

MTS 4.0 ER-133000

ALH949/001

ER-152986 - Demodisplay no. 111 MTS 4.0 round

Documentation for exhibitions and shows
Installation of pedestal and use of service tool



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Change history

Index	Date	Remarks	Signature
1.0	22.09.2021	Initial draft	ham
2.0	03.10.2021	Updates Pedestal	ham
3.0	05.11.2021	Hardware Update	ham
4.0	30.08.2023	Hardware and Software Update	ham
5.0	07.05.2024	Software Update	bob

Document release

Index	Function	Name	Date	Signature
4.0	Project Lead MTS 4.0	Martin Hartmann	30.08.2023	ham
	Team Leader R&D Standardization	Benno Frey	30.08.2023	bfr
	Team Leader M&S	Michael Gautschi	30.08.2023	mga
5.0	Product Manager Standardization	Björn Oberli	07.05.2024	bob

1 Material & packaging

- Bill of materials is included in the transport box
- **Unload** the podest **with the pallet** from the box
- Always **lift the podest** to reposition. Do not push!



Figure 1: Transport box

2 Setup pedestal

2.1 Installation instructions

Connect air inlet (min. 6 bar - max. 10 bar) and power (230 V).

The pivot bearing is used for air distribution P2, P3, and P4. It provides a 360° rotation of the chuck.

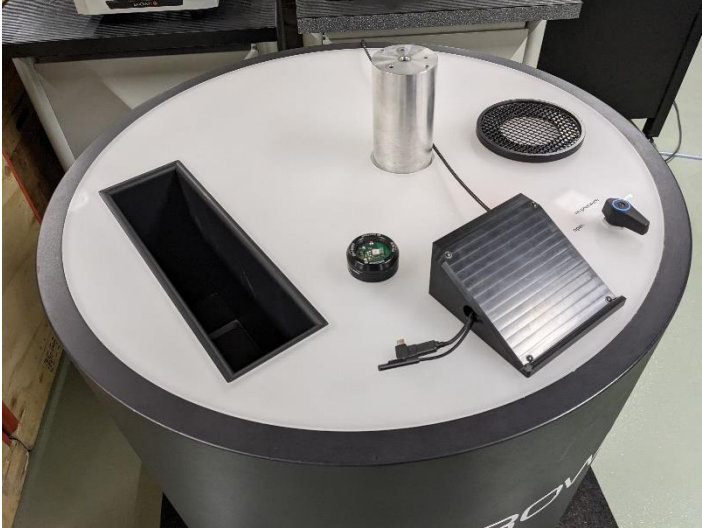


Figure 2: Pivot bearing



Figure 3: Pedestal connections Typ J and ø6

2.2 MTS 4.0 Baseplate

Dimensions: 360 x 360 x 65 mm ; STM 200 ; Type MTS 4.0 P/A

Chuck labeling as shown in the figure, important for setting the parameters/ troubleshooting.



Figure 4: MTS 4.0 4-fold base plate

2.3 Mounting the baseplate

The chuck can only be mounted in one orientation (matching the corresponding air holes). The base (Green Dot) must match the marking on the mounting plate. An O-ring must be inserted for each air hole. Tighten the M12 screws to max. 15 Nm.

Number	Description	b7
3	O-ring Ø10 x 4 FPM 75	000305
4	Socket head screw M12 x 55	-
4	Nut M12 / 0.8d	020824
1	Socket head screw M12 x 30 low head	-
4	Washer for M12 screws (only for the base plate)	000579

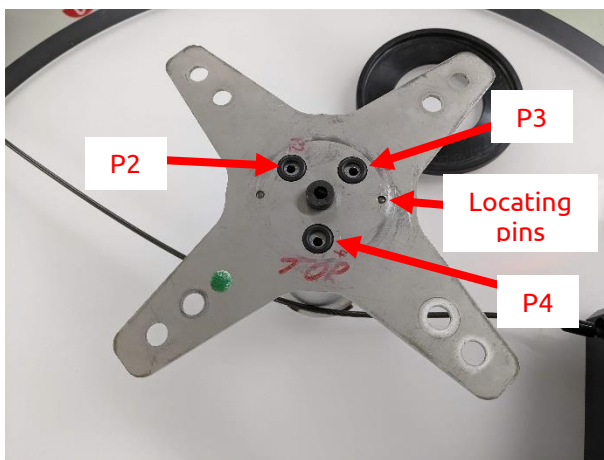


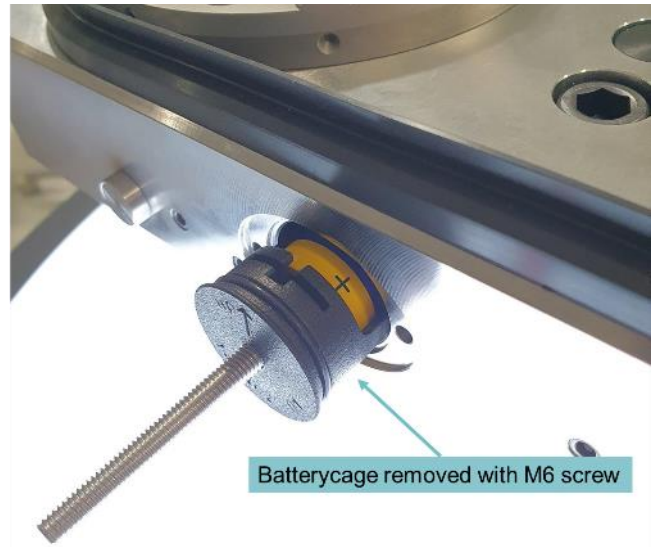
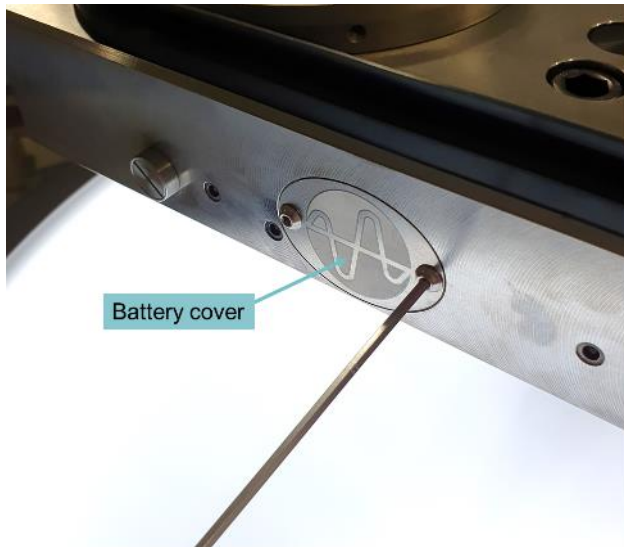
Figure 5: Base plate mounting air connection



Figure 6: Base plate orientation and mounting 4 x M12

2.4 Batteries for baseplate

- Batteries are pre-installed in the baseplate. Spare batteries are provided in the transport box.
- Do not change batteries unless there is a warning in the service tool "BATTERY LOW"
- For troubleshooting purposes or if the chuck has an unknown error, remove one battery and insert it after 10 seconds.
- **Generally, this should not be needed for the duration of an exhibition.**
- The chuck connects automatically to the antenna (blue LED).



2.5 Pivot bearing for 360° rotation

Manual control valve with 3 positions. Reclamp for 3-4 seconds, then move to no pressure. The clamping system is self-locking.

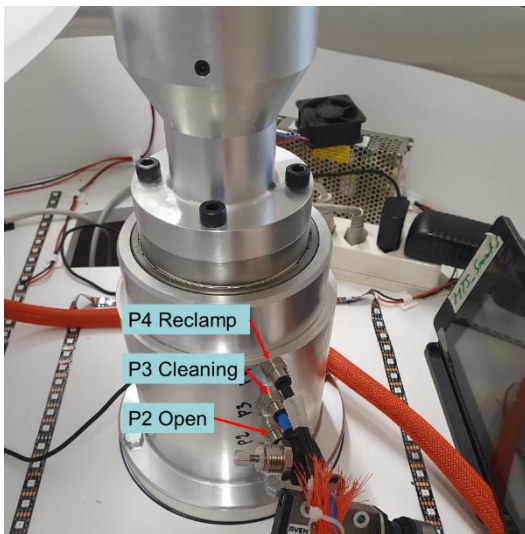


Figure 7: Pivot bearing for 360° rotation

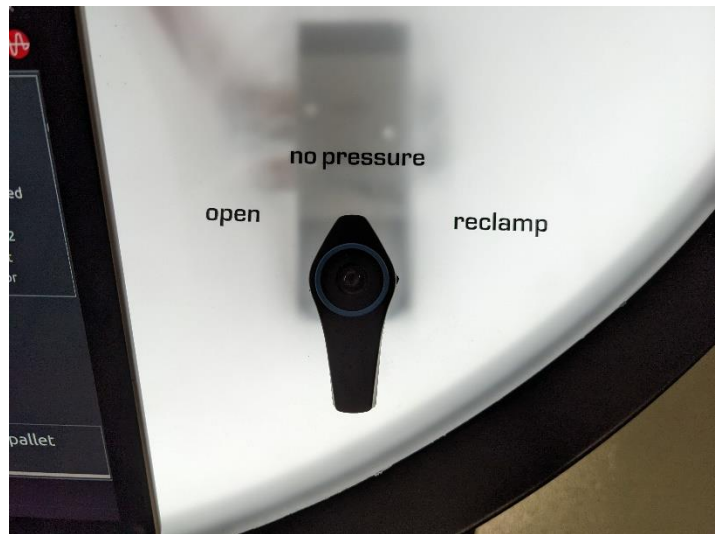


Figure 8: Valve with 3 positions

2.6 LED indicators

State of the chuck and antenna is ensured by LEDs.

Green = power

Blue = Wireless connection (BLE)

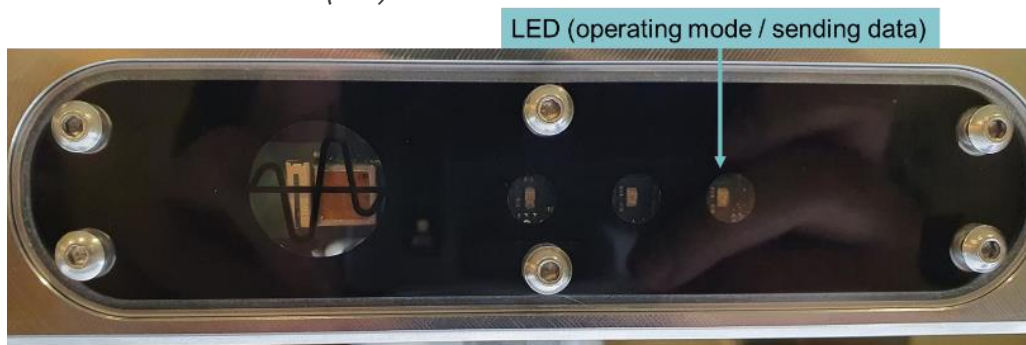


Figure 9: Base plate LED power



Figure 10: Antenna

2.7 Pallets included

Pallet	Picture	Usage
Lightweight pallet, 4-fold, aluminum	 <i>Figure 11: Pallet 398x398x48 lightweight</i>	Demonstration clamping force, presence sensor, "normal use" NOTE: Pallet is very light and therefore the presence sensors may not always activate! Insert the pallet firmly into the chuck. In real applications, pallets are 5-10 times heavier.
Pallet without spigot, ø148, aluminum	 <i>Figure 12: Pallet ø148 without spigot</i>	Demonstration error, presence error

2.8 Layout internal

Electronic components are permanently installed inside the pedestal. Removing the plate is only required in case of failure.

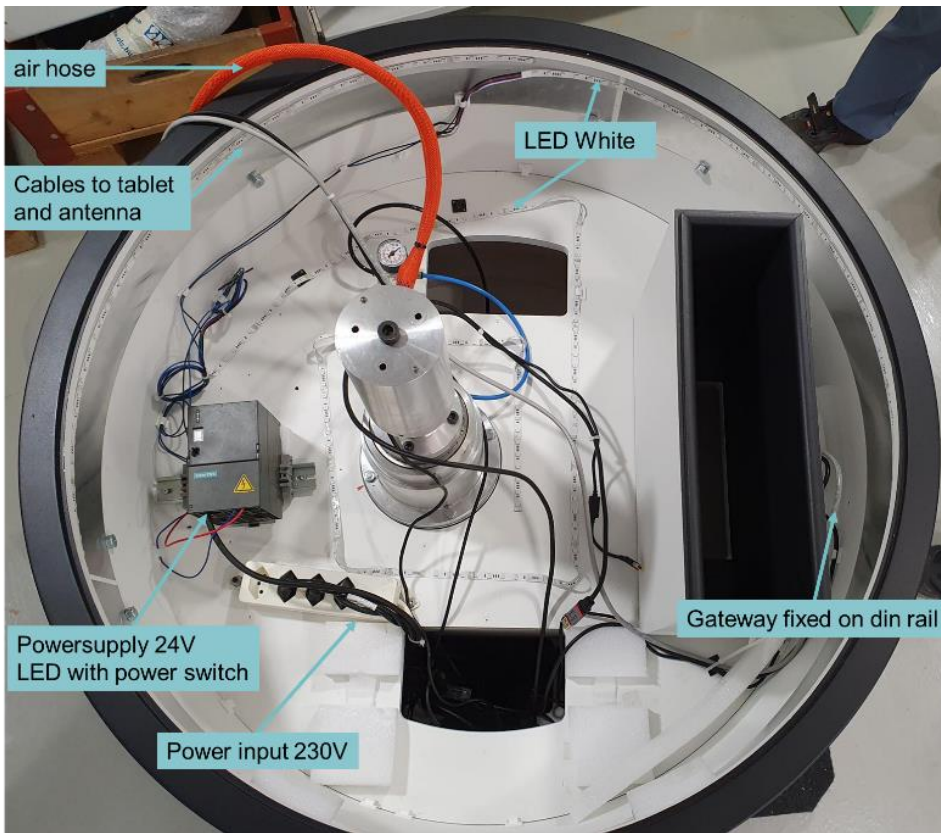


Figure 13: Inside pedestal

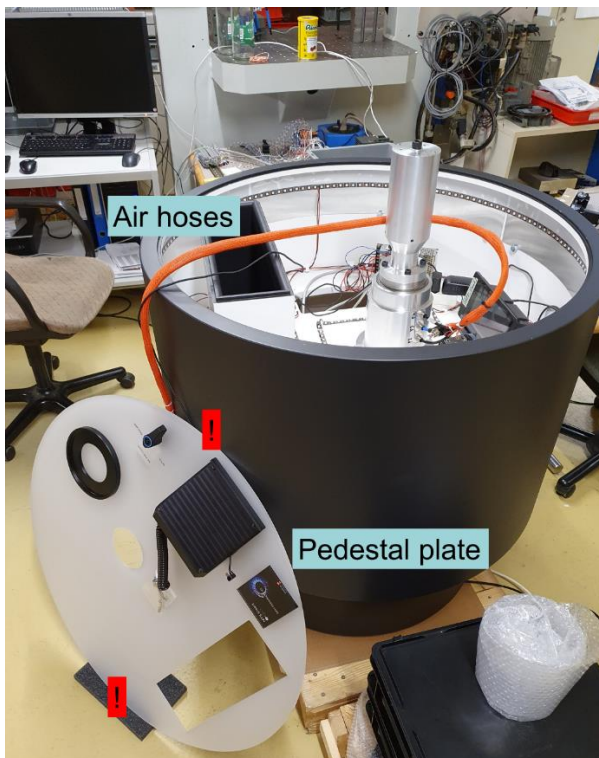


Figure 14: pedestal plate (installation)



Figure 15: Gateway

2.9 Pneumatic system

Function	Value	Description
Air input min.	5 bar	MTS 4.0 min. opening pressure
Air Input max.	10 bar	Components designed for max. pressure
Pressure reduction	6 bar	MTS 4.0 max. pressure for reclamping
Cleaning air (fixed)	50 l/min	For exhibition only

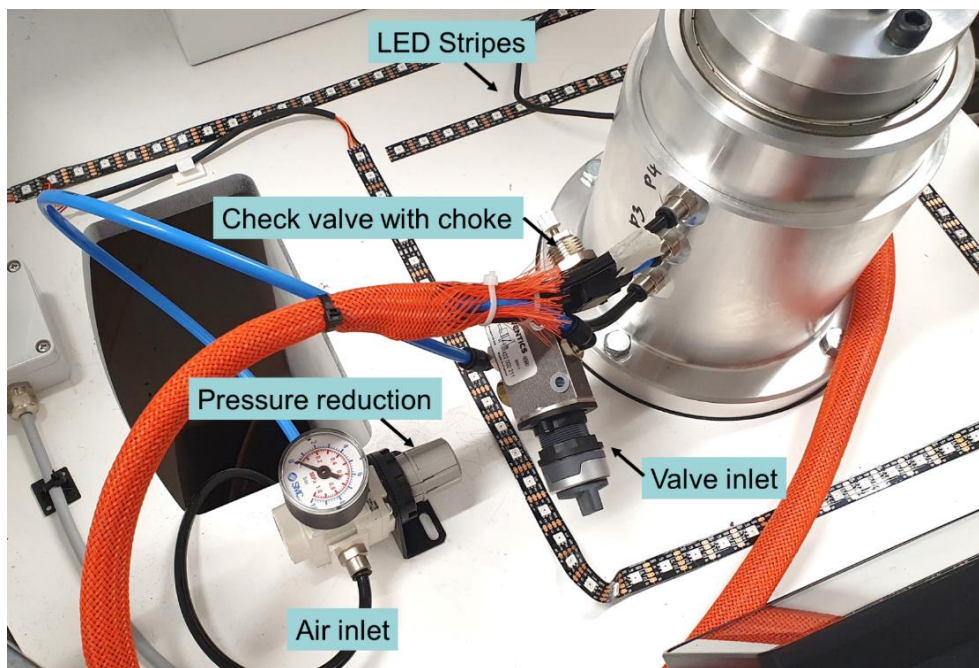


Figure 16: pedestal internal components

3 Setting up Surface Go

3.1 Safety (theft)

Maclocks safety lock with wire. Provided with 2 keys.

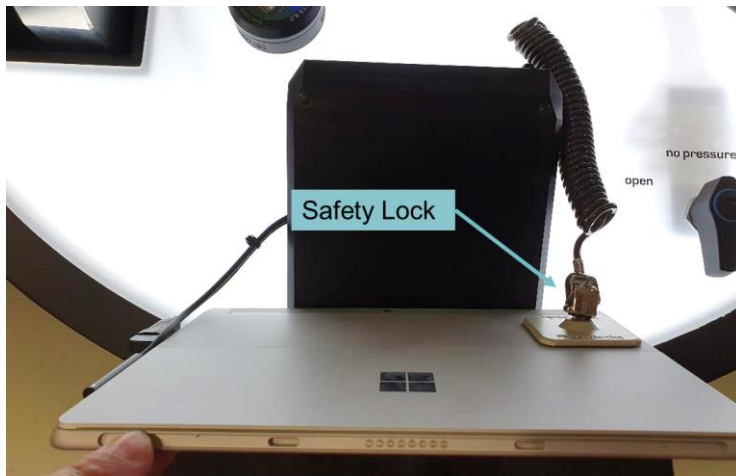


Figure 17: Safety lock for Surface Go

3.2 Startup

Windows Login

Username: Smart

Password: 1970

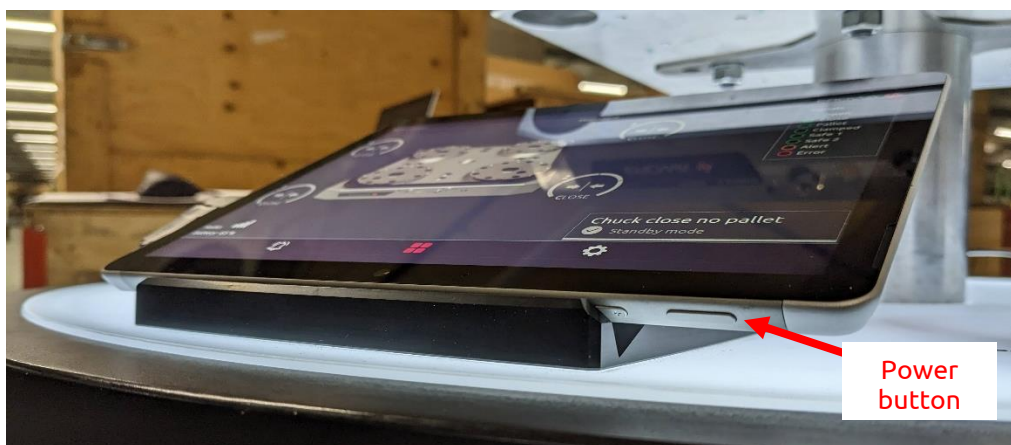
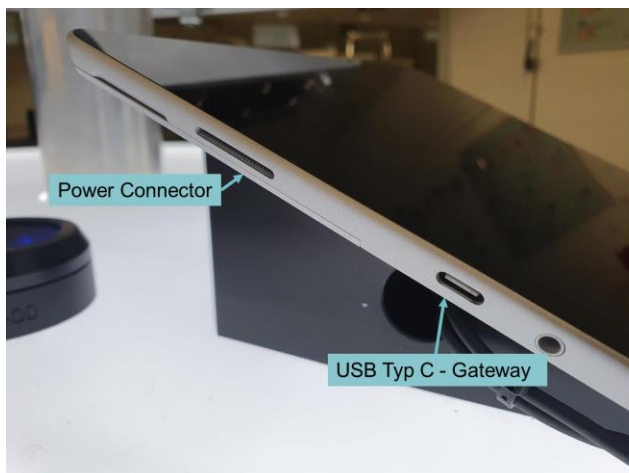


Figure 18: Surface Go power button

Info: Touchscreen is disabled to prevent manipulation from visitors. Use a keyboard and mouse to operate Servicetool.

3.3 Connections



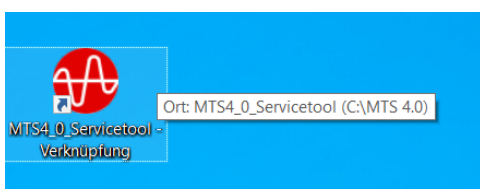
3.4 Peripherals

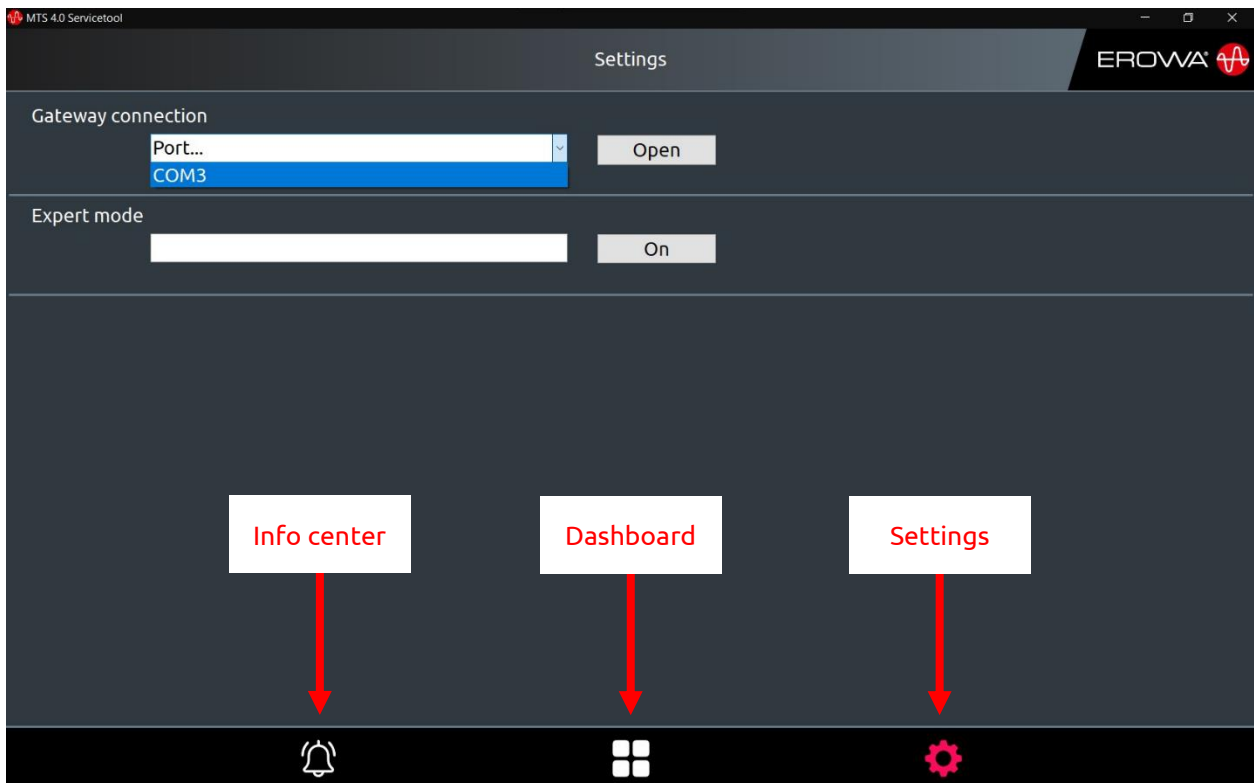
Keyboard and mouse are connected to the Surface Go via USB Type C cable.



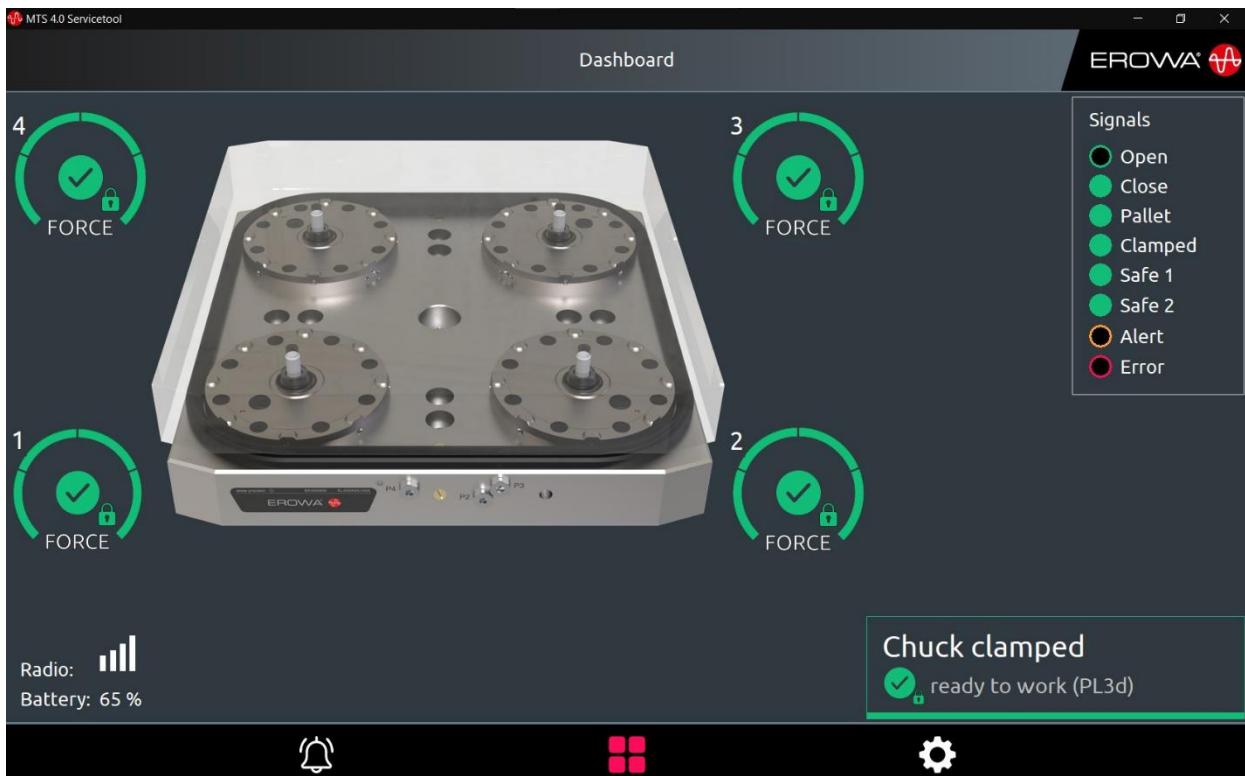
3.5 Starting Servicetool

- Open **MTS4_0_Servicetool V3.1.1.exe** from the desktop icon.





- Go to Settings page
- Select COM-Port 3 and press "Open"



- Go to Dashboard page

4 Servicetool monitoring and possibilities

4.1 General states

Nr.	Symbol	Description	Visualization
ID 1		open no pallet	Chuck open no pallet ✓ ready to load
ID 2		open with pallet	Chuck open with pallet ✓ ready to unload
ID 3 (a)		clamped safe Pallet is clamped according to ISO13849 PL3d.	Chuck clamped ✓ ready to work (PL3d)
ID 3 (b)		clamped (unsafe) Pallet is clamped but the configuration of spigots/palet type do not allow PL3d (no centering spigots used)	Chuck clamped ✓ ready to work
ID 4		Closed no pallet	Chuck close no pallet ✓ Standby mode
ID 5		error Errors appear after a delay of 4 seconds if an invalid chuck state is present.	ERROR ✗ Type of error and chuck number
ID 6		alert Alert appears if sensors, battery, or radio transmission is out of tolerance.	ALERT ⚠ Service
ID 7		inactive Inactive chucks are used for 2- or 3-fold Baseplate or for Calibration.	INACTIVE ⊘ chuck number

4.2 Errors "produced on purpose"

Pallet check → Example A: 3 pallets Alu and 1 steel = error.

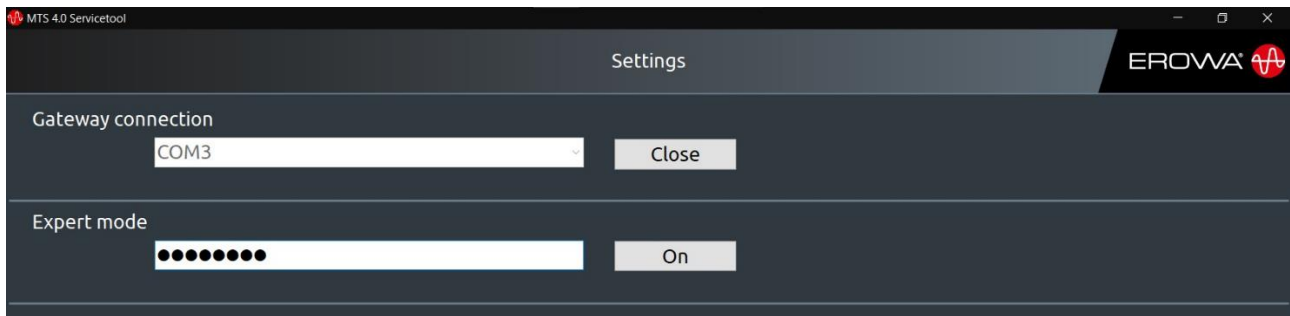
Pallet check → Example B: put metallic object near 1 presence sensor = error after 4 seconds



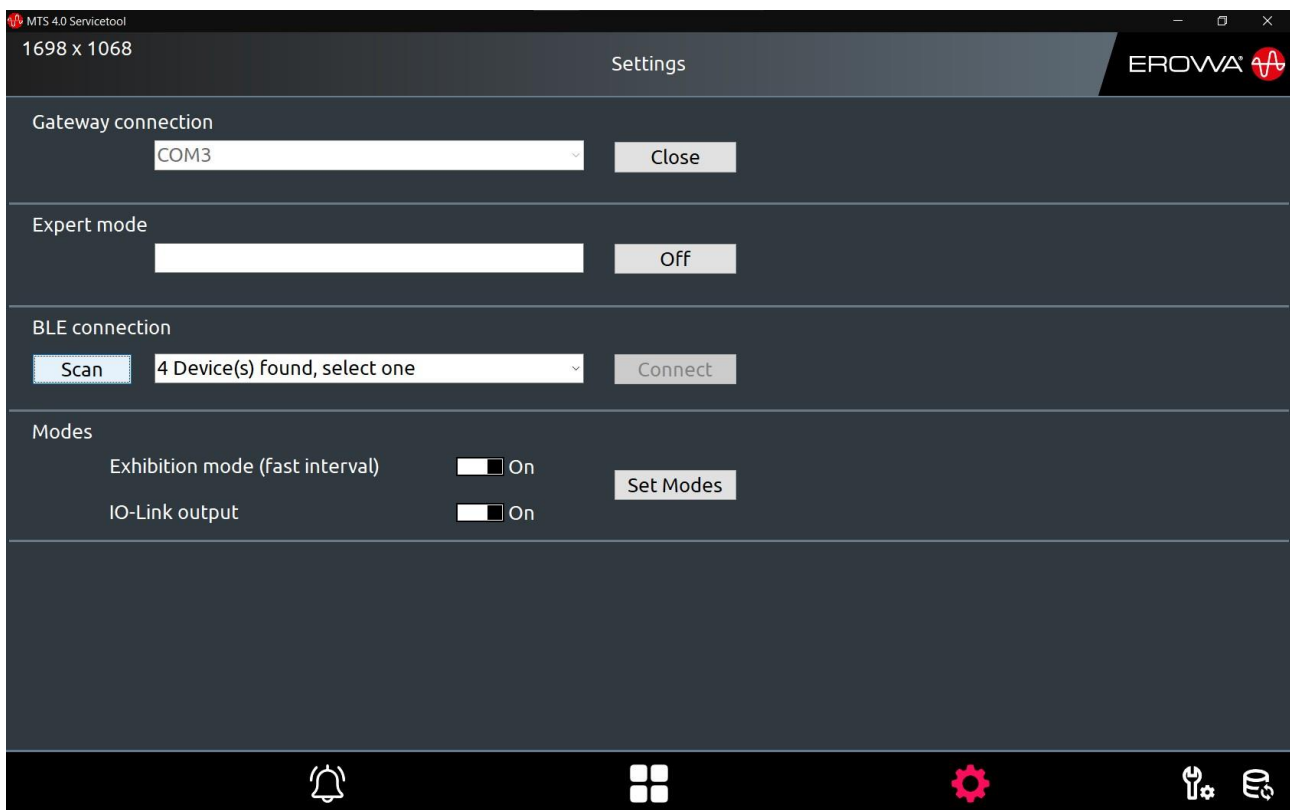
5 Calibration

Only needed if there are issues (alerts or errors, despite correct handling of the pallets).

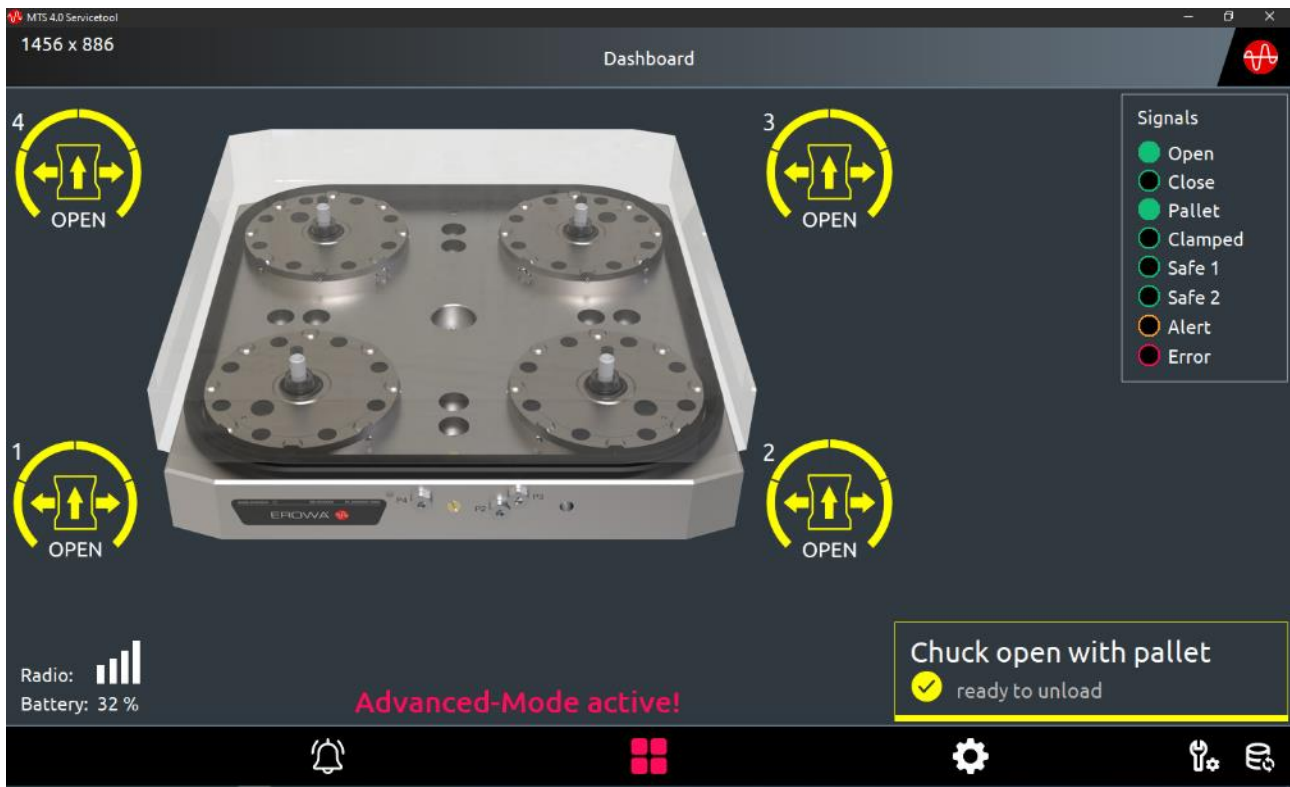
5.1 Enter "Expert mode"



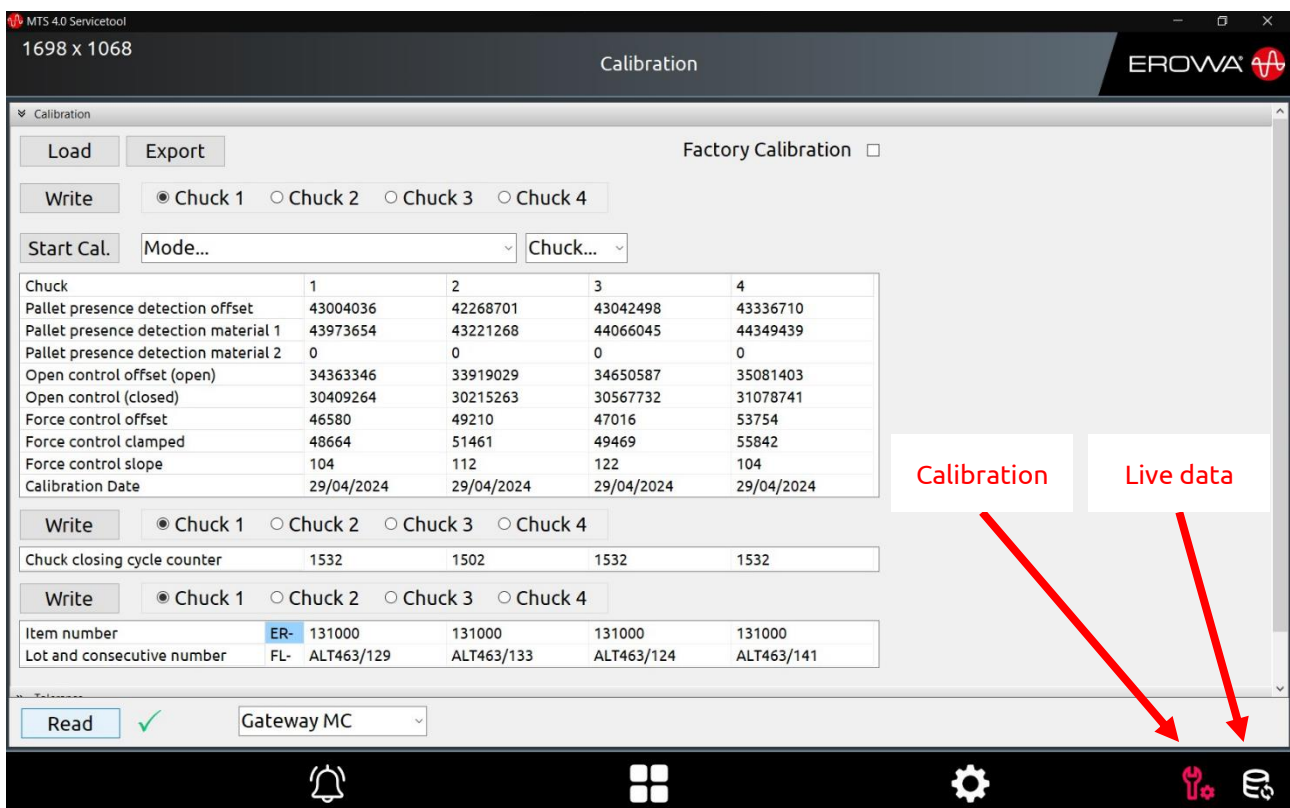
- Password: erowa01
- **TURN OFF ADVANCED MODE AFTER CALIBRATION**



- In advanced mode a new radio connection can be established (not necessary during the exhibition as the MTS 4.0 is pre-installed)



- A warning "Advanced-Mode active!" is displayed in the dashboard. Turn off advanced mode (expert mode) after calibration



- Switch to calibration page
- Select "Gateway MC" and press "read" to see the current calibration on the gateway
- *NOTE: this table does not update automatically, always select "Gateway MC" and press "read" to see the current calibration, also after a new calibration*

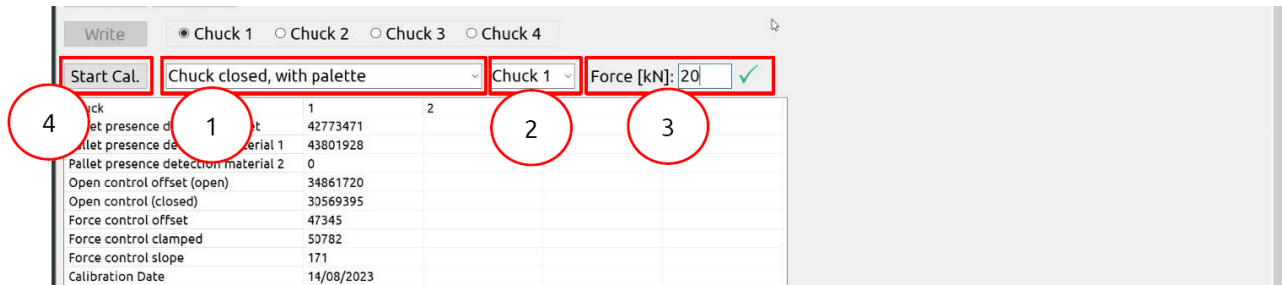
Calibration mode	Pallet	Corresponding sensor
Chuck opened, without palette	No pallet	Open control Pallet presence Force control
Chuck closed, with palette material 1	4-fold pallet aluminum	Pallet presence
Chuck closed, with palette	4-fold pallet aluminum	Open control Force control

Note: The order in which the calibration is performed is not important.

5.2 Calibration: open control

1. Open the chuck and unload the pallet (if present)
2. Select calibration mode "chuck opened, without palette"
3. Select "all"
4. Press "Start Cal."
5. Wait, until the calibration is finished (indicated with a green check mark)

5.3 Calibration: force



1. Open the chuck and load a pallet
2. Reclamp for 3-4 seconds and set valve position to "no pressure" again
3. Select calibration mode "chuck closed, with palette"
4. Select "Chuck 1"
5. Enter Force [kN]: "20"
6. Press "Start Cal."
7. Wait, until the calibration is finished (indicated with a green check mark)
8. Repeat steps 4-7 for each chuck 2-4 again

5.4 Calibration: pallet presence

1. Open the chuck and load a pallet
2. Reclamp for 3-4 seconds and set valve position to "no pressure" again
3. Select calibration mode "chuck closed, with palette material 1"
4. Select "all"
5. Press "Start Cal."
6. Wait, until the calibration is finished (indicated with a green check mark)

Optional: repeat the calibration process for a different material by selecting "chuck closed, with palette material 2". If any pallet is in the detection tolerance of material 1 or material 2, the pallet will be detected successfully.

- **TURN OFF ADVANCED MODE AFTER CALIBRATION**

6 Troubleshooting

6.1 Pedestal LED

- If there are no white backlights: Check 24V power supply on the inside of the pedestal.

6.2 Surface Go

- Check power cable to the Surface Go
- Check data cable to the Surface Go (USB C)

6.3 Servicetool

- Check if any cables are unplugged from the Surface Go
- Check if gateway and baseplate are powered
- If there is an error with "No USB data", try to close and restart the servicetool on the Surface Go and select the correct COM-Port again

6.4 Gateway or general error

- Unplug the whole pedestal, and restart the servicetool on the Surface Go. Baseplate and gateway should connect automatically.

6.5 Transmitting module error

- If there is a problem with the radio connection or transmitting module error, unplug the pedestal so the gateway automatically is restarted.

6.6 Chuck errors or alerts

- Force error = reclamp the chuck and set valve to "no pressure" again
- Pallet error = pallet is not flat on the chuck
- Service errors = sensors are out of tolerance (recalibration)

6.7 Errors or warnings during "normal" use

No Radio	Antenna is disconnected from the gateway or Bluetooth connection is reestablishing (this may take 10-20 seconds)
No USB Data	Gateway is turned off (no power) or the cable is not connected
Battery low	Battery voltage below 2.5 V (change in the next few hours)
Low force	Pallet is only clamped with spring force without reclamp or there is a wrong/loose spigot or there is something underlying the pallet
Pallet check	one or more presence sensors are not within the limits (empty, material 1, material 2)
Open control	one or more open sensors are not within the limits (closed, open, clamped).

7 Contacts EROWA AG

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