OPERATING MANUAL

Wheel alignment system SetupWizzard

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Keep for future use!

Wheel alignment system SetupWizzard

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Contents

1 Introduction

Dear customer,

Thank you for deciding in favour of the SetupWizzard.

This operating manual provides all the information you need to operate the Wheel alignment system SetupWizzard properly.

All persons responsible for operating, maintaining, cleaning, and troubleshooting the measuring system must read, understand and heed the operating manual. This applies in particular to the safety information that is given.

After reading the operating manual you will be able to

- Operate the measuring system safely
- Clean the measuring system according to the rules and regulations
- Take the necessary action in the event of a fault.

In addition to this operating manual, it is necessary to comply with the general laws and other regulations concerning accident prevention and environmental protection in the country of use.

This operating manual must always be kept at the measuring system’s point of deployment.

1.1 Notational conventions

Passages of this operating manual that require special attention or are a direct hazard warning are shown as follows:

1.1.1 Section-related warnings

Section-related warnings are not limited to just one specific action but apply to all the actions performed within a section.

Structure

SIGNAL WORD

Symbol that describes the danger in more detail

Type and source of danger

Possible consequence(s) of failure to comply

– Measure(s) to avoid the danger

Danger levels

DANGER

Hazard which, unless avoided, may involve a high risk of death or serious injury.

WARNING

Hazard which, unless avoided, may involve a medium risk of death or serious injury.

CAUTION

Hazard which, unless avoided, may involve a minor risk of negligible or moderate injury.

NOTE

Hazard which, unless avoided, may involve a low risk of material damage.

1.1.2 Embedded warnings

Embedded warnings apply to specific actions and are integrated directly in the action.

Structure

⚠ **KEY WORD** Type and source of the danger

Possible consequences of non adherence

– Measures to avoid the danger

Danger levels

– ⚠ **DANGER** / **WARNING** / **CAUTION**

– ***NOTE***

For explanations of the danger levels, see „1.1.1 Section-related warnings”.

1.1.3 Other notational conventions

The info symbol provides useful information.

– Text following this mark represents an item in a list.

• Text following this mark describes actions to be performed in the specified order.

„ ” Text in double quotation marks refers to other chapters or sections.

1.1.4 Symbols used in the manual

Particular hazards in connection with hazard warnings are shown in addition as follows:

Fatal injury hazard due to electricity

This symbol warns of a fatal injury hazard due to electricity.

Contact with live parts is a direct fatal injury hazard.

Warning of hot surface

This symbol warns of a burn hazard due to hot surfaces.

Warning of hand injury

This symbol warns of hand injuries when setting up the measuring system.

Warning of laser beams

This symbol warns of laser beams (leveling laser, toe laser, positioning laser).

Warning of obstacles on the ground

This symbol warns of obstacles on the ground (cables, tools, ...).

1.2 Warranty and liability

The obligations under the supply contract, the general delivery terms and conditions of the measuring system and the legal regulations in force at the time the contract was signed will apply.

All information in this operating manual has been compiled in line with the applicable standards and regulations, the state of the art, and our longstanding knowledge and experience.

Warranty and liability claims for personal injury and material damage are excluded if they are attributable to one or more of the following causes:

- Unintended or inappropriate use of the measuring system
- Inappropriate installation, commissioning, operation, maintenance or cleaning of the measuring system
- Operation of the measuring system with defective safety devices or with improperly fitted or non-functional safety devices and guards
- Failure to heed information in the operating manual regarding installation, commissioning, operation, maintenance, and cleaning of the measuring system
- Use of unqualified or inexperienced personnel
- Structural alterations to the measuring system (conversions or other alterations to the measuring system are not allowed to be made without prior written permission from CP Tech GmbH. Any breach of this causes the measuring system to lose its EC conformity).
- Improperly executed repairs
- Use of non-permitted spare parts or of spare parts that do not satisfy the technically established requirements
- Disasters, effects of extraneous elements and force majeure

We reserve the right to make technical alterations in the course of further development and improvement of features.

1.3 Copyright

This operating manual is protected by copyright and intended for internal use only.

This operating manual or parts thereof must not be passed or disclosed to any third party or be reproduced or exploited in any form without the prior written consent of CP Tech GmbH except for internal use.

Contravention results in liability for damages. Further claims remain reserved.

1.4 Guarantee terms

The guarantee terms are contained in the general terms and conditions of CP Tech GmbH.

1.5 Service / Customer service

Our Customer Service department is at your disposal for any technical queries you may have.

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In addition, our employees are consistently interested in new information and experiences resulting from the application that may be of value in improving our products.

2 Safety

Failure to observe the safety information below may have serious consequences:

- Risk to persons due to electrical, mechanical or chemical effects
- Failure of important functions
- Environmental damage due to leaking hazardous substances

Read the safety and hazard information in this section thoroughly before putting the measuring system into operation.

In addition to the information specified in this operating manual, always comply with general safety and accident prevention regulations.

Follow internal rules and regulations.

In addition to the information specified in this operating manual, the plant operator/system operator must comply with national occupational, health and safety regulations.

2.1 Intended use

The safety of the measuring system is only ensured if it is used as intended.

The measuring system is only intended for the measurement of vehicle suspension.

The measuring system is not intended for use other than as described here; other use counts as inappropriate. In addition, the measuring system is only approved for vehicles with a total vehicle weight of up to 2000kg or 500kg/wheel.

Intended use also includes:

- Observing all information from the operating manual
- Complying with the inspection and maintenance intervals
- Complying with the operating conditions

The technical specifications mentioned in the technical data must be complied with without exception.

Only use the measuring system as intended; otherwise there is no guarantee of safe and reliable operation.

It is not the manufacturer but the plant operator who is responsible for any and all personal injuries and material damage resulting from unintended use.

2.1.1 Structural alterations to the measuring system

Construction and manufacturer's acceptance are based on the German Product Safety Act (ProdSG). The measuring system is not allowed to be converted or otherwise altered without prior written permission from CP Tech GmbH.

Any breach of this causes the measuring system to lose its EC conformity. Such a breach absolves the manufacturer of the measuring system from warranty. This also applies to welding work on components.

Any parts not in a perfect state must be replaced immediately.

Use original spare/wearing/accessory parts only. These parts have been specifically designed for the measuring system. For parts from other sources there is no guarantee that they have been designed and manufactured in line with load and safety requirements.

Parts and special features not delivered by CP Tech GmbH have not been released for use with the measuring system.

2.1.2 Foreseeable misuse

Any use exceeding the concept of intended use and/or other use of the measuring system can lead to severe injuries.

- Only use the measuring system for its intended purpose.

2.2 Personnel requirements

The measuring system is only allowed to be operated, maintained, and repaired by persons who have been qualified and/or trained for this. These persons must know the operating manual and act in accordance with it. The respective authorizations for personnel must be defined clearly.

Personnel require the following qualifications for the various activities:

Qualified, instructed personnel (in this case, e.g., automotive mechatronics technicians)

Qualified personnel are able to do their work and recognize/avoid potential hazards on their own as a result of their training, knowledge and experience and their familiarity with regulations.

Electrical specialists

Electrical specialists are able to work on electrical equipment and recognize/avoid potential hazards on their own as a result of their training, knowledge and experience and their familiarity with standards and regulations.

Electrical specialists have been trained for their specific point of deployment and know the relevant standards and regulations.

2.2.1 Responsibilities

Inappropriate handling can lead to severe personal injury and material damage.

All activities must therefore be carried out by qualified personnel only.

- Personnel must consist of individuals who can be expected to perform their work reliably. Individuals whose response is impaired by drugs, alcohol, medication, and the like must not work on the measuring system.
- All persons working on the measuring system must read the operating manual and confirm with their signature that they have understood it.
- Initially, personnel requiring training are only allowed to work on the measuring system under the supervision of qualified personnel. The completion and success of instruction must be confirmed in writing.

The plant operator is responsible for training and instructing personnel.

2.2.2 Obligations of personnel

Before working on or with the measuring system, all persons undertake the following:

- To comply with basic regulations concerning health and safety and accident prevention.
- To read the safety information and warnings in this operating manual and to confirm with their signature that they have understood the issues.

2.2.3 Unauthorized persons

Unauthorized persons who do not have the required qualifications are not aware of the hazards in the work area.

- Keep unauthorized persons away from the work area.
- Address persons in case of doubt and eject them from the work area if applicable.
- Interrupt work while any unauthorized persons are in the work area.

2.2.4 Instruction

The plant operator must instruct personnel at regular intervals. Keep a record of all instructions given in order to keep track of matters.

Date	Name	Type of instruction	Instruction given by	Signature

2.3 General safety information

- Always read and understand the operating manual before operating and maintaining the measuring system.
- Only use the measuring system for its intended purpose (see „2.1 Intended use”).
- Do not work on the measuring system when other persons are present in the danger zone.
- Refrain from any act which is likely to compromise the health and safety of people and safe operation of the measuring system.
- Never operate the measuring system without the associated guards and safety devices. Never take installed safety devices out of operation.
- Always keep the work area around the measuring system clean and tidy to prevent hazards due to dirt and things lying around.
- Do not exceed the technical data (see „3.3 Technical data”).
- Keep all safety and hazard signs on the measuring system in a legible state and renew them if necessary.
- Only qualified or trained personnel are allowed to operate or work on the measuring system (see „2.2 Personnel requirements”).
- Take the measuring system out of operation immediately if a fault occurs. Have faults rectified by appropriately trained specialists or by CP Tech GmbH.
- Always keep the operating manual at the measuring system’s point of deployment. It must be ensured that all personnel working on the measuring system can view the operating manual at any time.

2.4 Safety measures for environment protection

In all work obey the regulations for waste avoidance and proper waste disposal/recycling.

In the course of installation, maintenance and decommissioning, in particular, it must be ensured that materials which could jeopardize the groundwater – such as greases, oils, coolants, solvent-containing cleaning fluids and the like – do not pollute the ground or get into the drains. These materials must be caught, kept and transported in suitable containers and disposed of in compliance with national regulations.

2.5 Special hazard signs

2.5.1 Symbols used on the measuring system

Fatal injury hazard due to electricity
This symbol warns of fatal injury hazard due to electricity.
Contact with live parts is a direct fatal injury hazard.

Warning of hot surface
This symbol warns of a burn hazard due to hot surfaces.

Warning of hand injury
This symbol warns of hand injuries when setting up the measuring system.

Warning of laser beams
This symbol warns of laser beams (leveling laser, toe laser, positioning laser).

Warning of obstacles on the ground
This symbol warns of obstacles on the ground (cables, tools, ...).

Keep all safety and hazard signs on the measuring system in a legible state. Renew the signs if necessary.

2.5.2 Hazards due to electricity

DANGER

Voltage

There is a hazard of electric shock from contact with live parts.

- Make sure electrical components are always fully closed.
- Have work at electrical equipment only be carried out by electrical specialists who, as a result of their training, knowledge and experience, are able to recognize and avoid potential hazards.
- Observe the five golden safety rules:
  1. Disconnect completely
  2. Secure against reconnection
  3. Verify that it is disconnected
  4. Carry out grounding and short circuiting
  5. Project against live parts

DANGER

Voltage

An electric shock may have a number of secondary effects that lead to additional injury (e.g. falling if working at height).

- Always observe the five golden safety rules when working on electrical equipment.
- Only have electrical specialists carry out work on the electrical equipment.

- Before working on electrical equipment, switch off the measuring system and prevent unexpected restoration of power.
- Only electrical specialists - e.g. plant electricians - are allowed to work on the electrical equipment.
- Regularly check the electrical equipment for defects such as loose connections or scorched cables. Have any defects rectified immediately.
- Have the electrical equipment and fixed electrical apparatuses tested by an electrical specialist every 4 years at least.

  Fixed electrical apparatuses are permanently installed apparatuses or apparatuses that do not offer any carrying device and which, due to their weight, are difficult to move. This also includes electrical equipment that is fitted on a temporary basis and operated using movable device cabling.
- Have portable electrical equipment and extension and device cabling with plugs and sockets tested by an electrical specialist, or by a trained person using suitable inspection facilities, every 6 months at least.

  Equipment is portable if, by its nature and in its normal use, it is moved while under power. This includes, for example, electric floor cleaners.
- Alterations at electrical equipment made after testing must comply with DIN EN 60204-1.

- Check correct functioning of all the measuring system's safety devices regularly.
- Only use original fuses.
- Have a damaged housing and pipes/hoses/cables repaired or replaced immediately before switching on the measuring system.
- Ground the measuring system.

2.5.3 Hazards due to hot surfaces

Contact with hot parts can cause burns.

- Always wear protective clothing and safety gloves when working near hot parts (wheel support, brake discs, brake caliper).
- Before maintenance and repair work, let all machine components cool down to the ambient temperature.

2.5.4 Hazards due to incorrect spare parts

Incorrect or faulty spare parts may cause damage, malfunctioning or total failure, and may also give rise to safety hazards.

- Use original spare parts only.
- Procure spare parts via CP Tech GmbH.

For the ordering of spare parts our customer service is at your disposal:

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33142 Büren / Germany
Phone: +49 (0) 2955 / 4849-553
support@setupwizzard.com
www.setupwizzard.com

In addition, our employees are consistently interested in new information and experiences resulting from the application that may be of value in improving our products.

2.6 Personal protective equipment

During measuring system operation, always wear personal protective equipment, irrespective of the risk assessment at work, to minimize health hazards.

- Always wear the personal protective equipment required for the respective task when carrying out work.
- Never wear rings, necklaces or other jewelry.
- In the work area, obey all signs relating to personal protective equipment.

Protective clothing

Protective clothing refers to tight-fitting working clothes that tear easily and feature tight sleeves and no loose parts. They predominantly protect against becoming entangled in moving machine parts.

Safety shoes

Wear non-slip safety shoes to protect yourself against heavy falling parts and prevent you from slipping.

Safety gloves

Wear safety gloves to protect your hands against friction, abrasion, puncture wounds or deeper injuries as well as against coming into direct contact with hot surfaces or chemical substances.

The personal protective equipment must be provided by the plant operator and must be fit for purpose.

It is also necessary to obey national regulations, the guidelines of the risk assessment at work and, if applicable, the operator's internal instructions.

2.7 Safety devices and guards

- Before switching the measuring system on, always make sure that all safety devices and guards have been fitted properly and are functional.
- When subcomponents are delivered, the plant operator must ensure that the guards are fitted according to the rules.

2.8 Information for emergencies

Preventive measures

- Always be prepared for accidents or fires.
- Keep first aid equipment (first aid box, blankets etc.) and fire extinguishers at hand.
- Familiarize the personnel with accident reporting, first aid, fire-extinguishing, and rescue equipment.
- Keep access routes for rescue vehicles clear.

Measures in the event of accidents

- Bring persons out of the danger zone.
- In the event of cardiac and/or respiratory arrest, initiate a resuscitation attempt immediately.
- If anybody is injured, notify the first aid officer and the emergency medical service.
- Clear the access routes for rescue vehicles. If necessary, appoint a member of staff to engage with fire and rescue services upon arrival and to provide them with the appropriate information.
- Extinguish any burning oil/grease with a CO_2 or powder extinguisher.
- Use a CO_2 extinguisher to put out any fire in the electric control system.

2.9 Obligations of the plant operator

The measuring system is used in the commercial and private sector. The plant operator is therefore subject to the legal requirements concerning health and safety at work.

In addition to the safety information in this operating manual, it is necessary to comply with the safety, accident prevention and environmental protection regulations in force where the measuring system is being used. The following applies in particular:

- The plant operator must ensure that the measuring system is only used as intended (see „2.1 Intended use").
- The plant operator must always keep the operating manual in a legible and complete state at the measuring system's point of deployment.
- The plant operator must clearly define and arrange the responsibilities for installation, commissioning, operation and cleaning.
- The plant operator must verify that no individual working at the measuring system is under the minimum age stipulated by law.
- The plant operator must only let suitably qualified and trained personnel work on the measuring system.
- The plant operator must ensure that all personnel working on or with the measuring system have read and understood this operating manual.
- Moreover, the plant operator must train staff and inform them about hazards at regular intervals.
- The plant operator must provide personnel with personal protective equipment and also ensure that this is used.
- The plant operator must make sure that individuals whose response is impaired by drugs, alcohol, medication, and the like do not work on the measuring system.

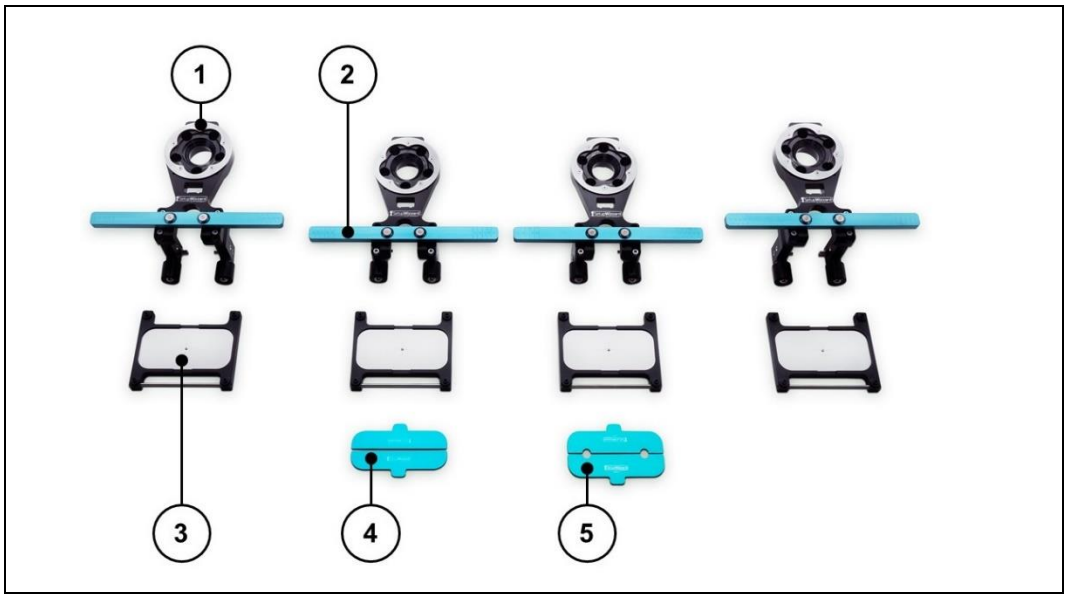
In addition, the plant operator is responsible for keeping the measuring system in a perfect technical state. So the following also applies:

- The plant operator must ensure compliance with the service intervals described in this operating manual.
- The plant operator must regularly check that all safety devices are functioning correctly and are complete.
- The plant operator must regularly check that all safety and warning signs on the measuring system are legible and stay on the measuring system.

3 Description of the measuring system

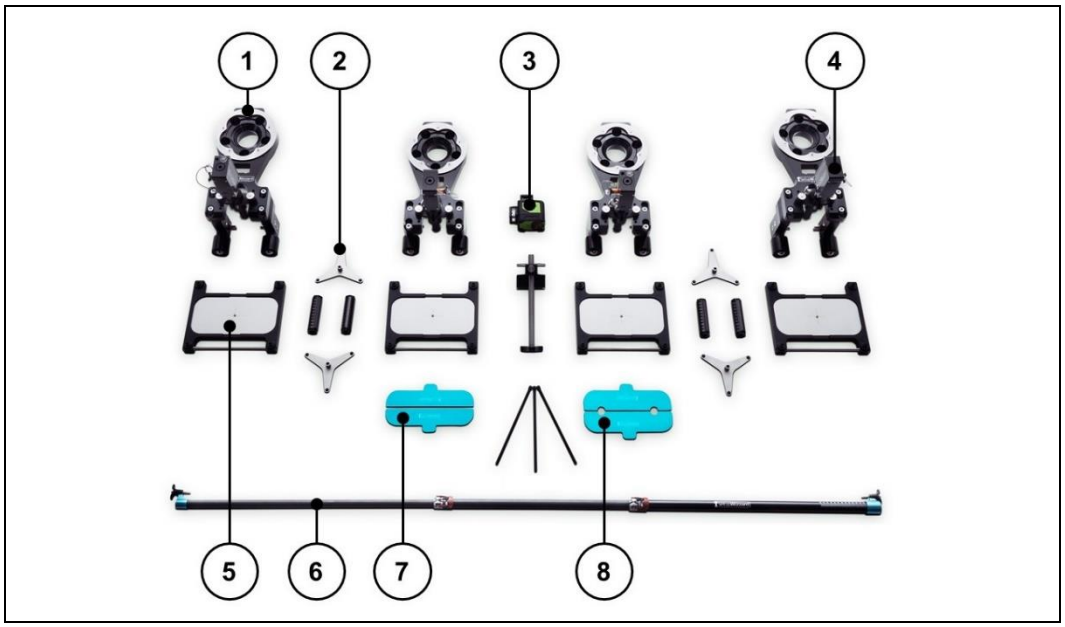
3.1 Scope of supply

3.1.1 Scope of supply of the system version Easy



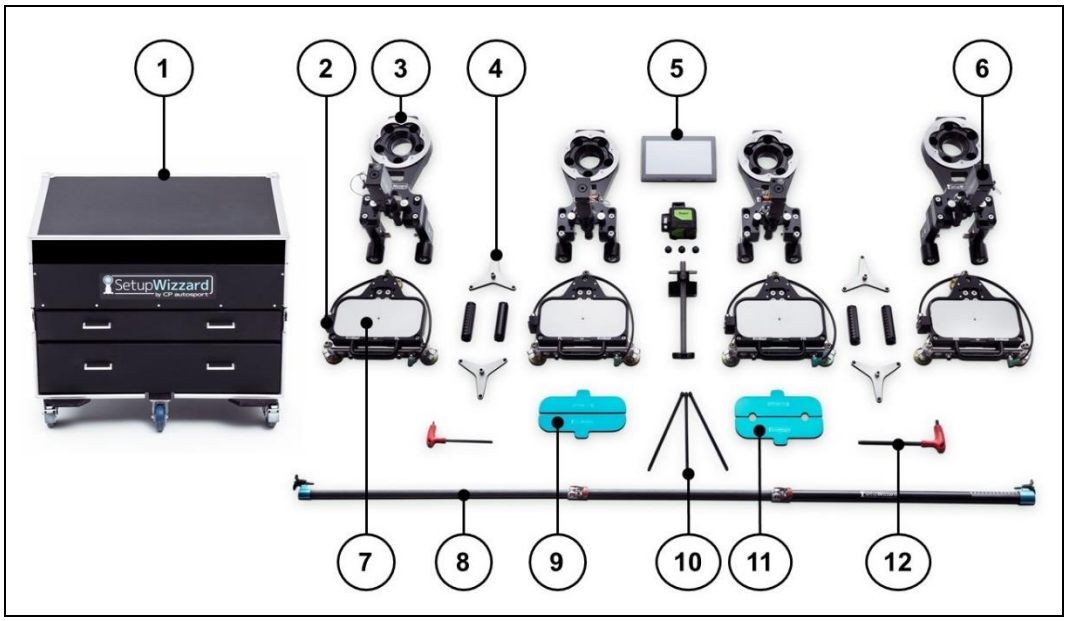
1 Setup wheel, incl. wheel adapter (4x)
2 Rim scale for toe measurement (4x)
3 Setup platform (4x)
4 Positioning template, loose (2x)
5 Positioning template, fixed (2x)

3.1.2 Scope of supply of the system version Basic



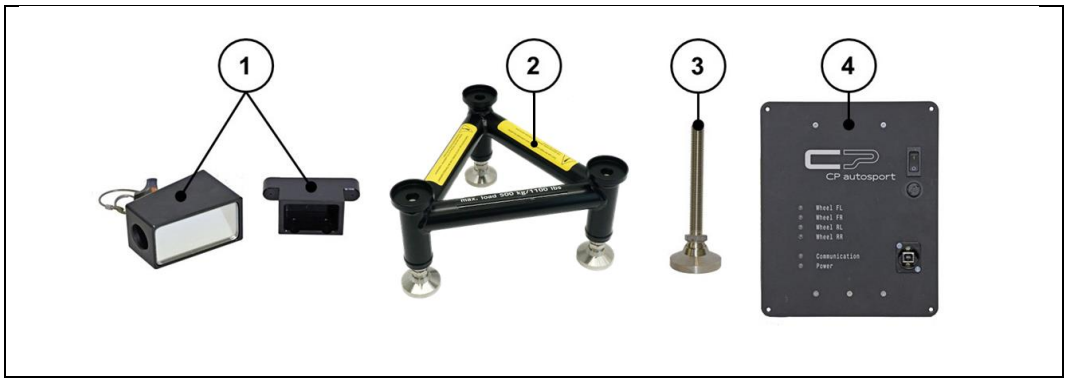
1 Setup wheel, incl. wheel adapter (4x)
2 Height measuring module (4x)
3 Leveling laser, incl. stand (1x)
4 Toe measuring module (4x)
5 Setup platform (4x)
6 Track gauge (1x)
7 Positioning template, loose (2x)
8 Positioning template, fixed (2x)

3.1.3 Scope of supply of the system version Pro



1 Transport box, incl. charger (1x)
2 Camber measuring sensor (inclinometer) (4x)
3 Setup wheel, incl. wheel adapter (4x)
4 Height measuring module (4x)
5 Netbook (1x)
6 Toe measuring module (4x)
7 Measuring platform (4x)
8 Track gauge (1x)
9 Positioning template, loose (2x)
10 Leveling laser, incl. stand (1x)
11 Positioning template, fixed (2x)
12 Tool for platform adjustment (1x)

3.1.4 Accessories for system version Pro



1 Caster measurement
2 Platform elevation
3 Longer platform stand
4 CAN charger

3.1.4.1 Rating plate

The rating plate including CE marking with the following minimum information should be affixed to the flight case (multilingual, if necessary).

- SetupWizzard
- Serial no.
- Year of manufacture

Optional:

- Voltage/frequency
- Connected load
- Weight
- CE mark

3.2 Function

The wheel alignment system SetupWizzard in the Easy, Basic and Pro version is only intended for the measurement of vehicle suspension.

It is predominantly used in motor racing. Special setup wheels with vehicle-specific wheel adapters are installed at the vehicle. The vehicle is thus lowered onto four measuring platforms aligned by laser leveling and then secured with positioning templates against unintentional movement. Using toe lasers, track gauge, camber sensors (inclinometers), wheel load scales, height measuring modules, and caster measuring, various suspension measurements can be carried out and, depending on the equipment version, managed/logged on the netbook.

3.3 Technical data

3.3.1 Measuring platform (System version Pro)

Measuring range	0 - 500kg per wheel
Measuring accuracy	± 0,1%
Adjustment range	45mm
Accumulator life	15h
Radio transmission 2.4 GHz, range	approx. 30m

3.3.2 Camber sensor (System version Pro)

Measuring range	± 10°
Measuring accuracy	± 1% (based on measuring range)

3.3.3 Toe laser

Accumulator life	50h
Power supply	2x 1.5V AA (Mignon) batteries
Laser class	1
Wavelength	650nm

3.3.4 Leveling laser (see technical specification user manual)

Accumulator life	4,5h
Power supply	4x 1.5 V LR 6 (AA)
Laser class	2
Wavelength	505-520nm
Accuracy	±3mm for 10m
Operating range	25m
Protection class	IP 54
Operating temperature	-10 to +50°C

3.3.5 Transport box (flight case)

Dimensions	900mm x 730mm x 750mm (WxHxD)
Total weight (System version Pro)	approx. 200kg depending on wheel adapter and accessories

3.3.6 Platform elevations (accessories)

Adjustment range	85mm
Adjustment range platform elevations + platform	130mm

3.3.7 Ambient conditions

Permissible ambient temperature during operation	+10° C to +40° C
Permissible ambient temperature in storage	+5° C to +40° C
Permissible humidity	80% relative humidity

4 Transport and storage (by manufacturer)

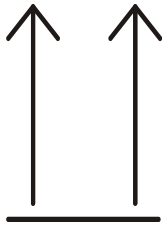
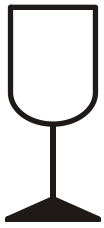
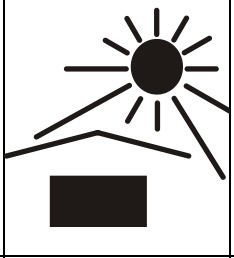
The measuring system is transported by a transport company authorized by CP Tech GmbH. The following transport containers are used:

- System version Easy: Cardboard box
- System version Basic: Cardboard box
- System version Pro: Flight case

NOTE

In order to ensure that the measuring system will function safely and precisely, the transport regulations of CP Tech GmbH must be strictly adhered to.

- Heed the pictograms on the packaging:

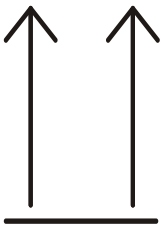
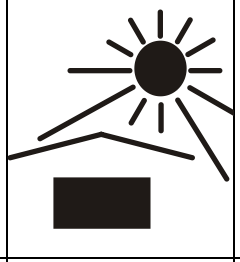
				
Top	Breakable goods	Protect against moisture	Protect against heat	Do not stack

5 Transport and storage (by plant operator)

Transport between the points of deployment is carried out by the plant operator or by companies authorized by the plant operator. The measuring system is transported in the flight case (CP Tech GmbH) or in containers provided by the plant operator.

The transport regulations of CP Tech GmbH must be adhered to.

- Use and heed the pictograms on the packaging:

				
Top	Breakable goods	Protect against moisture	Protect against heat	Do not stack

5.1 Safety during transport

Observe the following safety information when transporting the measuring system or components:

- When transporting by sea, protect the measuring system from sea air and water (seaworthy packaging).
- When transporting by air, pay attention to the LiPo accumulators in the netbook.
- The measuring system or components are only allowed to be transported by suitably qualified and instructed personnel in compliance with all safety information.
- When choosing suitable lifting equipment and load handling attachments, always take the weight of the heaviest component into consideration (for weights, see „3.3.5 Transport box (flight case)")
- Wear protective clothing, safety shoes, and safety gloves when working.
- Make sure that nobody is in the transport route.
- Only lift the measuring system/component at the intended points.
- Always lift the measuring system slowly and carefully.

5.2 Intermediate storage

If the measuring system is not used directly after delivery, it must be stored carefully in a protected location. The measuring system must be temporarily stored, ensuring it is protected against cold, moisture, soiling, and mechanical influences.

For the recommended storage conditions of the measuring system, please refer to „3.3.3 Ambient conditions”.

No liability will be accepted for damage arising in the event of incorrect storage.

6 Installation by manufacturer

Installation of the measuring system components takes place at the factory of CP Tech GmbH. The delivered setup wheels are preset at the factory of CP Tech GmbH only according to customer specifications (tire and vehicle data). If no customer data are available, the delivery will be made in dismantled condition.

NOTE

> Fine adjustment to tire types to achieve the specified precision must be carried out by the plant operator.

7 Installation by plant operator

WARNING

Injury hazard when lifting and installing the components!

– Take hold of the measuring system components only at the intended points. Wear personal protective equipment.

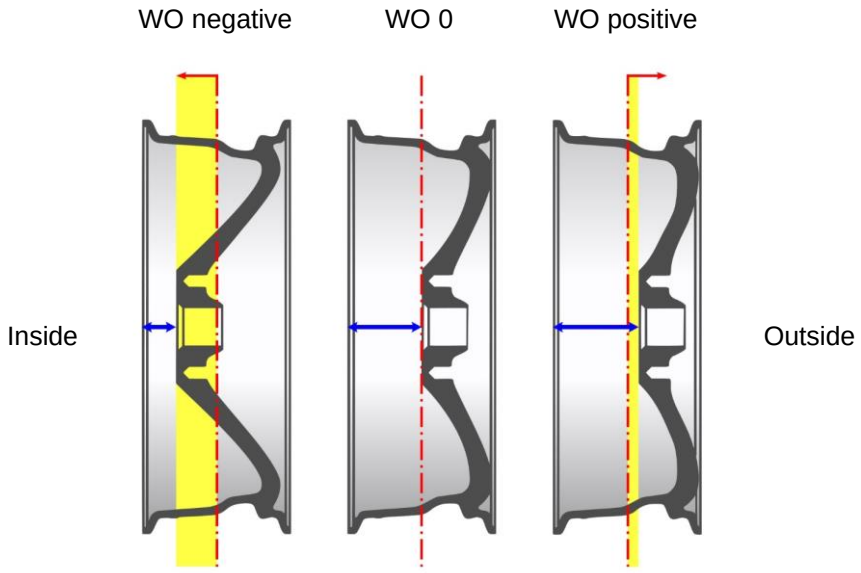
WARNING

Trip hazard due to objects on the floor (tools, cables, compressed air hoses)

– Lay all lines in such a way that they cannot be tripped over and do not cause an obstruction.
– Keep the work area tidy.
– Color highlight any tripping points that are unavoidable.

7.1 Adjusting the universal stands of the setup wheel

The setup wheels supplied by CP Tech only have a preset based on known vehicle data and typical tire data. The wheel offset and the tire radius is required for this:



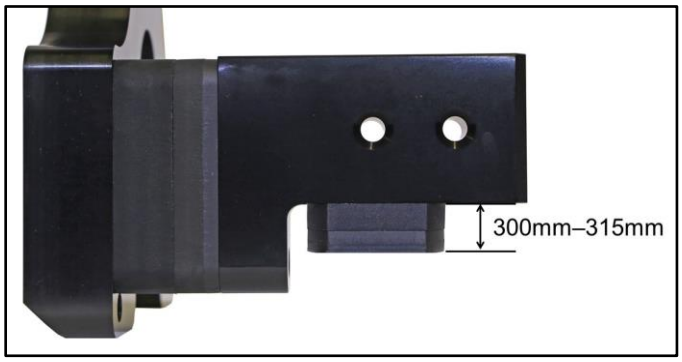
We always set the setup wheels to the theoretical wheel offset and the static tire diameter. With the aid of the setup wheel offset, the reaction behavior of the measuring system to camber variations on the vehicle can be adapted to the behavior of the vehicle wheels.

Overview of adjustment options			
Position		Adjustment range	
Stand	Ball caster	Tire radius [mm]	Wheel offset [mm]
1		300-315	
2		315-330	
3		330-345	
4		345-360	
	A		10-50
	B		37.5-77.5

To further increase the accuracy of the measuring system, it makes sense to set the setup wheels exactly to the tires used.

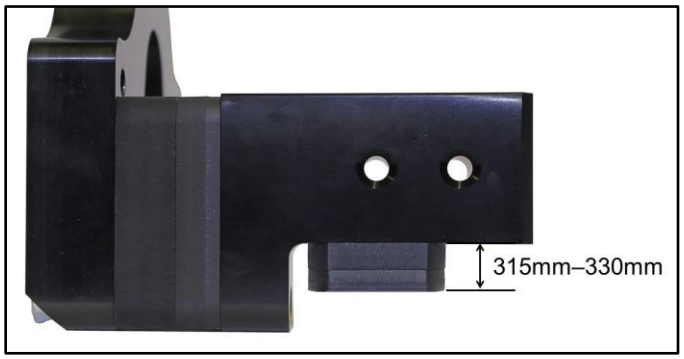
The desired tire radius is adjusted by means of various shims (1mm, 2mm, 4mm and 8mm) and different stand positions. The universal stand can also be rotated to achieve a larger adjustment range. In this case, the shims are installed between the universal stand and the ball roller.

The first stand position (upper screw-on option, stand with flat side upward) results in a wheel radius of 300mm. The radius can be increased up to 315mm in increments of 1 mm using the shims.



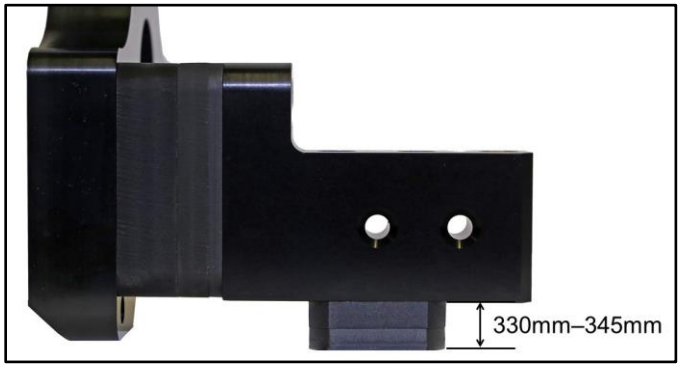
Stand position 1

The second stand position (lower screw-on option, stand with flat side upward) results in a wheel radius of 315mm (up to 330mm using shims).



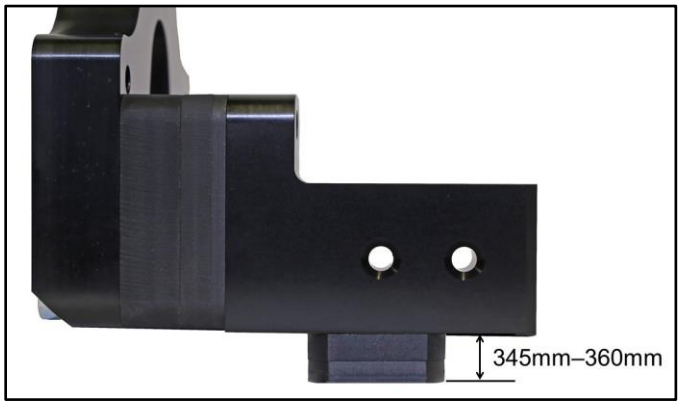
Stand position 2

The third stand position (upper screw-on option, flat side rotated downward) results in a wheel radius of 330mm (up to 345mm using shim discs).



Stand position 3

The fourth stand position (lower screw-on option, flat side rotated downward) results in a wheel radius of 345mm (up to 360mm using shim discs).



Stand position 4

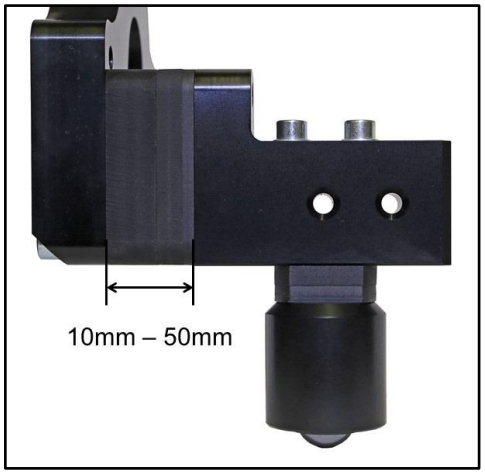
WARNING

Observe the tightening torques and screw-in depths depending on the shim package:

- **M8: 35Nm; min. 12mm / max. 16mm**
- **M10: 65Nm; min. 15mm / max. 20mm**

The wheel offset (position of the ball caster) can also be adjusted using shims (5mm, 10mm, and 20mm) and two slotted holes. In this case, the shims are installed between the setup wheel and the universal stand.

The first position of the ball caster covers the adjustment range of 10-50mm.



Ball caster position A

The second position of the ball caster covers the adjustment range of 37.5-77.5mm.

Ball caster position B

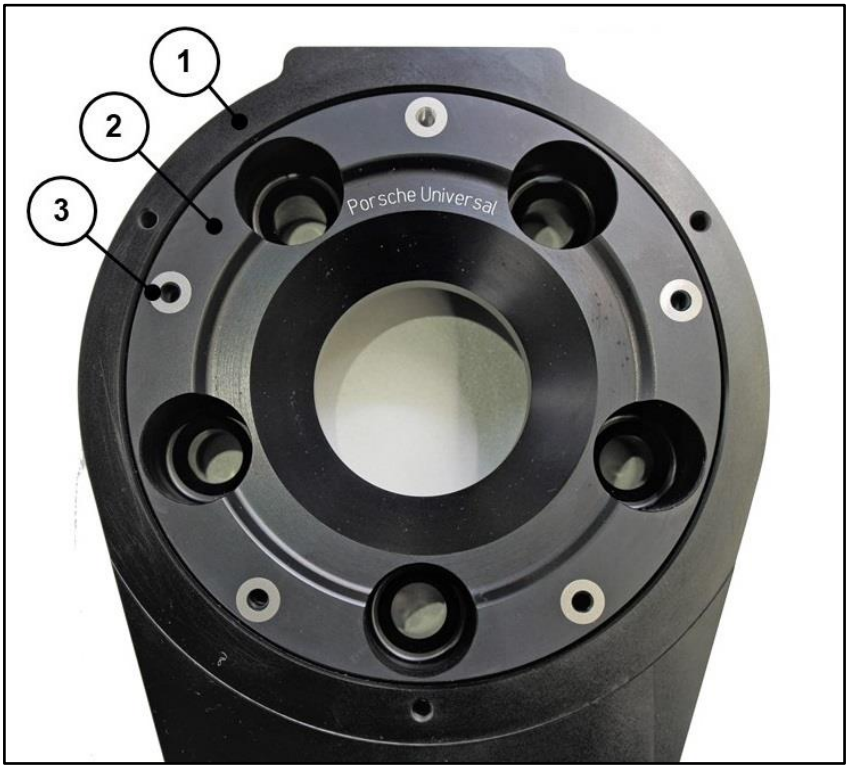
7.2 Replacing the wheel adapters

If different vehicles are to be measured, the wheel adapters may have to be replaced. It should be noted that the wheel adapter can also be rotated after the conversion and sits backlash-free in the setup wheel.

To change the wheel adapter, first remove the setup wheel from the vehicle. Then dismantle the clamping ring by removing the five countersunk bolts on the head of the setup wheel. When dismantling the clamping ring, make sure that the shims for adjusting adapter clearance are not lost. The wheel adapter can now be removed by rotating it.

Subsequently, the desired wheel adapter can be installed. To do so, grease the fitting surface first. Then insert the adapter into the setup wheel while rotating it. Make sure that no dirt or chips impair installation.

Afterwards, adjust adapter clearance when installing the clamping ring; shims with a thickness of 0.1 mm are available for this purpose. Alternately tighten the countersunk screws with the specified torque alternately.



1 Setup wheel 2 Wheel adapters 3 Shims

You have used the correct number of shims if the wheel adapter is still difficult to rotate after the clamping ring has been installed. In order to avoid measurement errors, it is important to ensure that clearance is not too large.

WARNING

> **When tightening the countersunk screws, pay attention to the correct tightening torque of 7Nm and the correct clearance between the wheel adapter and the setup wheel.**

7.3 Setting up the software

The SetupWizzard software is already preinstalled on the supplied netbook (may differ from the picture above). Start the program by clicking the desktop shortcut. The data transmitted by the measuring platforms via radio are processed and visualized by the software.

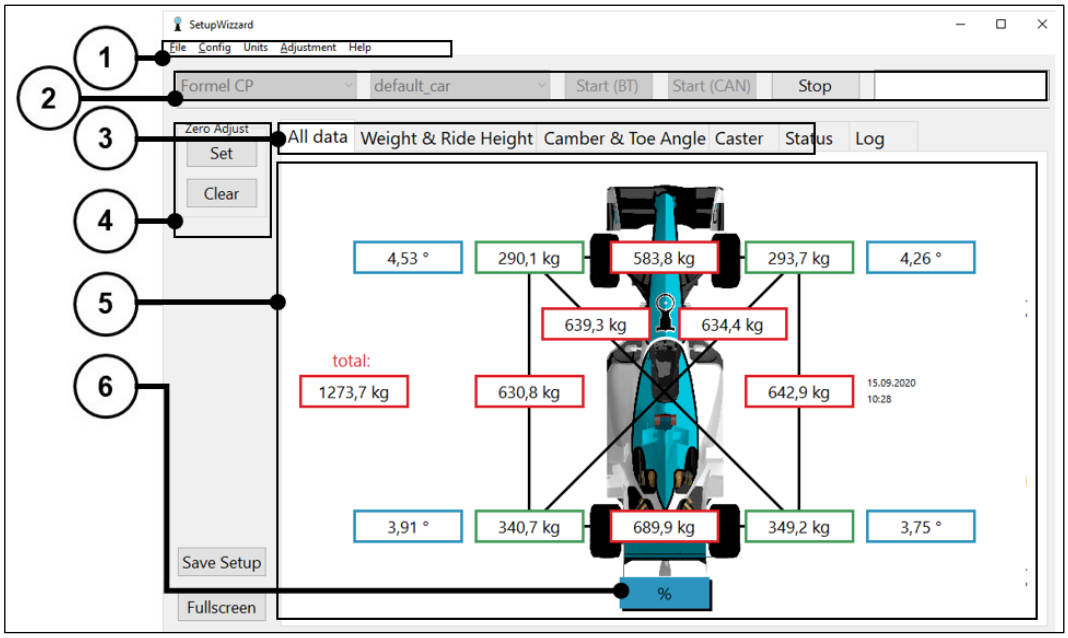
At the time of delivery, the four measuring platforms are already connected to the netbook and configured in the PC software. A measurement can thus be started immediately by pressing the „Start" button.

The SetupWizzard software offers the following application options:

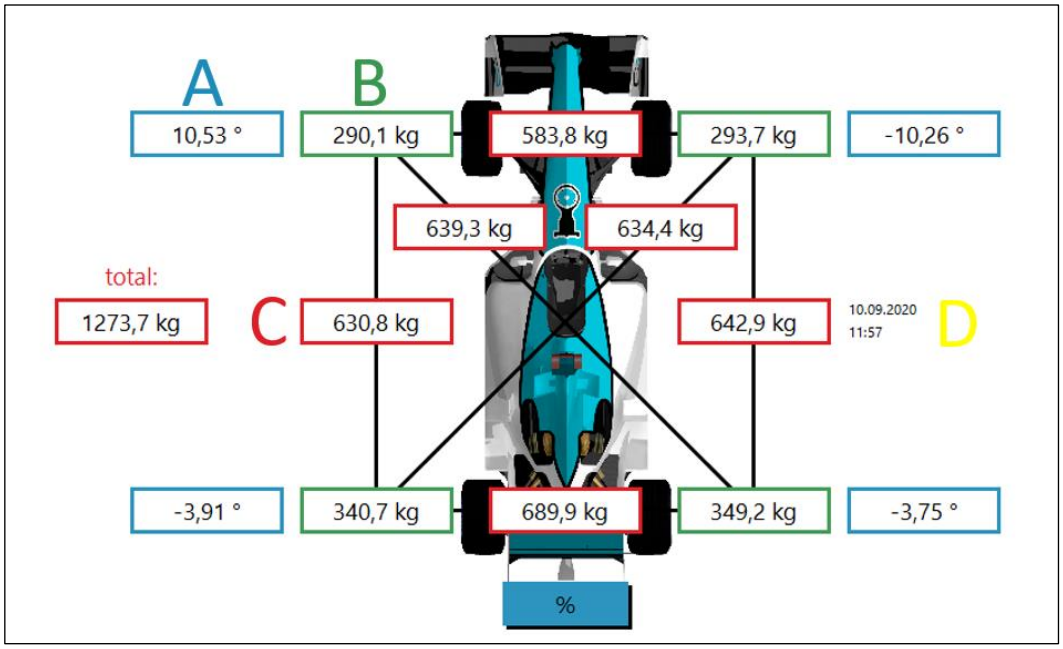
- Suspension measurement
  - Camber measurement
  - Wheel load distribution measurement
  - Caster measurement (optional)
- Camber sensor (inclinometer) adjustment
- Taring the wheel load scales
- Management of several vehicles
- Management of several SetupWizzard measuring systems

If you would like to install the software on another device, you will find it on the USB stick in the leather case of the flight case. Simply copy the software from this USB stick to the desktop of the computer. The SetupWizzard software does not require a conventional installation, so it can be started directly from the program folder by double-clicking on the SetupWizzard icon. For a better order of the computer, we recommend copying the folder of the SetupWizzard software into the program folder and creating a desktop shortcut.

The user interface of the software is basically divided into six sections:



1. Buttons for controlling the program functions Configuration, Units, Adjustment, and Help.
2. Management of several SetupWizzard systems, Start and Stop button for switching data transmission on/off, and an individually writable text field.
3. Program tabs for controlling the display.
4. Tare function
5. Display of measured values
6. Switching to percentage display



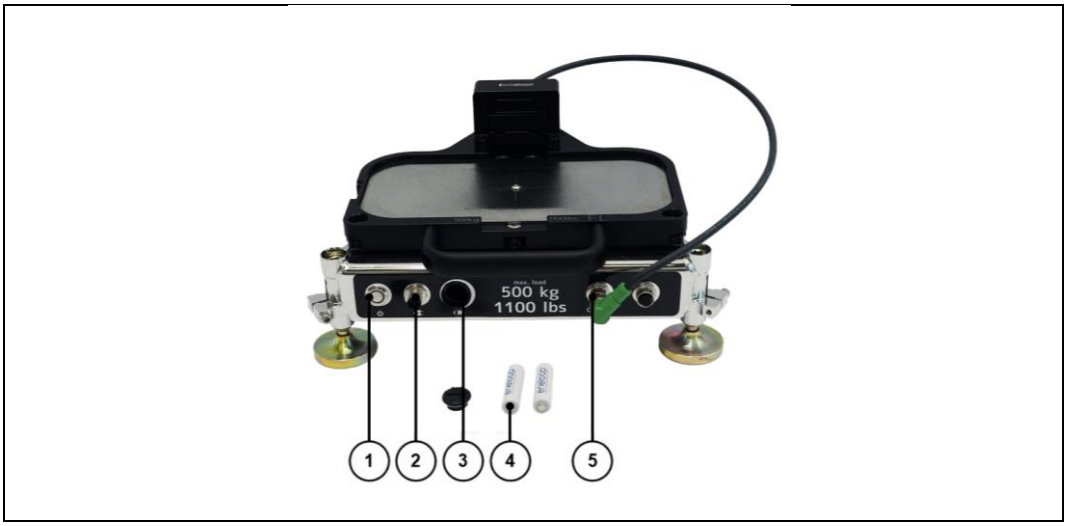
A Camber values

B Single wheel loads (measured)

C Load distribution (calculated) [axle load, diagonal load, total weight]

D Date and time (current)

7.3.1 Measuring platform operation



1 On/Off button

2 Charging/communication jack

3 Accumulators compartment

4 Accumulators,
type: Panasonic eneloop AA

5 Sensor connections
(inclinometer, etc.)

Briefly press the button on the front of the measuring platform once to switch the platform on or off. This button also has an LED indicator which indicates the status of the platform.

Flashing codes of the measuring platform	
Device status	**LED**
Switched off	LED off
Device starting	LED lights up for 1s
Switched on	1x flashing, 1s repeat time
Connected to software	2x flashing, 1s repeat time
Pair radio connection	3x flashing, 1s repeat time

You can charge the accumulators of the platform and connect the optional CAN charger via the charging/communication jack.

The accumulator compartment accommodates the two „eneloop AA" accumulators, which you can remove, charge or replace if necessary. Always ensure that the accumulators are inserted correctly.

NOTE

- It is expressly forbidden to use non-rechargeable batteries for operating the measuring platforms, as these would damage the measuring electronics of the platforms in the event of an accidental charging process.
- Only Panasonic eneloop AA accumulators may be used.
- The platform should never be started without an inserted accumulator.

You can connect external measuring sensors via the two sensor connections on the front, right-hand side of the platform. The connection sequence is irrelevant, as the platform electronics automatically recognize the connected sensor and process the data accordingly.

7.3.2 Pairing the measuring platform

A radio connection to the PC is absolutely necessary in order to use the measuring platforms. For this purpose, the measuring platforms must be „paired" under Windows. This procedure must be performed once for each platform and does not need to be repeated afterwards.

To pair the measuring platform with a computer, first start the pairing mode of the platform. To do this, press the button for 5 seconds. After activating the pairing mode, the flashing code of the LED on the button changes (3x flashing, 1s repeat time). The pairing mode is automatically terminated after 60 seconds for safety reasons.

Then select the command „Add device" under Windows. („Start" → „Control Panel" → „Devices and printers" → „Add device") Windows now searches for all possible devices to pair in the vicinity. Now select the desired measuring platform from the list; the number or MAC address of the platform can be found on the sticker on the rear of the measuring platform.

Finally, the correct connection must be confirmed; to do so, the displayed code must always be confirmed with „Yes". If an older Windows version is used, a pairing code must be entered. This code is always „1234".

The measuring platform is now paired with the computer. Perform these steps for all platforms as needed.

7.3.3 PC software configuration

After the measuring platforms have been paired with the computer, they still have to be assigned to a vehicle corner or a system. This is done in the configuration menu of the SetupWizzard software.

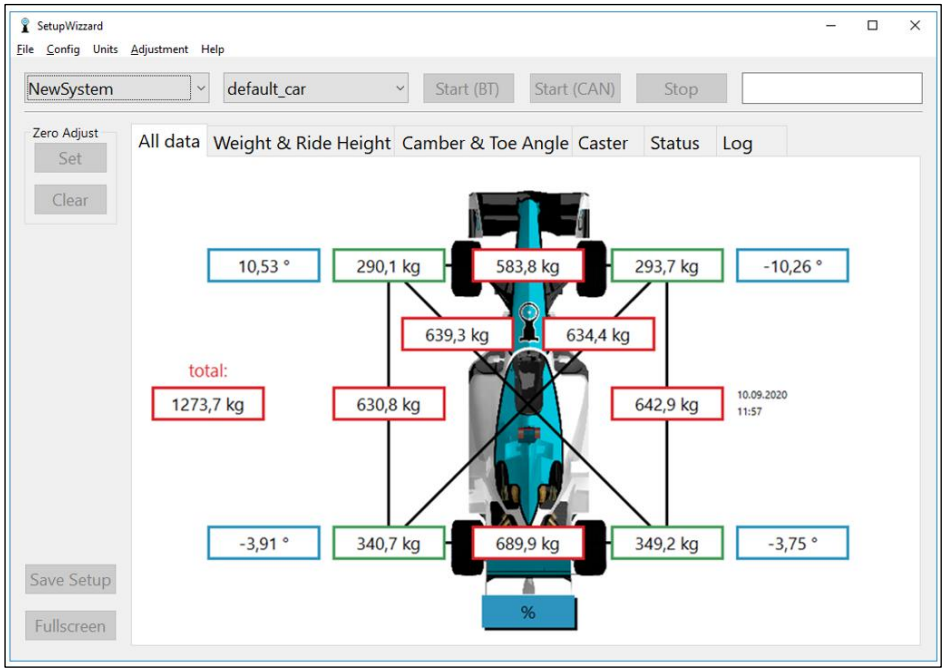
To do this, open the SetupWizzard software and select the menu item „Config" → „Systems". Now assign the respective vehicle corners to the measuring platforms. The designation of the platform can be found on the underside sticker. Please note that only the platforms previously paired with the computer can be assigned.

Optionally, it is possible to connect the platforms with the SetupWizzard software via CAN communication. The CAN charger from the SetupWizzard accessories is needed for this.

When clicking "Config" → "Vehicles" it is possible to set a weight offset. How to do this is described in the next chapter. Furthermore it is possible to set a ride-height offset, values for toe measurement and numbers of decimals. Ride-height offset and toe measurement values are only needed, when using digital toe and height measurements.

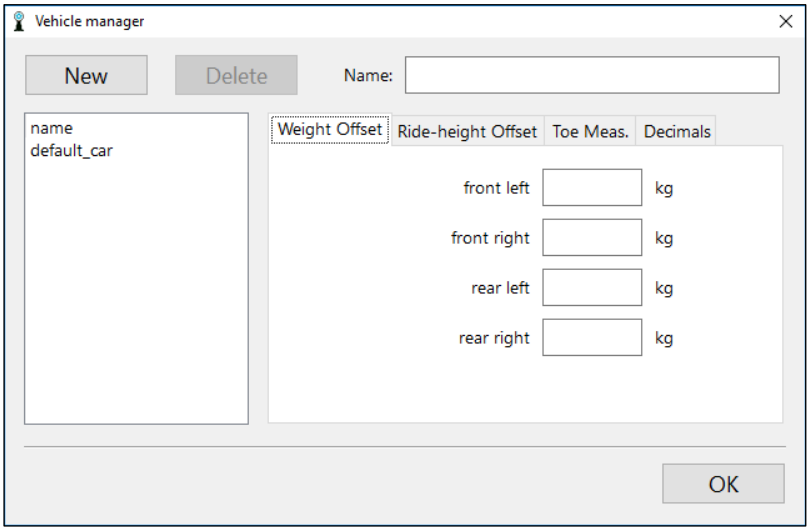
7.3.4 Taring the wheel load scales

Use the buttons on the left and “Config” → “Vehicles” on the top of the user interface to tare the wheel load scales.



You can use the „Zero Adjust“ tare function to shift the zero point of the wheel load scales determined by calibrating the load cell. To do this, click the „Set“ button to set the new zero point and the „Clear“ button to cancel the shift.

When clicking “Config” → “Vehicles” on the top, you can also enter the difference between the weight of the vehicle wheel and the weight of the setup wheel. This is then included in the single wheel loads during the measurement.



For this purpose, a vehicle wheel of the front and rear axle is weighed and the difference to the weight of a setup wheel is calculated. If the vehicle wheel is heavier than the setup wheel, you must enter the difference with a positive sign. If the vehicle wheel is lighter than the setup wheel, you must enter the difference with a negative sign.

If you want to undo the input, you must enter the value „0” at the desired wheel.

8 Commissioning

8.1 Safety measures to be taken before commissioning

Familiarize yourself with the

- operator and system controls of the measuring system
- equipment of the measuring system
- operation of the measuring system
- immediate environment of the measuring system
- and the measures for an emergency
- use your personal protective equipment.

Carry out the following activities before commissioning the measuring system:

- Check and make sure that all safety devices are attached and are working.
- Inspect the measuring system for visible damage; rectify any detected defects immediately or notify supervisory staff of them– the measuring system must only be operated in a perfect state.
- Check and ensure that only authorized persons are in the work area of the measuring system.
- Remove all objects and other materials that are not needed to operate the measuring system out of its work area.

8.1.1 Necessary operating and maintenance space

When choosing the installation site, observe the ambient conditions (see 3.3.3).

When choosing the installation site, make sure there is enough operating and traffic space.

8.1.2 Floor requirements

WARNING

Loss of stability

A loss of stability of the setup platforms may result in a significant risk of injury.

- The floor must be straight and level.
- The floor must have the necessary load capacity. The plant operator is responsible for the structural stability of the floor.

8.2 Setting up the measuring system

8.2.1 Installing the setup wheels

First, position your vehicle at the intended measuring location. Lift the vehicle as intended and exchange the vehicle wheels with the setup wheels of the measuring system.

NOTE

Observe the labeling and assignment of the setup wheels.

Tighten the setup wheels to the torque of the vehicle wheels. Leave the vehicle jacked up to position the platforms/measuring platforms under the setup wheels.

8.2.2 Positioning the platforms/measuring platforms

Position the platforms/measuring platforms centrally under the setup wheels. The optional positioning laser can make work much easier and faster. Make sure that the setup wheel is precisely centered on the measuring platform, otherwise the measuring accuracy may be lost.

NOTE

IMPORTANT:

Always observe the labeling and correct assignment of the setup wheels and the setup platforms/measuring platforms.

FL = Front Left

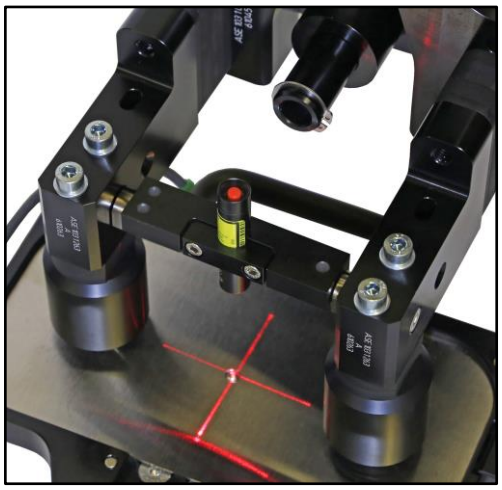
FR = Front Right

RL = Rear Left

RR = Rear Right

8.2.2.1 Using the positioning laser

The positioning laser is installed in a magnetic holder. Place the holder with the laser (laser optics pointing downward) on the centering pins provided at the stand of the setup wheel. The centering pin and laser holder must be clean and free of chips in order to ensure optimum measurement results. Switch on the laser and position the measuring platform centrally under the laser cross. Switch off the laser and repeat the process with the remaining three platforms.



8.2.3 Leveling the measuring platforms

Before the vehicle can be lowered onto the measuring platforms, the platforms must form a horizontal, level surface. The leveling laser is used to display this surface. Use the stand to position it centrally between the four measuring platforms on a solid and level surface. Do not move the laser when aligning the measuring platforms! The leveling laser is operated via a one-button control. However, before you switch on the laser, unlock it. To do this, slide the locking mechanism under the vertical optics into the freely moving position. Then briefly press the Power button once each time to switch on, toggle cross lines, vertical line or horizontal line, switch off. When operating the laser, make sure that the laser pendulum does not touch the stop.

WARNING

Injury hazard due to laser beams

Laser beams can cause eye injury.

- **Do not stare directly into the laser beam.**

Now insert the leveling sleeves into the holes provided in the load plate. Check the set height at all three corners and adjust if necessary. To do this, loosen the clamping screws at the corner of the measuring platform with the supplied 4 mm hexagon socket wrench. You can then adjust the height with the 8 mm hexagon socket wrench. Make sure that the beam of the leveling laser has the same height on all three sleeves. After the measuring platform has been aligned in height, secure its height adjustment again with the clamping screws at the corners of the platform.

WARNING

The minimum screw-in depth of the platform stands is always 25mm!

8.2.4 Lowering the vehicle onto the measuring platforms

Now lower the vehicle onto the leveled platforms. While doing so, avoid impact loads on the measuring platforms. When lowering, make sure that when the ball casters of the setup wheel make contact with the platform the vehicle can start moving and can move freely within a certain range. In order to limit this range to the necessary minimum, it is imperative to use the supplied positioning templates. There are two different variants: fixed clamping (shown) and loose clamping. We recommend you to insert the fixed clamping variant at the front left and the loose clamping variant at the rear right.

WARNING

When lowering the vehicle and especially when inserting the insertion templates, pay attention to the increased crush hazard due to possible unforeseeable movements of the still freely moving vehicle.

8.2.5 Adjusting the toe laser

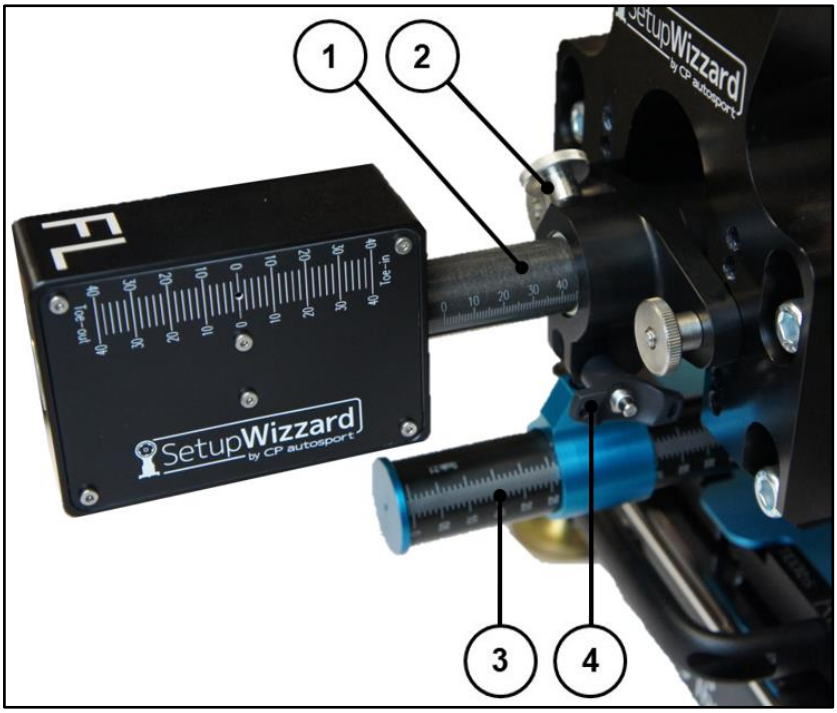
In order to take the different axle geometries of the front and rear axle into account, the toe measuring modules on the vehicle must be adjusted for toe measurement. The distance between the toe lasers of the front axle and the toe lasers of the rear axle must be identical. In addition, the lasers of one axle must be symmetrically arranged in relation to the center of the vehicle.

To adjust the toe lasers, first determine the track width difference between the front and the rear axle. Use the track gauge for this purpose.

1 Reference end 2 Lock 3 Measuring slide

The track gauge consists of three tubes pushed into each other, which can be fixed in length by means of clamps. The measurement is carried out between the fixed reference end and the measuring slide, wherein the measuring slide moves on a scale of 1:2.

For the measurement, extend the track gauge to the appropriate length for the vehicle and secure the set length with the clamps. Once set, the length between the measurements on the front and the rear axle may no longer be adjusted, as this would falsify the result.



1 Scale value on laser shaft
2 Clamping screw
3 Scale value on track gauge
4 Ball lock pin

Attach the gauge to the measuring slide and the reference end to the left and the right setup wheel of the axle using the ball lock pins. Then read the measured value at the measuring slide and adjust it on both sides of the measured axle at the laser. To do this, loosen the clamping screw and move the laser shaft to the setup wheel.

Then measure the second vehicle axle with the track gauge (length must not be changed!). To do this, slide the gauge between the stands of the setup wheels and fix it into position with the ball lock pins similar to the other axle. Set the read value on both sides (scale 1:2) at the toe lasers of the second axle.

If the track width changes considerably during suspension adjustment, e.g. due to camber variation, you may have to readjust the toe lasers again before the final toe measurement.

It is recommended to set a mark on the gauge to determine the length for future measurements.

8.2.6 Functional testing of the toe lasers

Before delivery, our SetupWizzard components undergo intensive quality inspections and functional tests. This enables and ensures accurate measurement of the vehicle. However, to guarantee correct functioning of the toe laser after improper use or transport, you can carry out the following inspections.

First, make sure that the setup wheel cannot move at all. Read the laser beam position on the scale of the other axle and note or mark it with a dash.

WARNING

Injury hazard due to laser beams

Laser beams can cause eye injury.

- **Do not stare directly into the laser beam**

Then pull out the ball lock pin used to position the laser housing on the laser shaft and remove the laser housing from the laser shaft. Rotate the housing 180°, put it back on the laser shaft and fix it into position using the ball lock pin. The housing is now „upside down" above the shaft, but the laser beam still points in the same direction as before.

If, after rotating, the laser beam continues to hit the same spot as before, the laser housing is working properly.

Laser housing in normal position

Laser housing rotated 180°

Now it can be checked whether the laser shaft is straight or whether the screw-on flange is exactly perpendicular to the shaft. To check the shaft, rotate it 180° around its axis so that the scale is at the bottom of the shaft. The position of all other parts is retained. If, after rotating, the laser beam continues to hit the same spot as before, the laser shaft is straight. You can now also rotate the screw-on flange 180° around the shaft axis to check its perpendicularity.

8.2.7 Adjusting the camber sensors (inclinometer)

The camber sensor is calibrated and adjusted upon delivery. It is recommended to check it at regular intervals (especially if the ambient conditions change) and to adjust the zero point if necessary.

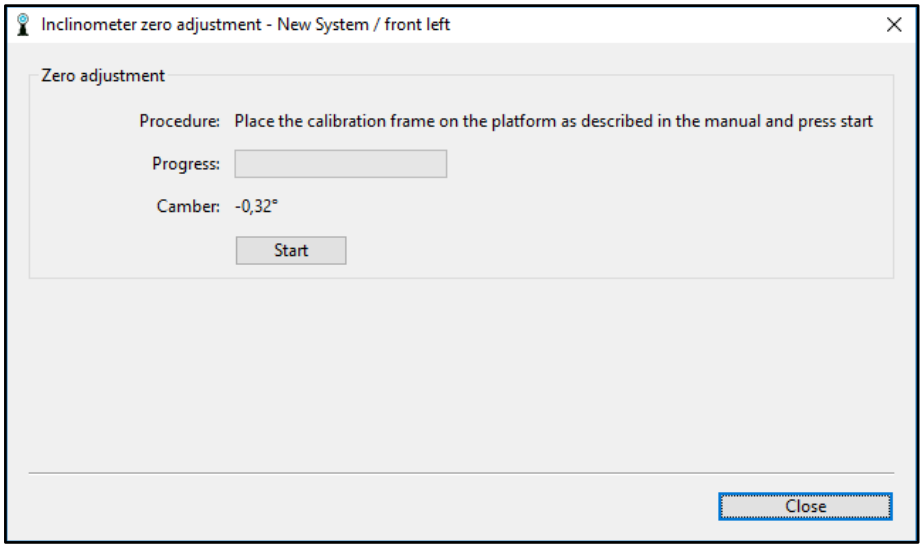
A calibration frame is supplied with the system for adjusting the zero point. This is placed on top of the measuring platform so that the two alignment pins slide into the holes provided for this purpose. Please make sure that the magnets are free of metal chips for correct positioning and that the frame rests evenly on the platform. The sensor is then inserted into the calibration frame. Observe the alignment of the sensor. The spring-loaded pressure pads of the sensor must point downward in the direction of the platform.

Platform calibration frame and camber sensor (inclinometer)

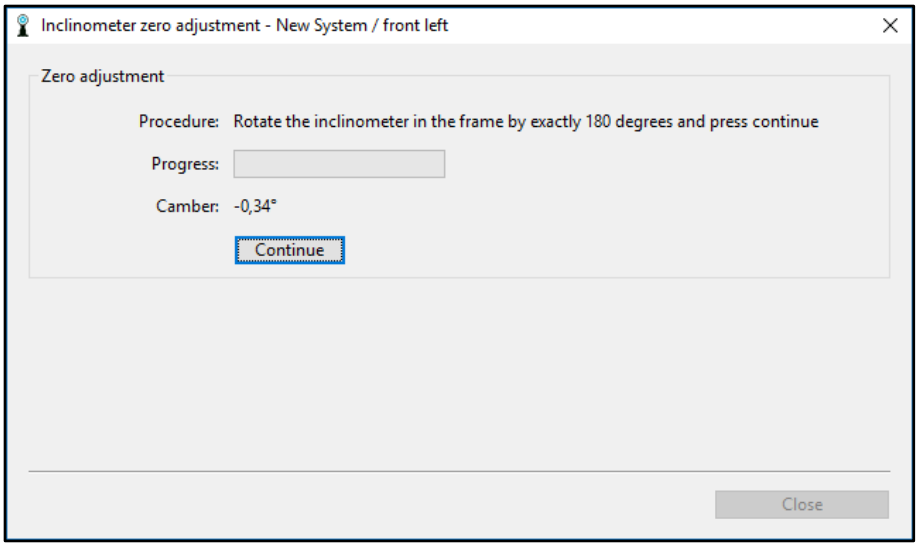
Platform with calibration frame and camber sensor rotated 180°

Now start the SetupWizzard software to continue with the adjustment of the inclinometer. After connecting the platforms to the netbook, the display value of the inclinometer should first be adjusted to the real conditions; if the display value is sufficiently accurate, further adjustment is not necessary. The easiest way to do this is with the calibration frame on the leveled platform, here the inclinometer should now show "0 °" accordingly. If this is not the case, an adjustment is required.

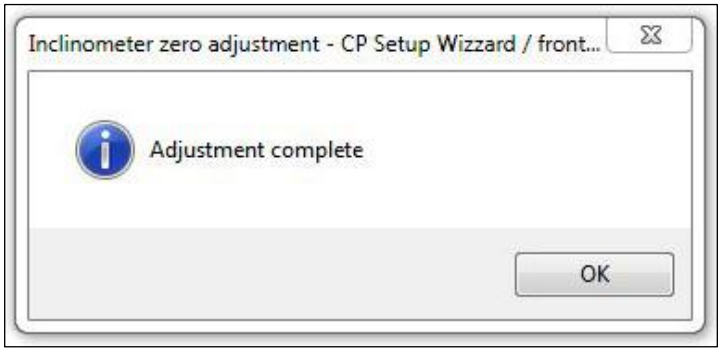
If an adjustment is necessary, select the inclinometer to be adjusted in the menu item „Adjustment" - „Inclinometer". Again, pay attention to the designation of the vehicle corner. The following pop-up window opens:



Once the camber sensor has been securely positioned in the calibration frame on the platform, press the „Start” button. The software automatically stores the inclination of the sensor and then prompts the user to rotate the inclinometer 180°. As soon as the inclinometer is safely positioned in the frame after rotation, press the „Continue” button.



The new inclination of the sensor is stored internally and finally the mean value of the two values is calculated and the zero point adjusted. Successful calibration is confirmed.



Repeat this procedure for the three remaining inclinometers.

9 Operation

9.1 Safety measures during normal operation

- Safety devices must not be removed or disabled while the measuring system is in operation.
- Operating personnel must ensure that no unauthorized persons are in the measuring system's work area.

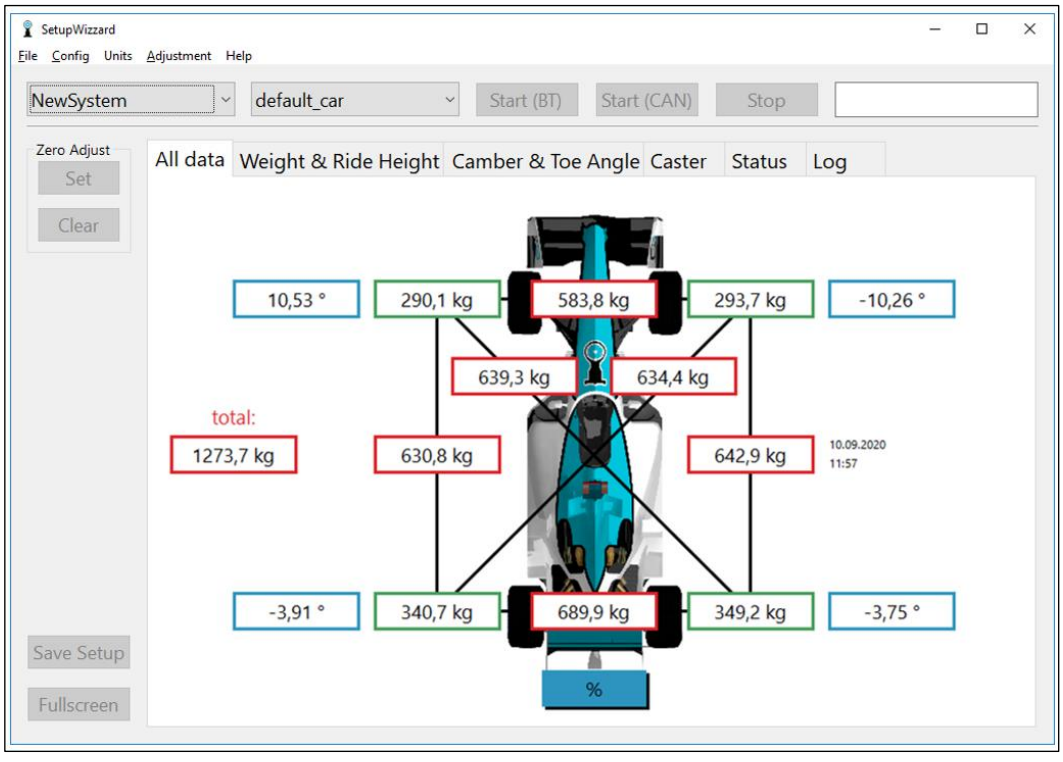
Carry out the following inspection activities every day:

- Inspect the measuring system for externally visible damage.

9.2 Measuring the suspension

9.2.1 Measuring the wheel loads

The SetupWizzard software is required to measure wheel loads. Start it as described above and establish the connection between the netbook and the measuring platforms. The current measured value is then displayed on the software user interface. The measured values can be displayed in both „kg" and „lbs". In addition, the distribution of the wheel loads can also be displayed in „%". Select the desired unit in the upper left section of the display window.



9.2.2 Measuring the camber

For camber measurement, the camber sensors (inclinometer) must be inserted into the recess in the setup wheels provided for this purpose. Make sure that the spring-loaded pressure pads point downward toward the platform. Additionally ensure that the inclinometer with the upper surface rests properly against the setup wheel and that no dirt can falsify the measurement.

Only the measuring platforms must then be connected to the software, and the camber value of the respective vehicle corner is displayed in the software directly next to the weight.

9.2.3 Measuring the toe

In order to measure the toe of the vehicle, the toe lasers must first be set correctly (see 8.2.5). Once this setting has been made, the toe value of the vehicle corner at the other axle on the same vehicle side can be read after switching on the toe laser on the underside of the toe measuring module. Simply said, the toe value for the vehicle corner „front left", „rear left" must be read.

WARNING

Injury hazard due to laser beams

Laser beams can cause eye injury.

- **Do not stare directly into the laser beam.**

The toe measuring modules are equipped with a millimeter scale as standard. When reading the values, it is important to read in the middle range of the laser beam. If the beam is too far up or down, there may be slight deviations.

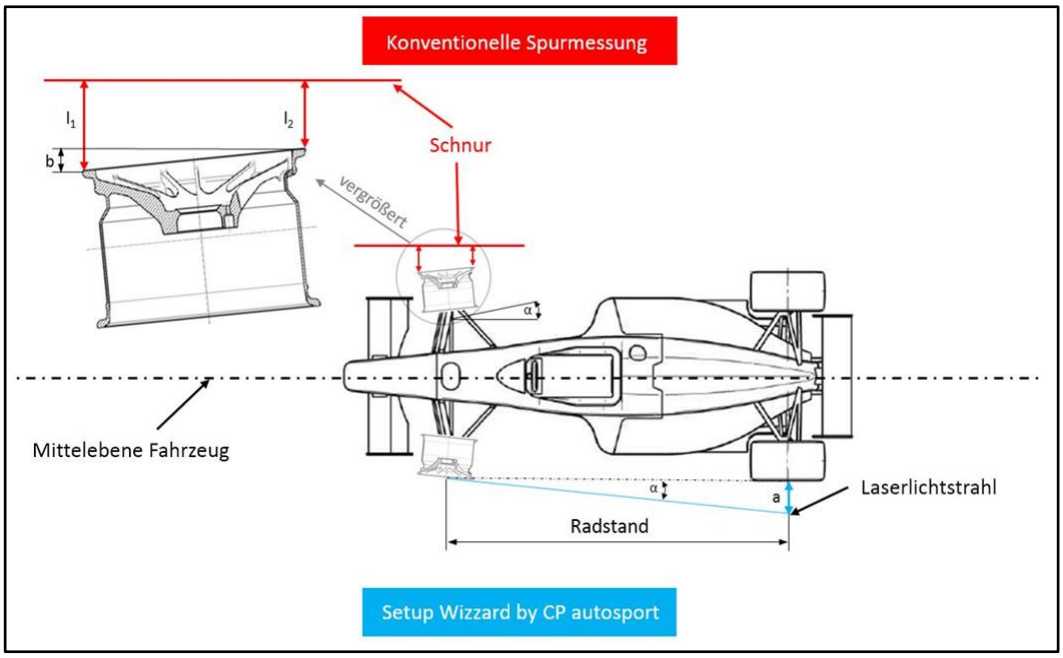
Optionally, it is possible to order a vehicle-specific scale for the toe measuring modules in the accessories. Alternatively, you can also compare the standard millimeter measurement values with the following formulas using conventional measuring methods:

Conversion conventional toe angle measurement:

$$Rim\ measurement\ [mm] = \frac{Laser\ measured\ value\ [mm] \times\ Rim\ \emptyset\ [mm]}{Wheelbase\ [mm]}$$

Toe angle in minutes:

$$Toe\ angle\ [min] = Laser\ measured\ value\ [mm] \times \frac{3438}{Wheelbase\ [mm]}$$



The SetupWizzard achieves a clearly higher measuring accuracy with the same reading accuracy of the measured values at the ruler than conventional toe measuring systems with batter board and ruler. This is due to the greater distance between the measuring point and the reading scale. This greatly increases the deflection of the measured value. In the case of toe changes, the measured value changes only slightly with conventional systems, so that a fine measuring system is necessary in order to be able to record the toe change with sufficient accuracy. Due to the stronger deflection of the measured value in the SetupWizzard, the measuring system can deliver correspondingly more accurate results. This considerably improves the reproduction of measurement results.

9.2.4 Measuring the ride height

In order to determine the ride height of your vehicle, the leveling laser is required in addition to the height measuring modules. This forms the reference plane on which the ride height to the undertray of the vehicle can be read.

NOTE

It is important that the leveling laser has not been moved and that it matches the markings on the leveling sheels of all platforms.

WARNING

Injury hazard due to laser beams

Laser beams can cause eye injury.

- **Do not stare directly into the laser beam.**

Position the height measuring modules at the desired positions under the vehicle. Unlock the height measuring modules by turning them to the right. The measuring scale is now pressed by spring force from below to the desired measuring point. Depending on the type and condition of the measuring point, you can use two differently sized measuring tips. In addition, you can compensate for any difference between the undertray and the measuring point with the aid of the removable measuring tips. The difference between the wheel contact area on the platform and the level of the laser is already taken into account in the scale. If the setup wheels are set correctly, you can measure the ride height of the vehicle directly above the road surface.

9.3 Operating the accessory components

The accessory components can significantly increase the range of functions of the Pro system version and expand its area of application.

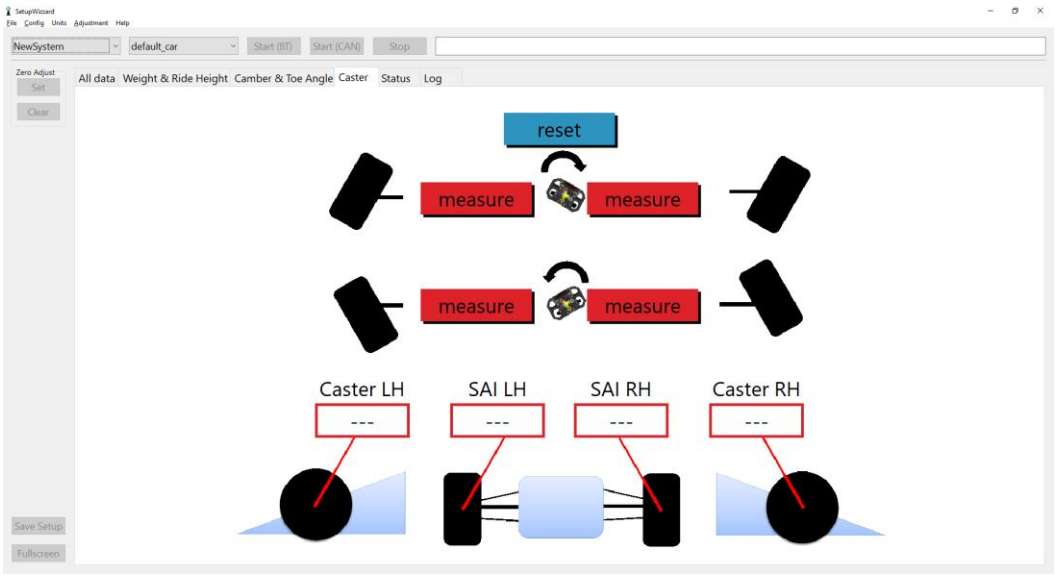
9.3.1 Caster measurement (optional)

With the optional kit for caster measurement, you have the possibility to measure the caster as well as the SAI of your suspension geometry. The existing camber sensor (inclinometer) and a toe measuring module serve as measuring sensors. Please note that it is imperative that the wheel adapters on the front axle are clearance free and can be rotated when installed.

WARNING

> **Before using the caster measurement, make sure that the wheel adapters can be rotated when installed. Otherwise the vehicle may slip off the measuring platform during the first turning!**

Once all the necessary components are ready, the modification of the system for caster measurement can be started. First exchange the toe measuring module on the side of the front axle to be measured with the mirror of the caster measurement kit. Remove the ball lock pin and pull the toe measuring module from the guiding shaft. Slide the mirror onto the guiding shaft and lock it with the ball lock pin. Then attach the magnetic holder from the caster measurement kit as horizontally as possible to the clamp ring of the wheel adapter. Make sure that there are no foreign objects on the magnets and that they fit evenly. Now slide the inclinometer into the magnetic holder. Make sure that the spring pads point downward toward the measuring platform and that the inclinometer fits evenly on top of the surface. Engage the brake or have the brake operated by another person. Now carefully remove the positioning templates on the front axle to allow steering. Then insert these templates additionally on the rear axle. Finally, open the tab for measuring the caster and SAI in the software.



WARNING

During the entire measurement, make sure that the vehicle is centered on the measuring platforms and that the ball casters of the setup wheel do not come too close to the edges of the measuring platforms. Never apply high steering forces!

1. Now steer the front axle so that the laser beam of the rear toe measuring module indicates „0” on the rear scale through the mirror on the front axle.
2. Now set the steering angle and click the „Measure” button. The sequence is irrelevant, but still make sure to select the correct „Measure” button.
3. Then turn the mirror on the front axle around the axis of the ball lock pin.
4. Now steer to the other direction and click the „Measure” button when the steering angle has been reached.
5. The values for caster and SAI are automatically calculated by the software and displayed on the operator panel.

Repeat this procedure to measure the second side of the vehicle.

A new measurement of caster and SAI is possible at any time, the measured values are then simply overwritten by the software.

The measuring accuracy is +/- 0.3°; the repeatability is +/- 0.2°.

NOTE

Important: The other side of the vehicle cannot be measured with the mirror on one side, because the steering trapezoid produces different steering angles for left and right.

9.3.2 Platform elevations (optional)

The platform elevations extend the Pro version with a multitude of options. The one hand, the adjustment range of the platforms increases significantly, so that larger terrain unevenness can be compensated. On the other hand, the platform elevations (only when additional chassis stands are used) also allow work to be carried out under the vehicle. When using the platform elevation, always ensure that the stands of the measuring platform are unscrewed evenly and that the platform elevation is straight.

WARNING

When working under the vehicle, it is imperative to use chassis stands as additional protection! Ideally, a chassis stand with a min. 1t load capacity is positioned at each corner of the vehicle.

9.3.3 Longer platform stands (optional)

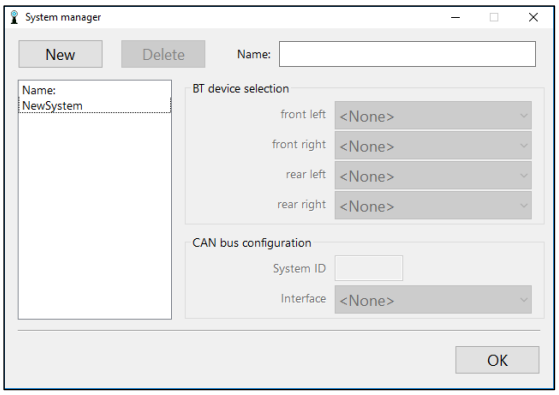
If you need to compensate larger terrain unevenness, but do not want to use the platform elevations, you have the option of using longer platform stands. You can easily exchange the longer stands (also with a cordless screwdriver) for the standard stands. The longer stands allow a much larger adjustment range.

WARNING

The minimum screw-in depth of the platform stands is always 25mm!

9.3.4 CAN charger (optional)

The CAN charger essentially serves as a back-up solution for the radio connection between the measuring platforms and the computer. In addition, it offers the advantage that the platforms are supplied with power during the measurement, ensuring the accumulator capacity is not exploited. To do this, connect the measuring platforms to the CAN charger via the communication and charging jack. Subsequently connect the CAN charger to the computer using a USB cable. And finally, select the CAN charger in the system configuration. The name in the interface can be found via the USB connection. Use the „Start CAN" button to establish the connection to the platforms. The status LEDs in the cover of the charger now indicate whether all measuring platforms are connected via CAN and whether the communication is working.



10 Faults and remedial measures

Device	Problem	Solution proposal
Platform	Cannot be switched on	Replace depleted accumulators with charged ones or connect power supply unit
	Overload display	Remove weight from platforms
	No display	Platform switched on and connected to PC
	Connection to PC not available	Platform switched on and activate connection via radio or CAN
	Connection to the PC only sporadically available	Replace accumulators or connect power supply unit Delete and add devices and systems in the operating system and PC software
	Only individual platforms connected to the PC	Delete and add devices and systems in the PC and PC software Switch on platforms one after the other
	Mech. damage	Send in device for repair
	Accumulators very hot	Replace accumulators and observe correct polarity
	Accumulators leaked	Send in device for repair
	No charge	Reconnect power supply unit
Inclinometer	Unstable measured values	Restart platform, connect power supply unit
	Failure	Restart platform, connect other inclinometer to the same platform, check connection
	Deviating measured values	Carry out calibration
	Deviation after calibration	Recalibrate, connect power supply unit
	Calibration not possible	Check whether PC software is correct and is functioning properly
	Damage/Broken cable	Send in device for repair
PC software and Operating system	Unable to configure system	Check the coupling of the platforms in the Control Panel under "Devices and Printers", re-pair platforms with the PC
	Not all platforms are displayed	Check the coupling of the platforms in the Control Panel under "Devices and Printers", re-pair platforms with the PC
	Unable to perform zero offset	Restart PC software, restart PC
	Platform display incomplete, not available	Restart PC software, restart PC
	Data backup	Check user rights and delete old log files after backup

11 Service

11.1 Safety measures when carrying out service

Heed the following points before doing service work:

- Cordon off access to the measuring system's work area. Make sure that no unauthorized persons are in the measuring system's work area.
- Make sure that all system components have cooled down to the ambient temperature.
- Make sure that suitable hoists and lifting accessories are available if larger parts (flight case) need to be replaced.
- Make sure you do not bend your back when working on parts fitted at a low level; always crouch. Make sure you are standing upright and your back is straight when working on parts fitted at a high level.
- Replace any imperfect parts immediately.
- Use original spare parts only.

Carry out the following activities after maintenance and before starting up the measuring system:

- Check that all previously released screw connections have been retightened properly.
- Make sure that all previously removed safety devices and guards have been refitted.
- Make sure that all tools, materials and other equipment have been removed from the work area.
- Clean up the work area. Remove any leaked liquids and similar substances.
- Make sure that all the measuring system's safety devices are functioning correctly.

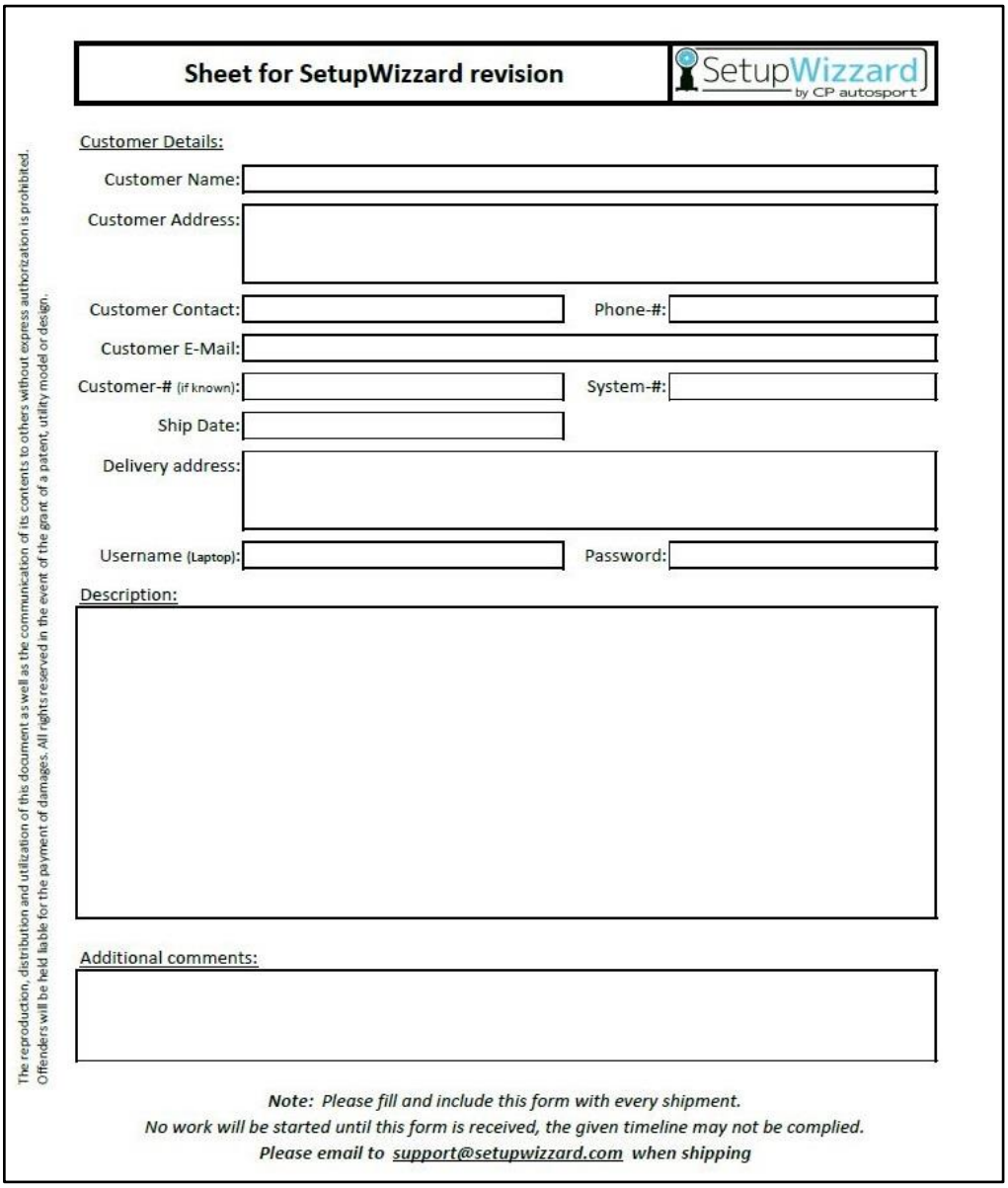
11.2 Inspection and service work

11.2.1 Revision SetupWizzard

The SetupWizzard system consists exclusively of high-quality components and is maintenance free. CP Tech GmbH prescribes an annual revision of the system in order to guarantee the quality and accuracy of the system and its operation.

When shipping please observe chapter 5 "Transport and storage (by the operator)".

In order to ensure a smooth process of the revision at CP Tech, it is absolutely necessary to complete this revision sheet:



Sheet for SetupWizzard revision

Customer Details:

Customer Name:

Customer Address:

Customer Contact: Phone-#:

Customer E-Mail:

Customer-# (if known): System-#:

Ship Date:

Delivery address:

Username (Laptop): Password:

Description:

Additional comments:

Note: Please fill and include this form with every shipment.
No work will be started until this form is received, the given timeline may not be complied.
Please email to support@setupwizzard.com when shipping

NOTE

To maintain the accuracy of the measuring system, a revision after 12 months is essential.

11.2.2 Accumulators

In each of the four measuring platforms, there are two „Panasonic eneloop AA 2000mAh" accumulators. A built-in power supply unit is available in the flight case for charging the accumulators. To charge the accumulators, simply connect the platforms in the lower compartment to the charging plugs of the built-in power supply unit. Then connect the supplied IEC power plug to the mains supply. Please note that the charge of the accumulators during the first charge cycle can take a little longer.

WARNING

The electronics inside the platform can reach higher temperatures during charging, which can also heat up the underside of the platform and the battery compartment.

To avoid high temperatures during the charging process, open the cover of the flight case at higher outside temperatures to allow air circulation.

DANGER

The built-in power supply unit may only be operated with the supplied IEC power plug. Otherwise grounding of the metal housing is not ensured.

If there is no CE-compliant socket with earthing cable available, charge the accumulators outside the measuring platforms using a local charger. Alternatively, CP Tech offers a conversion kit for the built-in power supply unit for the international market.

If the accumulators in the measuring platforms are damaged or become defective in between inspection intervals, they may only be replaced with identical „Panasonic eneloop AA 2000mAh" accumulators.

NOTE

Replacing the accumulators with batteries can lead to defects in the measuring platforms and is therefore prohibited.

11.2.3 Batteries

The batteries in the toe or leveling laser may have to be replaced in between maintenance intervals, depending on how long the system has been in use. For the toe laser, you must remove the screws of the cover plate and remove the plate. The battery compartment can then be removed. After removing the screw plug, the two „AA" batteries can be replaced. Pay attention to the correct polarity! Please make sure that no cables are crushed or damaged when assembling the toe measuring module. The „Huepar 901CG" leveli

ng laser also works with four „AA" batteries. To replace them, you can simply open the battery compartment on the underside of the leveling laser. Pay attention to the correct polarity of the batteries!

11.2.4 Special service intervals

11.2.4.1 Electrical equipment

DANGER

Fatal injury hazard due to electric shock

Touching live parts may result in a fatal electric shock.

- Only electrical specialists are allowed to work on the electrical equipment.
- Always shut off the power of the machine before maintenance and inspection work.

- Perform a safety check in accordance with the country-specific guidelines and standards.

11.2.5 Service of third-party components

For further information on service work on third-party components (laser, netbook, charger), please refer to the documentation provided by the respective supplier.

12 Decommissioning and disposal

12.1 Decommissioning / Dismantling the machine

- Switch off the measuring system and disconnect the mains plug of the charger from the socket.

DANGER

Fatal injury hazard due to electric shock

There is a risk of fatal injury if work on the electric system is carried out by unqualified personnel.

– All work at the electrical plant must only be carried out by electrical specialist staff. Electricians have received special training in electrical systems, know the risks posed by electricity and can avoid possible hazards by acting correctly on their own.

NOTE

Environmental harm due to incorrect disposal!

– Cleaning agents and auxiliary means used to clean the measuring system must be disposed of in accordance with local regulations and in accordance with the manufacturer's safety data sheets.

– Dispose of the measuring system in an environment-friendly manner, separating the various materials.

– Dispose of lubricants and lube oils in conformity with valid regulations or, if necessary, contact CP Tech GmbH.

13 Appendix

13.1 EC Declaration of Conformity / Declaration of incorporation

(Translation of the original)

We, the company

CP Tech GmbH
Dornierstraße 7
D-33142 Büren

hereby declare that the wheel alignment measuring system
SetupWizzard by CP autosport, version: 2.0,
in the system versions Easy, Basic and Pro

complies with the basic safety requirements of the Low Voltage Directive 2014/35/EU, as well as the EMC Directive 2014/30/EU.

Additional directives and standards used:

- EN ISO 12100 Safety of machinery – General principles for design
- EN 60825-1:2014 Safety of laser products
- EN 62368-1:2016, EN 5522, EN 6100-6-2

Person authorized to compile the technical documentation: CP Tech GmbH

Büren, 31.10.19

Stamp, signature of authorized representative (managing director)

13.2 Attached documents

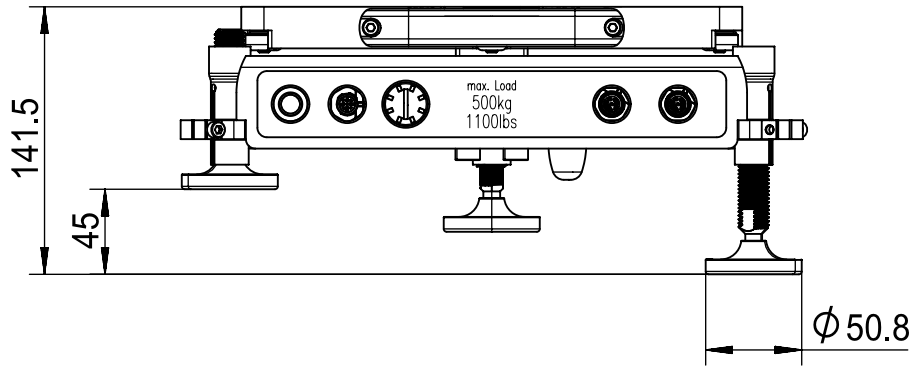
The following documents are provided with this operating manual:

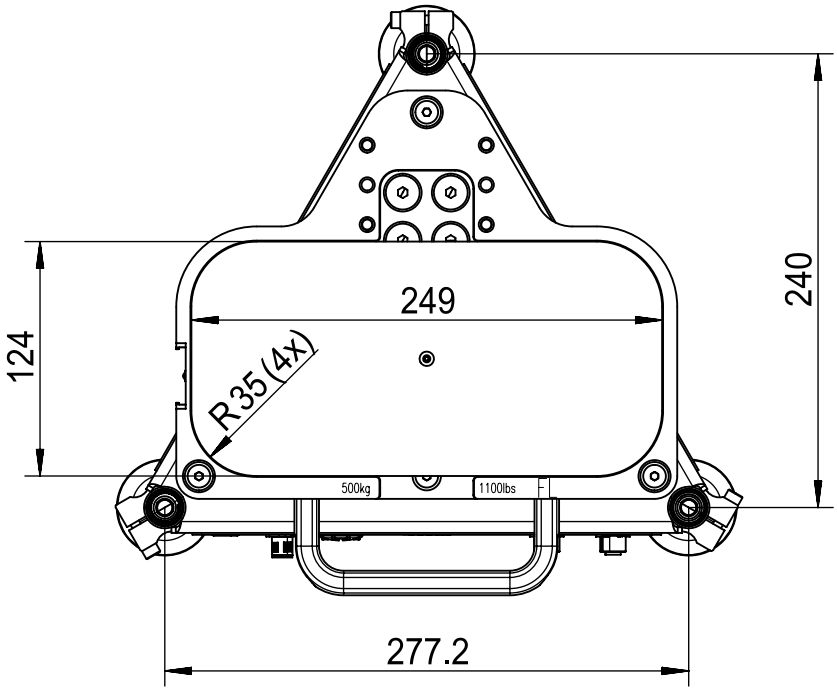
– Drawings:

  - Assy Platform

  - Assy Height Extension

  - Assy Setup Wheel





REV	MODIFICATIONS	GRID	DATE	NAME
A	Drawing created			

DRAWING NO.	REVISION	MATERIAL	ALT. MATERIAL	WEIGHT (g)
TITLE		SURFACE TREATMENT \		LAYER THICKNESS
		SURFACE PROTECTION		DESIGNED BY: CP
Assy Platform		HEAT TREATMENT		DATE: 2019-10-18
		WORKPIECE EDGES		APPROVED BY
PRO-ALPHA NO.		FOR MISSING DIMENSIONS AND SPECIFICATIONS, SEE THE 3D-CAD-DATA SET. IN CASE OF CONFLICT USE THE DRAWING. GENERAL TOLERANCES SHALL BE APPLIED TO DIMENSIONS DETERMINED FROM THE 3D-CAD DATA		
REFERENCE				

UNLESS OTHERWISE SPECIFIED:
ALL DIMENSIONS METRIC (mm)
ALL DIMENSIONS APPLY TO FINISHED PART AFTER SURFACE TREATMENT

TOLERANCE PRINCIPLE	THREAD TOLERANCE	SCALE
		1:4
GENERAL TOLERANCES	GEOMETRIC TOLERANCES	SIZE
		A4
		SHEET
		1/1

a Nedschroef company

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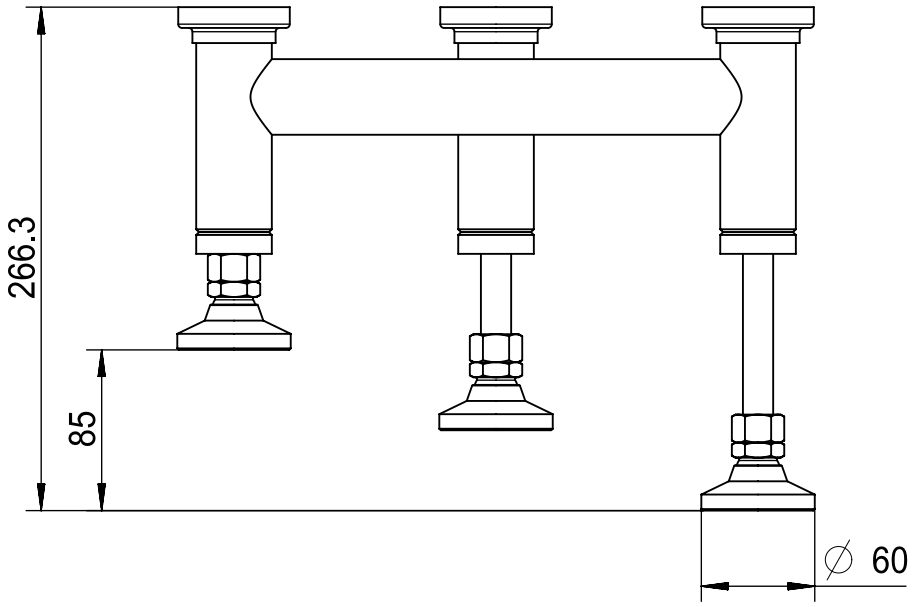

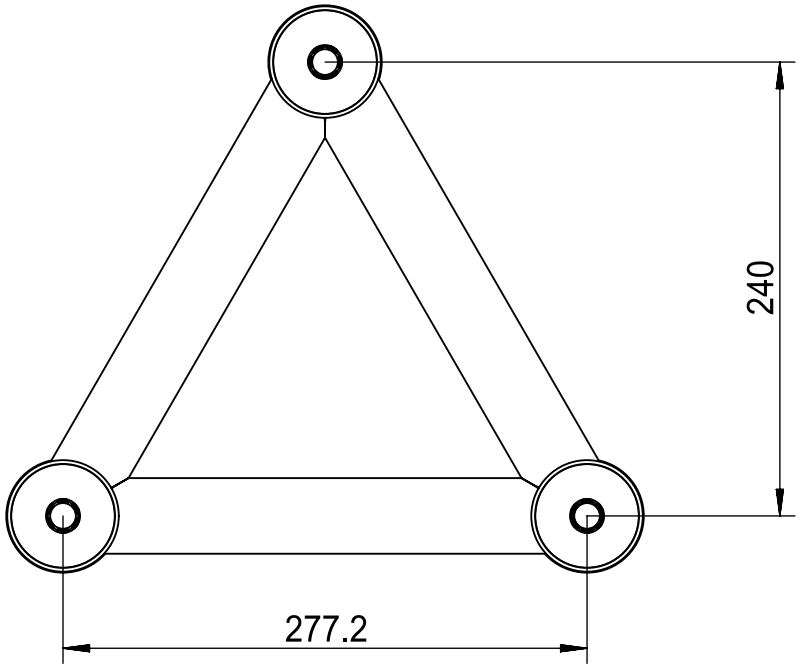

REV	MODIFICATIONS	GRID	DATE	NAME
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DRAWING NO.	REVISION	MATERIAL	ALT. MATERIAL	WEIGHT (g)	UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS METRIC (mm) ALL DIMENSIONS APPLY TO FINISHED PART AFTER SURFACE TREATMENT	
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		SURFACE PROTECTION		DESIGNED BY CP	TOLERANCE PRINCIPLE / THREAD TOLERANCE	SIZE A4
Assy Height Extension		HEAT TREATMENT		DATE 2019-10-18	GENERAL TOLERANCES / GEOMETRIC TOLERANCES	SHEET 1/1
		WORKPIECE EDGES		APPROVED BY		
PRO-ALPHA NO.		FOR MISSING DIMENSIONS AND SPECIFICATIONS, SEE THE 3D-CAD-DATA SET. IN CASE OF CONFLICT USE THE DRAWING. GENERAL TOLERANCES SHALL BE APPLIED TO DIMENSIONS DETERMINED FROM THE 3D-CAD DATA				
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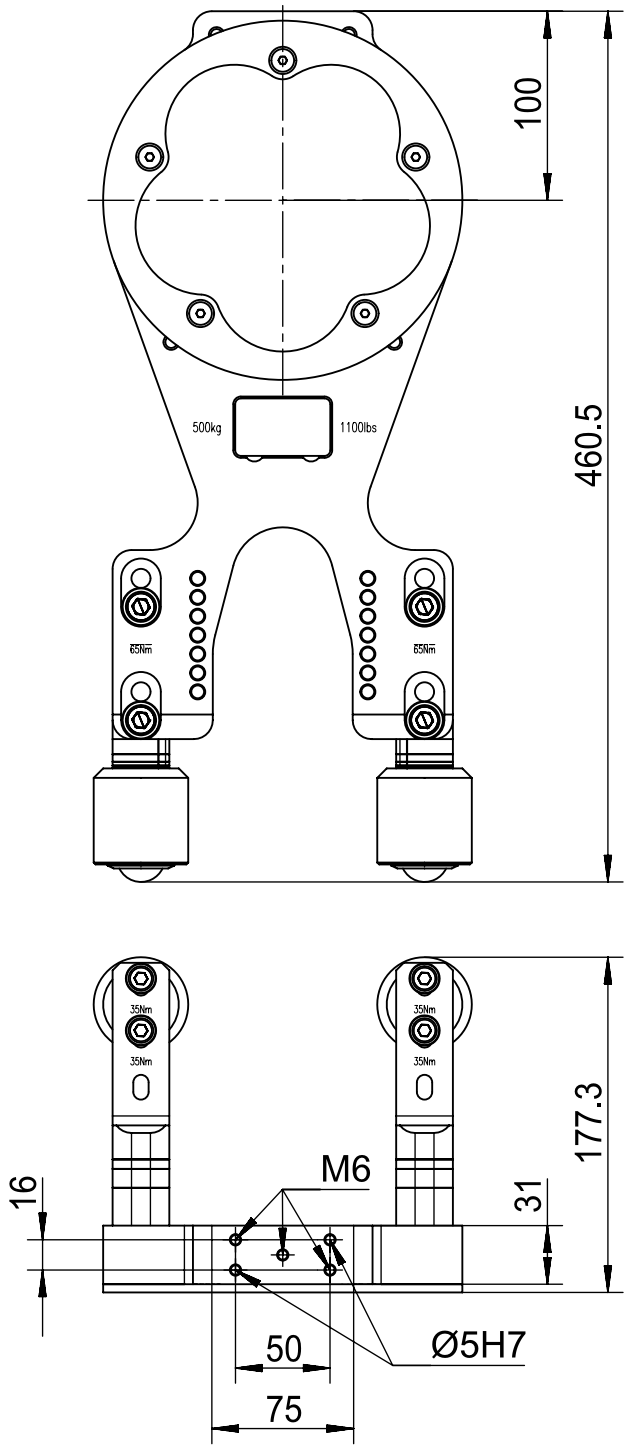

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TITLE		SURFACE TREATMENT \		LAYER THICKNESS	SCALE 1:4
		SURFACE PROTECTION	DESIGNED BY CP	TOLERANCE PRINCIPLE / THREAD TOLERANCE	SIZE A4
Assy Setup Wheel		HEAT TREATMENT	DATE 2019-10-18	GENERAL TOLERANCES / GEOMETRIC TOLERANCES	SHEET 1/1
		WORKPIECE EDGES	APPROVED BY		
PRO-ALPHA NO.		FOR MISSING DIMENSIONS AND SPECIFICATIONS, SEE THE 3D-CAD-DATA SET. IN CASE OF CONFLICT USE THE DRAWING. GENERAL TOLERANCES SHALL BE APPLIED TO DIMENSIONS DETERMINED FROM THE 3D-CAD DATA			
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