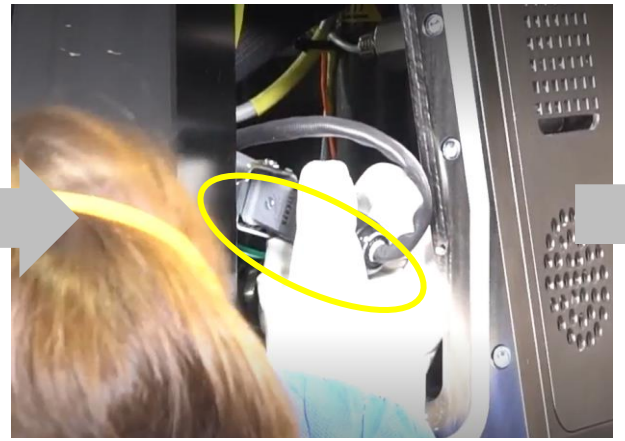
1. Switch the machine off at the main switch
2. Open the service flap
3. Disconnect the cable connection from the sensor
4. Remove the sensor from the machine by unscrewing it (using a wrench and then by hand)


Process of removing O2 sensor from EOS M300-4

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O2 Sensor Check

Step 5 – Connect Sensor to Calibration Case

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1. Screw the sensor into the calibration case

2. Use the extension chord to connect the sensor to the machine

3. Switch on the machine

Process of connecting O2 sensor to calibration a case

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O2 Sensor Check

Step 5 – Connect Sensor to Calibration Case

O2 Sensor calibration

4. Connect the 20.9% gas to the calibration case and select the appropriate port

5. If the sensor was cold, wait 30 minutes for it to heat up

6. Flood the sensor with gas at a rate of 0,5 l/min for 10 minutes

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O2 Sensor Check

Step 6 – Check Results

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If the displaying value is within the tolerance, the test is valid and the sensor may be reinstalled in the machine

If the displaying value is out of range, perform a calibration

Inspecting O2 Sensor Results

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O2 Sensor Check
Step 7 – Summary

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When performing the O2 sensor check make sure to:

- Document the measured values:
  - Date
  - Inspector
  - Values achieved/changed

- Refit the oxygen sensor in its original place by following the unfastening steps in reverse order.

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O2 Sensor Check (RFS System)

Step 1 – Remove the O2 Sensor

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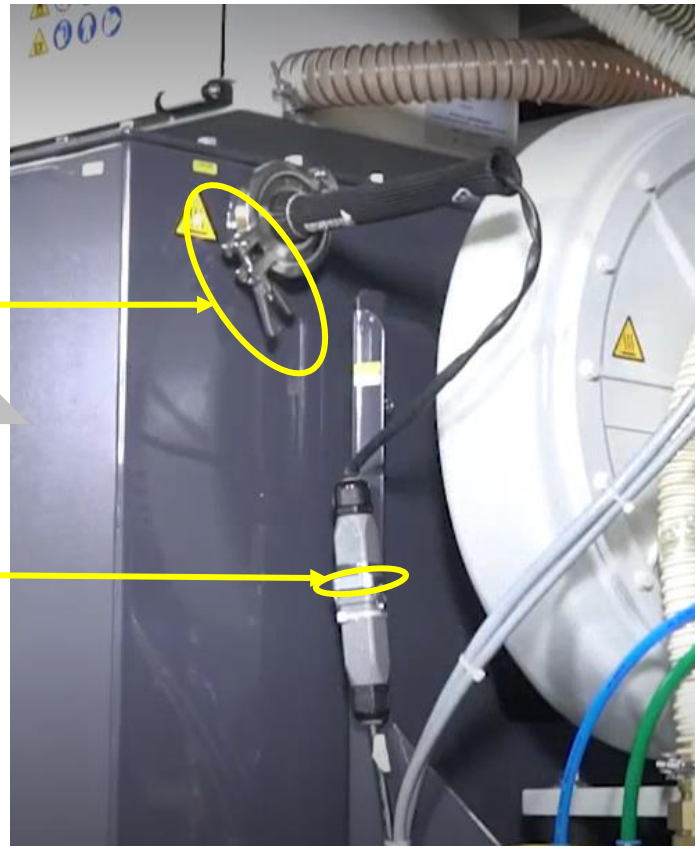
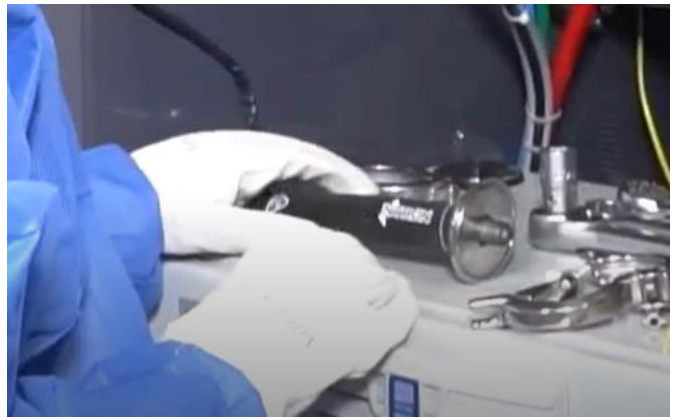
2. Loosen fastening from the sensor to remove it from the machine

1. Remove cable tie from the connector



3. Place the sensor on a heat resistant surface



Process of Removing the O2 Sensor

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O2 Sensor Check (RFS System)

Step 1 – Remove the O2 Sensor

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4. Fasten a blind cover to the sensor entrance so no oxygen can enter

5. If the sensor was cold, wait 30 minutes for it to heat up

Process of Removing the O2 Sensor

Check the sensor for any metal powder deposits. If there are any, contact EOS support as it indicates a filter breakthrough ⚠

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O2 Sensor Check (RFS System)
Step 2 – Ambient Air Sensor Check

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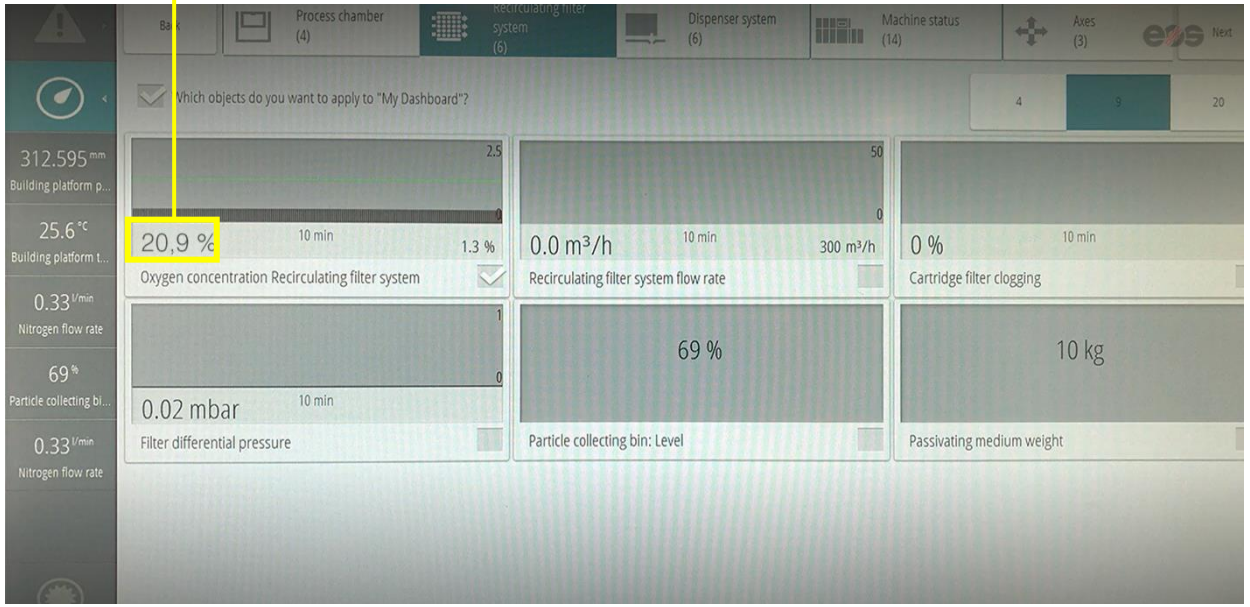
1. Once on the Process chamber screen, check the oxygen concentration level



EOS M300-4 HMI

If a value between 19.6% and 22.2% is indicated, proceed to step 7 of the process chamber section. This means everything is ok ✓

If a value less than 19.6% or greater than 22.2% is indicated, proceed to step 5 of the process chamber section ✗

Any questions?

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Thank you!

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