



# Lochnerbox technical documentation

It contains the detailed technical description of Lochnerbox tracking system and (L-Way) system which assists overtaking

Technical equipment provided prior to the competition

- ▶ Lochnerbox rack console
- ▶ Lochnerbox power cable set with 3 m cable

You can install the vehicle tracking unit safely by the help of the rack console. You have to attach it in the vehicle before the first race. You can choose the attachment place freely. On the occasion of the races we place the LOCHNERBOX vehicle tracking unit in the rack console. There's no controller on the unit so it may be placed in an unreachable position. The LOCHNERBOX weight 2,5 kg so you have to use at least 4 boreholes out of 6 to attach it. The racing team is responsible for all injuries, in all cases, resulting from the defective attachment. The vehicle tracking unit can be installed only by the given console. The rack console should be placed and attached such a way as to make it possible to push the vehicle tracking unit into it without difficulty and the 5 connectors can easily be connected. You have to use 'M6' countersunk head screw for the installation. After the installation, the screw heads must not protrude from the rack console's plain, because it would obstruct the placement of the vehicle tracking unit. Because the place need of the connections a 5 cm free space is required by the rack console. (showed on the photo).

The handover of the vehicle tracking unit is impossible if the rack console hasn't been installed properly.

Connectors

- ▶ Power cable wich includes ignition
- ▶ GPS antenna cabel
- ▶ GSM antenna cabel
- ▶ L-Way antenna cabel
- ▶ Controll unit connecting cable

Power cable set

Connecting

Grounded line : the negative point of the vehicle's battery

+12V the positive point of the vehicle's battery minimum of 2A, up to 5 A fuse

Ignition: from the ignition switch or from the fuse board

The cables which should be connect will be clearly marked.

You have to connect the +12V power supply before the power switch, to keep the vehicle tracking unit's operation, even after de-energizing. This is the main condition of the "medical assistance request" function's correct operation. The employee of Lochner Group will check the operation without electricity during the machine handover. In case of improper wiring the handover of the vehicle tracking unit is impossible.

Technical equipment hand over directly before the race

- ▶ Vehicle tracking unit, LOCHNERBOX
- ▶ GPS antenna
- ▶ GSM antenna
- ▶ L-Way antenna
- ▶ Control unit and signaling equipment

The vehicle tracking unit can be attached by slipping it into the rack console and by the tightening of the 2 necessary screws by hand. Other additional attaching is not required. After the installation the 5 interface cable should be attached by the following order, Antennas (the order of attachment is optional)

The connector of control unit: 5 pole XLR

Power cable: 3 pole XLR

The connectors are not interchangeable (it's impossible as a result of their type). The GPS antenna should always be placed outside of the passenger cab on the top of the vehicle. The installation of the cable can be made by piercing the roof or other part of the body kit. In this case a 10 mm diameter borehole is required. The racing team is responsible for making the borehole. In default of a borehole the installation can be made through the vehicle's doorway. Lochner specialists can assist in the professional construction.

The placement of the L-Way antenna: inside the passenger cabin by sticking it into the upper part of the windscreen or on the rally cage with cable ties.

Placement of control unit and signaling equipment:

There can be found 1 pushbutton and 1 protected switch on the control unit. By pressing the pushbutton the racer can sign the intent of overtaking (with the help of L-way) to the foregone racer. The protected switch activates the medical alert feature. The control unit should be placed in a reachable position, the driver and the navigator have to reach it with a fasten seatbelt. L-Way light and piezo sounder are inseparable parts of the L-Way unit, it must be located in a place where the driver can see it clearly. The control unit's cable is 1,5 m long. The lengths of the sound and light signal equipment's cable is 1,5 m.

The cables mustn't be unfold. The GPS antenna, GSM antenna, L-Way antenna and the control unit can be left at the racers, they have to remove it only after the last race. If the racing vehicle is damaged to such an extent that its bodywork and interior is also required for repair the listed units must be removed and handed over to the Lochner Group staff. The racing team get the units back after the repair.

Prohibited:

- ▶ To unfold the unit
- ▶ To unfold the cables connecting to the vehicle tracking unit
- ▶ To connect the cables contrary to specification
- ▶ To hand over the vehicle tracking unit to any other racers
- ▶ To damage the connectors and antennas
- ▶ To interfere the GSM or GPS receiving (the unit log all and register all attempts)
- ▶ To cover the antennas with metal or metal content tape

Racers can ask for technical help in connection with the installation of the vehicle tracking unit before the race on the location. The takeover of the vehicle tracking unit should be verified with a technical report. Racers and navigators get oral and written coverage about the useage of the vehicle tracking and L-Way unit, before the race, they verify this fact on a form with their signature.

Lochnerbox and the console



Lochnerbox and rack console  
80% assembled.



Lochnerbox and rack console  
50% assembled.



Lochnerbox and rack console  
fully assembled.



Lochnerbox disassembled.



Lochnerbox disassembled  
from behind



Rack console



XLR 3 Cable set



Name of connector: swinging XLR 3 MAMA

Picture of the connector:



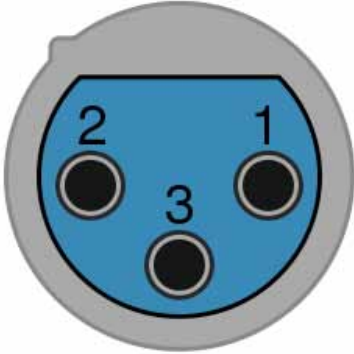
Allocation of connection points

- ▶ 1. (+30) permanent positive (battery 12V+) 5A fuse
- ▶ 2 ( 31) grounded line (gnd)
- ▶ 3. (+15) ignition 5A fuse

The power supply of connection point 1. should be attached to the car battery on a non-disconnectable way. The equipment must get power supply as well when the car is de-energized.

Grounded line point 2. should also be attached to the car battery on a non-disconnectable way

Ignition point 3. should be installed to the car's ignition or to the electric fuel-pump's power supply. The motor can't operate in such a way, that there is no tension on this point.



The place of the rack console can be choosed freely in the cabin, because there's no controller on it. The press buttons which operate L-Way "long-distance horn" and medical assistant request were placed in a separate unit, with a fix 1,5 m long cable. The control unit should be placed in a reachable position, the driver and the navigator have to reach it with a fasten seatbelt.

The sound and light warning device of L-Way "long-distance horn" is connected to the control unit with a 1,5 m long fix cable. We will give the sound and light devices before the race. Placement: in the driver's field of vision without it's disturbance.

We will give the GSM and GPS antennas together with the device at the time of the handover. The electric cables should be installed stabile, protected by break and friction. The not proper attachment of the GPS cause the refusal of machnie's takeover.



The technical documentation, components and visual characteristics (image) are owned by Lochner Ltd. It is prohibited to reproduce, publish or distribute any of its content without the written permission of Lochner.