COSBER

ASSEMBLY INSTRUCTION

CAR-PLATE BRAKE TESTER

COSBER C-BTP 10

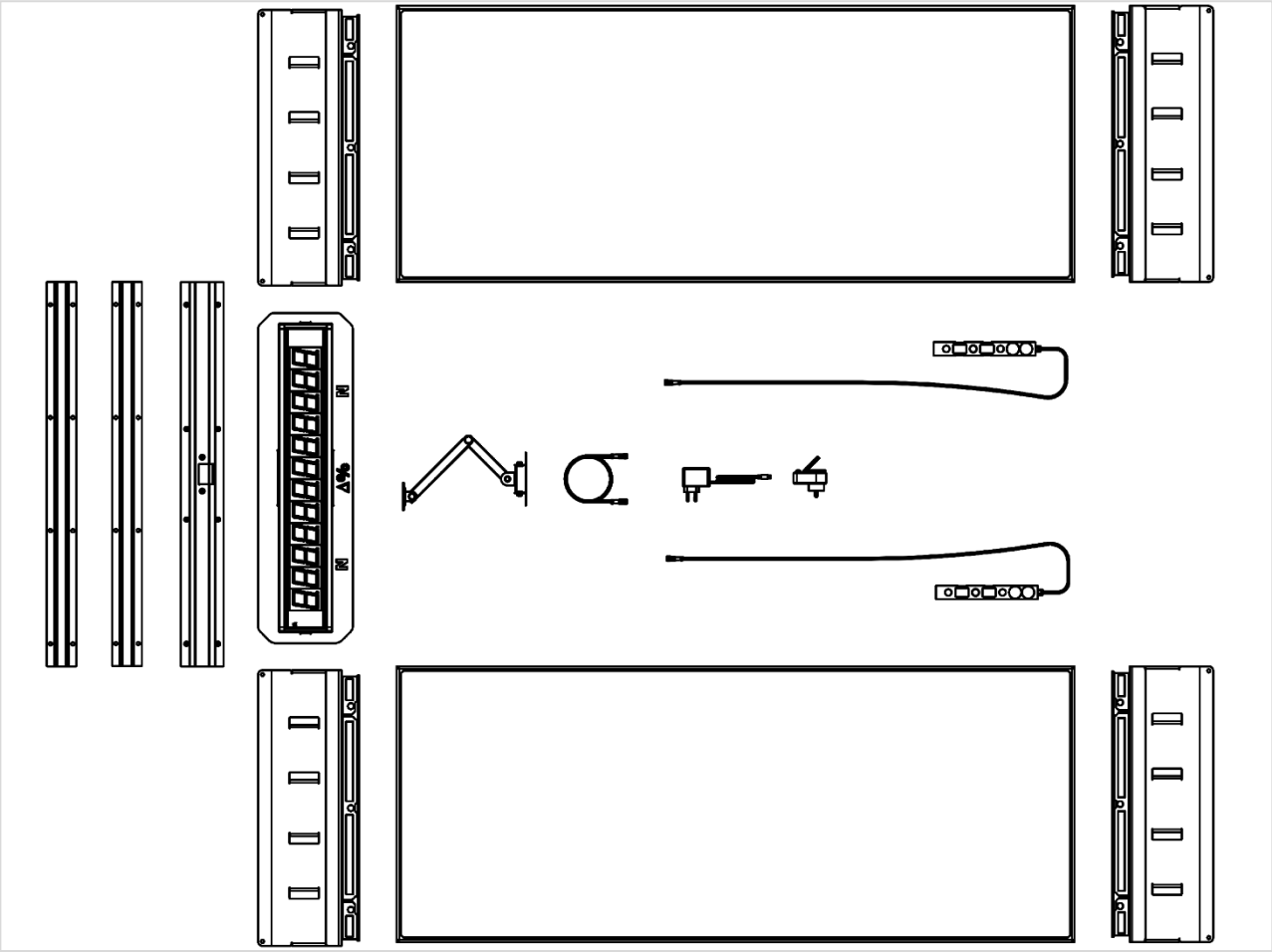
INDEX

1 Important basic information

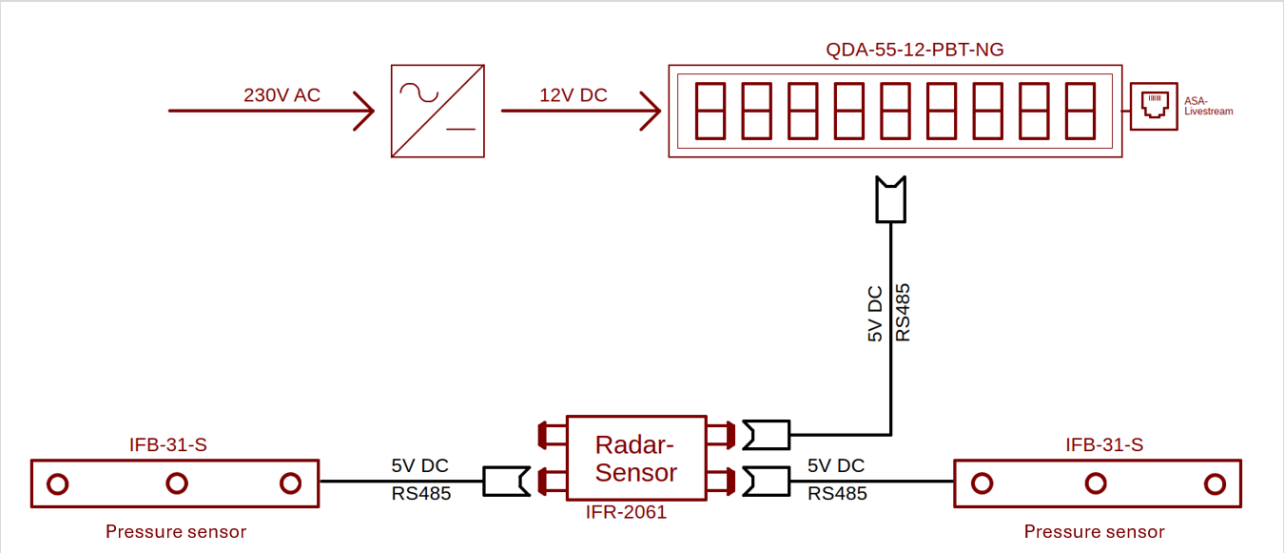
1.1 Scope of delivery

- 2x test plate
- 2x brake force sensor
- Speed sensor with cable cover plate
- 4x up and down ramps
- 2x cable cover plate
- Digital display including wall bracket, socket adapter and power supply
- Integrated ASA live stream interface (in the display)
- Cable and assembly kit
- Documentation

1.2 System overview



1.3 Connection diagram



1.4 Requirements for the installation location:

- Installation in driveways and passageways permitted (max. 4t overrun load, can be driven across at 5km/h)
- A flat and horizontal surface must be available in the installation area
- Obstacle-free access to the test bench and sufficient space on the exit side (two car lengths)
- The surface must allow fastening with screws/anchors of 12mm Ø / 150mm deep
- A concrete surface of 200mm thickness is recommended (no asphalt or paving!)
- The display must be clearly visible to the operator from the vehicle
- The display must be installed below a roof.
- To mount the display, the wall must allow fastening with screws/anchors
- The connecting cable from the test bench to the display has a length of 15m (alternatively 25m)
- The lateral distance from the test bench to a wall must be at least 0.85m
- A wall can be located to the right or left of the test bench
- The connecting cable to the display can be connected to the left or right of the test bench
- Provide a safety socket (230V 50/60Hz) near the display (max. 0.5m distance)
- Make sure for a free water drainage, test plates are forbidden to be under water!

1.5 Intended use

- The test bench is suitable for testing the service or parking brake systems on single-track and two-track vehicles with a maximum permissible total vehicle weight of 3.5t
- The test bench may only be operated in accordance with its intended purpose and within its performance limits, see technical data of the test bench
- The test bench is suitable for four-wheel drive vehicles
- The test bench is suitable for testing electronic parking brakes
- The test bench is suitable for trailer testing

1.6 Signal words

NOTE

denotes a potentially harmful situation. If not avoided, the product or something in its surroundings may be damaged.

ATTENTION

denotes a potentially imminent danger. If not avoided, minor or minor injuries may result.

WARNING

denotes a potentially imminent danger. If not avoided, death or severe injuries may result.

DANGER

denotes an imminent danger. If not avoided, death or severe injuries may result.

2 Legal information

2.1 Limitation of liability

See “General Terms and Conditions (GTCs)” of Cosber GmbH at:
https://cosber.de/de/content/page/view/id/604

2.2 Warranty

- We guarantee that our products are free from defects for a period of 12 months
- The warranty period begins from the time the goods are delivered to the buyer. This regulation does not apply to used products, for which any warranty is excluded.
- As part of the warranty, we undertake to carry out either a repair and/or replacement parts at our own discretion.
- Liability for damage resulting from defects and for lost profits is excluded.
- We reserve the right to withdraw from the contract after unsuccessful attempts at repair have been made and/or a replacement delivery is impossible.

3 Before assembly

3.1 Assembly preparation

- Determine assembly location according to the specifications (see point 1.3)
- Clean assembly location (swept clean)
- Ensure that work can be carried out safely at the assembly location
- Wear personal protective equipment

3.2 Required tools

- Socket wrench with socket SW17
- Cutter knife
- Bit Torx TX20
- Drill with stone drill Ø6 and Ø12
- Vacuum cleaner
- Hexagon socket 2.5mm
- Open-end wrench SW10 and SW13
- String cutter
- Phillips screwdriver

3.3 Transport at the assembly location

- The packed test bench on the pallet can be moved to the assembly location with a forklift/pallet truck
- The brake plates may only be lifted and moved at the assembly location by two people

3.4 Packaging / disposal

- The test bench is shipped from the factory packed on a pallet
- Remove all packaging
- Packaging residues must be disposed of in accordance with applicable environmental regulations

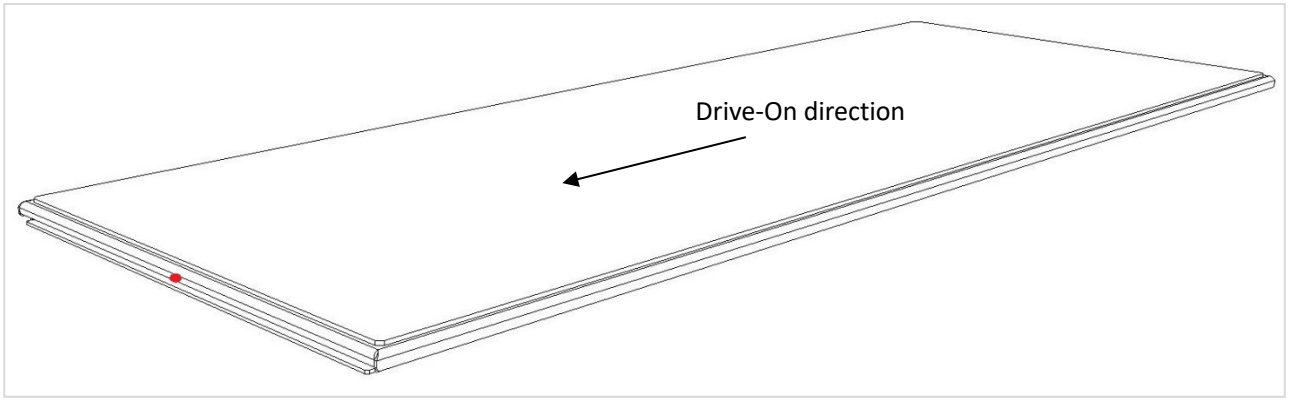
4 Assembly

4.1 Mechanic

ATTENTION

Lifting of brake plate only with two persons!

Lift the brake plates from the pallet and position them at the assembly location. Pay attention to the alignment of the brake plates. The departure sides are marked by a red dot on the front (red dot).



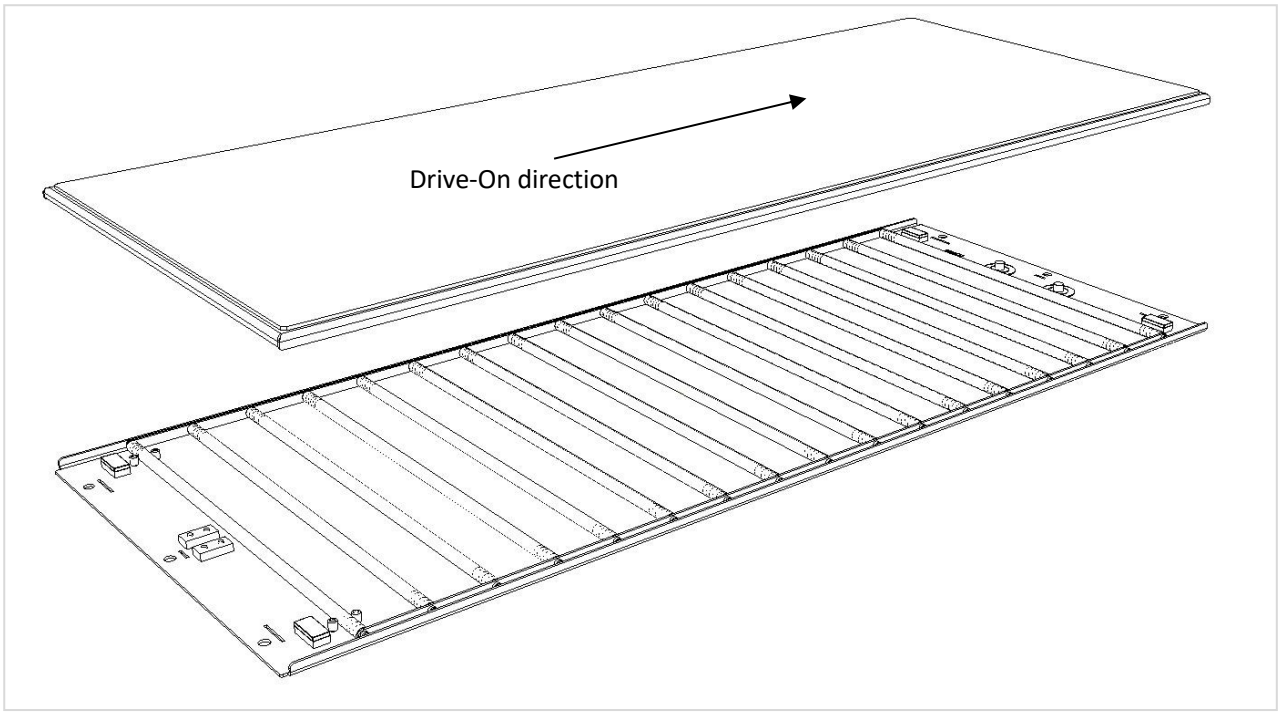
Remove the top plates of the brake plates by lifting them up sharply and put them to one side. The top plates are magnetically attached to the bottom plates.

ATTENTION

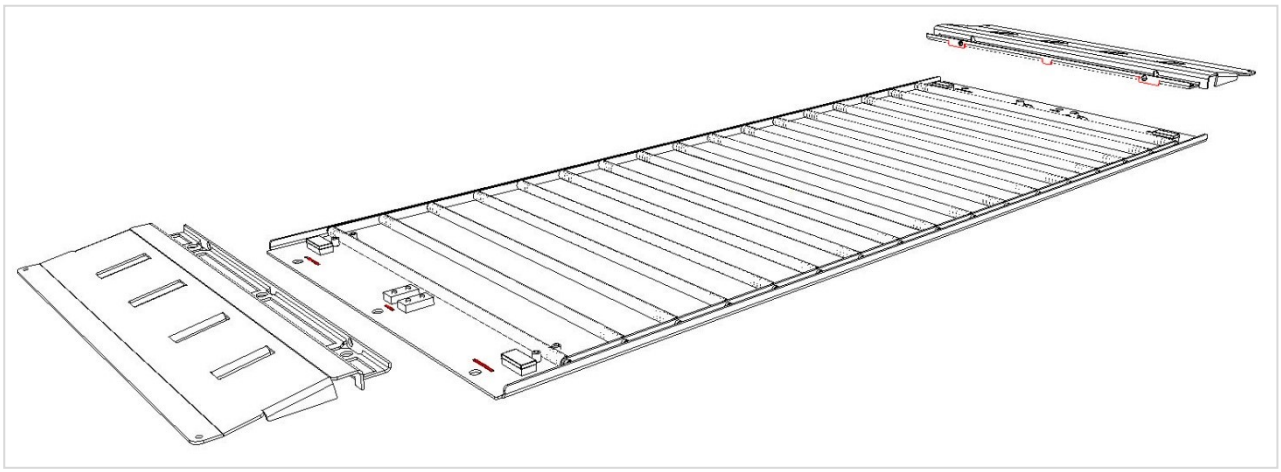
To avoid injuries to the hands caused by the surface coating, work gloves must be worn during assembly!

ATTENTION

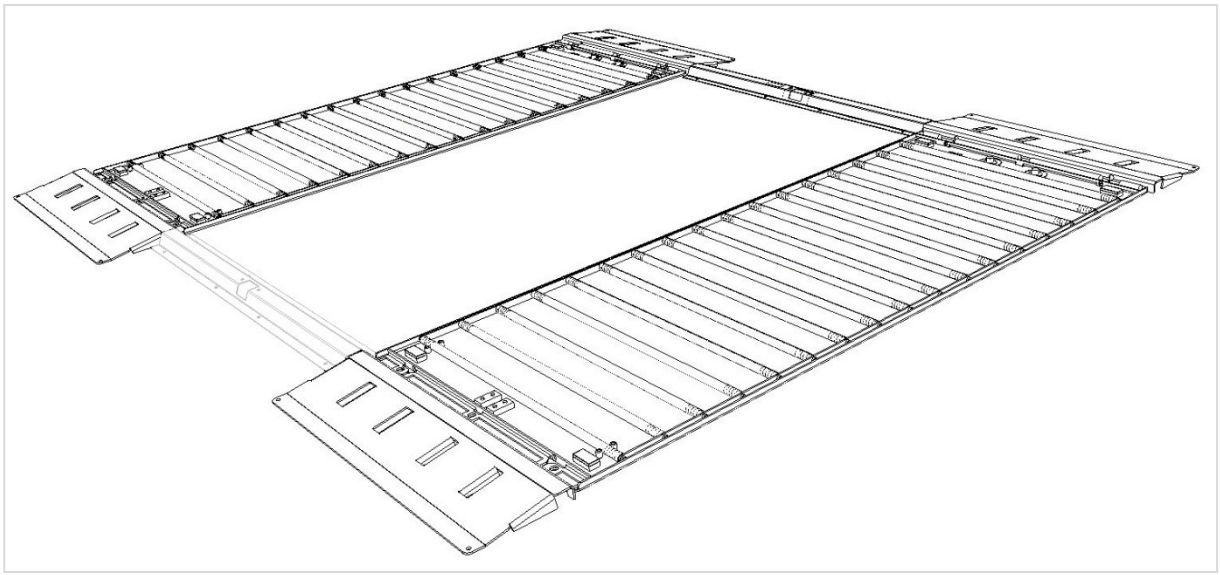
If the top plate is lifted too slowly, the magnets can pull the top plate back! Risk of crushing fingers!

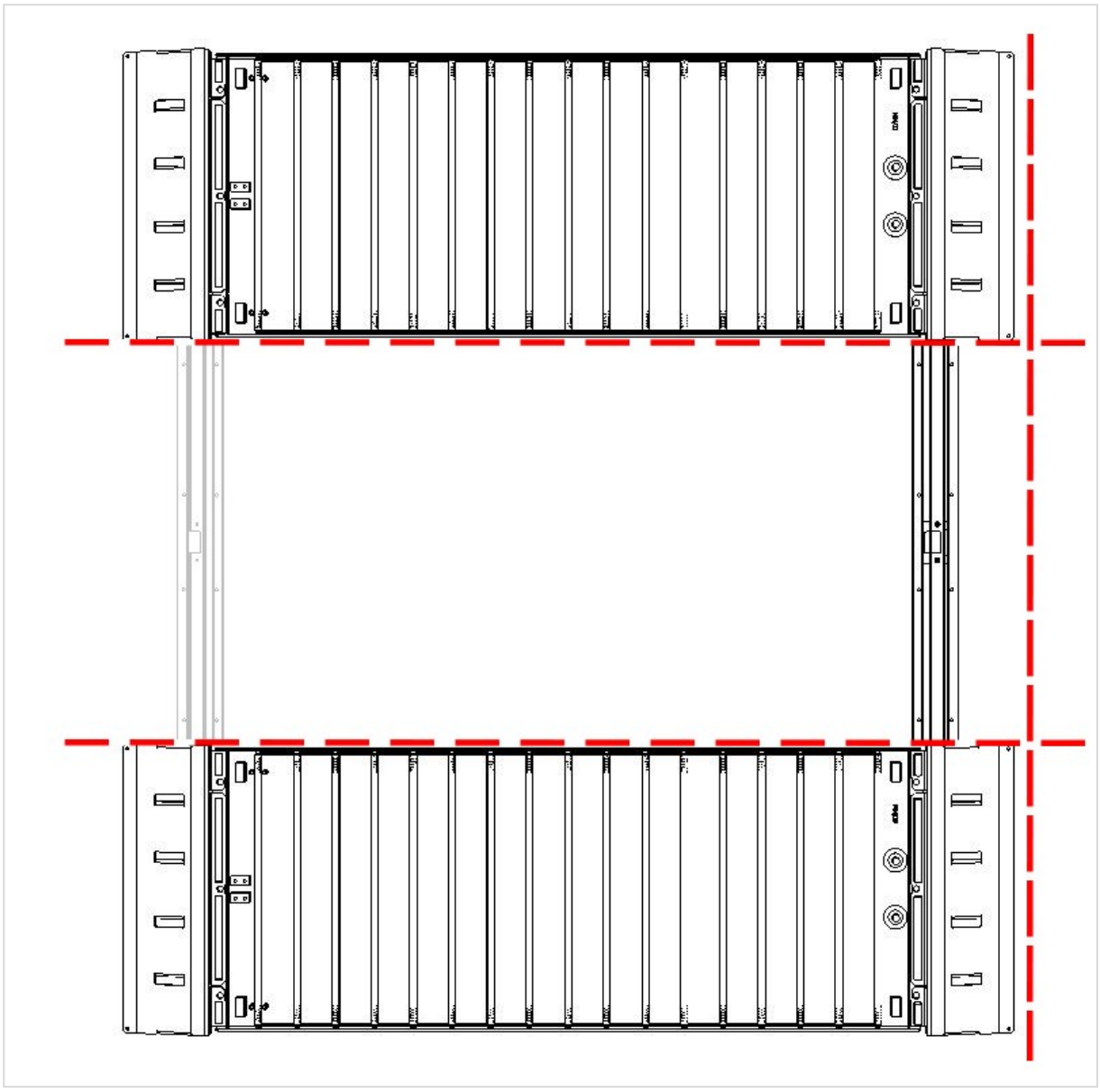


Insert the four on- and off-ramps into the designated recesses (locking lugs).



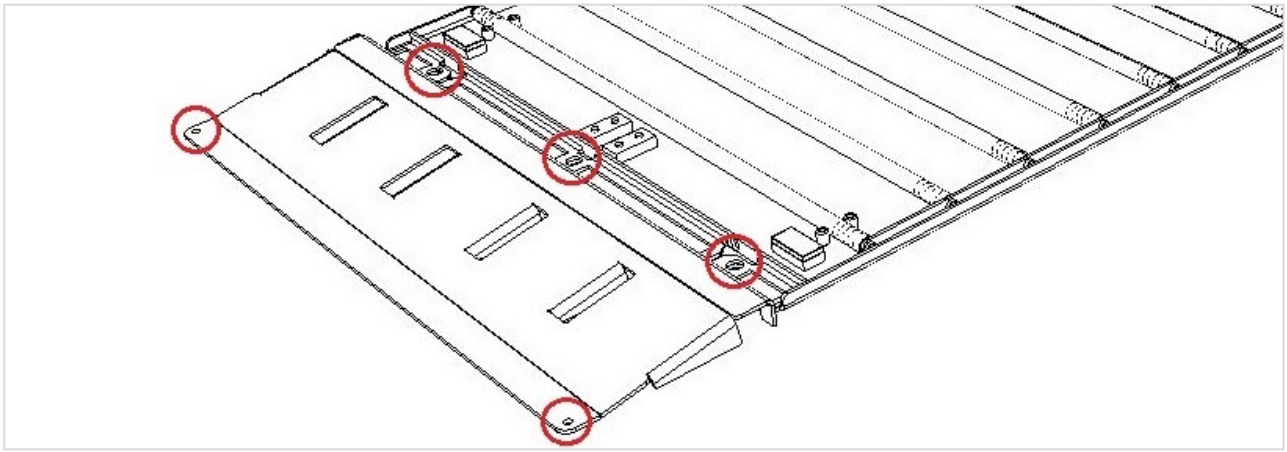
Use the radar plate to determine the distance between the two brake plates, first at the front and then at the back. To do this, use the inside of the ramp as a stop for the radar plate. Make sure that the brake plates are parallel and aligned to each other and to the direction of travel.



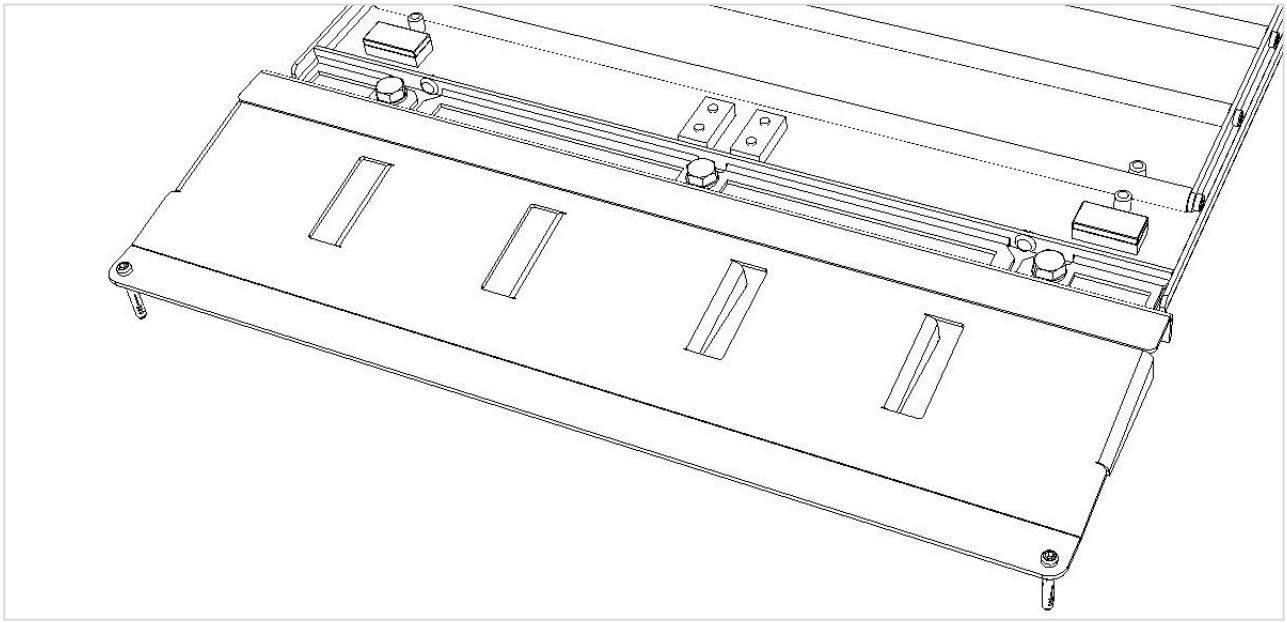


Each brake plate is anchored to the ground along with two on- and off-ramps using 6 screw/anchor connections (Ø12). Each on-ramp is additionally secured to the ground against lifting by two screw/anchors connections (Ø6).

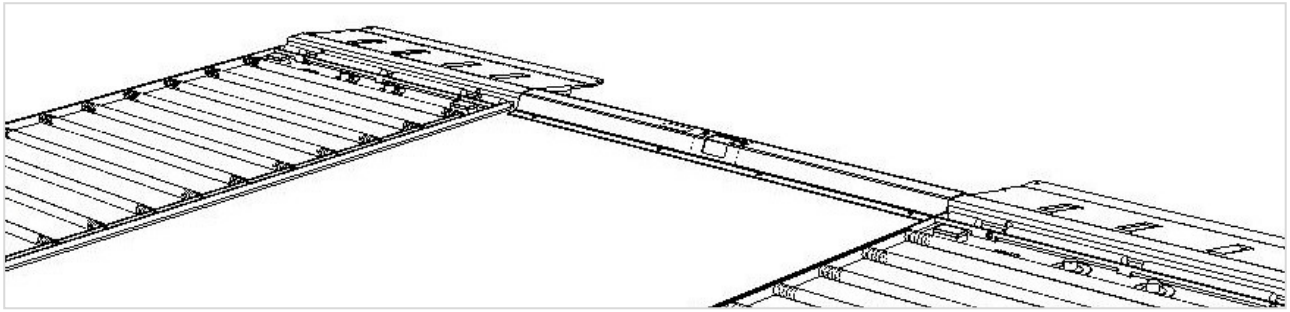
Drill the appropriate holes in the ground at the designated locations. Remove the drilling dust with the vacuum cleaner while drilling.



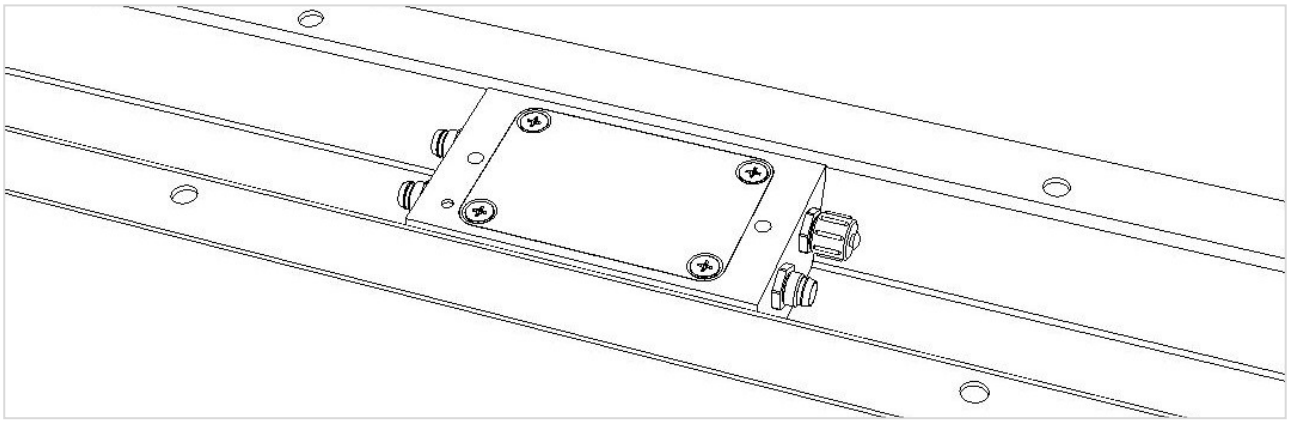
Insert the supplied dowels into the respective drill holes and attach the brake plates including the on- and off-ramps to the ground using the appropriate screws.



The radar cover plate is positioned flush between the off-ramps on the off-ramp side. Drill the appropriate holes in the ground at the designated locations (8x Ø6). Remove the drilling dust with the vacuum cleaner while drilling. Insert the supplied anchors into the drill holes.

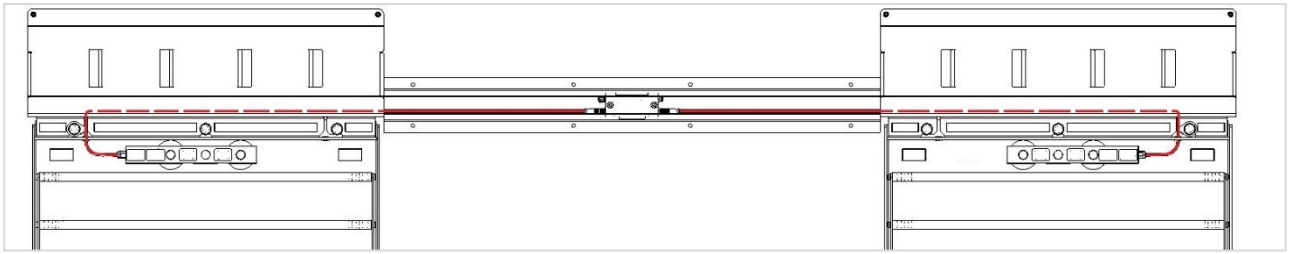


Then turn the radar cover plate with the bottom facing upwards so that the plug connections on the radar module are accessible.

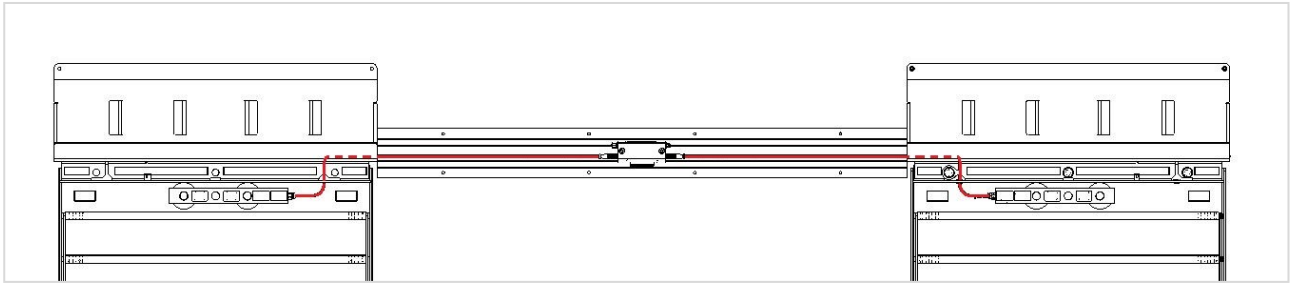


In the next step, the brake force sensors are inserted into the brake plates. Note that the cable routing of the sensor cables and the alignment of the sensors differ depending on the length of the radar cover plate.

Variant 1: Radar cover plate length 850mm (included in the standard scope of delivery)



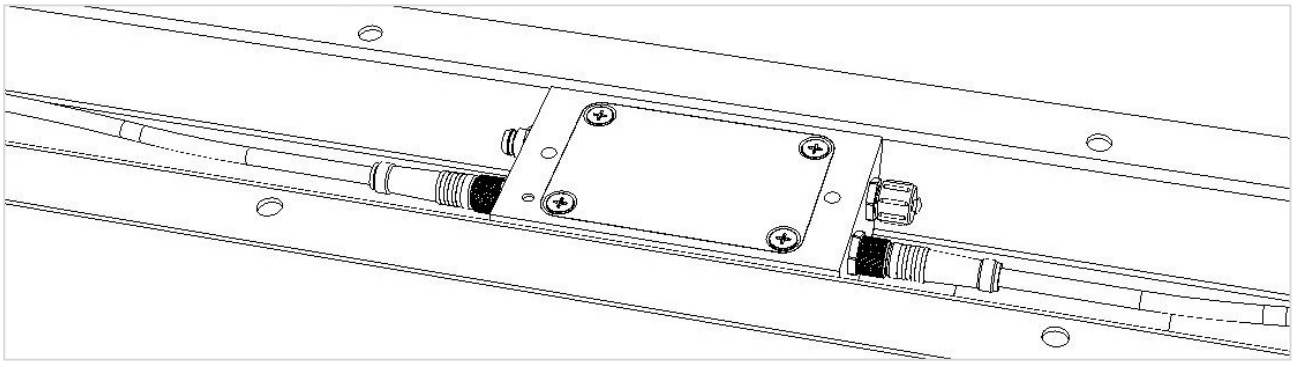
Variant 2: Radar cover plate length 1000mm (optionally available)



NOTE

*Also note the inscription **"THIS SIDE UP"** on the brake force sensors! Incorrect installation of the brake force sensor can lead to damage!*

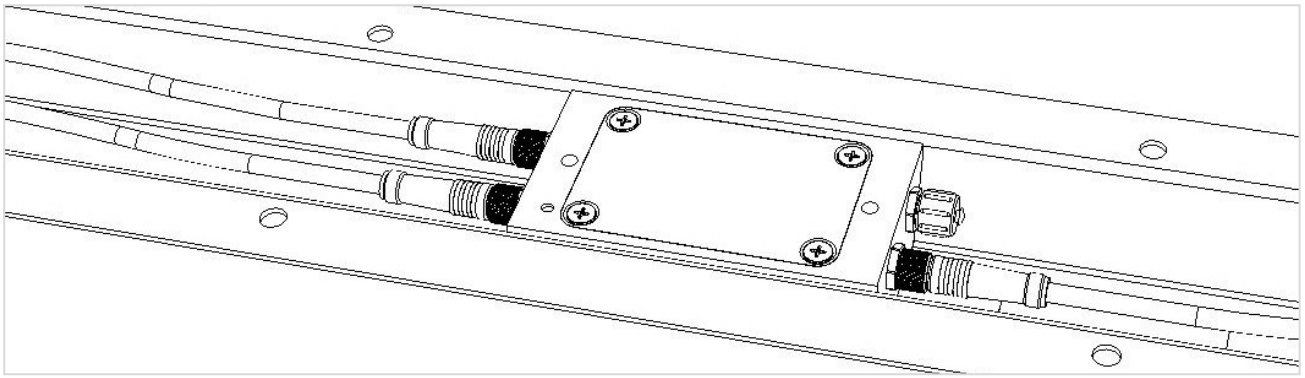
Guide the respective sensor cable through the ramp towards the radar module. Connect the sensor cables to the connectors of the radar module and secure the connections by tightening the union nuts.



NOTE

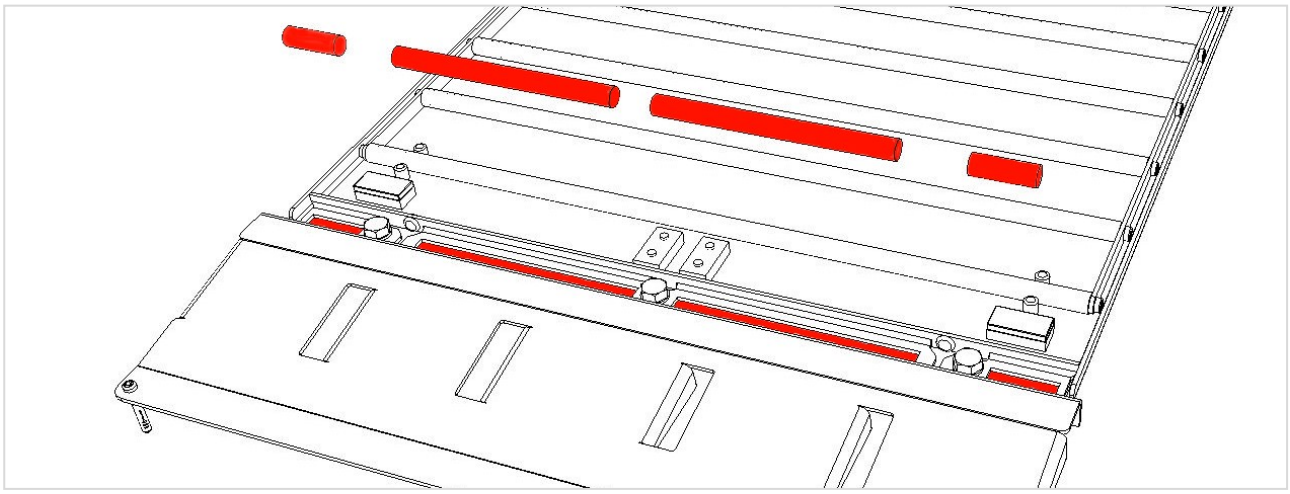
Make sure that the cables are not crushed or pinched during installation!

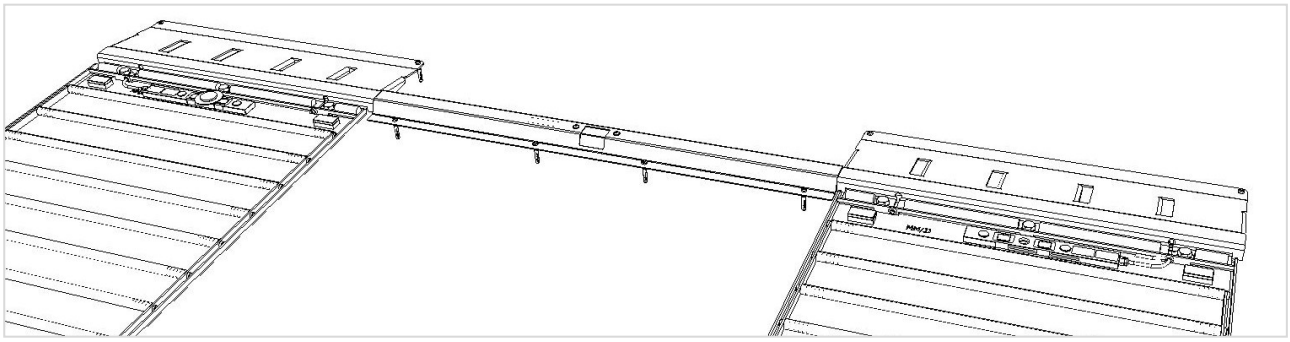
Route the display's connection cable to the radar module on the appropriate side under the corresponding ramp. Connect the connection cable to a connection on the radar module and secure the connection by tightening the union nut. Close the unused fourth connection on the radar module with the supplied cover cap to ensure IP protection.



Turn the radar module back on its top and position it appropriately over the drill holes. Fasten the radar cover plate to the floor with the appropriate screws.

In the next step, insert the loose rollers into the recesses provided in the on- and off-ramps (8 pieces per brake plate).





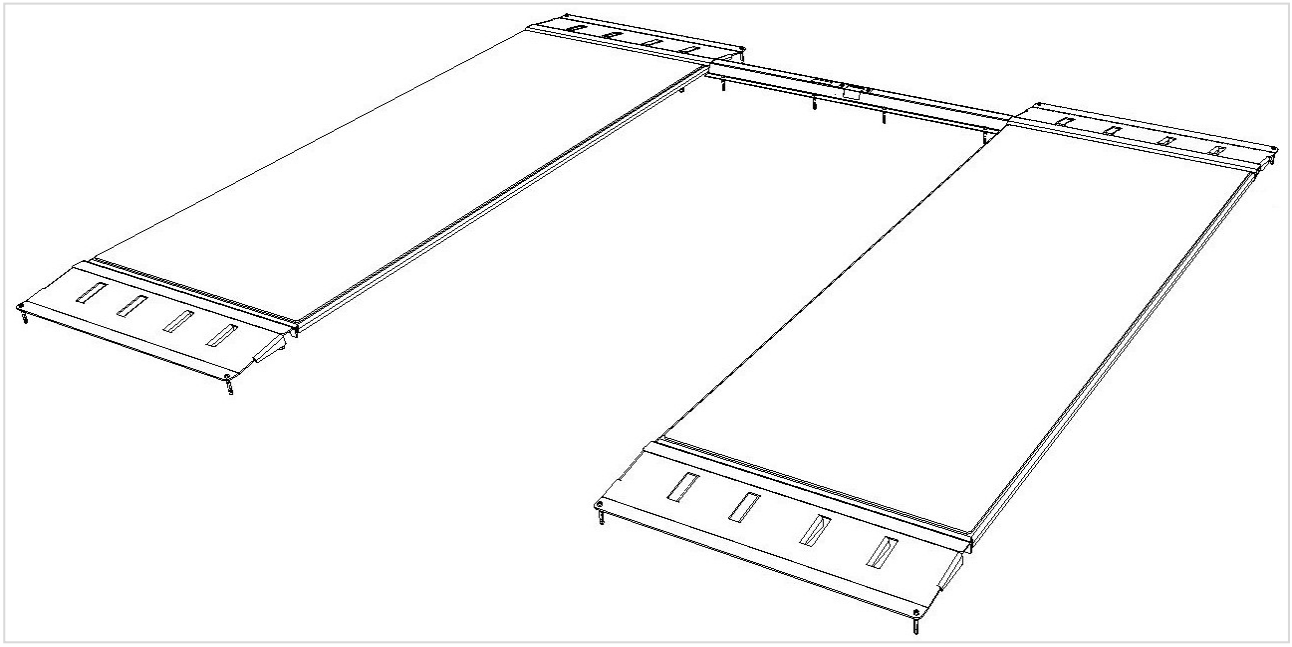
ATTENTION

The magnets pull the top plate down abruptly. Do not grasp the top plate with your fingers to avoid crushing!

NOTE

The top plate must snap into place at the front and back. Be careful not to damage the sensor by applying too much force!

Place the top plates on the bottom plates. Make sure that the pin of the top plate engages the linear guide and on the brake force sensor of the bottom plate.

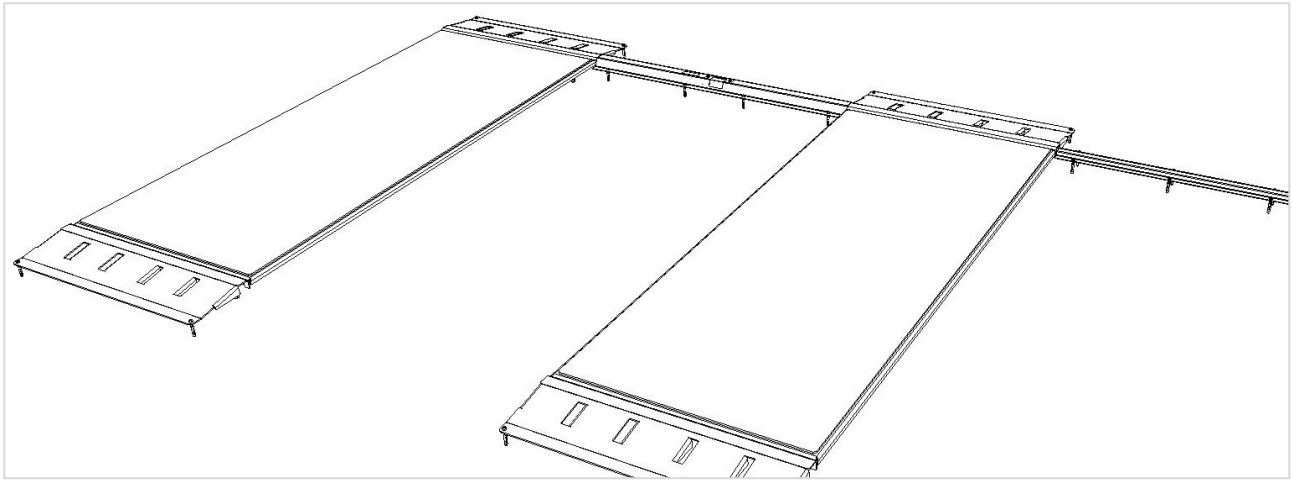


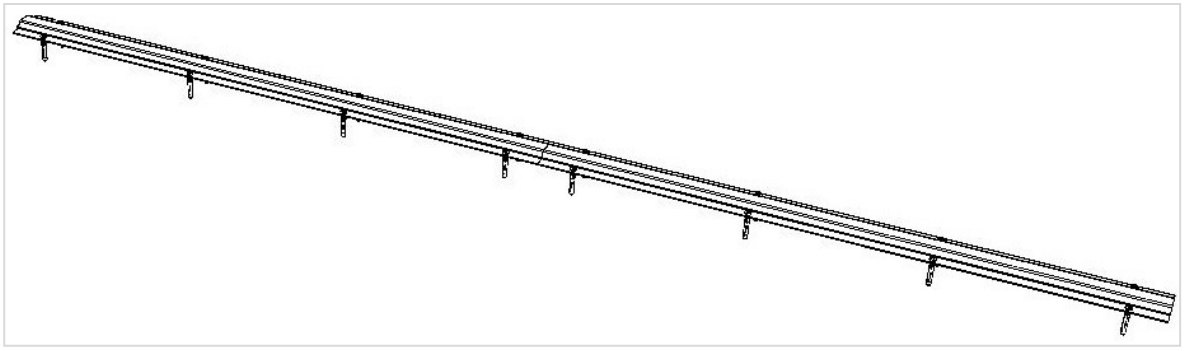
Use the two cable cover plates provided to cover the display connection cable from the brake plate in the direction of the desired position of the display (left or right of the test bench).

Additional cable cover rails are available as an option. The cable cover rails are attached to the floor with screw/anchor connections in the same way as the radar cover plate.

NOTE

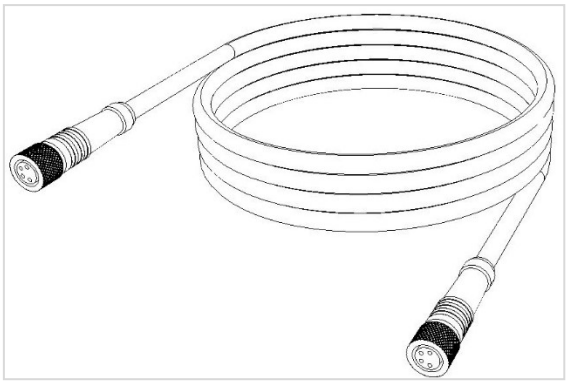
Make sure that the cables are not crushed or trapped during installation!



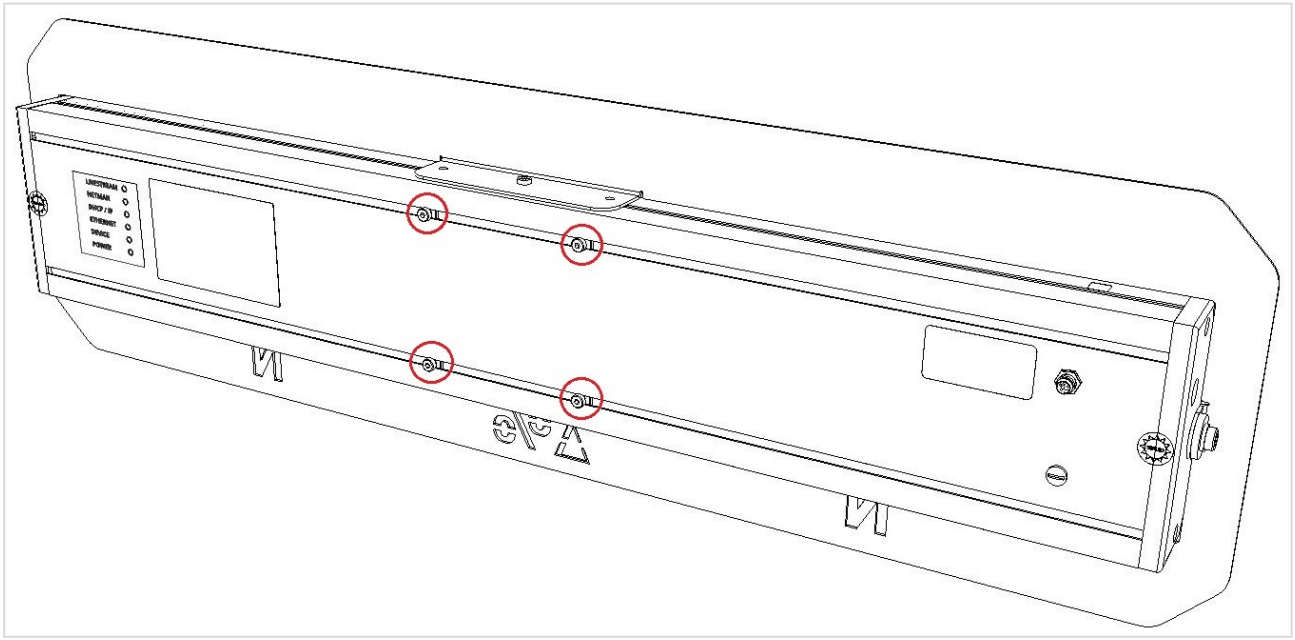


4.2 Digital display

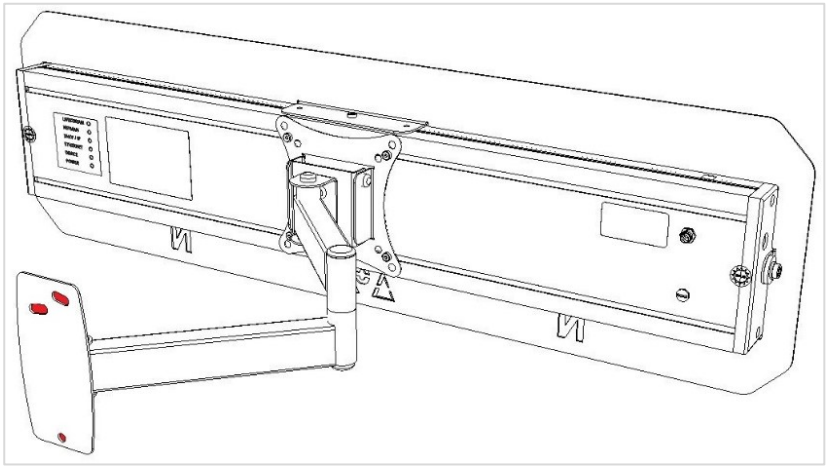
Lay the connection cable in a suitable manner to the mounting point of the display. Pay attention to the length of the connection cable (15m included in the standard scope of delivery, 25m available as an option). Special lengths are available from the manufacturer on request.

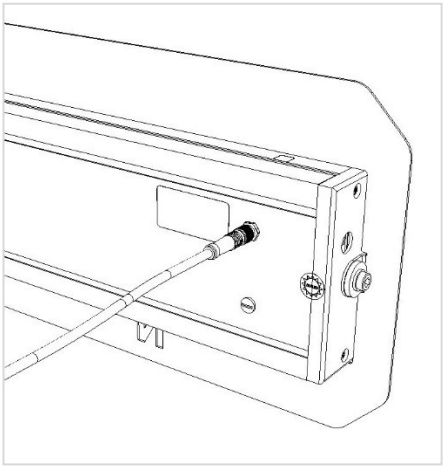


In the next step, mount the wall bracket according to the enclosed assembly instructions. There are four screws/slot nuts on the back of the display for attaching the wall bracket.



Depending on the installation location, you can move the wall bracket along the back of the display. Then screw the wall bracket onto the display. The wall bracket is attached to the wall using the supplied mounting material with three screws/anchor connections.



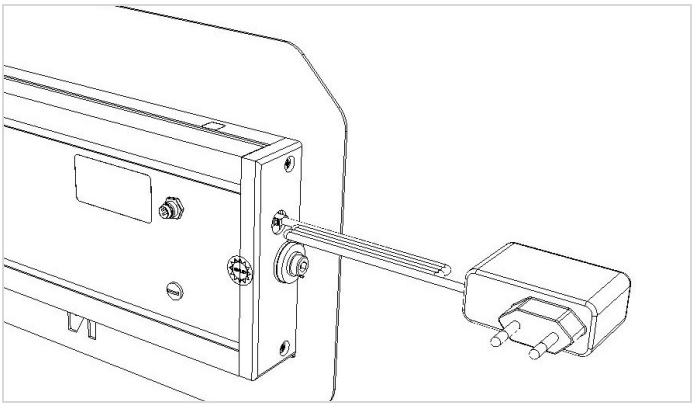


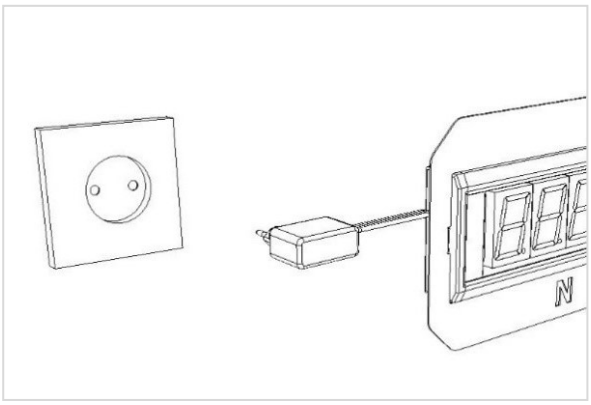
Connect the connecting cable to the connection on the back of the display and secure the connection by tightening the union nut.

The power supply is first plugged into the side of the display using the pull-out plug. The power supply is then connected to the 230V socket adapter. The sensor cable and the power supply cable must be routed to the wall bracket and secured with cable ties. Make sure that the wall bracket has freedom of movement.

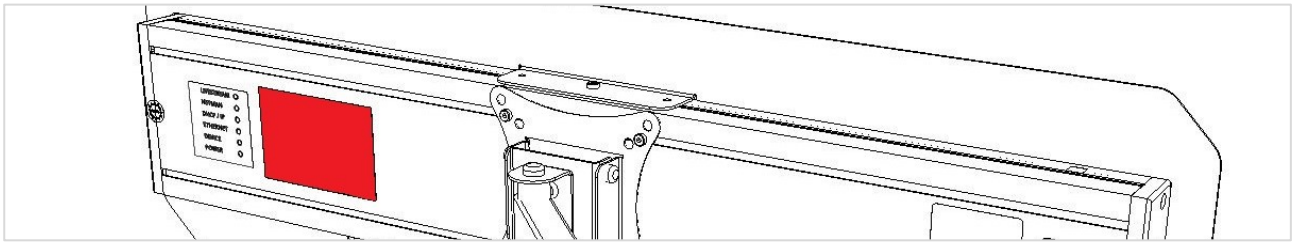
NOTE

Make sure that the cables are laid along the wall bracket so that they are not crushed or damaged by swivelling/moving the display!





Finally, attach the nameplate to the back of the display. The nameplate is included in the document folder. The document folder must be given to the operator. Inform the operator of the obligation to keep it!

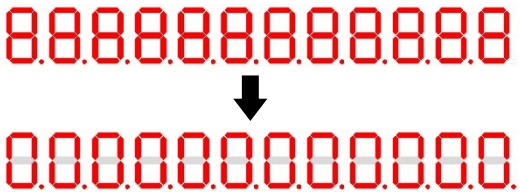
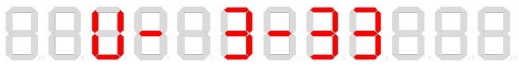


5 Commissioning

When delivered, the test bench sensors are not assigned (addressed). After assembly, the side and measuring direction must first be assigned! After that, the test bench is ready for use.

5.1 Turn-on of test bench

- ✓ The test bench must be unloaded
- ✓ Plug in the power cable of the digital display
- ✓ Switch on the display

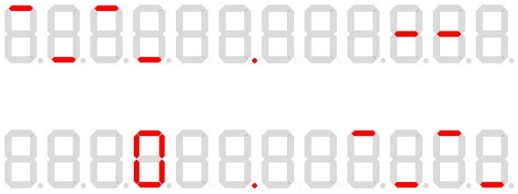
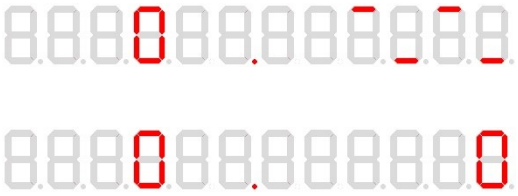
Description	Display
The display starts and all segments are activated and carry out a self-test, the display shows the following:	
The display starts a countdown with a segment test, counts down and shows the following:	
The software version is finally displayed, here V3.33	

5.2 Teaching the test bench

The configuration menu is called up using a magnetic switch with the magnet provided. Place the magnet on the "target sticker" marking on the digital display and the following menu items will be scrolled through. The respective menu item is selected by removing the magnet.

Description	Display
Magnet detected – the 4 points of the first 4 segments light up:	
Menu item Calibration: “CC” Measured values are output live – division 1N	
Menu item Take zero point: “nP” Set zero point of the brake force sensors	
Menu item Teach sensors: “AA” The addressing (side) and measuring direction are assigned.	

As soon as the menu item “AA” is displayed, remove the magnet. The test bench is now in “learning” mode.

Description	Display
Display is in "learning" mode	
Display is ready to teach the left brake plate. Jerk the left test plate with your foot in the direction of travel. The left side and the measuring direction are determined and saved. The test plate then outputs the measuring signal.	
The display is ready to teach the right brake plate. Jerk the right test plate with your foot in the direction of travel. The right side and the measuring direction are determined and saved. The test plate then outputs the measuring signal.	
Configuration is complete and the display automatically switches to normal operating mode.	

5.3 ASA-Livestream

The ASA livestream interface is functional as soon as the test bench is commissioned and ready for use. The ASA livestream interface is located on the right-hand side of the display and is marked with a corresponding sticker. On the back of the display there are LEDs that describe the system status of the interface.

Description	Function	LED
POWER	ASA converter is on	
DEVICE	Test bench sends data to ASA converter	
ETHERNET	LAN/ETHERNET connection is active	
DHCP / IP	IP address has been assigned	
NETMAN	Connected to network manager	
LIVESTREAM	Livestream data is sent to the client	

All LEDs must light up to transmit the ASA livestream data to a client!

6 Troubleshooting and correction

If errors occur, error messages are displayed:

Description	Display
Brake force sensor on the left – no communication	
Possible reason: • Left sensor not recognized • Sensor connection cable loose • Sensor or sensor cable defective	**Solution:** • Re-teach the test bench (see point 5.3) • Check that connections are fix • Replace the sensor and re-teach the test bench (see point 5.3)
Brake force sensor on the right – no communication	
Possible reason: • Right sensor not recognized • Sensor connection cable loose • Sensor or sensor cable defective	**Solution:** • Re-teach the test bench (see point 5.3) • Check that connections are fix • Replace the sensor and re-teach the test bench (see point 5.3)
Radar sensor – no communication	
Possible reason: • Radar sensor defective	**Solution:** • Replace radar sensor
All sensors – no communication	
Possible reason: • Test bench not learned • Cable from test bench to display loose • Cable from test bench to display defective	**Solution:** • Re-teach test bench (see point 5.3) • Check cable connections on both sides to ensure they are firmly seated • Replace connection cable
Brake force sensor on the left – overload Braking force during test > 10,000N	
Possible reason: • Braking force too high	**Solution:** • If vehicle is loaded, reduce load • Drive at a lower speed (8-12 km/h) • Do not brake abruptly, but brake more evenly • Vehicle not suitable for test bench
Brake force sensor on the right – overload Braking force during test > 10,000N	

Possible reason: • Braking force too high	**Solution:** • If vehicle is loaded, reduce load • Drive at a lower speed (8-12 km/h) • Do not brake abruptly, but brake more evenly • Vehicle not suitable for test bench
Brake force sensor on the left and right – overload Braking force during test > 10,000N	
Possible reason: • Braking force too high	**Solution:** • If vehicle is loaded, reduce load • Drive at a lower speed (8-12 km/h) • Do not brake abruptly, but brake more evenly • Vehicle not suitable for test bench
Brake force sensor left – tension Sensors are tensioned after testing or when restarting - zero point too high/low	
Possible reason: • Vehicle with brake / handbrake applied is on the test bench • Foreign objects (dirt, stones, etc.) are jamming both brake plates • Sensors defective	**Solution:** • Switch off the test bench, release the brake and remove the vehicle from the test bench, restart the test bench • Switch off the test bench, remove foreign objects, restart the test bench • Replace the sensors
Brake force sensor right – tension Sensors are tensioned after testing or when restarting - zero point too high/low	
Possible reason: • Vehicle with brake / handbrake applied is on the test bench • Foreign objects (dirt, stones, etc.) are jamming both brake plates • Sensors defective	**Solution:** • Switch off the test bench, release the brake and remove the vehicle from the test bench, restart the test bench • Switch off the test bench, remove foreign objects, restart the test bench • Replace the sensors
Brake force sensor left and right – tension Sensors are tensioned after testing or when restarting - zero point too high/low	
Possible reason: • Vehicle with brake / handbrake applied is on the test bench • Foreign objects (dirt, stones, etc.) are jamming both brake plates • Sensors defective	**Solution:** • Switch off the test bench, release the brake and remove the vehicle from the test bench, restart the test bench • Switch off the test bench, remove foreign objects, restart the test bench • Replace the sensors

7 Notes

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