



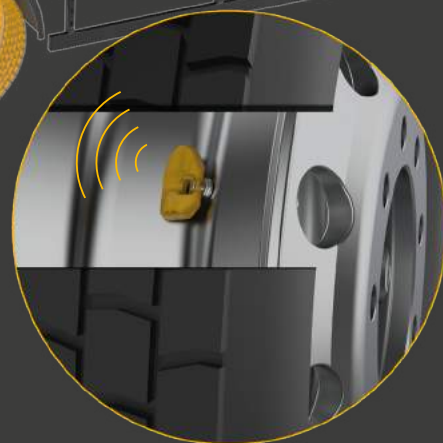
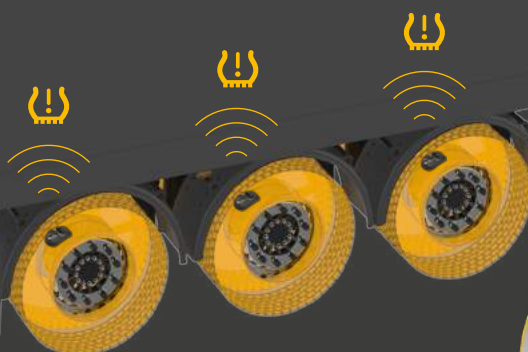
aspoeck.com

ASPÖCK TPMS

OPERATING MANUAL



ASPÖCK[®]
S Y S T E M S





SERVICE NOTES

- Please read these assembly instructions completely before starting assembly.
- These installation instructions are intended for workshops and attachment manufacturers. Appropriate background knowledge is therefore assumed in these assembly instructions. It should be noted that some work may only be carried out by appropriately qualified personnel in order to avoid the risk of injury and to achieve the quality required for construction work.
- When making product improvements, we reserve the right to make technical and optical changes.
- If you have any questions or installation problems, call Aspöck customer service, the dealer or contact your authorized workshop.

LIABILITY PROVISIONS



General information:

- National mounting, installation and operating regulations must be observed.
- The product may only be used in accordance with the enclosed instructions and safety notes. Instructions can be found online at **www.aspoeck.com**.
- No modifications may be made to the product unless only the original spare parts intended for this purpose or spare parts approved by Aspöck are used and installed by professionally qualified personnel.

Exclusion of warranty:

- Warranty for any product damage is excluded in the event of non-compliance with the instructions, with the product data sheet or in the event of use outside of the intended purpose or operating conditions.
- The warranty also does not cover products that have been damaged or are in poor operating condition due to hazards (including environmental hazards, road traffic hazards, hazards caused by third parties or circumstances beyond the control of Aspöck).
- Repair or replacement of a defective product does not result in the start of a new warranty period.
- Other warranty provisions can be found in item 10 of the Terms of Sales and Delivery (TSD) **www.aspoeck.com**.

Exclusion of liability:

- Aspöck Systems accepts no liability for indirect damage, consequential damage and financial losses.
- Other (limiting) liability provisions can be found in item 11 of the Terms of Sales and Delivery (TSD) **www.aspoeck.com**.
- Limiting product liability provisions are laid down in item 12 of the Terms of Sales and Delivery (TSD) **www.aspoeck.com**.



TABLE OF CONTENTS

SERVICE NOTES	2
LIABILITY PROVISIONS	2
1. LIST OF SHORTCUTS	4
2. GENERAL INFORMATION	5
2.1 TARGET GROUP	5
2.2 INTENDED USE	5
2.3 USED PICTOGRAM	5
3. SYSTEM DESCRIPTION	6
4. NEW REGULATION UN ECE R141	7
5. COMPONENTS	8
5.1 SENSORS	8
5.2 RECEIVER	9
5.3 TPMS CABLE HARNESSES	10
5.4 ELECTRONIC UNITS AND ACCESSORIES	10
5.5 CAN-TERMINATION	11
5.6 SOFTWARE OVERVIEW	11
5.7 ASPÖCK TPMS DIAGNOSTIC TOOL T350	12
5.7.1 DOWNLOAD THE SOFTWARE	12
5.7.2 FIRST INSTALLATION AND SOFTWARE UPDATE	13
5.8 INSTALL CONFIGURATION SOFTWARE	14
6. INSTALLATION	15
6.1 SAFETY INSTRUCTIONS	15
6.2 MOUNTING THE SENSORS	15
6.2.1 MOUNTING THE SENSORS ON THE VALVE	16
6.2.2 HORIZONTAL ASSEMBLY MACHINE	17
6.2.3 VERTICAL MOUNTING MACHINE	18
6.2.4 MOUNTING THE SENSORS ON THE VALVE WITH STRAP	19
6.3 MOUNTING THE MAXRX & ERX RECEIVER UNITS	22
6.3.1 MOUNTING THE MAXRX RECEIVER UNITS	23
6.3.2 MOUNTING THE ERX RECEIVER UNITS	26
6.3.3 RECOMMENDED INSTALLATION SITUATIONS	29
6.3.3.1 WITH AUTOLOCATE	29
6.3.3.2 WITHOUT AUTOLOCATE	31
6.4 CABLING	33
7. START-UP	34
7.1 CONFIGURATION FILE	34
7.2 CREATION AND EXPORT OF ONE CONFIGURATION FILE	34
7.3 UPLOAD TO THE ASPÖCK TPMS DIAGNOSTIC TOOL T350	37
7.4 FIRST START-UP	38
7.5 SETTINGS IN THE EBS	40
7.6 ERROR MESSAGES FROM THE ASPÖCK TPMS	40
DIAGNOSTIC TOOL T350	40
8. WORKSHOP INSTRUCTIONS	41
8.1 MAINTENANCE	41
8.2 SELF DIAGNOSIS	41
8.3 DIAGNOSIS ASPÖCK SERVICE WORKSHOP	42
8.4 REPAIR	43
8.4.1 CHECKING SENSORS	43
8.4.1.1 SENSOR REPLACEMENT	44
8.4.1.2 SENSOR REPLACEMENT WITH AUTOLOCATE	44
8.4.1.3 SENSOR REPLACEMENT WITHOUT AUTOLOCATE	45
8.4.2 CHECKING THE FUNCTIONALITY OF THE MAXRX	46
8.4.3 TRAILER TYRE ISO POSITIONS	47
8.4.2.1 MAXRX REPLACEMENT	49
8.4.3 ERX REPLACEMENT	49
9. CIRCUIT DIAGRAMS AND PIN ASSIGNMENTS	50
10. RECYCLING	56
11. ASPÖCK TPMS REPAIR MANUAL	57



1. LIST OF SHORTCUTS

SHORTCUT	EXPLANATION
ADR	„Accord européen relatif au transport international des marchandises dangereuses par route“ „European Agreement concerning the International Carriage of Dangerous Goods by Road“
CAN	Controller area network
EBS	Electronic braking system
ECU	Electronic control unit
EMC	Electro-magnetic compatibility
EOLT	End-of-Line-Test
ESD	Electrostatic discharge
HDSCS	Heavy-duty sealing connection system
ID	Identification number
OEM	Original equipment manufacturer
PCB(A)	Printed circuit board (assembled)
TPMS	Tyre pressure monitoring system



2. GENERAL INFORMATION

2.1 TARGET GROUP

This document is intended for vehicle manufacturers and workshops.

2.2 INTENDED USE

The Aspöck TPMS is intended exclusively for measuring the air pressure and temperature of trailer tyres and transmitting the values to the trailer EBS, which acts as a gateway to transmit the values to the display in the towing vehicle.

Any use beyond this is considered improper use. The manufacturer is not liable for any resulting damage. The user alone bears the risk for this.

Intended use also includes compliance with the operating, maintenance and servicing regulations prescribed by the manufacturer.

The relevant accident prevention regulations and other generally recognised safety and occupational health regulations must be observed.

Unauthorised modifications to the system exclude the manufacturer's liability for any resulting damage.

2.3 USED PICTOGRAM

These instructions contain information that must be observed for personal safety and to prevent personal injury and damage to property. These are highlighted by warning triangles and shown below depending on the degree of danger.

DANGER

The signal word indicates a hazard with a **high** level of risk which, if not avoided, could result in death or serious injury.

WARNING

The signal word indicates a hazard with a **medium** level of risk which, if not avoided, could result in death or serious injury.

CAUTION

The signal word indicates a hazard with a **low** level of risk which, if not avoided, could result in a minor or moderate injury.

NOTE

A note in the context of these instructions is important information, a technical note, about the product or the relevant part of the instructions to which particular attention is to be paid.



3. SYSTEM DESCRIPTION

TPMS (Tyre Pressure Monitoring System) for trucks is a monitoring system that was developed in accordance with the requirements of ECE Directive R141. It is used to continuously monitor the tyre pressure and temperature of commercial vehicles in real time.

Main features:

- **Real-time monitoring:**
TPMS for trucks monitors tyre pressure and temperature in real time to detect deviations from recommendations and safety standards.
- **Direct sensors:**
Sensors in each tyre measure pressure and send information to the vehicle to alert the driver of pressure loss or temperature issues.
- **Tyre life:**
By monitoring tyre pressure, tyre life is extended, resulting in cost savings.
- **Compliance with regulations:**
TPMS on lorries helps to meet legal requirements in accordance with ECE Directive R141 and ensures road safety.





4. NEW REGULATION UN ECE R141

ECE Regulation R141 defines the requirements for tyre pressure monitoring systems (TPMS) for trucks. The following is a summary of the most important points:

- **Area of application:**
ECE R141 applies to vehicles from classes O3 and O4.
- **Tyre pressure monitoring:**
The TPMS monitors tyre pressure in real time and warns the driver if the pressure in one or more tyres falls below a certain threshold value.
- **Warnings:**
The TPMS alerts the driver with a visual warning if insufficient tyre pressure is detected.
- **Self-monitoring:**
The system must monitor its own functionality and inform the driver in the event of a fault.
- **Mandatory date:**
From 7 July 2024, all newly registered vehicles entering the EU for service in the categories listed above must be equipped with a TPMS in compliance with this regulation. Existing vehicles registered before this date are exempt from this obligation.

ECE R141 aims to improve road safety by ensuring that drivers are informed of deviating tyre pressure in good time. This helps reduce accidents caused by tyre problems and improve efficiency on the road.




5. COMPONENTS

This text describes the basic properties of important components.

5.1 SENSORS

The tyre pressure sensor is located inside the tyre and measures the pressure and temperature.



HOUSING MATERIAL		PA GF 35 and Stainless steel
WEIGHT		25g
DIMENSIONS [MM]		60x39x16
BATTERY	TYPE	Lithium button cell (not replaceable)
	DURABILITY	5 — 7 years
PRESSURE MEASURING RANGE		0 to 13.915 bar \pm 0.220 bar
TEMPERATURE DETECTION RANGE		-40°C — +120°C \pm 3°
TEMPERATURE RANGE		-40°C — +120°C
EMC APPROVAL		 10R-06 3558
ADR-TEST		ADR Zone 2
LEAK TEST (IP)		IPX6K


Each sensor is provided with a unique identifier which ensures that it is exclusively connected to the corresponding wheels and correctly identifies itself to the electronic control unit (ECU). This prevents pressure signals from other vehicles from being incorrectly assigned to our own system. This identifier is defined during the manufacturing of the sensor and cannot be changed. The identifier is printed on the sensor to make commissioning easier. Alternatively, the identifier can be read out wirelessly using the Aspöck TPMS Diagnostic Tool T350.



5.2 RECEIVER


The MaxRx is the main receiver, which communicates with the sensors in the tyres and forwards the signal to the EBS. The MaxRx is the ECU of the system. The configuration file is stored on the MaxRx, so if the receiver is replaced, it must be reinstalled and the sensors reprogrammed.



HOUSING MATERIAL	Nylon
WEIGHT	120g
DIMENSIONS [MM]	105x125x38
NOMINAL VOLTAGE V (VOLT)	12V/24V
VOLTAGE RANGE V (VOLT)	8 - 32V
TEMPERATURE RANGE	-40°C — +85°C
EMC APPROVAL	 10R-06 3521
ADR-TEST	ADR Zone 2
LEAK TEST (IP)	IP6K9K

The eRX is an additional receiver for range extension. It communicates with the sensors in the tyres and sends the signal to the MaxRx. In combination with the MaxRx, the eRx receiver enables the „Autolocate“ function.

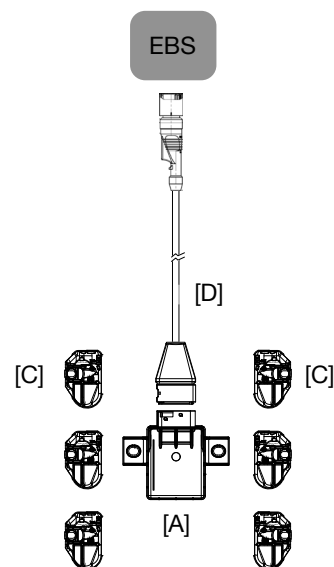


HOUSING MATERIAL	Nylon
WEIGHT	48g
DIMENSIONS [MM]	118x39x29
TEMPERATURE RANGE	-40°C — +85°C
EMC APPROVAL	 10R-06 3125
ADR-TEST	ADR Zone 2
LEAK TEST (IP)	IP6K9K



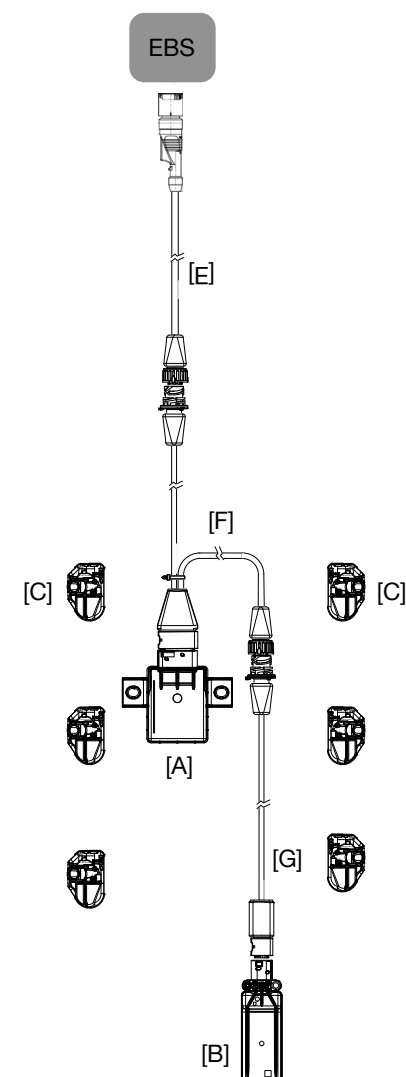
5.3 TPMS CABLE HARNESSES

	ORDER NB. OEM	ORDER NB. AM	VERSION	ADDITION	
CABLE	78-7022-007	78-7022-004	[D]	TPMS Knorr EBS3-Rx18	1 m
	78-7022-017	78-7022-014	[D]	TPMS Knorr EBS3-Rx18	6 m
	78-7022-057	78-7022-054	[E]	TPMS Knorr EBS3-K1.2	1 m
	78-7022-307	78-7022-304	[D]	TPMS Wabco EBS3 - Rx18	2 m
	78-7022-317	78-7022-314	[D]	TPMS Wabco EBS3 - Rx18	6 m
	78-7022-357	78-7022-354	[E]	TPMS Wabco EBS3 - K1.2	2 m
	78-7021-607	78-7021-604	[F]	TPMS K1.2 - Rx18 + K1.2	1 m
	78-7021-407	78-7021-404	[G]	TPMS K1.2 - eRx	1 m



5.4 ELECTRONIC UNITS AND ACCESSORIES

	ORDER NB. OEM	ORDER NB. AM	VERSION	ADDITION
SYSTEM COMPONENTS	75-0210-007	75-0210-001	[A]	Aspöck TPMS Receiver MaxRx18
	75-0210-107	75-0210-101	[B]	Aspöck TPMS Sub Receiver eRx
	75-0210-207		[C]	Aspöck TPMS Valve-Sensor
		75-0210-204		TPMS Valve-Sensor + Screw M6 + Sticker rim + Assembly instructions
	14-1620-057			TPMS Valve-Sensor Screw M6
	14-4314-007	14-4314-004		TPMS Cradle
	14-4315-007	14-4315-004		TPMS Strap
	10-0211-327			Sticker trailer: 140 x 50 mm
	10-0211-337			Sticker rim: 60 x 20 mm



Sticker trailer: 140 x 50 mm



Sticker rim: 60 x 20 mm

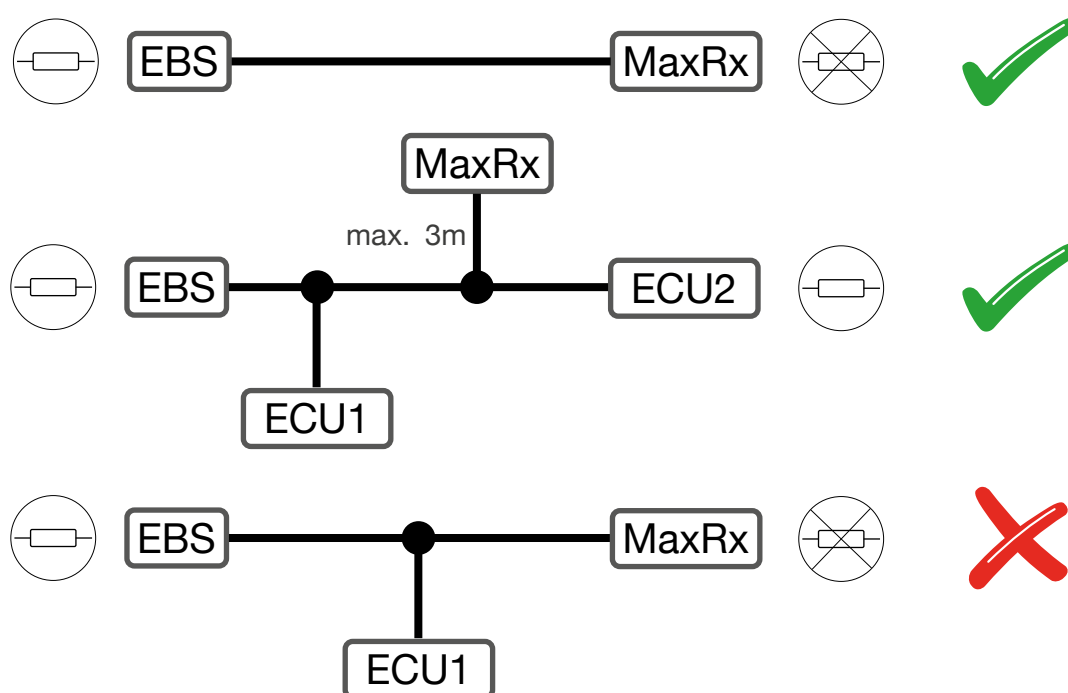


5.5 CAN-TERMINATION

A CAN connection should always consist of a line with a maximum of two defined ends. Each end must be terminated by a terminating resistor. As a rule, the terminating resistor is located in the connected CAN device.

A CAN network with more than two terminating resistors does not enable reliable communication. For this reason, it is necessary that additional devices are only operated with the resistor switched off. Resistance-free devices must be connected at the short end of a path (max. 3m).

The MaxRx main receiver has no CAN termination installed.



5.6 SOFTWARE OVERVIEW

Aspoeck TPMS Config Generator (.exe)

The *Aspoeck TPMS Config Generator* creates configuration files for different vehicle configurations. These generated vehicle configurations can be exported from the application and imported into the *Aspoeck TPMS Config Uploader*.

Aspoeck TPMS OE Config Key (.exe) (Aspoeck TPMS OE Config Key Driver)

To use the *Aspoeck TPMS Config Generator*, a special USB stick called „Aspoeck TPMS OE Config Key“ is required. Before use, the „Aspoeck TPMS OE Config Key Driver“, which is the driver for the USB stick, must be installed. Without this installation and the connected USB stick, the *Aspoeck TPMS Config Generator* cannot be used.

Aspoeck TPMS Config Uploader (.exe)

The *Aspoeck TPMS Config Uploader* recognises a connected *Aspöck TPMS Diagnostic Tool T350* and can write the configuration file to it.

Aspoeck-TPMS-Diagnostic-Tool-Software (.tprp)

Is the software for the *Aspöck TPMS Diagnostic Tool T350*.

5.7 ASPÖCK TPMS DIAGNOSTIC TOOL T350

⚠ WARNING

Danger due to electromagnetic radiation!
Pacemaker owners must not use this product.

With the Aspöck TPMS Diagnostic Tool T350, Aspöck tyre pressure sensors can be stimulated and analysed. Data such as temperature, pressures, service life of the internal batteries, IDs, etc. can be analysed.

The Aspöck TPMS Diagnostic Tool T350 can be configured in various languages via its menu.

In order to be able to control the sensor, the software version on the Aspöck TPMS Diagnostic Tool T350 may need to be updated.



WEIGHT (INCL. BATTERY)	490g
DIMENSIONS [MM]	187x107x47
NOMINAL VOLTAGE V (VOLT)	12V
BATTERY TYPE	Lithium-polymer battery can be replaced by the user
WORKING TEMPERATURE RANGE	0°C — +45°C
STORAGE TEMPERATURE RANGE	-10°C — +50°C
KEYBOARD	7 buttons, dust, water and grease resistant

5.7.1 DOWNLOAD THE SOFTWARE

Step 1: Registration at TPMS.register@aspoeck.com

- Compose a new e-mail and send it to **TPMS.register@aspoeck.com**.
- Fill out the registration form requested in the email. Enter your relevant data, such as name, serial number, and other required information.

Step 2: Confirmation of the e-mail address

- Check your email inbox for a message from **TPMS.register@aspoeck.com**.
- Open the email and follow the instructions to confirm your email address. This includes clicking on a confirmation link.

Step 3: Receiving the confirmation email

- Once you have successfully confirmed your e-mail address, you will receive an automatic confirmation e-mail from Aspöck.

Step 4: Accessing the configuration software

- Open the confirmation email and search for the download link for the configuration software and for the „Aspöck TPMS Diagnostic Tool T350“ device.
- Click on the download link to download the required software.

NOTE

Install and use the configuration software according to the instructions to complete the configuration of the tyre pressure monitoring system. If you have any further questions or problems, please contact Aspöck technical support directly: **TPMS.support@aspoeck.com**



5.7.2 FIRST INSTALLATION AND SOFTWARE UPDATE

Step 1: Connect

- Connect the Aspöck TPMS Diagnostic Tool T350 to a free USB-C port on the computer using a USB-C cable. The device is recognised on the PC as a removable storage device.

Step 2: File transfer

- Open the file explorer and navigate to the location where the *Aspöck TPMS Diagnostic Tool Software* was downloaded.
- Open the Aspöck TPMS Diagnostic Tool T350 drive and copy the update file (.tprp file) to the *Updates* folder.

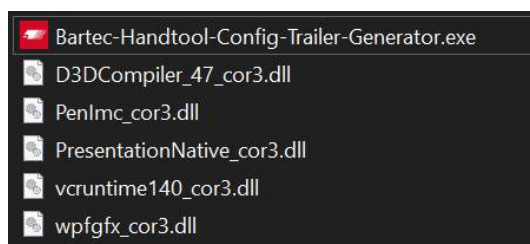
Step 3: Installing the software

- The Aspöck TPMS Diagnostic Tool T350 is restarted automatically. The device checks the update file and updates itself.
- Once the installation is complete, the *Aspöck TPMS Diagnostic Tool Software* can be used on the Aspöck TPMS Diagnostic Tool T350.

5.8 INSTALL CONFIGURATION SOFTWARE

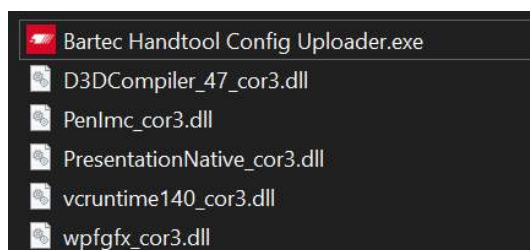
Install *Aspoeck TPMS Config Generator*:

- Unzip the download package and save it on the „C:“ drive.
- Open the folder with the *Aspoeck TPMS Config Generator*.
- Start the *Aspoeck TPMS Config Generator.exe*.



Install *Aspoeck TPMS Config Uploader*:

- Unzip the download package and save it on the „C:“ drive.
- Open the folder with the *Aspoeck TPMS Config Uploader*.
- Start the *Aspoeck TPMS Config Generator.exe*.



NOTE

The specific system requirements must be met for each software and administrator authorisations may be required. It is recommended that you download the latest versions of all programmes from the official website to ensure that the latest functions and bug fixes are included.



6. INSTALLATION

This chapter describes the installation on the vehicle.

6.1 SAFETY INSTRUCTIONS

National health and safety regulations, workshop regulations and the vehicle manufacturer's instructions must be observed!

⚠ CAUTION

Danger from dust

Do not clean the rims with compressed air, as this can produce dust that is harmful to health.

⚠ WARNING

Danger due to loose wheel nut!

Loose wheel nuts can lead to accidents on the road.

- Always tighten the wheel nuts to the tightening torque specified by the vehicle manufacturer.
- After travelling about 500 km, the wheel nuts should be checked again to ensure they are tight.

⚠ WARNING

Danger from unsecured vehicle!

Before carrying out any work on the vehicle, it must be secured against rolling away. This prevents possible accidents and injuries.

6.2 MOUNTING THE SENSORS

NOTE

Danger due to improper handling!

Modifications or manipulations to the sensor can destroy the device and lead to tyre damage. Do not attempt to open the sensor. Do not use balancing powder or tyre sealant to avoid possible damage. Never attach a damaged tyre pressure sensor to a rim. Do not mount the tyre on the rim until the tyre pressure sensor has been correctly mounted. Never mount a tyre pressure sensor on non-approved rims.

Tyre pressure sensors should be stored in a dry environment, avoiding moisture and extreme temperatures. Typical storage temperatures are -10°C to 55°C

Use the right valve for the rim!

⚠ CAUTION

Reasons for replacing sensors.

The sensors must be replaced if the following is detected:

- The housing is visibly damaged.
- Foreign objects can be seen in the pressure opening.
- The battery life of the internal sensor is exhausted.



6.2.1 MOUNTING THE SENSORS ON THE VALVE

- ① Required parts:



- ② Fit the correct tyre valve according to the rim manufacturer's instructions, ensuring that the valve is correctly aligned. The valve must be fitted with a suitable mating surface on the valve head and a hole with an M6x1mm thread.



- ③ Place the sensor on the inside of the rim on the valve head and fix it with the screw so that the sensor can still be moved easily.



- ④ Press the sensor against the rim and hold it so that it rests on the rim base. The valve head must protrude beyond any countersink so that there is a gap between the front of the sensor and the rim.



- ⑤ Press and hold the sensor against the rim as shown in the previous image. Tighten the T30 screw with a calibrated torque screwdriver to $6.0 \text{ Nm} \pm 0.5 \text{ Nm}$.



NOTE

Danger to the sensor due to tensile or compressive forces!

When mounting the tyre, make sure that the tyre bead does not come into contact with the sensor to protect it from damage.

NOTE

Danger to the sensor from liquids!

The sensor must not come into contact with liquids (mounting fluid). Do not fill the tyre with water.



6.2.2 HORIZONTAL ASSEMBLY MACHINE

- ① Coat both tyre beads with mounting fluid.



- ② Mount the wheel on the tyre changer so that the mounting head is on the opposite side of the valve, i.e. offset by 180°



- ③ Pull the tyre bead over the rim and place the tyre bead on the rim flange in the sensor area so that the sensor is touched as little as possible during installation.



- ④ Rotate the entire unit 180° with the tyre changer so that the sensor is at the 12 o'clock position on the mounting head of the machine. Press the bead down with an auxiliary arm of the machine or attach a bead hold-down device at the 1 o'clock position.



- ⑤ Now fit the tyre in accordance with the tyre changer manufacturer's instructions so that the upper bead is fitted over the rim flange.



- ⑥ Fill the tyre according to the manufacturer's instructions and ensure that the beads are in the correct position.





6.2.3 VERTICAL MOUNTING MACHINE

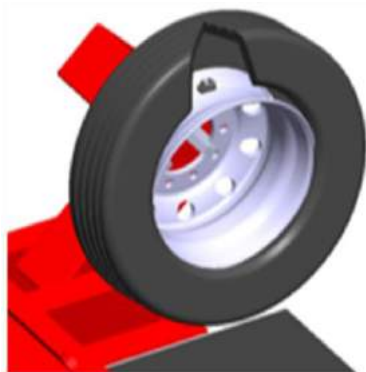
- ① Coat both tyre beads with mounting fluid.



- ② Lift the first tyre bead into the rim well and slide the tyre onto the rim without touching the tyre pressure sensor.



- ③ Lift the tyre over the sensor and place the bead on the rim flange so that the sensor can no longer be touched when inflating the tyre.



- ④ Using the machine, position the sensor at an angle of 180° to the machine roller and secure it over the roller with a bead hold-down device.



- ⑤ Turn the rim clockwise and ensure that the sensor has not been pinched during the installation process.



- ⑥ Fill the tyre according to the manufacturer's instructions and ensure that the beads are in the correct position.





6.2.4 MOUNTING THE SENSORS ON THE VALVE WITH STRAP

- ① Sensor (75-0210-207 / 75-0210-204) to be assembled into Cradle (14-4314-007) and fitted with Strap (14-4315-007).



- ② Insert the Sensor into the cradle by aligning the plastic guide with the metal insert and snapping the sensor into position.



- ③ Taking the white end of the fabric strap, route through the cradle, under the sensor and feed it through the first bar feature on the opposite side until all of the white section is visible.



- ④ Fold the white strap section back and press firmly against the black strap section.



- ⑤ Route the free end of the strap through the other end of the cradle to form a loop, ensuring the strap is not twisted.

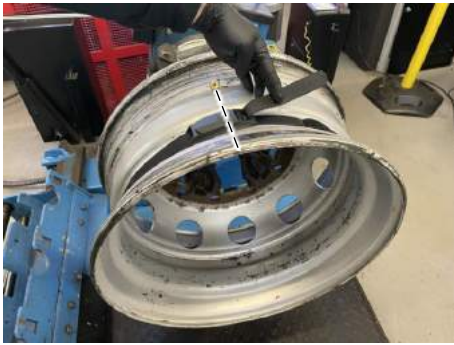


- ⑥ Fit the strap over the edge of the wheel rim and locate the strap in the dropwell (lowest point) of the rim.





- ⑦ With the cradle aligned with the tyre valve, pull the strap fully through the cradle until it is tight on the wheel rim. (arrow in valve direction)



- ⑧ Holding the cradle in position, fasten the strap so that all of the hook and loop sections are fully in contact and press the sections together firmly. Tighten the belt with 180N.



- ⑨ Ensure the cradle is aligned with the tyre valve when the strap is fully tightened to aid the tyre removal process.



- ⑩ Rotate the wheel rim to position the valve at the 6 o'clock position.



- ⑪ Fit the top section of the first tyre bead at the 12 o'clock position.



- ⑫ Fit the lower section of the first tyre bead at the 6 o'clock position (in line with sensor), ensuring no contact occurs with the cradle.





- ⑬ Using the machine, position the sensor at an angle of 180° to the machine roller and secure it over the roller with a bead hold-down device.



- ⑭ Turn the rim clockwise and ensure that the sensor has not been pinched during the installation process.



- ⑮ Once the second bead is fully fitted, the clip can be removed, bead breaker disk retracted and the tyre can be removed from the spindle.



- ⑯ Fill the tyre according to the manufacturer's instructions and ensure that the beads are in the correct position.



CAUTION

Danger due to damaging the sensor!

Procedure may vary depending on Tyre Machine type. It is imperative to ensure the tyre bead does not contact the cradle during fitment as this may result in movement or damage of the cradle and/or sensor!

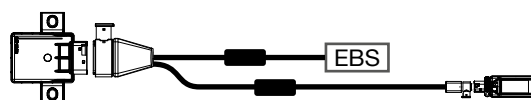
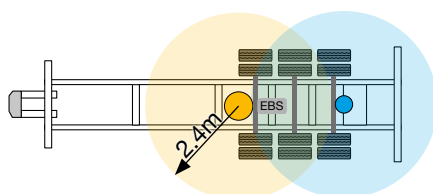


6.3 MOUNTING THE MAXRX & ERX RECEIVER UNITS

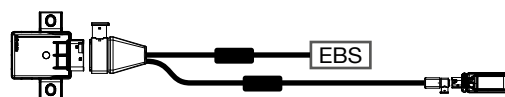
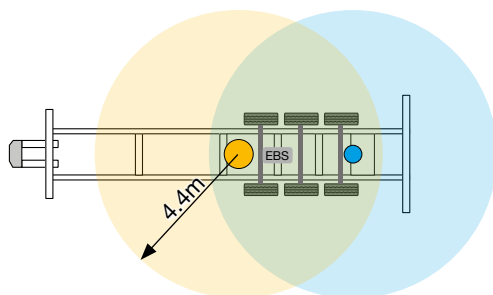
For a good radio connection, the receiving units should not be shielded by metal structures in the immediate vicinity. It should not be installed directly inside longitudinal frame or cross frames. If possible, there should be a line of sight to the wheels sensors. For this purpose, the receiving units should, if possible, be mounted below the vehicle frames. As much distance as possible should be maintained from other electronic control devices that could disrupt the reception of the wheel sensors by emitting interference frequencies.

When installing the receiver units, observe the following distances from the wheel sensors:

Maximum distance twin tyres: 2.4m



Maximum distance single tyres: 4.4m



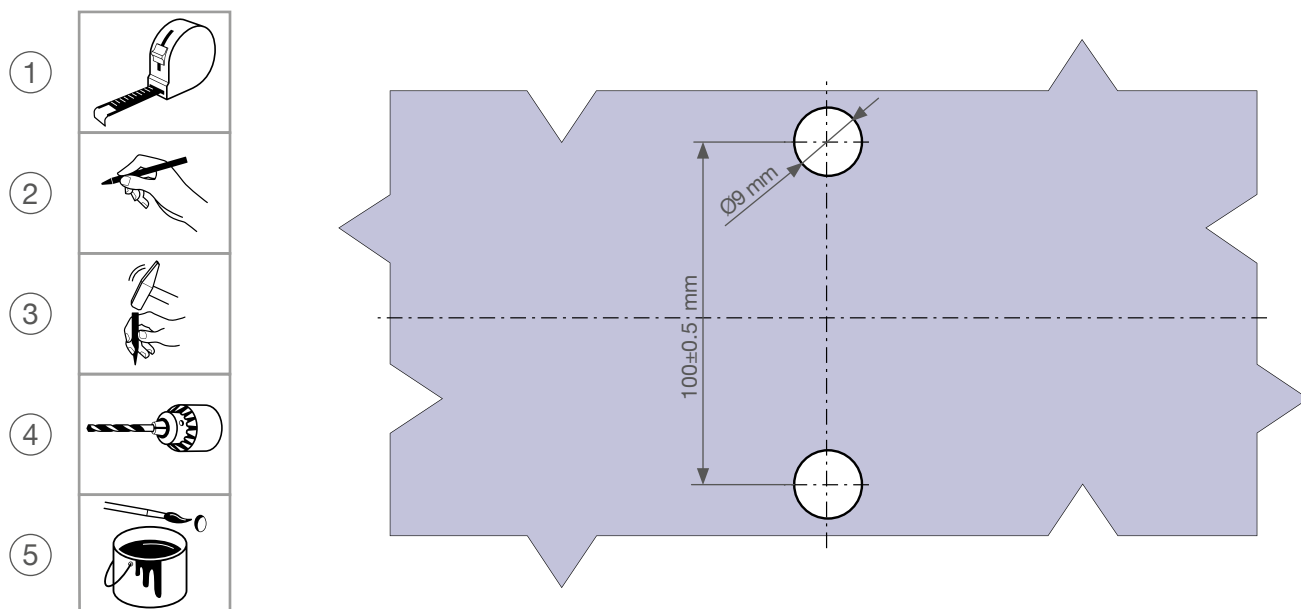
NOTE

Danger due to loss of signal!

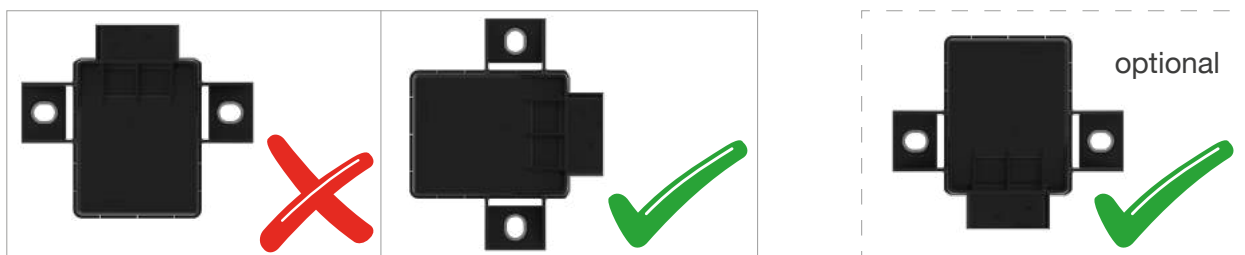
Exceeding the specified distances or mounting in unfavorable installation situations is possible if sufficient signal availability can be proven by a signal availability measurement.



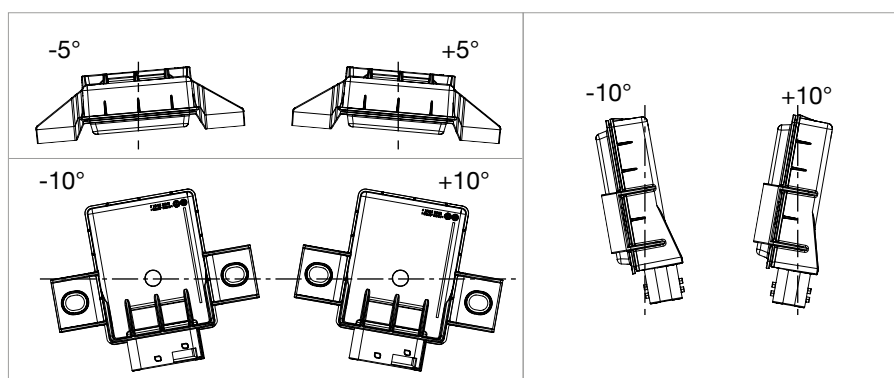
6.3.1 MOUNTING THE MAXRX RECEIVER UNITS



The MaxRx should be mounted vertically or horizontally so that the plug points downwards or to the side.

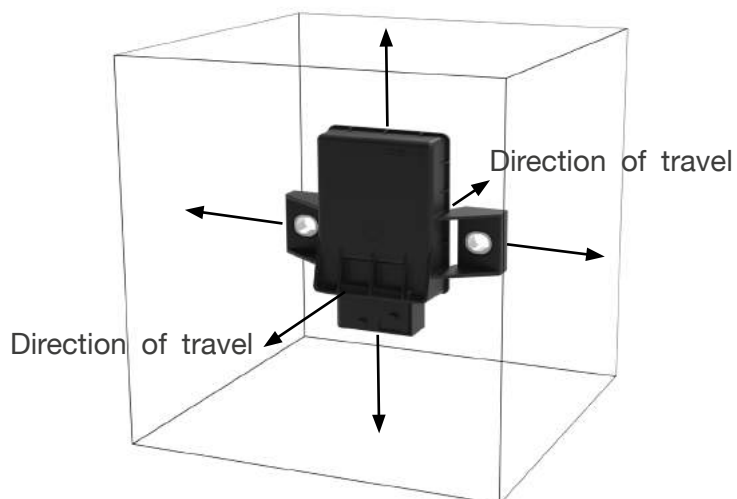


Mounting tolerances:





The MaxRx must be installed at a distance of more than 500 mm from all electrical compressed air and control valves on the vehicle.



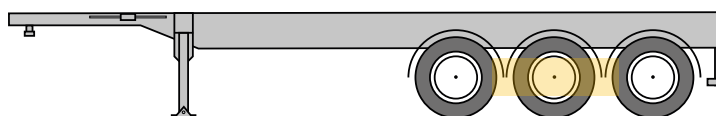
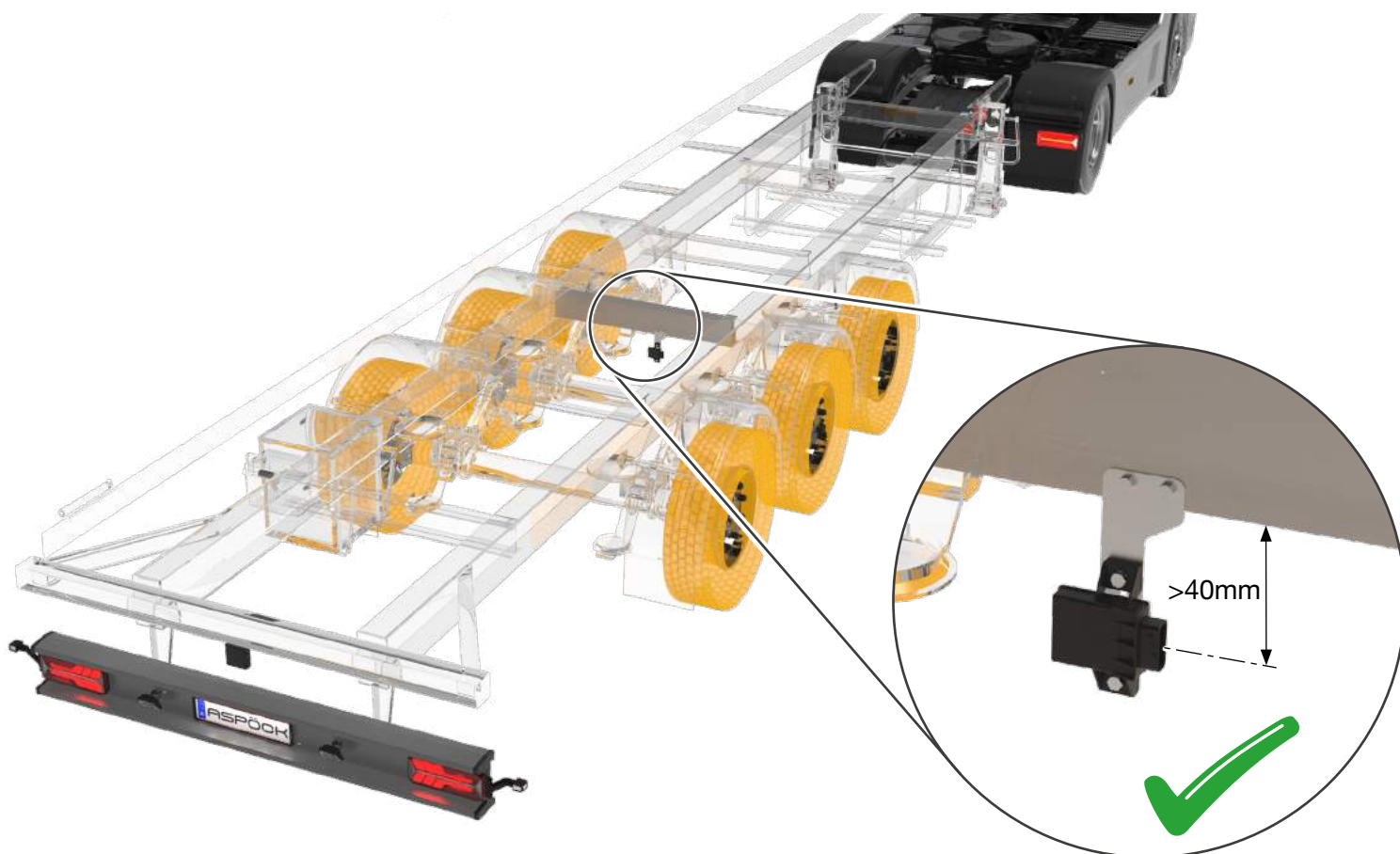
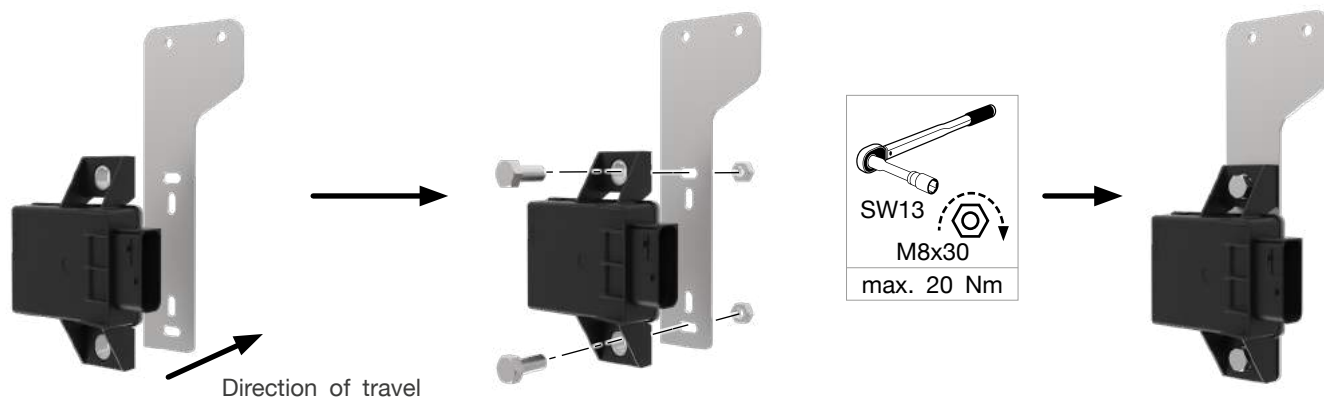
NOTE

Danger to signal reception!

The MaxRx must not be covered by solid metal. A minimum distance of 40 mm must be maintained in all directions, with the exception of the fixing points.



The MaxRx should be mounted on a bracket that is directly connected to the chassis. The cover side (white plastic cover) of the MaxRx must face the bracket.



The ideal mounting position of the main receiver (MaxRx) is underneath the frame up to the axle of the tyre.

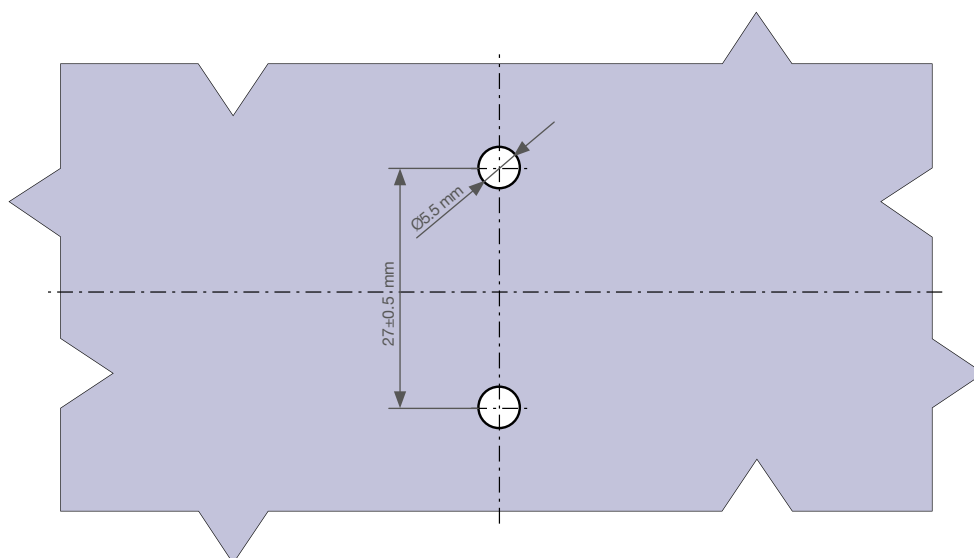
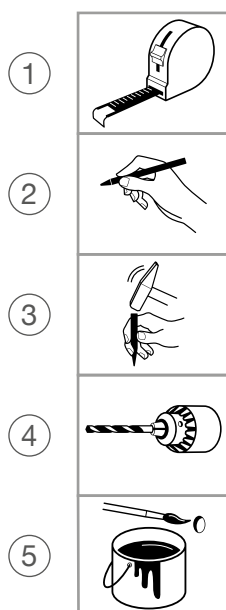


6.3.2 MOUNTING THE ERX RECEIVER UNITS

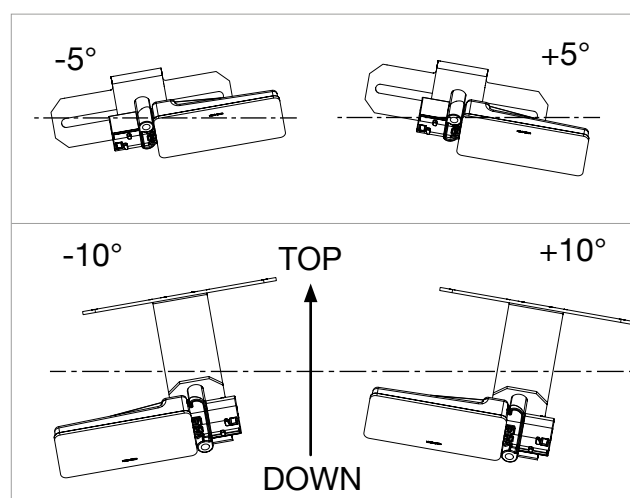
NOTE

Danger to signal reception!

The position of each receiver depends on the axle configuration.

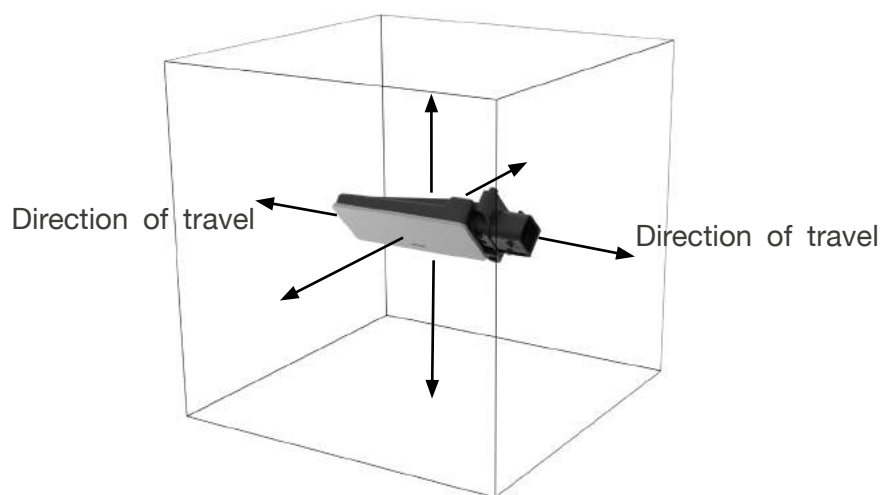


Mounting tolerances:





The eRx must be installed at a distance of more than 500 mm from all electrical compressed air and control valves on the vehicle.



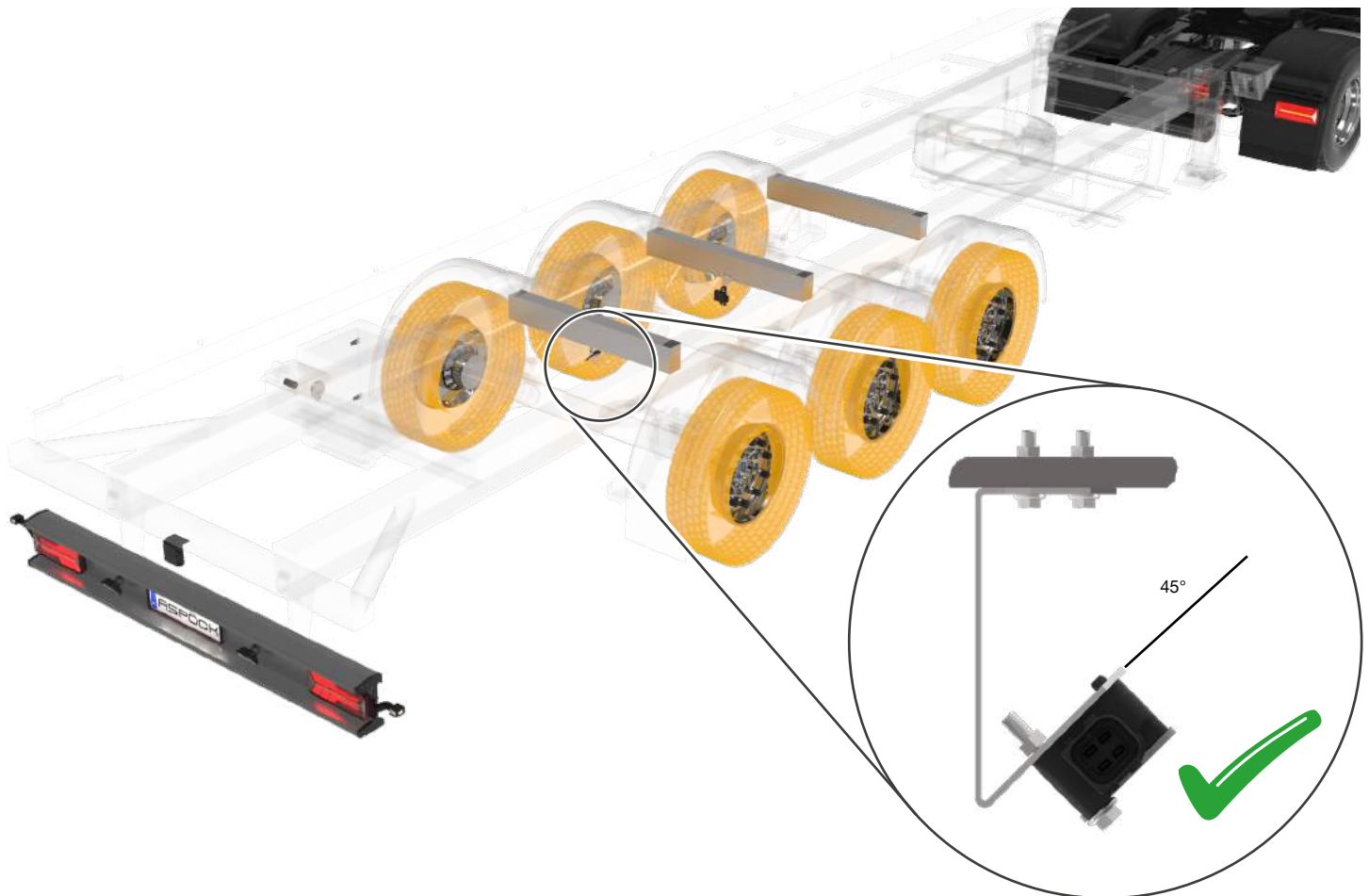
NOTE

Danger to signal reception!

The eRx must not be covered by solid metal, a minimum distance of 40 mm must be maintained in all directions, with the exception of the fixing points.



The eRx must be mounted with a bracket. The cover side (white plastic cover) of the additional receiver must be mounted facing downwards at an angle of approx. 45° to the floor surface (carriageway level).



6.3.3 RECOMMENDED INSTALLATION SITUATIONS



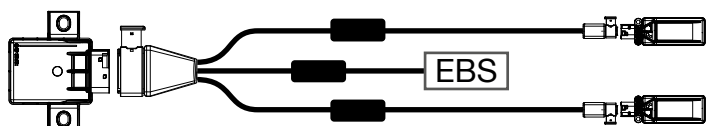
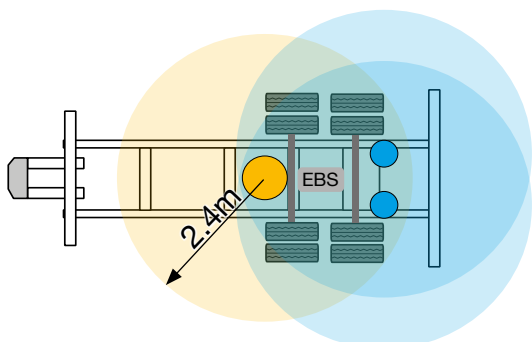
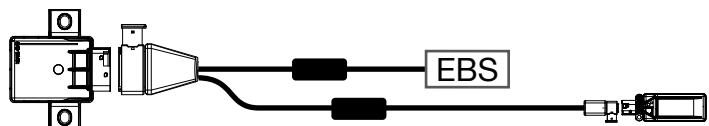
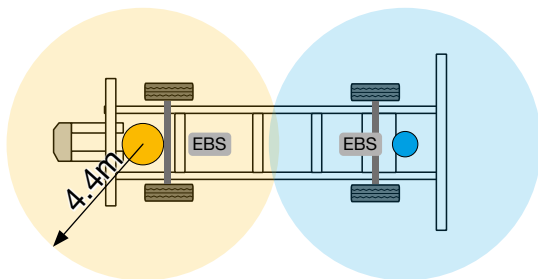
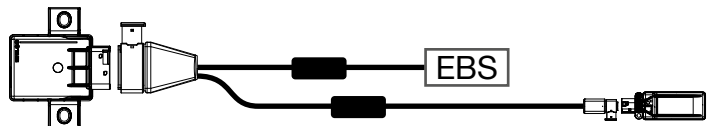
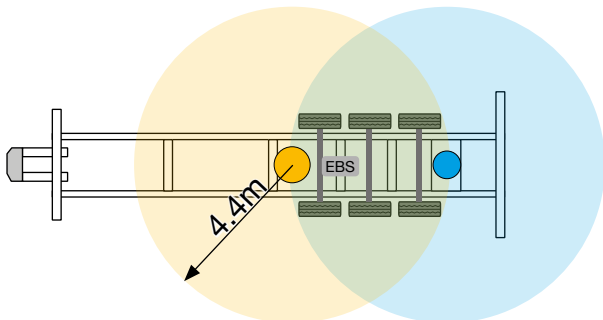
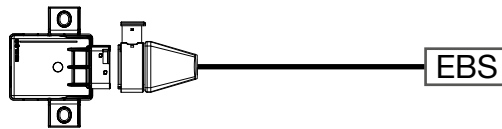
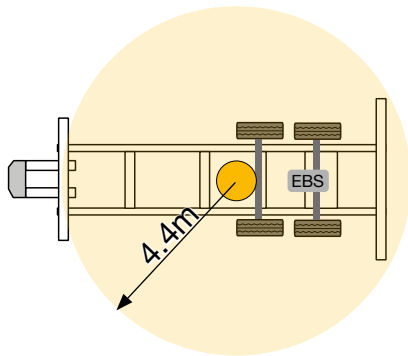
MaxRx18

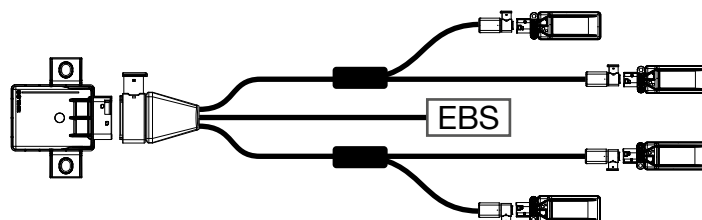
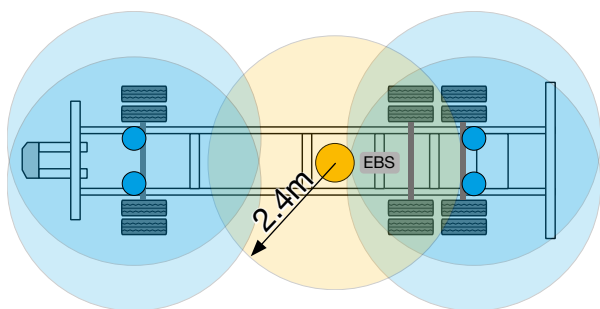
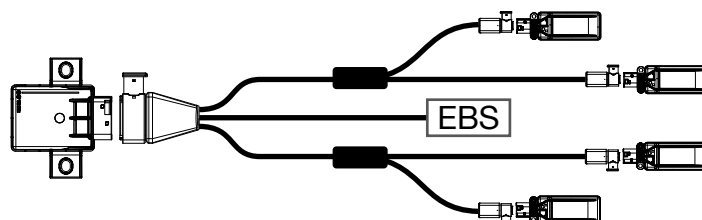
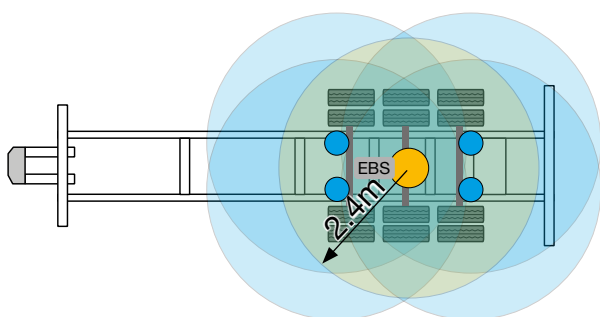
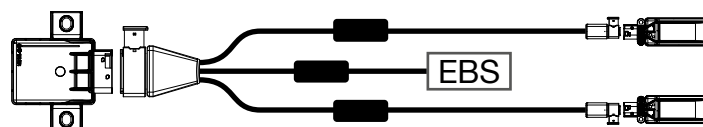
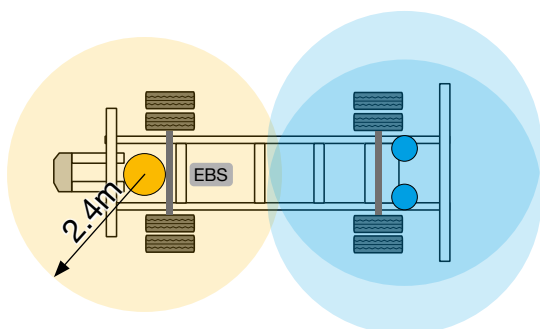


eRx



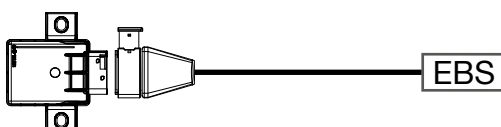
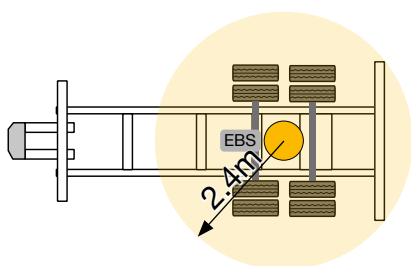
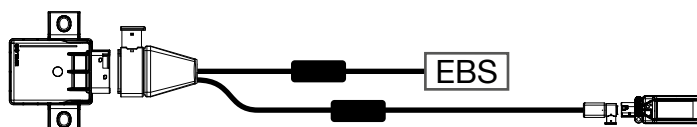
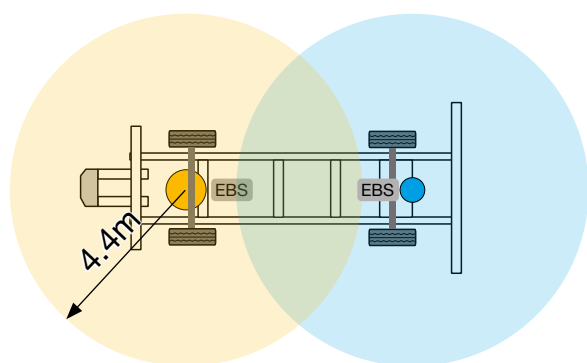
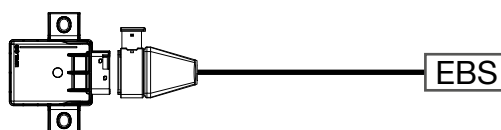
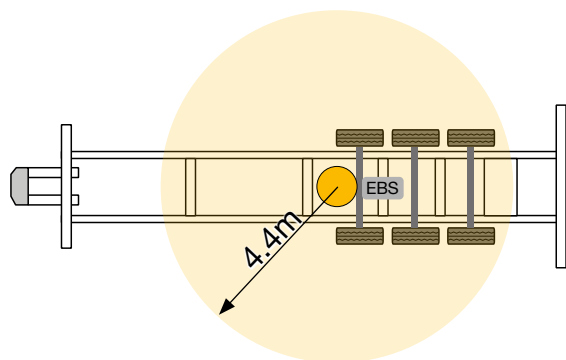
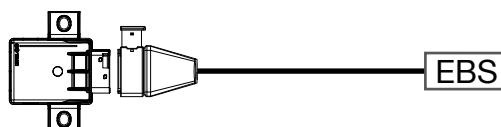
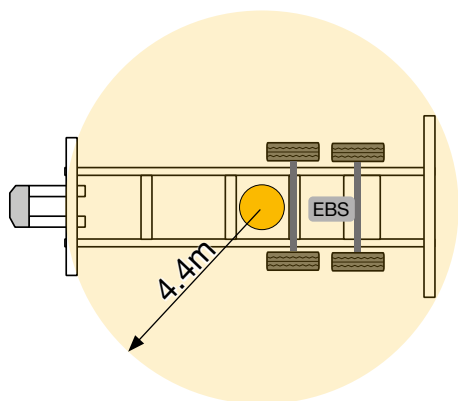
6.3.3.1 WITH AUTOLOCATE

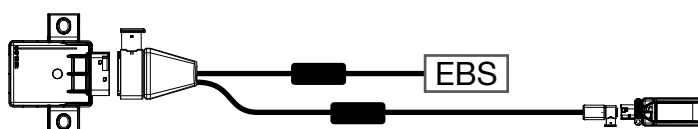
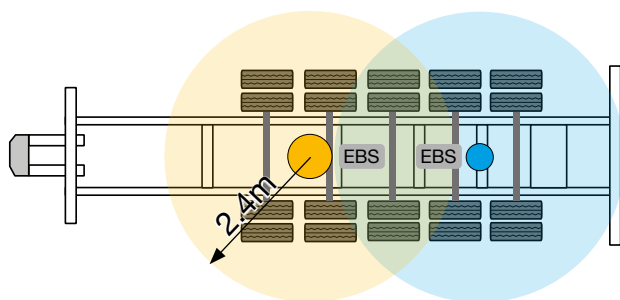
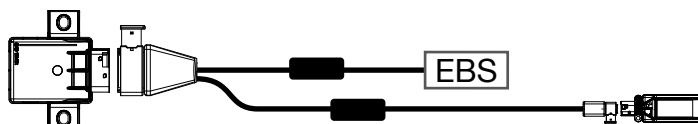
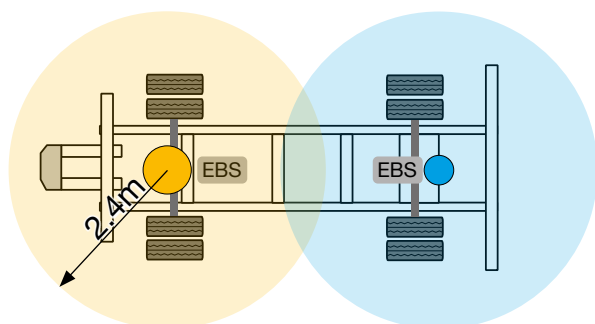
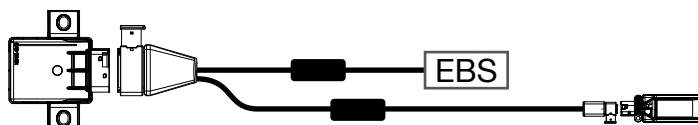
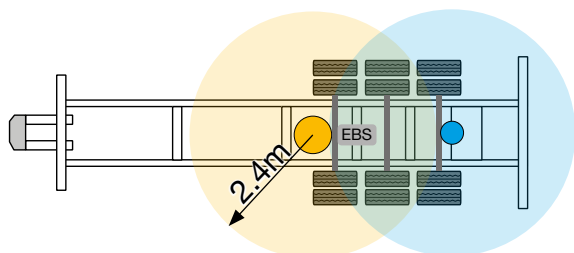






6.3.3.2 WITHOUT AUTOLOCATE



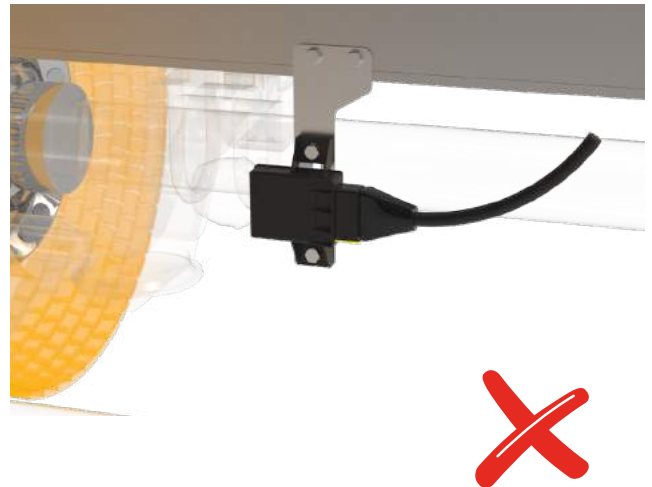
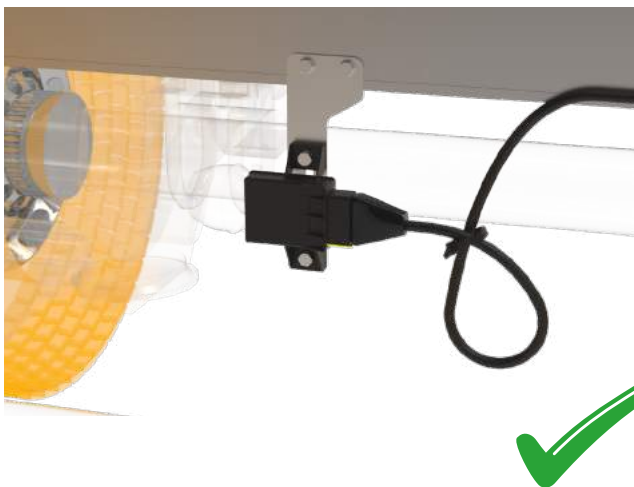




6.4 CABLING

It is assumed that general rules for wiring on vehicles are known and understood.

- Read chapter „6.3 Installing the MaxRx & eRx receiver units“.
- Prepare the appropriate wiring drawing for the vehicle.
- De-energise the trailer.
- Fasten the cables parallel to existing wiring harnesses using cable ties in accordance with the wiring diagram. Form large loops with excess lengths.
- The cables must be fastened and positioned in such a way that they are protected from mechanical and thermal stress.
- Connect all components according to the wiring diagram.



7. START-UP

7.1 CONFIGURATION FILE

The configuration file from the vehicle manufacturer is required before you can start the start-up process.

NOTE

Danger for use!

The configuration files must only be created and managed by the vehicle manufacturer.

7.2 CREATION AND EXPORT OF ONE CONFIGURATION FILE

NOTE

To use the *Aspoeck TPMS Config Generator*, a special USB stick called „Aspoeck TPMS OE Config Key“ is required. Before use, the „Aspoeck TPMS OE Config Key Driver“, which is the driver for the USB stick, must be installed. Without this installation and the connected USB stick, the *Aspoeck TPMS Config Generator* cannot be used.

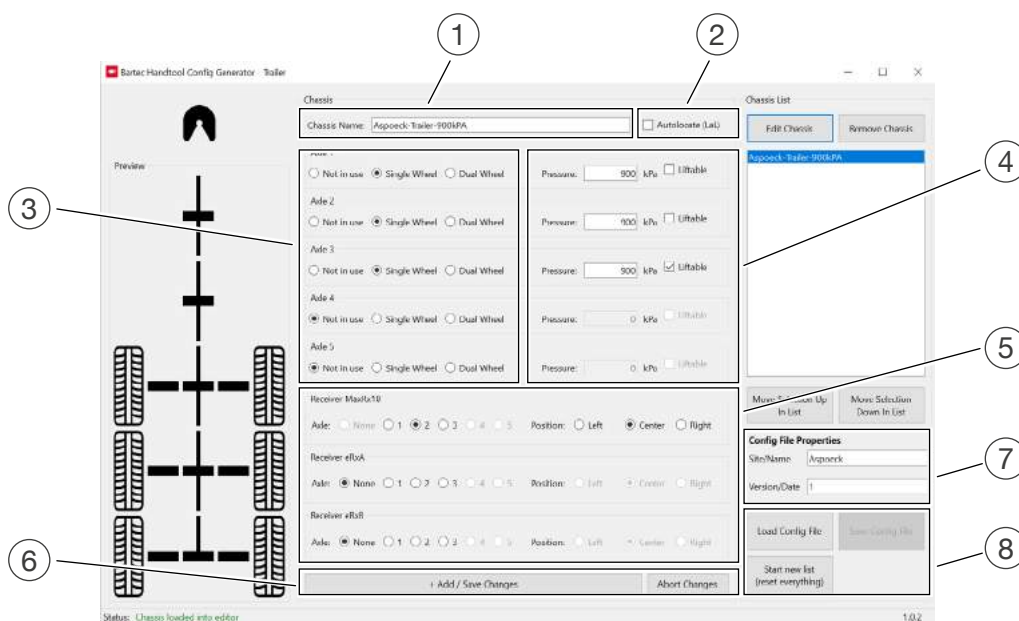
The *Aspoeck TPMS OE Config Key* security dongle must be plugged in to enable the creation/editing of configuration files.

A message is displayed in the bottom left-hand corner as a reminder.

Status: Please install DESkey driver and insert DESkey security dongle into local USB port to activate.

Status: Please insert DESkey security dongle into local USB port to activate.





① Enter the chassis name

Chassis Name: Aspöck-Trailer-900kPa

② Select if you want to activate Autolocate.

☐ Autolocate (LaL)

③ Select the axle type for all 5 axles.

Axle 1
☒ Not in use ☐ Single Wheel ☐ Dual Wheel

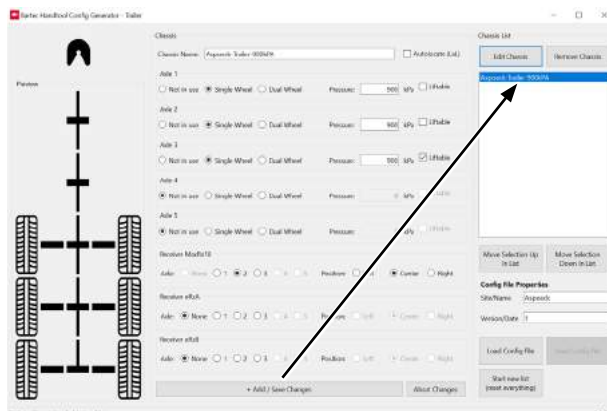
④ Set the pressure for all axel. The pressure must be between 100 and 1000 kPa and is rounded to the nearest 10 kPa in the final configuration file.

Pressure: kPa

⑤ Select the position of the main receiver (MaxRx). Optionally, one or more additional receivers eRxA and eRxB can be selected.

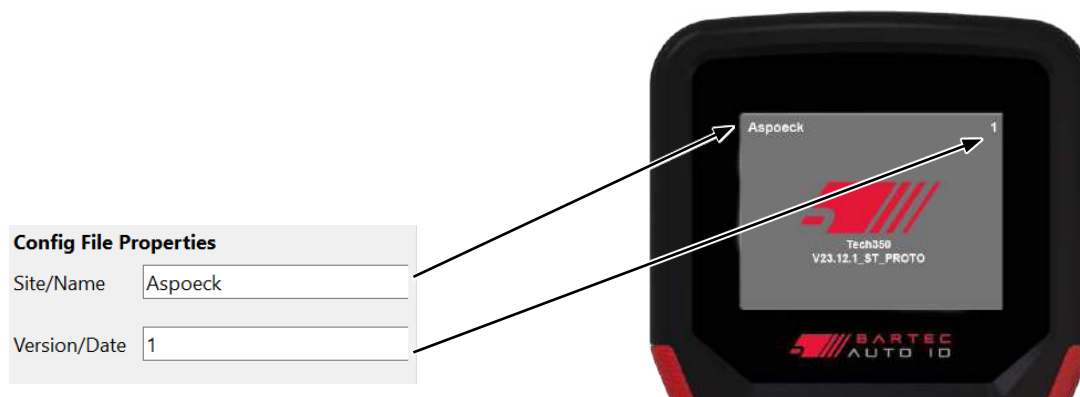
Receiver MaxRx18	
Axle: <input checked="" type="radio"/> None <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5	Position: <input type="radio"/> Left <input checked="" type="radio"/> Center <input type="radio"/> Right
Receiver eRxA	
Axle: <input checked="" type="radio"/> None <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5	Position: <input type="radio"/> Left <input checked="" type="radio"/> Center <input type="radio"/> Right
Receiver eRxB	
Axle: <input checked="" type="radio"/> None <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5	Position: <input type="radio"/> Left <input checked="" type="radio"/> Center <input type="radio"/> Right

- ⑥ Click + Add / Save Changes to add the chassis to the list on the right-hand side.

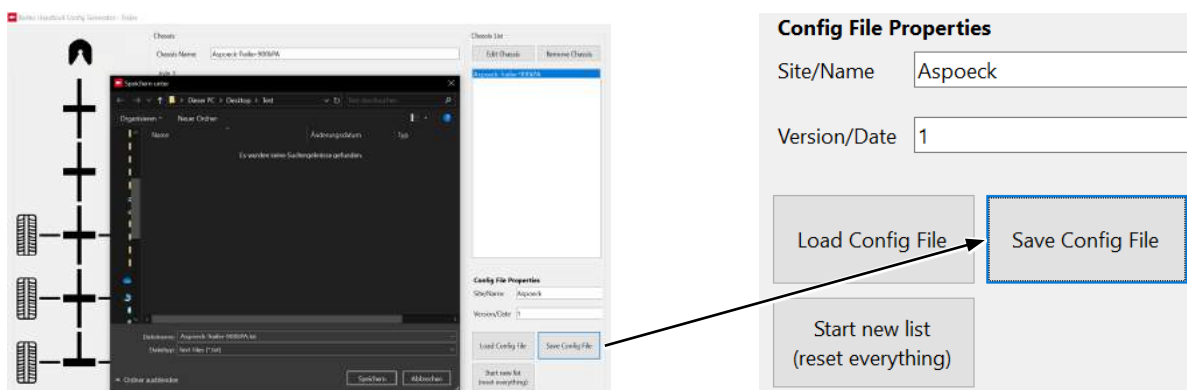


- ⑦ For further vehicle configurations, repeat steps 1 - 5 until all the required chassis are shown in the list on the right-hand side.

- ⑧ When starting the software on the Aspöck TPMS Diagnostic Tool T350, the name and version are displayed as shown in the image below. However, these have no influence on the functionality of the device. The input field is for checking purposes.



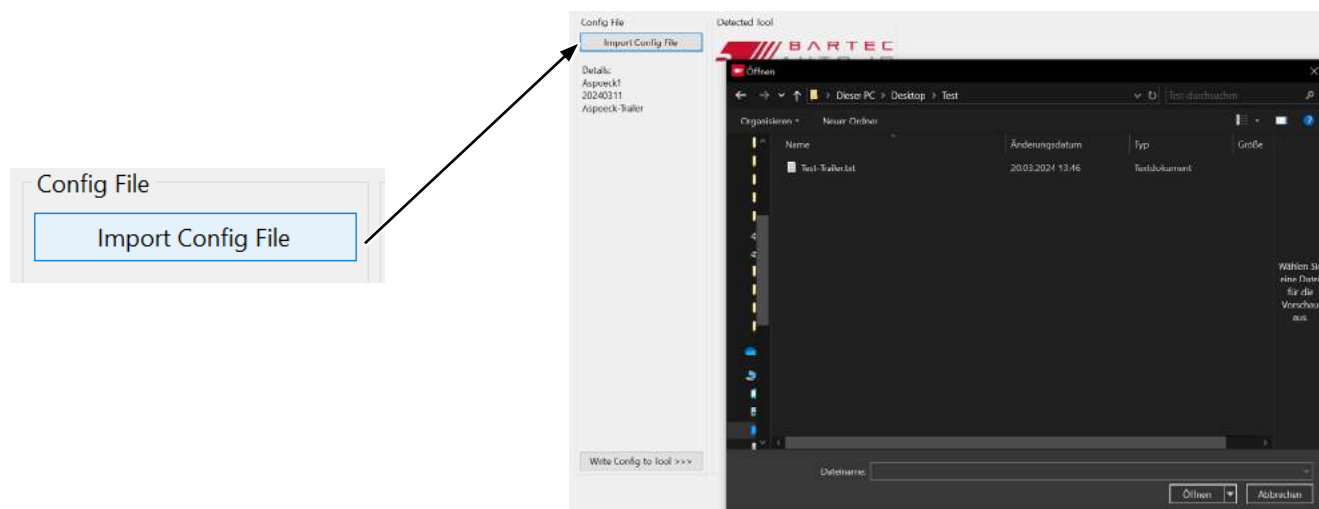
- ⑨ Click on Save Config File and select a storage location for the configuration file.



7.3 UPLOAD TO THE ASPÖCK TPMS DIAGNOSTIC TOOL T350

The *Aspoeck TPMS Config Uploader* recognises a connected *Aspöck TPMS Diagnostic Tool T350* and can write the configuration to it.

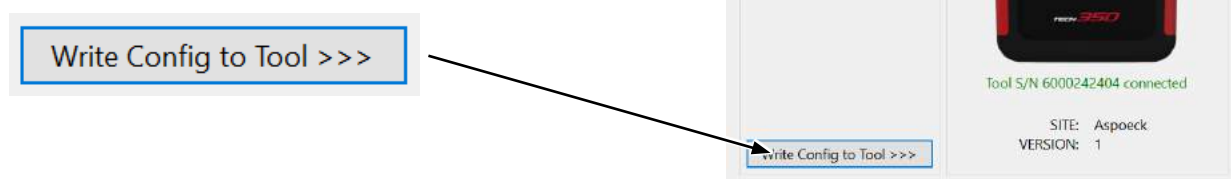
- ① Click on *Import Config File* and search for the configuration file that was previously created.



- ② The device must be connected to the computer via the USB-C cable.

- ③ When the device is switched off, it switches on. Windows recognises it as a flash drive. The uploader application displays the serial number of the device.

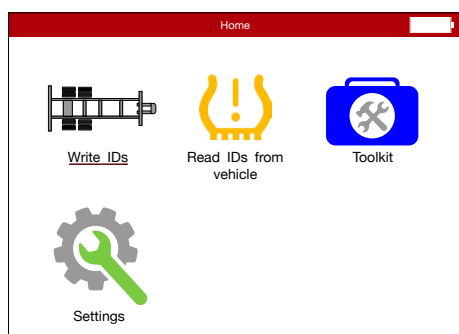
- ④ Click on *Write Config to Tool* to copy the configuration file to the device.



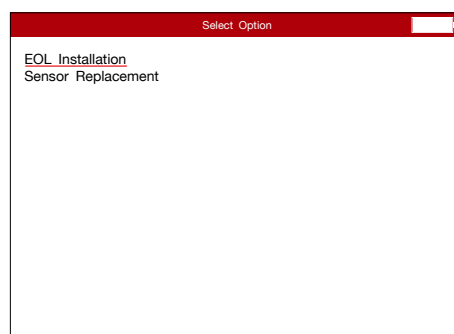


7.4 FIRST START-UP

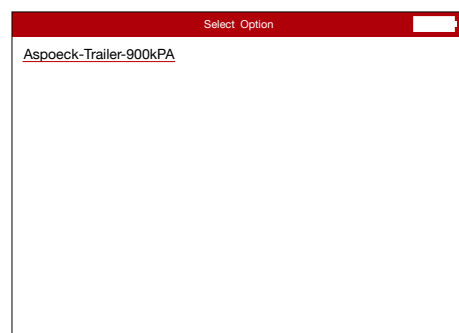
- 1 Click on *Write IDs* with *Enter* to access the programme menu.



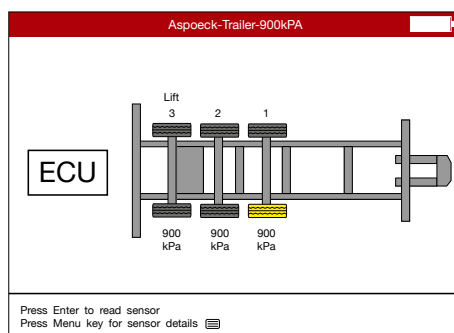
- 2 Click on *EOL Installation* with *Enter* to access the configuration data overview.



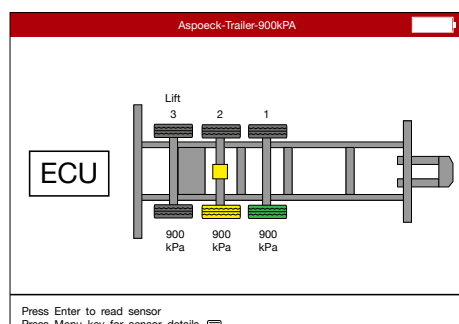
- 3 Click on the *configuration file* to load it.



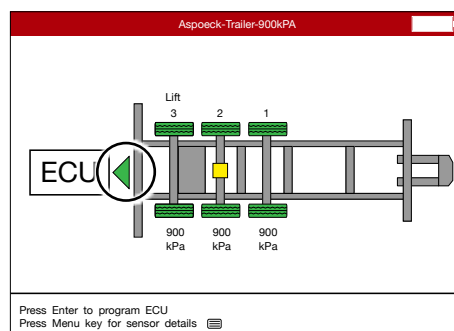
- 4 Use the Aspöck TPMS Diagnostic Tool T350 to programme each sensor with *Enter*.
Use the arrow keys to select the tyres.



- 5 The sensor to be programmed (tyre) flashes yellow. A programmed sensor lights up green.

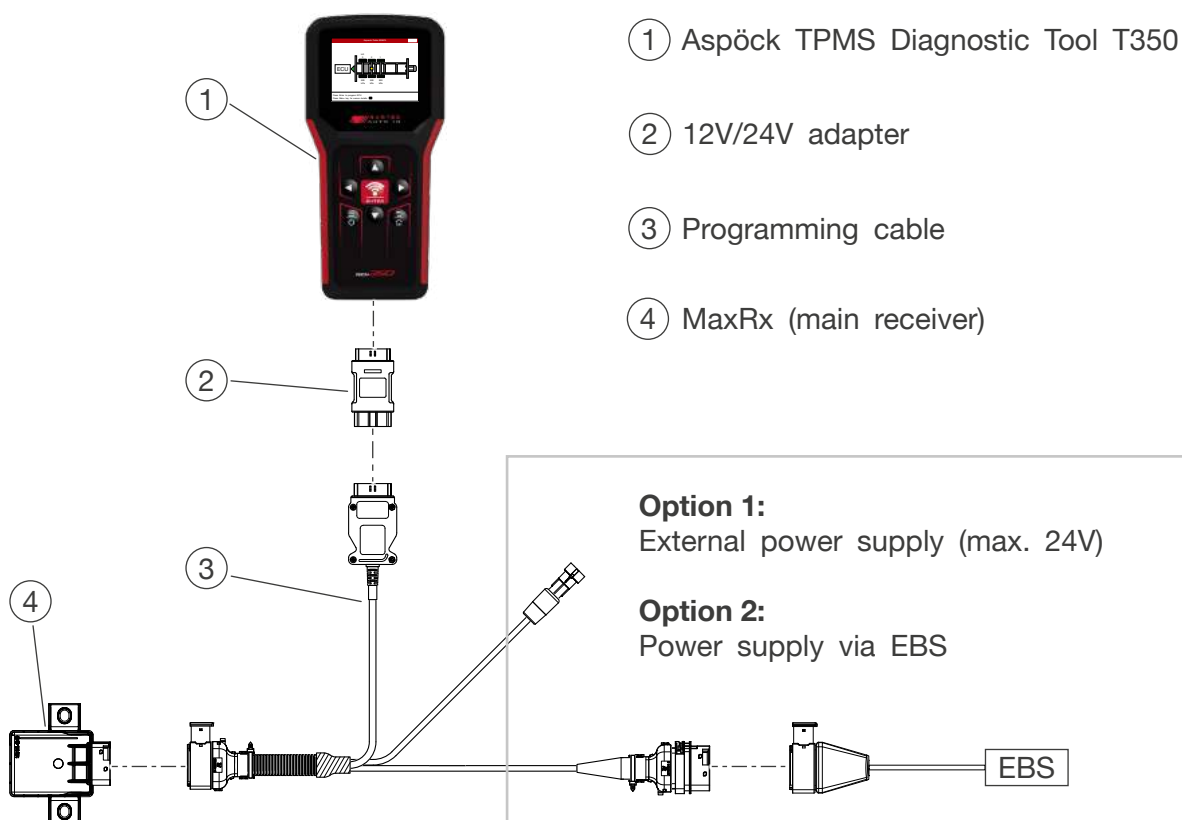
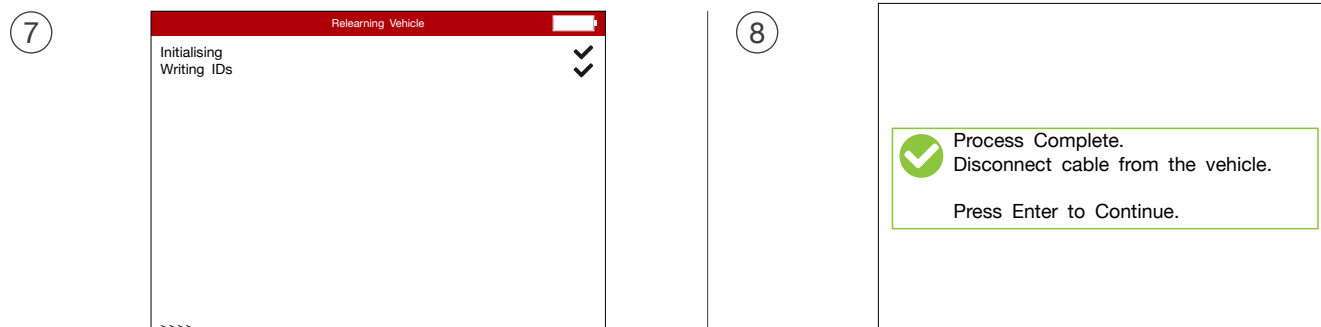


- 6 When all sensors in the tyres have been programmed, they appear in green. A green arrow appears. Press *Enter* to programme the ECU.





When the Aspöck TPMS Diagnostic Tool T350 is connected to the programming cable, click Enter to programme the MaxRx.



NOTE

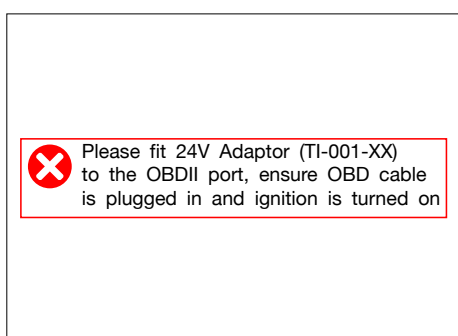
Danger to functionality!

The OBD adapter and the programming cable must be disconnected when programming the sensors!

7.5 SETTINGS IN THE EBS

The EBS must be programmed to enable the power supply and processing of the CAN bus. TPMS R141“ must be activated in the diagnostic programme of the EBS manufacturer.

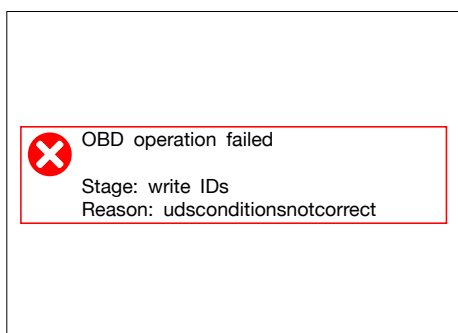
7.6 ERROR MESSAGES FROM THE ASPÖCK TPMS DIAGNOSTIC TOOL T350



This error message occurs if the ECU (MaxRX) is not supplied with power.

Troubleshooting:

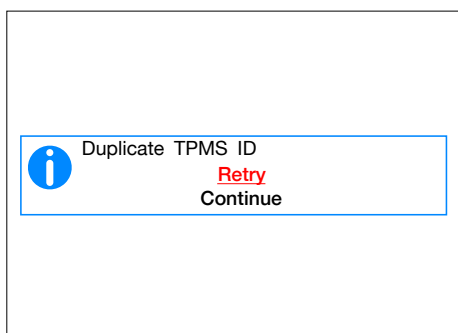
1. external power supply (max. 24V)
2. power supply via EBS



This error message occurs if the trailer is configured with the Sensor Replacement function and not EOL Installation.

Troubleshooting:

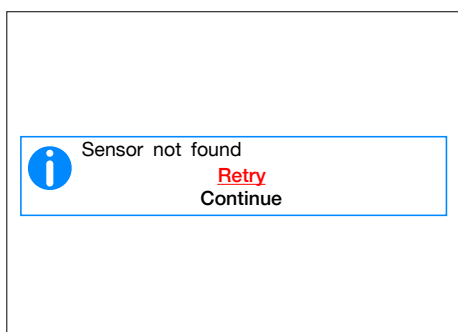
1. click on EOL Installation in the menu.



This error message occurs if the same sensor has been scanned twice.

Troubleshooting:

1. scan a new sensor.



This error message occurs if no sensor was found.

Troubleshooting:

1. unplug the device from the programming cable.
2. scan a new sensor.

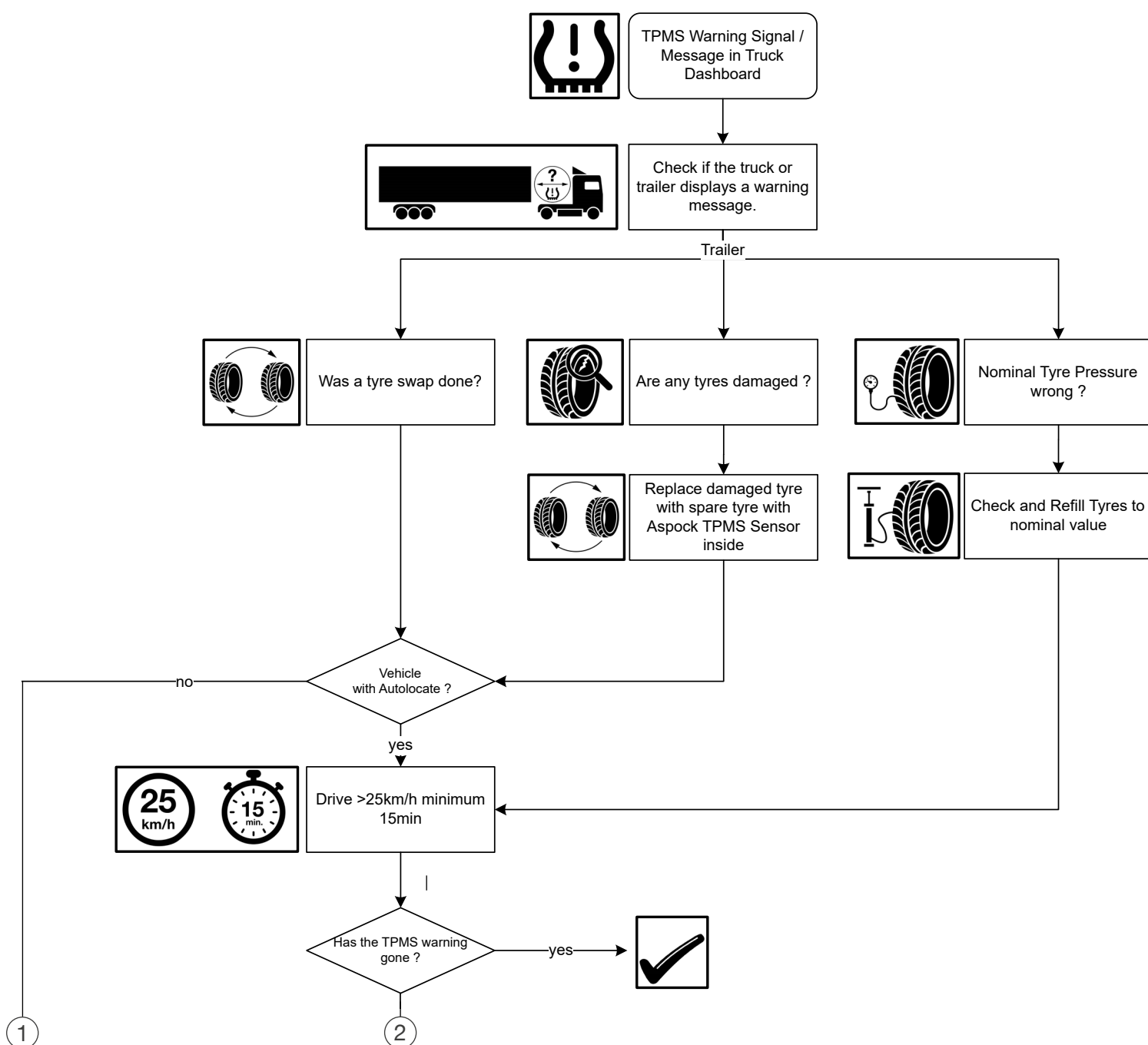


8. WORKSHOP INSTRUCTIONS

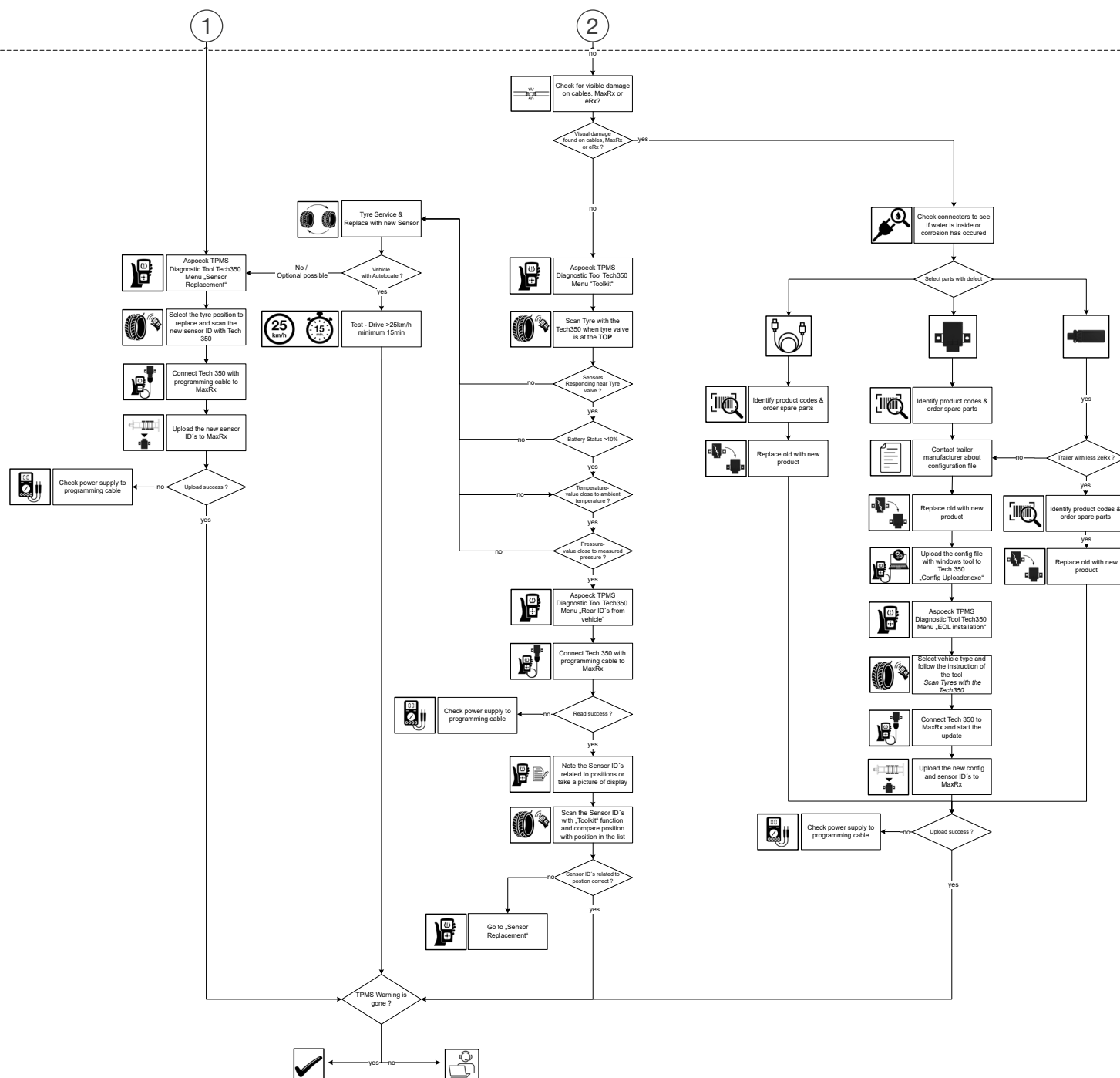
8.1 MAINTENANCE

Aspöck TPMS is basically maintenance-free. If the display shows a malfunction, a diagnosis should be carried out to identify the fault.

8.2 SELFDIAGNOSIS



8.3 DIAGNOSIS ASPÖCK SERVICE WORKSHOP



NOTE

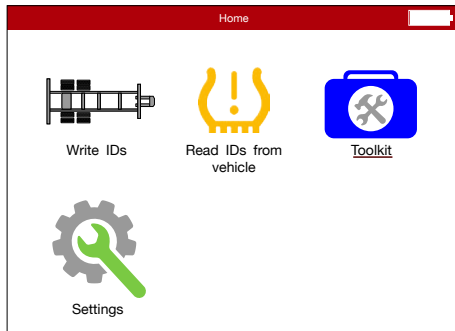
The complete Aspöck TPMS repair instructions can be found in DIN A3 format for printing under chapter „11. Aspöck TPMS repair instructions“.

8.4 REPAIR

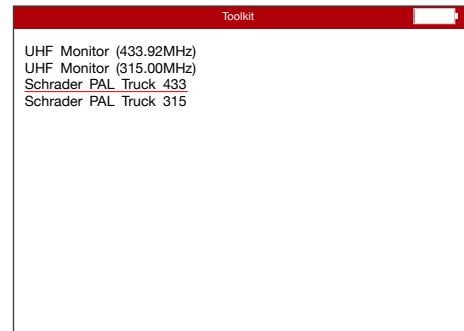
8.4.1 CHECKING SENSORS

With the read function of the Aspöck TPMS Diagnostic Tool T350, each individual sensor can be read out. The most important information is the pressure, the temperature, the sensor ID and the battery status of the tyre.

- 1 Click on *Toolkit* with *Enter* to check the sensors.



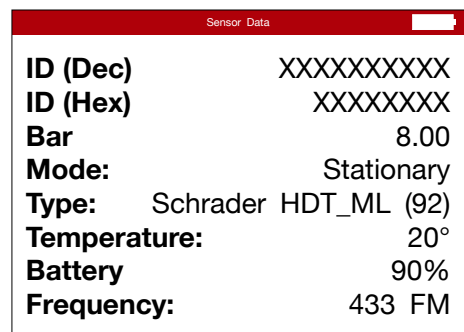
- 2 Click *Enter* on *Schrader PAL Truck 355* to check the sensors.



- 3 Position the Aspöck TPMS Diagnostic Tool T350 close to the valve. Do not hold the device directly on the rim, but on the rubber.



- 4 Press *Enter* to confirm the position. The device automatically searches for the sensor.



NOTE

Risk of misinformation!

When checking the sensors, the tyre valve must be in the upper area of the tyre. If the sensor is no longer connected to the tyre valve, but the sensor is still functional and sends incorrect information to the Aspöck TPMS Diagnostic Tool T350.

NOTE

Risk of misinformation!

On trailers with dual tyres, the two tyres are often mounted offset by 180° so that the valves are opposite each other. If the sensor is loose, the sensor on the inner tyre may be detected. If a loose sensor is suspected, the outer tyre should be removed for closer inspection.

CAUTION

Danger due to empty battery!

Check the battery status: If it is below 10%, this can affect the transmission of information to the Aspöck TPMS Diagnostic Tool T350. In this case, the sensor must be replaced.

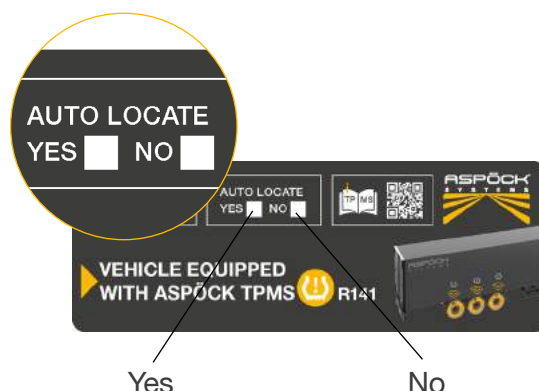
8.4.1.1 SENSOR REPLACEMENT

Read chapter „6.2 Mounting the sensors“.

NOTE

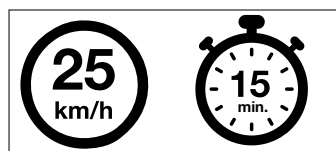
Check for Autolocate!

If an Aspöck TPMS system is used, a sticker is affixed to the trailer. This indicates whether the system supports the Autolocate function or not.



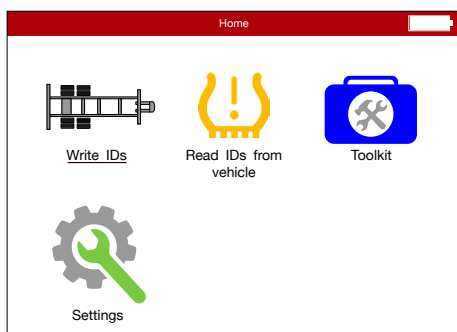
8.4.1.2 SENSOR REPLACEMENT WITH AUTOLOCATE

After replacing a sensor, the vehicle must be driven at a speed of over 25 km/h for at least 15 minutes. The sensor will self-learn during this time.

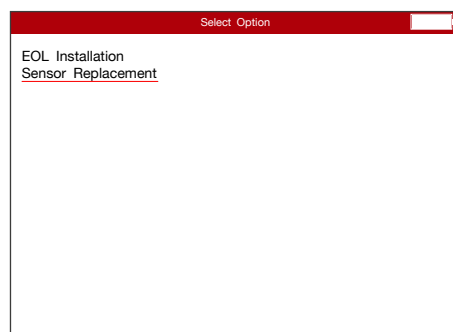


8.4.1.3 SENSOR REPLACEMENT WITHOUT AUTOLOCATE

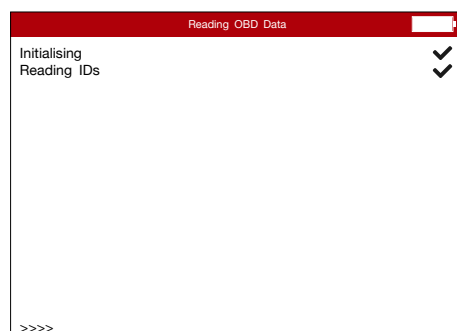
- ① Click on *Write IDs* with *Enter* to teach in the sensors.



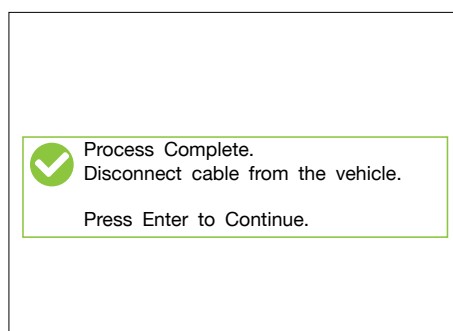
- ② Click on *Sensor Replacement* with *Enter* to teach in the replaced sensors.



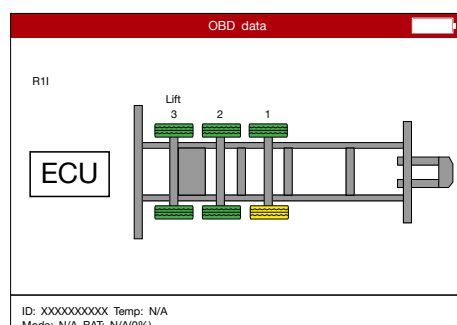
- ③ Sensor IDs are loaded.



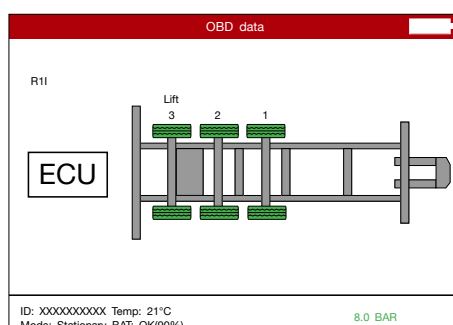
- ④ The programming cable can now be disconnected.



- ⑤ Press *Enter* to click on the tyre position that is to be replaced and scan the new sensor ID.



- ⑥ Click *Enter* at the tyre position that is to be replaced to scan the new sensor ID.



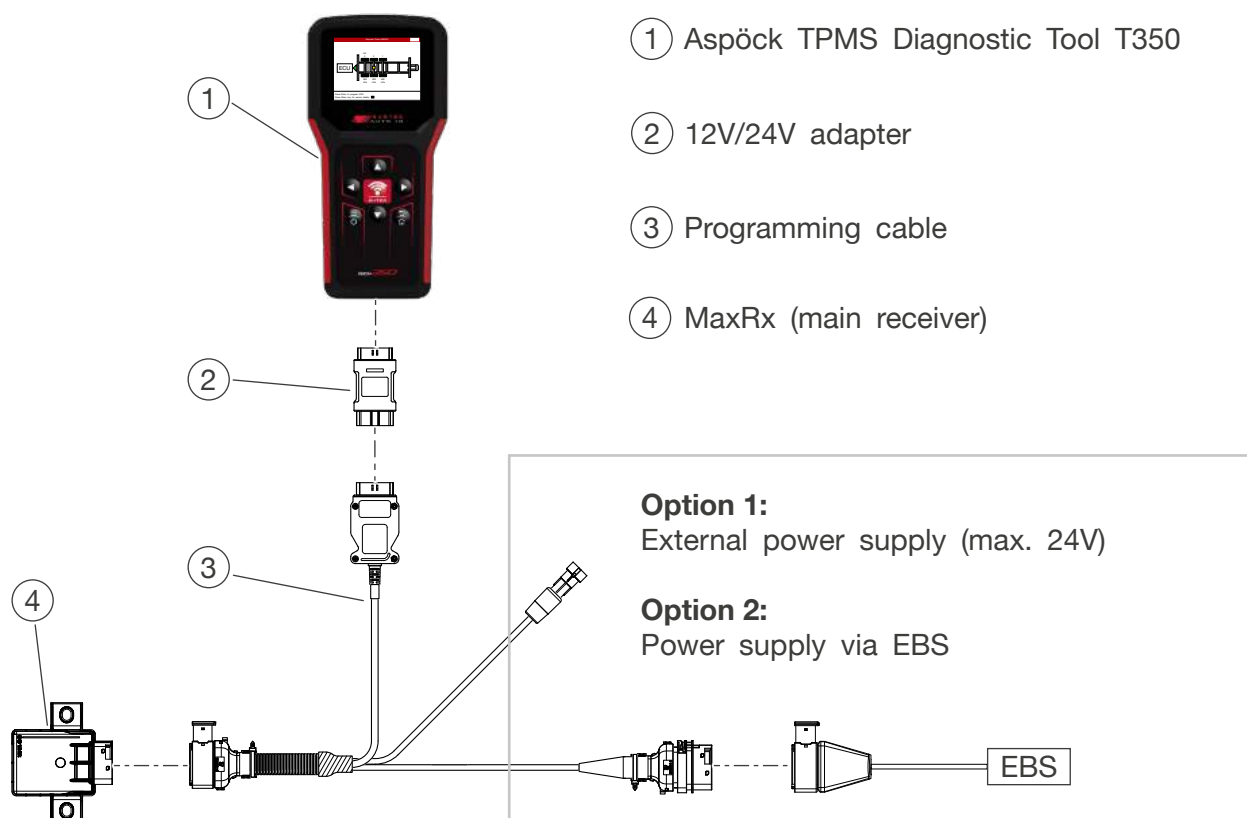
NOTE

Danger to functionality!

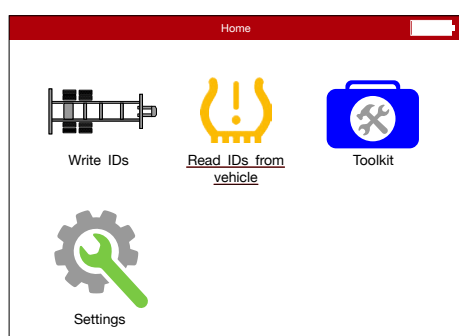
The OBD adapter and the programming cable must be disconnected when programming the sensors!

8.4.2 CHECKING THE FUNCTIONALITY OF THE MAXRX

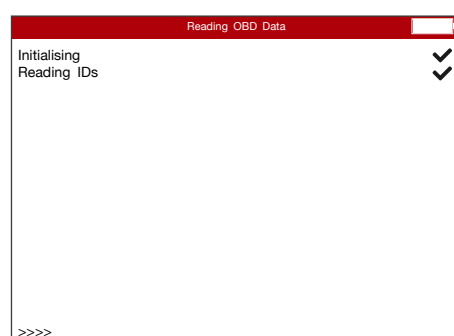
Connect the Aspöck TPMS Diagnostic Tool T350 to the programming cable to check the MaxRx.



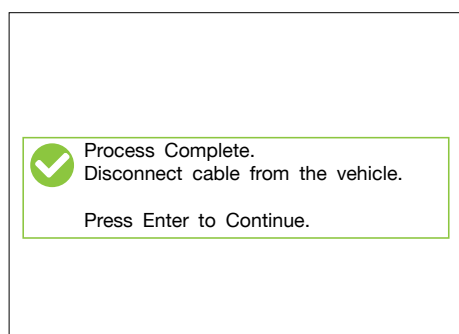
① Click on *Read IDs from vehicle* with *Enter* to read TPMS data.



② The Aspöck TPMS Diagnostic Tool T350 establishes a connection with the MaxRx main receiver.



- ③ Click *Enter* to continue.



- ④ The Aspöck TPMS Diagnostic Tool T350 displays a list of all sensors that are programmed on the MaxRx main receiver.

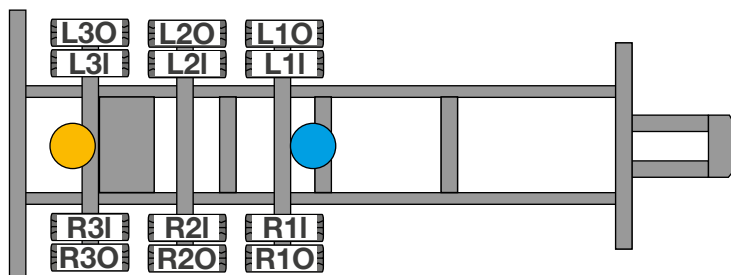
ID (Hex)	
L1I	5C6D3E4A
R1I	5C6D42D6
L2I	5C6D4E1A
R2I	5C6D4DDA
L3I	5C6D41CD
R3I	5C6D422F

ESC = Exit

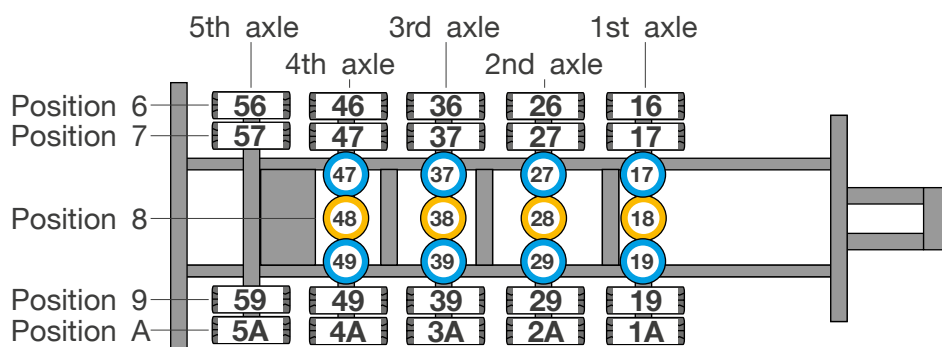
Legend:

R = Right side of vehicle
 L = Left side of vehicle
 1 = First vehicle axle
 2 = Second vehicle axle
 I = Inner tyre
 O = Outer tyre

Example:



8.4.3 TRAILER TYRE ISO POSITIONS





NOTE

Danger of mixing up tyres!

Note the sensor IDs for the corresponding positions or take a photo.

WARNING

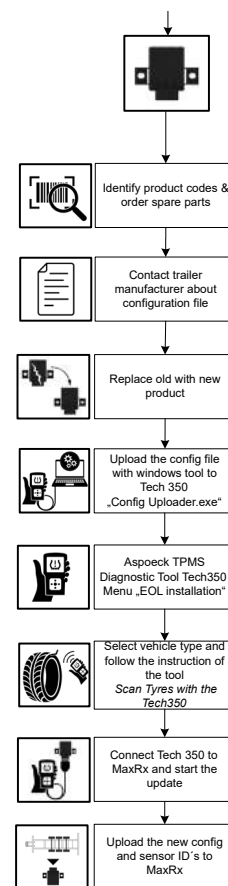
Danger of misinformation!

Tyres are often changed without reconfiguring the positions or relearning the sensor IDs with the Aspöck TPMS Diagnostic Tool T350. As a result, the TPMS can erroneously issue an error or display the tyre pressure at an incorrect position.



8.4.2.1 MAXRX REPLACEMENT

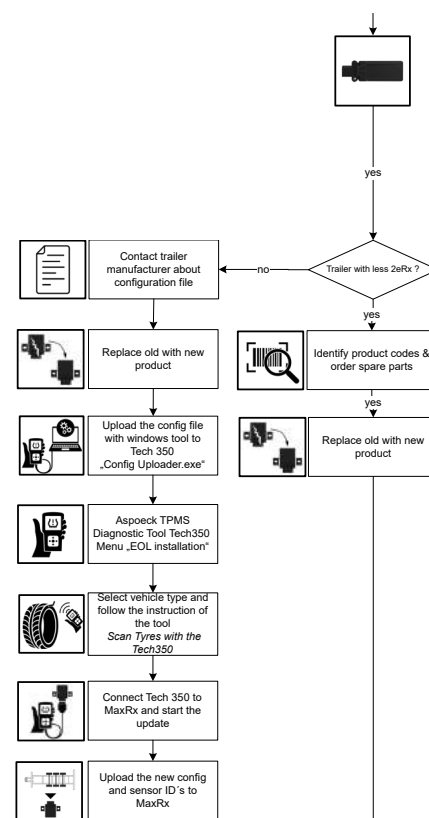
- ① If the MaxRx is replaced, it must also be reprogrammed with the configuration file.
To do this, contact the trailer manufacturer and request the appropriate configuration file for the trailer.
- ② Unplug the defective MaxRx main receiver and replace it with a new one.
- ③ The new MaxRx must now be programmed with the configuration file by following the instructions in chapter „7.3 Upload to the Aspöck TPMS Diagnostic Tool T350“.
- ④ As the new MaxRx does not have any information about the installed sensor IDs, these must be rescanned and transferred to the MaxRx. To do this, read chapter „7.4 Initial commissioning“.



8.4.3 ERX REPLACEMENT

- ① Does the trailer have less than 2 eRx installed?

- | | |
|---|--|
| <ol style="list-style-type: none"> ② Yes ③ Replace the defective eRx additional receiver with a new one. ④ No further programming necessary. | <p>No</p> <p>Please contact the vehicle manufacturer or specialist workshop.</p> |
|---|--|





9. CIRCUIT DIAGRAMS AND PIN ASSIGNMENTS

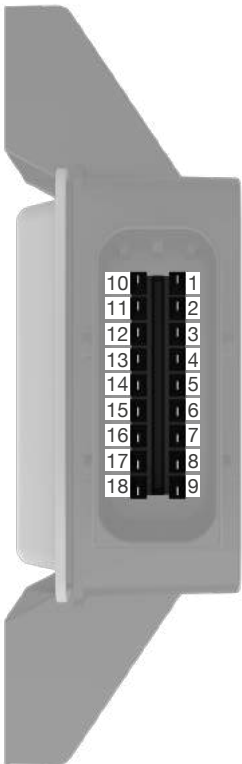
4 pol. HDSCS



PIN NUMBER	INPUT / OUTPUT
1	Ground
2	CAN Low
3	+12V
4	CAN High

18 pol. HDSCS





PIN NUMBER	INPUT / OUTPUT
10	eRx1 VDD
11	Ground
12	Ground (KL31)
13	Ground
14	Chassis CAN Low
15	Chassis CAN High
16	N/A
17	Ground
18	eRx2 VDD



PIN NUMBER	INPUT / OUTPUT
1	eRx1 CAN Low
2	eRx1 CAN High
3	KL15
4	+24V
5	Chassis CAN Low
6	Chassis CAN High
7	N/A
8	eRx2 CAN Low
9	eRx2 CAN High







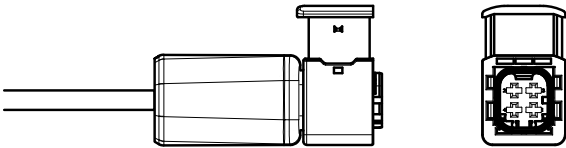
Knorr EBS G2

PIN NUMBER	INPUT / OUTPUT	PIN COLOUR
1	-	-
2	-	-
3	+VDC Bat	
4	-	-
5	-	-
6	-	-
7	-	-
8	-	-
9	CAN Low	
10	CAN High	
11	Ground	
12	-	-



Knorr EBS G3

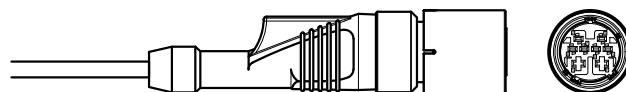
PIN NUMBER	INPUT / OUTPUT	PIN COLOUR
1	+VDC Bat	
2	CAN High	
3	CAN Low	
4	Ground	





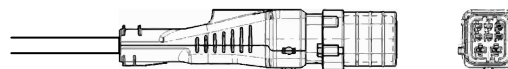
Wabco TEBS-E

PIN NUMBER	INPUT / OUTPUT	PIN COLOUR
1	+VDC Bat	
2	CAN High	
3	CAN Low	
4	Ground	
5	-	
6	-	
7	-	
8	Wheel speed sensor	



Wabco TEBS-F

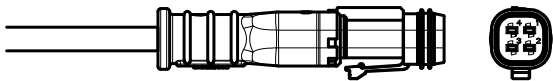
PIN NUMBER	INPUT / OUTPUT	PIN COLOUR
1	+VDC Bat	
2	-	-
3	-	-
4	Ground	
5	CAN High	
6	-	-
7	-	-
8	CAN Low	





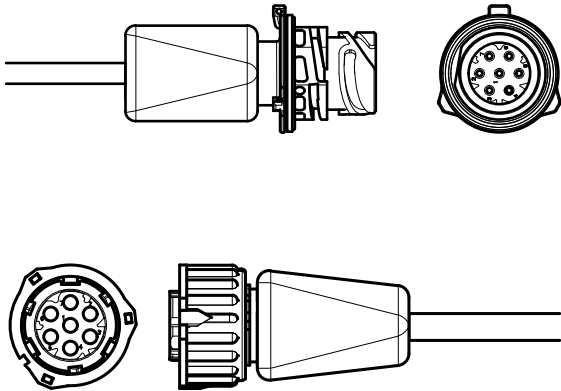
Haldex Gen 4

PIN NUMBER	INPUT / OUTPUT	PIN COLOUR
1	+VDC Bat	Red
2	CAN High	Green
3	CAN Low	Yellow
4	Ground	Blue



DIN AMP 7 pol.

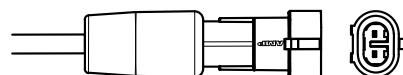
PIN NUMBER	INPUT / OUTPUT	PIN COLOUR
1	-	-
2	+VDC Bat	Red
3	-	-
4	-	-
5	Ground	Blue
6	CAN Low	Green
7	CAN High	Yellow



Programming cable:

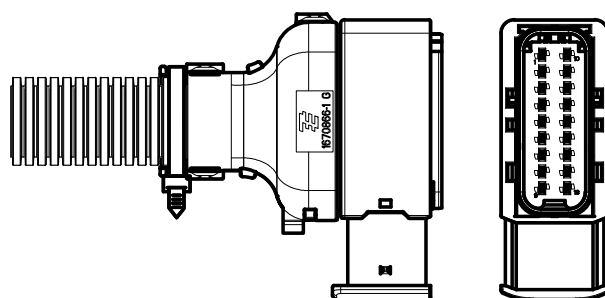
AMP Superseal 2 pol.

PIN NUMBER	INPUT / OUTPUT	PIN COLOUR
1	Ground	○
2	+DC24V	●



HDSCS 18 pol. direction to EBS

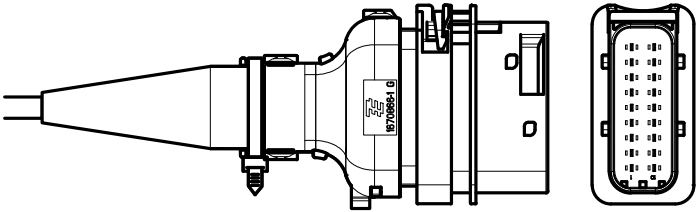
PIN NUMBER	INPUT / OUTPUT	PIN COLOUR
1	eRx1 CAN Low	-
2	eRx1 CAN High	-
3	KL15	●
4	+24V	-
5	Chassis CAN Low	-
6	Chassis CAN High	-
7	N/A	-
8	eRx2 CAN Low	-
9	eRx2 CAN High	-
10	eRx1 VDD	-
11	eRx1 Ground	-
12	N/A	-
13	Ground	○
14	Chassis CAN Low	-
15	Chassis CAN High	-
16	N/A	-
17	eRx2 Ground	-
18	eRx2 VDD	-





HDSCS 18 pol. direction MaxRx

PIN NUMBER	INPUT / OUTPUT	PIN COLOUR	ÜBERBRÜCKT
1	eRx1 CAN Low	-	-
2	eRx1 CAN High	-	-
3	KL15	-	●
4	+24V	-	●
5	Chassis CAN Low	●	-
6	Chassis CAN High	●	-
7	N/A	-	-
8	eRx2 CAN Low	-	-
9	eRx2 CAN High	-	-
10	eRx1 VDD	-	-
11	eRx1 Ground	-	-
12	N/A	-	-
13	Ground	-	●
14	Chassis CAN Low	-	-
15	Chassis CAN High	-	-
16	N/A	-	-
17	eRx2 Ground	-	-
18	eRx2 VDD	-	-





10. RECYCLING

- **Decommissioning and disposal:**

Please observe the applicable legal regulations for the decommissioning and disposal of this product. In particular, observe the regulations on the disposal of batteries, equipment and electrical systems.

- **Electrical appliances:**

Collect electrical appliances separately from household or commercial waste. These can be recycled or disposed of properly. If possible, pass on the old appliance for in-house disposal or contact the manufacturer for specific instructions.

- **Environmental protection:**

Electrical and electronic equipment must be collected separately from unsorted municipal waste and disposed of or recycled properly. Improper disposal can damage health and the environment. Contact specialised waste disposal companies or the responsible authorities for detailed information.

- **Packaging:**

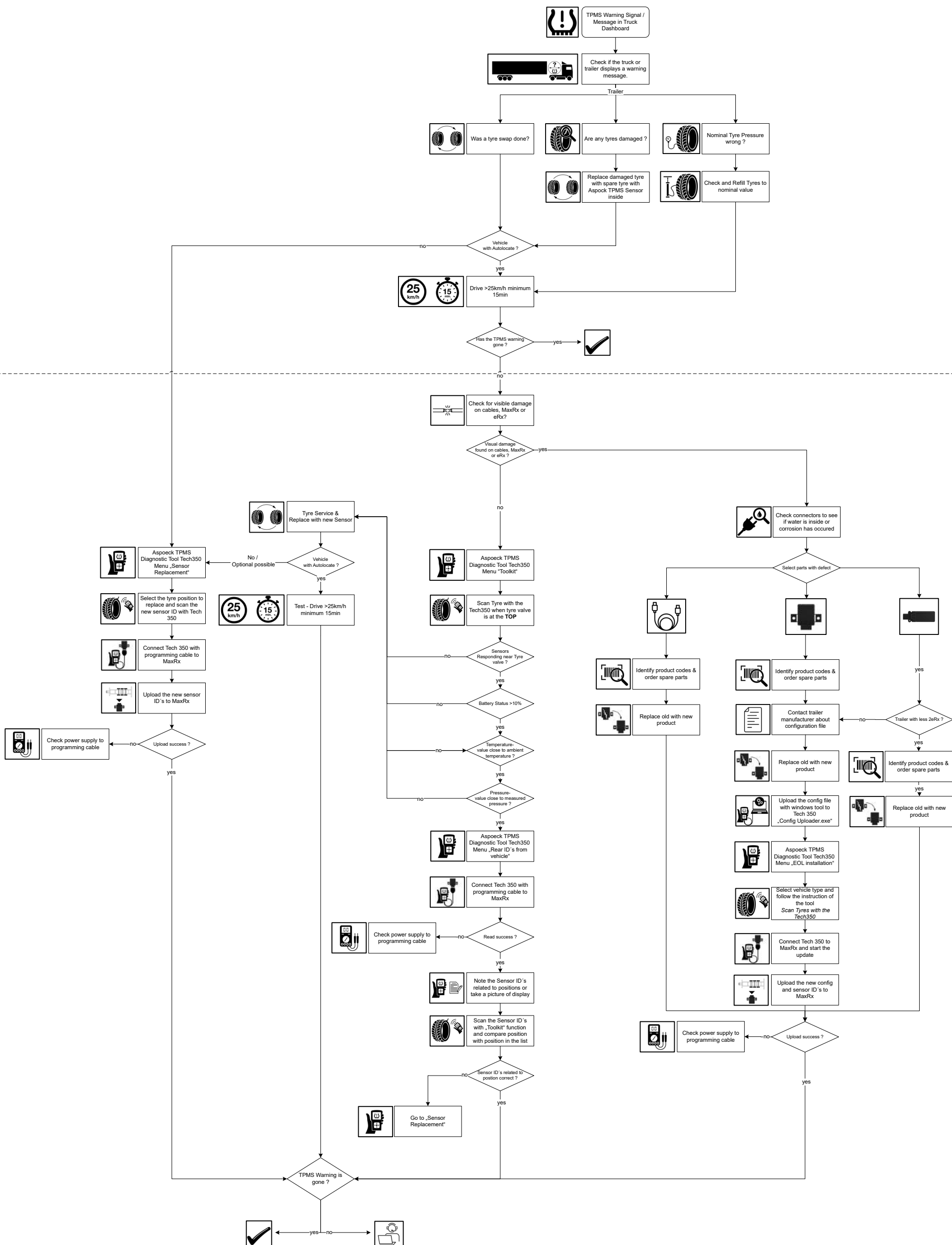
Packaging must be disposed of separately. Paper, cardboard and plastics can be recycled.



11. ASPÖCK TPMS REPAIR MANUAL

Truck Driver & Fleet

TPMS Service Workshop



THE ART OF LIGHTS

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