OPERATING MANUAL

Fahrwerk-Vermessungssystem SetupWizzard

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Keep for future use!

Wheel alignment system SetupWizzard 2.2

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Version E

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Contents

1 Introduction

Dear customer,

Thank you for choosing the SetupWizzard.

This operating manual provides you with all the information you need for the smooth operation of the Fahrwerk-Vermessungssystem SetupWizzard.

The operating manual must be read, understood and applied by all people who are responsible for operating, cleaning and troubleshooting the measuring system. This applies in particular to the safety instructions listed.

After studying the operating manual, you can

- operate the measuring system in a safe manner,
- clean the measuring system in accordance with regulations,
- take the appropriate action if a fault occurs.

In addition to the operating manual, generally applicable, statutory and other binding regulations on accident prevention and environmental protection in the country of use must be observed.

The operating manual must always be kept with the measuring system.

1.1 Types of safety indications

In this operating manual text statements that require special attention, as a direct warning of danger, are marked as follows:

1.1.1 Section-related warnings

Section-related warnings apply not only to a specific action, but to all actions within a section.

Structure

SIGNAL WORD

Symbol to explain the hazard in more detail

Type and source of danger

Possible consequence(s) of non-compliance

– Measure(s) to avoid the hazard

Hazard levels

DANGER

Hazard with a high degree of risk which if not avoided, will result in death or serious injury.

WARNING

Hazard with a medium degree of risk which if not avoided, may result in death or serious injury.

CAUTION

Hazard with a low level of risk which if not avoided, may result in minor or moderate bodily injury.

NOTES

Hazard with a low level of risk which if not avoided, can result in material damage.

1.1.2 Embedded warnings

Embedded warnings apply to certain actions and are directly integrated into the action.

Structure

⚠ **SIGNAL WORD** Type and source of danger

Possible consequences of non-compliance

– Measures to avoid the danger

Hazard levels

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

– ***NOTE***

See chapter 1.1.1 for explanations of the hazard levels.

1.1.3 Other means of presentation

The info symbol provides useful information.

– Texts that follows this indicator are bullet point lists

• Texts that follow this indicator describes activities that must be carried out in a specified order

" " Texts in quotation marks are references to other chapters or sections.

1.1.4 Symbols used in the instructions

In warnings, special hazards are additionally marked as follows:

Danger to life from electrical voltage

This symbol warns of the danger to life from electrical voltage.

With contact with electrically live conducting parts is immediate danger to life.

Warning of hot surface

This symbol warns of the risk of burns from 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 (levelling lasers, track lasers, positioning lasers)

Warning of obstacles on the ground

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

1.2 Warranty and liability

The responsibilities and obligations agreed in the delivery contract, the General Terms and Conditions and the delivery conditions of the measuring system and the statutory regulations valid at the time the contract is concluded shall apply.

All information and instructions in this operating manual have been compiled taking the applicable standards and regulations into account, considering the current state of the technology involved and our many years of knowledge and experience.

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

- improper or incorrect use of the measuring system,
- improper installation, commissioning, operation and cleaning of the measuring system,
- Operating the measuring system with defective safety devices or improperly installed or non-functional safety and protective devices,
- Failure to observe the operating manual and the information in the operating manual regarding installation, commissioning, operation and cleaning of the measuring system,
- Use of unqualified or untrained personnel,
- structural changes to the measuring system (modifications or other changes to the measuring system may not be made without the prior written consent of CP Tech GmbHIn the event of non-compliance, the measuring system will lose its EC conformity),
- improperly carried out repairs,
- Use of unauthorized spare parts or use of spare parts that do not meet the technically specified requirements,
- Catastrophes, foreign bodies and force majeure.

We reserve the right to make technical changes in the context of improving the usage properties and further development.

1.3 Copyright protection

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

The operating manual may not be made available to third parties, reproduced in any form or by any means - including excerpts - nor may their contents be used and/or disclosed without the written permission of CP Tech GmbH, except for internal purposes.

Infringements shall result in compensation for damages. Further claims remain reserved.

1.4 Warranty conditions

The warranty conditions are contained in the General Terms and Conditions of CP Tech GmbH

1.5 Care instructions

- Handle the measuring system with care and do not drop measuring devices and components of the measuring system.
- Keep all components of the measuring system dry and clean.
- Please remove the batteries if the device will not be used for a longer period of time.
- Avoid contact with water and dust.
- Only have the measuring system repaired by qualified specialist personnel and with original parts in order to maintain the safety and measuring accuracy of the system.

2 Security

Failure to observe the following safety instructions can have serious consequences:

- Danger to people due to electrical, mechanical or chemical influences,
- Failure of important functions,
- Environmental damage caused by leaking hazardous substances.

Read the safety and hazard information in this section carefully before operating the measuring system.

In addition to the information in this operating manual, please also observe the generally applicable safety and accident prevention regulations.

Comply with existing internal factory regulations.

In addition to the instructions in this operating manual, the user must observe the existing national work, operating and safety regulations.

2.1 Intended use

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

The measuring system is intended exclusively for measuring vehicle suspension alignment. Any other use is considered improper and non-intended and is hereby expressly prohibited. In addition, the measuring system is only approved for vehicles with an authorized total weight of up to 3000 kg or 750 kg/wheel.

Intended use also includes

- observing all instructions in the operating manual,
- compliance with the service intervals,
- compliance with the operating conditions,

All sensors of the measuring system (camber sensor, digital height measuring module, measuring platform and digital toe measuring module) are measuring devices, therefore careful and proper handling is essential.

If measuring devices are dropped, it cannot be guaranteed that they can be used as intended. It is expressly pointed out that measuring devices must always be professionally checked by the manufacturer after being dropped in order to ensure correct functioning and measuring accuracy.

Avoid the vehicle measuring system coming into contact with water and dust.

The technical specifications given in the technical data must be adhered to without exception.

Only use the measuring system as intended, otherwise safe operation cannot be guaranteed.

The operator of the measuring system, not the manufacturer, is responsible for all personal injury and property damage resulting from improper use!

2.1.1 Structural changes to the measuring system

Design and manufacturer approval are based on the German Product Safety Act (ProdSG). No modifications, additions or conversions may be made to the measuring system without the prior written consent of CP Tech GmbH.

In the event of non-compliance, the measuring system loses its EC conformity. The manufacturer of the measuring system excluded from providing warranty. This also applies to welding performed on components.

Replace components that are not in perfect condition immediately.

Only use original spare parts/wear parts/accessories. These parts are specially designed for the measuring system. There is no guarantee that externally sourced parts are designed and manufactured to withstand the stresses and ensure safety.

Parts and special equipment not supplied by CP Tech GmbHare not approved for use on the measuring system.

2.1.2 Foreseeable misuse

Any use of the measuring system that goes beyond the intended use and/or any other use may result in serious injury.

- Only use the measuring system as intended.

2.2 Requirements for personnel

The measuring system may only be operated by people who are qualified and/or instructed to do so. These people must be familiar with the operating manual and act accordingly. The respective authorizations of the personnel must be clearly defined.

The following qualifications are specified in the operating manual for various areas of activity:

Qualified, trained personnel (e.g. vehicle mechatronics technicians

Qualified personnel are able to carry out the work assigned to them and to independently recognize and avoid potential hazards due to their professional training, knowledge and experience as well as knowledge of the relevant regulations.

Electrician

Due to their specialist training, knowledge and experience as well as knowledge of the relevant standards and regulations, a qualified electrician is able to carry out work on electrical equipment and independently recognize and avoid potential hazards.

The qualified electrician is trained for the specific location in which they are working and knows the relevant standards and regulations.

2.2.1 Responsibilities

Improper handling can lead to considerable personal injury and damage to property.

Therefore, all work should be carried out by qualified personnel.

- Only people who can be expected to carry out their work reliably are permitted as personnel. No people whose ability to react is impaired by drugs, alcohol, medication or similar are permitted to work on the measuring system.
- All people working on the measuring system must read the operating manual and sign to confirm that they have understood it.
- Personnel to be trained may initially only work on the measuring system under the supervision of qualified personnel. Completed and successful training must be confirmed in writing.

The operator is responsible for instructing the personnel.

2.2.2 Operating personnel responsibilities

Before starting work, all people that are commissioned to work on the measuring system undertake to

- observe the basic regulations on occupational safety and accident prevention,
- have read the safety instructions and warnings in this operating manual and to confirm that they have understood them by signing them.

2.2.3 Unauthorized people

Unauthorized people who do not meet the operating personnel qualification requirements are not aware of the dangers in the work area.

- Keep unauthorized people from the work area.
- If in doubt, speak to people and direct them away from the work area.
- Interrupt or stop work as long as unauthorized people are in the work area.

2.2.4 Instruction

The operator must instruct the operating personnel regularly, but at least once a year. Keep a record of the training for better tracking.

Date	Name	Type of instruction	Instruction is provided by	Signature

2.3 General safety instructions

- The measuring system may only be put into operation after reading this operating manual.
- Only use the measuring system as intended (see "2.1 Intended use").
- Do not work on the measuring system when other people are in the danger zone.
- When operating the measuring system, refrain from any work that could impair the safety of people or the measuring system.
- Never operate the measuring system without the associated protective and safety devices. Never disable built-in safety devices.
- Always keep the working area of the measuring system clean and tidy to avoid hazards caused by dirt and parts lying around.
- Do not exceed the technical performance data.
- Keep all safety and danger indicators/decals on the measuring system in a legible condition and update them as required.
- Operation and work on the measuring system may only be carried out by qualified or instructed personnel (see " 2.2Requirements for personnel ").
- In the event of malfunctions, put the measuring system out of operation immediately. Have faults rectified by appropriately trained specialists or by CP Tech GmbH
- Always keep the operating manual with the measuring system. It must be ensured that all people carrying out work on the measuring system can view the operating manual at all times.

2.4 Safety measures for environmental protection

Comply with the regulations on waste avoidance and proper waste recycling and disposal during all work carried out.

Particular care must be taken during work and decommissioning to ensure that substances hazardous to groundwater such as grease, oil, coolants, cleaning fluids containing solvents or similar do not contaminate the ground or the sewage system. These substances must be collected in suitable containers, stored, transported and disposed of in accordance with local regulations.

2.5 Special hazard warnings

2.5.1 Symbols used on the measuring system

Danger to life from electrical voltage
This symbol warns of the danger to life from electric voltage.
With contact with live conductive parts there is an immediate danger to life.

Warning of hot surface
This symbol warns of the risk of burns from 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 (levelling lasers, tracking lasers, positioning lasers).

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

Keep all safety and hazard notices/decals on the measuring system in a legible condition. Renew the notices if necessary.

2.5.2 Dangers due to electrical energy

DANGER

Electrical voltage

There is a risk of electric shock when touching live parts.

- Always keep electrical components closed.
- Only have work on the electrical equipment carried out by a qualified electrician who is specially trained to work on electrical equipment and can recognize and avoid hazards.
- Observe the five safety rules:
  1. Switch off
  2. Secure against being switched on again
  3. Determine absence of voltage
  4. Earthing and short-circuiting
  5. Cover or block off live parts

DANGER

Electrical voltage

In the event of electric shock, there is a risk of secondary accidents due to fright (e.g. falling).

- Observe the five safety rules when working on electrical equipment.
- Only have work on the electrical equipment carried out by a qualified electrician.

- Before working on the electrical equipment, disconnect the measuring system from the power supply and secure it against being switched on again
- Work on the electrical equipment may only be carried out by a qualified electrician, e.g. a company electrician.
- Check the electrical equipment regularly for defects such as loose connections, chafed or slightly burned cables. Have defects rectified immediately.
- Have the electrical equipment and stationary electrical equipment checked by a qualified electrician at least every 4 years.
- Fixed electrical supply is permanently installed equipment or equipment that has no carrying device and whose mass is so great that it cannot be easily moved. This also includes electrical equipment that is temporarily installed and operated via movable connecting cables.
- Have portable electrical equipment, connecting cables with plugs as well as extension and appliance connection cables with their plugs and sockets checked by a qualified electrician at least every 6 months if they are used.

  Equipment is mobile if it can be moved under voltage according to its type and normal use. This includes, for example, electrical floor cleaning machines.
- Modifications to electrical equipment carried out after the test must comply with DIN EN 60204-1.
- Regularly check the function of all safety devices of the measuring system.
- Only use original fuses.
- Damaged housings and cables must be repaired or replaced immediately before being switched on.
- Ground the measuring system.

2.5.3 Dangers from hot surfaces

Contact with hot components can cause burns.

- Always wear protective clothing and gloves when working in the vicinity of hot components (wheel hubs, brake discs, brake callipers).
- Allow the components to cool down to ambient temperature before carrying out service or repair work.
- Parts of the wheel alignment system can also heat up when installed near hot components

2.5.4 Dangers of using the wrong spare parts

Incorrect or faulty spare parts can lead to damage, malfunctions or total failure and impair safety.

- Only use original spare parts.
- Obtain the spare parts from CP Tech GmbH

Our customer service is available for ordering spare parts:

CP Tech GmbH

Dornierstrasse 7

33142 Büren / Germany

Tel: +49 (0) 2955 / 4849-553

support@setupwizzard.com

www.setupwizzard.com

Furthermore, our employees are constantly interested in new information and experiences that result from the use of the measuring system and can be valuable for the improvement of our products.

2.6 Personal protective equipment

When operating the measuring system, personal protective equipment must be worn to minimize health hazards, regardless of the workplace risk assessment.

- Always wear the protective equipment required for the work in question while working.
- Do not wear rings, necklaces or other jewelry.
- Follow the instructions on personal protective equipment posted in the work area.

Protective work clothing

Protective work clothing is tight-fitting work clothing with low tear resistance, tight sleeves and no protruding parts. It is primarily used to protect against being caught by moving machine parts.

Safety shoes

Wear non-slip safety shoes to protect against heavy falling parts or slipping on slippery surfaces.

Protective gloves

Wear protective gloves to protect your hands from rubbing, abrasions, punctures or deeper injuries as well as from contact with hot surfaces or chemical substances.

Personal protective equipment must be provided by the operator and must comply with the applicable requirements.

In addition, the national regulations and specifications from the workplace risk assessment and, if applicable, the operator's internal instructions must be observed.

2.7 Safety and protective devices

- Before each use of the measuring system, check that all safety and protective devices are properly fitted and functional.
- If partial components are supplied, the protective devices must be fitted by the operator in accordance with the regulations.

2.8 Notes for emergencies

Preventive measures

- Always be prepared for accidents or fire.
- Keep first aid equipment (first-aid kit, blankets, etc.) and fire extinguishing agents to hand.
- Familiarize staff with accident reporting, first-aid, fire extinguishing and rescue equipment.
- Keep access routes clear for emergency vehicles.

Measures in the event of accidents

- Rescue people from the danger zone.
- In the event of cardiac and/or respiratory arrest, initiate resuscitation immediately.
- In the event of personal injury, notify the first aid officer and an emergency doctor or the rescue service.
- Clear the access routes for rescue vehicles. If necessary, assign someone to instruct the emergency services.
- Extinguish burning oil/grease with a CO2 extinguisher or powder extinguisher.
- Extinguish a fire in the electrical control unit with a CO2 extinguisher.

2.9 Responsibilities of the operator

The measuring system is used in the commercial and private sectors. The operator of the measuring system is therefore subject to legal responsibilities regarding occupational safety.

In addition to the safety instructions in this operating manual, the safety, accident prevention and environmental protection regulations applicable to the area of use of the measuring system must be observed. The following applies in particular:

- The operator must ensure that the measuring system is only used as intended (chap. 2.1).
- The operator must always make the operating manual available at the place of use of the measuring system in a legible and complete condition.
- The operator must clearly regulate and define the responsibilities for installation, commissioning, operation and cleaning.
- The operator may only allow people to work on the measuring system who have reached the legally permissible minimum age of 15 years.
- The operator may only allow sufficiently qualified and instructed personnel to work on the measuring system.
- The operator must ensure that all employees who work with the measuring system have read and understood the operating manual.
- In addition, the operator must demonstrably train staff at regular intervals and inform them about the dangers.
- The operator must provide the personnel with personal protective equipment and ensure that it is used.
- The operator must ensure that no people are working on the measuring system whose ability to react is impaired by drugs, alcohol, medication or similar.

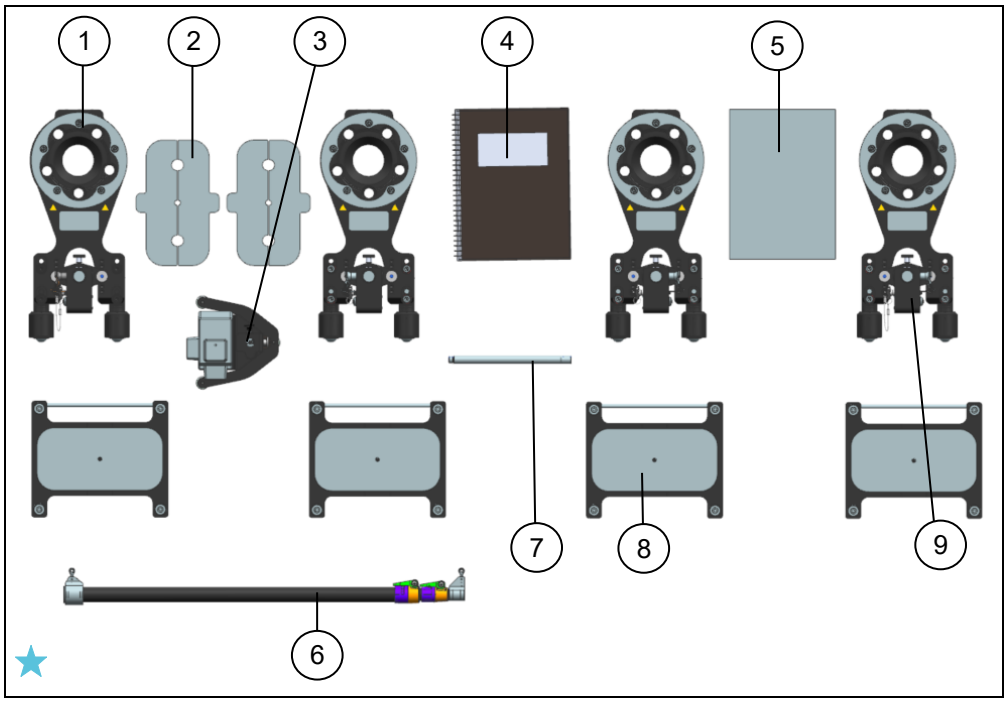
Furthermore, the operator is responsible for ensuring that the measuring system is always in perfect technical condition. The following therefore applies:

- The operator must ensure that the inspection intervals described in this operating manual are observed.
- The operator must have all safety equipment checked regularly for functionality and completeness.
- The operator must regularly check that all safety and warning notices attached to the measuring system are clearly legible and remain permanently attached to the measuring system.

3 Description of the measuring system

3.1 Scope of delivery

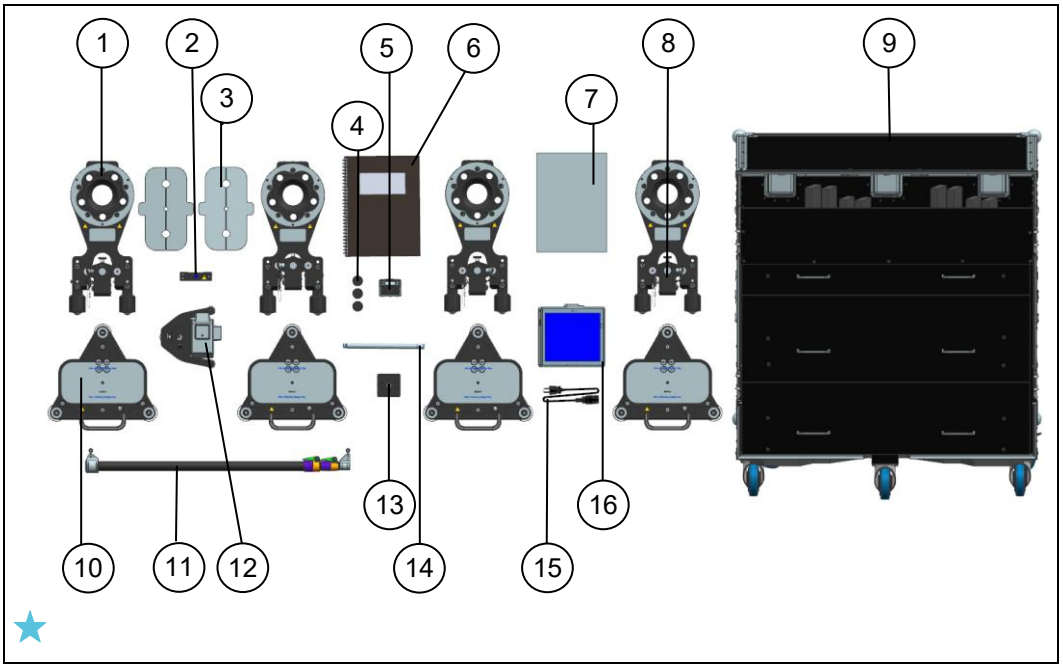
3.1.1 System variant Baseline



1	Setup wheel incl. wheel adapter (4x)	6	Track gauge
2	Insert plates (4X)	7	Leveling laser tripod extension
3	Leveling laser incl. tripod (1x)	8	Setup platform (4x)
4	Operating manual	9	Analog toe measuring module (4x)
5	Sticker sheet		

★ illustration similar

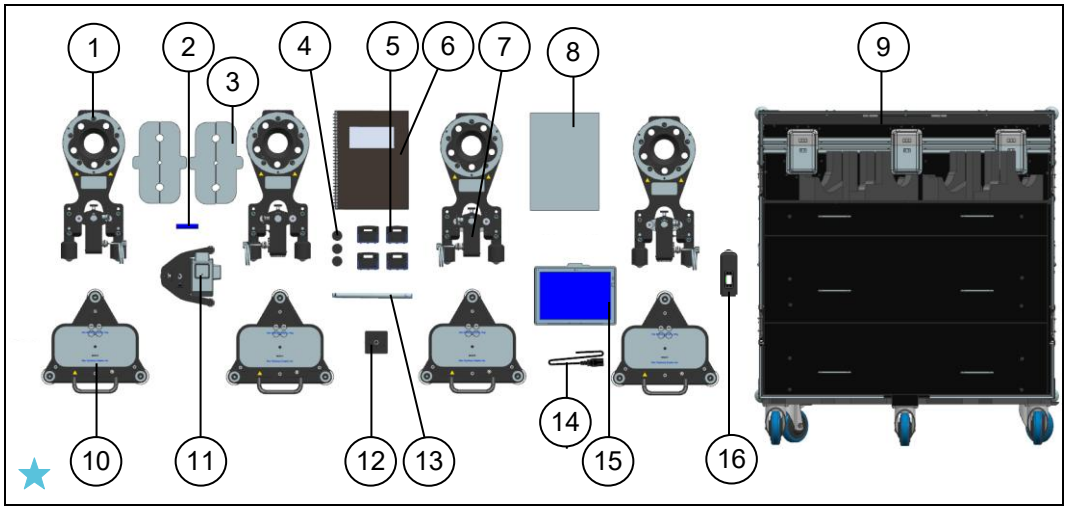
3.1.2 Proline system variant



1	Setup wheel incl. wheel adapter (4x)	9	Flightcase incl. charger (1x)
2	Positioning laser	10	Measuring platform (4x)
3	Insert plates (4x)	11	Track gauge (1x)
4	Leveling sleeves (big) (3x)	12	Leveling laser incl. tripod (1x)
5	Camber sensor (1x)	13	Calibration tool for camber sensor
6	Operating manual	14	Leveling laser tripod extension
7	Sticker sheet	15	Power cable
8	Analog toe measuring module (4x)	16	Tablet PC

★ illustration similar

3.1.3 Digital system variant

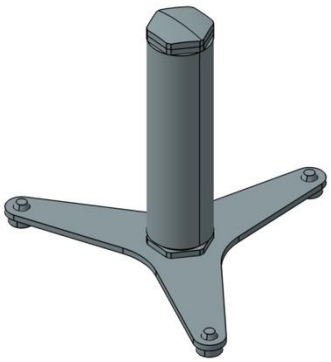
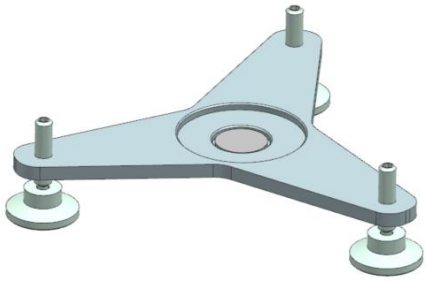


1	Setup wheel incl. wheel adapter (4x)	9	Flightcase incl. charger (1x)
2	Positioning laser	10	Measuring platform (4x)
3	Insert plates (4x)	11	Leveling laser incl. tripod (1x)
4	Leveling sleeves (big) (3x)	12	Calibration tool for camber sensor
5	Camber sensors (4x)	13	Leveling laser tripod extension
6	Operating manual	14	Power cable
7	Digital toe measuring module (4x)	15	Tablet PC
8	Sticker sheet	16	Digital height measurement (1x)

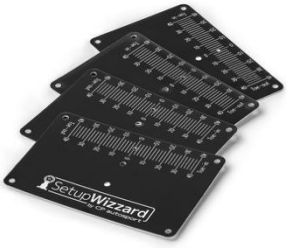
★ illustration similar

3.2 Accessories

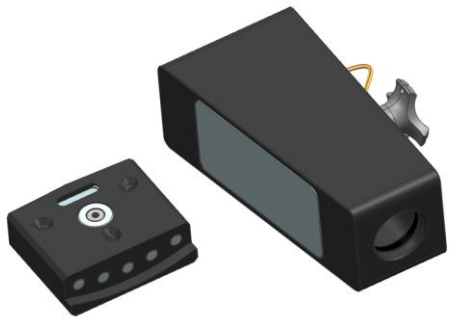
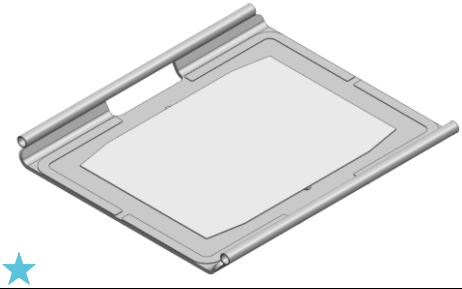
The following tables show the accessories that may be used with the SetupWizzard 2.2. A distinction is made between system and measurement accessories. If accessories other than those listed in these tables are to be used, their suitability must be clarified with CP Tech GmbH to ensure that they are safe to use.

SetupWizzard by CP autosport **System accessories**		Baseline	Proline	Digital
 ★	Analog height measurement	X	X	X
 ★	Digital height measurement	X	X	X
 ★	Foot digital height measurement	X	X	X

★ illustration similar

SetupWizzard by CP autosport **System accessories**		Baseline	Proline	Digital
 ★	Longer platform foot		X	X
 ★	Height extension		X	X
 ★	Positioning laser, self-adjusting	X	X	X
 ★	Vehicle-specific toe laser scales	X	X	

★ illustration similar

SetupWizzard by CP autosport System accessories		Baseline	Proline	Digital
 ★	Caster measurement kit		X	X
	Camber Measurement upgrade kit	x	x	x
 ★	Vehicle-specific wheel adapters	X	X	X
 ★	Tire plates		X	X

★ illustration similar

SetupWizzard by CP autosport **System accessories**		Baseline	Proline	Digital
 ★	Height reference (formula/prototype)	X	X	X
 ★	Height measurement aluminum (formula/prototype)	X	X	X
 ★	Height measurement fixed carbon (formula/prototype)	X	X	X
 ★	Height measurement floating carbon (formula/prototype)	X	X	X
 ★	Zimmer (formula/prototype)	X	X	X

★ illustration similar

SetupWizzard by CP autosport System accessories		Baseline	Proline	Digital
	Digital dial gauge	X	X	X
 ★	Magnetic toe string holder Setup Wheel	X	X	X

★ illustration similar

Measurement accessories	
	Weight bag black 5kg, 10kg, 15kg, 20kg
	Weight bag blue 5kg, 10kg, 15kg, 20kg
	Air jack extension block rectangular, heights 25mm, 30mm, 40mm, 50mm and 60mm
 ★	Air jack extension block, heights 25mm, 30mm, 40mm, 50mm and 60mm

★ illustration similar

	Ground sockets plastic floor measuring platform / leveling laser / height measurement
	Overvoltage protection 230 V

3.3 Technical data

3.3.1 Ambient conditions

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

NOTES

Charging, operation and storage outside the specified ambient conditions may damage the system.

3.3.2 Measuring platform

Dimensions	291 x 328 x 136mm
Weight	10,8kg
Battery life	min. 12h
Power supply	7.2V/3350mAh
Measuring range	0kg - 750kg per wheel
Measuring sensor accuracy	± 0.2 kg
Leveling range	35mm

3.3.3 Toe measuring module (analog)

Dimensions	133 x 75 x 90mm
Weight	0,99kg
Battery life	~50h
Power supply	2x 1.5V AA (Mignon) battery
Laser class	1
Wavelength	650nm
Measuring range	±8,5mm Toe
Measuring sensor accuracy	-
Measuring system accuracy	±1mm Toe

3.3.4 Toe measuring module (digital)

Dimensions	135 x 78 x 133mm
Weight	1,3kg
Power supply	via measuring platform
Laser class	1
Wavelength	650nm
Measuring range	±8,5mm Toe

Measuring sensor accuracy	±0.02mm
Measuring system accuracy	± 0.5mm Toe

3.3.5 Camber sensor

Dimensions	47 x 31 x 54mm
Weight	0,25kg
Battery life (continuous use)	~24h
Power supply	3.7V/380mAh Li-Ion
Measuring range	±10°
Measuring sensor accuracy	±0.1°
Measuring system accuracy	±0.15°

3.3.6 Leveling laser

Dimensions w/o tripod extension / incl. tripod extension	185 x 185 x 130mm / 334mm
Weight	2,17kg
Battery life	~5h
Power supply	3.7V/5200mA Li-Ion
Laser class	2
Wavelength	505nm - 520nm
Measuring range	±4°
Accuracy	±3mm to 10m*
Work area	25m
Protection class	IP 54

* The accuracy of the self-adjusting laser level depends on the distance. The less the distance, the better is the precision.

E.g.: If height measurement of your car is more important on the front axle, place the leveling laser more to the front.

3.3.7 Flightcase

Dimensions	930 x 780 x 1070mm
Weight (equipped)	~213kg
Weight (empty)	~135kg
Charging electronics connection data	90V (AC) - 264V (AC), 47Hz - 63Hz
Fuse dimension	2x 4A (slow)

3.3.8 Analog height measurement

Dimensions (incl. base)	145x126x132
Weight	0,31kg
Measuring range	120mm
Measuring sensor accuracy	-
Measuring system accuracy	±1mm

3.3.9 Digital height measurement

Dimensions	50 x 50 x 132mm
Weight	0,35kg
Battery life	~24h
Power supply	3.6V / 1420mAh Li-Ion
Measuring range	100mm
Measuring sensor accuracy	±0.02mm
Measuring system accuracy	±0.3mm

3.3.10 Long platform foot

Dimensions	60 x 60 x 161mm
Weight	0,6kg

3.3.11 Height extension (500kg)

Dimensions	291 x 328 x 131mm
Weight	1,75kg
Setting range	130mm

3.3.12 Caster measurement

Mirror dimensions	133 x 67 x 50mm
Dimensions of camber sensor bracket	65 x 58 x 20mm
Weight	1,00kg
Measuring range	20°
Measuring system accuracy	±0,3°

3.4 Type plate

The type plate including product certifications with the following minimum information is attached to the flightcase (in several languages if necessary).

- SetupWizzard
- serial no.
- Year of manufacture

Optional:

- Voltage/frequency
- connection power
- weight
- Product certifications

The manufacturer is responsible for affixing it.

3.5 Function

The SetupWizzard wheel alignment system in the Baseline, Proline and Digital versions is intended exclusively for measuring vehicle suspensions.

They are mainly used in motorsport. Special setup wheels with vehicle-specific wheel adapters are mounted on the vehicle. The vehicle is then placed on four measuring platforms aligned by laser levelling and then secured against unintentional movement with insert plates. Various wheel alignment measurements can be performed using toe lasers, toe measurement modules, track gauge, camber sensors, measuring platforms, height measurement, caster measuring kit and, depending on the equipment variant, can be managed/recorded on the tablet PC.

4 Assembly by manufacturer

If a SetupWizzard measuring system configuration is also ordered, an adjustment is made at the CP Tech GmbH factory according to known tire and vehicle data. No liability is accepted for the correct setting.

If no vehicle data is available, delivery will be made in dismantled condition.

NOTES

The fine adjustment to tire types to achieve the specified precision must be carried out by the operator.

5 Installation by operator

WARNING

Risk of injury from lifting and installing the components!

– Only grip the components of the measuring system at the intended points, such as handles. Use personal protective equipment.

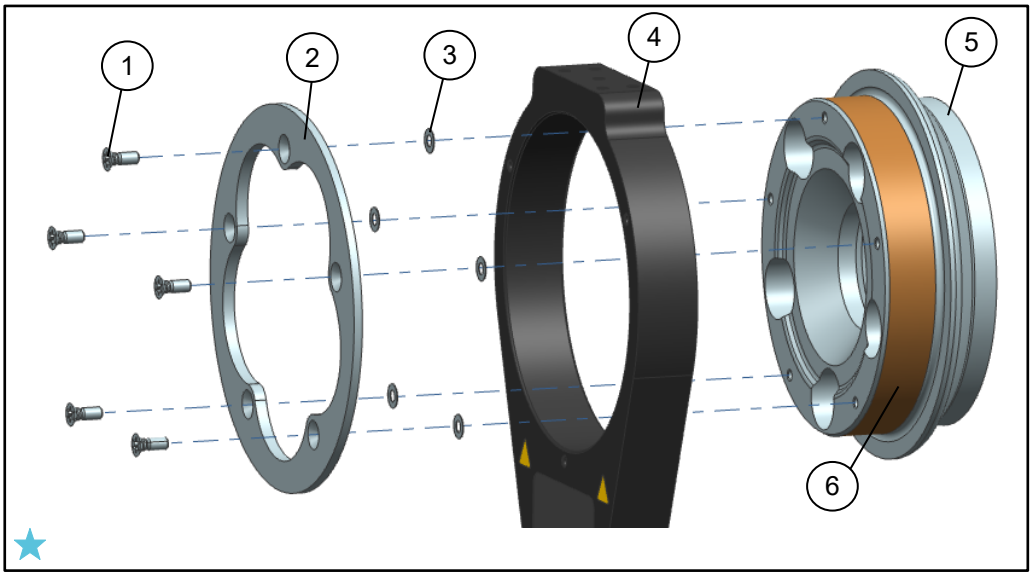
WARNING

Risk of tripping due to objects on the floor (tools, cables, compressed air hose)

– Always lay cables so that they are trip and barrier-free.
– Keep the workplace tidy.
– Mark unavoidable tripping hazards with a highly visible color.

5.1 Changing the wheel adapter

If different vehicles are to be measured, it may be necessary to swap the wheel adapters.



1	Countersunk head screw (5x)	4	Setup wheel
2	Clamping ring	5	Vehicle adapter
3	Shim washers	6	Fitting surface to be greased

NOTES

A part description can be found on the wheel adapters. This defines the adapter to a vehicle manufacturer. The "Universal" adapters are only approved for one vehicle manufacturer for the GT3 and GT4 vehicles of the current year. These adapters do not fit all vehicles from this manufacturer!

★ illustration similar

To change the wheel adapter, the setup wheel must first be removed from the vehicle. Then remove the clamping ring by removing the five countersunk screws on the head of the setup wheel. When removing the clamping ring, make sure that the shim washers for adjusting the adapter play are not lost. Make a note of how many shim washers are positioned where. The wheel adapter can now be removed by rotating it.

The desired wheel adapter can now be fitted. The first step is to apply grease to the fitting surface.

It is recommended to use Autol TOP 2000 grease.

The adapter is then inserted into the setup wheel using rotating movements. Make sure that no dirt or swarf obstructs the assembly. Place the same number of shim washers on the threaded holes as for the other adapter. Carefully place the clamping ring on the shim washers so that they do not slip. Now tighten the countersunk screws in the adapter to the specified tightening torque.

If the adapter can be turned with slight force, the adapter play is set correctly. If not, the 5 countersunk screws must be loosened again and the number of shim washers increased.

WARNING

When tightening the countersunk screws, ensure the correct tightening torque of 7 Nm and the correct clearance between the wheel adapter and the setup wheel.

Observe the following specifications when replacing the screws: ISO14581 M6x16 A2-70.

5.2 Adjusting the setup wheel universal feet

The Setup Wheel is adapted to the wheel-tire combination used in order to obtain the best possible measurement results.

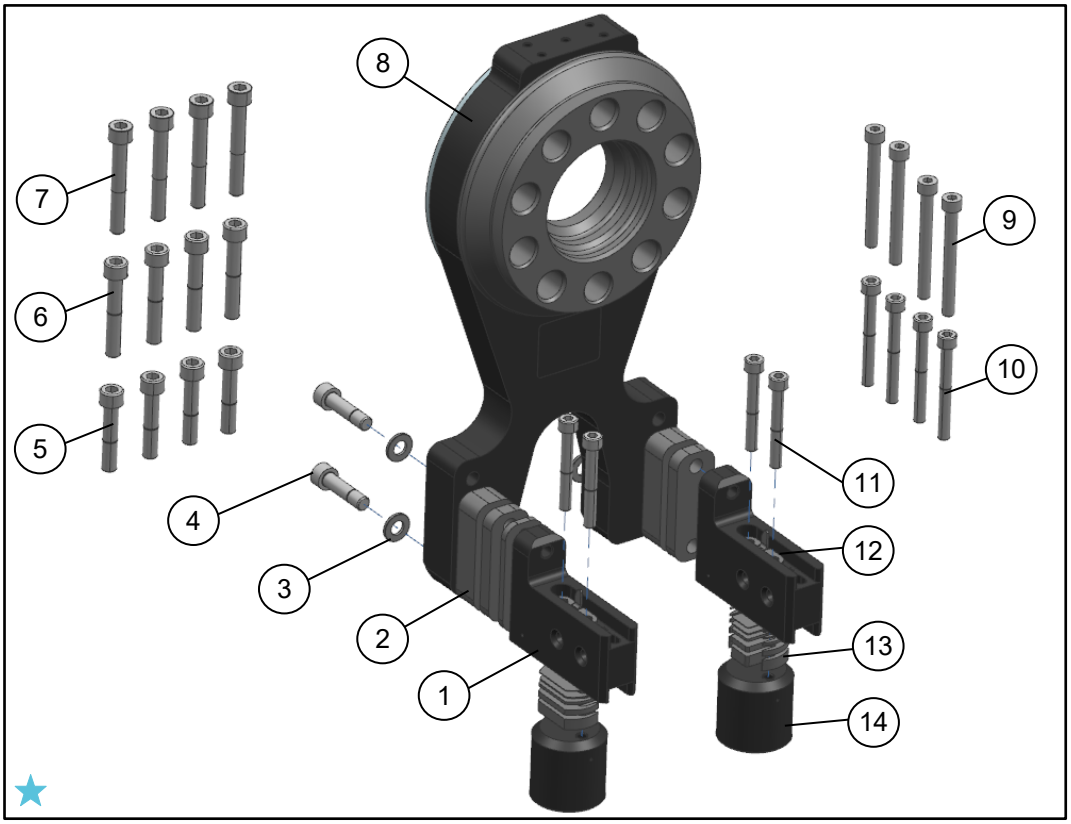
The settings consist of wheel radius and rim offset.

In this chapter you will find all the information about the adjustment of the Setup Wheels.

On the SetupWizzard website, in addition to this information, the adjustment data sheets of well-known vehicles can be found in the download area. These can also be used to adjust the setup wheels.

5.2.1 Overview and determination of offset & static wheel radius

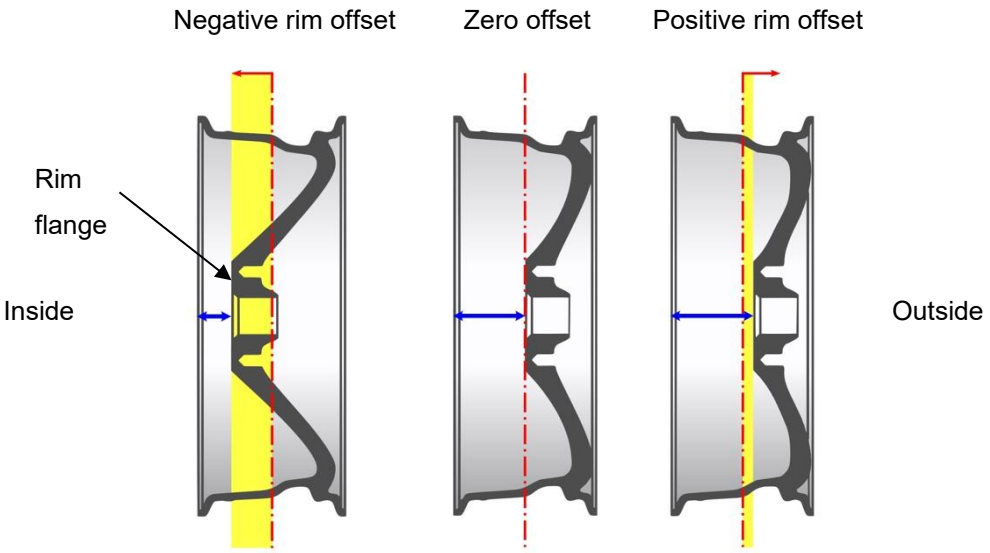
When the SetupWizzard system is ordered, the setup wheels supplied by CP Tech GmbH only have a presetting based on known vehicle data and typical tire data. In particular, the wheel rim offset (Offset) and the static wheel radius are required to adjust the universal feet of the setup wheel.



1	Universal foot (2x per setup wheel)	8	Setup Wheel incl. wheel adapter
2	Rim offset shims (8x 5mm, 8x 10mm, 8x 20mm)	9	M8x70 bolts for static wheel radius (4x per setup wheel)
3	M10 washers (4x per setup wheel)	10	M8x65 bolts for static wheel radius (4x per setup wheel)
4	M10x40 bolts for rim offset (4x per setup wheel)	11	M8x60 bolts for static wheel radius (4x per setup wheel)
5	M10x50 bolts for rim offset (4x per setup wheel)	12	Measuring washer (2x per setup wheel)
6	M10x60 bolts for rim offset (4x per setup wheel)	13	Wheel radius shims (8x 0.5mm, 8x 1mm, 8x 2mm, 8x 4mm, 8x 8mm)
7	M10x70 bolts for rim offset (4x per setup wheel)	14	Ball caster (2x per setup wheel)

illustration similar

The setup wheels are always to be set to the theoretical rim offset. With the setup wheel offset set to the same as the car wheels, the reaction of the measuring system to camber changes can be adapted to the behavior of the car wheels.

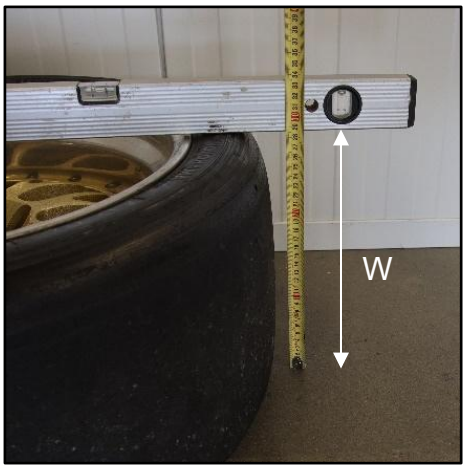


If known, the offset can be found from the rim itself (either cast into or printed onto the wheel rim) or can be taken from a wheel rim datasheet.

Otherwise, the rim offset can also be determined in the following way:

1) Measuring the rim width W

   Example: W = 400mm



2) To determine the center of the wheel rim, halve the rim width (=W/2)

   W/2 = 400mm/2 = 200mm

3) Measure the distance from the back edge to the wheel rim mounting flange (=F)

   F = 250mm

4) Calculating the rim offset = depth of mounting flange (F) - Center of rim value (W/2)

   Rim offset = F - W/2

   Rim offset = 250mm - 200mm = 50mm
   ➔ *Rim offset = 50mm*

This must be done for the front and rear axle, as the rim offsets can vary per axle!

CP Tech wheel adapters designed to accommodate a negative offset and are manufactured correspondingly longer.

The setup wheel is also always set to the dynamic radius of the vehicle wheels.

The dynamic wheel radius can be taken from vehicle data. If not known, there are two methods to determine the wheel radius.

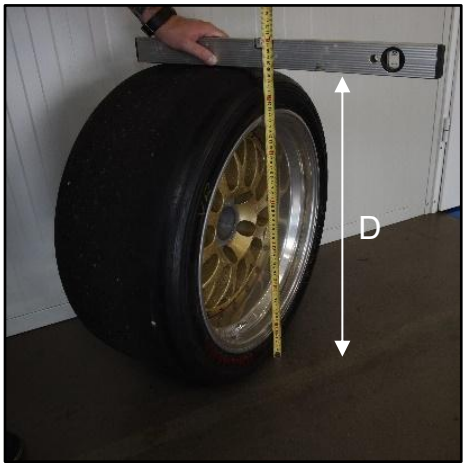
In the first method, the static unloaded tire radius is determined. This must be applied a factor of 0.97 to approximate the required dynamic wheel radius.

This setting is made when the installation of the SetupWizzard is ordered, but no wheel data of the vehicle is known. A typical wheel-tire combination is selected, and the static wheel radius is determined.

This way is shown below:

1) Measuring the diameter of the tire D

Example: D = 721.6mm



2) Halve wheel diameter (= D/2)

D/2 = 721.6mm/2 = 360.8mm

➔ Static wheel radius D/2 = 360.8mm

Dynamic wheel radius D/2 * 0.97

➔ 360.8mm * 0.97 ≈ 350mm

This must be done for the front and rear axle, as the radii can vary per axle!

The second method is based on a measurement on the vehicle. The following conditions must be met:

-Weight of the vehicle in normal operating state

-Tire pressures in normal operating state

1) Placing the vehicle in a place with approx. 2 vehicle lengths of free space in the direction of travel of the vehicle

2) Marking the central wheel contact point both on the tire and on the ground

3) Rolling the vehicle forward by one wheel rotation

4) Marking this position on the floor

5) Measure the distance between the two markings on the ground with a tape measure (wheel circumference) and note the value

To get the wheel radius from the wheel circumference, divide the noted value by 2 * 3.14 (Pi). This results in the wheel radius.

Example:

Measured circumference U = 2199mm

*Calculating the wheel radius: D/2 = U / (2 * 3.14)*

➔ *D/2 = 2199mm / (2 * 3.14) ≈ 350mm*

If different wheel sizes are used on the front and rear axles, the same procedure must be repeated on the other axle.

5.2.2 Setting the wheel radius

To further increase the precision of the measuring system, it makes sense to adjust the setup wheels precisely to the tires used.

The adjustment of the setup wheels can only be done completely when both settings (wheel radius & rim offset) have been determined for the vehicle, as they are dependent on each other! Please go through chapters 0 and 5.2.3!

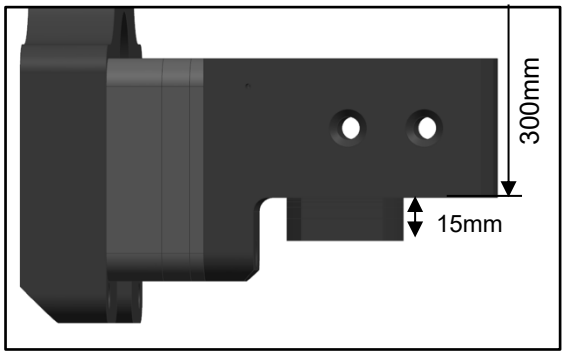
Once the wheel radius has been successfully determined (chap. 5.2.1), it is now set using various shims (1mm, 2mm, 4mm and 8mm) and different foot positions. The universal foot can be rotated to achieve a larger adjustment range. Each position (positions 1 to 4) gives a 15mm step in wheel radius. The 4 different foot positions are shown on *the next page*. The static wheel radius shims are installed between the universal foot and the ball caster.

The following table shows the wheel radii of a foot position, a shim thickness and the bolts to be used.

Wheel radius [mm]	Foot position	Shim Thickness [mm]	Bolts to be used
300 301 ... 307	1	0 1 ... 7	M8x60
308 ... 312		8 ... 12	M8x65
313 ... 315		13 ... 15	M8x70
316 317 ... 322	2	1 2 ... 7	M8x60
323 ... 327		8 ... 12	M8x65
328 ... 330		13 15	M8x70
331 332 ... 337	3	1 2 ... 7	M8x60
338 ... 342		8 ... 12	M8x65
343 ... 345		13 ... 15	M8x70
346 347 ... 352	4	1 2 ... 7	M8x60
353 ... 357		8 ... 12	M8x65
358 ... 360		13 ... 15	M8x70

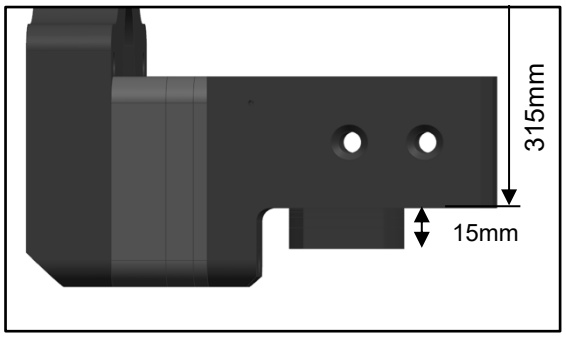
The following pictures show the possible foot positions 1 to 4.

The 1st foot position (upper mounting position, foot with flat side facing upwards) results in a wheel radius of 300mm without wheel radius shims. The radius can be increased in 1 mm steps from 300mm up to 315 mm using the static wheel radius shims.



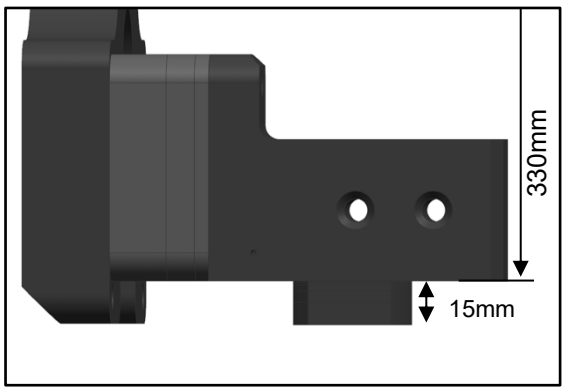
Foot position 1

The 2nd foot position (lower mounting position, foot with flat side facing upwards) results in a wheel radius of 315 mm (up to 330 mm using static wheel radius shims).



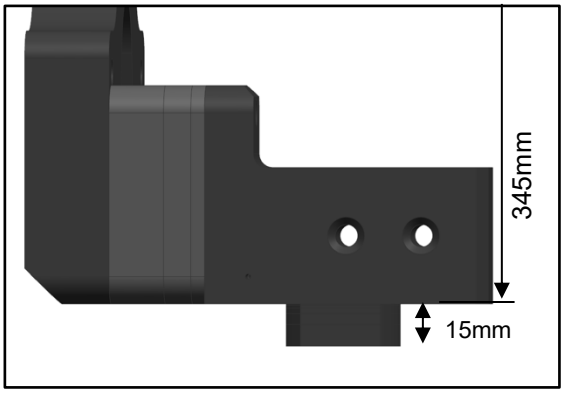
Foot position 2

The 3rd foot position (upper mounting position, flat side turned downwards) results in a wheel radius of 330 mm (up to 345 mm with static wheel radius shims).



Foot position 3

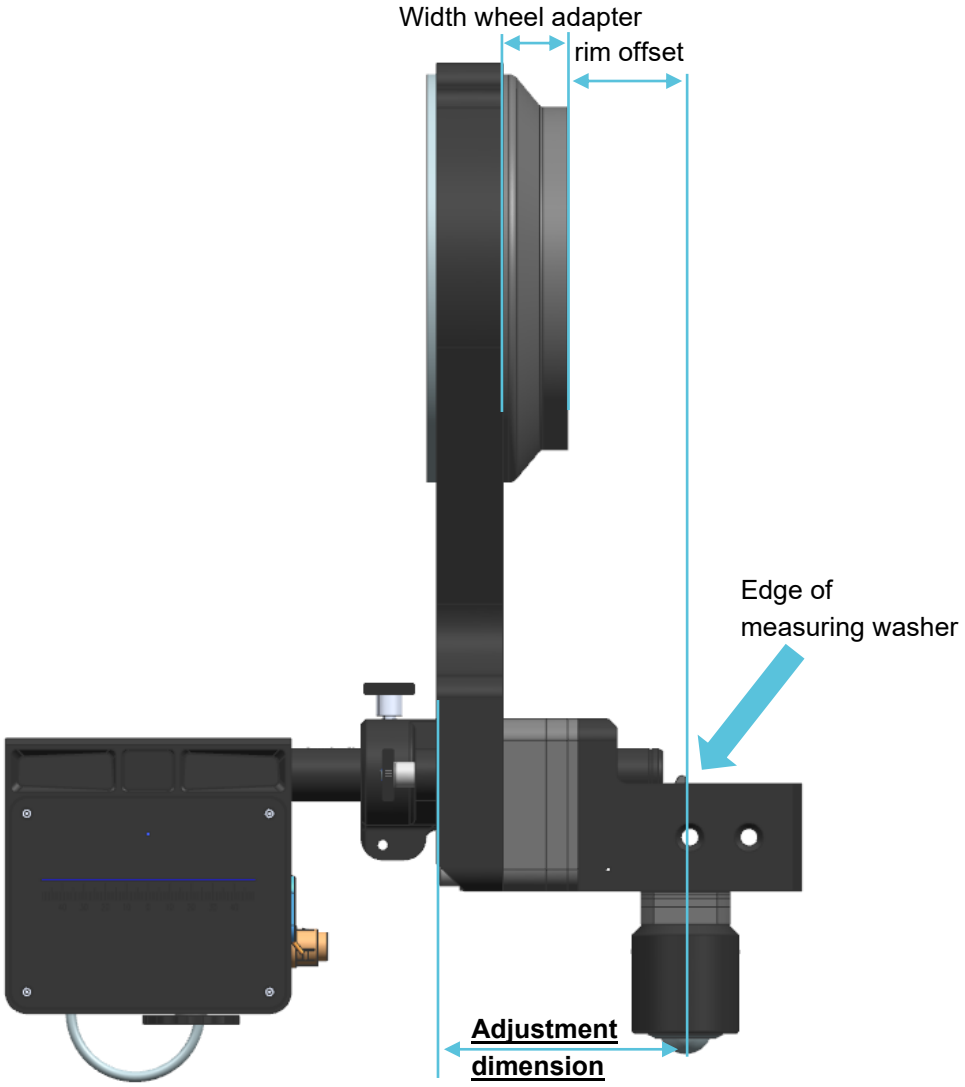
The 4th foot position (lower mounting position, flat side turned downwards) results in a wheel radius of 345 mm (up to 360 mm with static wheel radius shims).



Foot position 4

5.2.3 Setting the offset

Once the wheel offset has been successfully determined (chap. 5.2.1), it is now also set using **rim offset shims** (5mm, 10mm and 20mm) and two **slotted holes** with a freedom of movement of 5mm. The rim offset shims are installed between the setup wheel and the universal foot. There are two possible positions for attaching the foot, these are shown on *the following pages*. The offset determines the foot position.



Determine the width of your installed wheel adapter by measuring it using a caliper gauge. To do this, measure from the outer edge of the setup wheel to the outer edge of the wheel adapter.

The wheel adapters have a standard width of 40 mm.

Next, the following formula is used to calculate the **adjustment dimension:**

$$\boldsymbol{adjustment\ dimension} = rim\ offset + width\ wheel\ adapter + 31mm$$

Refer to the following table based on the determined **adjustment dimension.** There you will find the required foot position, the required shim thickness and the bolts to be used for the respective adjustment.

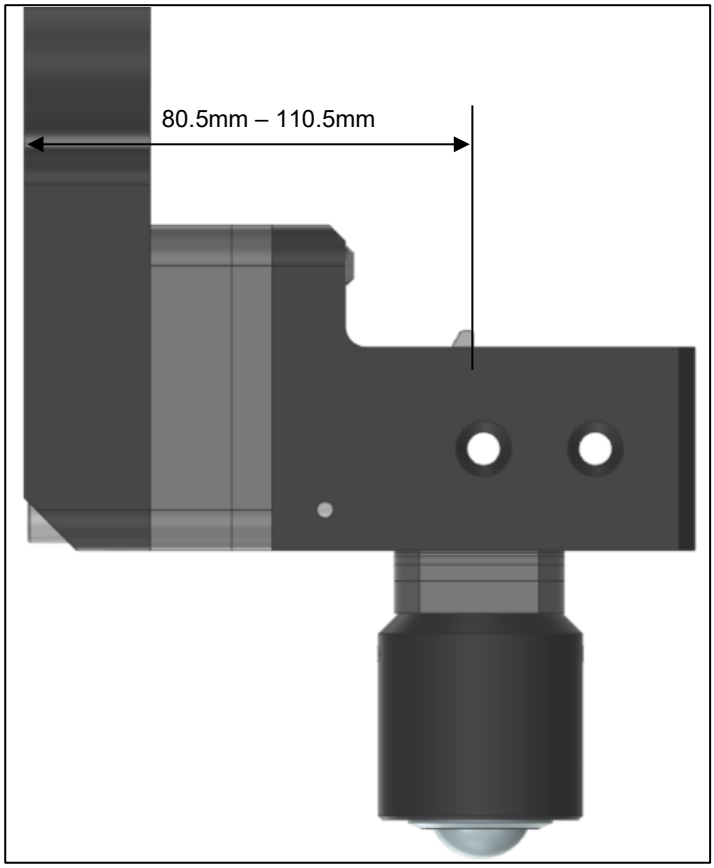
Adjustment dimension [mm] = width wheel adapter + rim offset			**Shim thickness [mm]**	
from	to max			screws to be used
80.5	85.5	**Foot position A**	**0**	M10x40
85.5	90.5		**5**	M10x40
90.5	95.5		**10**	M10x50
95.5	100.5		**15**	M10x50
100.5	105.5		**20**	M10x60
105.5	110.5		**25**	M10x60
108	113	**Foot position B**	**0**	M10x40
113	118		**5**	M10x40
118	123		**10**	M10x50
123	128		**15**	M10x50
128	133		**20**	M10x60
133	138		**25**	M10x60
138	143		**30**	M10x70
143	148		**35**	M10x70

A shim is installed between the two bolts for static wheel radius, which has an edge (orange edge, see picture) that can be easily measured from the outer edge of the setup wheel. This distance is shown in the table as the "**adjustment dimension**" and is also used as a dimension in the following illustrations.

As this dimension is easy to measure, it should be used for checking and fine adjusting (moving in the slotted hole).

Measured from the measuring edge on the shim to the outside of the setup wheel (**adjustment dimension**), position A covers the dimensions 80.5 to 110.5mm.

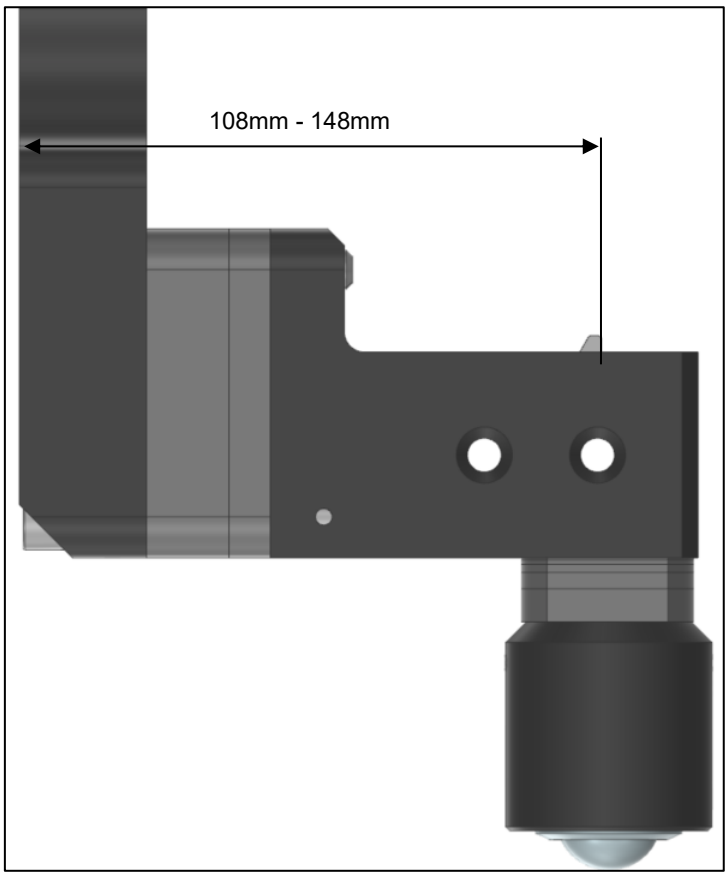
For a standard wheel adapter (width of 40mm) these are the rim offsets of 9,4mm to 39,4mm.



Ball caster position A

The second position of the ball caster covers the distance from 108 to148mm.

For a standard wheel adapter (width of 40mm) these are the rim offsets of 37mm to 77mm.



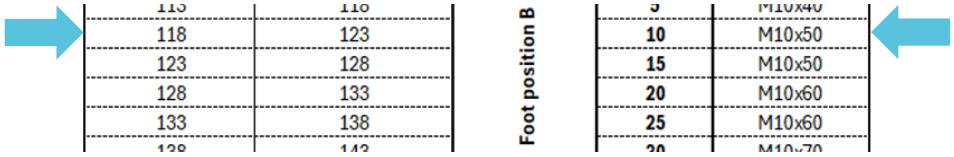
Ball caster position B

Example:

Rim offset = 50mm, i.e. distance from center of ball caster to mounting flange of wheel adapter must be 50mm

Determined width of wheel adapter = 40mm
***Adjustment dimension** = rim offset + width wheel adapter + 31mm*
***Adjustment dimension** = 50mm + 40mm + 31mm = 121mm*

→ *Table: **adjustment dimension** = 121mm, lies between 118mm and 123mm*



118	123	Foot position B	10	M10x50
123	128		15	M10x50
128	133		20	M10x60
133	138		25	M10x60

→ ***Foot position B, shim thickness 10mm, bolts M10x50***

Fine adjustment in the slotted hole by moving 3 mm

You can also use the following **table for raw adjusting the foot position**; it shows the foot position, shim thickness and bolts to be used dependent on the rim offset. This is calculated with a **wheel adapter width of 40mm**.

You then must check the fine adjustment in the **slotted holes** with the **adjustment dimension**.

rim offset (wheel adapter width =40mm)			Shim thickness [mm]	
from	to max			screws to be used
9,4	14,4	Foot position A	0	M10x40
14,4	19,4		5	M10x40
19,4	24,4		10	M10x50
24,4	29,4		15	M10x50
29,4	34,4		20	M10x60
34,4	39,4		25	M10x60
37,0	42,0	Foot position B	0	M10x40
42,0	47,0		5	M10x40
47,0	52,0		10	M10x50
52,0	57,0		15	M10x50
57,0	62,0		20	M10x60
62,0	67,0		25	M10x60
67,0	72,0		30	M10x70
72,0	77,0		35	M10x70

5.2.4 Check M8 and M10 bolt thread engagement

WARNING

If the bolts are too long, the feet will not be securely fastened. If the bolts are too short, the thread engagement depth is not sufficient for force transmission, and the threaded bolts may tear out.

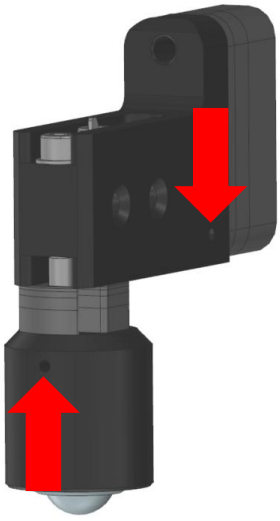
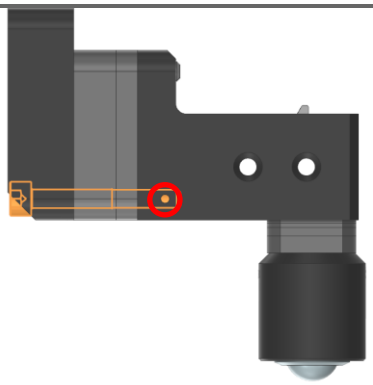
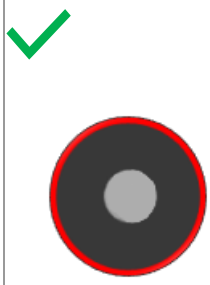
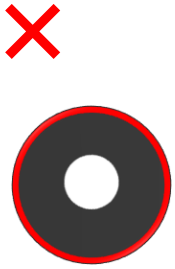
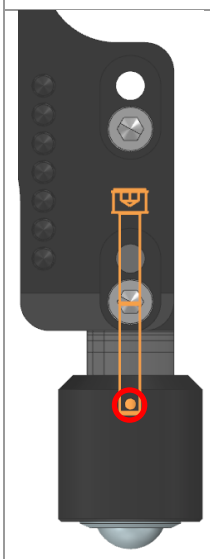
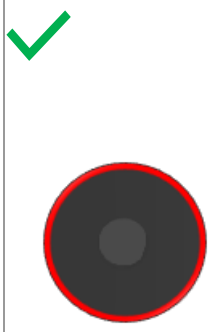
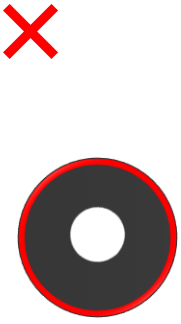
Therefore, observe the tightening torques and thread engagement depths depending on the shim package thickness:

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

The thread engagement depth is checked by means of inspection holes

To check the bolt thread engagement, please use the inspection holes in the base of the SetupWheel!

Look right inside the inspection holes. If no light can be seen on the other side of the inspection hole, the required thread engagement depth is guaranteed.

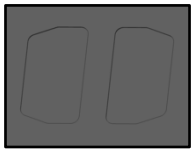
Position of inspection holes	Control holes	Detailed view of inspection holes	
			
			

5.3 Positioning the stickers

To assign a fixed position to the relevant SetupWizzard system component, each measuring system is supplied with a sticker sheet. The stickers on the sheet can be used to assign fixed vehicle corners (FL, FR, RL, RR) to the camber sensors, the platforms, the toe measurement modules and the digital height measurements. There is also the option of numbering the measuring equipment with additional stickers on the sheet.

Numbering is useful in order to be able to assign the devices in the software.

For easy positioning, small indentations are machined on the relevant components into which the stickers can be placed. The indentation always looks like this.



6 Software

6.1 Installation/software update

If a measuring system configuration of the SetupWizzard is ordered with CP Tech, the WizzardOS software is already pre-installed on the supplied tablet. You start the software by double-clicking on the shortcut on the desktop. The supplied devices are also already paired and connected to your software.
For starting the software go on to “First starting the software” (chap. 6.2).

NOTES

Some of the software functions described here require optional accessories, depending on the SetupWizzard variant.

6.1.1 Minimum requirement

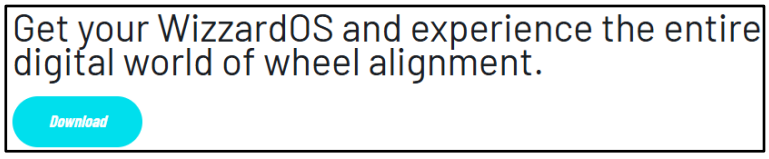
Before downloading the software, check the minimum device requirements of the WizzardOS software.
The following table provides an overview of the device requirements.

Operating system	Windows 11
Processor	1 GHz with at least 2 cores on a compatible 64-bit processor
Working memory	min. 8 GB RAM
Hard disk storage	min. 500 MB

6.1.2 Initial installation

If you would like to install the software on an end device, check the minimum requirements. If your device fullfills them all, you can download the WizzardOS software from the download area of the SetupWizzard website under the "**WizzardOS**" tab.

If you now scroll all the way down, you will find the download button for the latest version of the WizzardOS software.

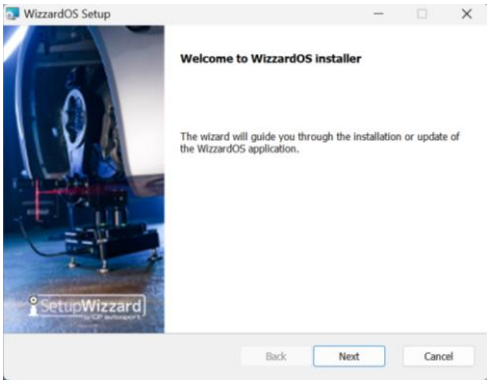


Click on "**Download**" to start downloading the program folder. Drag the folder from the download folder on your device to the location where you want to store the software permanently (e.g. Programs). Create a shortcut to the ".exe" file "WizzardOS" from the WizzardOS software folder on your desktop.

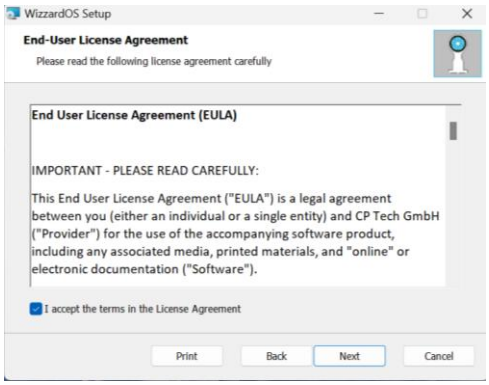
There are two ways to start the software. One way is through the installer, which is supplied standardly. This automatically installs the software.

When the installer is started, Windows asks for installation permission. Click 'Allow.'

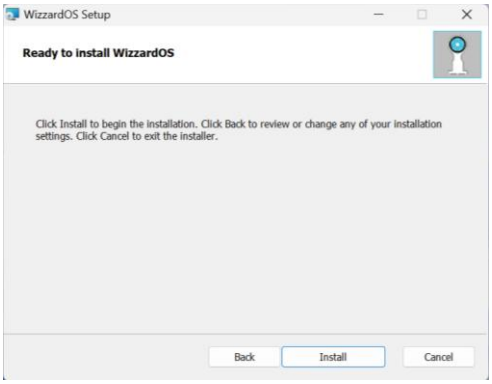
Then the WizzardOS Setup window opens.



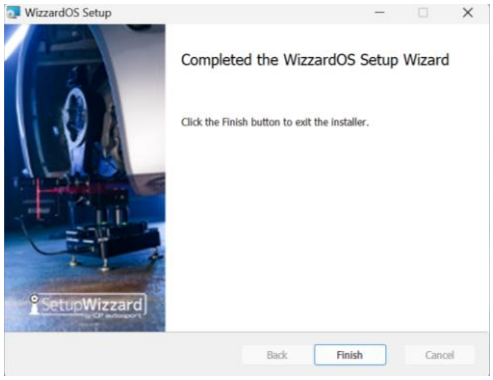
Click “Next”. In the following window, you must agree to the End User Licence Agreement (EULA).



Please read carefully and tick the box “I accept the terms in the Licence Agreement” and click “Next”.



To start the installation, click on “Install”.



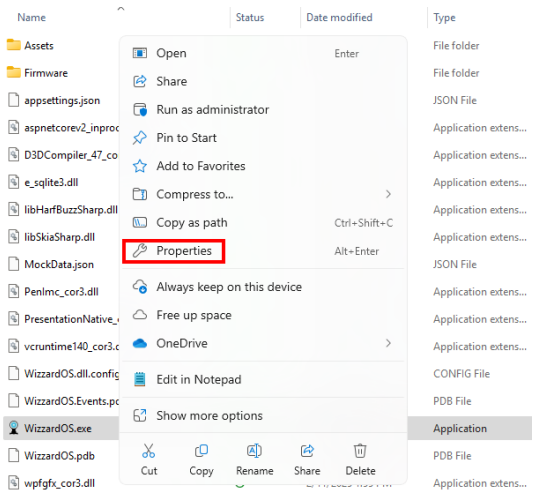
To finish the installation, click on "Finish".

If the installation is successfully completed by the installer, WizzardOS can be started by double-clicking on the WizzardOS icon on the desktop.

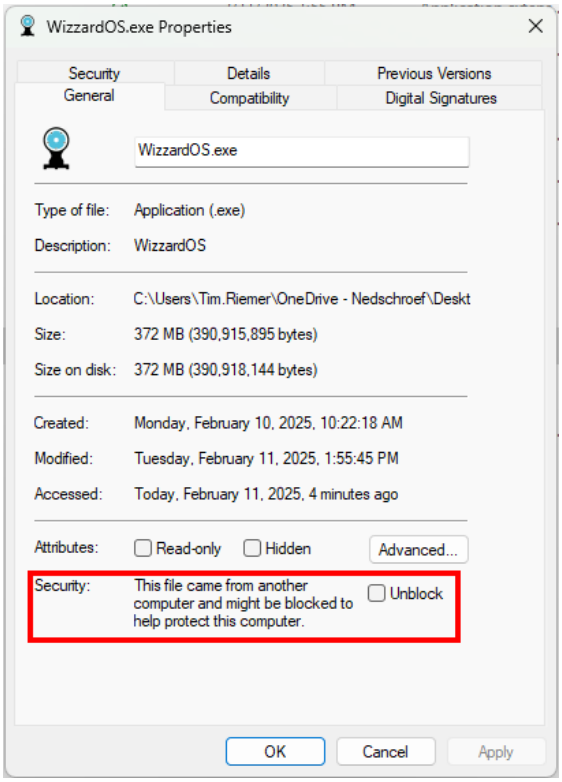
If installation via the installer is not possible, the program folders required for the software can be inserted manually. To do this, contact SetupWizzard Support.

After manually inserting the program folders, permission is required before starting the software, otherwise your device will not perform any visible action when you try to start the software. The following describes how to grant permission.

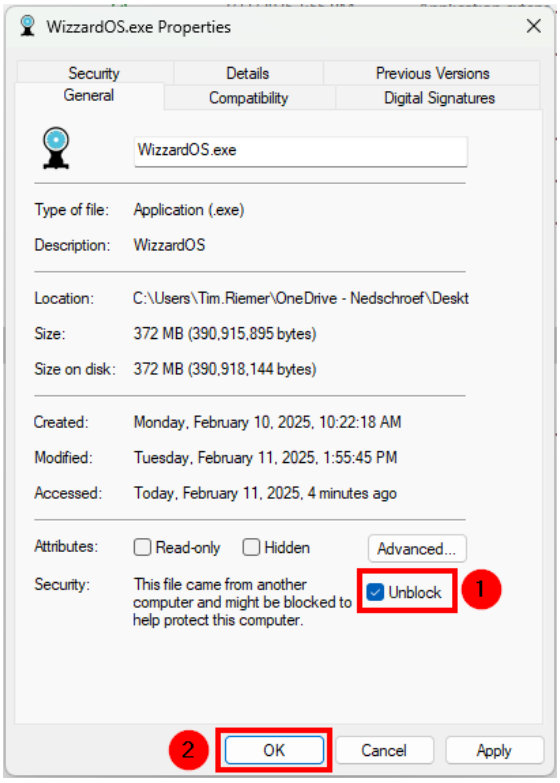
Right-click on the "WizzardOS.exe" file. The settings window opens.



Click on "Properties". The properties window opens.



Tick the "Unblock" box and then click on "OK".



The software can now be used. Double-click the “WizzardOS.exe” file for starting.

6.1.3 Softwareupdate

If you want to update your currently installed WizzardOS software, you must first back up all the data entered in the software (chap. 8.12). Only when this has been successfully completed you should use the installer to update the WizzardOS software. To update the software via installer, proceed in the same way as for the initial installation (chap. 6.1.2).

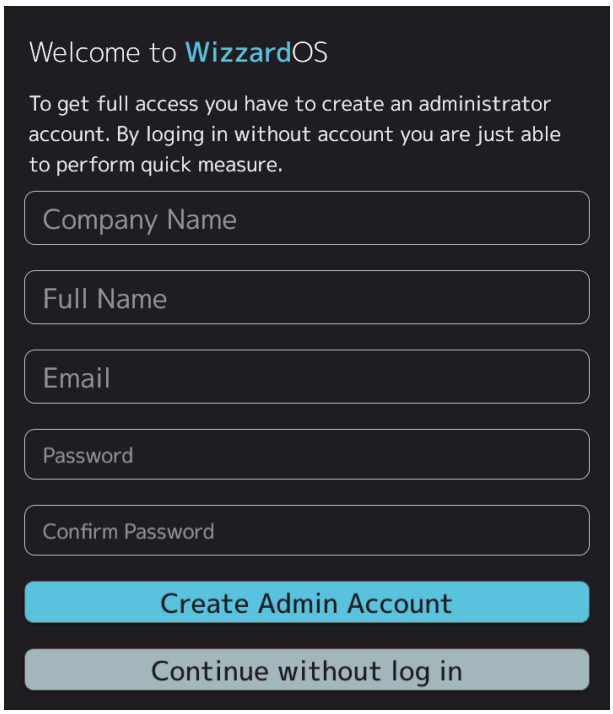
6.2 First starting the software

After starting the software, you can decide whether you want to create an **admin account** (chap. 6.2.1) or **continue without login**.

If you start without logging in, you have only access to "**Quick Measure**" (chap. 8.3), **Device Management** (chap. 6.2.3), **System Management** (chap. 6.2.4), **Cars** (chap. 6.2.6) and **Wheels** (chap. 6.2.6).

6.2.1 Creating an admin account

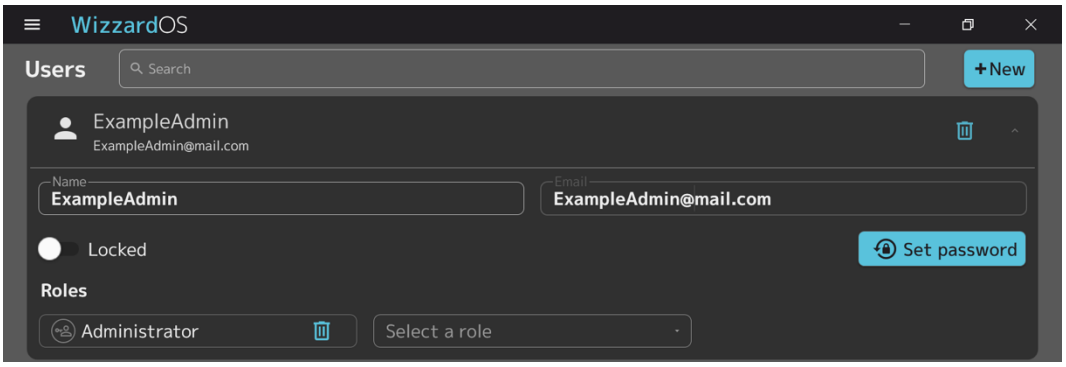
By filling in the fields and clicking on "Create Admin Account", an administrator account is created. The admin has access to all functions of the software. This step should therefore be carried out by the person responsible for the system.



The password must be at least 8 characters long and contain a capital letter, a special character and a number.

6.2.2 User administration

Under the menu item "**Settings**"→ "**Users**", you will find the option to assign certain user roles. A new user can be created with the button +New.



Enter the name and e-mail address of the employee for whom you would like to create an account. Various roles can be assigned to the user under the "**Roles**" menu item. The role assigned to the user determines their access and editing options. An overview follows:

Administrator	Unrestricted access
Engineer	No access to users and backup settings, otherwise unrestricted
Mechanic	Only access to devices, systems, measured values and measurements possible

You then create a temporary password using the "Set password" function, which must be communicated to the employee. The employee can then log in independently using this password and the email address known to them.

The profile can be locked using the "**Locked**" slide button, Locked , and can then no longer be used by the corresponding user.

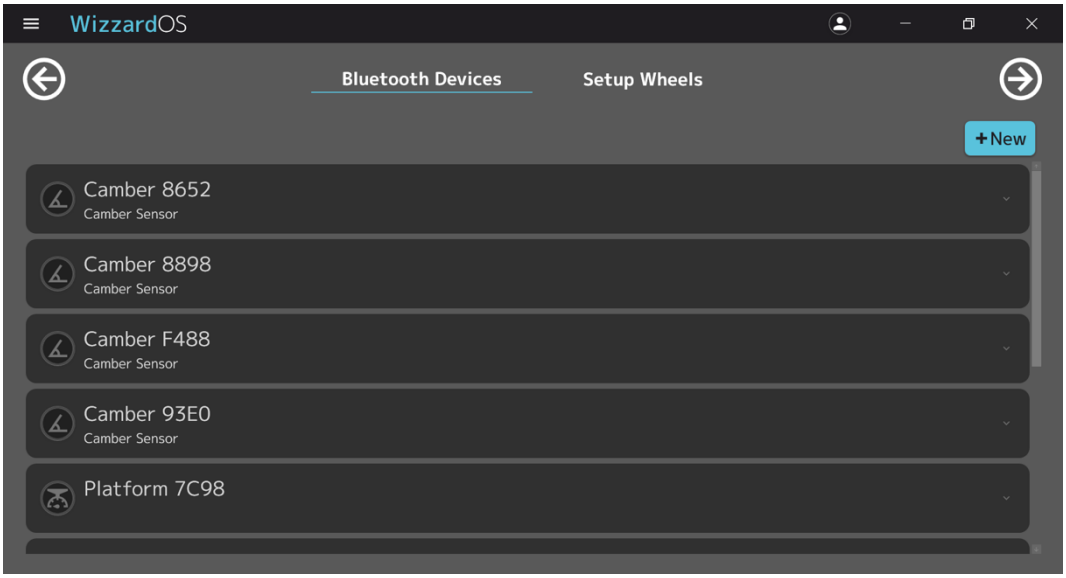
6.2.3 Connecting devices

The device settings can be accessed via the menu item "**Settings**→ **"Devices"** as well as the "Device Management" field on the landing page.

Under the "Bluetooth Devices" tab, you will see your connected devices listed. New devices are added via +New. Press and hold the power button of the respective digital device until the LED flashes blue. The device can then be found by the software.

Connected devices can be assigned a number for identification purposes by clicking on them. For easy identification of the device, attach a sticker with the selected number to the device (chap. 5.3). For the digital devices of camber sensor and height measuring modules you can set a “User Offset”; this value is added to the measured value. For height measurement, this is used to maintain the height of the screw-out or fixed measuring tip. For all digital devices you can choose a standby time, after which the devices switch into standby mode.

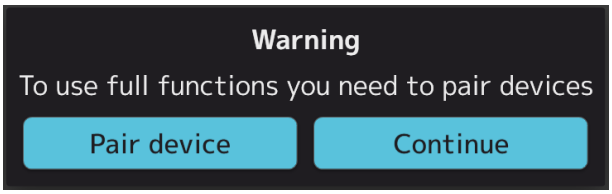
Add all digital measuring instruments to the software.



6.2.4 Creating a system

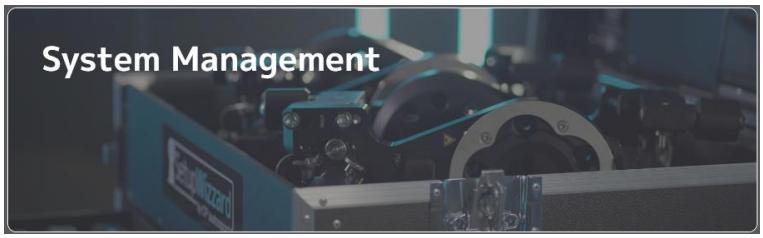
The devices and the setup wheels are combined in one system. You need a system to be able to use the measurement via "Quick Measure". Start by creating a new system via +New under the menu item "**Settings→ "Systems**" and give it a name. You can also access the system page via the landing page via System Management.

After clicking +New you will prompt in a window, if you haven´t connected any Bluetooth devices yet.

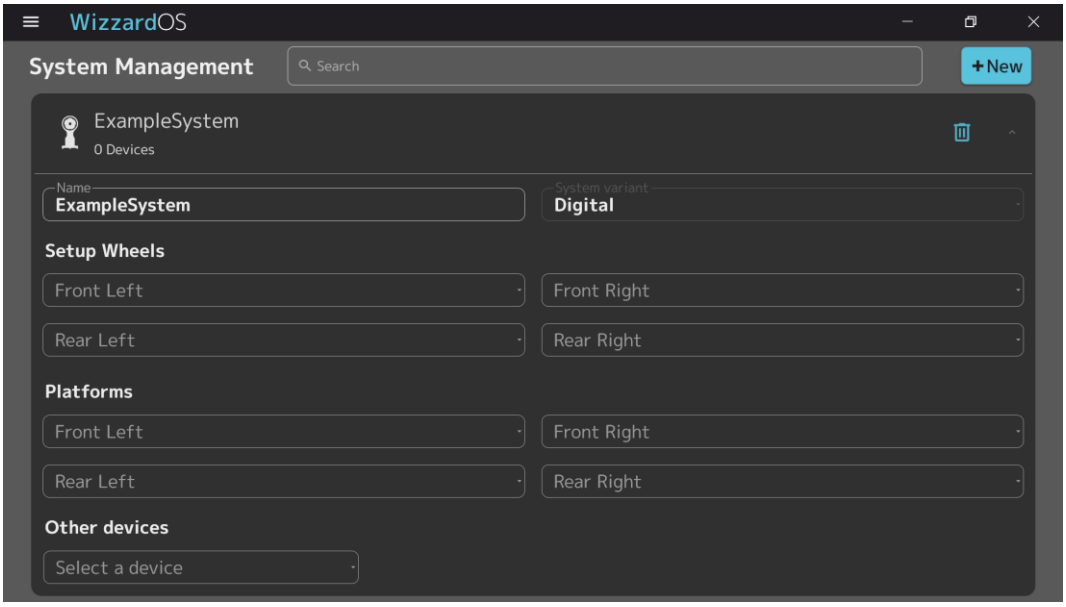


By clicking on Pair device you will get to the device settings and can pair your devices with WizzardOS or enter data of your Setup Wheels. By clicking on Continue you get to the **system management** overview.

To avoid errors in measurement, choose the system variant of your SetupWizzard system in the system management. The software considers different settings with different system variants, e.g. distinguishing digital from analog toe measurement modules.



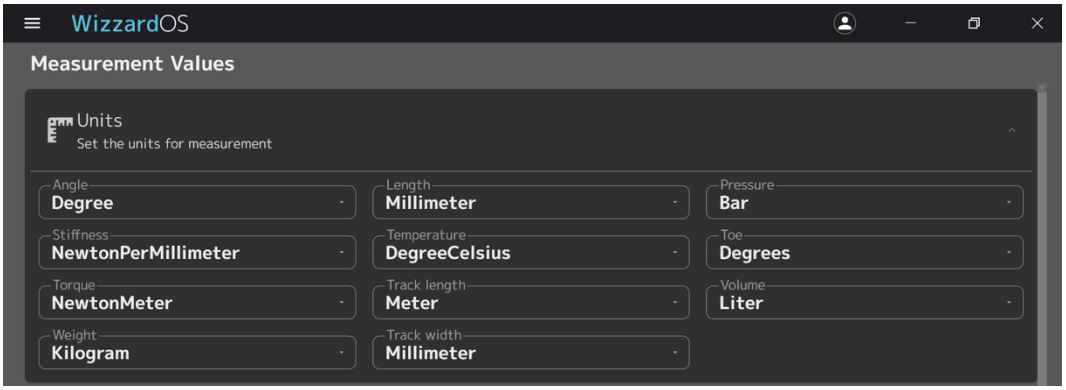
Then assign the appropriate setup wheels and the other measuring devices to the system. In this step, you also assign a vehicle corner to the setup wheels.



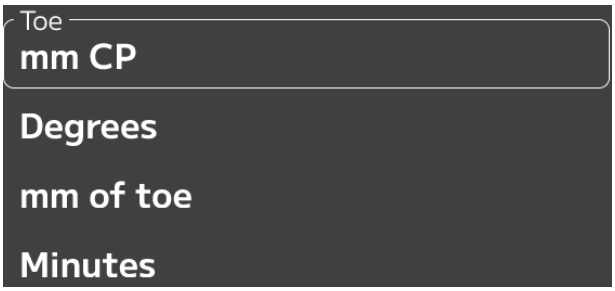
If you want to measure several cars or have more than one SetupWizzard system, you can create several systems.

6.2.5 Measuring units

You can change the units to your preferred ones under the menu item "**Settings**→ "**Measurement Values**". There you can also make settings for rounding the displayed measured values and their tolerances.



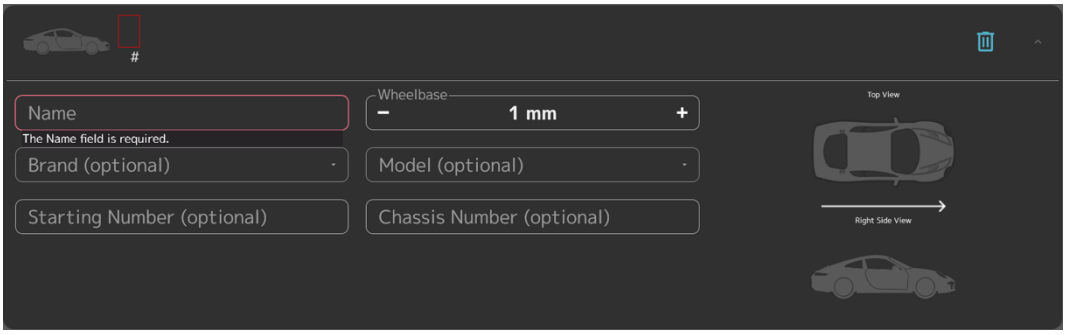
There are 4 different units available for toe measurement:



mm CP - Real millimeters on the millimeter laser scale [mm]
Degrees - Angle [°]
mm of toe - Millimeters of batter board scale [mm]
Minutes - Angle [Min]

6.2.6 Creating cars and wheels

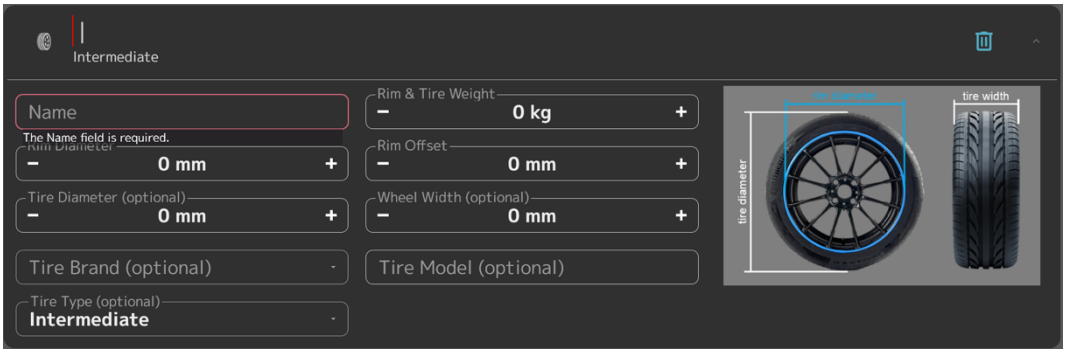
You can access the settings for **cars** ("**Cars**") and wheels ("**Wheels**") via the "**Garage**" menu item. First create a new vehicle by clicking on +New under "**Cars**". Give the vehicle a name. Fill in all the required fields. The information about the Wheelbase is especially important for the units “Degree”, “Minutes” and “mm of Toe” in toe measurement.



Under this menu, adjustments can be made to the view from above and from the side of the vehicle. By clicking on "Top View" or "Right Side View", replacement images can be selected from your computer's file browser. To maintain clarity, make sure that the orientation of the virtual vehicle is maintained.

Create a new wheel by clicking on +New under "**Wheels**" and give it a name. Fill in the other required fields as well. The rim & tire weight is especially important for correct vehicle weight measurement.

The data on tire diameter, wheel width and rim offset determined in chapter 5.2.1 can be recorded here.



Only if you enter the rim & tire weight the software is able to calculate the weight offset correctly. In “**Quick Measure**” and "**Database Measure**" the Setup Wheel weight, specified in chapter 8.5, and the entered values here are allocated.

7 Commissioning

7.1 Safety measures before commissioning

Familiarize yourself sufficiently with

- the operating and control elements of the measuring system,
- the equipment of the measuring system,
- the operation of the measuring system,
- the immediate vicinity of the measuring system,
- use your personal protective equipment,
- the measures to be taken in an emergency.

Carry out the following activities before commissioning:

- Check and ensure that all safety devices are fitted and functioning.
- Check the measuring system for visible damage; rectify any defects immediately or report them to the supervisory personnel - the measuring system may only be operated if it is in perfect condition.
- Check and ensure that only authorized people are present in the working area of the measuring system.
- Remove all objects and other materials from the work area that are not required for the operation of the measuring system.

7.1.1 Floor space requirements

Observe the ambient conditions when selecting the installation location. (chap. 3.3.1).

When selecting the installation location, consider the necessary operating and traffic areas.

WARNING

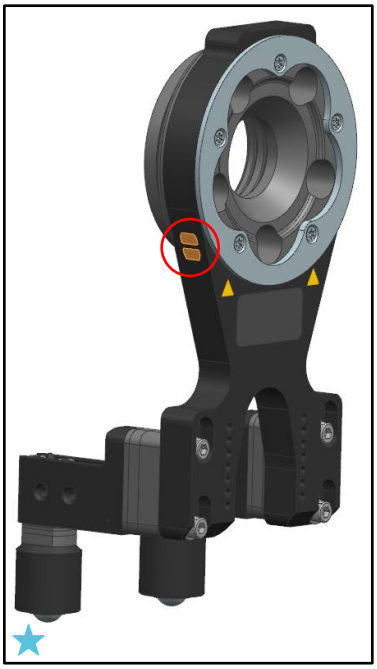
Loss of stability

A loss of stability of the setup platforms can lead to considerable risk of injury.

- The installation surface must be straight and level.
- The footprint must have the necessary load-bearing capacity. The operator is responsible for the statics of the footprint.

7.2 Setting up the measuring system

7.2.1 Fitting the setup wheels to the vehicle



First position your vehicle at the designated measuring point. Lift the vehicle as intended.

When using an air lifting system, please also use air lifting supports for your own safety to prevent the vehicle from falling.

Now replace the vehicle wheels with the setup wheels of the measuring system. You defined the position of the setup wheels on the respective vehicle corner in the software when creating a system (chap. 6.2.4) and placed the stickers on the SetupWizzard (chap. 5.3).

NOTES

It is essential that you observe the labeling and assignment of the setup wheels.

Tighten the setup wheels using the tool and the torque of the vehicle wheels. Leave the vehicle in the jacked-up position so that you can position the measuring platforms under the setup wheels.

WARNING

It is not permitted to measure the vehicle on the vehicle wheels without the accessories approved by the manufacturer! Always use the setup wheels!

Measuring with vehicle wheels on the measuring platform is only allowed with the accessory “**tire plates”** (chap. 8.10.11).

WARNING

Loss of stability

Moving the vehicle when it is raised can lead to serious injuries

- The vehicle must be securely positioned and must not be moved when raised

★ illustration similar

7.2.2 Positioning the measuring platforms

Always keep the measuring platforms clean. In particular, make sure that the load plate and electrical plug connections are free of dirt. Observe the general care instructions (chap. 1.5). After improper use (chap. 2.1), the measuring device must be sent to the manufacturer for inspection.

Position the measuring platforms centrally under the ball rollers of the setup wheels. The positioning laser can make the work much easier and faster here (chap. 7.2.2.1). Make sure that the setup wheel is positioned in the center of the measuring platform, otherwise the measuring accuracy may be lost. A spirit level is attached to the platform to support straight alignment; this is only used as a guide and does not replace leveling the platforms (chap. 7.2.3)!

NOTES

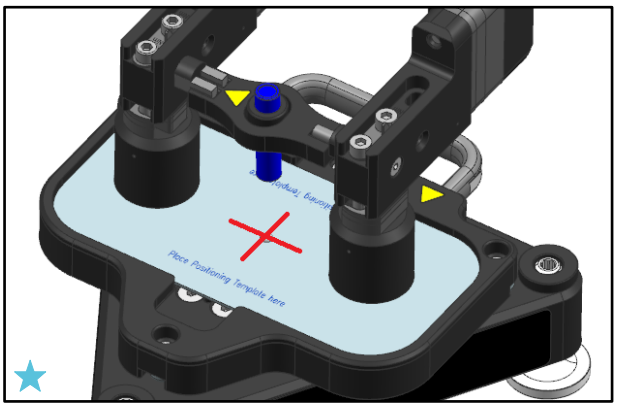
Be sure to observe the labeling and correct assignment of setup wheels and measuring platforms.

FL = Front Left
FR = Front Right
RL = Rear Left
RR = Rear Right

7.2.2.1 Using the positioning laser

The positioning laser is available in two versions: fixed and self-adjusting.

The fixed positioning laser is installed in a magnetic holder. For the initial commissioning of the positioning laser, it must be set to the camber value of the vehicle, as this cannot be set appropriately at the factory

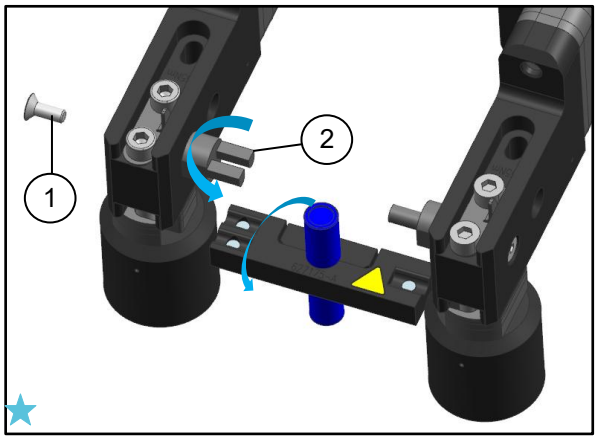


The adjustment is necessary because the camber of the vehicle influences the position of the positioning laser and it therefore no longer indicates the correct position for the platform.

Moreover there are two positions of the mounting for the positioning laser which are dependent on the position of the ball caster.

★ illustration similar

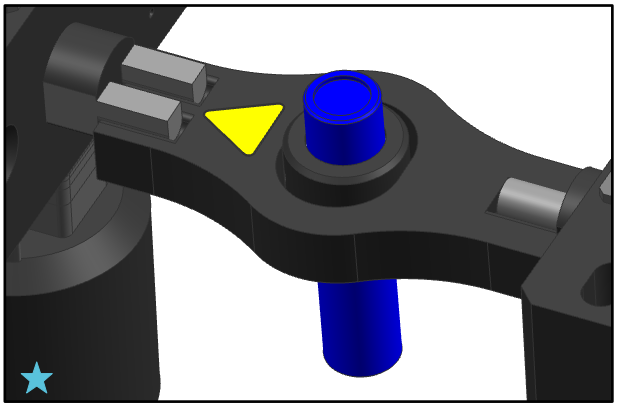
You can change the position of the laser using the hexagon socket screw on the two-point holder.



1 Hexagon socket screw 2 Two-point mounting

Place the holder with laser (laser optics pointing downwards) from below on the centering bolts provided at the base of the setup wheel. The centering pins and laser holder must be clean and free of chips to ensure a secure and accurate fit. Switch on the laser and position the measuring platform centrally under the laser cross. Switch the laser off and repeat the process with the remaining three platforms.

The self-adjusting positioning laser does not need to be adjusted and finds the centered position automatically.



WARNING

Risk of injury from laser beams

Laser beams can cause eye injuries.

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

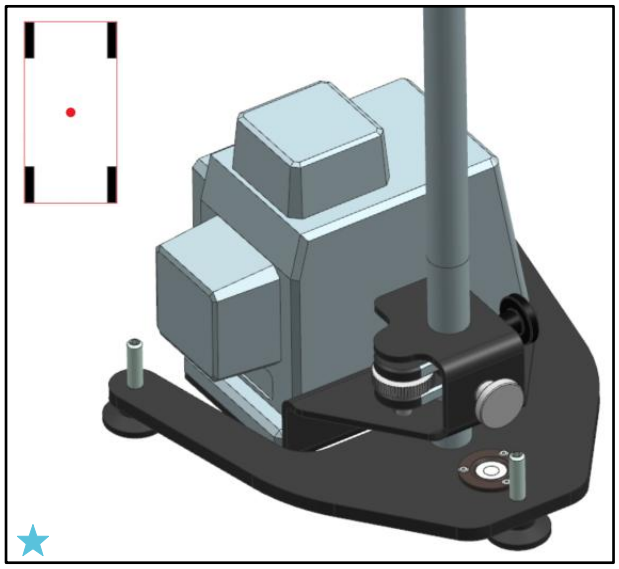
★ illustration similar

7.2.3 Leveling the measuring platforms

Before the vehicle can be lowered onto the measuring platforms, the platforms must form a horizontal, level surface. Even if the individual platforms stand upright on their own after alignment, it is possible that the 4 platforms together do not form a level surface due to unevenness in the floor

The leveling laser spans a flat surface on all sides, to which the measuring platforms must be aligned.

Position the levelling laser with its tripod as centrally as possible between the four measuring platforms on a firm and level surface. The bubble level on the tripod helps to keep the laser level. You can use the fine adjustment screw to change the height of the laser in small increments in order to set the desired position of the laser exactly.



The leveling laser is operated using a one-button control. To unlock the laser pendulum, push the slider at the bottom of the laser (see image). The laser is activated at the same time. Now briefly press the changeover button at the top of the laser (see illustration) to switch from cross lines to vertical line or horizontal line.

The laser can only be switched off if it is locked in the transport position. To do this, you must move the slider back in the other direction.

When operating the levelling laser, make sure that the laser pendulum is not coming against the stop and can swing freely. If the laser flashes, the laser pendulum is coming against the stop. Adjust the feet of the laser stand so that the laser pendulum can swing freely. Do not move the laser during alignment of the measuring platforms!

When using an air lifting system, make sure that the levelling laser is positioned so that the laser can reach all levelling sleeves on all platforms. When positioned in the middle, some leveling sheels are often in the shadow of the air lifters.

illustration similar

WARNING

Risk of injury from laser beams

Laser beams can cause eye injuries.

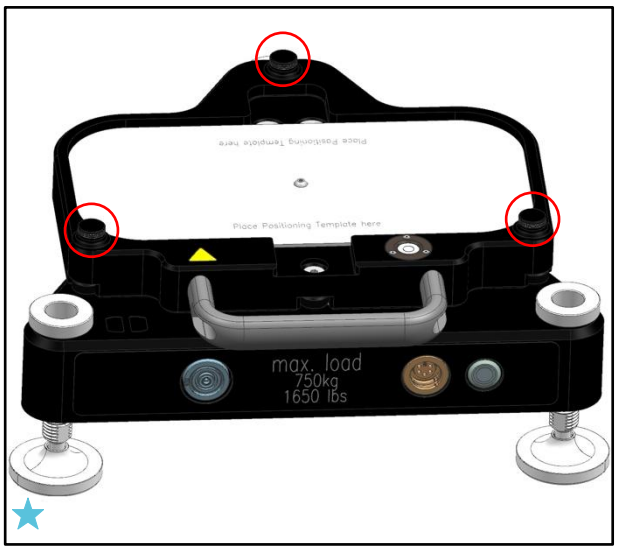
- **Do not look directly into the laser beam.**

WARNING

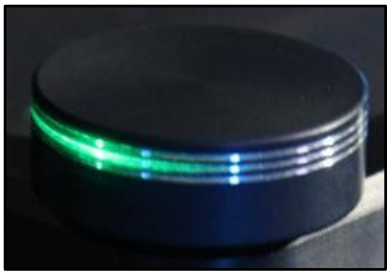
Using the height extension for the levelling laser without the height extension can cause damage to the underbody of the vehicle

Insert the leveling sheels into the holes provided in the platform.

Three sheels are used on the platform at the same time. Check the set height at all three corners and adjust if necessary.



The laser beam must be clearly visible on the middle of the three grooves (see picture). Then the corner of the platform is leveled.



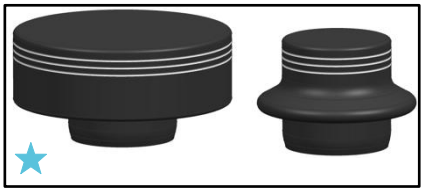
For leveling, loosen the knurled lock nut and turn the adjustable feet with the enclosed tool. Make sure that the beam of the leveling laser has the same height on all sleeves. Once the height of the measuring platform has been adjusted, secure its height setting again using the knurled lock nuts on the corners of the platform.

WARNING

The minimum thread engagement depth of the platform feet is always 25 mm and is only guaranteed with the tool provided by the manufacturer for adjusting the platform height

★ illustration similar

Small and large leveling sleeves are available. The large leveling sleeves offer better visibility and allow a larger window for positioning the leveling laser. These are supplied standardly.

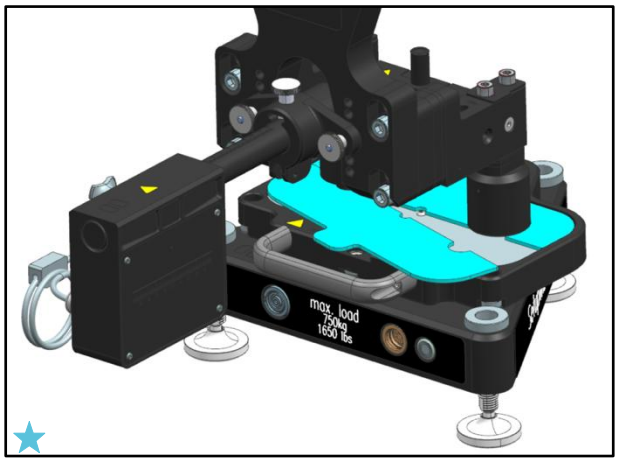


★ illustration similar

7.2.4 Lowering the vehicle on the measuring platforms

Now place the vehicle on the leveled platforms. Avoid impact loads on the measuring platforms.

When lowering, make sure that the vehicle can move when the ball casters of the setup wheel come into contact with the platform and can move freely within a certain range. To restrict this area to the necessary minimum, it is essential to use the positioning templates supplied.



We recommend using the positioning templates on one side of the vehicle, i.e. front left and rear left, to avoid tensioning the chassis.

It is recommended to insert the inner template first, then press the ball caster balls into the template and finally insert the outer template (see illustration).

WARNING

The positioning templates must only be inserted once the vehicle has been lowered onto the platforms to prevent the templates from being rolled over!

NOTES

Due to subsidence phenomena, the measuring system should first be aligned in the unloaded state and then in the loaded state.

CP recommends unhooking the front and rear anti-roll bars of the vehicle when using the SetupWizzard.

WARNING

When lowering the vehicle and especially when inserting the positioning templates, be aware of the increased risk of crushing due to possible unpredictable movements of the vehicle while it is still moving freely.

★ illustration similar

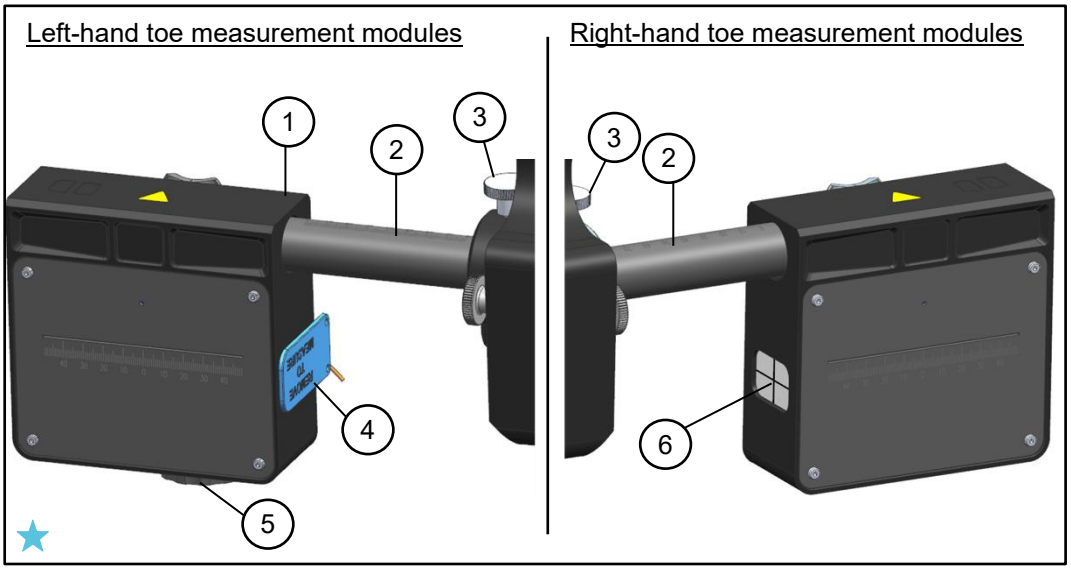
7.2.5 Adjusting the digital toe lasers

If you are using the analog toe measurement modules, please go to chapter 7.2.6.

Always keep the digital toe measuring modules clean. Observe the general care instructions (chap. 1.5). After improper use (chap. 2.1), the measuring device must be sent to the manufacturer for inspection.

7.2.5.1 Digital toe laser setting

To take the different axle geometries of the front and rear axles into account, the toe measurement modules on the vehicle must be adjusted correctly for the track width difference measurement.



1	Digital track measuring module with integrated track laser	4	track measurement protection
2	Guiding shaft with scale	5	Handwheel (1 of 2)
3	Clamping screw	6	Target sticker

The left-hand toe measuring modules contain a laser and the electronic unit for evaluating the track width. The right-hand toe measuring modules reflect the measurement signal emitted from the left-hand side using a target sticker.

NOTES

To avoid measurement errors in symmetric toe measurement, the scale value on the laser shaft must always be identical on every vehicle corner!

★ illustration similar

1. If necessary, turn the toe measuring module so that it is vertical.

2. Choose a fixed value (e.g. 40mm) and adjust all toe measurement modules to this value by reading the guiding shaft scale. Do this by losing the clamping screw and push in or pull out the guiding shaft. After adjusting tighten the clamping screw.

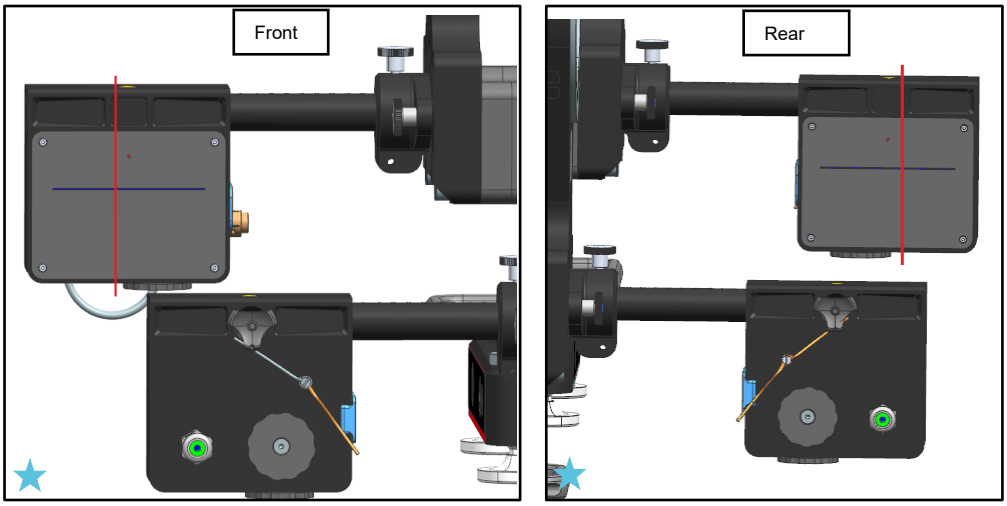
3. Insert the plug of the digital toe measuring module into the socket of the measuring platform.

WARNING

The measuring platform must be switched off before plug contacts are disconnected or closed. Risk of voltage peaks and damage to electronic components.

4. Now switch the platform on using the on/off switch (chap. 8.2).

Can the laser beam of the back toe measurement module be seen on the front module (left image)? Can the laser beam be seen from the front on the rear toe measurement module (right image)?



Yes, both are visible: You can continue with the track width measurement setting (chap. 7.2.5.2).

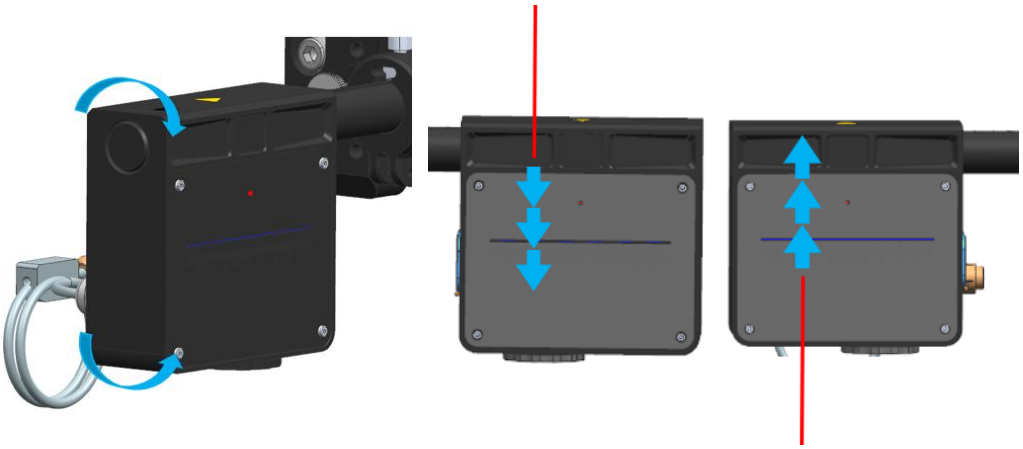
No, partly not or not at all: you need to adjust the angle of the toe measurement module or the extended width of the toe measuring modules. There are 3 possible reasons for this. The overview on the *next page* can help you with this.

When adjusting, make sure that all measuring modules of the vehicle are extended to the same guiding shaft scale value!

★ illustration similar

1. Not all modules are adjusted to the same value on the guiding shaft scale
   ➔ Check the guiding shaft scale values and make sure that they are on the same value

2. The modules are tilted towards each other
   ➔ Turn the toe measurement module till the laser beam is visible on the opposite toe measurement module



★

3. Body parts of the vehicle prevent the laser beam from hitting the opposite toe measurement module
   ➔ All toe measurement modules must be extended further on the guiding shaft scale

★ illustration similar

7.2.5.2 track laser setting

After aligning the toe lasers, the next step is to align the laser for the track width measurement.

The track width difference of front and rear axle is relevant for the measurement. This is recorded electronically in the digital track measuring modules. The measuring signal is emitted by the left-hand toe measuring modules. It is reflected on the target sticker of the right-hand module. Therefore, the two track measuring modules of an axis must be aligned with each other.

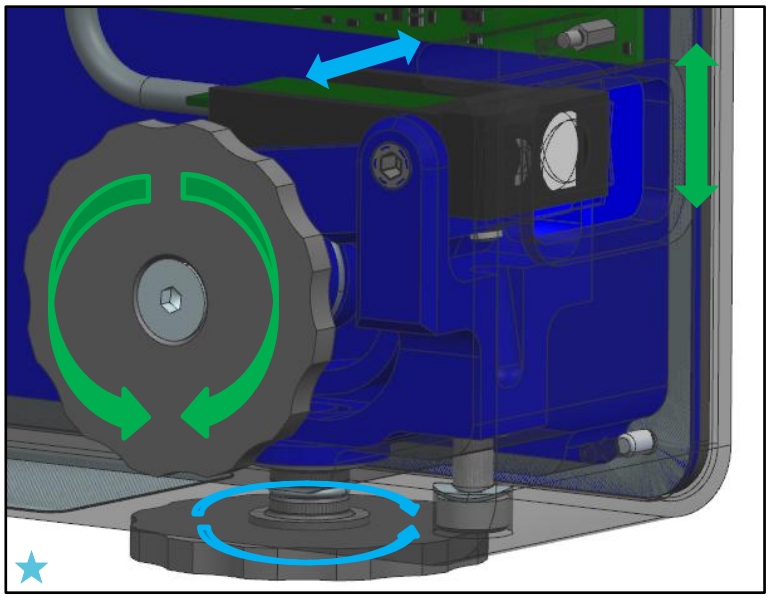
To do this, first remove the track width measurement protection.

If the protection has been removed, the track width sensor is no longer protected against water and dust. Take great care to ensure that the sensor does not come into contact with water or dust!

If water or dust has entered, the affected track measuring module must be serviced by CP Tech GmbH.

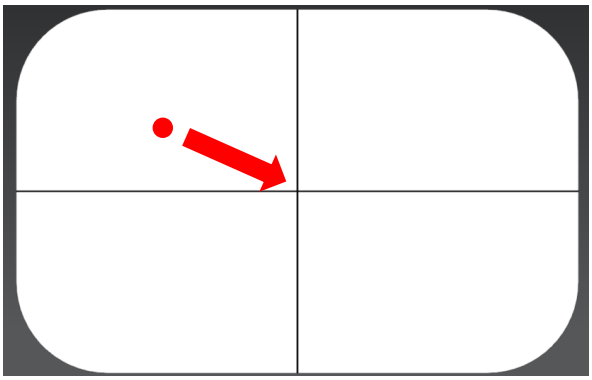
★ illustration similar

Two handwheels are attached to the left-hand track measuring modules to adjust the track width laser. The lower handwheel moves the sensor unit to the left and right. The rear handwheel moves the sensor unit up and down. There is no stop in this adjustment, i.e. when the rear handwheel is turned, the laser rises first and then lowers again after a certain point.



In the normal mode the track laser is turned off. For track laser setting the adjustment mode of the laser must be activated. Therefore, click on the adjustment mode button  in the upper left corner. A timer of one minute is activated, the track lasers are now flashing.

The track width laser must now be centered on the target sticker of the right toe measuring module.

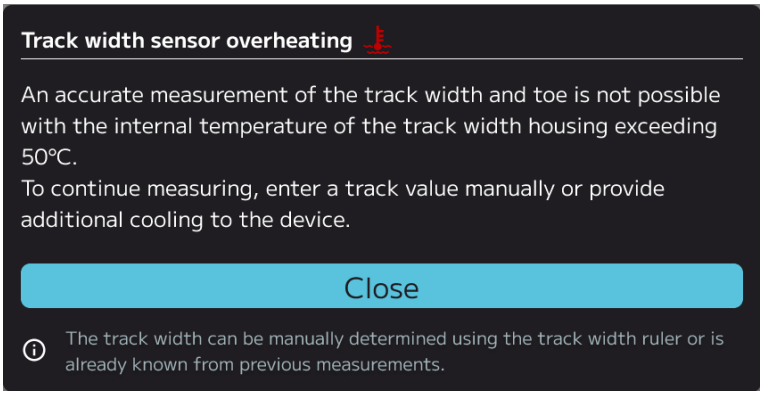


Once the setting has been made, the measurement needs to be started by clicking on the "Measure track width" button 

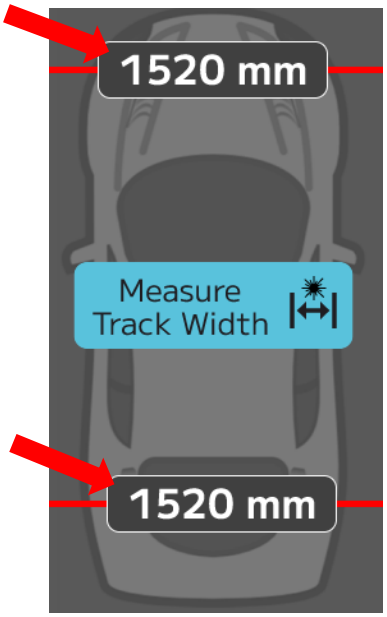
. The values are measured automatically, the toe values are calculated and shown in the software.

★ illustration similar

When the temperature of the track sensor reaches 50°C there is no more accurate measurement possible and the following popup window appears.



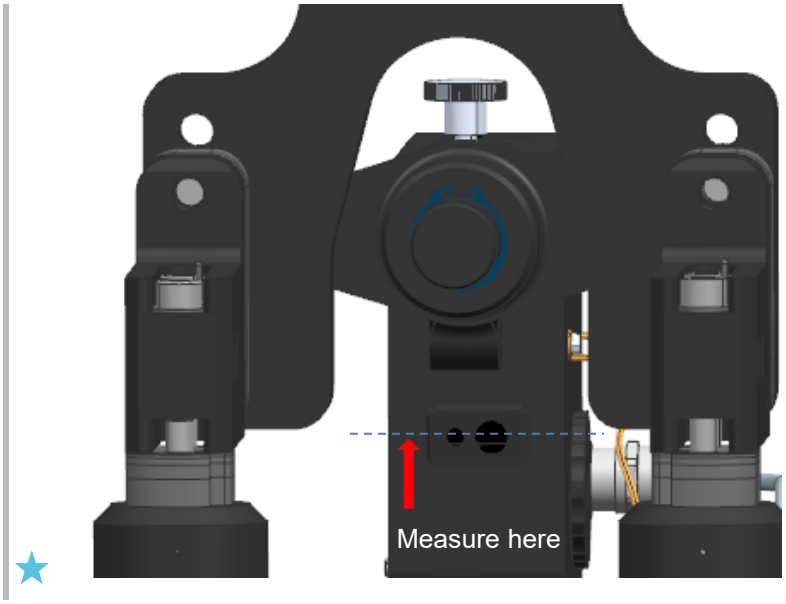
In this case and anytime it is needed you can enter a track measuring value manually by clicking in the value fields in the software:



The entered values overwrite the measured values. Starting a new measurement overwrites the manually written values again.

The track values can also be determined manually, e.g. with a tape measure, to check for plausibility or to use it as. Therefore, measure between the two toe measurement modules of an axle. Make sure measuring right beside the window of the track laser and the target sticker (picture below).

The measured value with a tape measure is not the same as measured via track measurement sensor. There is a constructional offset of 68.5mm between these two values.



★ illustration similar

7.2.6 Adjusting the analog toe lasers

If you are using the digital toe measurement modules, please go back to chapter 7.2.5

Taking the different axle geometries of the front and rear axles into account, the toe measurement modules must be configured. The distance between the toe lasers on the front axle and the toe lasers on the rear axle must be identical. In addition, the lasers on an axle must be arranged symmetrically to the center of the vehicle.

To configure the toe lasers, first determine the track width difference between the front and rear axles. To do this, use the track width ruler.

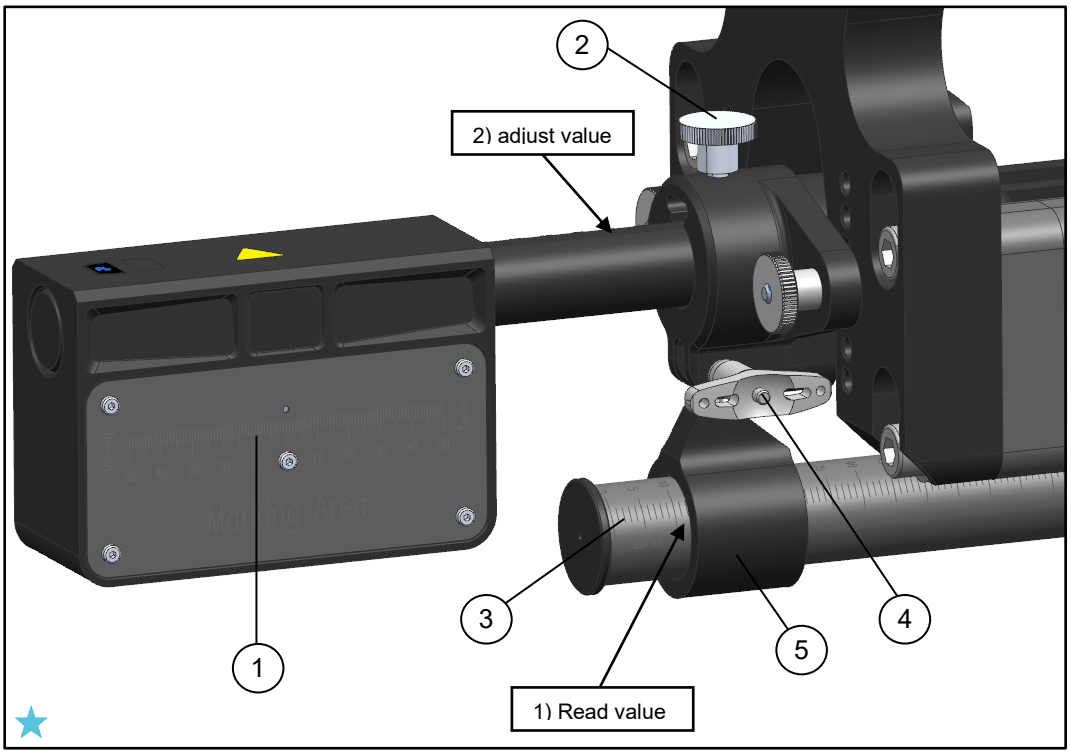
The track width ruler consists of three tubes that can pushed into each other and in length using clamp fasteners. The measurement is carried out between the fixed reference end and the measuring slide, whereby the measuring slide moves on a scale of 1:2.

1 Fixed Reference end
2 Clamp fastener
3 Measuring slide

To measure, extend the track gauge to the appropriate length for the vehicle and secure the set length with the clamp fasteners. Leave one clamp fastener open for adjusting to the first axle.

The appropriate length for your vehicle is slightly shorter than the widest point of the vehicle to be measured.

Once set, the length between the measurements on the front and rear axle must not be adjusted!



1	Value on laser scale	4	Ball locking pin
2	Clamping screw	5	Measuring slide
3	Value on track gauge ruler		

Attach the track gauge to the right-hand setup wheel using the ball locking pins on the fixed reference end and on the left-hand setup wheel using the ball locking pin measuring slide. Take a value in the middle of the scale of the track gauge ruler and note it. Clamp the last clamping fastener. Now remove the ball locking pins on the left and right Setup Wheel and carry the track ruler to the other axle.

Adjust the toe measurement modules on the first axle on a fixed value (e.g. *40mm*).

Measure the second vehicle axle with the track gauge (length must not be changed!). To do this, secure the ruler with both ball locking pins on fixed reference end and on Measuring slide. Due to the different width of this vehicle axle, the measuring slide moves on the scale of the track width ruler. Note the measured value of the track gauge ruler. There is a difference between the measured value on the first and second axle. Add or subtract the difference to the fixed value of the first axle (e.g. *40mm + 15mm* or *40mm – 15mm*) and adjust the toe measurement modules of the second axle on this value.

No conversion is necessary! You can set the read measurement unchanged on both scales of the track measuring modules.

★ illustration similar

If the track width changes significantly while training and adjusting the car parameters, e.g. due to camber adjustment, you may need to readjust the toe lasers again before the final toe measurement.

It is advisable to make a mark on the ruler to determine the length of your vehicle for future measurements.

7.2.7 Function test of the toe lasers

The functional test of the toe lasers can be carried out with both variants using the following instructions. The digital version is illustrated.

Before delivery, our SetupWizzard components undergo intensive quality checks and functional tests. This ensures that the vehicle can be measured accurately. However, you can carry out the following checks to ensure that the track laser functions correctly after improper use or transportation.

WARNING

The measuring platform must be switched off before plug contacts are disconnected. Risk of voltage peaks and damage to electronic components.

First of all, you must ensure that the setup wheel is absolutely immobile. Read the laser beam position on the scale of the other vehicle axle and note or mark it with a line.

WARNING

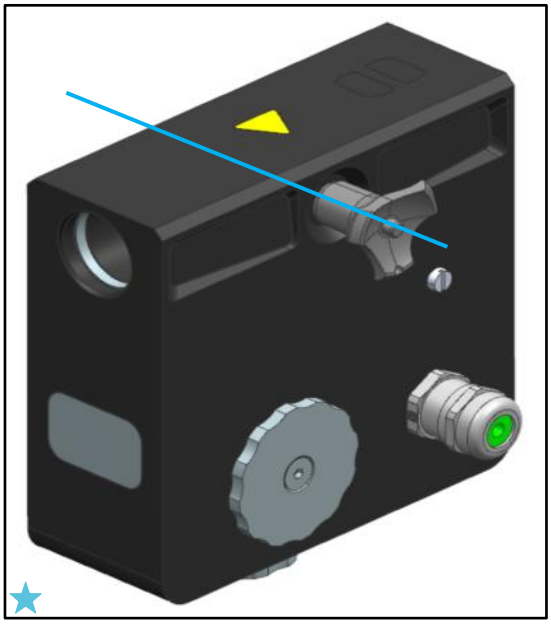
Risk of injury from laser beams

Laser beams can cause eye injuries.

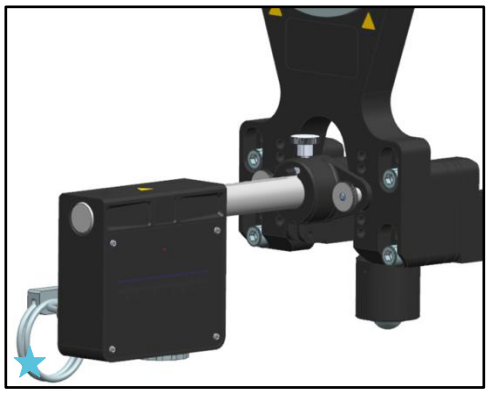
- **Do not look directly into the laser beam**

Then pull out the ball lock pin that positions the track measuring module on the laser shaft and remove the track measuring module from the laser shaft. Rotate the housing 180° around the axis of the ball lock pin (see picture), place it back on the laser shaft and secure it with the ball lock pin. The toe module is now "upside down" above the shaft, but the laser beam still points in the same direction as before.

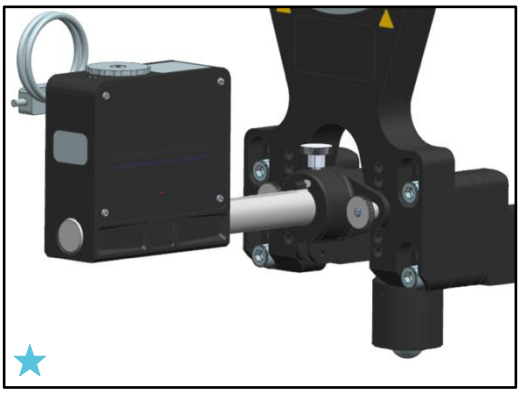
If the laser beam continues to hit the same spot as before after rotation, this ensures that the laser housing is working properly.



★ illustration similar



Laser housing in normal position



Laser housing rotated by 180°

You can now check whether the laser shaft is straight or whether the screw-on flange is exactly at right angles to the shaft.

To check the shaft, rotate it 180° around the shaft axis so that the scale is at the bottom of the shaft. The position of all other parts is retained. To do this, loosen the clamping screw, remove the ball lock pin and reinsert it after rotation. If the laser beam continues to hit the same spot as before after rotation, it is ensured that the laser shaft is straight.

You can now also rotate the screw-on flange by 180° around the shaft axis to check its squareness. To do this, remove the two knurled screws on the side, turn the flange and screw the knurled screws back on. The position of all other parts is also retained here. If the laser beam continues to hit the same spot as before, you can be sure that the screw-on flange is at a right angle.

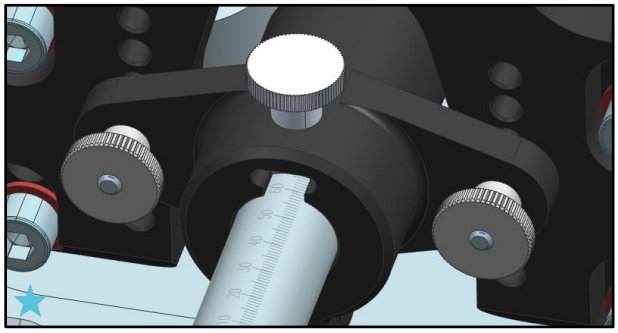


illustration similar

7.2.8 Analog ride height measurement (accessory)

To determine the ride height of your vehicle, the leveling laser is required in addition to the height measurement modules. This forms the reference plane from which the ride height to the underbody of the vehicle can be read.

NOTES

It is important here that the leveling laser has not been moved and that it matches the level of the leveling sleeves of all platforms.

WARNING

Risk of injury from laser beams

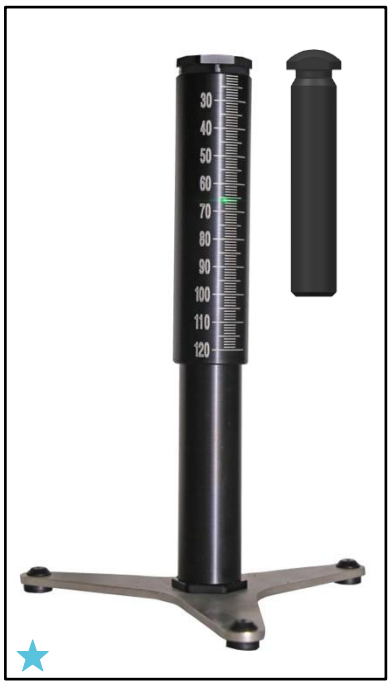
Laser beams can cause eye injuries.

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

For analog height measurement, position the height measurement module at the desired position under the vehicle. The height measurement module is unlocked by pressing it down and turning it. The measuring scale is then pressed from below to the desired measuring point using spring force.

The laser now hits the measuring scale of the height measurement, and the height can then be read off directly.

Depending on the type and nature of the measuring point, you can use two measuring tips of different sizes. You can also use the measuring tips to compensate for any difference between the base and the measuring point. You must measure this change in height and add it manually to the read value.



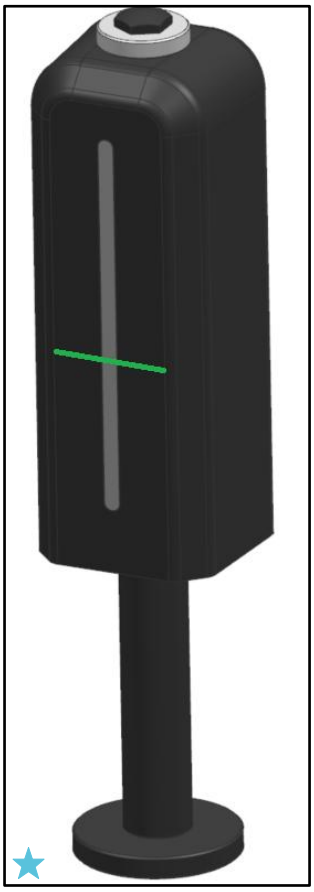
The difference between the wheel contact area on the platform and the level of the laser is already taken into account in the scale. If the setup wheels are correctly adjusted, you can measure the vehicle height above the road directly.

There are also magnetic height tips with constant offsets of 0, 50, 100, 150, 200 and 250mm available as accessories

★ illustration similar

7.2.9 Digital ride height measurement (accessory)

Always keep the digital height measurement clean. Observe the general care instructions (chap. 1.5). After improper use (chap. 2.1), the measuring device must be sent to the manufacturer for inspection.



Optionally, the ride height can be determined digitally using the digital height measurement. The use of the leveling laser is also necessary here. The slot in the housing of the height measurement module must be directed towards the laser

For the ride height values to be displayed in the software, the height measurement module must be connected to the software (chap. 6.2.3). The measuring points can be distributed virtually on the vehicle in the software (chap. 8.7). In the software, the measured heights are displayed in the menu item "**Quick Measure**" or "**Database Measure"** under the "**Height**" tab. The height measurement module is unlocked by pressing it down and turning it. The height measurement module is now pressed from below to the desired measuring point using spring force.

The height measurement can also be used without a connection to the software by simply reading the measured values on the display.

★ illustration similar

If the measuring point is lower than the vehicle floor to which the ride height is to be measured, the tip can be unscrewed. This must be specified as an **offset** in the software so that the software can take the deviation into account when outputting the measured values.

To do this, measure the height of the wide, flat measuring tip up to the lock nut. Unscrew the measuring tip to the desired height. Lock the measuring tip with the lock nut. Now measure back down to the lock nut. Subtract the height of the first setting from the height of the second setting. This value is the **offset** that you must enter in the software.

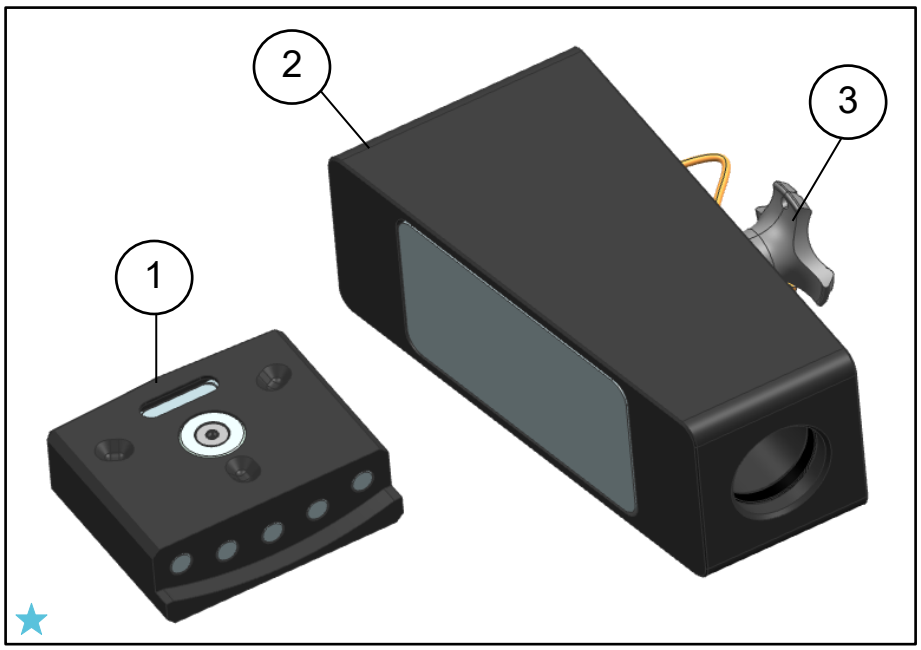
The entry in the software is made in the menu item "**Devices**" under the "**Bluetooth Devices**" tab by clicking on the respective connected height measurement. Then enter the calculated deviation in millimeters under "**Offset**". This offset will then be taken into account for the selected height measurement module during the next measurement.

There are also magnetic height tips with constant offsets of 0, 50, 100, 150, 200 and 250mm available as accessories.

★ illustration similar

7.2.10 Caster measurement (accessory)

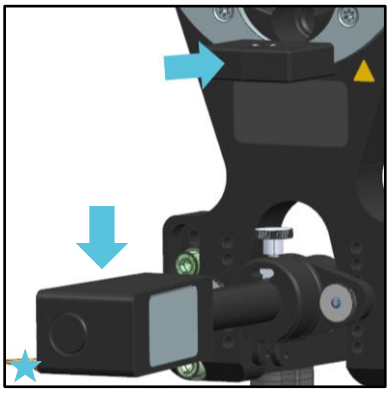
With the caster measurement kit, you have the option of measuring both the caster and the spread of your suspension geometry. A camber sensor and a toe measurement module serve as measuring sensors.



1 Magnetic holder with level
2 Mirror
3 Ball locking pin

WARNING

Before using the caster measurement, make sure that the wheel adapters can be rotated. Otherwise, the vehicle may slip off the measuring platform the first time it is turned!



First, replace the toe measurement module on the side to be measured on the front axle with the mirror housing of the caster measurement kit. To do this, remove the ball lock pin and pull the tracking measurement module off the laser shaft.

Now slide the mirror onto the laser shaft and lock it in place with the ball lock pin. Then attach the magnetic holder from the caster measurement kit as horizontally as possible to the clamping ring of the wheel adapter. Use the spirit level on the magnet holder for this. Make sure that the magnets are free from dust and dirt and that they are evenly positioned.

Place a camber sensor on the attached magnetic holder. The camber sensor must be connected to the software (chap. 6.2.3).

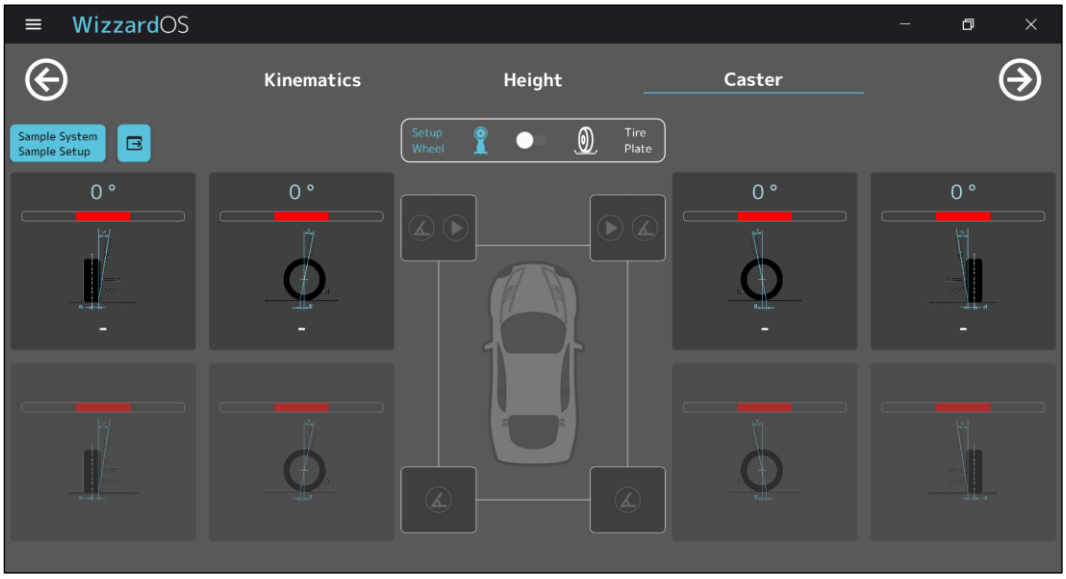
★ illustration similar

Press the brake or have someone pressing the brake for you. Now carefully remove the positioning templates on the front axle to enable steering. Then also insert these templates on the rear axle.

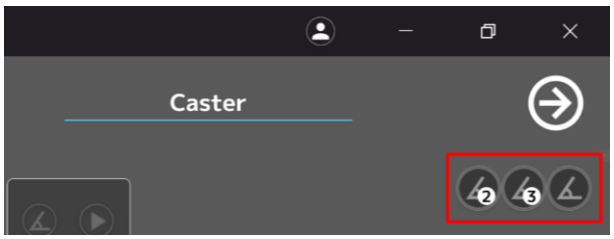
WARNING

When lowering the vehicle and especially when inserting the positioning templates, be aware of the increased risk of crushing due to possible unpredictable movements of the vehicle while it is still moving freely.

Finally, open the tab for measuring caster in the software under the menu item "**Quick Measure**" or "**Database Measure**".



If the camber sensor is connected to the software, it is displayed as a gray numbered symbol on the right-hand side.



This symbol must then be assigned to a vehicle side on the front axle by clicking on it. Once this has been done, the sensor now shows the vehicle corner in the display.

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 that the laser beam of the rear toe module shows "0" on the rear scale through the mirror on the front axle. This creates a steering angle of 10°.

2. Click on the "Measure" button. Make sure that you click on the correct "Measure" button.

3. Then remove the ball lock pin, pull the mirror off the laser shaft, rotate it around the axis of the ball lock pin, place it back on the laser shaft and lock it in place with the ball lock pin.

4. Now steer in the other direction and press the Measure button again when the value "0" is reached on the rear scale.

5. The values for caster and spread are now automatically calculated by the software and displayed on the control panel.
6. Repeat the setup and this work sequence for the measurement on the second side of the vehicle.

NOTES

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

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

7.2.11 Weight and height measurement with tire plates (accessory)

For measuring the car with tire plates, position your car at the designated measuring point. Lift the car up and place the measuring platforms right under the car wheels. Now the platforms must be leveled to have a refence plane and to make sure that the vehicle is not coming off the tire plates. To level the platforms, go through the instructions in chapter 7.2.3. After levelling remove the leveling sheels and insert the tire plates.

WARNING

Measuring with car wheels instead of Setup Wheels is only allowed with the original accessory “tire plates”.

When using tire plates, make sure that the measuring platforms with tire plates are at a middle position under the car wheels when lowering the vehicle. The sliding plate also must be in a middle position on the sliding area. Otherwise, there is a risk of wobbling.

Start **WizzardOS** and continue every setting till you get to “**Quick Measure**” or “**Database Measure**”. The measurement with car wheels must be confirmed by moving the slider from **Setup Wheel** to **Tire Plate**, otherwise the displayed weight and height measurement values are incorrect.

When the slider is set to **Tire Plate** the weights of the entered Setup Wheels and (car) wheels are not considered in the vehicle weight. Furthermore, the deposited offset between the insert plate of the measuring platform and the leveling sheels is then turned off. This is important for height measurement with tire plates.

With inserted tire plates and without applying the vehicle load to the measuring platforms, use the tare button (chap. 8.2.1) for taring the weight sensor in the platforms. After taring, the displayed weight value in every corner should be zero. Now you can lower the car on the tire plates.

Make sure you tare the platforms without tire plates for the next measurement with Setup Wheels.

The ride height measurement is carried out with the leveling laser standing under the car, as described in chapter 7.2.9 for the digital variant, and chapter 7.2.8 for the analog height measurement.

8 Operation

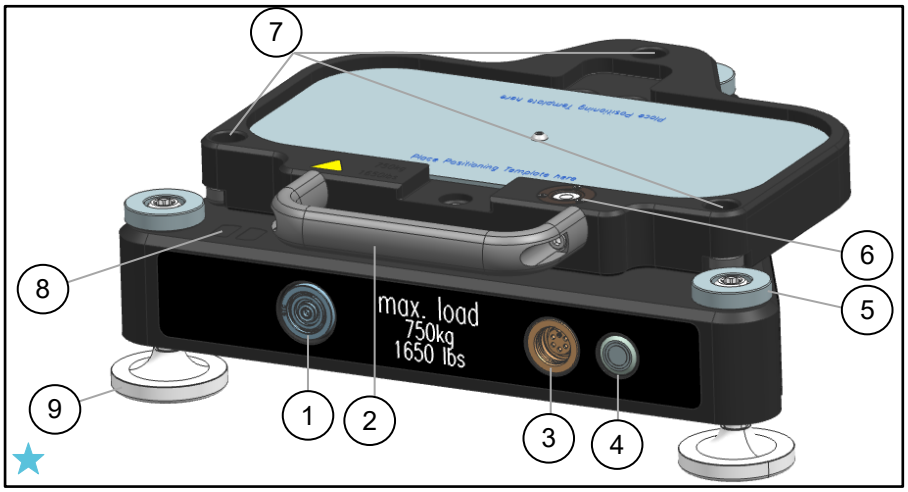
8.1 Safety measures in normal operation

- No safety devices may be removed or disabled while the measuring system is in operation.
- The operating personnel must ensure that no unauthorized people are present in the working area of the measuring system.

Carry out the following checks once a day:

- Check the measuring system for externally visible damage.

8.2 Operation of measuring platform



1	Charging connection	6	Spirit level
2	Handle	7	Holes for leveling sleeves
3	Connection for digital track measuring modules	8	Place for sticker (vehicle side and number)
4	On/off button	9	Adjustable feet
5	Knurled lock nut		

Use the on/off button on the front of the measuring platforms to switch the platform on or off. To switch it on, press and hold the button until the platform LED lights up. To switch off, the button must be held down until the LED goes out. The LED indicates the current device status of the platform.

★ illustration similar

Flash codes of the measuring platform	
Device status	**LED**
Switched off	from
Search connection	Flashing green
Connected with software	Glowing green
Bluetooth pairing mode	Flashing blue
Loading in the transport crate	Glowing red
During charging: Fully charged	from

A rechargeable battery with a capacity of 3350 mAh is integrated into the platform. This is charged via the charging connection in the transport box. This battery may be replaced if it is defective before the service interval (chap. 12.2.3).

NOTES

> The SetupWizzard sticker on the side must not be removed, otherwise parts of the platform could be lost.

8.2.1 Taring the wheel load scale

You can use the tare function to shift the zero point of the wheel load scale, which is determined by the calibration of the load cell.

To tare the load cell, use the "**Quick Measure**" function in the main menu of the software (chap. 8.3) or the "**Database Measure**" function. There are 4 symbols on the left-hand side at the top of the user interface. The tare function is executed by pressing the scale button.

8.3 Quick Measure

"**Quick Measure**" is suitable if you...

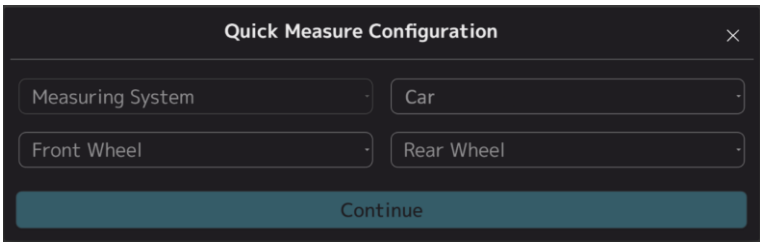
...want to carry out a quick measurement

...want to carry out a measurement without setpoint adjustment

Otherwise, please use the "**Database Measure**" function (chap. 8.8)

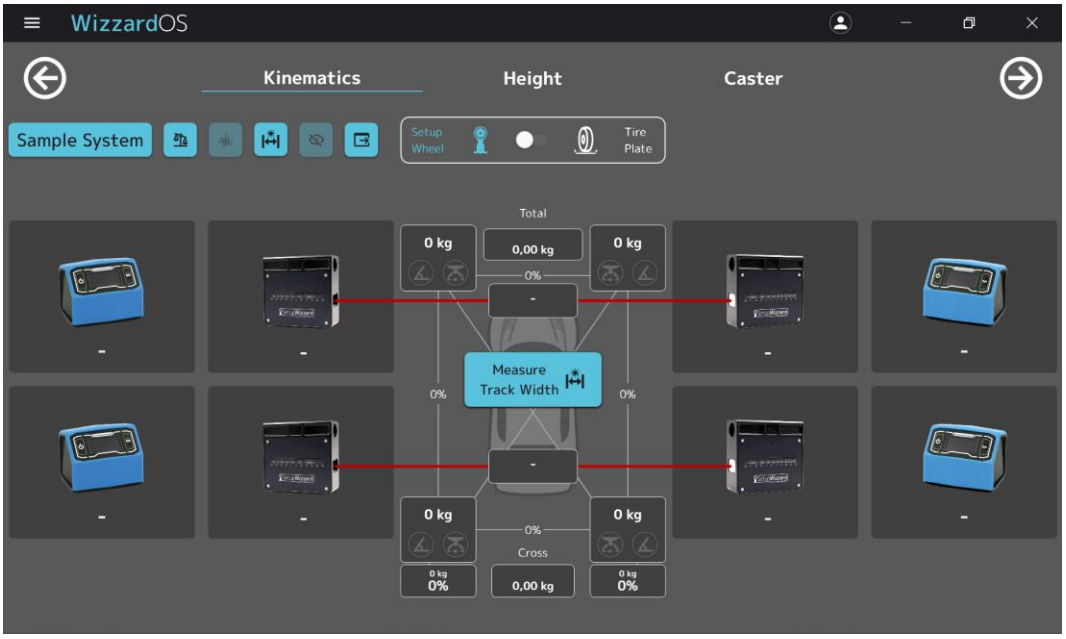
You can access the quick measurement interface under the menu item "**Quick Measure**" or on the landing page under the Quick Measure area.

When opening “Quick Measure” you will be prompted in a window to choose a measuring **system**, **wheels** of the front and rear axle and a **car**. The information given in these settings are needed for measuring with “Quick Measure”.



If you haven´t set up **systems** (chap. 6.2.4) with **devices** (chap. 6.2.3), **wheels** (chap. 6.2.6) or a **car** (chap. 6.2.6), close the window and refer to the corresponding chapters and set them up.

There are three tabs in Quick Measure. In the first tab "Kinematics", you have the option of carrying out a toe, camber and vehicle weight (distribution) measurement. The "Height" tab also displays the weight distribution data, where you can also determine the ride height. Under the third tab, "Caster", you can carry out a caster and spread measurement.



8.3.1 Quick Measure - Digital toe measurement

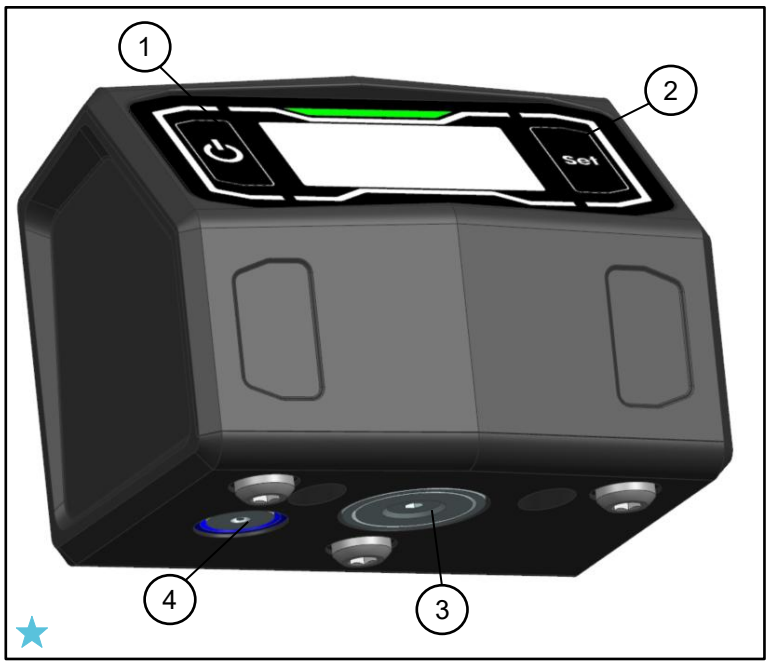
Adjust the digital toe lasers according to the instructions in chapter 7.2.5. This process must be completed correctly for the toe measurement to take place. For the toe measurement, the toe lasers of the digital toe measurement module must be switched on via the button , if not already done.

Because of the adjustment, the rear line laser now meets the toe measurement module on the front axle and vice versa. The software automatically reads the track values and displays them at the appropriate corner of the vehicle.

★ illustration similar

8.3.2 Quick Measure - camber measurement

Always keep the magnetic contacts of the camber sensor clean. Observe the general care instructions (chap. 1.5). After improper use (chap. 2.1), the measuring device must be sent to the manufacturer for inspection.

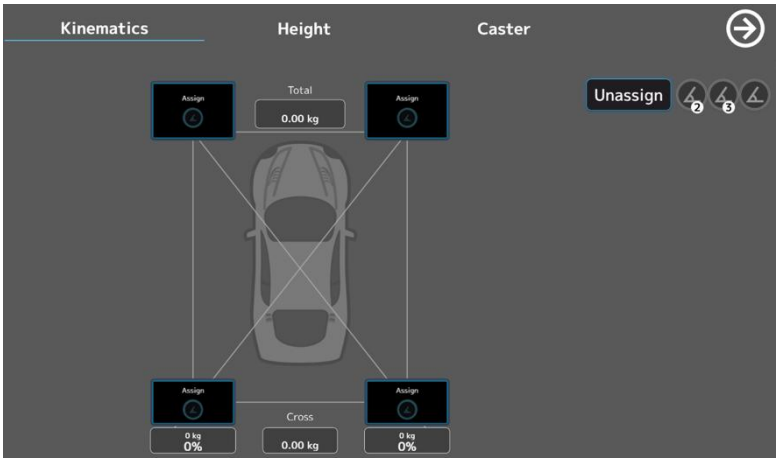


1	On/off button	3	Magnetic holder
2	"Set" button	4	Magnetic charging connection

To measure camber, switch on the camber sensor using the power button on the device. When the camber sensor is connected to the software, it appears as a numbered gray symbol on the right-hand side.

This can then be assigned to a vehicle corner by clicking on it in the window that opens. Click on "Assign" on the vehicle corner to which you want to assign the camber sensor.

★ illustration similar

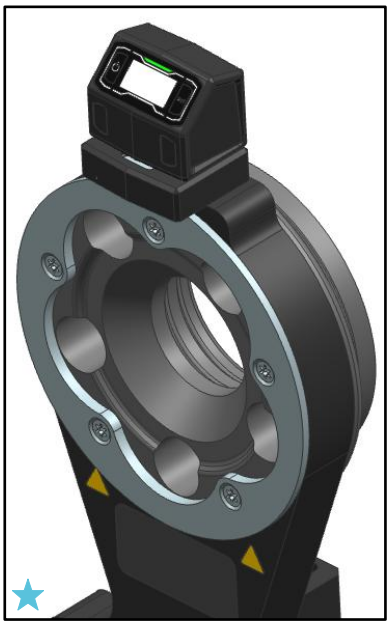


Once this has been done, the assignment to the vehicle appears in the top left-hand corner of the camber sensor display. In addition, the software then automatically shows the value that is shown on the display of the camber sensor.

If you want to deactivate the display on the device, use the button in the software.

Place the camber sensor on the setup wheel at the vehicle corner specified in the software. The camber sensor is held in position magnetically. Proceed in the same way with all four camber sensors.

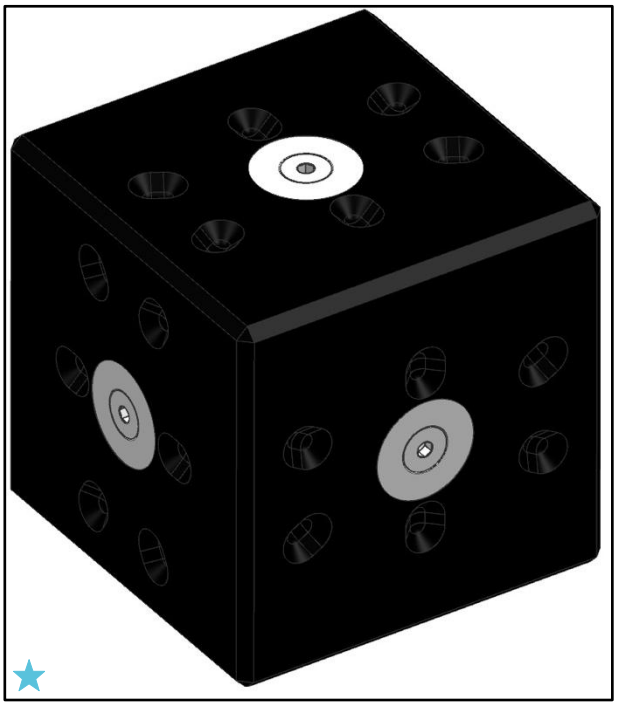
If you only have one camber sensor available for the measurement, you can use it for all four corners of the vehicle. To do this, assign the camber sensor to a vehicle corner and place the sensor on the adapter at the top of the setup wheel. The camber sensor is held in position by magnets. To save the camber value, press the "Set" button on the device. The value approximately one second before pressing the button is then saved. The vehicle corner in the display has now changed. Now place the camber sensor on the corner of the vehicle shown on the display and repeat the saving and repositioning process on the other corners.



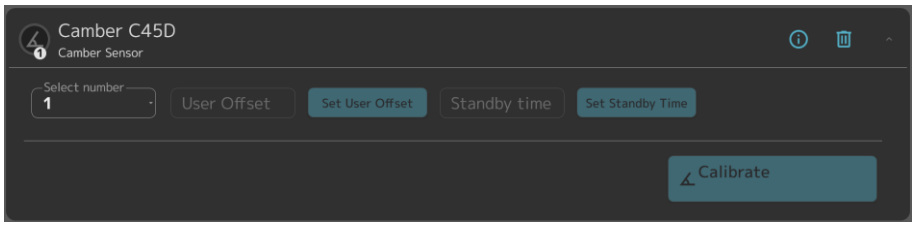
★ illustration similar

8.3.2.1 Calibrate camber sensor

The camber sensor is calibrated and adjusted on delivery from the factory. It is recommended to check it at regular intervals (especially if the ambient conditions change) and to recalibrate it if necessary.

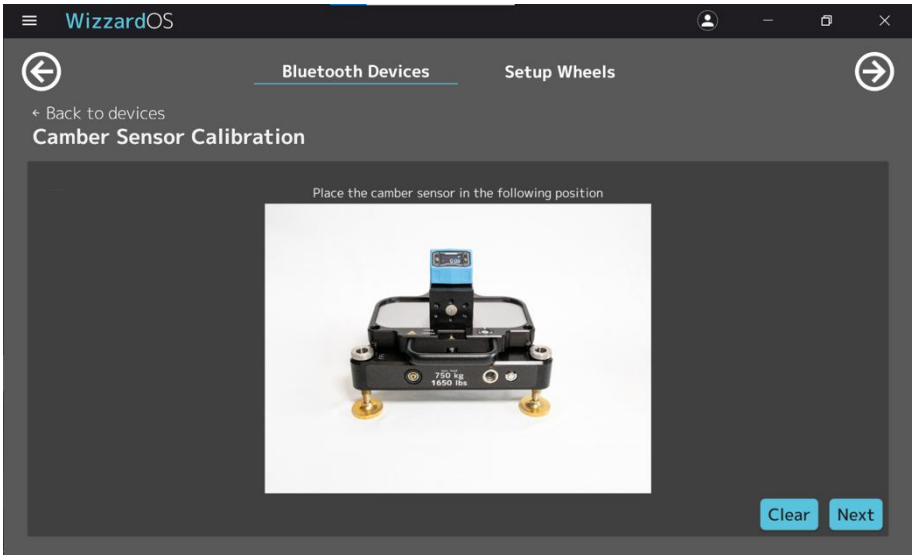


The tool shown above is included for calibration. The camber sensor is connected to this via magnets. Then place the sensor with the calibration tool on a level measuring platform (chap. 7.2.3). The calibration tool has magnets on the lower side that hold the cube in position on the platform. During the calibration process, ensure that all magnets are free of metal chips for correct positioning and that the calibration tool is resting on the platform.



Click on the camber sensor to be calibrated in the "**Bluetooth Devices**" tab, select Calibrate and follow the instructions in the software. The device has to be turned on and paired with the software.

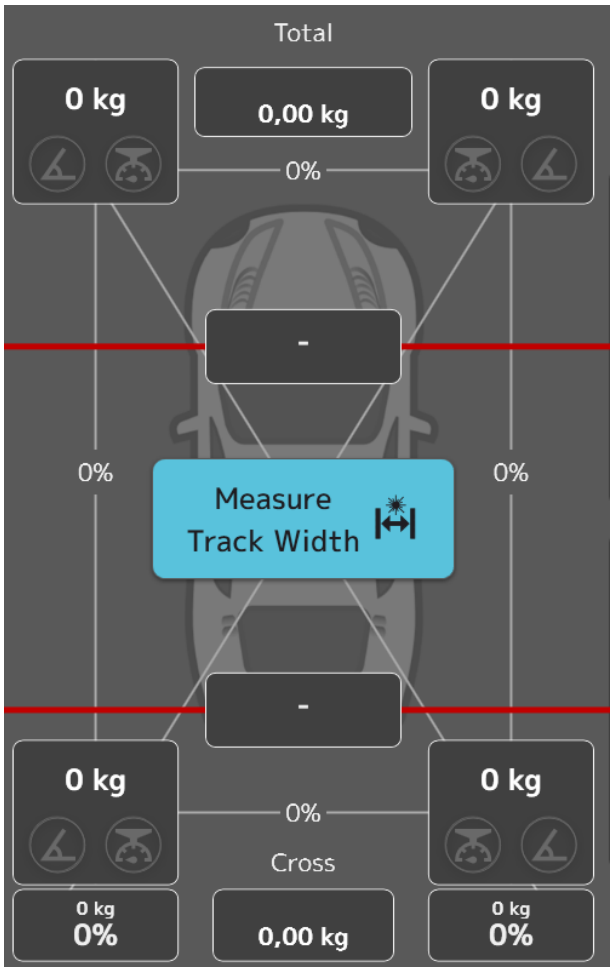
★ illustration similar



Hold the calibration tool firmly with one hand while you move the camber sensor to another position with the other hand. This prevents the calibration from being distorted if the calibration tool should slip.

8.3.3 Quick Measure – weight measurement

As soon as the platforms are connected to the software, they are displayed at the corner assigned under “System” (6.2.4) in the software with the respective defined number (chap. 6.2.3). When loaded, the software then displays nominal and percentage values for the wheel load and wheel load distribution.



8.3.4 Quick Measure - ride height measurement

Height measurement is only possible with accessories, except for the digital SetupWizzard system variant.

Use the digital height measurement as described in chapter 7.2.9. If the digital height measurement is connected to the software (chap. 6.2.3), the values shown on the display are also shown in the software.

If you want to deactivate the display on the device, use the button in the software.

If you are using the analog height measurement, use it as described in chapter 7.2.8. You can enter the manually read values of the analog height measurement under **"Quick Measure**" under the "Height" tab by clicking on the measured value fields. These then also appear on the exported measured values for the vehicle (chap. 8.11).

8.3.5 Quick Measure - Caster and spread measurement

A step-by-step guide for caster measuring can be found in chapter 7.2.10.

8.4 Analog toe measurement

Once the adjustment in chapter 7.2.6 has been completed, the toe laser can be switched on via an on/off button on the rear of the analog tracking measurement module. The toe lasers on the rear axle now hit the toe measuring modules on the front axle. The toe value can now be read in the middle laser beam on the standard millimeter scale. If the laser beam is directed too far up or down, there may be slight deviations.

The track value from the front left is read on the rear left track measuring module and vice versa. On the other side, the front right track value is read at the rear right and vice versa.

WARNING

Risk of injury from laser beams

Laser beams can cause eye injuries.

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

The track measuring modules are equipped with a 1:1 millimeter scale as standard (= CP mm).

As an option, it is possible to order a vehicle-specific scale for the track measuring modules as an accessory. Installation is described in chapter 8.10.7.

★ illustration similar

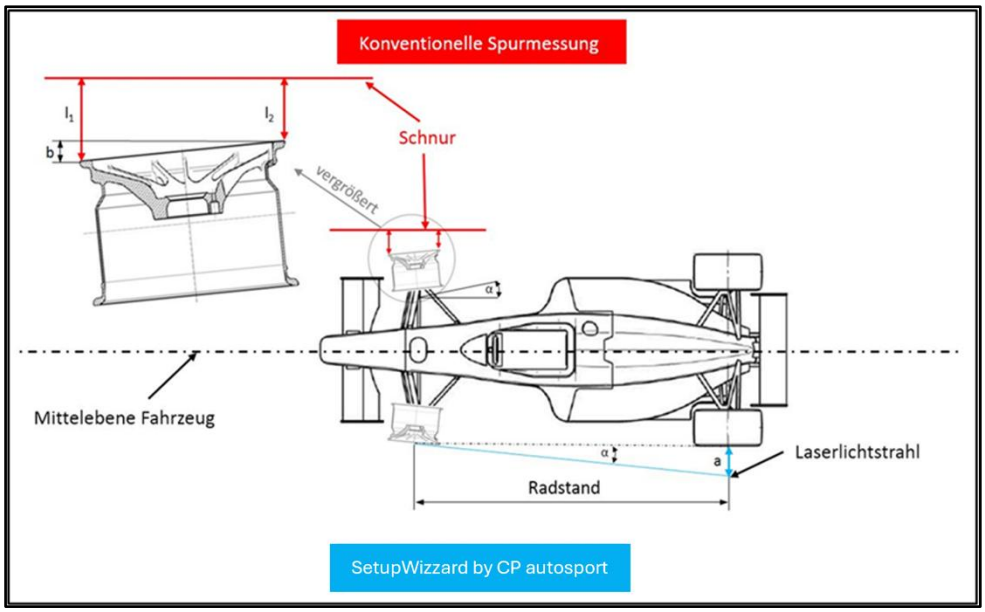
Alternatively, you can also compare the standard millimeter measurement values with conventional measurement methods using the following formulas:

Conversion conventional track measurement:

$$Messung\ Felge\ [mm] = \frac{Messwert\ Laser\ [mm] \times Felgen\emptyset\ [mm]}{Radstand\ [mm]}$$

Tracking angle in minutes:

$$Spurwinkel\ [min] = Messwert\ Laser\ [mm] \times \frac{3438\ [min]}{Radstand\ [mm]}$$

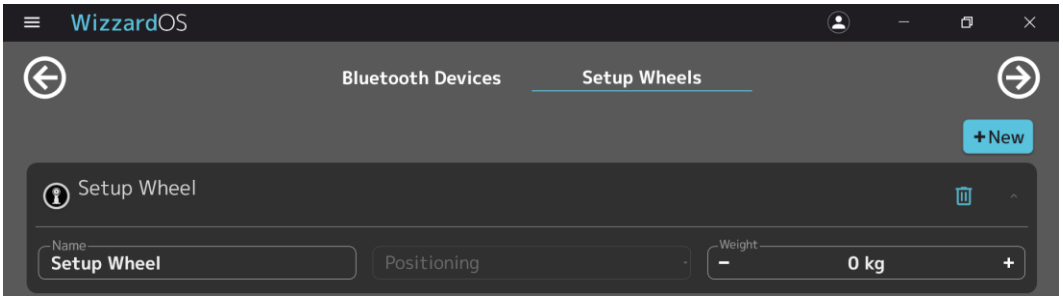


The SetupWizzard achieves a significantly higher measurement accuracy than conventional track measuring systems with a string and ruler, with the same reading accuracy of the measured values on the ruler. This is due to the greater distance between the measuring point and the reading scale. This greatly increases the deflection of the measured value. In the case of lane 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 lane change with sufficient accuracy. Due to the greater deflection of the measured value with the SetupWizzard, the measuring system can deliver correspondingly more precise results. This significantly improves the reproduction of measurement results.

8.5 Creating setup wheel weight

Only if you specify the weight of the setup wheel the software can allocate the Setup Wheel weights and the car wheel weights in "**Database Measure**" correctly.

As the weight of the setup wheel can vary due to the selection of existing add-on parts and the size of the vehicle adapter, a weight must be specified in the software to ensure precise wheel load distribution. The weight of the setup wheel and the weight of the tire specified in the software are calculated by the software. A setup wheel is created and the weight entered in the software in the **Settings** menu item→ "**Devices**" under the "**Setup Wheels**" tab using the button +New. You can also directly add a vehicle corner definition to the Setup Wheel.



8.6 Creating drivers and teams

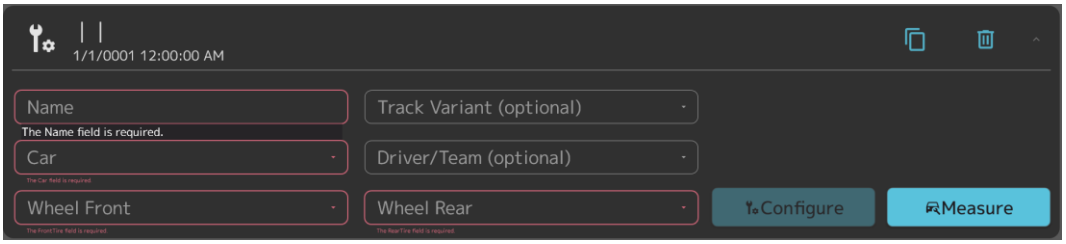
You can access the driver and team settings via the "**Drivers and Teams**" menu item. We recommend that you first create one or more drivers under "**Driver**" by clicking on +New and be sure to enter the weight under "Weight". You can also assign a license to each driver.

Under "**Team**" you have the option of setting and naming a racing team. Previously created drivers can then be assigned to this team. During the vehicle measurement, the software then uses the average weight of all the drivers in your team, so you should only use this option if your car is driven by several drivers in succession.

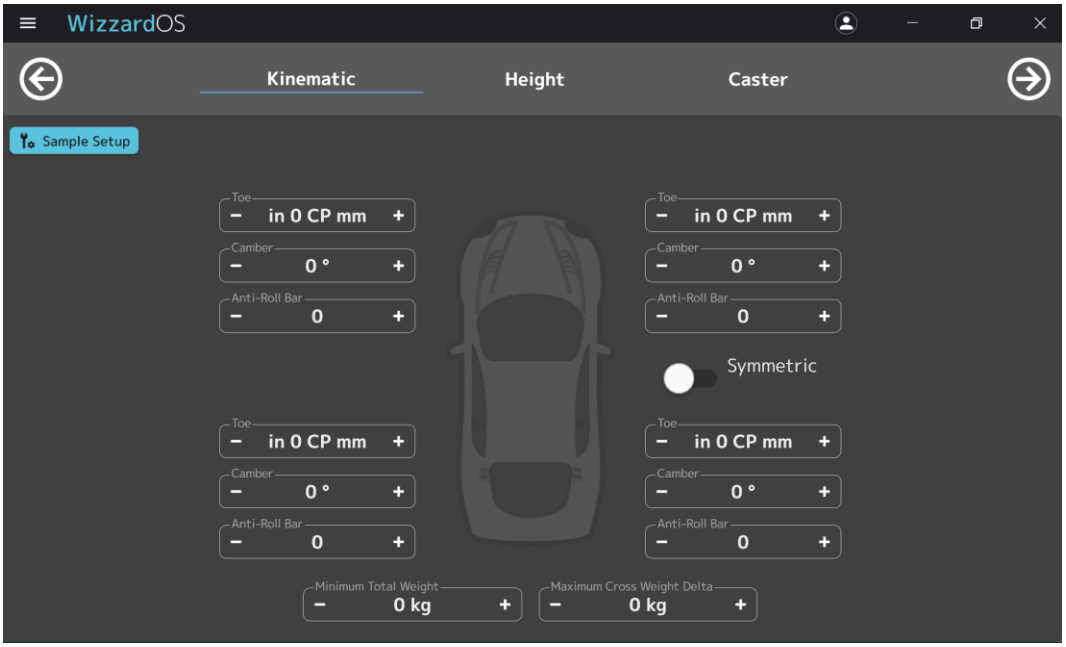
8.7 Creating a setup

The setup menu can be accessed on the landing page via "**Setups**" or under the menu item "**Plan & Prepare**".

Use the button +New to create new individual setups. Configured vehicles are assigned to a setup in the "**Car**" drop-down menu. Optionally, a racetrack and a driver/team can be assigned to the setup.



The button Configure takes you to the setup configuration menu, where you can enter the desired target values for the kinematics and wheel load distribution, the height and the camber of the vehicle.



Under the "**Kinematic**" tab, the toe, camber and anti-roll-bar can be set for all 4 wheels. The settings for the left-hand side of the vehicle are transferred to the right-hand side via the "Symmetric" sliding button 

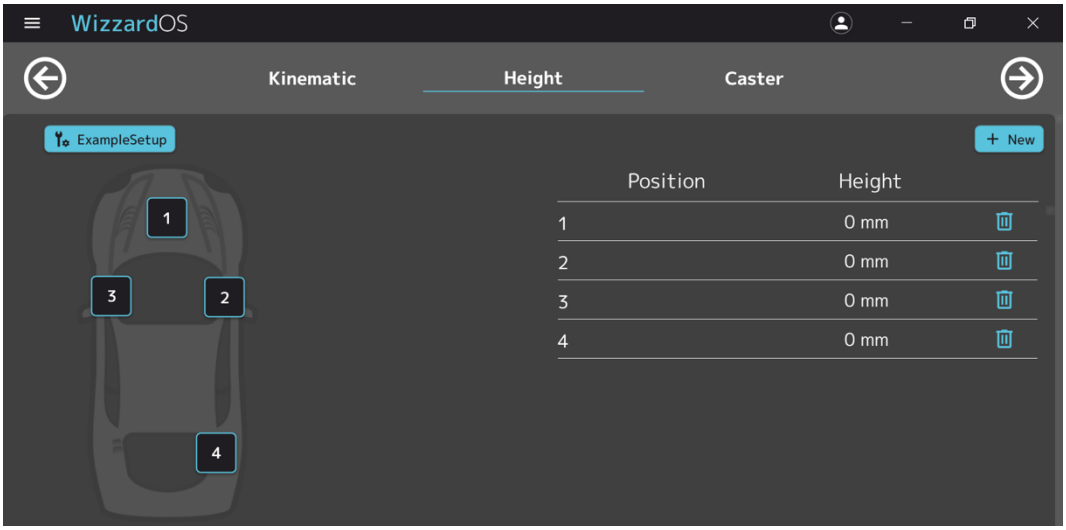
. The total vehicle mass and the desired cross weight difference can also be set.

NOTES

> Optional accessories are required for the following height and caster measurement functions of the SetupWizzard.

In the "**Height**" tab, individual measuring points on the vehicle can be defined for height measurement. The white numbers on a black background with a blue border (

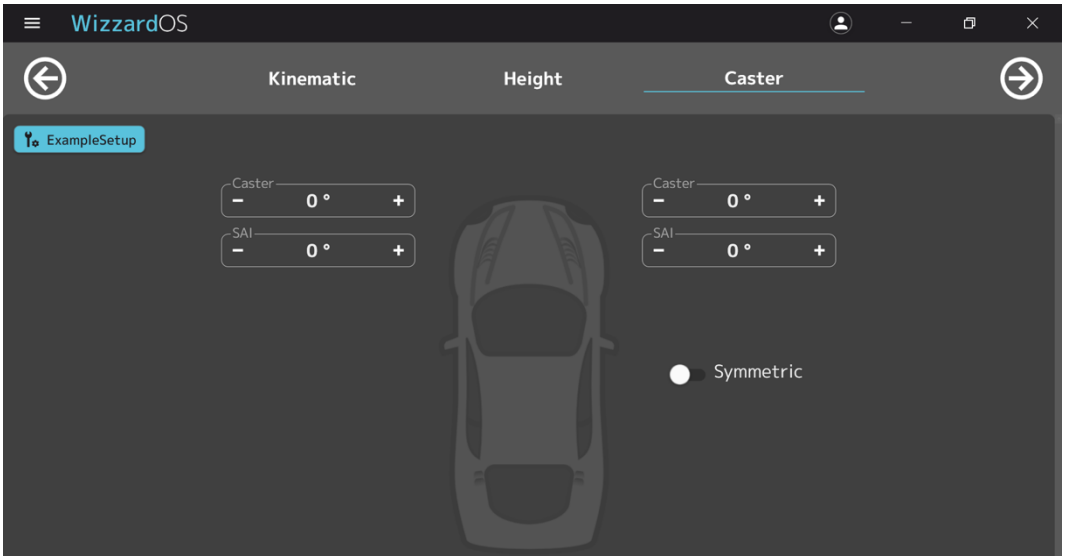
) can be moved and positioned individually on the vehicle graphic to display the height measurement points on the vehicle.



Add new height measurement modules via 

on the right-hand side and position them on the vehicle graphic on the left-hand side. Now enter the respective target values for these in the table on the right.

In the "**Caster**" tab, you can set the target values for the spread and the overrun.



The "**Symmetric**" sliding button 

is used to transfer the settings for the left-hand side of the vehicle to the right-hand side.

8.8 Database Measure

"Database Measure" is suitable if you...

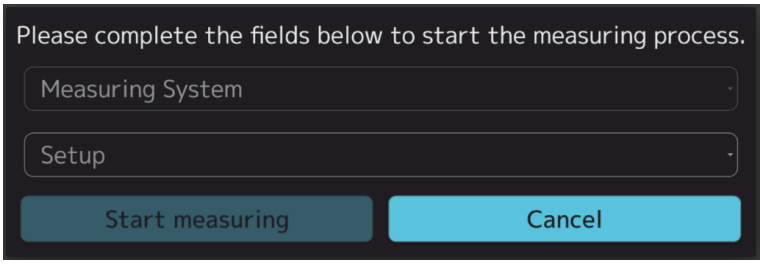
...want to carry out a measurement with setpoint adjustment

Otherwise, "Quick Measure" (chap. 8.3) is sufficient.

If you have successfully created a system (chap. 6.2.4) and a setup (chap. 8.7), the measurement with setpoint adjustment can now be carried out. If not done yet, first create a system and setup and get back to Data Measurement again.

The “Database Measure” menu can be accessed on the landing page via "**Database Measure**" or under the menu item "**Plan & Prepare**".

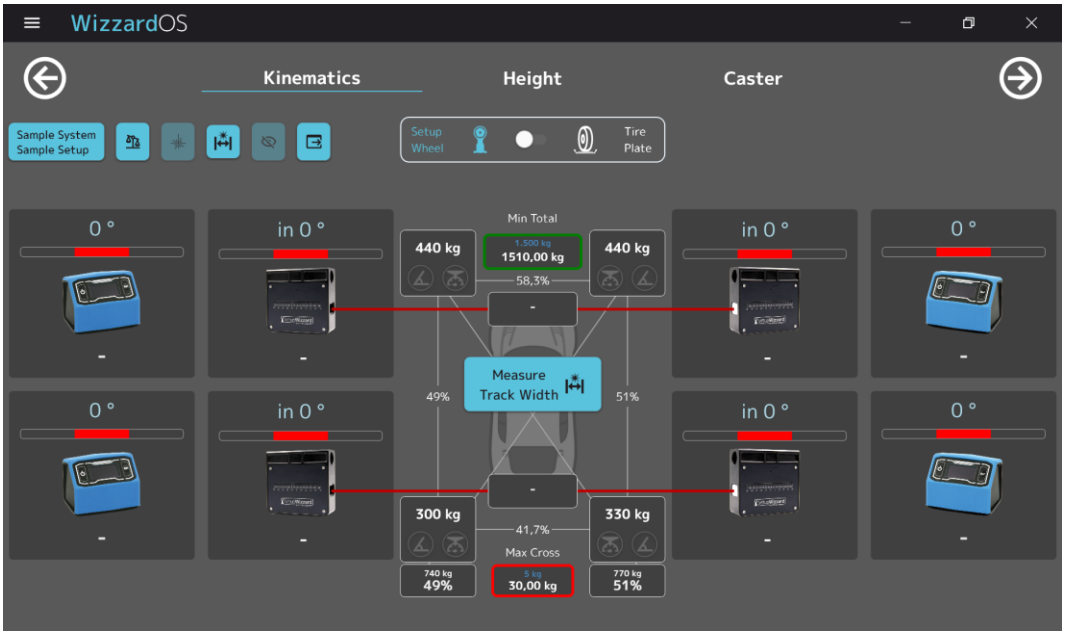
When starting Database Measurement you will be prompted in a window asking about the **measuring system** and **setup** you want to use.



In the drop-down menu choose the **measurement system** and **setup** you want to measure with and continue with clicking on Start measuring.

The only difference between the “Database Measure” view and the "Quick Measure" view is that the target values for the individual variables created in the setup in chapter 8.7 are also shown there.

The measurements are explained in detail in chapter 8.3 and carried out in the same way as in "**Quick Measure**".



A colored marker shows whether the specified target values have been reached. In this example, the minimum target weight (1500kg) has been exceeded (1510kg), so the target has been reached; the box is outlined in green. However, the cross-weight distribution is significantly greater (30kg) than specified (5kg); the box is outlined in red.

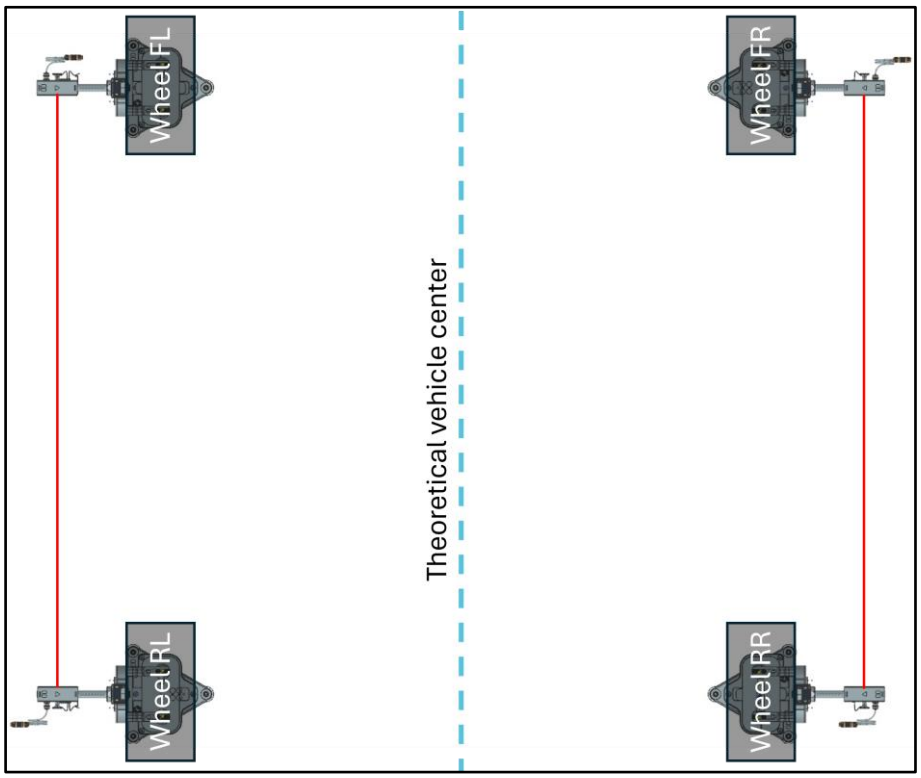
For the other measured variables such as camber and toe, a colored marking also shows whether the measured values correspond to the specified target values.

8.9 Asymmetric toe measurement

Notes

Toe measurement with asymmetrical camber adjustment can be carried out with all system variants of the SetupWizzard.

This chapter describes the toe measurement with an asymmetrical adjustment of the vehicle's camber values. Due to the asymmetrical camber setting, the center of the vehicle shifts from the theoretical vehicle center. To counter this displacement the toe measuring modules have to be adjusted to this displacement.



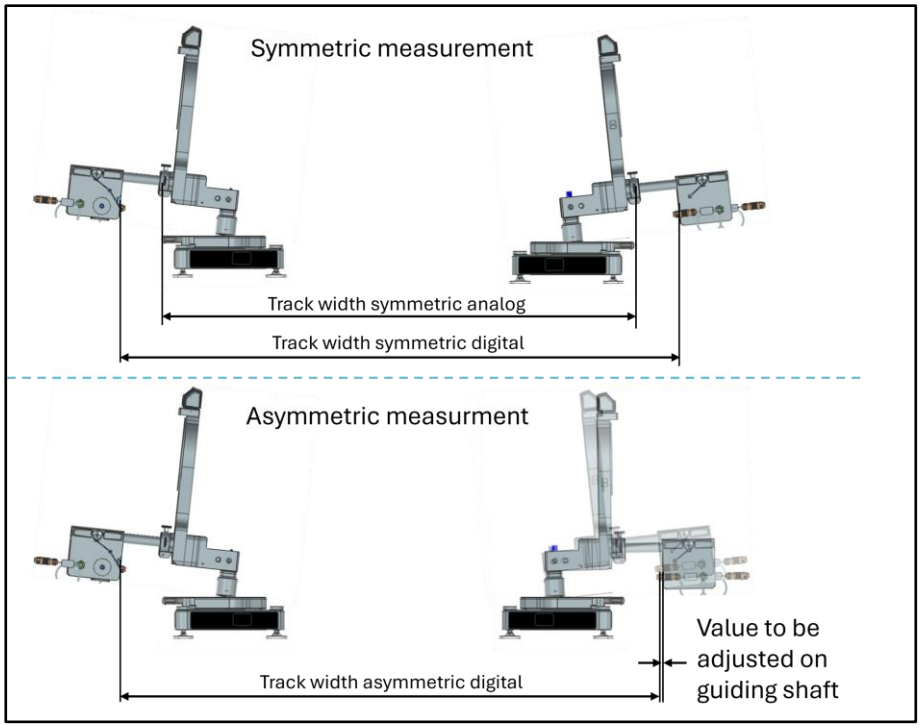
Start with a symmetrically adjusted car and symmetric measurement.

A symmetrically adjusted vehicle is as shown in the figure above. The toe measurement modules are aligned with each other. The theoretical center of the vehicle is on the actual center of the vehicle. For the symmetric adjustment the track width is either measured by the track gauge or by the track measuring sensor in the Digital SetupWizzard variant. For details of toe module adjustment, see chapters 7.2.5 or 7.2.6. Write down the track measurement values and the guiding shaft value of every vehicle corner.

Now adjust the car to asymmetric measurement, e.g. by adding or removing camber shims for camber adjustment. The track width will change compared to the symmetric measurement. Measure the track width with the SetupWizzard again after asymmetric vehicle adjustment.

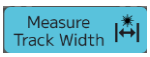
The difference between the symmetric and asymmetric track width values must be adjusted on the guiding shaft scale in respective vehicle corner.

Example: *If the track width of the front axle is reduced by 2 mm because camber shims are removed at the front right, 2 mm more must be pulled out on the guiding shaft scale at the front right corner of the vehicle to stand with the track measurement module in the same position as before the adjustment.*



Notes

For the SetupWizzard Digital:

After every adjustment that has an impact on the track width, the position of the track width laser has to be checked and if necessary realigned with the adjustment mode button  . After this the track width measurement must be activated with the 

button. Adjust the respective vehicle corner with the difference to the symmetric track measurement.

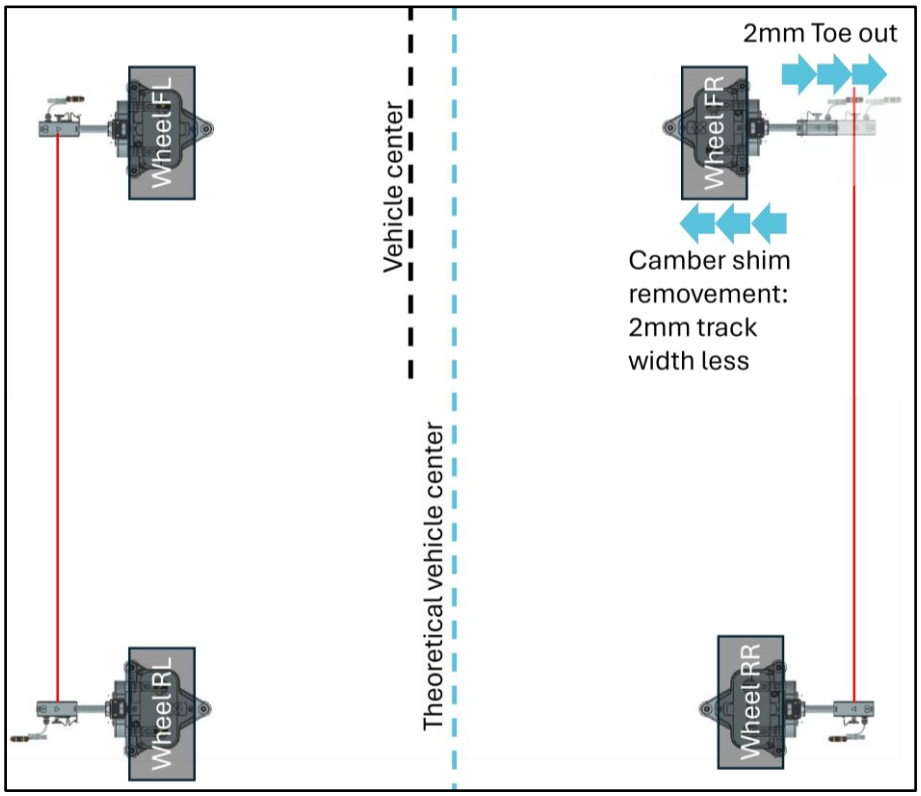
After the alignment of the toe modules on the guiding shaft scale there must be started a new measurement to have correct toe measurement values!

For the SetupWizzard Proline and Baseline:

The track width has the be measured with the track gauge (chap. 7.2.6). Adjust the respective vehicle corner with the difference to the symmetric track measurement.

If the track width increases, the value on the guiding shaft scale must be reduced.

If the track width becomes smaller, the value on the guiding shaft scale must be increased.



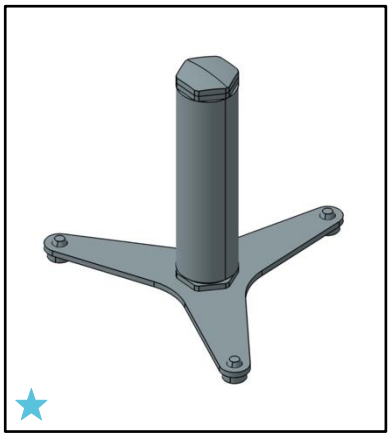
This setting can happen separately at each corner of the vehicle. After setting the camber value of a vehicle corner, check directly whether it causes a change in track width and, if necessary, correct this on the guiding shaft scale of the toe measurement module of the respective vehicle corner.

The measurability of the toe values is retained with exact execution.

8.10 Operating the accessory components

The accessory components can significantly increase the range of functions of the three system variants Baseline, Proline and Digital and expand the area of application of the SetupWizzard.

8.10.1 Analog height measurement



The analog height measurement is used to measure the ride height. The use of this is explained in chapter 7.2.8.

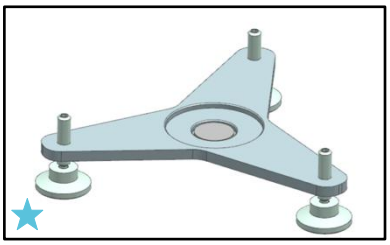
It can be useful to use several height measurements to determine the ride height at several points at the same time.

8.10.2 Digital height measurement

Digital height measurement is used to measure the ride height of a vehicle. In contrast to analog height measurement, the advantage of digital height measurement is that the ride height value does not have to be read manually but is determined and shown on the display and in the software. Details on use can be found in chapter 7.2.9.

It can be useful to use several height measurements to determine the ride height at several points at the same time

8.10.3 Foot digital height measurement



The base of the digital height measurement provides more stability and prevents the height measurement from tipping over. At the same time, it allows adjustments to be made for uneven ground, as the three feet are also adjustable.

The height measurement can simply be placed on the foot. It is held in position magnetically.

8.10.4 Long platform foot

If you need to compensate for uneven terrain but do not want to use the height extensions, you have the option of using longer platform feet. You can simply replace the longer feet with the standard feet. The longer feet allow a significantly greater adjustment range.

Replace the longer platform feet with the normal platform feet by unscrewing the normal ones completely out of the platform and screwing in the longer platform feet.

WARNING

The minimum thread engagement depth of the platform feet is always 25 mm!

Always use the tool supplied for height adjustments.

When adjusting platform height there is a risk of separating the round foot from the thread – pay attention!

8.10.5 Height extension

The height extensions add a variety of options in terms of functionality to the SetupWizzard. On the one hand, the adjustment range of the platforms is significantly increased so that larger uneven terrain can be compensated for, and on the other hand, the platform extensions also enable work to be carried out under the vehicle.

WARNING

When working under the vehicle, it is essential to use supporting stands as additional protection! Ideally, a support stand with a load capacity of at least 750 kg should be positioned at each corner of the vehicle. This corresponds to a minimum total load capacity of 3t (4 x 750kg).

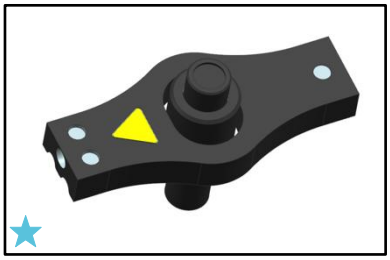
Lift up your vehicle high enough so that you can first place the height extensions and then the measuring platforms under the vehicle.

WARNING

When using the height extension, always ensure that the feet of the measuring platform are screwed out evenly so that the height extension is straight.

To level the measuring platforms on the height extensions (chap. 7.2.3), use the tripod height extension supplied with the levelling laser.

8.10.6 Self-adjusting positioning laser

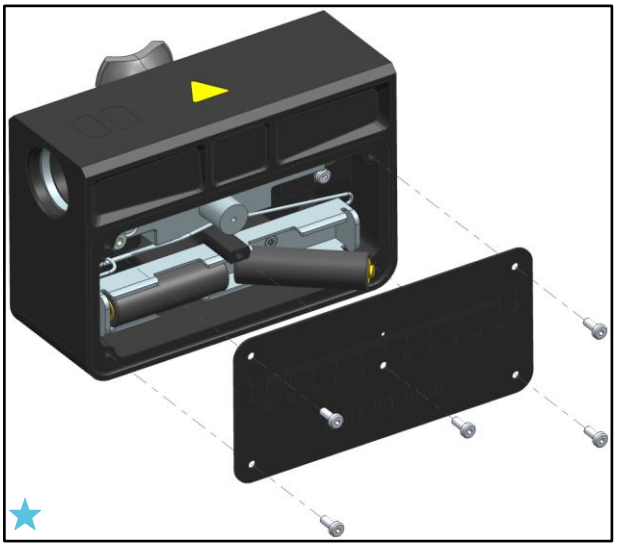


The positioning laser that finds its own position. Leveling is automatic, without having to make an adjustment that takes into account the camber of the vehicle.

Simply replace the fixed positioning laser with the self-adjusting one. To do this, attach it to the existing holder. It is held in position magnetically.

Pay attention to the width of the positioning laser. There is a narrow (width 95mm) and a wide (104mm) version. If you have the wide fixed version, you need the wide free-swinging positioning laser.

8.10.7 Vehicle-specific laser scales



Real millimetres can be read off the laser scales in standard delivery. These must be converted with a factor made up of the wheelbase and the rim diameter in order to obtain units such as millimetres of track or track angle. Vehicle-specific laser scales already take these factors into account. This makes it much easier and less time-consuming to read the toe values.

If you want to change the laser scales (only system variants Baseline and Proline), proceed as follows:

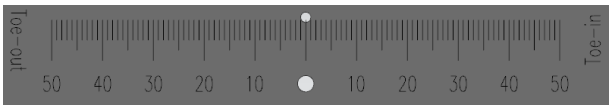
Remove the 5 screws from the laser scale. Remove the laser scale and replace it with the vehicle-specific one. Now retighten the 5 screws with a torque of 0.6 Nm.

★ illustration similar

During installation, make sure that the laser scales are correctly assigned to the track measuring modules. Otherwise your measurement results will be incorrect.

Front left (FL)

Rear right (RR)



Front right (FR)

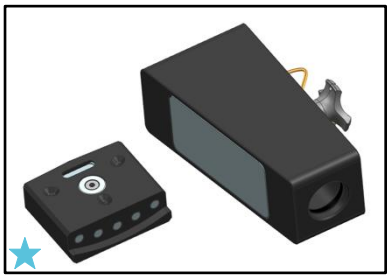
Rear left (RL

Toe-In = Toe-in

Toe-Out = Toe-out

8.10.8 Caster measurement

The operation of the caster measurement is explained in detail in chapter 7.2.10. Please go back to this chapter.



8.10.9 Camber measurement Upgrade Kit

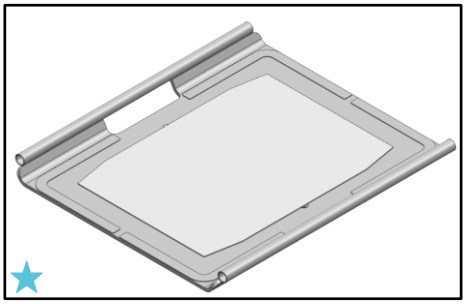
For upgrading your SetupWizzard system there is a Camber Measurement Upgrade Kit. It is selectable between 1x camber sensor and 4x adapters for the Setup Wheel including 1x charging USB cable and 8x bolts for mounting of adapters or 4x camber sensors and 4x adapters including charging 1x USB cable and 8x bolts for mounting of adapters.

8.10.10 Vehicle-specific wheel adapters

As the hole pattern and rim parameters such as the offset vary between manufacturers and models, the wheel adapters for each system are individually adapted to the vehicle. There are wheel adapters with a multi-hole pattern as well as wheel adapters with central locking.

★ illustration similar

8.10.11 Tire plates



Tire plates are for measuring the vehicle weight and ride height without the need to change the car wheels to Setup Wheels.

The main body of the tire plate is laid with the mounted positioning frame below in the measuring platform. The top sliding area of the main body is covered with grease. In this sliding area there is the sliding plate which allows movement of the car wheels when relaxing the suspension.

For a step by step instruction for measuring weights and ride height with tire plates, refer to chapter 7.2.11.

8.10.12 Drop height measurment formula/ prototype

With the SetupWizzard there are two different variants of measuring the drop height for formula or prototype vehicles.

The first variant is the fixed drop height measurement. The height bar (chap. 8.10.14) is attached to vehicle fixing points. Often the height bar is fixed to a Zimmer (chap. 8.10.15) which is both vehicle specific measuring point and vehicle lifting support. At both ends of the height bar the drop height is measured onto the reference surfaces of the height references (chap. 8.10.13) with a measuring tool of choice, e.g. a digital dial gauge (chap. 8.10.16). The height references are mounted on the Setup Wheels of the SetupWizzard.

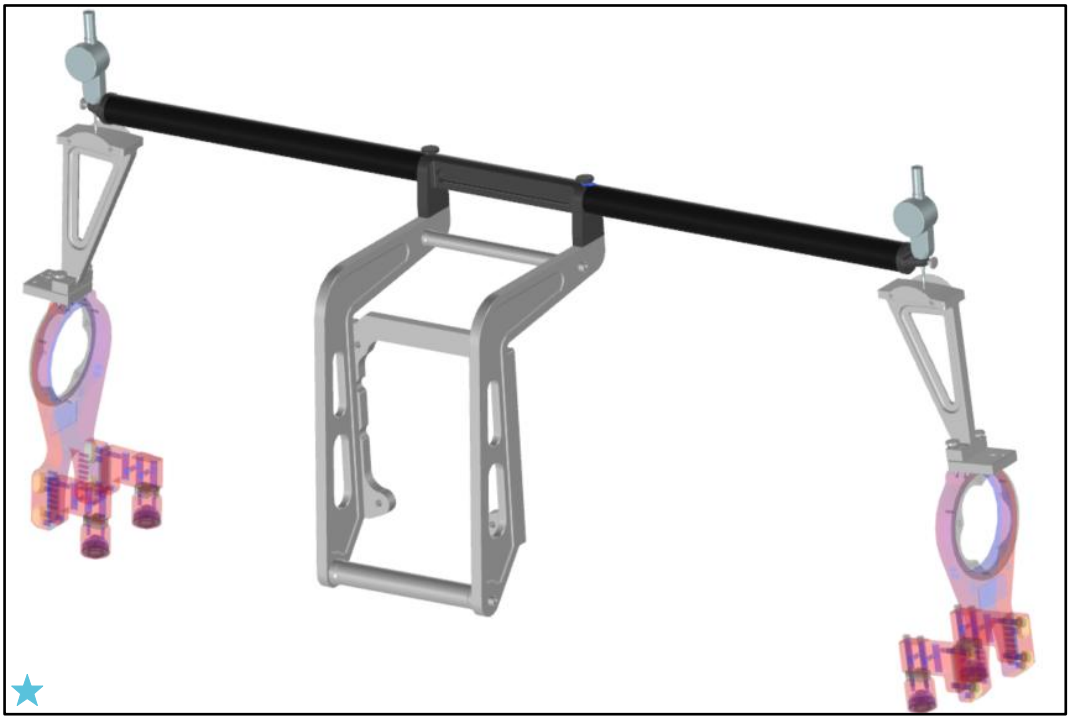
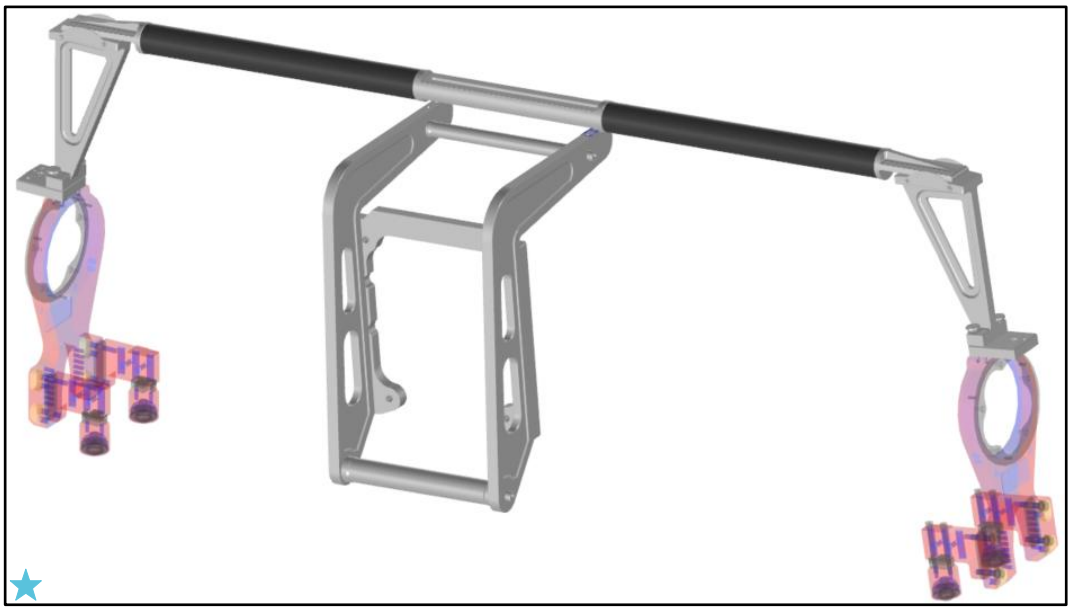


illustration similar

The second variant is floating drop height measurement. The height bar lies on top of the reference surface of the height reference. The drop height is measured with a measuring tool of choice in the middle of the height bar to vehicle specific measuring points.



For both variants it can be chosen between an Aluminum and a Carbon Height bar, for details see chapter 8.10.14.

8.10.13 Height reference formula/prototype

For the floating drop height measurement, the ends of a measuring bar (Aluminium or Carbon) (chap. 8.10.14) lay on the curved top surface of the height reference. For this there are limiting sheets on the height reference needed. The limiting sheets are mounted beside the curved top surface.

For the fixed drop height measurement, the same height reference can be used.

NOTES

For fixed drop height measurement make sure to remove the limiting sheets. Otherwise, there is a risk of damaging your measuring equipment.

★ illustration similar

For measurement, no matter measuring floating or fixed drop height, the height reference is mounted on top of the setup wheel. An adapter for the camber sensor is used for this. To mount the height reference, first insert two dowel pins into the adapter. Then screw it on using two knurled screws.

Because of the curved surface, adapted to the camber angle of the vehicle, there is no deviation in drop height measurement with deviations in camber adjustment of the vehicle.

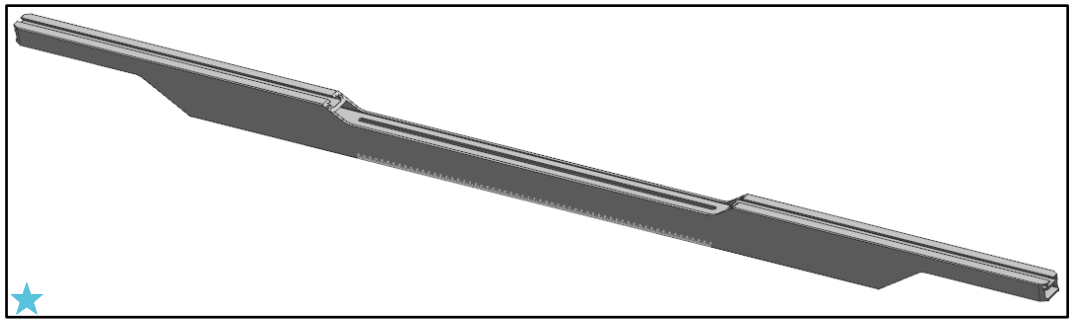
8.10.14 Height measurement bar Formula/Prototype

There are three types of height measurement bars for drop height measurement, which differ in terms of the materials used and the structure.

Aluminium bar

Generally, the Aluminum bar can be used for both fixed and floating drop height measurements by placing shims.

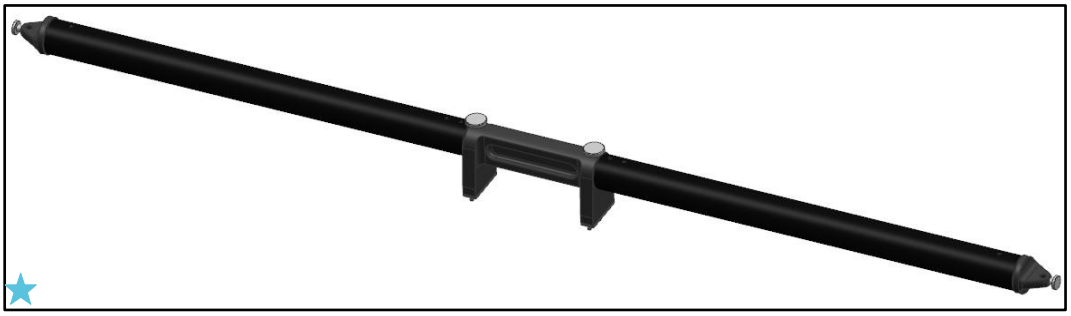
For floating drop height measurement, the aluminum bar is placed on the height references (chapt. 8.10.12). The drop height is then measured down from the middle of the bar to a vehicle specific measuring point.



For fixed drop height measurement, the aluminum bar is mounted in the middle to vehicle specific mounting points or the Zimmer (chap. 8.10.15). The drop height is measured at the outer ends of the aluminum bar with a measurement device of choice.

illustration similar

Fixed carbon bar



Generally, carbon bars are customized to a specific vehicle. The centered mounting points and the length of the carbon parts differ for every vehicle.

The central brackets are mounted on the Zimmer (chap. 8.10.15) which is mounted to the vehicle. The drop height can be measured at the outer ends using a measuring device of choice. It is measured on the curved surface of the height reference (chap. 8.10.12).

If desired, this can be done on both the front and rear axle. At the rear axle, fixed connection points are usually on the vehicle's gearbox without the usage of a Zimmer.

Floating carbon bar

The floating carbon bar is also customized for a specific vehicle. The floating carbon bar is laying with the plane ends on the height references (chap. 8.10.12). The height is then measured down from the center bar to a measure point at the vehicle.

illustration similar

8.10.15 Zimmer formula/prototype

The Zimmer engages at the connection points that are used for the vehicle nose. The Zimmer is both the mount for the vehicle jack and the height level on which the height measurement bar (chap. 8.10.14) is mounted.

The pattern for vehicle adaptation, the height and width are individually customized for each vehicle.

8.10.16 Digital dial gauge

As standard the drop height measurement can be delivered with a digital dial gauge. It has a range of 50mm measurement and an accuracy of 0.02mm.

The digital dial gauge has no communication to the WizzardOS software, but the values of drop height measurement can be entered manually in WizzardOS. When exporting the measurement data (chap. 8.11) the height values are also exported.

8.10.17 Magnetic toe string holder Setup Wheel

For measuring toe string, the magnetic toe string holder is used. It is easily installed by just placing it on the Setup Wheel. Magnets keep the holder in position. The two arms have scales for reading the toe values.

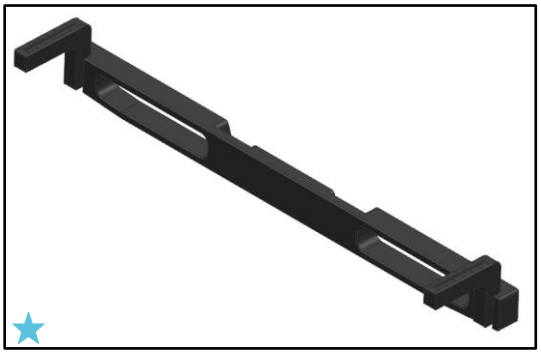


illustration similar

8.10.18 Weight bags (5 kg, 10 kg, 15kg, 20kg)

The weight bags are used to weigh down the vehicle during the measurement. They are available in black and blue in 5kg, 10kg, 15kg and 20kg respectively.

For simulation of any bodywork removed, weight bags are placed in the vehicle where needed.

8.10.19 Air jack extension blocks rectangular

The air jack extension blocks rectangular are designed to increase the height of an air lifting system installed in the vehicle. This simplifies the installation and leveling work on the vehicle and SetupWizzard system.

The heights 25mm, 30mm, 40mm, 50mm and 60mm are available.

Place the wheel chocks centrally under the air jacks. The vehicle is then raised by the height of the shim.

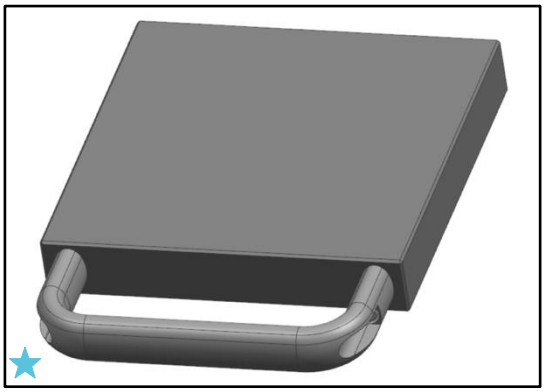
WARNING

Only use the wheel chocks on firm and level ground! Otherwise the vehicle may slip off the air jack extension blocks!

8.10.20 Air jack extension blocks square

The square wheel chocks are designed to increase the height of an air lifting system installed in the vehicle. Versions with heights of 25 mm, 30 mm, 40 mm, 50 mm and 60 mm are available

Place the wheel chocks centrally under the air jacks. The vehicle is then raised by the height of the shim.



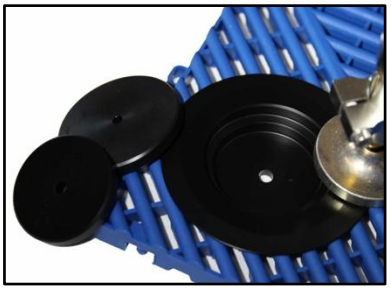
★ illustration similar

WARNING

Only use the air jack extension blocks on firm and level ground! Otherwise, the vehicle may slip off the air jack extension blocks!

8.10.21 Ground socket Measuring platform/leveling laser / height measurement

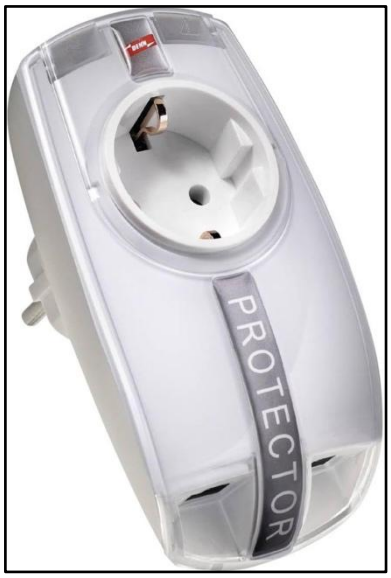
The floor sleeves can be very helpful for the fixed positioning of the measuring platforms or leveling lasers or height measurements when using a mobile pit floor. The devices are then always in the right place and no longer need to be repositioned. For the sleeves Ø83 mm holes need to be drilled in the mobile pit floor.



8.10.22 Overvoltage protection

The overvoltage protection protects the SetupWizzard from overvoltages.

To use it, plug it in the power source and then connect the SetupWizzard system's power supply unit.



8.10.23 Camber sensors

Additional camber sensors have the advantage that the camber sensors no longer need to be moved during the measurement process and all 4 vehicle corners can be measured simultaneously.

For system variant Baseline: The adapters for the setup wheel are also required to use the camber sensors.

The following applies when installing the adapters: Observe the tightening torque of 9 Nm for the screw.

8.11 Export of measured values

Once the measurement is complete, the measured data can be exported as a table sheet. Via the export button  , the software automatically opens a pre-filled data sheet of all measured values in a spreadsheet program (e.g. Libre office) and displays it.

SetupWizzard RACING

Username		Date/Time	
Wheels		**Car**	
Wheel Name		Car Name	
Wheel Type		Car Brand	
Wheel Diameter		Car Model	
Wheel Width		Chassis Number	
Wheel Weight		Chassis Mileage	
Rim Diameter		Starting Number	
Rim Offset		Wheelbase	

Front Left				Total Weight		Front Right			
	Unit	Setup	Measured	Setup	Measured		Unit	Setup	Measured
Corner Weight	kg			0 kg	0 kg	Corner Weight	kg		
Toe	mm	0				Toe	mm	0	
Camber	°	0				Camber	°	0	
Caster	°	0				Caster	°	0	
SAI	°	0				SAI	°	0	
Anti Roll Bar	pos	0,000				Anti Roll Bar	pos	0,000	
Rear Left						**Rear Right**			
	Unit	Setup	Measured				Unit	Setup	Measured
Corner Weight	kg					Corner Weight	kg		
Toe	mm	0		Cross Weight Delta		Toe	mm	0	
Camber	°	0		Setup	Measured	Camber	°	0	
Anti Roll Bar	pos	0,000		0 kg	0 kg	Anti Roll Bar	pos	0,000	

Height					Aero			
Position	Unit	No	Setup	Measured	Description	No	Setup	Measured
1	mm	1	0,000					
2	mm	2	0,000					
3	mm	3	0,000					
4	mm	4	0,000					

Driver/Team		Evaluation
Name		
Driver/Team Weight		
License		

System Name	Position	Number	Serial Number	Versioning

If no table editing program (e.g. Libre Office) is available on the executing device, the table file cannot be opened. As a standard Libre Office is preinstalled on the delivered tablet PCs.

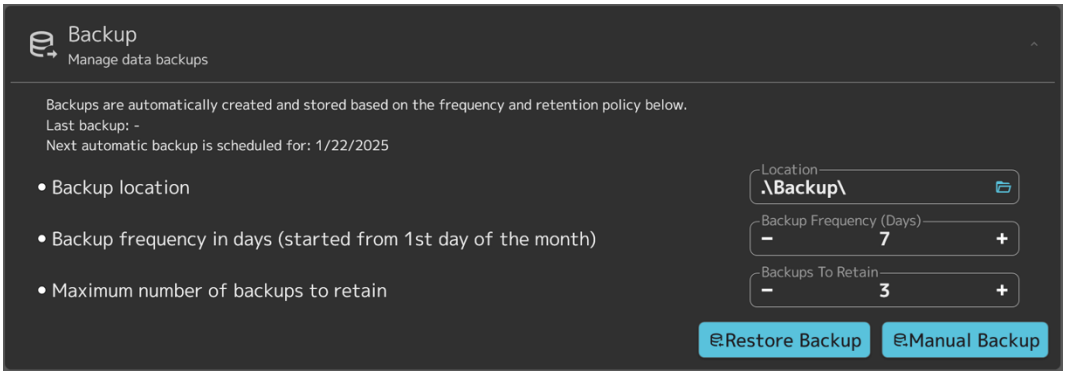
In this document, additions can be made to forgotten data in the software that are important for the documentation. The added data is not retroactively entered into the WizzardOS software but must be added manually in the correct places.

Once all the necessary data has been entered, the table editing program specifies the export options to other file formats (e.g. PDF, txt, etc.).

8.12 Backup

Before updating the software (chap. 6.1.3), you must back up the data stored in the software so that it can be loaded into the new software version. Otherwise, you will lose all your saved data!

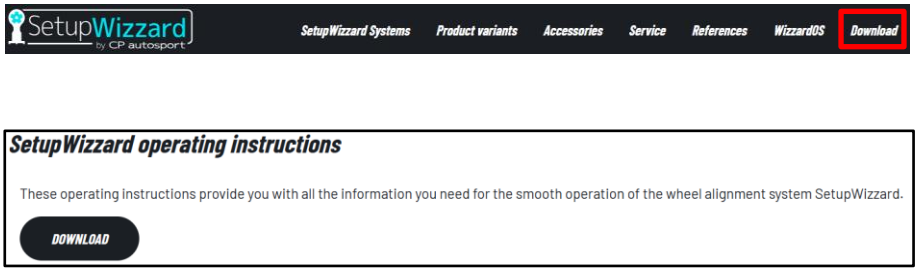
The software provides a local backup of the entered data and settings in the form of a backup. Under the "**Settings**" and "**Backup**" menu items, you can set the frequency of the automatic backup and tell the software how many backups should be kept. You can also specify the storage location for the backup files and perform a manual backup using the button Manual Backup.



You can use the button Restore Backup to load the settings and data from an existing backup into the software. Select a backup file (.zip file) in the file browser and confirm the following window with Restore. You must log in to the software again after loading the backup.

8.13 Operating manual and FAQ

The operating manual for the SetupWizzard system can be downloaded from the SetupWizzard website in the download area.



To solve problems, please refer to chapter 11. There you will find a list of frequently occurring problems with possible solutions.

9 Transportation 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 variant Baseline: Cardboard box

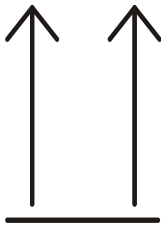
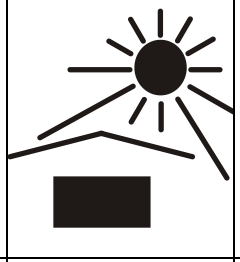
Proline system variant: Transport box

Digital system variant: Transport crate

Note

To ensure the functional safety and precision of the measuring system, the transportation instructions of CP Tech GmbHmust be strictly adhered to.

- Observe the pictograms on the packaging:

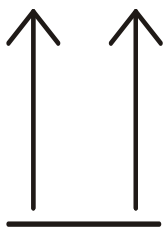
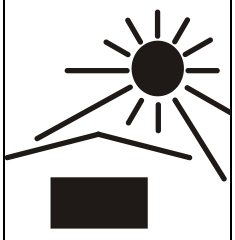
				
Above	Fragile goods	Protect from moisture	Protect from heat	Not resilient

10 Transportation and storage (by operator)

Transport between the locations of use is carried out by the operator or by companies authorized by the operator. The measuring system is transported in the transport crate (CP Tech GmbH) or in containers provided by the operator.

The transportation regulations of CP Tech GmbHmust be observed.

- Use and observe the pictograms on the packaging:

				
Above	Fragile goods	Protect from moisture	Protect from heat	Not resilient

10.1 Safety during transportation

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

- Protect from sea air and water during transportation by sea (seaworthy packaging).
- Take care of the Li-ion batteries during flights (chap. 10.2)
- The measuring system or components may only be transported by appropriately qualified and instructed personnel and in compliance with all safety instructions.

When selecting suitable lifting devices and load handling attachments, always take the weight of the heaviest component into account (chap. 3.3).

* The accuracy of the self-adjusting laser level depends on the distance. The less the distance, the better is the precision.

E.g.: If height measurement of your car is more important on the front axle, place the leveling laser more to the front.

- Wear protective clothing, safety shoes and protective gloves when working.
- Make sure that there are no people in the path of travel.
- Only lift the measuring system/component at the intended points
- Always lift the measuring system slowly and carefully.

10.2 Transportation by airfreight

The measuring devices of the Setup Wizzard System contain various rechargeable batteries with a total output of over 100 Wh. The following regulations must therefore be observed during transportation. The packaging regulations are based on IATA VA 967 Part I. Only 5 kg net battery weight per package may be transported on passenger aircraft. In cargo aircraft, the net battery weight is 35 kg. Rigid outer packaging must be used. Alternatively, the battery can also be protected by the device. The following protective measures must generally be taken.

- Security against unintentional commissioning
- Security against movement of the batteries in the transport packaging
- Safety from short circuits

The following table provides an overview of the accumulators used.

Component	mWh (each)	Type	Net weight [g]
Tablet (Surface Go 4)	27760	Li-ion	122
Camber sensor	1406	Li-ion	8
Platform	24120	Li-ion	100
Leveling laser	19240	Li-ion	~200
Digital height measurement module	5112	Li-ion	35

Packages should be labeled as follows:

LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT, UN 3481

Net weight (NET QTY)

Address of sender/recipient

For transportation by air freight, the shipper's declaration for dangerous goods UN 3481, Lithium ion batteries contained in equipment, 9 // 967 must be completed. Furthermore, the note "Dangerous Goods as per Shipper's Declaration" must be entered in the "Handling Information" field of the air waybill. In the case of a consignment containing dangerous and

non-dangerous goods , the number of dangerous goods must also be noted in the "Handling Information" field.

You must observe the special regulations A88, A99, A154, A164, A181, A185, A213 and A802 for air freight. Employees also require IATA training.

10.3 Interim storage

If the measuring system is not used immediately after delivery, it must be stored carefully in a protected location. The measuring system must be stored temporarily in such a way that it is protected from cold, moisture, dirt, sea air and mechanical influences.

For the recommended storage conditions of the measuring system, please refer to chapter 3.3.1.

No liability is accepted for any damage resulting from improper storage!

11 Issues and remedial measures

Device	Issue	Possible cause, suggested solution
Measuring platform	Cannot be switched on	Battery empty, connect power supply unit
	Overload display	Overloaded, take weight off the platforms
	No display in the software	Battery empty, connect power supply unit Device not paired, switch on platform and connect to the software (chap. 6.2.3)
	Connection to PC not available	Device not connected, switch on platform and connect to the software (chap. 6.2.3) Delete device, reconnect
	Connection to the PC only sporadically available	Connect the power supply unit. Delete system and devices in software and reconnect
	Only single platforms connected to the PC	Delete system and devices in the software and reconnect
	mech. damage	Send device to CP Tech GmbH for repair
	Batteries very hot	Allow platform to cool down, do not load, do not use
	Charging not possible	Reconnect power supply unit, ensure sufficient contact between plug and socket
	Cannot be tared	Device empty, connect power supply unit
	Damage/cable breakage	Send device to CP Tech GmbH for repair
Camber sensor	Unstable measured values	Battery near to empty, connect power supply unit
	Failure	Battery empty, restart camber sensor, connect power supply unit
	Deviating measured values	Perform calibration with calibration block
	Deviation after calibration	Restart camber sensor, perform calibration again, connect power supply unit
	Calibration not possible	Check software for correct version and function
	Damage/cable breakage	Send device to CP Tech GmbH for repair
Positioning laser	No output of a cross-laser line	Button cells empty, replace button cells
Digital toe measuring module	Deviation of measured values Track width with comparative measurement	Wrong offset in software, check for newest WizzardOS software version
Analog toe measuring module	No output of a laser line	AA batteries empty, replace batteries (chap. 12.2.4)
Software and operating system	System cannot be configured	Checking the coupling of the devices in the software, deleting and adding new devices
	Not all devices are displayed	Not all devices added yet, connect devices with software (chap. 6.2.3) Device empty, connect power supply unit Device defective, send device to CP Tech GmbH for repair
	Software cannot be started	Right-click on SetupWizzard.exe icon, "Properties" tab: Activate "Allow" checkbox, restart software (chap. 6.1.2)

12 Service

12.1 Safety measures for service work

Observe the following points before carrying out service work:

- Block access to the working area of the measuring system. Ensure that no unauthorized people are present in the working area of the measuring system.
- Ensure that all system components have cooled down to ambient temperature.
- Ensure that suitable lifting gear and load-bearing equipment is available for replacing larger parts (transport crate).
- Only carry out work on low-mounted components in a squatting position, not in a bent position. Carry out work on high components in an upright, straight posture.
- Replace all faulty parts immediately.
- Only use original spare parts.

Carry out the following activities after completing the service work and before starting the measuring system:

- Check all previously loosened screw connections again to make sure they are tight.
- Check that all previously removed guards and covers have been properly reinstalled.
- Ensure that all tools, materials and other equipment used have been removed from the work area.
- Clean the work area. Remove any spilled liquids and similar substances.
- Ensure that all safety devices of the measuring system are working properly again.

12.2 Service work

NOTES

The service work at CP Tech GmbH is always required when...

...one inspection interval* has passed (entire wheel alignment system).

...components or measuring devices of the SetupWizzard system have not been used as intended** (components or measuring devices).

This is also the case if the measuring devices still appear to be working. Damage within the device can lead to incorrect measured values being output. Without a professional check, it is not possible to ensure that the measuring accuracy of the measuring equipment is still guaranteed.

*Inspection interval = 12 months

**Non-intended use (chap. 2.1)

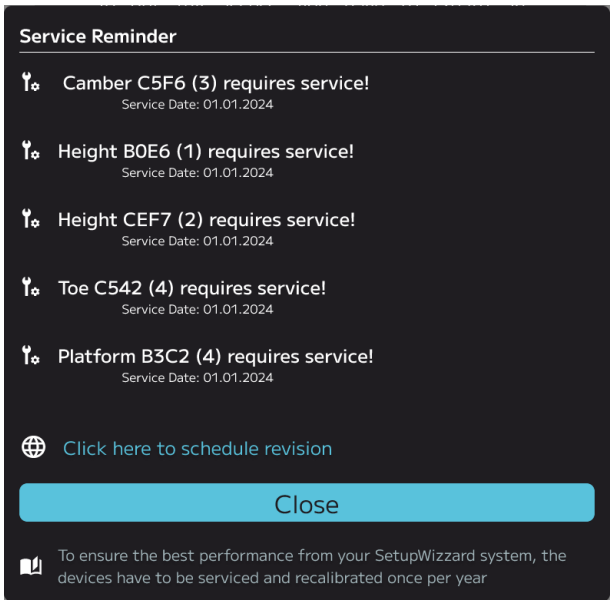
12.2.1 Revision SetupWizzard

The SetupWizzard system consists exclusively of high-quality components and is therefore maintenance-free. However, CP Tech GmbH prescribes an annual revision of the system to ensure the quality and accuracy of the system and its mode of operation.

NOTES

> To maintain the accuracy of the measuring system, an inspection after 12 months at the latest is essential.

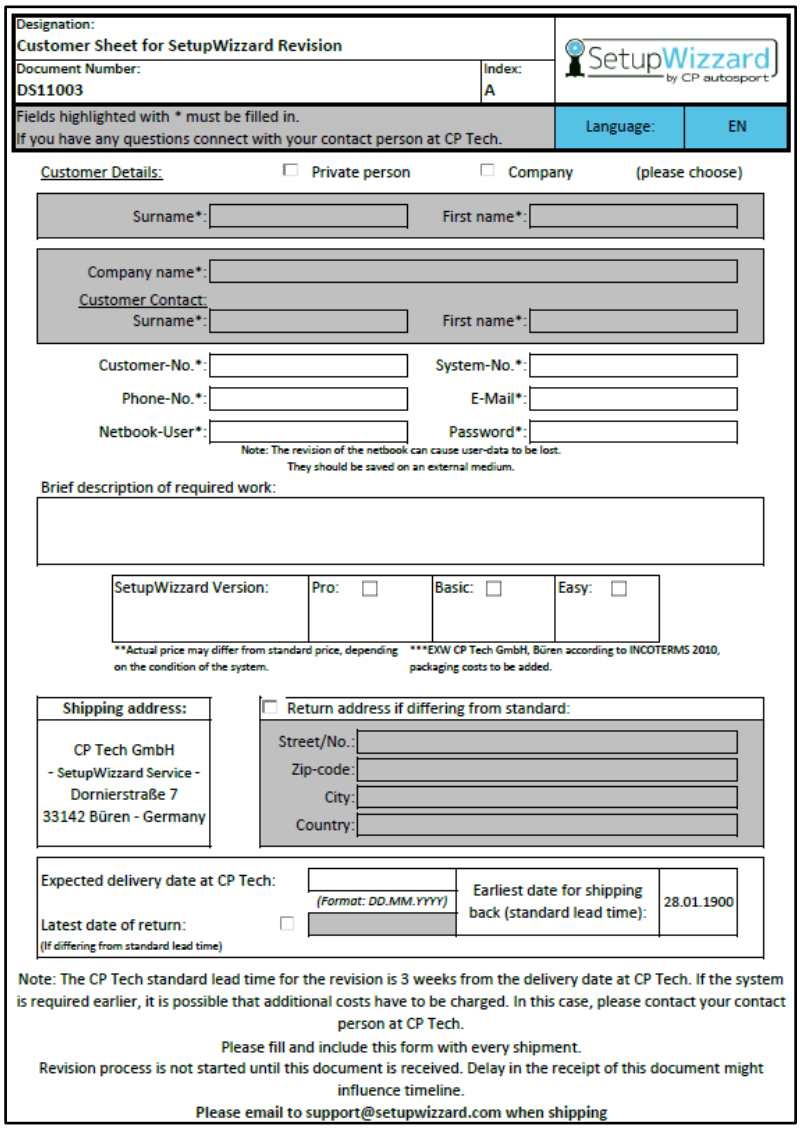
The WizzardOS software reminds you of the service dates of your components with a popup window after entering the software.



By clicking “Click here to schedule revision”, you get to the contact information of CP Tech GmbH to schedule a revision.

Please observe chapter 10 when shipping.

In order to ensure a smooth revision process at CP Tech, it is essential that this revision form is completed in full:



Designation:
Customer Sheet for SetupWizzard Revision

Document Number: DS11003 | Index: A

Fields highlighted with * must be filled in.
If you have any questions connect with your contact person at CP Tech.

Language: EN

Customer Details: ☐ Private person ☐ Company (please choose)

Surname*: First name*:

Company name*:
Customer Contact:
Surname*: First name*:

Customer-No.*: System-No.*:
Phone-No.*: E-Mail*:
Netbook-User*: Password*:

Note: The revision of the netbook can cause user-data to be lost.
They should be saved on an external medium.

Brief description of required work:

SetupWizzard Version:	Pro: ☐	Basic: ☐	Easy: ☐

**Actual price may differ from standard price, depending on the condition of the system.
***EXW CP Tech GmbH, Büren according to INCOTERMS 2010, packaging costs to be added.

Shipping address:
CP Tech GmbH
- SetupWizzard Service -
Dornierstraße 7
33142 Büren - Germany

☐ Return address if differing from standard:
Street/No.:
Zip-code:
City:
Country:

Expected delivery date at CP Tech: (Format: DD.MM.YYYY)
Latest date of return: ☐ (If differing from standard lead time)
Earliest date for shipping back (standard lead time): 28.01.1900

Note: The CP Tech standard lead time for the revision is 3 weeks from the delivery date at CP Tech. If the system is required earlier, it is possible that additional costs have to be charged. In this case, please contact your contact person at CP Tech.
Please fill and include this form with every shipment.
Revision process is not started until this document is received. Delay in the receipt of this document might influence timeline.
Please email to support@setupwizzard.com when shipping

You can download the revision form as a PDF document from the download area of the SetupWizzard website.

12.2.2 Accumulators

The platform (Proline & Digital system), height measurement module (accessory), levelling laser and camber sensor (Proline & Digital system) are fitted with rechargeable batteries. A built-in power supply unit is available in the transport case for charging the batteries.

To charge the batteries, simply connect the platforms in the lower compartment to the magnetic charging plugs of the built-in power supply unit. Make sure that no foreign objects are blocking the plug

To charge the other devices, place them in the designated place in the drawer of the transport box. The other devices are also charged via a magnetic plug. Then connect the supplied power supply unit to the mains. The leveling laser is charged externally using the enclosed power supply unit. Please note that it may take a little longer to charge the batteries during the first charging cycle.

WARNING

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

To avoid high temperatures during the charging process, open the lid of the transport box at higher outside temperatures to allow air to circulate. Never charge the components in direct sunlight, otherwise they may overheat and be damaged!

DANGER

The built-in power supply unit may only be operated with the mains plug supplied. Otherwise the earthing of the metal housing is not guaranteed.

CP Tech also offers a conversion kit for the US market for the built-in power supply unit.

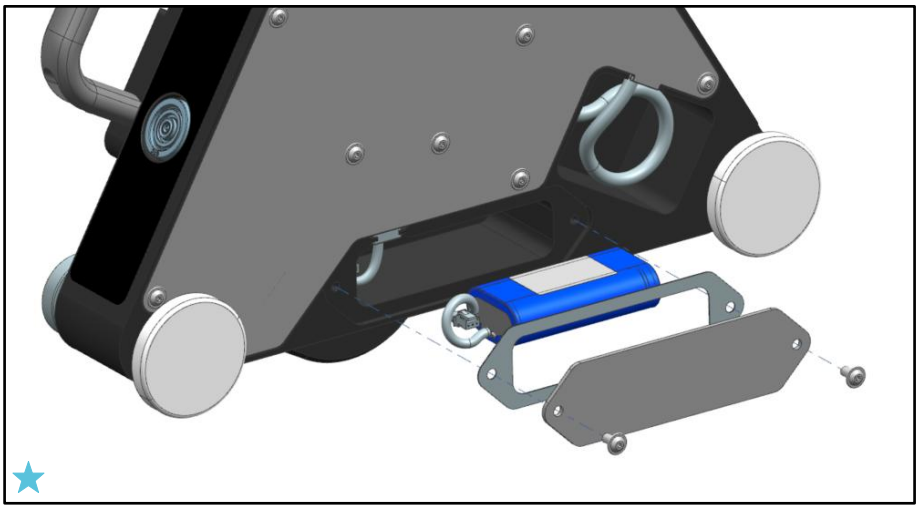
12.2.3 Replace the accumulator of the measuring platform

If the accumulators in the measuring platforms are damaged or defective outside of the inspection interval, they may only be replaced with identical accumulators

NOTES

Of all the accumulators installed in the SetupWizzard, only the measuring platform accumulator may be replaced.

You can find instructions here.



To do this, unscrew the two screws on the small sheet metal cover on the underside of the measuring platform and remove the sheet metal cover and the flat seal underneath. You can now remove the battery and disconnect the plug from the access cable. The battery is covered on both sides with a protective padding film so that it sits securely in the compartment in the platform. The material is compressible so that the battery can expand when heated.

Provide the replacement battery with a suitable cushioning material.

If necessary, clean the compartment in the measuring platform.

NOTES

When replacing the battery, make sure that the battery is well guided in the compartment but is not constricted when heated.

Only use a replacement battery of the same size, capacity and with the same technical data!

★ illustration similar

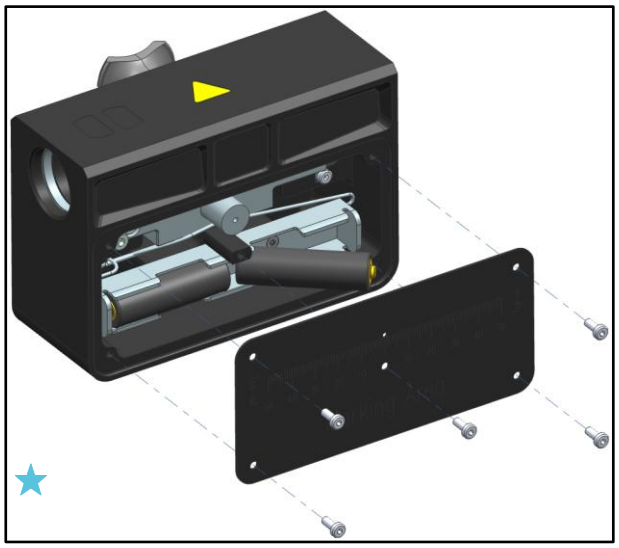
Now connect the battery to the plug on the supply cable. Stow the battery in the compartment of the measuring platform. Make sure that the cable is not kinked and is loose. Finally, place the flat gasket and the cover on the compartment and tighten the two screws with a tightening torque of 1.4 Nm.

NOTES

Replacing the rechargeable batteries with batteries can lead to defects and is therefore prohibited.

12.2.4 Batteries

Depending on how long the system has been in use, the batteries in the analog track measuring module (Baseline and Proline system) may need to be replaced.



To do this, you must remove all 5 screws from the measuring scale on the front and remove the measuring scale. The AA batteries can then be removed from the battery compartment and replaced. Make sure that the polarity is correct!

Now reinsert the measuring scale and tighten it with the 5 screws. The tightening torque is 0.6 Nm.

CP recommends removing the batteries if the system is not to be used for a longer period of time.

★ illustration similar

12.2.5 Special service intervals

12.2.5.1 Electrical equipment

DANGER

Danger to life due to electric shock!

Contact with live components can lead to a fatal electric shock.

- Work on the electrical equipment may only be carried out by a qualified electrician.
- Disconnect the machine from the power supply before carrying out any maintenance or inspection work.

- Carry out safety checks in accordance with the country-specific directives and standards.

12.2.6 Service third-party components

For further information on servicing third-party components (laser, tablet, charger), please refer to the supplier's documentation.

12.3 Service / Customer service

For technical information, please contact our customer service:

CP Tech GmbH
Dornierstrasse 7
33142 Büren / Germany
Tel: +49 (0) 2955 / 4849-553
support@setupwizzard.com
www.setupwizzard.com

In addition, our employees are constantly interested in new information and experiences that result from the application and can be valuable for the improvement of our products.

13 Decommissioning and disposal

13.1 Decommissioning / dismantling the measuring system

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

DANGER

Danger to life due to electric shock!

Unqualified personnel may be at risk of death when working on the electrical system.

– All work on the electrical system may only be carried out by qualified electricians. Qualified electricians are specially trained to work on electrical systems, are aware of the dangers of electrical voltage and can avoid potential hazards by acting correctly.

NOTES

Environmental damage due to improper disposal!

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

– Dispose of the measuring system in an environmentally friendly manner, separated by material.

– Dispose of lubricants and oils in accordance with the applicable regulations or contact CP Tech GmbHif necessary.

Electrical and electronic equipment and batteries must not be disposed of with household waste, but only collected separately. Ask your local authority for collection points.

14 Appendix

14.1 EC declaration of conformity / declaration of incorporation

RoHS

The entire SetupWizzard system complies with the requirements of the RoHS Directive 2011/65/EU and Annex (EU)2015/863.

CE

The complete EC Declaration of Conformity / Declaration of Incorporation of the wheel alignment system SetupWizzard by CPautosport can be downloaded from the SetupWizzard website at the following link:

https://www.setupwizzard.com/download-pdf/

FC

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Responsible party in the USA:

Owen Hayes Motorsport, LLC

Contact Person: Owen Hayes

Address: 8709 Anklin Forrest Dr, Waxhaw, NC 28173

Tel.: 949 308 5287

Email : owen.hayes@owenhayesmotorsport.com

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines. This equipment should be installed and operated keeping the radiator at least 20cm or more away from person's body. This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

Contains FCC ID:2BPIP-NINAB30

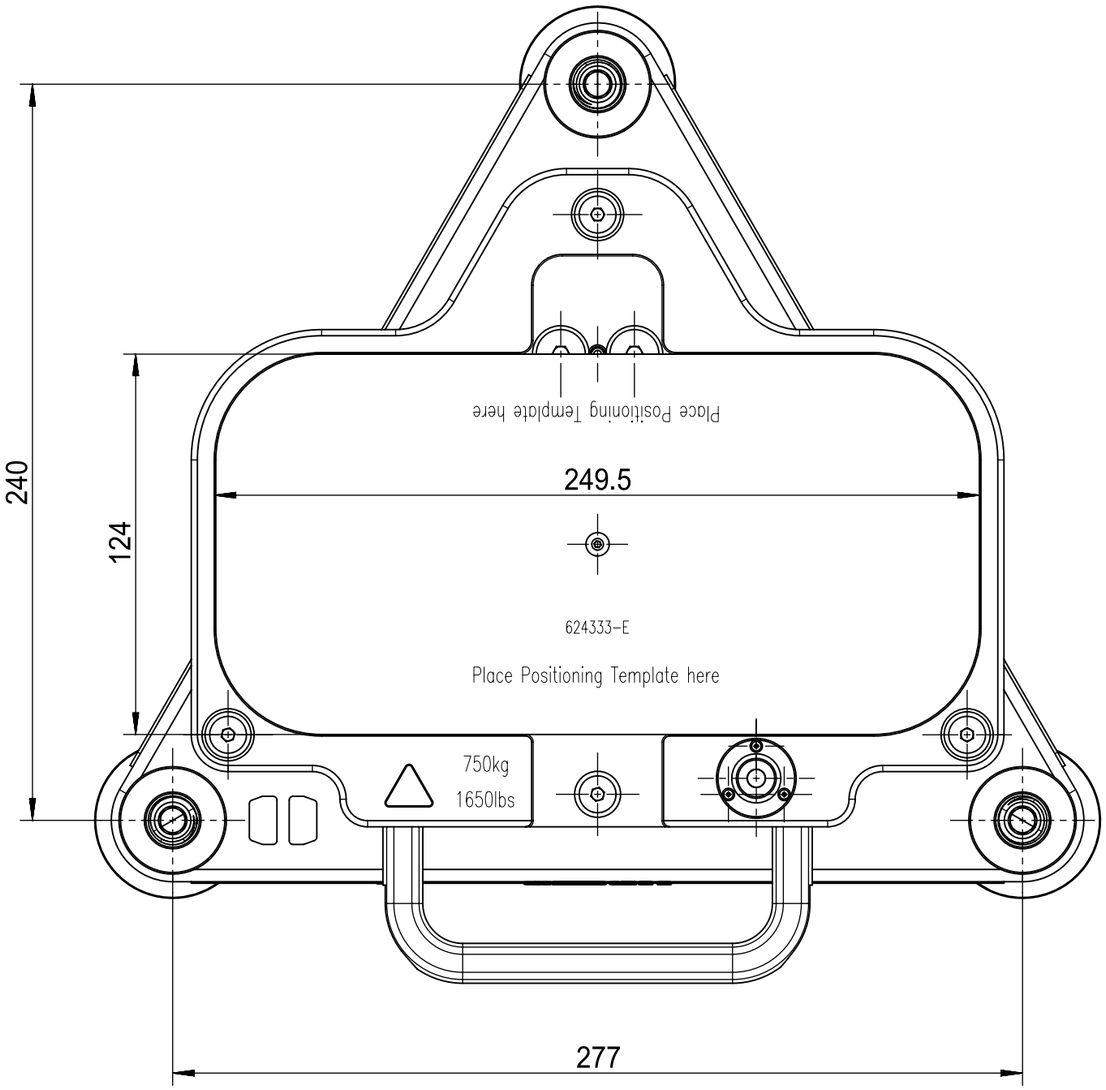
14.2 Attached documents

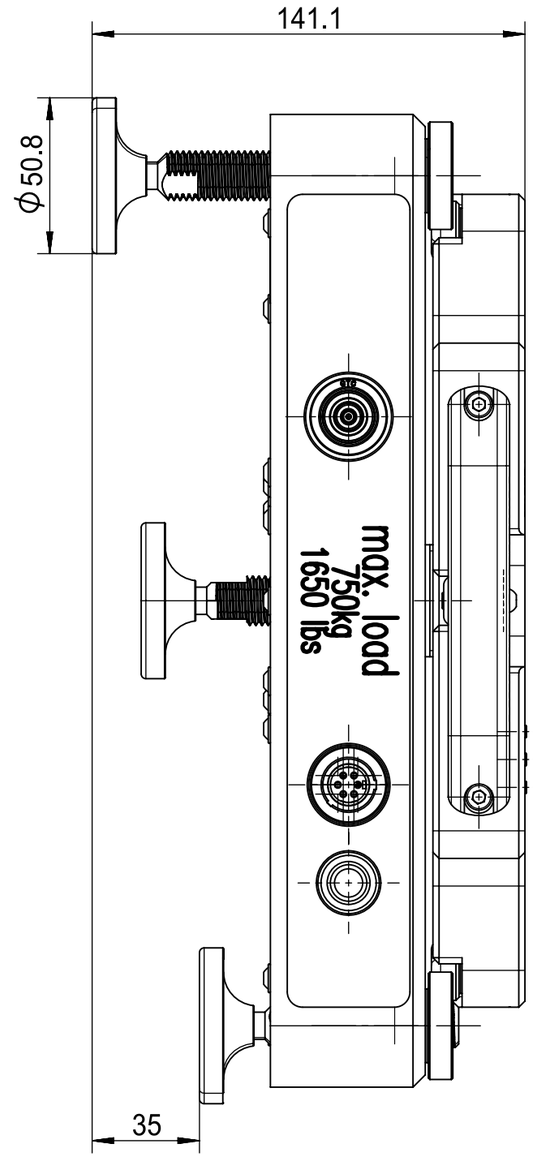
The following documents are attached to this operating manual:

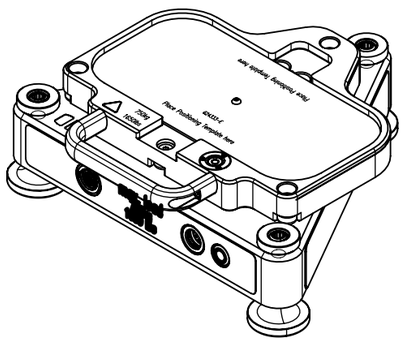
- Drawings:

  - Assy Platform

  - Assy Setup Wheel







REV	MODIFICATIONS	GRID	DATE	NAME
A	Drawing created			

DRAWING NO.	REVISION D	MATERIAL -	ALTERNATIV MATERIAL -	UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS METRIC (mm) ALL DIMENSIONS APPLY TO FINISHED PART AFTER SURFACE TREATMENT	
TITLE		SURFACE TREATMENT \ -	LAYER THICKNESS		SCALE 1:1
		SURFACE PROTECTION -	WEIGHT (g) ***10800.0***	TOLERANCE PRINCIPLE ISO 8015	THREAD TOLERANCE ISO 965 - 6H/6g / SIZE A3
		HEAT TREATMENT -	DESIGNED BY	GENERAL TOLERANCES ISO 2768 - mK	GEOMETRIC TOLERANCES ISO 1101 / SHEET 2/2
		WORKPIECE EDGES ISO 13715 +0.3 -0.3 Ra 3.2	DATE		
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	APPROVED BY		
REFERENCE -					

CHARACTERISTICS CRITICAL TO QUALITY (CTQ): DEFINITION ACCORDING TO **DT00001**

- SC CRITICAL TO SAFETY
- FC CRITICAL TO FUNCTION
- LC CRITICAL TO LEGALITY
- VC CRITICAL TO QUALITY PERCEPTION

IF NOT STATED OTHERWISE, EVERY DIMENSION TOLERATED CLOSER ADDITIONALLY TO THE GENERAL TOLERANCES HAS TO BE TREATED AS A FUNDAMENTALLY FUNCTIONAL CRITICAL CHARACTERISTIC FC 1

FOR ALL DIRECTLY TOLERATED DRILL HOLES AND OUTER CYLINDERS WITH THE FUNDAMENTAL TOLERANCE DEGREE <IT7 , THE ENVELOPE REQUIREMENT ACCORDING TO 14405-1 Ⓔ SHALL APPLY

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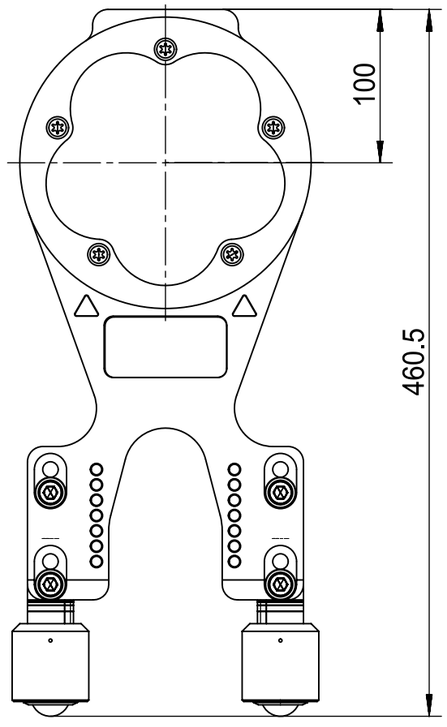

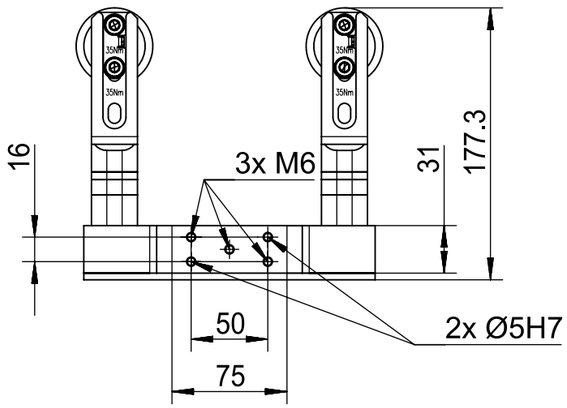

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REV	MODIFICATIONS	GRID	DATE	NAME
A	Drawing created			

DRAWING NO.	REVISION	MATERIAL	ALTERNATIV MATERIAL
TITLE: Assy Setup Wheel 750kg		SURFACE TREATMENT \ : -	LAYER THICKNESS
		SURFACE PROTECTION: -	WEIGHT (g)
		HEAT TREATMENT: -	DESIGNED BY: CP
		WORKPIECE EDGES +0.3 -0.3 Ra 3.2	DATE
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	APPROVED BY
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
		A3
		SHEET
		2/2

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