C_MTL M 18.0 W301

Mobile Test Lane System

Original Operating Instructions

BA023001_013-en

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Manufacturer

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Dear Customer,

MAHA is one of the world's leading manufacturers of testing and lifting technology and places particular emphasis on quality and performance. The company's concept includes the development, manufacture and sale of products for use in automotive workshops, by vehicle manufacturers and testing organisations.

MAHA's claim is to also be a leader in the areas of reliability, safety and sustainability – this can be seen in many details that have been developed with these aspects in mind.

We are convinced that you will be more than satisfied with the quality and performance of our products for many years. With the purchase of our products you will also receive professional assistance in case of need for service and repair.

Please remember to keep these operating instructions in a safe place. Accurately following their contents will significantly extend the life of your product and also increase its resale value. If you sell your product, please also pass on the operating instructions.

MAHA is constantly working on the further development of all products and therefore reserves the right to make changes, e.g. in shape and appearance, without prior notice.

Extensive accessories, useful assembly material and auxiliary materials are available for our products. For further information, please ask your dealer or your MAHA contact person at any time.

Thank you for choosing a MAHA product!

Contents

1 General Safety Instructions

1.1 Introduction

- These operating instructions must be read carefully and understood before work commences.
- Please observe the specific safety information provided for the respective sections of the operating manual.
- Adhering to the procedures, sequences and corresponding safety instructions is essential.
- A printed copy of the operating instructions shall be kept permanently available at the test bench.
- The relevant regulations regarding accident prevention and health and safety must be observed.

1.2 Symbols and Signal Words

1.2.1 Personal Injury

DANGER

indicates an immediate hazard which, if not avoided, will result in death or severe personal injury.

WARNING

indicates a potential hazard which, if not avoided, could result in death or severe personal injury.

CAUTION

indicates a potential hazard which, if not avoided, could result in moderate or minor personal injury.

1.2.2 Property Damage

NOTICE

indicates a potentially harmful situation which, if not avoided, could result in damage to the equipment or surrounding objects.

1.3 What to Do in the Event of Defects or Malfunctions

If the fault cannot be rectified using the procedures described in section "Troubleshooting", proceed as follows:

- Switch off the main switch and secure it against being switched on again (unauthorised use).
- Contact service team.

1.4 What to Do in the Event of an Accident

- Notify first aiders, the ambulance service and/or immediate care doctor:
  - Where did the accident happen (address, workshop ...)?
  - What happened?
  - How many are injured?
  - What injuries have occurred?
  - Who is reporting the accident?
- Keep calm and answer questions.

1.5 Requirements on Operating and Service Personnel

Only persons qualified for testing in accordance with TRBS 1203 may be used as service personnel.

All persons involved in the operation, maintenance, assembly, dismantling and disposal of the equipment must

- be 18 years of age or older,
- have the mental and physical capacity for their role,
- be demonstrably trained and instructed,
- have read and understood the operating instructions, in particular the instructions on how to behave in the event of a malfunction and on proper use,
- observe the locally applicable regulations on occupational health and safety,
- show knowledge and experience in handling the equipment and the dangers posed.

1.6 Product-Specific Safety Instructions

- Transport the mobile test stand only using the trailer provided for this purpose.
- All fastenings between the trailer and the mobile test stand must be secured during transport.
- The mobile test stand must only be moved using vehicles and trailers that comply with the locally applicable legal requirements and traffic regulations for the transport of the combined weight of the mobile test stand and trailer.
- All operators must be competent to drive the transport vehicle with the mobile test stand attached and loaded.
- The mobile test stand must only be used on a level, firm, load-bearing, dry surface capable of supporting the test stand's own weight as well as the load of the vehicles being tested.
- The ground must have a firm, load-bearing surface so that the lifting jacks cannot sink into the ground (e.g. concrete, paving). Asphalt is only suitable to a limited extent, depending on the temperature.
- The mobile test stand must not be parked on an icy surface.
- The installation site must prevent oil from seeping into the ground.
- The trailer must be secured at all times to prevent it from rolling away unintentionally.
- The trailer must be maintained and kept roadworthy in accordance with locally applicable legal requirements and the manufacturer's specifications.
- It is prohibited to remain in the danger zone whilst the mobile test stand is being loaded or unloaded.
- When loading and unloading the mobile test stand, the parking brakes of the trailer and the towing vehicle must be engaged.
- Personal protective equipment (safety footwear, gloves) must be worn during all work on the test stand.
- Access to the emergency stop switch and emergency stop push-button must be ensured.
- When carrying out any work on the test stand, ensure that the main switch is switched off and secured against being switched on again.
- Suitable lifting equipment must be used when moving heavy components (> 25 kg).
- All electrical work must be carried out only by qualified electricians in accordance with locally applicable regulations, guidelines and standards.
- Test and measure the protective conductor connection and insulation as part of the overall commissioning.
- Sufficient lighting must be provided in the work area.
- Operation of the mobile test stand in adverse weather conditions (lightning, hail, etc.) is not permitted.

- It is prohibited to remain in the danger zone during entry, exit and driving over the test rig, as well as during vehicle testing.
- Operation is only permitted with safety and protective devices in working order.
- The access and exit ramps may only be mounted on the mobile test rig when it is in its designated position.
- It is prohibited to remain in the danger zone during entry, exit and transit, as well as during the vehicle test.
- Drive the vehicle onto the mobile test stand slowly (at walking pace) and keep it centred.
- When using the axle play tester, no person must be positioned beneath the vehicle. The axle suspension must be inspected from the side.
- When using the axle play tester, one of the non-tested and non-steered axles of the vehicle under test must be secured against rolling away using wheel chocks.
- The facility, including the working area, must be kept clean.
- The operator must ensure adequate ventilation.
- Replace hydraulic hoses in accordance with the requirements of applicable standards and carry out regular checks of their functionality.
- When working beneath the raised mobile test stand, it must be mechanically secured against unintentional lowering, e.g. with support stands.
- The emergency remote control cable for lowering/raising must be removed from its transport bracket before use and taken out of the danger zone.
- Service work may only be carried out by specialist personnel who are specifically authorised and trained for this purpose. Specialist personnel include authorised, trained specialists from the manufacturer, the authorised dealers and the respective service partners.

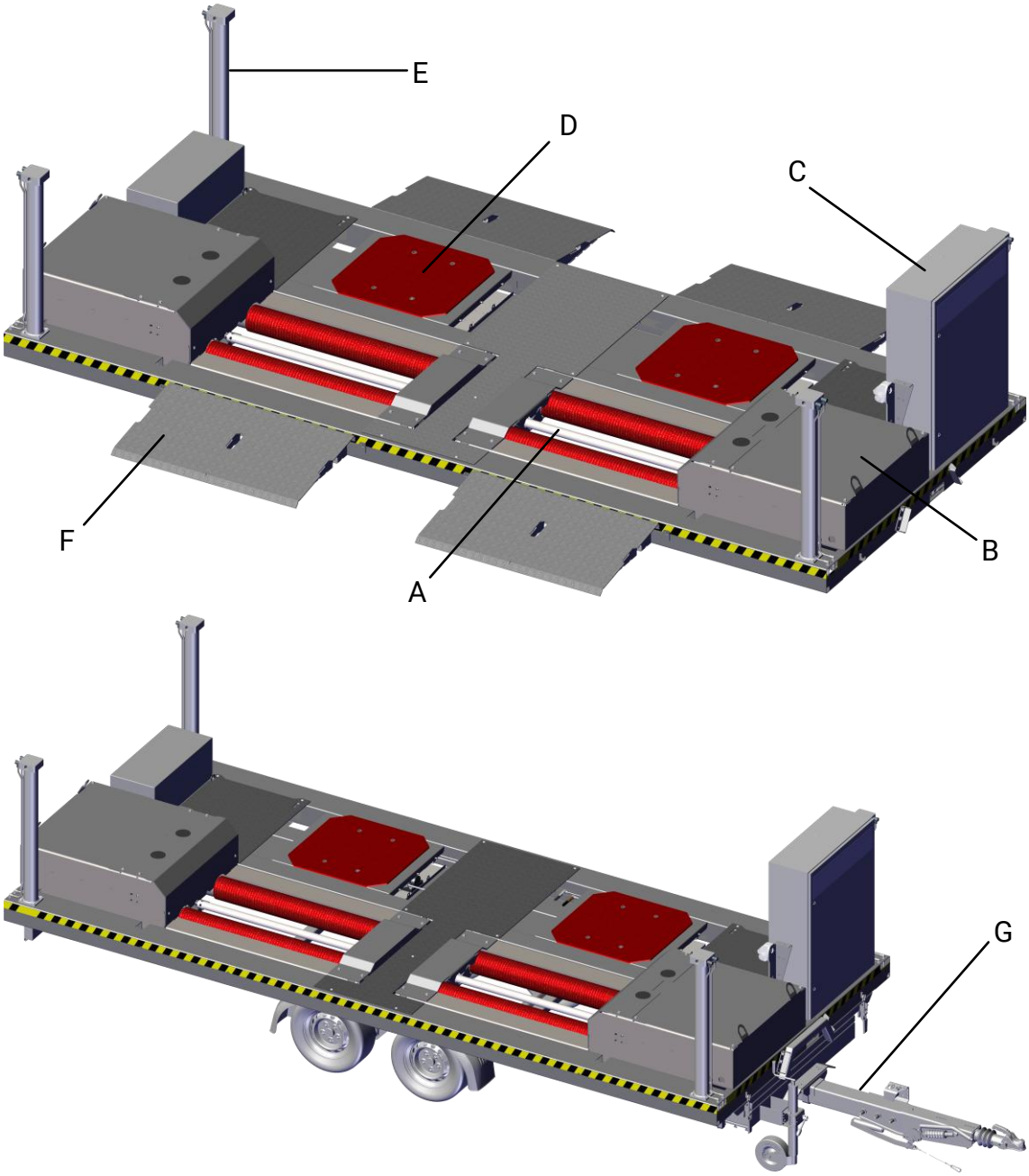
2 Description of the Test Stand

2.1 Service Life

The test stand is designed for a service life of approx. 10 years. This depends, among other things, on the existing operating conditions. After this period, the test stand must be replaced with a new product or undergo a general overhaul.

A general overhaul should only be carried out by the manufacturer or persons authorised by them. Among other things, the safety structures are to be inspected and, if necessary, other parts are to be replaced in accordance with the manufacturer's specifications.

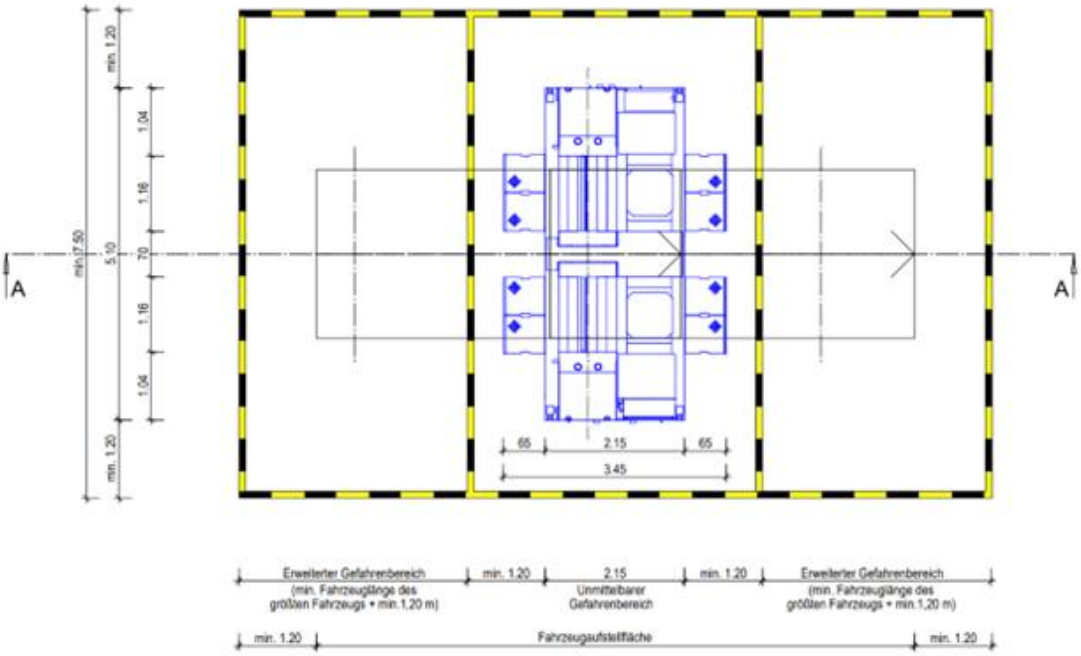
2.2 Overall View with Components



A	Roller set (2 test rollers, 1 sensor roller)	**E**	Jack stand
B	Electric motor	**F**	Drive-on/-off ramp
C	Control box with operating unit	**G**	Trailer
D	Axle play tester		

2.3 Danger Zone

When the test stand is in operation, no persons or obstacles must be present in the danger zone (risk of crushing!). This must be marked by a yellow-and-black marking or a barrier around the test stand.



Danger zone (extract from foundation plan 1415918)

2.4 Control Description

The control unit consists of a control box containing electrical and electronic components, in conjunction with the corresponding operating, control and monitoring software, and the control elements necessary for safe operation. Detailed information can be found in the electrical circuit diagram supplied.

2.5 Technical Data

2.5.1 Test System

Permissible axle load (traversable) ..... 18 000 kg
Power supply .....3x 400 V/N/PE 50 Hz
Fuse .....63 A time-delay
Connection plug .....CEE 63A / 6H5p

2.5.2 Weight (Depending on Options)

Fully equipped (incl. ramps + supply cable, excl. trailer + tarpaulin) ..... 2750 kg
Without LMS (incl. ramps + supply cable, excl. trailer + tarpaulin) ..... 2450 kg
8 ramps .....100 kg

Tarpaulin ..... 25 kg
Trailer ..... 640 kg
Maximum weight ..... 3415 kg

2.5.3 Dimensions

Frame/test system, transportable (H x W x L) ..... 1200 x 2150 x 5150 mm
Frame/test system, with cylinders extended (H) ..... 2010 mm
Frame/test system, installed (W) ..... 3460 mm
With trailer (H x W x L) ..... 1800 x 2150 x 6800 mm
Ramp, 8 required (H x W x L) ..... 150 x 575 x 642.5 mm

2.5.4 Brake Tester

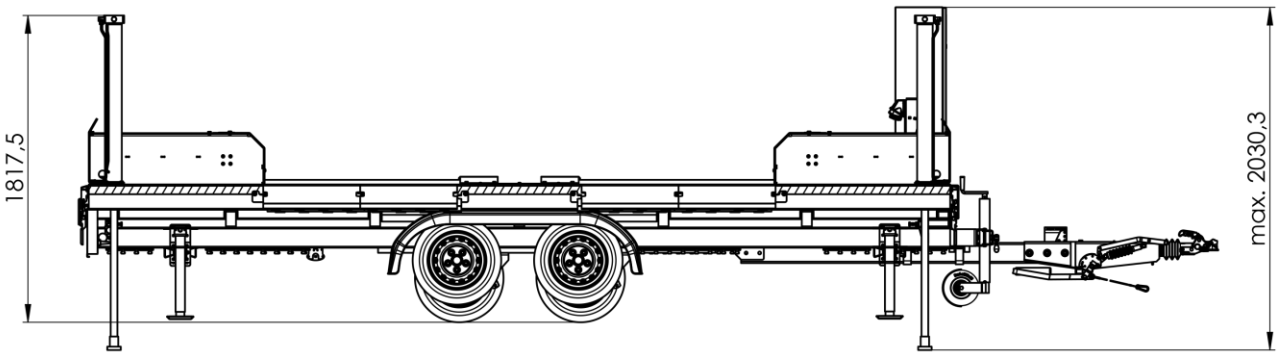
Drive power ..... 2x 9 kW or 2x 11 kW
Test speed ..... 2.2 km/h
Roller diameter ..... 150 mm
Roller length ..... 1150 mm
Roller centre distance ..... 450 mm
Track width ..... 750…3010 mm
Clearance height ..... 196 mm
Brake force max. (electronically limited) ..... 30 kN
Measured value display ..... 0…45,5 kN
Display accuracy (full scale) 2%
Test roller with welded textured surface, coefficient of friction (dry/wet) ..... *
Test roller with plastic/granulate coating, coefficient of friction (dry/wet) ..... *

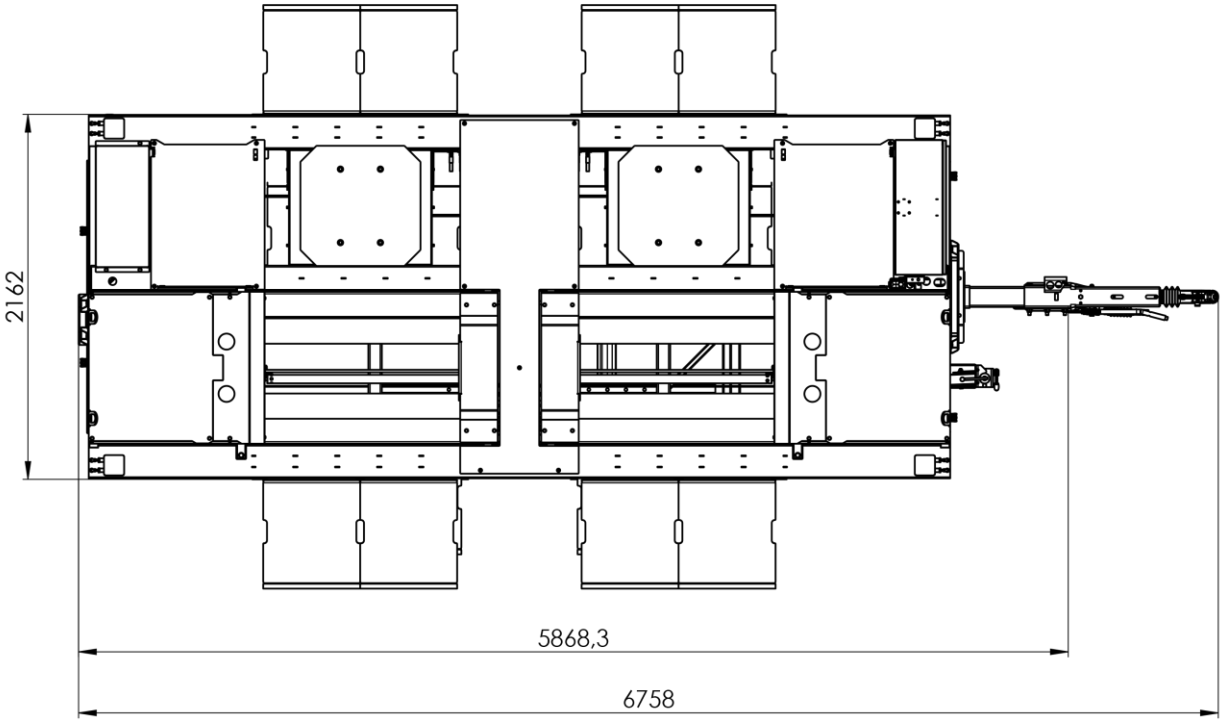
2.5.5 Hydraulic System

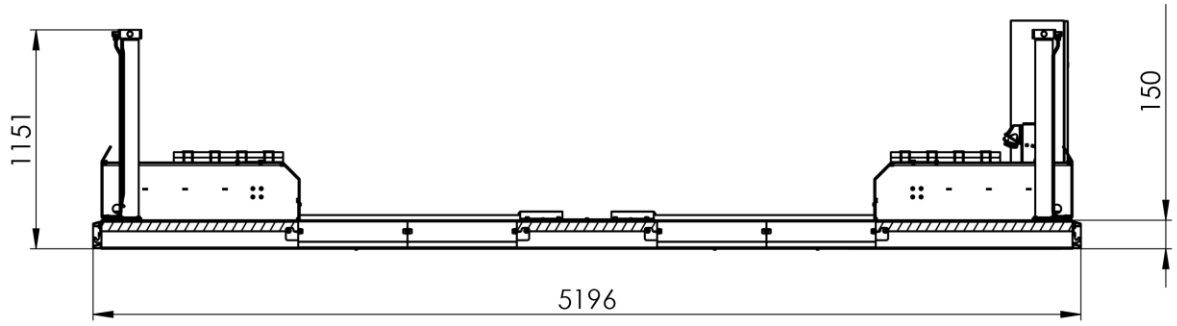
Hydraulic oil quantity ..... 20 L
Operating pressure max. ..... 120 bar
Rated power ..... 2.5 kW

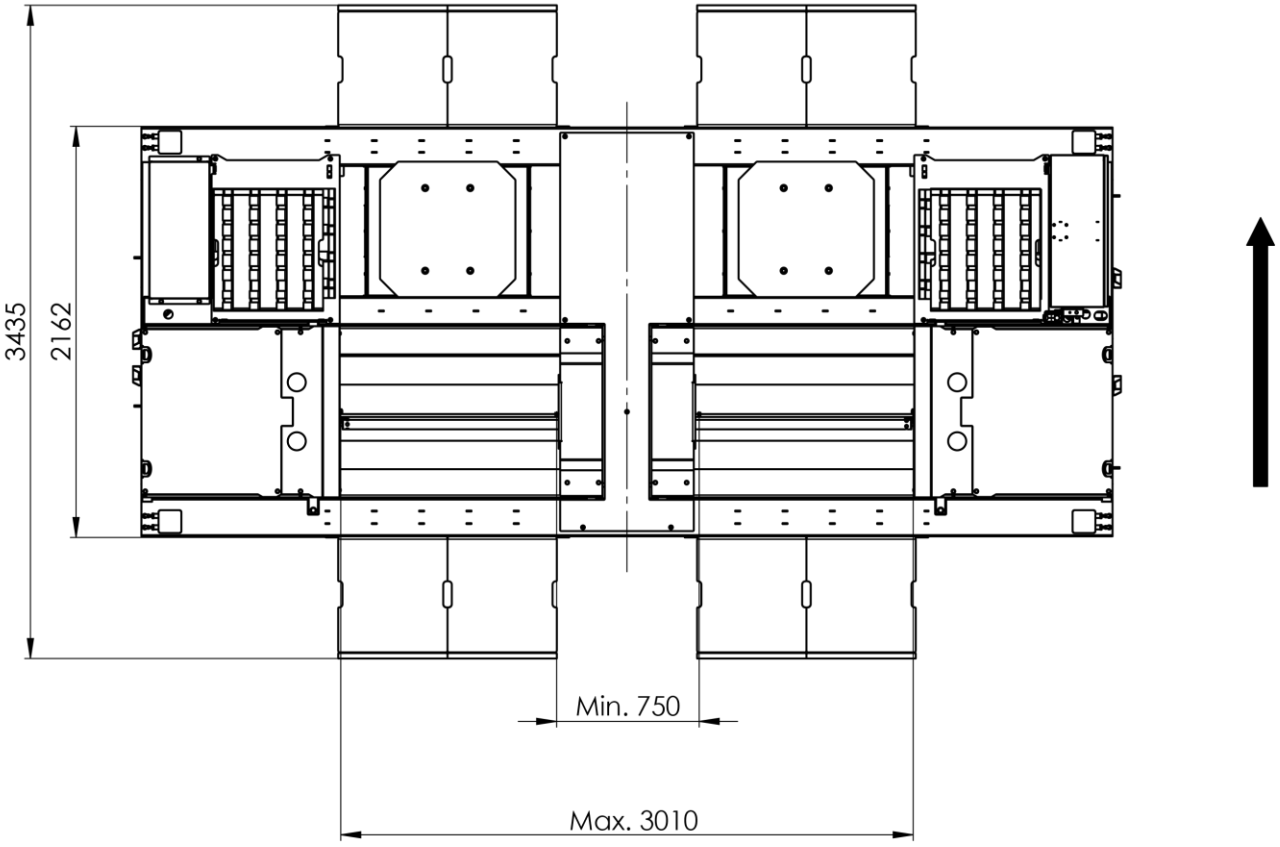
* MAHA standard

2.5.6 Dimensions






1151
150
5196


3435
2162
Min. 750
Max. 3010

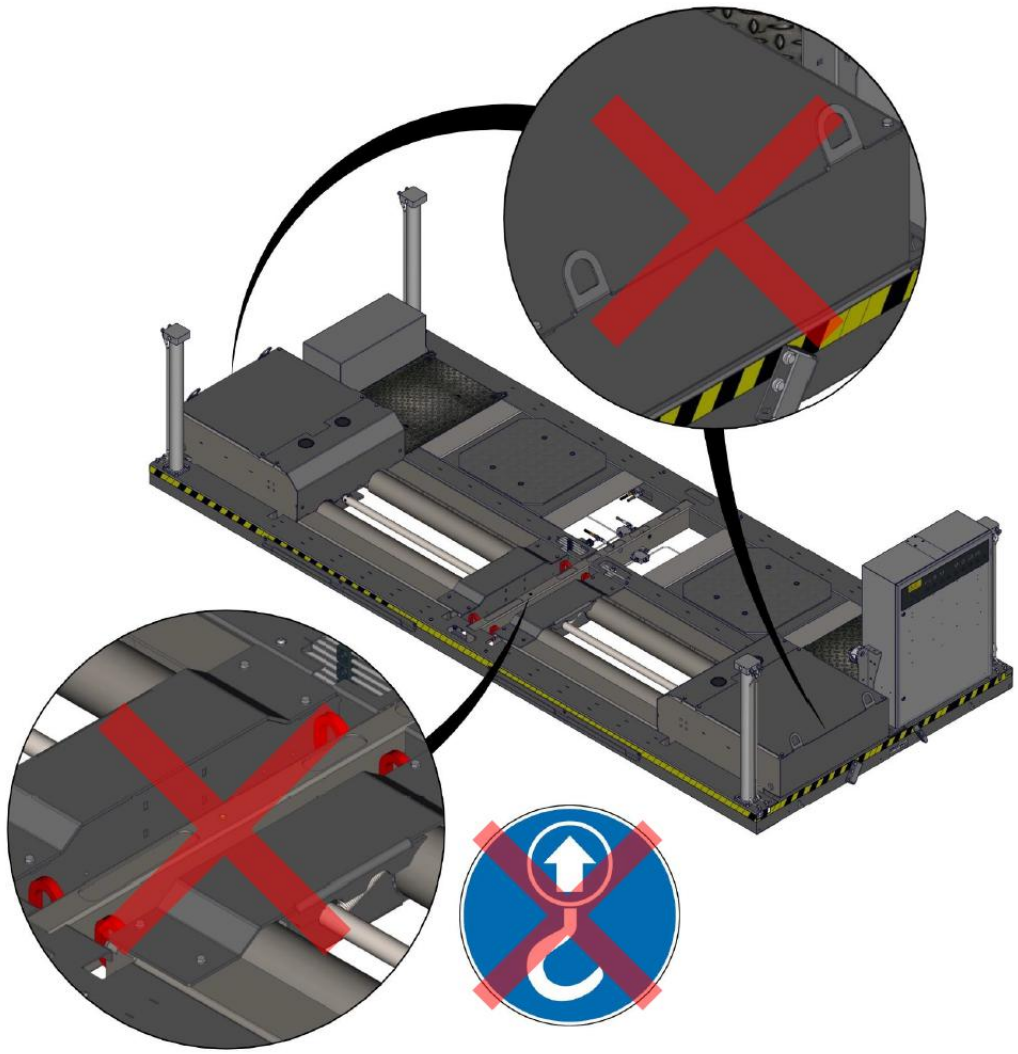
3 Transport, Handling and Storage

For detailed information, please refer to the ‘CONNECT SERIES’ and ‘PMS/LMS’ operating manuals, which are available for download on the MAHA website.

3.1 Safety Instructions

WARNING

- The entire mobile test stand must only be lifted at the designated emergency lifting points.
- The lifting points of the brake test stand must only be used for the assembly and disassembly of the brake test stand.
- The holes in the hydraulic cylinders must also not be used for lifting.



3.2 Emergency Lifting Points in the Event of Hydraulic Failure

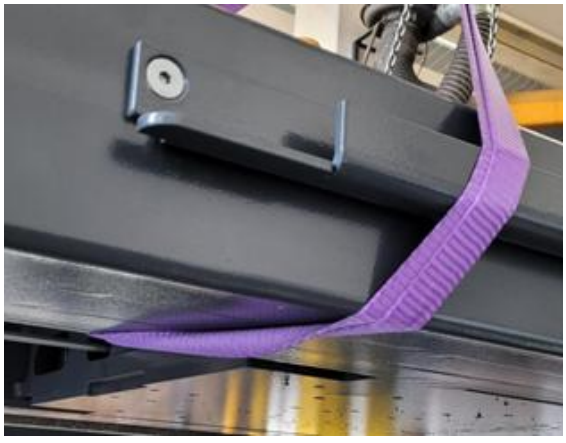
In the event of a failure of the lifting hydraulics on the C_MTL M 18.0 W301, it can be lifted as a temporary measure. This procedure is expressly intended for use only in the event of a technical fault. To do this, the MTL frame must be lifted slightly off the ground using aids to allow lifting straps to be threaded through.

The emergency lifting points are located on the inner track of the installed C_MBT (enclosing the roller and MTL frame) on the left and right roller sets, as well as enclosing the MTL frame to the left and right of the LMS. For the latter two lifting points, the covers on the top must be removed. Openings are provided in the splash guards on the underside for threading the lifting slings through. The exact positions can be seen in the following images.

All four lifting slings must then be connected to an adjustable 4-leg chain sling, which must be adjusted so that the MTL hangs level when lifted. Ensure that the lifting slings and the chain sling have sufficient load-bearing capacity.


Polytex
WLL 2t


Polytex



4 Installation and Initial Operation

4.1 Unloading the Mobile Test Stand

CAUTION

Ensure there is a clear safety zone during the unloading process!

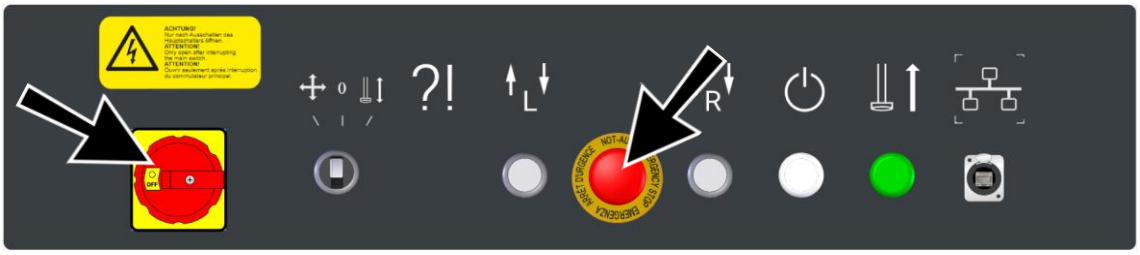
1 Secure the trailer to prevent it from rolling away (parking brake, wheel chocks).

2 Uncouple the trailer from the towing vehicle. Move the towing vehicle out of the work area.

3 If necessary, remove the protective cover from the mobile test stand.

4 Push the trailer's extendable lighting units into the inner locking position.

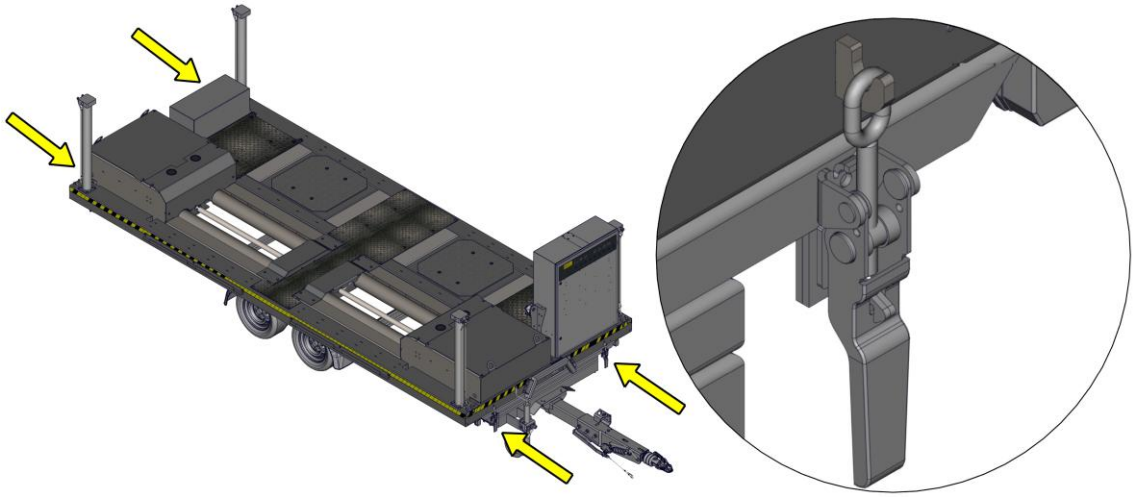
5 Connect the mobile test stand to the power supply.



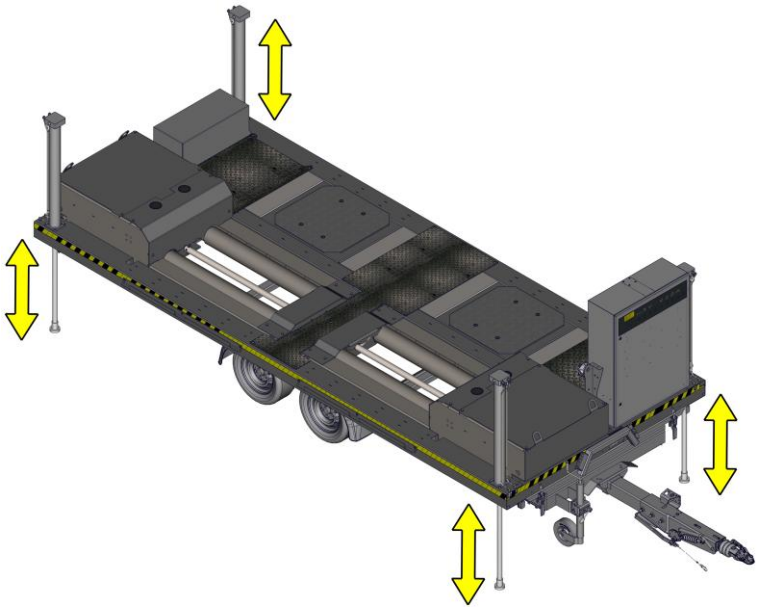
6 Switch on the main switch and check that the emergency stop switch is in the unlocked position.

7 Wait for the control unit to initialise until the 'Ready for operation' indicator lights up. This process may take up to 2 minutes.

8 Set the hydraulic mode selector switch to 'Lifting function'.



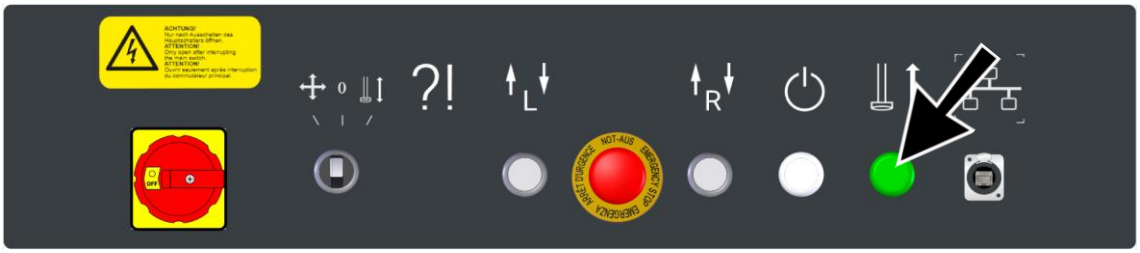
9 Release and unhook the clamps (2 at the front and 2 at the rear of the trailer).



10 Extend the jack stands of the mobile test stand to their upper end position using the C_RECO S remote control (press the ‘Plus’ button).

11 Release the trailer’s wheel chocks. Manually pull the trailer forwards out from under the raised mobile test stand. Ensure that the mobile test stand and the trailer do not collide!

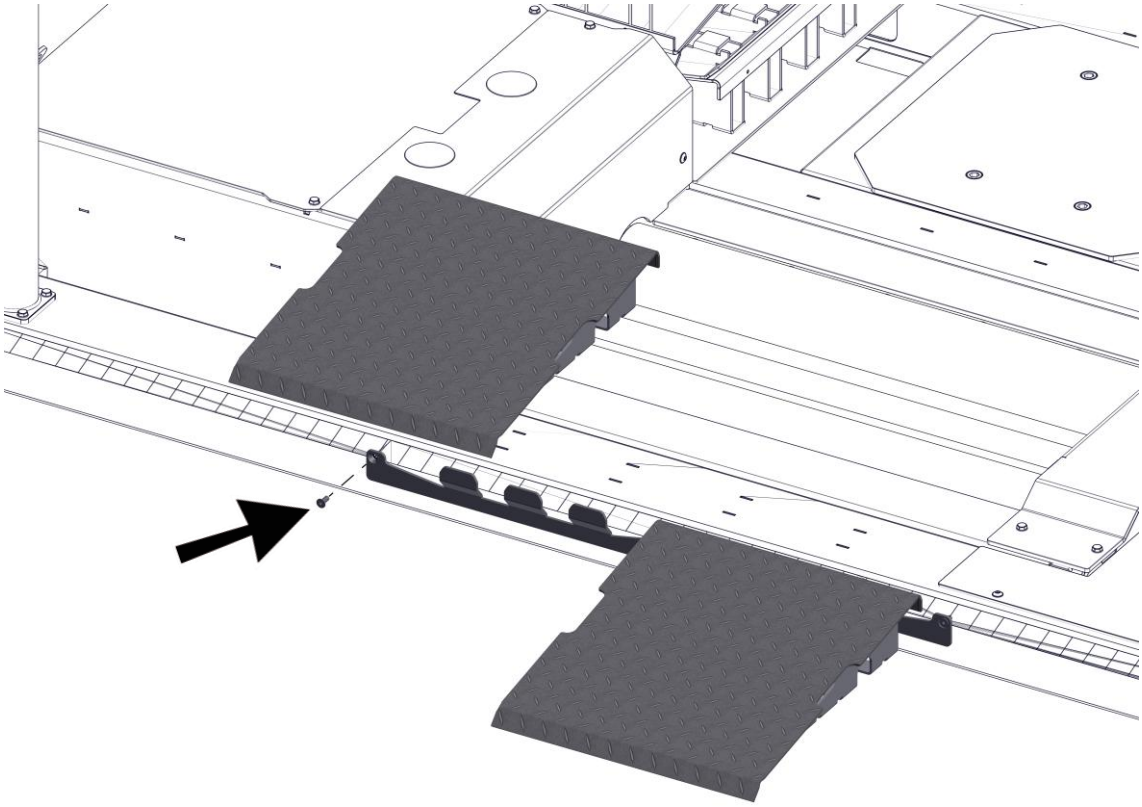
12 Remove the trailer from the work area and secure it against rolling away (parking brake, wheel chocks).



13 Retract the mobile test stand’s jack stands using the C_RECO S remote control (‘Minus’ button) until the test stand rests flat on the ground. All supports must be fully retracted (the hydraulics switch off automatically), and the green indicator must be illuminated.
The mobile test stand must only be placed on a suitable, level and sufficiently load-bearing surface (see specifications for installation area on the installation plan).

14 If necessary, secure the mobile test stand to prevent slipping (e.g. anti-slip mats, stops).

15 Set the hydraulic mode selector switch to ‘Neutral’ or ‘Axle play tester’.



16 Release the transport locks on the drive-on and drive-off ramps. Hook the ramps into the designated positions, four on each side.

▶ The mobile test stand is ready for operation.

4.2 Loading the Mobile Test Stand

CAUTION

Ensure there is a clear safety zone during the loading process!

1 Remove the ramps, stow them in the designated place and attach the transport locks

2 Set the hydraulic mode selector switch to ‘Lifting function’.

3 Extend the lifting supports of the mobile test stand to their upper end position using the C_RECO S remote control (‘Plus’ button).

4 Ensure that the trailer’s retractable lighting units are retracted to the inner locking position.

5 Manually push the trailer from the front under the mobile test stand, aligning it with the cross guides and the longitudinal stop. Ensure that there is absolutely no collision between the mobile test stand and the trailer!

6 Secure the trailer to prevent it from rolling away (parking brake, wheel chocks).

7 Retract the mobile test stand’s jack stands using the C_RECO S remote control (‘Minus’ button) until the test stand rests flat on the ground. All jacks must be fully retracted (the hydraulics switch off automatically).

8 Fasten and tighten the tensioning fasteners at the front and rear of the trailer.

9 Set the hydraulic mode selector switch to ‘Neutral’.

10 Switch off the main switch.

11 Disconnect the mobile test stand from the power supply. Stow the supply cable on the mobile test stand and secure it for transport.

12 Extend the trailer’s retractable lighting units to the outer locking position.

13 If necessary, fit the protective tarpaulin to the mobile test stand, ensuring it is properly secured. Ensure that the tarpaulin does not rub against the wheels and that all traffic-related elements (lights, number plates, etc.) remain visible.

14 Couple the trailer to the towing vehicle (see trailer operating instructions).

15 Release the trailer’s wheel chocks.

▶ The mobile test stand is ready for transport.

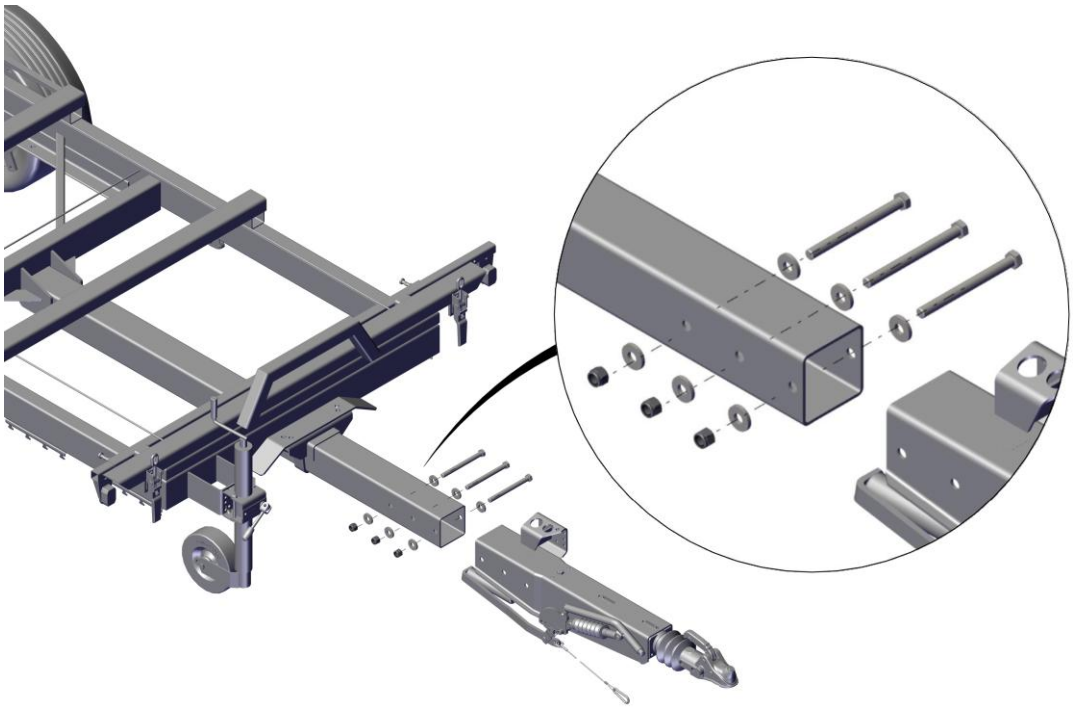
4.3 Removing and Reinstalling the Overrun Device

The overrun device can be removed for container shipping of the trailer.

CAUTION

Removal and installation of the overrun device must only be carried out by qualified personnel. The trailer must be secured against unintentional rolling away at all times (using wheel chocks)!

4.3.1 Removal



1 Remove the brake linkage from the overrun braking system.

2 Loosen the screw connections on the overrun braking system.

3 Remove the overrun device.

4 Dispose of the hex nuts (only permitted for single use).

4.3.2 Installation

Place the stop device on the pull rod at the designated point.

2 Insert the screw connection and tighten. It is essential to use new hex nuts with polyamide clamping inserts (included in the scope of delivery). Tightening torque: T_A= 210 Nm.

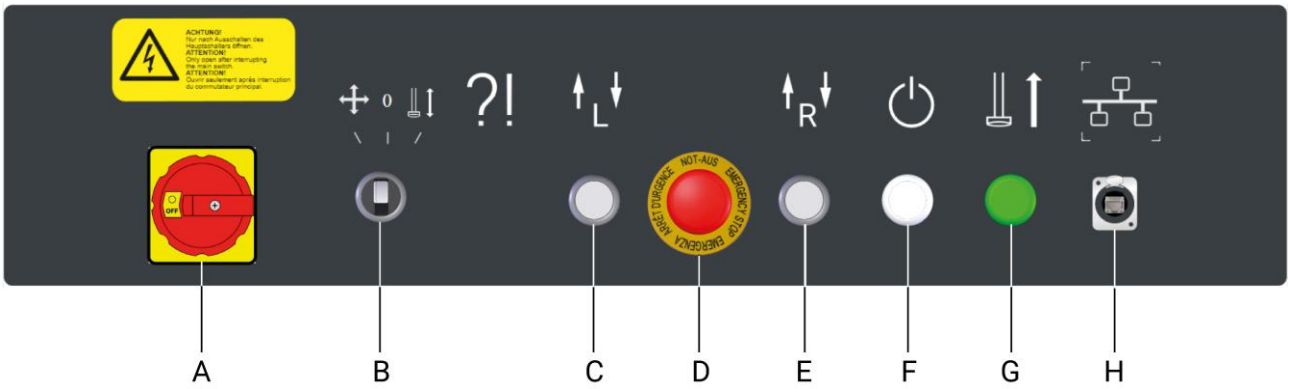
3 Fit the brake linkage to the overrun device.

4 Check the brake function.

5 Operation

For detailed information, please refer to the ‘CONNECT SERIES’ and ‘PMS/LMS’ operating manuals, which are available for download on the MAHA website.

5.1 Controls and Indicators



A	-Q1	Main switch
B	-S210	Hydraulic switch: Left: Enable LMS operation Centre: Off Right: Enable flat lifting/lowering for loading and unloading
C	-S66	Rotation direction left: Select rotation direction
D	-S200	Emergency stop: Shutdown of the drives
E	-S65	Clockwise rotation: Select direction of rotation
F	-P1	Control on: Central module ready for operation *
G	-P211	Cylinders retracted: The cylinders for raising/lowering the flat are fully retracted.
H	-X140	LAN RJ45: LAN RJ45 socket for connection to LAN MAHA

* The ‘Control On’ (-P1) indicator light on the front cover of the control cabinet illuminates as soon as the main switch is switched on, the control system has

been initialised and there are no faults.
In the event of a fault, the mains indicator flashes at a frequency of 1 Hz.

5.2 Warning Lights

The warning lights on the lifting cylinders remain lit until they have retracted to their end position.

5.3 C_RECO S Radio Remote Control

The button assignment differs in the following point from the stationary CONNECT SERIES test stands:

‘Minus’ button = Retract lifting cylinder

‘Plus’ button = Extend lifting cylinder

5.4 Control Cabinet Heating Option

As the test stand is not a permanent installation and the control cabinet heating is therefore not always powered, moisture may build up in the control cabinet due to condensation.

NOTICE

To extend the service life of the electrical components, contact between the equipment inside the control cabinet and water must be avoided during transport, operation and storage.
At temperatures below 5°C, the test stand must be supplied with power before and during use so that the control cabinet heater prevents condensation or dissipates any existing condensation water.

6 Inspection and Maintenance

For detailed information, please refer to the ‘CONNECT SERIES’ and ‘PMS/LMS’ operating manuals, which are available for download on the MAHA website.

7 Troubleshooting

For detailed information, please refer to the ‘CONNECT SERIES’ and ‘PMS/LMS’ operating manuals, which are available for download on the MAHA website.

8 Repairs

For detailed information, please refer to the ‘CONNECT SERIES’ and ‘PMS/LMS’ operating manuals, which are available for download on the MAHA website.

9 Decommissioning, Dismantling and Disposal

Observe the product and safety data sheets of the lubricants used. Avoid environmental damage. If the device is to be disposed of, it must be disposed of in an environmentally responsible manner in accordance with local legislation. Sort all dismantled materials according to type and take them to a suitable recycling point. Collect operating materials such as grease, oil, coolant, cleaning fluids containing solvents etc. in suitable containers and dispose of them in an environmentally responsible manner.

Alternatively, you can take your device to a waste management company. They will ensure that all parts and fluids are disposed of properly and ecologically.

Safety goggles must be worn when working on hydraulic/pneumatic components. Suitable working scaffolds/platforms must be used when working at height.

10 Declaration of Conformity

See following page(s).

Original-EG-Konformitätserklärung
Original EC Declaration of Conformity

CE023001_013-de-en

MAHA SE & Co. KG

erklärt hiermit als Hersteller in alleiniger Verantwortung, dass nachstehend bezeichnetes Produkt in Konzeption und Bauart den grundlegenden Sicherheits- und Gesundheitsanforderungen der hier genannten Richtlinien entspricht.
Bei Änderungen am Produkt, die nicht von oben genannter Firma genehmigt wurden, verliert diese Erklärung ihre Gültigkeit.

herewith declares as a manufacturer its sole responsibility to ensure that the product named hereafter meets the safety and health regulations both in design and construction required by the directives stated below.
This declaration becomes void if any change is made to the product that was not approved by named company beforehand.

Typ | Model

C_MTL M 18.0 W301..... VP 410217

Serialnummer | Serial Number

Bezeichnung | Designation

Mobiles Prüfstraßen-System

Mobile Test Lane System

Richtlinien | Directives

2006/42/EG
2014/53/EU
2014/30/EU
2011/65/EU

2006/42/EC
2014/53/EU
2014/30/EU
2011/65/EU

Normen | Standards

EN ISO 12100:2010
EN 60204-1:2018
EN ISO 13849-1:2023

Bevollmächtigter für die Zusammenstellung der technischen Unterlagen
Person Authorised to Compile the Technical File

Ralf Kerkmeier • MAHA SE & Co. KG • Hoyen 20 • 87490 Haldenwang • Germany

Haldenwang, 2025-12-01

Dr. Peter Geigle
Geschäftsführer | Managing Director